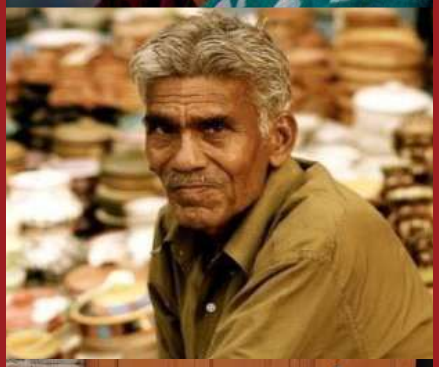

सत्यमेव जयते

Longitudinal Ageing Study in India (LASI)

Wave-1

INDIA REPORT

NATIONAL PROGRAMME FOR HEALTH CARE OF ELDERLY

&

INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES

MINISTRY OF HEALTH & FAMILY WELFARE

GOVERNMENT OF INDIA

(स्थापना / Established in 1956)

बेहतर भविष्य के लिए क्षमता निर्माण

Capacity Building for a Better Future

सत्यमेव जयते

Government of India
Ministry of Health and Family Welfare

Longitudinal Ageing Study in India (LASI)

Wave-1

An Investigation of Health, Economic, and Social Well-being of India's Growing Elderly Population

INDIA REPORT
2020

NATIONAL PROGRAMME FOR HEALTH CARE ELDERLY
NPHCE

(स्थापना / Established in 1956)
बेहतर भविष्य के लिए क्षमता निर्माण
Capacity Building for a Better Future

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प्रधानमंत्री जन आरोग्य योजना
आयुष्मान भारत
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जय विज्ञान
जय अनुसंधान

सबका साथ, सबका विकास, सबका विश्वास
Sabka Saath, Sabka Vikas, Sabka Vishwas

सत्यमेव जयते

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Dr Harsh Vardhan

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Union Minister for Health & Family Welfare, Science & Technology and Earth Sciences Government of India

MESSAGE

India is currently experiencing unprecedented wave of demographic changes: increasing longevity and falling fertility have led to a dramatic increase in the population of elderly aged 60 and above, in both absolute and relative terms. In 2011 census, the 60+ population accounted for 8.6% of India's population, accounting for 103 million elderly people. Growing at around 3% annually, the number of elderly aged 60 and above will rise to 319 million in 2050. Including the pre-retirement ageing phase, the older adult population aged 45 and above will rise to over 650 million people by 2050.

Launched in 2016, the Longitudinal Ageing Study in India (LASI) is a nation-wide population based survey of scientific investigation of the health, economic, and social determinants and consequences of population ageing in India. The LASI wave 1 successfully interviewed a panel sample of 72,250 individuals aged 45 years and above and their spouses, including 31,464 elderly aged 60 years and above and 6,749 oldest-old persons aged 75 years and above. The data were collected from 35 States and Union Territories of India (excluding Sikkim).

The LASI is India's first and the world's largest ever survey that provides a longitudinal database for designing policies and programmes for the older population in the broad domains of social, health, and economic well-being. From health to demography and social and economic wellbeing, LASI provides a reservoir of scientific evidence for the country's policymakers to make informed policy decisions on the issues of health and ageing. The longitudinal data also lays the foundation for understanding the science of ageing. Taking into consideration, the health and welfare concerns of elderly, the Government has launched several programmes for elderly. The evidence from LASI will be used to further strengthen and broaden the scope of National Programme for Health Care of the Elderly. In addition, LASI will help in establishing a range of preventive and promotive health care programmes for older population and most vulnerable among them.

I compliment the entire LASI team at International Institute for Population Sciences (IIPS), the collaborating partners and Dte.GHS for successfully completing this nation-wide study. I also acknowledge with appreciation all those who have supported and contributed to the success of this important study.

Harsh

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Ashwini Kumar Choubey

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एक कदम स्वच्छता की ओर

स्वास्थ्य एवं परिवार कल्याण राज्य मंत्री
भारत सरकार
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HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

MESSAGE

Population ageing, which entails an increasing share of older persons aged 60 years and above in the population, represents an unprecedented global demographic transformation, and is expected to intensify during the remainder of the twenty-first century. Although adult health and ageing is a subject that is being increasingly investigated, there are currently no comprehensive and internationally comparable national survey data in India that cover and connect the full range of topics necessary to understand the health, economic, social, and psychological aspects of the ageing process. The LASI is India's first nation-wide longitudinal ageing study designed to fill this gap.

The LASI provides a comprehensive scientific evidence base on demographics, household economic status, chronic health conditions, symptom-based health conditions, functional health, mental health (cognition and depression), biomarkers, health insurance and healthcare utilization, family and social networks, social security programmes, work and employment, retirement, satisfaction, and life expectations. The LASI has embraced state-of-the-art large-scale survey protocols and field implementation strategies with one or more of the following innovative attributes that existing studies lack: representative sample of India and its states and by socioeconomic spectrum, an expansive topical focus, harmonisation with HRS, a longitudinal design, coverage of comprehensive biomarkers, and the use of Computer Assisted Personal Interviewing(CAPI) technology for data collection, quality control, and Geographic Information System (GIS). No other survey in India collects detailed data on health and biomarkers together with information on family and social network, income, assets, and consumption.

The International Institute for Population Sciences (IIPS), Mumbai has been in the forefront of collecting population based data on health and other socio-economic dimensionsof India's population for policy and programme purposes. I congratulate the entire LASI team at International Institute for Population Sciences (IIPS), collaborating partners and Dte.GHS for successfully completion of LASI Wave 1.

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RAJESH BHUSHAN, IAS
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भारत सरकार
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Message

The demographic and the epidemiological transition in India has shifted a major share of the country's burden of disease to the older population. While infectious/parasitic diseases are still posing significant challenges to the public health system, the emerging burden of chronic and degenerative diseases are causing India to bear a double burden of disease and consequently, a significant share of the global burden of disease.

The dramatic and widespread nature of recent and ongoing demographic shifts indicate that the challenges of population-ageing that India will face are both inevitable and exist on an enormous scale. These demographic changes present complex health, social, and economic challenges to which our Country must rapidly adapt, both at present and continuing into the future. The shift in the age-structure and the rapid rise of elderly population call for robust and internationally harmonised data on ageing and health. There is an increasing need of evidence-based policies to deal with the emerging public health challenges of population ageing.

Recognizing the need for comprehensive data on health and social and economic wellbeing, the Ministry of Health and Family Welfare, launched the Longitudinal Ageing Study in India (LASI) designed to fill this data gap. LASI provides comprehensive and internationally comparable data for India and all of its States and Union Territories. I am happy that the study covers and connects the full range of topics necessary to understand the physical and mental health, economic, and social aspects of the ageing process in India.

I am happy to note that the efforts of LASI team and their partners have culminated in a national report which along with situational analysis of older adults and elderly in the country also provides a robust scientific base for policies on ageing. I congratulate the Principal Investigators Prof. P. Arokiasamy, Prof. David Bloom and Prof. Jinkook Lee and the entire LASI team at the International Institute for Population Sciences (IIPS) and the collaborating partners Harvard T. H. Chan School of Public Health and the University of Southern California, for successfully conducting this nation-wide study and coming out with this timely report. I also acknowledge with appreciation all those who have supported and contributed to the success of this important study.

Place : New Delhi
Date : 31 December 2020

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Additional Secretary & Mission Director (NHM)

MESSAGE

Population ageing represents an unprecedented global demographic transformation and is expected to intensify as the twenty-first century progresses.This dominant demographic trend represents a historic achievement in terms of increased longevity but at the same time offers unpredictable challenges with profound implications on society, health, and the economy.While India is being propelled to a position of international eminence, it faces three main domains of health challenges. First, India needs to deal effectively with the unfinished agenda of communicable diseases, maternal and child health, and the strengthening of health systems. Second, it needs to deal with emerging challenges such as the premature burden of non-communicable diseases (NCDs). Third, India needs to deal with globalisation-related issues while also contributing to the management and shaping of the global policy environment. The dramatic and widespread nature of the current and ongoing demographic shifts indicates that the population ageing challenges that India will face are both inevitable and exist on an enormous scale. These demographic changes present complex health, social, and economic challenges to which this heterogeneous country must rapidly adapt, both in the present and continuing into the future.

Despite several policy and programme initiatives, there is still a considerable policy vacuum in the absence of scientific evidence on India's older population. As no sufficiently broad, nationally representative dataset is currently available in India, comprehensive scientific data are needed to conduct analyses of the health, economic, and social challenges relating to population ageing and formulate mid- and long-term policies and programmes to address these challenges.Considering the void in scientific data, the Longitudinal Ageing Study in India (LASI) was launched under the aegis of MoHFW, Government of India. The LASI is a national landmark in scientific research to allow a better understanding of India's elderly health problems and population ageing processes. The LASI will play an important role of informing the design of appropriate evidence-based policies for older adults and the elderly in the country.

I appreciate the efforts of International Institute for Population Sciences (IIPS), its collaborating institutions and Dte.GHS in designing and implementing the LASI study and coming out with very relevant and important findings. I am sure, the LASI findings will facilitate the Health Ministry and the states/ UTs to further strengthen our coordinated efforts for ensuring the health, well-being and active ageing our growing elderly population.

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स्वास्थ्य सेवा महानिदेशालय
Government of India
Ministry of Health & Family Welfare
Directorate General of Health Services

MESSAGE

With approximately 1.39 billion inhabitants in 2020, India is projected to become the world's most populous country in the next few years. The demographic *vis-a-vis* the epidemiological transition in India has shifted a major share of the country's burden of disease from children to the older population. The transition from high rates to low rates in mortality and fertility that accompanied socioeconomic development also meant a shift in the leading causes of diseases and deaths, known as 'epidemiologic transition'. This is characterised by the waning of infectious and acute diseases and the emerging incidence of chronic and degenerative diseases.

The alarming population projections and the dramatic shift in age-structure call for robust and internationally harmonized data on ageing and adult health. LASI is an attempt to understand the socio-economic and health dimensions of elderly and adults in India. The main objective of the LASI is to provide a comprehensive scientific evidence base on chronic health conditions, symptom-based health conditions, functional health, mental health, biomarkers and healthcare utilization.

Morbidity and multiple chronic conditions increase with age and are associated with limited functional status, high mortality, and rise in the use of both in-patient and out-patient health care. Thus, health needs and demand for health services increases with age. In the LASI survey, detailed information was collected on hospitalisation, out-patient visits, expenditure on health care, quality of care, and health insurance coverage.

I congratulate the team at IIPS, collaborating partners and Dte.GHS officials for successfully completing the wave 1 survey. The findings from LASI will be very useful for formulating various health programmes for adults and elderly in India, as well as for monitoring the ongoing health care programmes.

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MESSAGE

In view of the recommendations and underlying strategy of healthy ageing in the national policy, the Ministry of Health and Family Welfare (MoHFW) has launched various healthcare programmes for the elderly. Under the aegis of the MoHFW, the National Programme of Health Care for Elderly (NPHCE) aims to provide comprehensive healthcare facilities to the elderly through primary, secondary, and tertiary delivery systems. The launch of the NPHCE and other related NCD control and prevention programmes are aimed to address the healthcare requirements of elderly in the country. Another important step undertaken by the Government to improve primary healthcare is Ayushman Bharat. Ayushman Bharat was launched in 2018 as a continuum of care but through two new components: Health Wellness Centres (HWC) and Pradhan Mantri Jan Arogya Yojana (PMJAY).

The Longitudinal Ageing Study in India (LASI) was launched under the aegis of the Ministry of Health and Family Welfare (MoHFW), considering the void in scientific data on population ageing in India.The LASI is a national landmark in scientific data that will allow a better understanding of India's elderly health problems and population ageing processes and will inform the design of appropriate evidence-based policies for older adults and elderly in the country.

I am confident the information given in this report will immensely help policymakers and programme managers in planning focused policies and programmes for the health care and welfare of elderly in India. I also hope that this report will be of great help to all those who are working in the areas of health and ageing in improving the health, social and economic wellbeing of India's growing elderly population.

I appreciate the LASI teams at the International Institute for Population Sciences, collaborating institutions and Dte.GHS for successfully completing the LASI, Wave 1 study.

(VISHAL CHAUHAN)

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Capacity Building for a Better Future

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FOREWORD

IIPS is delighted to bring out the report on the first wave of the Longitudinal Ageing Study in India (LASI). LASI will, undoubtedly, be a major source of information on issues of elderly in the country. The study is designed in line with the Health and Retirement Studies (HRS) carried out across many countries. The internationally harmonized data will allow easy cross-national and cross-cultural comparison. LASI provides data on number of important topics such as health economics of ageing, social and family dynamics, and social security coverage, views of old adults in the light of changing social, economic and familial circumstances.

An important feature of LASI is its innovative method and internationally comparable measures of health, including direct biological measures (Biomarkers).The biomarker measures without self-reporting bias provide true levels of disease prevalence as well as the extent of undiagnosed chronic diseases in the country. The data, thus, enable in-depth analysis on social and economic stratification of health status and services across population groups. I am confident that the evidence from LASI will lead to expansion of the existing programmes, and contribute to launching of landmark national and state-level policies in India. Since the major part of the data collection was in 2017, some of the household indicators like clean cooking fuel and toilet facilities may not reflect the significant progress made during the last few years.

LASI is going to be an important national resource for policy makers and researchers across wide range of disciplines. This is a comprehensive study designed to simultaneously generate data, raise awareness on health issues of the elderly population and inform public policies in the country. It provides an immense opportunity to examine how policies and institutions influence health care utilization and health outcomes among the elderly more than 60 years.

I thankfully acknowledge the support of the Ministry of Health and Family Welfare, Government of India for the successful completion of LASI wave 1. The support received from NIA and UNFPA India is also gratefully acknowledged. I congratulate the entire LASI team at IIPS, HSPH and USC on the successful completion of LASI Wave 1. I am sure, the findings of this study will immensely be useful to scholars and policy makers and all those interested in enhancing the wellbeing of elderly in the country.

Prof. K. S. James
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ACKNOWLEDGEMENTS

The Longitudinal Ageing Study in India (LASI) is a partnership between the International Institute for Population Sciences (IIPS), Harvard T. H. Chan School of Public Health (HSPH) and University of Southern California (USC). Launched under the aegis of the Ministry of Health and Family Welfare (MoHFW), Govt. of India, LASI Wave 1 was financially supported by MoHFW, National Institute on Aging (NIA/NIH), USA and United Nations Population Fund, India.

The successful completion of LASI Wave 1 is the outcome of national and international collaboration, efforts and involvement of numerous organizations and individuals at different stages of the study. At the outset, we are grateful to the Ministry of Health and Family Welfare, Govt. of India, for sponsoring this important study. We wish to place on record our sincere thanks to Shri. Rajesh Bhushan, Secretary, Ministry of Health and Family Welfare and the former secretaries of the department for their guidance, support and contribution to the survey.

The National Institute on Aging (NIA/NIH) fully funded the LASI pilot study in 2010 and partially supported the LASI, wave 1. We are thankful to NIA/NIH for financially supporting the study and a special word of mention goes to late Dr. Richard Suzman for his initiative and interest in LASI. The financial support from UNPFA India in the preparatory stage of LASI Wave 1 was very helpful and we are thankful to them.

The Central Programme Division NPHCE of Dte.GHS & MoHFW provided continuous support and guidance from the proposal stage till the successful completion LASI Wave 1. We acknowledge with gratitude the joint secretaries of NPHCE Mr. Nilambuj Sharan and Mr. Vishal Chauhan. The Directorate General Health Services gave immense support in all stages of LASI wave-1 especially Dr. Inder Parkash, DDG (PH) and Dr. Gowri Nambiar Sengupta, Assistant Director General (NPHCE & Public Health).

We acknowledge the immense contributions of the members of the International Technical Advisory Committee of LASI chaired by Prof. James Smith and the National Technical Advisory Committee chaired by Prof. P. M. Kulkarni for their guidance and advice over the years throughout the study. The contribution of several subject experts during LASI instrument development and national report preparation is greatly appreciated.

The Indian Council of Medical Research (ICMR) extended the necessary guidance and ethical approval for conducting the LASI. We are thankful to Regional Geriatric Centres (RGC) under the Ministry of Health and Family Welfare for their participation in the implementation of LASI biomarker component. We acknowledge the contributions of the director, faculty and staff of National AIDS Research Institute (NARI-ICMR), Pune for their support in the biomarker component of LASI: storage and testing of Dried Blood Spot (DBS) samples as well as the Chest Research Foundation (CRF), Pune for their technical support in conducting lung function test using spirometry.

We would like to place on record our special thanks to Prof. K.S James, current Director and Sr. Professor, and Prof. F. Ram, the former director of the International Institute for Population Sciences for their support and guidance. The administration at IIPS, including the Registrar and Accounts Officer, extended all possible help in successfully completing this survey.

We would like to thank the Management and staff of various state level field agencies (FAs) in successfully carrying out the task of data collection, despite many hardships in the field. This acknowledgement cannot be completed without expressing our appreciation for the hard work put in by the interviewers, health investigators and supervisors in collecting and maintaining the quality of data. The credit also goes to all the survey participants who patiently spent their valuable time and cooperated with survey teams by providing extensive range of information.

Lastly, the LASI team at IIPS contributed immensely at various stages of the study. They played a major role in developing the survey instruments, manuals and protocols, training of the field staff, monitoring the data collection, data analysis and preparation of fact sheets and this report. Their hard work and dedication is gratefully acknowledged. We also acknowledge the contributions of LASI teams at the Harvard T. H. Chan School of Public Health (HSPH), the University of Southern California (USC), University of California Los Angeles (UCLA) and University of Washington.

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CONTENTS

TABLES AND FIGURES

ABBREVIATIONS

ADL	Activities of Daily Living
APL	Above Poverty Line
AYUSH	Ayurvedic, Yoga and Naturopathy, Unani, Siddha and Homeopathy
BDS	Batchelor of Dental Surgery
BMI	Body Mass Index
BPH	Benign Prostatic Hyperplasia
BPL	Below Poverty Line
CAPI	Computer Assisted Personal Interviewing
CEB	Census Enumeration Block
CES-D	Centre for Epidemiologic Studies Depression
CGHS	Central Government Health Scheme
CHD	Coronary Heart Disease
CHE	Catastrophic Health Expenditure
CIDI	Composite International Diagnostic Interview
CIDI-SF	Composite International Diagnostic Interview-Short Form
COPD	Chronic Obstructive Pulmonary Disease
CVD	Cardiovascular Diseases
DBS	Dried Blood Spot
ESIS	Employee State Insurance Scheme
FEV1	Forced Expired Volume in 1 Second
FVC	Forced Vital Capacity
GATS	Global Adult Tobacco Survey
GERD	Gastroesophageal Reflux Disease
Hb/ HbA1c	Haemoglobin/ Haemoglobin A1C (Glycosylated haemoglobin)
HH	Household
HIV	Human Immunodeficiency Virus
HRS	Health and Retirement Study
hs-CRP	High sensitivity C-Reactive Protein
HT	Hypertension
IADL	Instrumental Activities of Daily Living
ICD	International Classification of Diseases
ICF	International Classification of Functioning, Disability and Health
IGNOAPS	Indira Gandhi National Old Age Pension Scheme
IGNWPS	Indira Gandhi National Widow Pension Scheme
IHD	Ischemic Heart Disease
LASI	Longitudinal Ageing Study in India
LEH	LASI age-eligible household
MBBS	Batchelor of Medicine and Batchelor of Surgery
MD	Doctor of Medicine
MPCE	Monthly Per Capita Expenditure
NCD	National Classification of Diseases
NCD	Non-communicable diseases
NFHS	National Family Health Survey
NGO	Non-Governmental Organization
NOAPS	National Old Age Pension Scheme
NSAP	National Social Assistance Programme
NSS	National Sample Survey
OBC	Other Backward Class
OCD	Obsessive–Compulsive Disorder
OOP	Out-of-pocket expenditure
PSU	Primary Sampling Units
RA	Rheumatism
RSBY	Rashtriya Swasthya Bima Yojana
RWA	Resident Welfare Association
SC	Scheduled Caste
SHG	Self Help Group
SRH	Self-Rated Health

SSU	Secondary Sampling Units
ST	Scheduled Tribe
TB	Tuberculosis
ToT	Training of Trainers
UN	United Nations
UT	Union Territory
UTI	Urinary Tract Infection
WHO	World Health Organisation
WHR	Waist to Hip Ratio

1. INTRODUCTION

1.1 GLOBAL TRENDS IN POPULATION AGEING

Population ageing, which entails an increasing share of elderly persons in a population, represents an unprecedented global demographic transformation and is expected to intensify as the twenty-first century progresses. Ageing results from demographic transition, a process whereby reductions in mortality are followed by reductions in fertility. This process then leads to a relative reduction in the proportion of children and an increase in the share of people in the main working age and older person groups in the population. Globally, the number of elderly (age 60 and above) are projected to exceed the number of children (under the age of 14) for the first time in 2047 and are expected to outnumber children under the age of ten by 2030 (UN World Population Ageing, 2013 & 2017). This dominant demographic trend represents a historic achievement in terms of increased longevity but at the same time offers unpredictable challenges with profound implications on society, health, and the economy.

Individuals are living longer than ever before. The global life expectancy at birth for males and females reached 68.5 years and 73.3 years between 2010 and 2015; up from 45.5 and 48.5, respectively, since 1950. On the one hand, the UN Population Division (2019) projects global life expectancy to reach 74.5 years for males and 79.1 years for females by 2050. On the other hand, the global fertility rate dropped to 2.7 children per woman in 2000 from 5.5 in 1950, which is further expected to decrease to 2.1 by 2050. As a result, the contours of the global population have undergone marked changes over the past several decades. The numbers of people aged 65 years or above are projected to be more than double globally, between the years 2019 and 2050, while the number of persons under the age of 25 are projected during the same period to reach a peak and then decline (UN Population Prospects, 2019). Moreover, the global share of elderly persons is expected to rise from 13.4% in 2020 to 21.3% by 2050.

Presently, about two-thirds of the world's elderly persons live in developing countries. As the elderly populations in the less developed regions are growing faster than in more developed regions, projections show that elderly persons will be increasingly concentrated in the less developed regions of the world; in 2050, nearly 8 in 10 of the world's elderly persons are expected to be living in developing regions (UN, 2017). Furthermore, populations in the developing regions will experience faster ageing transitions, significantly ahead of the institutional readiness to cope with the growing numbers of elderly and their disproportionate needs for health and social services.

- While global ageing can be seen as a symbol of medical, social, and economic advances, it has led to health, social, and economic consequences over the past half-century.
- Population ageing represents major policy challenges and therefore threatens to topple existing insurance and pension systems and create health system overload; thus, it calls for a review of existing models of healthcare, familial, and social support.
- In the 21st century, the phenomenon of global ageing has the potential to fundamentally alter disease burdens, the health care system and its costs, family and social structure, economies and trade, and human migration patterns.

Although some governments have started planning for the well-being of their ageing societies. There remains an urgent need to raise awareness about the significance of population ageing and its potentially dramatic implications. Gathering robust and internationally harmonised scientific data will be vital to prepare financially, socially, and medically for the world's rapidly ageing population.

1.2 POPULATION AGEING IN INDIA

With roughly 1.36 billion inhabitants in 2019, India is projected to become the world's most populous country within the next six years. In the 2011 census, people aged 60 and above accounted for 8.6% of the total Indian population, numbering 103 million elderly persons (Table 1.1). The share of the elderly population is projected to further rise to 19.5% (319 million) by 2050 (UN Population Division, 2019).

Including the pre-retirement phase, the older adult population (45 years and above) will rise to constitute over 40% of the population of India or 655 million people by 2050. The number of people aged 75 years and above is expected to increase by 340% between 2011 and 2050. These trends, largely a result of fertility decline and increasing life expectancy, indicate increasing future vulnerabilities such as increasing old-age dependency, reduced levels of potential support, and more older parents to support for the elderly persons Overall, little is known about the total disease burden, public health needs, or economic and social implications of the growth of the elderly population in India.

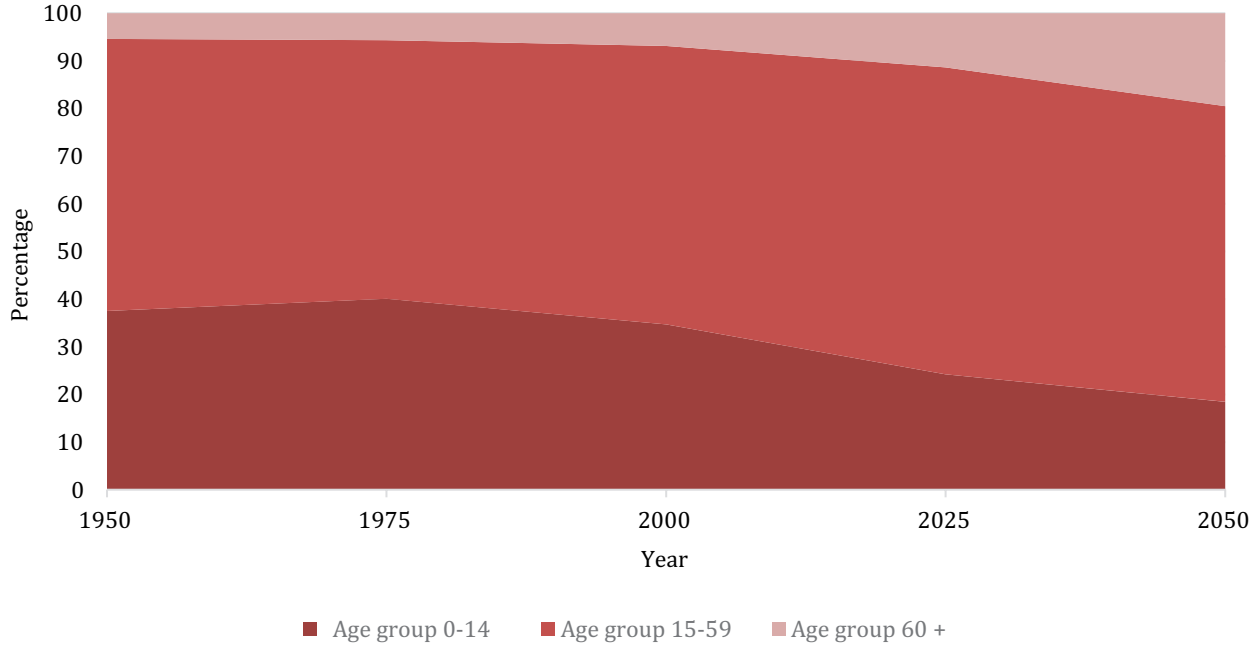
Table 1.1 Trends in population indicators, India, 1981-2011

	1981	1991	2001	2011
Population size (millions)	683	846	1028	1210
Decadal growth of population	24.7	23.7	21.54	17.7
Elderly population (age 60 and above) (millions)	44	57	77	103
Infant mortality rate per 1000	110	80	66	47*
Crude birth rate per 1000	33.9	29.5	25.4	22.1*
Crude death rate per 1000	12.5	9.8	8.4	7.2*

*refers to the year 2010

Source: Office of Registrar General of India, Census of India 2011, Office of the Registrar General of India, Sample Registration System (2009, 2011, 2012-16, 2017), Office of Registrar General of India, New Delhi

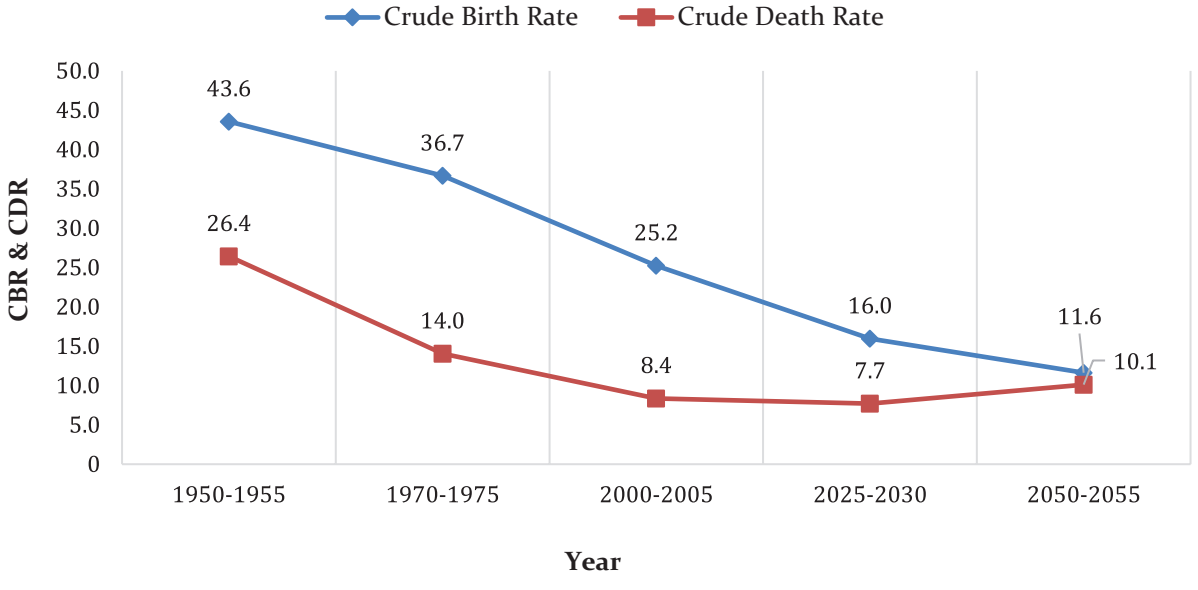
Figure 1.1: Population by broad age group, India, 1950-2050



Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York

The trends in the distribution of India's population in the three broad age groups show that the proportion of children population is expected to decline to 18.5% by 2050 down from 37.5% in 1950 and 34.7% in 2000. The proportion of the working-age population (15-59 years), which was at 57% in 1950 and 58.4% in 2000, is projected to rise to 62% by 2050 (Figure 1.1). The median age of the population, which was at 21.3 years in 1950, expected to rise to 38.1 years in 2050. The crude birth rate per 1000 of the population of India, which was 20.4 in 2011, is expected to reduce to 11.8 by 2050. The crude death rate per 1000 of the population has recorded a sharp decline from 27.6 in 1950 to 6.3 in 2017, with an expected projection of an increase in the rate to 7.3 in 2020. Figure 1.2 shows how these changes are driven by the steady pace of demographic transition in India.

Figure 1.2: Trends in crude birth and death rate, India, 1950-2050



Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York

The ageing index, which refers to the number of elderly persons aged 65 years and above per 100 children aged 0–14 years, which was 8.4 in 1950, is expected to increase to 74.5 by 2050.Due to the sharp 'decline in the child dependency ratio', the total dependency ratio is expected to decrease to 61.2 by 2050 from 75.1 in 1950; whereas, the 'old-age dependency ratio' is expected to witness a steep rise from 9.5 in 1950 to 31.5 by 2050. In 1950, the ageing index was 8.4 elderly persons (aged 65 years and above) for every 100 children and is further expected to become 74.5 elderly persons for every 100 children by 2050. The trends across all the ageing indicators signify a rapid pace of ageing in the country in the coming decades.

While increasing trends in population ageing are observed in all Indian states, the pace and extent are not uniform. State-wise ageing indicators show significant regional variations (Table 1.2 and Map 1.1). The demographically advanced south Indian states of Kerala (12.6), Goa (11.2), Tamil Nadu (10.4), Himachal Pradesh (10.2), Punjab (10.3), Maharashtra (9.9), Andhra Pradesh (9.8), Karnataka (9.5), and Odisha (9.5) are home to greater proportions of older population than the national average. Due to higher fertility rates, the states of Uttar Pradesh (2.7), Bihar (3.4), and Jharkhand (2.6) still have a higher share of population aged 0–14 years. The diametrically opposite trends in total fertility rate and life expectancy at the national level is shown in Figure 1.3. While life expectancy rates at birth are comparatively higher in the states of Delhi, Himachal Pradesh, Punjab, Jammu & Kashmir, Kerala, and Maharashtra, the demographically lagging northern states of India like Uttar Pradesh (72.7), Bihar (85.5), and Jharkhand (71.4) have higher young dependency ratios than other states.

Table 1.2 Population indicators by states/Union Territories, India, 2011

States/UTs	Population (2011)	Annual population growth rate (2001-2011)	Crude birth rate (2017)	Total fertility rate (2016)	Population % 60+ (2011)	Life expectancy (2012-2016)	Ageing Index (2011)	Total dependency ratio (2011)
India	**1,210,854,977**	**1.8**	**20.2**	**2.3**	**8.6**	**68.7**	**17.8**	**60.1**
Chandigarh	1,055,450	1.7	13.5	1.6	6.4	NA	15.5	42.7
Delhi	16,787,941	2.1	15.2	1.8	6.8	74.2	14.8	47.4
Haryana	25,351,462	1.9	20.5	2.1	8.7	69.4	17.9	56.9
Himachal Pradesh	6,864,602	1.3	15.8	1.9	10.2	72.3	26.6	51.3
Jammu & Kashmir	12,541,302	2.4	15.4	2	7.4	73.5	14.1	65.7
Punjab	27,743,338	1.4	14.9	1.6	10.3	72.5	26.4	50.4
Rajasthan	68,548,437	2.1	24.1	2.4	7.5	68.3	14.1	68.6
Uttarakhand	10,086,292	2	17.3	2.1	8.9	71.5	18.3	61.3
Chhattisgarh	25,545,198	2.3	22.7	2.2	7.8	65.2	15.4	61.6
Madhya Pradesh	72,626,809	2	24.8	2.3	7.9	65.4	15.3	65.9
Uttar Pradesh	199,812,341	2	25.9	2.7	7.7	64.8	13.7	72.7
Bihar	104,099,452	2.5	26.4	3.4	7.4	68.7	11.3	85.5
Jharkhand	32,988,134	2.2	22.7	2.6	7.1	67.9	11.8	71.4
Odisha	41,974,218	1.4	18.3	2.1	9.5	67.6	20.8	56.6
West Bengal	91,276,115	1.4	15.2	1.8	8.5	70.8	20.2	50.7
Arunachal Pradesh	1,383,727	2.6	18.3	2.1	4.6	NA	7.7	64.4
Assam	31,205,576	1.7	21.2	2.2	6.7	65.5	12.7	61.3
Manipur	2,855,794	2.5	14.6	2.6	7.0	NA	14.9	55.4
Meghalaya	2,966,889	2.8	22.8	3	4.7	NA	7.5	77.0
Mizoram	1,097,206	2.3	15	2.3	6.3	NA	12.4	59.6
Nagaland	1,978,502	(-)0.1	13.5	2.7	5.2	NA	9.8	62.3
Sikkim	610,577	1.3	16.4	1.2	6.7	NA	16.4	48.0
Tripura	3,673,917	1.5	13	1.7	7.9	NA	18.9	51.2
Dadra & Nagar Haveli	343,709	5.6	23.6	2.3	4.0	NA	7.5	52.3
Daman & Diu	243,247	5.4	20.2	1.7	4.7	NA	12.8	35.1
Goa	1,458,545	0.8	12.5	1.7	11.2	NA	32.2	43.1
Gujarat	60,439,692	1.9	19.9	2	7.9	69.5	17.5	54.0
Maharashtra	112,374,333	1.6	15.7	1.9	9.9	72.2	25	52.7
Andaman & Nicobar Islands	112,374,333	0.7	11.4	1.4	0.0	NA	16.2	41.1
Andhra Pradesh*	84,580,777	1.1	16.2	1.8	9.8	69.6	23.3	50.0
Karnataka	61,095,297	1.6	17.4	1.8	9.5	69.1	23.3	50.4
Kerala	33,406,061	0.5	14.2	1.6	12.6	75.1	35.5	49.7
Lakshadweep	64,473	0.6	15	1.8	8.2	NA	19.7	46.2
Puducherry	1,247,953	2.8	13.2	1.7	9.7	NA	25.7	45.3
Tamil Nadu	72,147,030	1.6	14.9	1.7	10.4	71.4	27.8	45.7
Telangana			17.2	1.8				

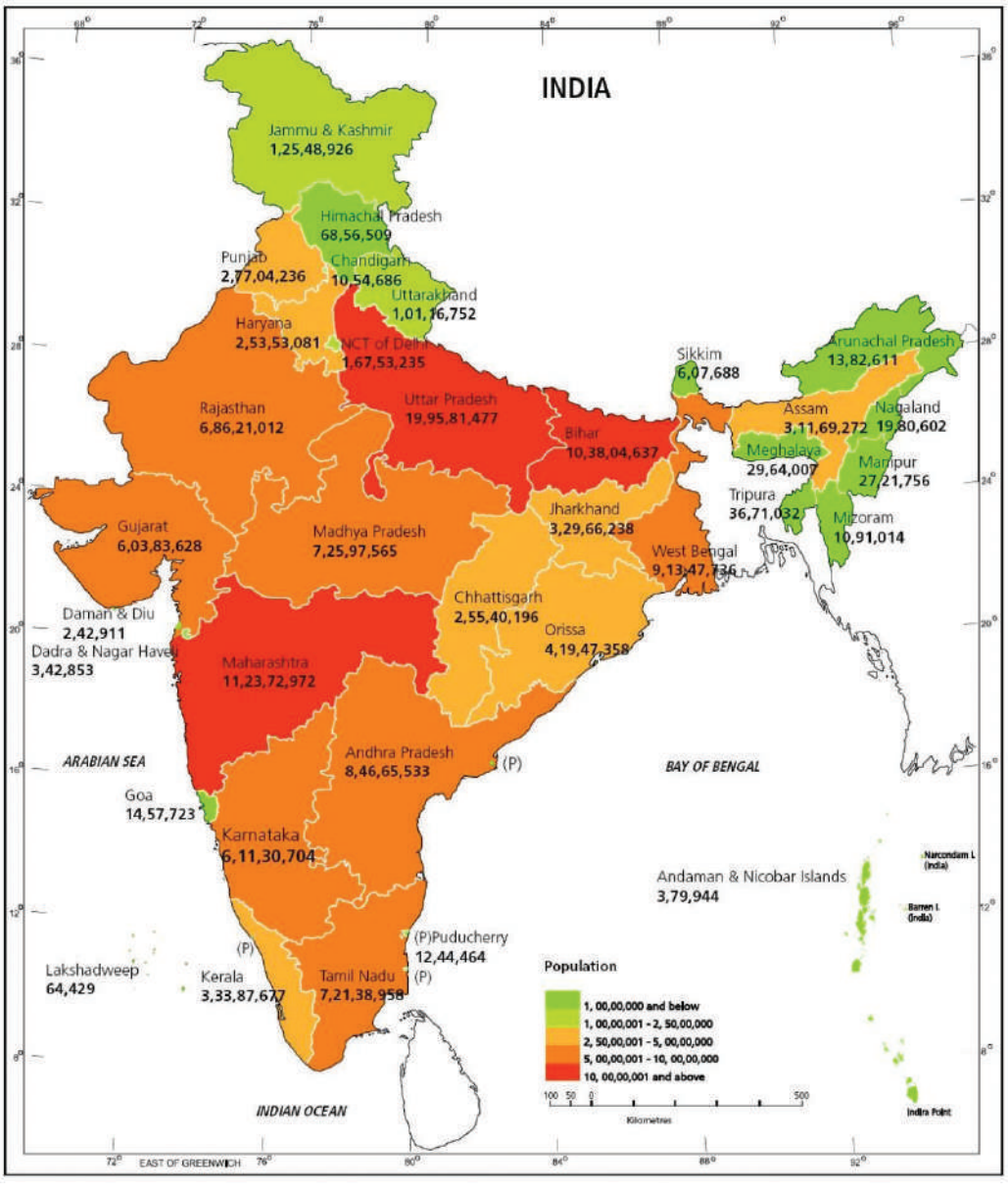
Note: 1. Ageing index refers to the number of persons aged 65 years and above for every 100 children.

2. The total dependency ratio refers to the number of persons aged 0-14 and 60 and above per 100 persons in the age range of 15-59 years. The old-age dependency ratio is defined as the number of persons aged 60 and above per 100 persons in the age range of 15–59 years. The child dependency ratio refers to the number of children aged 0-14 years per 100 persons in the age range of 15-59 years.

3. Andhra Pradesh* includes Telangana.

Source: Office of Registrar General of India, Census of India 2011, New Delhi, Office of the Registrar General of India, Sample Registration System (2012-16) New Delhi, International Institute for Population Sciences. National Family Health Survey-4 (2015-16), Mumbai

Map 1.1: Population size of the states of India, 2011



The rapid rise in India's elderly population coupled with changing family structures and limited social provisions presents policymakers with pressing economic, health, and social challenges. Several forces are driving India's population growth and the changing age structure that includes an upward trend in life expectancy. For example, while an Indian born in 1950 could expect to live for 36 years; whereas today, the life expectancy at birth in India has nearly doubled to 69 years. By 2050, the life expectancy in India is projected to increase to 75 years. At the same time, the total fertility rate has declined from 5.9 in 1950 to 3.3 in 2020 and will further decline to 1.8 by 2050 (Figure 1.3). These trends reflect significant declines in infant and adult mortality rates and improvements in survival rates across all ages. As a result, India's population will rise from 1.36 billion today to an estimated 1.7 billion by 2050, with a significant number of elderly in the population.

While India is being propelled to a position of international eminence, it faces three main domains of health challenges. First, India needs to deal effectively with the unfinished agenda of communicable diseases, maternal and child health, and the strengthening of health systems. Second, it needs to deal with emerging challenges such as the premature burden of non-communicable diseases (NCDs). Third, India needs to deal with globalisation-related issues while also contributing to the management and shaping of the global policy environment.

However, out of pocket expenditures at the point of health service account for more than 70% of health expenditure, leading to health vulnerability in the older population. India is currently developing policies and establishing health care and social security programmes to support a rapidly ageing population. With India having a decentralised policy system, many of these programmes are to be implemented at the state level.

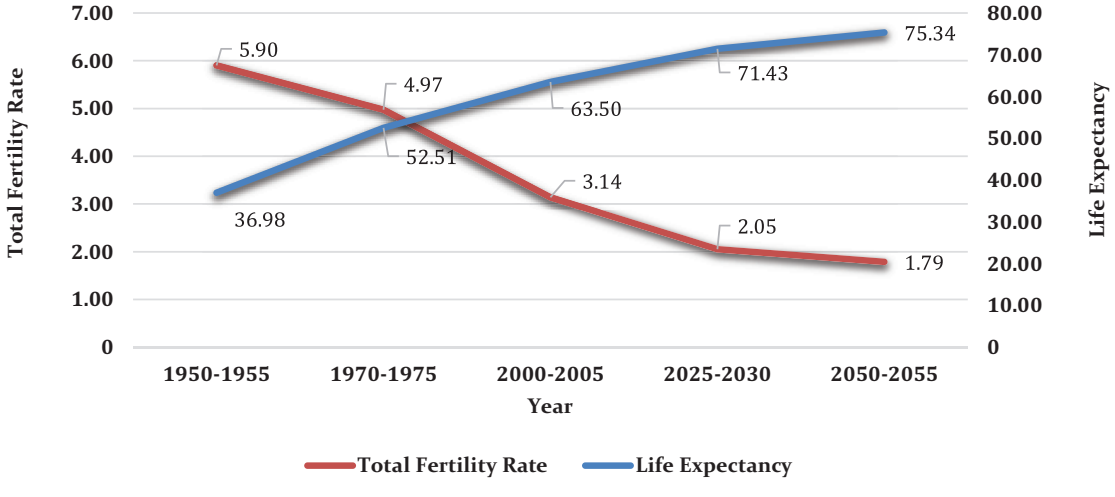
1.3 DEMOGRAPHY OF AGEING IN INDIA

India is currently undergoing an unprecedented wave of demographic changes. While increasing longevity and falling fertility have resulted in a 'demographic dividend', they have also led to a dramatic increase in the population of elderly age 60 years and above, in absolute and relative terms. The proportion of the 'oldest old', which refers to people who are at least 80 years of age, has more than doubled over the past 65 years. Concurrently, with increases in the proportion of older people, the old-age dependency ratio is expected to increase at a rapid pace in the coming years. The old-age dependency ratio refers to the number of persons aged 60 years and above per 100 persons in the age group of 15-59 years. The UN Population Division projects the old-age dependency ratio to increase from the 11.7 in 2000. to 31.5 by 2050.

Accompanying the issue of population ageing is the increasing feminisation of the older age group, which brings forth a unique set of issues to contend. Although the average life expectancy has increased dramatically in India, it has not risen equally for males and females. While women's life expectancy at birth has long exceeded that of men, as is generally the case globally, the life expectancy gender gap has been widening in India. Indian women's life expectancy at 60 years of age exceeded that of men by 0.7 years in 1970-75 and almost doubled (1.2 years) between 2010-2015, and is projected to reach 2 years by 2045-2050 (UN Population Division, 2019). This growing longevity gap between the sexes implies that India's older adult population is increasingly female. Females often have different needs and issues than their male counterparts which necessitates different policy responses.

The elderly population is not a homogenous group, especially in a diverse society like India. The concerns of the young-old and oldest-old vary considerably in terms of financial security, functional incompetency, loneliness, and social and work participation. This pronounced diversity calls for a comprehensive understanding of various age cohorts within the elderly population so that appropriate measures and policies are formed well in time.

Figure 1.3: Life expectancy and total fertility rate, India, 1950–2050



Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York

Table 1.3 Trends in the ageing-related indicators in India, 1950–2050

	1950	1975	2000	2025	2050
Child population in age 0-14 (%)	37.5	40.1	34.7	24.2	18.5
Working-age population in age 15-59 (%)	57.1	54.3	58.4	64.4	62.0
Elderly population in age 60 and above (%)	5.4	5.7	6.9	11.4	19.5
Older adult population in age 45 and above (%)	16.2	16.3	18.4	28.6	40.0
Oldest old population in age 75 and above (%)	0.9	0.9	1.3	2.3	5.2
Median age (in years)	21.3	19.7	22.7	30.0	38.1
Ageing index[1]	8.4	8.7	12.6	31.2	74.5
Child dependency ratio[2]	65.6	73.9	59.4	37.5	29.8
Old-age dependency ratio[3]	9.4	10.4	11.7	17.6	31.5
Total dependency ratio[4] (CDR + ODR)	75.1	84.3	71.2	55.2	61.2
Sex ratio of elderly population[5] (age 60 years)	98.1	104.1	94.2	96.7	95.1
Life expectancy at birth (in years)	35.8	51.0	62.5	71.0	75.0
Total fertility rate (TFR)	5.9	5.2	3.3	2.1	1.8

Note: 1. Ageing index refers to the number of persons aged 65 years and above for every 100 children.
2. The child dependency ratio refers to the number of children aged 0-14 years per 100 persons in the age range of 15-59 years
3. The old-age dependency ratio is defined as the number of persons aged 60 and above per 100 persons in the age range of 15-59 years
4. The total dependency ratio refers to persons age 0-14 and 60 and above per 100 persons in the age range of 15-59 years
5. Sex ratio refers to the number of females per 100 males.

Source: United Nation (2019), World Population Prospects, The 2019 Revision, United Nations, New York

1.3.1 Older adults

Healthy ageing is a process of developing and maintaining the functional ability that enables well-being in the older age. Healthy ageing largely depends on an individual's experiences at younger ages. Therefore, Ageing should be viewed from a life-course perspective. Older adults aged 45 years and above form an age group that represents pre-ageing and pre-retirement phases. These adults often are the carers and earners in their families. The pre-retirement age group is also significant in that it constituted about 18.4% of the total population in 2000—up from 16.2 per cent in 1950. This group is further expected to increase to 40% of India's population by 2050. As ageing is a natural and gradual process reflecting a gradual transition in the health, economic, and social status of individuals, it is vital to track these transitions. Furthermore, NCDs typically present in individuals aged 55 years or older in many developed countries, but their onset occurs in India a decade earlier (less than 45 years of age) (WHO, 2015; Seigel, Patel & Ali, 2014). Older adults age 45 and above also represent a significant part of the potential support system for the elderly population.

1.3.2 Elderly population

The proportion of the elderly population aged 60 years and above increased from 5.5% in 1950 to 8.6 per cent in 2011 and is further expected to further increase to 19.5% by 2050. In absolute numbers, there were 103 million elderly persons of age 60 years and above in 2011 (as per the 2011 census), and this figure is expected to increase to 319 million by 2050 according to the UN Population Division (2019). The population size in absolute numbers calls the need for immediate attention from policymakers and social scientists in the country. Population ageing has not been experienced uniformly across all the states of India. While the more developed states like Kerala, Tamil Nadu, and others in the south have experienced demographic transitions before the rest of the country, states like Uttar Pradesh and Bihar, owing to high fertility and mortality rates still have younger population age structures. The issues and concerns of the elderly in different age groups are different and the ageing experiences of the older adults in pre-ageing and pre-retirement ageing contribute toward their health and socio-economic circumstances in older ages.

1.3.3 The Oldest-old

Demographically, the composition and nature of the oldest-old cohort of 75 age and above are expected to change rapidly due to societal changes and ageing processes. In India, the oldest-old represented 0.9% of the population in 1950 and 1.7% in 2011 and this proportion is further expected to rise to 5.2% by 2050. Given the improvement in the level of education and other areas of socio-economic development, the future cohort will differ from those of the present. For instance, the incidence of chronic morbidity is expected to increase, with age impacting the activities of daily living. As age is the predominant determinant of health, all the experiences and engagements of the oldest-old depend on one major factor that is health. From the perspective of the feminization of ageing, there will be a larger share of oldest-old widows than the oldest-old widowers. While due to fewer obligations, the oldest-old have relatively more free time, their social networks, however, tend to shrink with increased age. The oldest-old also experience multiple health issues and reduced functional capabilities and possess limited resources and capacities, which hinder their engagement in productive activities. Further, they exhibit increased vulnerability and reduced identity, psychological autonomy, and personal control. The longitudinal approach of the Longitudinal Ageing Study in India (LASI) is intended to assess the physiological and social transitions occurring among ageing individuals over a longer period in the country.

1.4 SOCIAL, ECONOMIC, AND HEALTH DIMENSIONS OF AGEING IN INDIA

The dramatic and widespread nature of these current and ongoing demographic shifts indicates that the population ageing challenges that India will face are both inevitable and exist on an enormous scale. These demographic changes present complex health, social, and economic challenges to which this heterogeneous country must rapidly adapt, both in the present and continuing into the future. However, in the absence of adequate answers to the what, how, and when to adapt, implementing any effective policy in this vast nation will be extremely difficult.

1.4.1 Social dimensions of ageing in India

The ageing transition has far-reaching social implications related to family and social networks, psycho-social behaviour, living arrangements, life satisfaction, and overall wellbeing. In India, as in many East Asian and South Asian countries, the family has traditionally served as the prime source of support for ageing adults, with sons responsible for caring for their parents. However, evidence indicates that this support system has been declining due to factors such as increased urbanisation and mobility. Elderly living alone and without spouses is an increasing phenomenon. The reasons for living without children are mainly having no children and having children who reside away due to education, work, or marriage.

In 2007, the Indian parliament passed the Maintenance and Welfare of Parents and Senior Citizens Act, which allows elderly 60 years and older are ‘unable to maintain themselves’ to take legal action against adult children or grandchildren who fail to provide them with basic necessities such as housing, food, clothing, and medical care. While this Act codifies the basic rights of older adults and provides a legal backbone to a faltering social order, the act is also particularly germane to vulnerable sub-populations such as widows, low-income individuals, and other adults who may be subjected to elder abuse, neglect, or ill-treatment. However, the law is difficult to enforce, contains no assurances for childless adults, and does not address what, if any, are the responsibilities of the Indian government towards its ageing citizens. Such family-centred social welfare measures must be supported by appropriate government initiatives such as a robust pension system and healthcare delivery program.

An increase in the older population will lead to an urgent need for elder care and support, at a time, in India particularly where traditional family-based care is becoming less the norm than in the past (Arokiasamy, Bloom, Lee, Feeney & Ozolins, 2012). In this regard, understanding the family structure and living arrangements of the elderly across various important categories like age, sex, marital status, educational level, wealth quintile, rural/urban residence, religion, caste, health status, and social benefits is important. The co-residential family living arrangement is still the dominant type of living arrangement in India. However, the elderly living alone or living only with a spouse is an increasing trend, particularly in urban areas. Traditionally, the institution of family takes care of the well-being of the older persons, and the elderly in turn contribute to the household and family through informal care. With changing socio-economic milieu, India is experiencing a breakdown in the traditional extended family structure, resulting in changes in the living arrangements and social structure and thus, weakening the elderly's social support system. Studies have shown that there are more elderly women than men who live alone, and that widowhood, along with poor physical and functional health and financial insecurity, increases their vulnerability multifold. This situational analysis of the elderly calls the need for better external measures of support for the elderly through government schemes and programmes.

One of the major challenges posed by population ageing is how we might add life to the growing number of years in later life. Enhancing the social participation of older adults is a critical factor in achieving the goals of successful ageing. Such participative perspective is indeed present in the current ageing discourse—the more active the elderly are, the more they contribute to society (WHO, 1996). However, the social participation of the elderly has not yet been a focus of ageing discourse in India. Social participation among the elderly tends to increase with age as ageing Indians stop working for pay, are active outside the home, and participate in broader civic and social networks (Arokiasamy, Bloom, Lee, Feeney & Ozolins, 2012). A suitable social and physical environment is thus a requisite for enhancing the participation of the elderly in society, especially in the older ages.

Life satisfaction is an important psychosocial measure for the wellbeing of individuals. Individuals in older ages derive satisfaction from various factors such as closeness to family, qualitative and quantitative aspects of social support, employment status, and participation in volunteer work. In the Indian context, religiosity tends to increase with age, signifying life satisfaction through religious and spiritual engagement (Dharma). Research has highlighted certain variables that are consistently associated with life satisfaction, such as health, socio-economic status, education, financial satisfaction (also in Chou & Chi, 1999), and social integration (see Gray, Ventis, & Hayslip, 1992). Nonetheless, the determinants of life satisfaction are still inconclusive in the Indian context.

1.4.2 Economics of ageing in India

Global population ageing presents unprecedented challenges, which include a shifting disease burden, increased expenditure on health and long-term care, labour force shortages, public dissaving, and old-age income insecurity (Bloom, Canning & Lubet, 2017). The increased burden of healthcare, decreased labour supply, and increased need for social protection may potentially slow economic growth. Furthermore, prolonged post-retirement years can strain the pension system and personal saving capacities of individuals, implying that the older adults will need to depend on the family and the state to finance their consumption. Thus, population ageing may contribute towards economies being required to repay the 'demographic dividend' in the forms of reduced labour supply, increased spending on health and long-term care, and capital de-accumulation as the elderly seek resources to finance their consumption in retirement (Bloom, Canning & Lubet, 2017). The challenges arising from population ageing are more complex for developing countries like India, wherein a longevity economy is yet to be considered positive and wherein third careers, senior citizen universities, and lifelong learning are still uncommon.

In most of the developing countries, population ageing is taking place before these countries have grown wealthy—a pattern distinct from today's developed countries (Bloom & Eggleston, 2014). Moreover, in the Indian context, financial security in older ages affects social prestige and impacts the elderly's decision-making capabilities. With poor social security measures and a weak pension system providing meagre pension, a major proportion of elderly live in poverty. Such poverty-driven financial insecurities limit the healthcare utilisation capacities for the elderly, leaving a gap in health service provision.

The average household size in India has been decreasing over the past few decades owing to varying factors in urban and rural areas. In the bigger cities, the traditional joint family system has been gradually disintegrating partly due to the younger generation's living arrangement preferences. In small towns and rural areas, while living arrangement preferences might not have changed as much, children are required to move away for educational and job opportunities. Such transitions have major economic implications for India's elderly population, for they can no longer take for granted the familial and economic support that they provided for their parents' generation. Meanwhile, employment opportunities decline as age advances and the official retirement age in many public sector organisations remains around 57–62. Furthermore, the formal sector workforce constitutes only a small proportion of the working population; a majority of India's working population are engaged in the unorganized sector, wherein there is no social security provision. Informal sector employees have no fixed retirement age or system and thus work many years late into their old age.

A major proportion of elderly persons are not covered under old-age pension schemes and many others are ineligible. This creates a major gap in universal coverage and the utilization of social security measures in India. Furthermore, the amount of pension provided under old-age pension schemes is meagre in comparison to the financial needs of the elderly. As there is a lack of scientific literature on the dynamics of work and ageing in the country, there is a need to assess the working conditions, nature of work, retirement and benefits, and other issues pertaining to the elderly labour force in India.

1.4.3 Health dimensions of ageing in India

The demographic vis-a-vis the epidemiological transition in India has shifted a major share of the country's burden of disease to the older population. The transition from high rates to low rates in mortality and fertility that accompanied socioeconomic development also meant a shift in the leading causes of diseases and deaths, known as 'epidemiologic transition'. This is characterised by the waning of infectious and acute diseases and the emerging incidence of chronic and degenerative diseases. However, infectious/parasitic diseases still pose significant challenges to the public health system, causing India to bear a double burden of disease and consequently a significant share of the global burden of disease (Arokiasamy, 2018). Of the top ten individual causes of death in India in 2016, deaths due to NCDs increased between 1990 and 2016; the all-age death rate increased significantly for ischaemic heart disease (54.5%), diabetes (130.8%), and chronic kidney disease (32.7%) (Dandona et al., 2017). The rise in the proportion of disability-adjusted life years (DALYs) due to non-communicable diseases also confirmed that NCDs and mortality are more prevalent among older adults than in the general population. NCDs exceeded 50% in the 30–34 age group and were highest at 78.8% in the 65–69 age group. The disease categories causing 5% or more of total DALYs in India in 2016 were cardiovascular diseases (14.1%); diarrhoea, lower respiratory, and other common infectious diseases (12.7%); neonatal disorders (7.9%); chronic respiratory diseases (6.4%); diabetes, urogenital, and endocrine diseases (5.6%); mental and substance abuse disorders (5.6%); unintentional injuries (5.4%); and neoplasms (5%). The DALY rate between 1990 and 2016 was the highest for diseases such as diabetes (80.0%), ischaemic heart disease (33.9%), and sense organ diseases (mainly vision and hearing loss disorders; 21.7%) (ibid). However, the prevalence of mental illness among older adults may be higher than the reported figures, due to the social stigma and lack of trained mental health professionals. The burden of mental illness in India is pervasive in nature, especially for older adults living in distressed socio-economic conditions.

Overall, diabetes; urogenital, blood, and endocrine disease; neurological disorders; chronic respiratory diseases; cardiovascular diseases, and other non-communicable diseases are much higher among the elderly than the younger older adults. Furthermore, as people age, they are more likely to experience multimorbidity, i.e., the presence of multiple chronic conditions at the same time. The presence of multimorbidities further complicates the management of NCDs among the elderly. According to the WHO's Study on Global Ageing and Adult Health (SAGE) in India, while 60.7 % of respondents aged 70 and above reported more than one chronic condition, only 12.3 % of respondents between 18 and 49 years of age reported the same in comparison (Arokiasamy et al. 2015). Tobacco use, obesity, physical inactivity, and alcohol consumption also constitute major risk factors among the elderly, with obesity rising among older adults in India. According to LASI Pilot (2010), in total, 69% of the respondents reported undertaking no physical exercise. The lack of exercise increased with age and was significantly more prevalent among females than males (Arokiasamy, Bloom, Lee, Feeney & Ozolins, 2012). This finding is consistent with the anthropometric data gathered in the LASI pilot study, which showed 29% of female and 20% of male respondents to have BMIs of 25 or above.

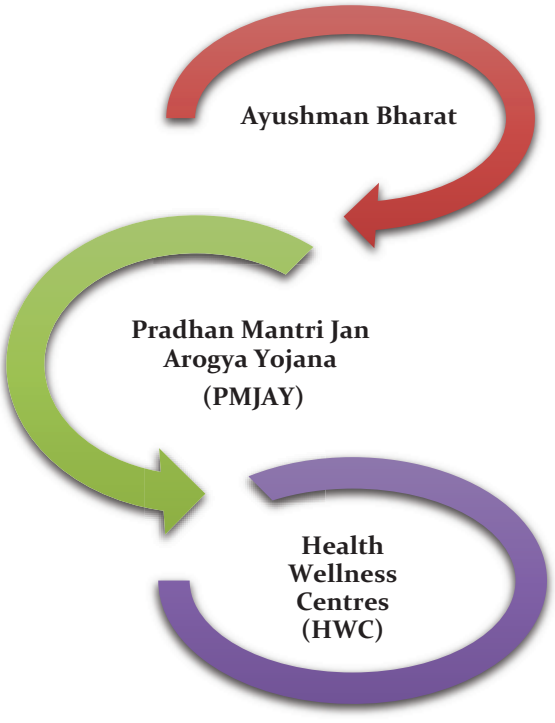
The extent of the human and social resources and opportunities available to older persons will be heavily dependent on one key characteristic—health—since good health adds life to longevity. However, if these added years are dominated by declines in physical and mental capacities, the implications may be much more negative. WHO has proposed a conceptual model of 'Healthy Ageing', which, instead of focusing on the absence of disease, focuses on the physical and mental capabilities-based approach. The approach looks to build and maintain the functional ability of older people to be and to do things that they have reason to value. This functional ability is determined by the intrinsic capacity of the individuals, the environments in which they live, and the interaction between the individuals and these environments (WHO, 2015).

While increased longevity indicates impressive socio-economic development, the demand for holistic healthcare also tends to grow, putting an increased burden on the resources of family, society, and the state at large. Along with India's population structure, the health profile of the country is also rapidly changing. In the absence of a long-term care policy in India, regional differences in the health profile of elderly, as well as the social inequality, lack of infrastructure, and lack of availability, accessibility, and affordability of healthcare highlight India's unevenness and complexities. Unattended and undiagnosed chronic diseases, unaffordable medicines and treatments, and malnutrition are part of old age life in India (Mane, 2016). Geriatric care is still an emerging field of medicine in the country and is mainly limited to urban areas. Eldercare management has largely been a family responsibility but has become more challenging in the light of increasing trend toward nuclear families. Besides these changes, more and more elderly are surviving to the older ages as discussed above. Older adults aged 50–59 years are the new 'sandwich' generation, who also have to take care of their parents in their 80s and above (the oldest-old).

The out-of-pocket health expenditures account for more than 70% of health expenditures in India, leading to health vulnerabilities in the older population. Self-reports of diagnosed medical conditions are tied to the access to healthcare services and therefore, can mask undiagnosed conditions. In countries like India, wherein access to healthcare is limited, the prevalence of undiagnosed conditions is expected to be greater than in the developed countries. According to the World Health Organization (2011a) most countries are slow to generate and use evidence to develop an effective health response to new disease patterns and ageing populations. A better understanding of the changing relationship between health and age is crucial. Furthermore, subjective wellbeing is crucial for later life satisfaction and is an important determinant of quality of life. Thus, global efforts are required to understand and use existing knowledge about the prevention and treatment of heart disease, stroke, diabetes, respiratory diseases, and cancer.

1.5 POPULATION AGEING, HEALTH, AND SOCIAL POLICIES FOR ELDERLY PERSONS IN INDIA

Recognising the challenges arising from the demographic transition and ongoing socio-economic changes such as industrialisation and urbanisation, the government of India has launched several health and social policy measures to enhance the well-being of elderly persons in the country.



In view of the recommendations and the underlying philosophy of healthy ageing in the national policy, the Ministry of Health and Family Welfare (MoHFW) has initiated various healthcare programmes. Under the aegis of the MoHFW, the National Programme of Health Care for Elderly (NPHCE) aims to provide comprehensive healthcare facilities to the elderly through primary, secondary, and tertiary delivery systems. Another important step undertaken by the MoHFW to improve primary healthcare is Ayushman Bharat. Ayushman Bharat was launched in 2018 as a continuum of care alongside two new components: Health Wellness Centres (HWCs) and Pradhan Mantri Jan Arogya Yojana (PMJAY). The aim of Ayushman Bharat is to upgrade health sub-centres and primary health centres into health and wellness centres, wherein a healthcare provider or doctor, two female and one male multi-purpose workers, and about five accredited social health activist (ASHA) workers collaborate to provide holistic health services at the community level. Simultaneously PMJAY aims to provide financial protection, cashless at the point of care and portable for secondary and tertiary care.

HEALTH AND SOCIAL POLICIES AND PROGRAMMES IN INDIA FOR THE ELDERLY (AND GENERAL)

Health policies and programmes in India

- National Programme for Health Care of the Elderly (NPHCE)
- Pradhan Mantri Jan Arogya Yojana (PMJAY)
- Health Wellness Centres (HWCs)
- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)
- National Programme for the Prevention and Control of Deafness (NPPCD)
- National Oral Health Programme (NOHP)
- National Tobacco Control Programme (NTCP)
- National Programme for Palliative Care (NPPC)
- National Programme for Prevention and Management of Burn Injuries (NPPMBI)
- National Programme for Prevention and Control of Fluorosis (NPPCF)
- National Iodine Deficiency Disorders Control Programme (NIDDCP)

Social policies and programmes in India

- Integrated Programme for Older Persons (IPOP)
- Indira Gandhi Old Age Pension Scheme (IGNOAPS)
- Indira Gandhi Widow Pension Scheme (IGWPS)
- Atal Pension Yojana (APY)
- Pradhan Mantri Jeevan Jyoti Bima Yojna (PMJJBY)
- Pradhan Mantri Suraksha Bima Yojana (PMSBY)
- The Annapurna Scheme (food security provision for elderly who are not covered under IGNOAPS)
- Assistance to panchayati raj institutions/ voluntary organisations/self-help groups for old age homes/multi-service centres for the benefit of older people in each district of the country

Article 41 of the Directive Principles of State Policy in the Indian Constitution directs the state to provide assistance for older persons and their rights to maintenance from their children under Section 125 of the Code of Criminal Procedure. The Maintenance and Welfare of Parents and Senior Citizens Act of 2007 provided a legal framework in support of the elderly, mandating that children and property heirs are responsible for the care and support of the poor elderly, as well as urging the state governments to implement old-age homes for the destitute elderly. The Maintenance Act of 2007 and the National Policy on Older Persons (1999) reaffirm the commitment of the Indian government to ensure the health, safety, social security, and well-being of older persons. They envision that the state will extend support for financial security, healthcare, shelter, welfare, protection against abuse and exploitation, and other needs of older persons. The revised National Policy for Senior Citizens 2011 (draft) also reflects a fundamental rights-based perspective and calls for ageing-in-place, healthy ageing, and social and labour force participation.

1.6 HEALTH AND RETIREMENT STUDIES (HRS): INVESTIGATING AGEING WORLDWIDE

The global ageing situation presents policy challenges that demand science-based longitudinal data on this phenomenon. Taking this initiative, the U.S. National Institute on Aging (NIA) and the Institute for Social Research (ISR) at the University of Michigan jointly launched the Health and Retirement Study (HRS) in 1992. The HRS was established to inform the U.S. national retirement policy as population ageing was recognized as a challenge. The HRS model employs unique and in-depth interviews to gather multi-disciplinary data spanning physical and mental health, insurance coverage, financial situations, family support systems, employment status, and retirement planning from a nationally representative sample of adults age of 50 and above. More than 44 nations have adopted the HRS model studies.

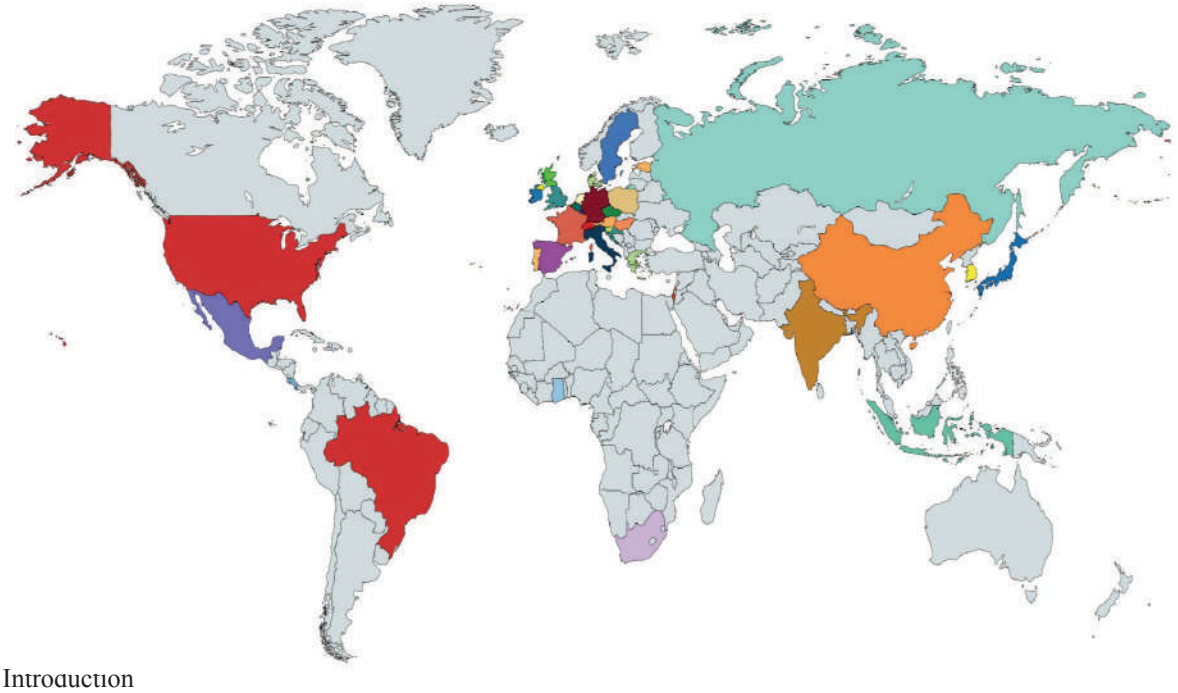
HRS-FAMILY OF AGEING STUDIES

Health and Retirement Study, HRS
Mexican Health and Aging Study, MHAS
English Longitudinal Study of Ageing, ELSA
Survey of Health, Ageing, and Retirement in Europe, SHARE
Costa Rican Longevity and Healthy Aging Study, CRELES
Korean Longitudinal Study of Aging, KLoSA
Indonesian Family Life Study, IFLS
Japanese Study of Aging and Retirement, JSTAR
Study on Global Ageing and Adult Health, SAGE
The Irish Longitudinal Study on Ageing, TILDA
China Health and Retirement Longitudinal Study, CHARLS
Brazilian Longitudinal Study of Ageing and Well-Being, ELSI-Brazil
Northern Ireland Cohort for Longitudinal Study of Ageing, NICOLA
Health and Aging in Africa: A Longitudinal Study of an INDEPTH Community in South Africa, HAALSI
Healthy Ageing in Scotland, HAGIS

Longitudinal Ageing Study in India, LASI (36 States)

They aim to measure health and its determinants and consequences over the later stages of their population's life cycle. One of the first such efforts outside of the U.S. was the English Longitudinal Study of Ageing (ELSA), which is directly comparable to the HRS. The successes of HRS and ELSA have led to an international study that now tracks health and retirement trends in Europe: The Survey of Health, Ageing, and Retirement in Europe (SHARE). SHARE is methodologically innovative and is designed to maximise cross-national comparisons. SHARE originally involved Sweden, Denmark, France, Belgium, the Netherlands, Germany, Switzerland, Austria, Spain, Italy, and Greece. The follow-up waves have expanded to include other countries and SHARE aims to include all EU member countries. SHARE, like HRS, is methodologically innovative and is designed to maximise cross-national comparisons (National Institute on Aging 2007).

Map 1.2: Health and Retirement Studies (HRS) around the World



KEY FEATURES OF THE HRS

- Nationally representative panel study of persons age above 50 and above
- Biennial interviews
- Interviews with both members of a couple
- Multidisciplinary content on health, health services, labour force, economic status, and family structure and transfers
- Linkages to administrative records
- Rapid and public release of data
- Currently in 44 countries and still growing

Many features of the HRS model allow for well-informed policy decisions, such as a rigorous and science-based agenda, respect for local knowledge, longitudinal focus, and public access to data. As population ageing becomes a major global policy concern in developing and developed countries alike, the HRS model has inspired the expansion of similar studies around the world. The Mexican Health and Ageing Study (MHAS), which launched in 2001, was the first such effort in a developing country. Similar studies are also underway in Asia; the most recent are the Korean Longitudinal Study on Ageing (KLoSA), the Japanese Study of Aging and Retirement (JSTAR), and the China Health and Retirement Longitudinal Study (CHARLS). The LASI is India's first and the largest amongst the global HRS family.

1.7 BACKGROUND AND NEED FOR THE LASI

The alarming population projections and dramatic shift in age-structure call for robust and internationally harmonized data on ageing. Although adult health and ageing is a subject that is being increasingly investigated, there are currently no comprehensive and internationally comparable national survey data in India that cover and connect the full range of topics necessary to understand the health, economic, social, and psychological aspects of the ageing process. The LASI is designed to fill this gap.

Sustainable development requires that we address the unacceptable number of older people who live in poverty, lack adequate income security, experience threats to personal safety (for example, through elder abuse or unmet needs in disasters), and have limited access to health and social care (Lansley, McCreadie & Tinker, 2004). Despite several state policy and programme initiatives, there is still a considerable policy vacuum in the absence of scientific evidence on India's older population. As no sufficiently broad, nationally representative dataset is currently available in India, comprehensive, new scientific data are needed to conduct analyses of the health, economic, and social challenges relating to population ageing and formulate mid- and long-term policies and programmes to address these and other challenges presented by population ageing. Considering the void in scientific data, the LASI project was launched under the aegis of MoHFW, Government of India. The LASI is a national landmark in scientific research to allow a better understanding of India's elderly health problems and population ageing processes. The LASI will play an important role of informing the design of appropriate evidence-based policies for older adults and the elderly in the country.

The LASI would be the one-stop platform to provide information to policymakers; from demography to economic well-being to health status, the LASI is designed to serve as a reservoir of scientific evidence for the country's policymakers and bureaucrats to make informed policy decisions on the issues of ageing. The LASI Wave 1 constitutes a comprehensive demographic profile of 72250 older adults age 45 and above including their spouses less than age 45 years. This information will help us estimate the age and sex distribution, education level, family size, age at marriage, and migration patterns of the elderly population in India. The LASI data could also be used to analyse the relationship between the various demographic characteristics of the elderly population and their impact on health status, economic wellbeing, and social and employment status. Additionally, the longitudinal data of the LASI would help in studying the demography, health, and economics of ageing transition in India and its states.

1.7.1 The LASI Pilot

The LASI pilot was successfully carried out in 2010 to test survey tools and protocols, and to understand the ways to strengthen the process for the main survey. A sample of 1,600 older adults 45 and above was drawn using stratified, multistage area probability sampling design. After a series of pre-pilot studies designed to test the instrument, pilot data was collected through face-to-face interviews conducted over a period of three months. Descriptive analysis of the data was performed and the lessons from the analysis were used for the launch of a full-scale LASI survey.

The LASI pilot survey was conducted in four states: Karnataka, Kerala, Punjab, and Rajasthan. To capture regional variation, we included two northern states (Punjab and Rajasthan) and two southern states (Karnataka and Kerala). Karnataka and Rajasthan were included in WHO's SAGE, which enabled us to compare our findings with the SAGE data. The inclusion of Kerala and Punjab demonstrates our aim to obtain a broader representation of India, wherein geographical variations, accompanied by socioeconomic and cultural differences call for careful study and deliberation.

Table 1.4 Number of households, number of interviews with LASI age-eligible individuals, number of biomarker responses, and response rates according to the place of residence covered in the LASI pilot, 2010

Results	Urban	Rural	Total
Household interviews			
Household selected	300	725	1025
Household interviewed	280	669	950
Household response rate1	**93.33**	**92.28**	**92.68**
Individual interviews			
Number of age-eligible individuals	495	1266	1761
Number of age-eligible individuals interviewed	472	1211	1683
Individual response rate2	**95.35**	**95.66**	**95.57**
Biomarker interviews			
Number of eligible persons for biomarkers	472	1211	1683
Number of eligible persons who completed biomarkers	423	1107	1530
Biomarker response rate 3	**89.62**	**91.41**	**90.91**
Dried blood samples (DBS) collection			
Number of persons who consented for DBS	366	1053	1419
Number of DBS collected	348	1008	1356
DBS response rate4	**95.1**	**95.7**	**95.6**

Note

This table is based on an unweighted sample. Eligible individuals were persons aged 45+ years and their spouses less than 45 years.

1. Indicates the number of households Interviewed/households selected.
2. Indicates the number of eligible individuals interviewed/number of age-eligible individuals.
3. Indicates the number of eligible biomarkers completed/number of eligible biomarkers.
4. Indicates the number of dried blood samples (DBS) collected/ number of eligible individuals consented for DBS.

The LASI pilot sought information on households and older individuals in the respective households. The analysis of LASI pilot data revealed insightful evidence on reported and measured health status, social network characteristics, income and consumption, retirement, and pensions of the ageing population. Details about the methodology, findings, and recommendations are presented in the LASI-Pilot India Report.

Learnings from the LASI pilot survey have guided the implementation of the first wave of a large-scale, national- and state-representative panel survey on the health, economic status, and social behaviours of older people in India, with sufficient statistical power to test the hypotheses in subpopulations of interest.

1.8 THE LONGITUDINAL AGEING STUDY IN INDIA (LASI), MAIN WAVE 1

The LASI is a full-scale national survey of scientific investigation of the health, economics, and social determinants and consequences of population ageing in India. The LASI is a nationally representative survey of 72,250 older adults age 45 and above across all states and union territories of India. LASI is envisioned to be conducted every 2 years for the next 25 years. It is the world's largest and India's first longitudinal ageing study. It is well-positioned to evaluate the effect of changing policies on the behavioural outcomes in India. In the LASI, internationally harmonized has been collected, enabling cross-state analyses and the cross-national analyses of ageing, health, economic status, and social behaviours, which lays the foundation for national and state-level policies to address the challenges presented by increasing disease burden and population ageing in India. The LASI's public, internationally harmonized data and de-identified panel data will also allow for cross-national comparative research studies on ageing.

Key Features of LASI

- A nationally representative longitudinal survey of 72,250 older adults age 45 and above in all of India's states and union territories in Wave 1, 2017–19, includes 31,464 elderly age 60 and above
- World's largest and India's first longitudinal ageing study
- Biennial survey of all the LASI Wave 1 participants
- First two waves: 2016–21, long-term goal to continue the survey for 25 years
- Internationally harmonized, de-identified panel data
- Adopts state-of-the-art technology in sample management
- Lays the foundation for national- and state-level policies to address the challenges of increasing disease burden and population ageing in India and cross-national comparative research studies on ageing

1.8.1 The LASI Main Wave: Goals, Objectives, and Outcomes

The main goal of the LASI is to collect longitudinal data on the burden of disease, functional health, healthcare, and the social and economic wellbeing of older adults based on internationally comparable research design and tools and to adopt cutting edge scientific methods to provide the foundation for credible and acceptable data for national policy and long-term scientific research. The LASI's key objective is to provide credible and comprehensive scientific evidence based on demographics, household economic status, chronic health conditions, symptom-based health conditions, functional health, mental health (cognition and depression), biomarkers, health insurance and healthcare utilization, family and social networks, welfare programmes, work and employment, retirement, satisfaction, and life expectations.

The first national wave of the LASI provides in-depth data on ageing, social relationships, social support, family, and life satisfaction to help determine the specific needs, circumstances, and views of ageing adults in the light of changing social and familial circumstances. All measures, while specific and sensitive to the Indian context, have been harmonized to the greatest possible extent with its international sister surveys on ageing and retirement. This is done in order to provide a valuable source for comparison and to work towards providing a comprehensive picture of population ageing in India and comparative studies of global population ageing.

LASI GOALS

1. To develop and implement a nationally representative, longitudinal survey of adult health and ageing in India

2. To provide data that are internationally harmonized with the HRS and its sister studies around the world to enable cross-national comparative studies that will advance understanding of how different institutions, cultures, and policies influence ageing

3. To provide de-identified data to the research community in a timely manner

4. To provide data that will have a strong foundation for national and state-level policymaking and will aid policymakers and researchers around the world in examining how policies and programmes affect population behaviours, health outcomes, and the resulting influences on society

5. To provide a foundation in India for innovative, rigorous, multidisciplinary studies of ageing that will inform policy and advance scientific knowledge

The LASI is designed to simultaneously generate data, raise awareness of the health issues of older people, and inform public policies in India and its states. The LASI provides a great opportunity to examine how different healthcare policies and institutions influence healthcare utilization and health outcomes using innovative and comparable measures of health, including the direct assessment of biological measures. The use of biomarkers enables us to study health outcomes without self-reporting biases that may be differentially associated with the socio-economic spectrum and access to health services. These biomarker measures also provide additional insights on the true levels of disease prevalence as well as the extent of undiagnosed conditions and effective management of chronic diseases in India.

SPECIFIC OBJECTIVES OF THE LASI

Objective-1 Health: Disease burden and risk factors

- To provide robust estimates of the prevalence of communicable diseases and non-communicable diseases (NCDs) for adults and elderly population
- To compare self-reported and measured health conditions and provide an overall assessment of the total burden of diseases
- To understand the risk factors and social determinants of communicable and non-communicable diseases
- To study the demography of ageing transition including the cause of death, life expectancy at older ages, etc.

Objective-2 Health care and health care financing

- To assess the coverage and pattern of health care utilization by diseases
- To study the episodes of health care utilization by choice of health care sources and provider preferences
- To assess household health expenditure, disease-specific health care costs, sources of health care financing, out-of-pocket health expenditure (OUP), catastrophic health expenditure (CHE) and the extent of medical impoverishment
- To assess household health expenditure on various services of health
- To study access to health insurance, type of health insurance, diseases covered, and family coverage under health insurance

Objective-3 Social: Family and social network, social welfare and security

- To study family and social networks including multigenerational family structure, living arrangement and networks, social support, financial support, social connectedness, and life satisfaction
- To examine the financial support/remittances received and provided to family members among the older population
- To study care taking of family members who are unable to perform daily activities
- To study social participation, decision making and the perception on lack of companionship, isolation, ill-treatment, and the satisfaction of older people with life

Objective-4 Economic: Income, wealth and expenditure

- To assess the economic well-being of older persons and their economic vulnerability: major domains include household income, expenditure, assets and debts
- To study the economically active older population, workforce participation across older ages and across different sectors and job characteristics, employment, retirement (official and non-official), pension (commercial, public pension, old age pension), perceived economic security, vulnerability and expectations
- To assess housing conditions, poverty, and food security among the older population

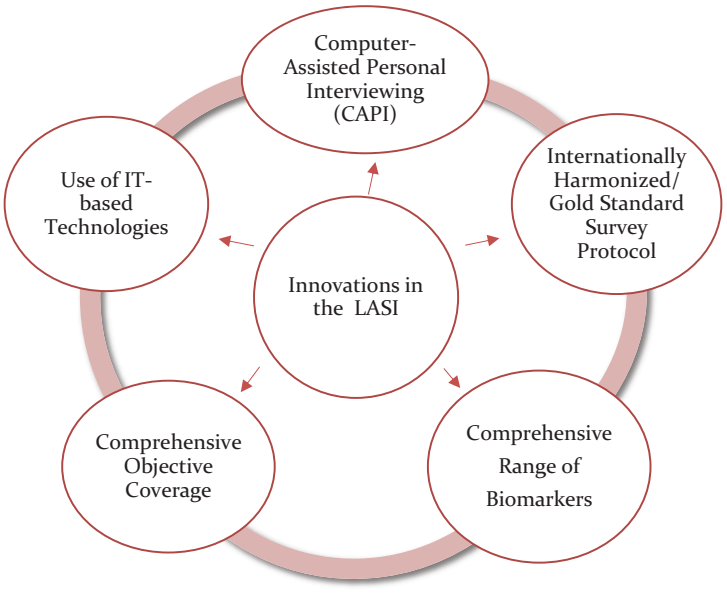
With the goals and objectives mentioned above, the LASI will help in expanding the scope of health and social security policy and programmes, and contribute to landmark national- and state-level policy and programmes in India. LASI will contribute greatly in expanding the NPHCE and the social and economic security programmes planned to be initiated by the Ministry of Social Justice and Empowerment (MoSJE).

The expected outcomes of the LASI are as follows:

- Prioritisation of healthcare spending, the expansion of healthcare infrastructure, and the promotion of innovations to meet healthcare challenges, including care for bed-ridden elderly
- Contribution in developing a comprehensive health and social security policy and programme framework and policies to deal with the economic challenges posed by ageing, as per the requirements of the Social and Economic Security Programme to be initiated by the MoSJE
- Creation of national and international scientific value through internationally comparable scientific multidisciplinary data; therefore, enhancing the understanding of the science of healthy ageing and contributing to the national and global research agenda
- Contribution in prevention and control of the heavy burden of NCDs and disability among older adults and the elderly population of India.
- Provide a database to expand and monitor the NPHCE initiated by the MoHFW
- Help in establishing a range of preventive and curative healthcare programmes for the older population and the most vulnerable among the older persons.

1.8.2 Innovations in the LASI

LASI is the first dataset in India that will provide a longitudinal database for designing policies and programmes in the broad domains of social, health, and economic wellbeing of the older population. The LASI adopts the state of the art large-scale survey protocol and field implementation strategies. Space limitations preclude a detailed review of existing studies such as the NFHS, the SAGE, and the India Human Development Survey (IHDS). While all these studies have notable strengths, they lack one or more of the following attributes: broadly representative samples, an expansive topical focus, harmonization with HRS, a longitudinal aspect, coverage of comprehensive biomarkers, and use of computer-assisted personal interview (CAPI) technology. No other survey in India collects such detailed data on income, assets, and consumption together with health and biomarker data other than the LASI.



1.8.2.1 Innovation in sample and data management

Our survey protocol uses state-of-the-art technology in sample management interviewing, CAPI, and data processing. These contribute to faster data release, accelerating scientific discovery. These technologies ensure data quality through built-in checks in CAPI as well as real-time data monitoring with an automated data quality control protocol. Most of the population surveys in India use paper and pencil for data collection, which delays data sharing with the public, among other disadvantages. We developed an automated quality control protocol during the pilot study, building on the Sample Management Software (SMS) and CAPI technologies associated with RAND's information system, MMIC™ (Multimode Interviewing Capability). CAPI directly records the responses of survey participants. This method requires field teams to be outfitted with laptop computers pre-loaded with survey questions asked of respondents in a face-to-face interview. Field teams input responses directly into a laptop computer, thereby limiting data entry processes as well as minimizing data recording and entry errors. Using this protocol in the full-scale, the LASI allows the monitoring of fieldwork progress and checks the quality of collected information by examining data (e.g., for internal inconsistencies and missingness) at the level of interviewers and state fieldwork agencies.

1.8.2.2 Innovation in measuring health and healthcare utilization

Another innovative feature of the LASI survey instrument is the collection of biomarkers, which can be analysed to provide researchers with data on direct health examinations. Given the lack of access in our sample to health care and proper diagnoses, we directly measure biological markers and performance measures instead of relying solely on self-reports. We also recognize the widespread use of healers and traditional medicine, differentiating between types of health care providers. Biomarkers include:

1. Physiological Assessments - blood pressure, lung function test, vision test;
2. Anthropometric Measurements- height and weight, waist and hip circumference;
3. Performance-Based Measurements- grip strength, balance test, and timed walk; and
4. Molecular Markers- hs_C- reactive protein, glycosylated hemoglobin, hemoglobin, cytomegalovirus/Epstein-Barr virus.

The inclusion of biomarkers and other health assessments is particularly important for developing countries such as India, where access to health care and awareness about health conditions are limited. As a result, undiagnosed diseases are more common in developing countries than in developed countries.

1.8.2.3 Information technology-based innovations

The LASI uses the latest IT-based technologies. The LASI uses geographic information system (GIS) for thematic mapping and community analysis of the information at the community level. It uses Barcode technology for correct matching and anonymizing data.

1.8.2.4 Comprehensive coverage of subjects

The LASI instrument collects information about the physical and social environment (e.g., water quality, sanitation, and crime in the neighbourhood), allowing multi-level analyses of a broad range of psychological, social, and behavioural risk factors (e.g., measuring social connectedness in addition to traditional social network questions) of health, and social and economic wellbeing of the older adults. LASI also collected information at the community level in addition to household and individual level information.

2. METHODOLOGY

2.1 STUDY POPULATION

The target population for the Longitudinal Ageing Study in India (LASI) Wave 1 included all Indian adults and elderly men and women age **45 and above** and their spouses who reside in the same household, irrespective of age. **There is no upper age limit for the selection of LASI respondents, including the collection of biomarkers.** The age of 45 is chosen to (a) harmonize this survey with its sister studies, the worldwide Health and Retirement Study (HRS) surveys[1]; (b) allow the measurement of pre-retirement behaviour, as people often begin to change their labour market, health, and consumption behaviours before they retire; and (c) determine the early onset of chronic diseases among adults before they reach older ages. Non-communicable chronic diseases are typically present in individuals age 55 or older in many developed countries, but their onset occurs in India a decade earlier, at age 45 or older (Arokiasamy, 2018). The selection of age 45 in India is important to study ageing and health transition from prime adult ages.

In accordance with the conventional practice for other population-based surveys, the LASI sampling frame included only household population. Persons living in collective living arrangements, such as nursing homes, long-term dependent or care facilities, boarding houses, messes, hotels, residential hotels, rescue homes, jails, prisons, army camps, boarding schools, ashrams, etc. were not considered as household population, and therefore, not included in the survey.

The eventual unit of observation of the LASI is a **LASI-eligible household (LEH)**. An LEH is a household with at least one-member age 45 and above. A 'household' is defined as comprising one or more individuals residing in a residential structure with a common cooking arrangement to prepare meals. From the selected households, the LASI included all men and women age 45 and above and their respective spouses, irrespective of their age. In other words, ***all married and non-married men and women age 45 and above and their spouses*** **in selected households were interviewed.** Existing survey data, such as the National Family Health Survey (NFHS-3), indicated that about two-thirds of households in India were expected to have a LASI age-eligible person. About half of these households were expected to have one age-eligible person (including spouses less than age 45), and another half were expected to have two or more age-eligible persons (and spouses less than age 45) but mostly two.

The LASI survey canvassed a household cover screen, popularly known as a household roster, which collects a set of key characteristics of each member of the sampled households. This cover screen was completed in all the age-eligible and non-age-eligible selected households. It provides information for present and future waves of the LASI and is used to:

- Identify LASI age-eligible households as well as individuals age 45 and above and their spouses, irrespective of age.
- Identify the key informant, the most knowledgeable person in the household, who can provide information on the household's economic condition.

The cover screen also serves as the sampling frame for subsequent LASI Waves in addition to providing baseline household data.

[1] The Korean Longitudinal Study of Aging and the China Health and Retirement Survey also employ age cut-offs of 45, whereas the HRS, the English Longitudinal Study of Ageing, and the Survey of Health, Ageing, and Retirement in Europe employ age cut-offs of 50. Because of India's shorter life expectancy, we choose an age cut-off of 45.

2.2 STUDY DESIGN

The LASI is a biennial panel survey representative of the older and elderly population age 45 and above for India and its states and union territories, as existed at the time of planning of the survey. It aims to follow a representative sample of the population age 45 and above (including spouses, irrespective of age) every two years for the next 25 years with refreshment samples for attrition due to death, dislocation, non-contact, and refusal. The LASI includes all age-eligible persons in LEHs. Wave 1 of the LASI covered a panel sample of 72,250 individuals age 45 and above and their spouses, including 31,464 elderly age 60 and above and 6,749 oldest-old persons age 75 and above from 35 states and union territories of India (excluding Sikkim).

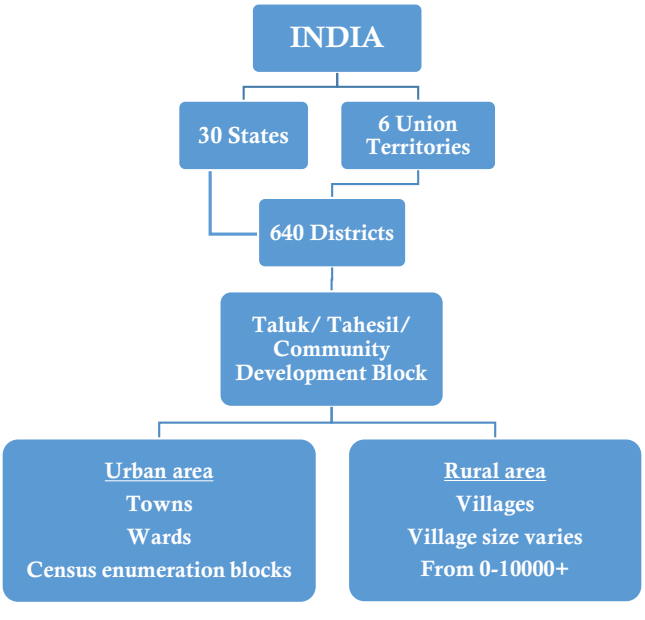
The LASI is designed to provide reliable estimates of all health outcomes and social and economic well-being indicators for older adults age 45 and above, including spouses less than age 45 representative to India's population and also for all of *its 30 states and 6 union territories according to 2011 census of India* (RGI, 2011). In addition, the LASI is designed to provide representative estimates for the four selected metropolitan cities of Delhi, Kolkata, Mumbai, and Chennai, representing the northern, eastern, western, and southern parts of India, respectively.

2.3 SAMPLING DESIGN

The main objective of the LASI is to study the health status and the social and economic well-being of older adults in India. The sampling design for the LASI survey is governed by its overall objectives. Therefore, the LASI adopted a ***multistage stratified area probability cluster sampling design*** to arrive at the eventual units of observation: older adults age 45 and above and their spouses irrespective of age. The goal was to select a representative sample in each stage of sample selection.

India is a union comprising 30 states and 6 union territories with a population of 1,211 million (Census of India, 2011) at the time of the survey. India's states vary significantly with respect to geography, culture, population size, health conditions, demographics, and socio-economic characteristics. For administration and development planning, the states are further divided into districts, sub-districts (Talukas/Tehsils/Blocks), villages, cities, and towns. India's hierarchical administrative divisions are presented in Figure 2.1.

Figure 2.1 Administrative divisions of India



2.3.1 Sampling frame

Within each state, LASI Wave 1 adopted a three-stage sampling design in rural areas and a four-stage sampling design in urban areas. In each state/UT, the first stage involved the selection of Primary Sampling Units (PSUs), that is, sub-districts (Tehsils/Talukas), and the second stage involved the selection of villages in rural areas and wards in urban areas in the selected PSUs. In rural areas, households were selected from selected villages in the third stage. However, sampling in urban areas involved an additional stage. Specifically, in the third stage, one Census Enumeration Block (CEB) was randomly selected in each in urban area. In the fourth stage, households were selected from this CEB (Figure 2.2).

The sampling frame (universe) in the first stage was the list of sub-districts (Tehsils/Talukas) according to the 2011 census. In rural areas, the sampling frame in the second stage was the villages in all selected sub-districts/Talukas according to the 2011 census. In urban areas, the sampling frame for the second stage consisted of all the wards in all selected sub-districts. The list of CEBs in each selected ward was the sampling frame in the third stage.

To obtain the sampling frame for the selection of households from secondary sampling units (SSUs), a mapping and household listing operation was carried out in the sampled SSUs (i.e. villages in rural areas and CEBs in urban areas). All of the listed households in selected villages/CEBs (i.e. the SSUs) formed the sampling frame for the selection of households.

Detailed information related to the sampling frame from the 2011 census is provided in Appendix I.

2.3.2 Stages of sample selection

Stage 1: Selection of Primary Sampling Unit (PSU): In the first stage, the selection of PSUs (sub-districts or Tehsils/Talukas), the number of targeted PSUs in a state were allocated proportionally to each sub-state region (level 1 stratification). In each region, the PSUs were selected using Probability Proportional to Size (PPS) sampling with the number of households in a PSU as the size measure.

Explicit (level 1) and Implicit (level 2) Stratification

The first level of stratification was geographic regions, with a group of districts forming a contiguous region (adopted from National Sample Survey Office regional classifications).

Within each of these regions, all the PSUs (sub-districts) were explicitly stratified using one or more of the following stratifying variables: 1) total number of households in a sub-district, 2) level of female literacy, 3) the proportion of Scheduled caste and Scheduled tribe population, and 4) the proportion of males engaged in the non-agricultural sector. Before the selection of PSUs from each stratum using the PPS sampling technique, the sub-districts were arranged according to the level of female literacy (implicit stratification) to ensure a representative sample of sub-districts with varying levels of social development.

In each state, the stratification and selection processes for stage 1 sampling units can be summarized as follows:

- The first level of stratification involved stratifying all the sub-districts into homogenous strata. All the sub-districts were stratified by geographical regions with a group of districts forming a contiguous region, and within each region by any one or more of the following criteria: i) sub-district population size, ii) proportion of SC/ ST population in sub-district and iii) the proportion of males engaged in the non-agricultural sector. In addition to these explicit stratification, further implicit stratification was done by arranging all the sub-districts within a stratum according to female literacy.
- The target number of PSUs to be selected from each stratum was proportional to the stratum size.
- The target number of PSUs from all the sub-districts within a stratum were selected by PPS sampling.

Stage 2 and 3: Selection of Secondary Sampling Unit (SSU): The second stage involved the selection of a fixed number of SSUs, which are villages in rural areas and wards in urban areas, from the selected PSUs. Urban and rural areas form the third level of stratification in the context of the overall LASI sampling design. Within each selected PSU, five SSUs are selected. These five SSUs were allocated proportionally to rural (villages) and urban areas (urban wards). Following the allocation across rural and urban areas, the required numbers of SSUs were selected using PPS sampling, taking the number of households in an SSU as the measure of size. SSUs (large size villages) in rural areas with approximately more than 500 HHs underwent another sampling stage. These large size villages were further segmented.

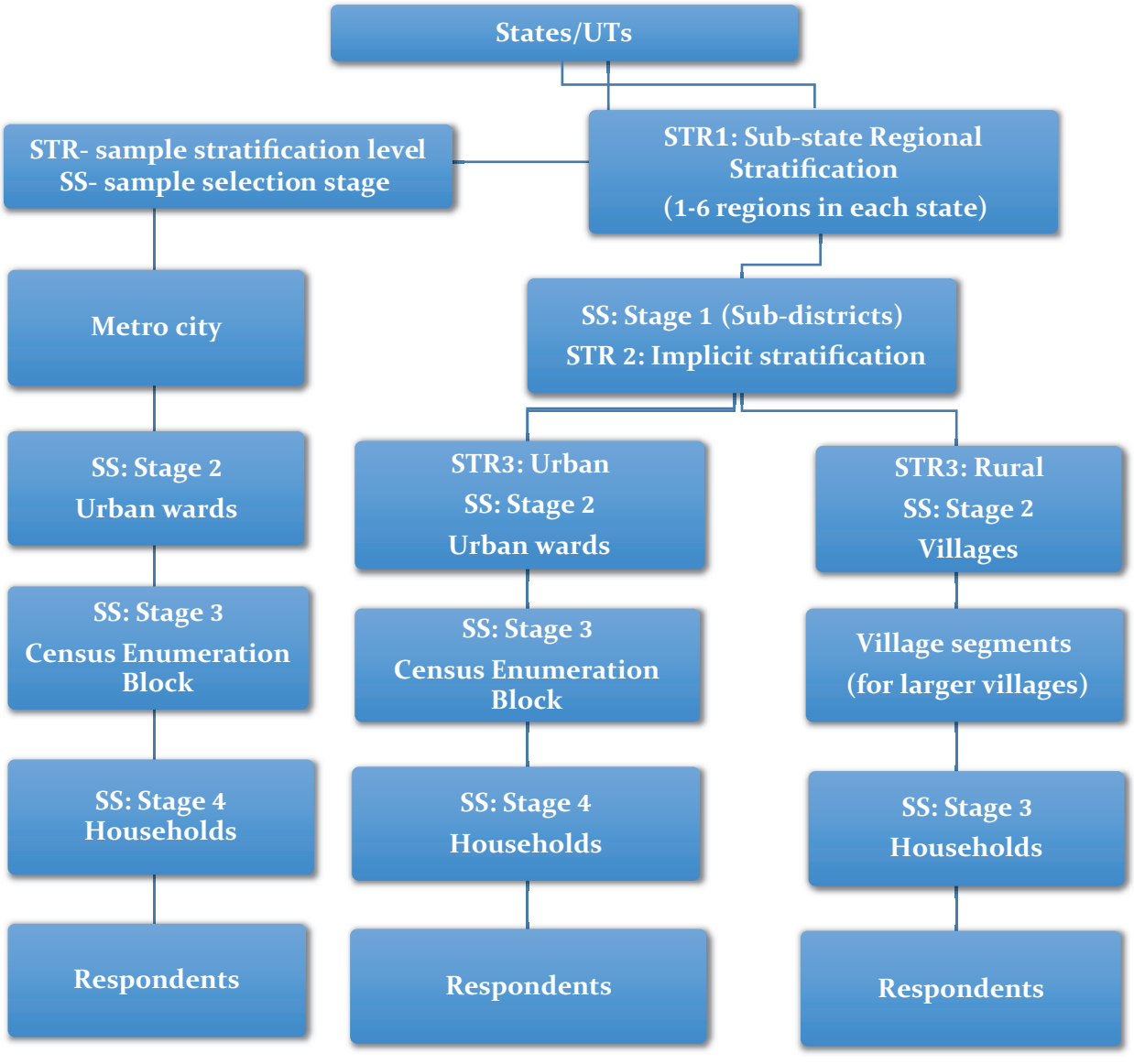
Sample selection in urban areas involved an additional stage of sample selection (stage 3). In the third stage, from each urban ward, one CEB was randomly selected.

- The third-level stratification involved the selection of villages (SSUs) and urban wards (CEB-SSUs) according to the rural and urban proportions of the population in each PSU.

Stage 3 and 4: Selection of Households (HH): In rural areas, the third stage involved the selection of a fixed number of HHs (i.e. 32) from each selected village or village segments (for villages with more than 500 HHs). In urban areas, the fourth stage of selection involved the selection of a fixed number of HHs (i.e. 35) from each selected CEB.

No readily available sampling frame for HHs exists in India, unlike in other developed countries (e.g. a master address file in the US). Therefore, a separate mapping and house listing exercise was carried out in all the SSUs for HH selection in both rural and urban areas. The listed HHs from the selected SSUs were used as the sampling frame for HH selection.

Figure 2.2 Schematic representation of three level stratification and stages of sample selection



2.3.3 Oversampling of metro cities and 65+ older population

Metropolitan cities: The selection of metropolitan areas included four metropolitan cities in India as part of a national urban sample; in addition to Delhi (state), which represents the north region, the cities of Kolkata, Mumbai, and Chennai represented the three major regions of east, west, and south respectively. The goal is to obtain representative samples for each of these four metropolitan cities to generate city-specific indicators and to contribute to regional and national urban indicators.

Three-stage probability sampling was adopted for each of the four major cities.

- In the **first stage,** 40 PSUs of the city wards were drawn for each of these 4 major cities using PPS sampling. All of the wards in each city, defined according to the 2011 Census of India, served as the sampling frame in the first stage of sample selection. Each urban ward is comprised of a large number of CEBs of more or less the same size (125-150 HHs). These CEBs formed the SSUs. For Delhi, the sample selection included 40 wards from Delhi city and 10 SSUs from the rest of Delhi.

- In the **second stage**, one CEB from each selected ward was selected at random. In this stage, all CEBs in the selected ward formed the sampling frame. One CEB was randomly selected from each ward primarily because the selection of more than one CEB from a selected ward would reduce the number of first-stage sampling units (40 urban wards), which would have resulted in an increase in the design effect.

- In **the third stage,** 31 HHs from each CEB were selected for administering the survey using systematic sampling.

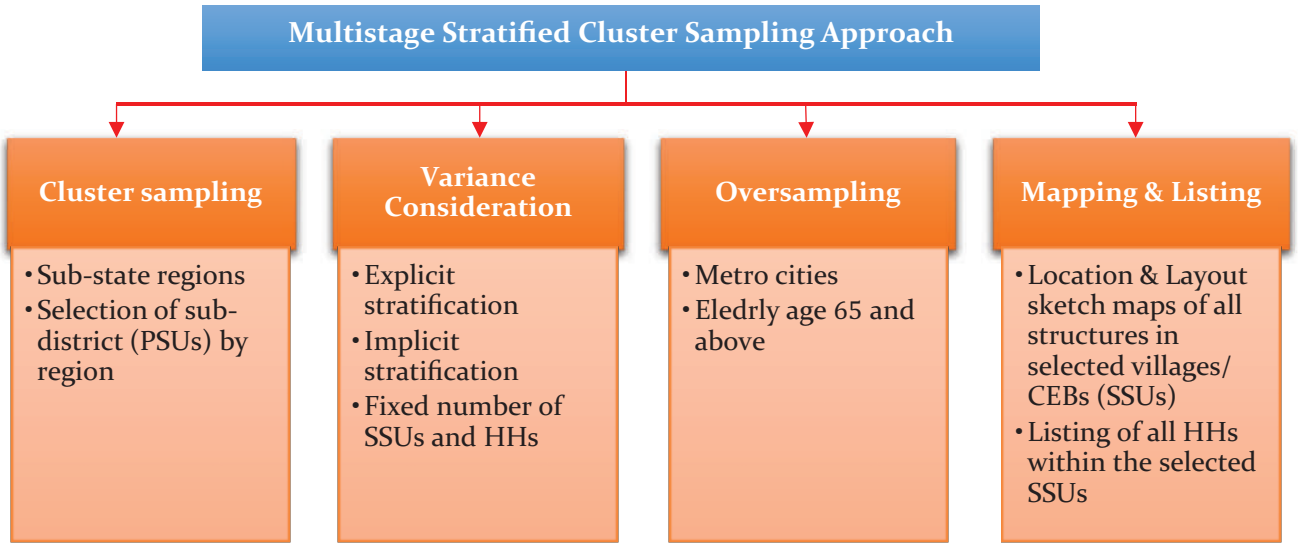
Elderly population age 65 years and above: Based on the sampling design of the LASI described here, the sample population of the elderly age 65 and above would not be sufficient for detailed analyses of the elderly population at the state level and across the socio-economic spectrum, at least for the first two waves. Therefore, it was decided to oversample the HHs with at least one-person age 65 and above to increase the sample size for the elderly age 65 and above. Specifically, in the first wave, in addition to the fixed number of 28 HHs in rural areas and 31 HHs in urban areas, 4 additional HHs with at least one elderly person age 65 and above were sampled in each village and CEB.

To obtain the sampling frame of HHs with person(s) age 65 and above, information about the number of person(s) age 65 and above was collected as part of the house-listing process. These four additional HHs were randomly selected from the HHs with at least one-member age 65 and above. It is important to note that, in these 4 additional HHs, not only older person(s) age 65 and above and their spouses as well as any other HH members age 45 and above and their spouses (irrespective of age) were also interviewed to be consistent with the LASI sample design.

In summary, the main design considerations for LASI are:

- The sampling units must be well-defined geographic/administrative units.
- The sampling units must contain enough household units to support a longitudinal survey.
- The selected sampling areas should not be sparsely spread with unreasonable travel requirements, and should be accessible to teams to conduct several follow-up surveys.

Figure 2.3 Key sampling principles in the LASI



2.4 SAMPLE SIZE

The major objective of the LASI is to estimate the prevalence of chronic diseases among older adults and the elderly population across the socioeconomic spectrum in India and its states and union territories. A previous population-based survey of individuals age 50 and above (WHO-SAGE, wave-1, India, 2007) provided estimates of the prevalence of different chronic diseases among men: arthritis (18%), hypertension (17%), asthma (9%), diabetes (7%), angina (6%), lung dysfunction (5%), depression (4%), and stroke (2%).

Sample size estimation

Assumptions:

- prevalence of any disease of 5 percent
- design effect of 2
- the margin of error of 2 percentage points with 95 percent level of confidence

Required sample size to estimate prevalence, under the above-mentioned assumptions, is:

$$N = z^2_{1-\alpha/2} * \frac{p(1-p)}{d^2} * \text{design effect}$$

Where: d=margin of error; p=proportion of population with a particular disease;
α=level of significance (5%)

$$= 1.96^2 * \frac{(0.05*0.95)}{0.02*0.02} * 2 \quad = \quad 912 \text{ (minimum sample of 1,000 for the smallest states)}$$

Based on the previously estimated disease prevalence and this calculation, a sample size of 1,000 individuals age 45 and above (including their spouses less than 45 years) in each state or union territory was considered the minimum necessary sample size to obtain reliable estimates of disease prevalence by state or union territory and by social and economic stratum. It is still possible to estimate the prevalence of a disease that may be lower than the assumed prevalence of 5% with the proposed sample size, considering the average prevalence of chronic diseases, however the margin of error will be higher in such cases.

As the states and union territories differ greatly in size, the sample was allocated proportionate to the size of the states and union territories. Additionally, the LASI provides estimates for the cities of Delhi, Mumbai, Kolkata, and Chennai, and, thus, the sample sizes of the states to which these cities belong were increased accordingly. The criteria used to allocate the sample across states and sub-state regions are shown in Tables 2.1 and 2.2.

2.4.1 Sample allocation

The minimum estimated sample size is 1,000 age-eligible persons for the smallest states or union territories. A larger sample size was considered for states with larger populations, larger geographic spreads, and more heterogeneity in socio-economic conditions to ensure that the sample represents the target population in each state. A larger sample size was also considered to ensure a sufficient sample size in the follow-up waves of the LASI in case attrition becomes significant due to death, migration, or non-response. In addition, the sample size was increased in Delhi, West Bengal, Tamil Nadu, and Maharashtra, where estimates were also required for the four selected metro cities. Tables 2.1 and 2.2 provide the state-wise sample size allocation according to the population sizes of the states as per the 2011 census.

Table 2.1 State-wise estimated sample sizes according to the 2011 census of India

Population categories (2011 census)	States	Sampled households
More than 150 million	Uttar Pradesh (199.8 million)	4,000
150-100 million	Maharashtra (112.4 million) Bihar (104.1 million)	3,000 3,000
100-75 million	West Bengal (91.3 million), Madhya Pradesh (72.6 million), Tamil Nadu (72.1 million)	2,000+1,000 (Kolkata) 2,500 2,000+1,000 (Chennai)
75-25 million	Rajasthan (68.5 million), Karnataka (61.1 million) Gujarat (60.4 million), Andhra Pradesh (49.4 million), Odisha (42 million), Telangana (35.3 million), Kerala (33.4 million), Jharkhand (33 million), Assam (31.2 million), Punjab (27.7 million), Chhattisgarh (25.5 million), Haryana (25.4 million)	2,000 – 1,625
25 million and less	Jammu and Kashmir (12.5 million), Uttarakhand (10.1 million) Himachal Pradesh (6.9 million), Goa (1.5 million)	1,250
North-Eastern states (except Assam)	Mizoram, Manipur, Nagaland, Arunachal Pradesh, Tripura, Sikkim, Meghalaya	1,000
Union Territories	Chandigarh, Puducherry, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep	1,000
Metro cities	Kolkata (14.1 million), Chennai (8.7 million), Mumbai (18.4 million), Delhi (16.8 million)	1,000 and 1250 (Delhi)

Table 2.2 Targeted sample size for India and its states and union territories, LASI, Wave 1

State/cities	Number of PSUs	Number of SSUs from each PSU	Total Number of SSUs	Targeted HHs from each SSU	Total number of HHs	Targeted age-eligible individuals
Uttar Pradesh	32	5	160	25	4,000	4,000
Maharashtra-Rest	16	5	80	25	2,000	2,000
Maharashtra-Mumbai			40	25	1,000	1,000
Maharashtra-Total			120	25		
Bihar	24	5	120	25	3,000	3,000
West Bengal-Rest	16	5	80	25	2,000	2,000
West Bengal-Kolkata			40	25	1,000	1,000
West Bengal-Total			120	25		
Andhra Pradesh	16	5	80	25	2,000	2,000
Telangana	16	5	80	25	2,000	2,000
Madhya Pradesh	20	5	100	25	2,500	2,500
Tamil Nadu-Rest	16	5	80	25	2,000	2,000
Tamil Nadu-Chennai			40	25	1,000	1,000
Tamil Nadu-Total			120	25		
Rajasthan	16	5	80	25	2,000	2,000
Karnataka	16	5	80	25	2,000	2,000
Gujarat	16	5	80	25	2,000	2,000
Orissa	16	5	80	25	2,000	2,000
Kerala	16	5	80	25	2,000	2,000
Jharkhand	16	5	80	25	2,000	2,000
Punjab	16	5	80	25	2,000	2,000
Chhattisgarh	13	5	65	25	1,625	1,625
Haryana	13	5	65	25	1,625	1,625
Delhi- Rest	2*	5	10	25	250	250
Delhi Metropolitan city			40	25	1,000	1,000
Delhi			50	25		
Assam	16	5	80	25	2,000	2,000
Arunachal Pradesh	8	5	40	25	1,000	1,000
Manipur	8	5	40	25	1,000	1,000
Meghalaya	8	5	40	25	1,000	1,000
Mizoram	8	5	40	25	1,000	1,000
Nagaland	8	5	40	25	1,000	1,000
Tripura	8	5	40	25	1,000	1,000
Sikkim	8	5	40	25	1,000	1,000
Jammu & Kashmir	10	5	50	25	1,250	1,250
Uttarakhand	10	5	50	25	1,250	1,250
Himachal Pradesh	10	5	50	25	1,250	1,250
Goa	10	5	50	25	1,250	1,250
Chandigarh	8*	5	40	25	1,000	1,000
Puducherry	8	5	40	25	1,000	1,000
Andaman & Nicobar Islands	8	5	40	25	1,000	1,000
Dadra & Nagar Haveli	8*	5	40	25	1,000	1,000
Daman & Diu	8*	5	40	25	1,000	1,000
Lakshadweep	8*	5	40	25	1,000	1,000
India	**456**		**2,440**		**61,000**	**61,000**

Note
PSUs: tehsils/ taluks. SSUs: villages/CEB. Age eligible persons: aged 45 and above and their spouses, irrespective of age.
* for these states, a total number of 40 SSUs is directly selected, as the number of sub districts was not sufficient.

2.5 SAMPLE COVERAGE AND CHARACTERISTICS

Table 2.3 Household roster completed, age-eligible households, and individuals interviewed across states/ UTs of India, LASI Wave 1, 2017-18

State/UTs	HH Rosters Completed (age-eligible and non-age-eligible)	Age-Eligible HHs	Age-eligible HH Interviews Completed	Age-eligible Individuals Identified	Individual Interviews Completed
Haryana	1,821	1,285	1,251	2,391	1,898
Delhi	1,283	776	754	1,494	1,319
Rajasthan	2,200	1,336	1,302	2,493	2,244
Uttar Pradesh	4,721	2,820	2,747	4,965	4,567
Bihar	3,336	2,109	2,083	3,828	3,520
Chhattisgarh	1,943	1,259	1,189	2,272	2,055
Madhya Pradesh	2,790	1,727	1,690	3,241	2,914
Gujarat	2,159	1,579	1,455	3,039	2,341
Daman & Diu (UT)	1,236	662	577	1,271	991
Dadra & Nagar Haveli (UT)	1,370	741	631	1,373	1,090
Karnataka	2,018	1,555	1,488	2,981	2,420
Goa	1,147	958	877	1,857	1,427
Lakshadweep (UT)	894	694	627	1,328	1,139
Kerala	1883	1,542	1,411	3,000	2,497
Tamil Nadu	3,248	2,176	2,150	3,845	3,530
Puducherry (UT)	1,173	848	839	1,542	1,428
Jammu & Kashmir	1,435	963	957	1,813	1,613
Himachal Pradesh	1,081	838	805	1,683	1,388
Uttarakhand	1,256	878	863	1,566	1,358
Punjab	1769	1,296	1,234	2,519	2,124
Chandigarh (UT)	1,107	708	651	1,373	1,026
Arunachal Pradesh	1,163	704	702	1,291	1,215
Nagaland	1,207	803	799	1,367	1,316
Manipur	1,180	862	860	1,594	1,369
Mizoram	1,188	765	732	1,410	1,246
Tripura	1,099	748	721	1,374	1,195
Assam	2,281	1,540	1,511	2,817	2,366
West Bengal	3,201	2,296	2,279	4,428	3,933
Jharkhand	2,236	1,451	1,408	2,758	2,464
Odisha	2,306	1,670	1,645	3,102	2,917
Maharashtra	3,293	2,446	2,421	4,675	3,973
Andhra Pradesh	2,264	1,568	1,511	2,854	2,679
Andaman & Nicobar Islands (UT)	1,089	736	725	1,347	1,244
Telangana	2,272	1,487	1,418	2,703	2,475
Meghalaya	666	636	636	1,056	969
India	**65,342**	**44,462**	**42,949**	**82,650**	**72,250**

Table 2.4 Household and individual response rate, states/UTs, India, LASI Wave 1, 2017-18

State/UTs	Household Response Rate			Individual Response Rate		
	Total	Rural	Urban	Total	Rural	Urban
Haryana	96.8	96.9	96.8	79.3	80.1	77.6
Delhi	96.1	90.0	96.2	88.2	78.8	88.4
Rajasthan	97.2	97.5	95.8	90.0	91.3	85.5
Uttar Pradesh	96.8	98.5	91.1	91.9	94.3	83.9
Bihar	98.4	98.6	97.3	92.0	92.1	90.6
Chhattisgarh	94.4	96.3	86.5	90.4	91.3	86.8
Madhya Pradesh	97.3	98.3	95.0	89.9	92.2	84.5
Gujarat	91.8	94.4	88.2	77.0	81.7	70.9
Daman & Diu (UT)	86.0	88.3	84.8	78.0	77.1	78.5
Dadra & Nagar Haveli (UT)	85.1	86.1	83.4	79.7	83.4	73.7
Karnataka	94.6	96.6	90.7	81.1	82.0	79.3
Goa	91.0	91.1	91.0	76.7	73.1	79.3
Lakshadweep (UT)	90.1	89.8	90.2	85.9	91.4	84.3
Kerala	88.9	90.1	87.7	83.3	84.6	81.9
Tamil Nadu	98.0	98.8	97.4	91.8	94.1	90.3
Puducherry (UT)	98.2	99.6	97.6	92.5	95.1	91.3
Jammu & Kashmir	96.2	98.4	90.7	88.9	90.0	85.9
Himachal Pradesh	95.2	95.0	96.3	82.5	83.3	77.1
Uttarakhand	97.7	97.6	98.0	86.8	88.8	82.0
Punjab	93.4	94.5	91.0	84.2	86.4	78.9
Chandigarh (UT)	89.4	88.8	89.4	74.3	68.4	74.3
Arunachal Pradesh	99.2	98.9	100.0	94.0	93.1	97.1
Nagaland	99.3	99.3	99.1	96.3	97.7	92.9
Manipur	99.5	99.8	99.0	85.9	89.1	80.0
Mizoram	94.8	96.3	93.5	88.4	90.6	86.5
Tripura	96.1	97.4	92.2	87.1	89.1	81.1
Assam	98.1	98.4	95.5	84.0	84.3	81.9
West Bengal	98.4	99.7	97.2	88.8	90.4	87.2
Jharkhand	96.0	97.2	91.7	89.2	90.2	85.8
Orissa	98.1	98.8	94.4	93.8	95.4	86.5
Maharashtra	98.1	99.7	96.6	84.5	89.1	80.3
Andhra Pradesh	95.6	96.6	92.9	93.9	95.0	90.8
Andaman & Nicobar Islands (UT)	98.5	98.3	98.9	92.3	93.0	90.9
Telangana	94.9	97.6	89.4	91.6	94.4	86.4
India	**95.8**	**97.2**	**93.4**	**87.3**	**89.6**	**83.6**

2.6 LASI SURVEY INSTRUMENTS

The LASI survey instrument comprised of the following three survey schedules, whose contents are summarized below:

(i) Household Survey Schedule: This schedule was administered to one per HH to all consenting randomly selected HHs, and the information was collected from one or more knowledgeable adults in the HH. It includes the following modules: Household Roster (Cover Screen), Housing and Environment, Household Consumption, Household Assets and Debts, Household Income, and Household Health Insurance.

The HH survey started with the HH roster (cover screen), which contains questions about the demographics of each HH member, deaths in the last two years, and details about the deceased HH members. The roster also provides information about the key informants for the following HH modules: (1) housing and environment, consisting of questions about the HH's physical dwelling, electricity, water facility, sanitation, and indoor air pollution; (2) consumption, designed to collect data on both market-purchased and home-produced consumption at the HH level, food consumption in the last 7 days, non-food consumption in the last year, and HH health expenditures for outpatient and inpatient care; (3) assets and debts, including detailed questions appropriate to the Indian context and residential history; (4) HH income, which attempts to determine the total income of all HH members from all sources, including public transfers and remittances from non-HH members; and 5) HH health insurance, designed to collect information on health insurance coverage for each member of the HH.

(ii) Individual Survey Schedule: This schedule was administered to each consenting respondent age 45 and above and their spouses (irrespective of age) in the sampled HHs. The individual survey was designed to collect detailed information about individuals in the following sections. (1) The demographics module includes age (month and year of birth), sex, religion, caste, marital status, literacy, education, and language. (2) The work, retirement, and pension module includes questions about past and current work, including self-employment and agriculture; job characteristics; earnings from work; and retirement, which includes questions on official retirement pensions that are designed to reflect India's growing pension scheme. (3) The health modules consist of questions about overall health and specific chronic diseases, organ-based chronic health conditions; symptom-based health conditions; endemic diseases; health events, including injuries and falls; women's health; functional health; health behaviour; and food security. (4) The mental health module includes cognition, orientation, immediate and delayed memory, arithmetic, executive function, verbal fluency, and object naming; in the depression section, the Centre for Epidemiologic Studies Depression scale (CES-D) and the Composite International Diagnostic Interview scale-Short Form (CIDI-SF) are included. (5) The healthcare services utilization and healthcare financing module is designed to capture access to and use of different types of healthcare providers and health insurance coverage. (6) The family and social networks module includes detailed questions about all immediate family members, including alive and deceased parents, children, and siblings; social activities; and psychosocial measures of life satisfaction, emotional proximity, social status, physical and social characteristics of the neighbourhood, and experience of ill treatment. (7) The social welfare scheme module includes awareness and utilization of social security programmes aimed at the elderly, awareness and utilization of the various concessions given to the elderly, and awareness of the Maintenance of Welfare of Parents and Senior Citizens Act. (8) The experimental modules include time use, expectations, social connectedness, and vignettes.

In addition, the LASI includes an individual module on (9) biomarkers and direct health examination. The functional health markers are blood pressure, pulse rate, a lung function test (spirometry), and a vision test (near and distance visual impairment); the performance-based markers are grip strength, timed walk, and balance tests; and the anthropometric measurements are height, weight, waist circumference, and hip circumference. Additionally, dried blood spot (DBS) samples were collected for testing of a variety of molecular markers, including hs-C-reactive protein (hs-CRP), glycosylated haemoglobin (HbA1c), haemoglobin (Hb), Cytomegalovirus (CMV)/ Epstein-Barr Virus (EBV).

(iii) **Community Survey Schedule:** This survey is administered at the community level (i.e. villages in rural areas and CEBs in urban areas) and is designed to be answered by several key informants, including village-level elected representatives, panchayat staff, and government health programme staff and community leaders. The community schedule includes sections on population characteristics, infrastructure and common resources, the accessibility and availability of healthcare services, and the coverage of health and social welfare programmes.

2.7 SURVEY IMPLEMENTATION

2.7.1 House-listing

Selection of HHs from villages/CEBs: HHs were randomly selected from the HH list for each of the SSUs (rural villages and urban CEBs) using the HH listing frame, in which each of the HHs were serially numbered. HHs were selected in two phases. For CEBs, 31 HHs were selected from all HHs listed in the CEB (irrespective of their eligibility criteria) using the systematic random sampling method. Then, 4 additional HHs were selected from all HHs that had at least one-member age 65 or above (after excluding the HHs already selected in stratum 1). A similar approach was used for rural areas, with 28 and 4 HHs, respectively.

- In rural areas, of the 28 HHs in each site, 17-20 are likely to have at least one-member age 45 and above in addition to the 4 HHs selected with elderly members age 65 and above.
- In urban areas, of the 31 HHs in each site, 20 are likely to have at least one-member age 45 and above, in addition to the 4 HHs selected with elderly members age 65 and above.
- These sample size for each SSU was chosen to achieve the target sample size of a minimum of 28 completed interviews, and also to ensure that a sufficient sample size can be achieved in the follow-up waves considering the possibility of significant attrition due to mortality, mobility, or non-response.

Merging of smaller villages: All the villages in the selected sub-districts form the rural sampling frame. All villages with 5 to 49 HHs were merged with nearby villages to form larger village units. From this larger-merged village frame, the desired number of SSUs was selected using PPS.

Segmentation of larger villages: All villages with more than 500 HHs were segmented into smaller segments, as preparing a sampling frame of HHs in a large village is resource intensive. Further, using PPS sampling, two segments were systematically selected from all segments of segmented villages.

However, in all the northeast states (i.e. Assam, Meghalaya, Manipur, Arunachal Pradesh, Mizoram, Tripura, Nagaland, and Sikkim), Jammu & Kashmir, and all union territories (i.e. Andaman & Nicobar, Lakshadweep, Dadra & Nagar Haveli, Daman & Diu, Puducherry, and Chandigarh), villages with more than 300 HHs were segmented into smaller segments. Further, using PPS sampling, two segments were selected from all the segments in the segmented villages.

2.7.2 Recruitment, training, and field work

The LASI is a large-scale national survey operation covering all thirty states and six union territories of India. A survey of such magnitude with the methodological complexities of longitudinal design requires detailed planning, careful implementation, and strategic management. The feasibility of the survey implementation, protocols, and instruments were tested in a pilot LASI conducted in 2010 (Arokiasamy, 2011). The many stages of planning and LASI field implementation are described in the remainder of this section.

2.7.2.1 LASI survey manuals

To standardize the questionnaire conventions, field protocols, and procedures across all the states, different manuals have been prepared and used for national-level training of trainers, state-level training of field investigators, and fieldwork supervision and monitoring. The manuals are comprehensive to ensure standardization, quality control, and control of non-sampling errors.

The specific manuals used for the LASI are as follows. The first is a mapping and listing manual which describes the essential steps for drawing location and layout maps of the selected sampling areas and listing all the structures and residential HHs. The second is a survey interview manual which contains comprehensive instructions for carrying out interviews, question-by-question protocols, outcome measures, and a detailed discussion of the questionnaires. The manual also provides the purpose of each question and ways to ask each question, probe for the answers, and record answer codes. Instructions for using a mini laptop (CAPI) for interviews and saving and downloading data are also provided in the interviewer manual. Third, because the biomarker section of the LASI includes a comprehensive range of physical tests and biomarkers, the biomarker manual provides instructions for conducting various direct heath examinations for biological markers. Fourth, the supervisor's manual describes the roles and responsibilities of supervisors for all of the field work. This manual contains a list of items that must be carried by the supervisor and that are needed to implement the field survey, including field forms. Fifth, the CAPI manual covers details about the hardware, logins, error logins, main screen, and preferences and also provides details about the procedure for transferring data from an individual investigator's computer to the project-dedicated server with the help of supervisors' logins. The manuals also provide checklists for each part of the process.

2.7.2.2 Training of trainers

Training of the field survey team is imperative not only to ensure that the participants have a good understanding of all the field tools and procedures but also to convince them of the importance of conducting the survey and adhering to all the survey protocols for conducting the survey. In each state, mapper and lister team trainings were conducted for 7 days, including field practice in both rural and urban areas. Each state agency conducted 35 days of training, including 5 days of field practice for interviewers and supervisors. Trainers trained by IIPS conducted these training workshops. The IIPS-appointed project officers for the state were present throughout each state's training. IIPS project coordinators, project managers, health coordinators, and senior project officers monitored these trainings, helped with training, and ensured that these trainings were conducted in accordance with the LASI's training guidelines and survey protocols. After each training, the capabilities and skills of each investigator were assessed to ensure that the investigators were capable of handling their assigned responsibilities. Throughout the training period, it was ensured that all the interviewers and investigators received a thorough understanding of the objectives and meanings of questions and extensive practice with the respective modules. The interviewers were trained for CAPI-based schedules to gain experience and to have better insights into the implementation of the survey protocol.

2.7.2.3 State-level field investigators training

Training of the field survey team is imperative not only to ensure that the participants have a good understanding of all the field tools and procedures but also to convince them of the importance of conducting the survey and adhering to all the protocols for conducting the survey. In each state, mapper and lister team trainings were conducted for 7 days, including field practice in both rural and urban areas. Each state agency conducted 35 days of training, including 5 days of field practice for interviewers and supervisors. Trainers trained by IIPS conducted these training workshops. The IIPS-appointed project officers for the state were present throughout each state's training. IIPS project coordinators, project managers, health coordinators, and senior project officers monitored these trainings, helped with training, and ensured that these trainings were conducted in accordance with LASI's training guidelines and survey protocols. After each training, the capabilities and skills of each investigator were assessed to ensure that the investigators were capable of handling their assigned responsibilities. Throughout the training period, it was ensured that all the interviewers and investigators received a thorough understanding of the objectives and meanings of questions and extensive practice with the respective modules. The interviewers were trained for CAPI-based schedules to gain experience and to have better insights into the implementation of the survey protocol.

2.7.2.4 Main survey implementation

The implementation of LASI fieldwork at the state level was sub-contracted to state-level field agencies. The main field survey was implemented in three phases with 130 field teams comprising 6 members. Each team consisted of one field supervisor, two female investigators, two male investigators, and one health investigator. The number of interviewing teams in each state varied according to the sample size for the state, and the interviewers were recruited by the state field agencies, taking into consideration their educational qualifications, previous experience with large-scale surveys, and other relevant qualifications. Each supervisor was responsible for obtaining sample HH lists and maps for each area where his/her team was working and for organizing travel and accommodation logistics for his/her team. Supervisors were also responsible for contacting local authorities to inform them about the survey and to gain their support and cooperation, securing all supplies and equipment necessary for their teams to complete their assigned interviews, and communicating any field problems to the field or senior coordinators at IIPS. Before commencing fieldwork, teams met with local officials and community leaders and shared printed informational brochures, including press releases in local newspapers, to heighten awareness and increase response rates.

2.7.2.5 Duration of the LASI field survey

The LASI field survey was conducted across 34 states from April 2017 to December 2018. The start and end dates by states or union territory are provided in Table 2.5

Table 2.5 Start and end dates of survey, states/UTs, LASI Wave 1, 2017-19

Phase 1 States/UTs	Survey Months 2017
Haryana	April- August, 2017
Delhi	April- August, 2017
Rajasthan	April- August, 2017
Uttar Pradesh	April- September, 2017
Bihar	May- September, 2017
Chhattisgarh	April- August, 2017
Madhya Pradesh	April- August, 2017
Gujarat	May- August, 2017
Daman & Diu (UT)	April- July, 2017
Dadra & Nagar Haveli (UT)	April-July, 2017
Karnataka	April- August, 2017
Goa	May- August, 2017
Lakshadweep (UT)	September- December, 2017
Kerala	June-October, 2017
Tamil Nadu	July- December, 2017
Puducherry (UT)	September- December, 2017
Phase 2 States/UTs	**Survey Months, 2017-18**
Himachal Pradesh	December 2017- February, 2018
Uttarakhand	December 2017- February,2018
Punjab	May- February, 2019
Chandigarh (UT)	May- December, 2018
Arunachal Pradesh	April- September, 2018
Nagaland	April- September, 2018
Manipur	April- September, 2018
Mizoram	April- September, 2018
Phase 3 States/UTs	**Survey Months, 2018-19**
Jammu & Kashmir	May- September, 2018
Tripura*	August, 2018- January, 2019
Meghalaya	July-December, 2019
Assam*	June 2018- January, 2019
West Bengal*	July, 2018- January, 2019
Jharkhand*	August, 2018- February, 2019
Odisha	August- December, 2018
Maharashtra	August- April, 2018
Andhra Pradesh	July- February, 2018
Andaman & Nicobar	July- December, 2018
Telangana	July-November, 2018

*Survey completed in 2018 however revisit of few SSUs were done in 2019.

Privacy, Ethics and Informed Consent: To maximize the cooperation of the sampled HHs and individuals, participants were provided with information brochures explaining the purpose of the survey, ways of protecting their privacy, and the safety of the health assessments as part of the ethics protocols. As per ethics protocols, consent forms were administered to each HH and age-eligible individual. In accordance with Human Subjects Protection, four consent forms were used in the LASI: Household Informed Consent, Individual Informed Consent, Consent for Blood Samples Collection for Storage and Future Use (DBS), and Proxy Consent. As part of the ethics protocols, participants were also provided with biomarker results report cards and referral letters if participant health measurements were outside the normal range.

Supervision, Monitoring, and Quality Control: Owing to the large size and complexity of the survey design, a three-tiered supervision and monitoring mechanism was implemented to minimize non-sampling error and ensure data quality. The monitoring procedures adopted during data collection are summarized below. Supervisors were given 10% of the completed HHs for validation with a randomly selected set of questions. Field teams were provided feedback based on direct observations, supervisor validations, and quality control analyses of the server to minimize errors. CAPI use and daily data transfers were also provided to give feedback to field agencies and teams to help ensure data quality. Section-wise and interviewer-wise error rates were provided on a regular basis, and state field agencies were asked to conduct briefing sessions with the teams.

2.8 SAMPLE WEIGHT

2.8.1 Need for survey weights

The LASI adopted a multistage stratified area probability cluster sampling design with stage stratification and 3-4 stages of sample selection. Therefore, to represent the LASI outcome indicators at the national and state levels, survey weights are required at the HH and individual levels. The purpose of the weights is to compensate for unequal selection probabilities at various levels of selection and to compensate for non-response. The LASI sample weight computation process consisted of the aggregation of selection probabilities in three stages at the PSU, SSU, and HH levels in addition to non-response and post-stratification adjustments to accurately represent the population characteristics.

The survey weight of a sampled person is the (estimated) number of individuals in the population which the person represents. For example, in the LASI, the number of HHs selected from each village (SSU) and CEB (SSU) is fixed at 32 and 35, respectively, irrespective of SSU size. This equal allocation of last-stage sampling units (HHs) in multi-stage cluster sampling is useful for managing interviewer workload in the field. However, this strategy leads to differential sampling rates for HHs belonging to different SSUs. Survey weights incorporate these differential sampling rates as well as adjustments for non-response and mismatches between the sampling and population distributions through post-stratification.

A weighted mean (or weighted proportion, e.g., prevalence of hypertension), where the weights are the survey weights, can estimate the true population mean (or proportion) in an approximately unbiased manner, whereas ignoring the survey weights in an analysis can lead to substantial bias. The extent of inefficiency depends on the variability in the survey weights. A small proportion of individuals with large weights can lead to substantial inefficiency. However, for descriptive analysis, it is usually recommended to consider weighted analysis, as the weighted estimator and its confidence interval offers a valid description of the population and the estimator (Korn and Graubard, 2011a).

2.8.2 Components of survey weights

Design weight: The design weight (or base weight) is the component of the survey weight that accounts for differences in selection probabilities, as follows from the sampling design. It is defined as the inverse of the inclusion probability of the HH or individual in the sample. In the LASI, the ultimate sampling unit is an HH. Within a selected HH, all adults and elderly men and women age **45 and above** and their spouses irrespective of age who resided in the sampled HHs were included in the sample. Hence, the design weight corresponding to the individual was the same as the design weight of the HH, as HH selection was the last stage of sample selection.

In the case of a three to four-stage sampling design, as in the LASI, the inclusion probability of an HH is the product of the inclusion probability in the first stage of sampling and the conditional inclusion probabilities in the later stage of sampling. Detailed calculations of design weights are given below.

The probability of selecting the kth HH from the ath state is π_{ka} where; $a = 1, \dots, 35$. The quantity π_{ka} is calculated as follows:

$$\begin{aligned}\pi_{ka} &= Prob.(\text{selecting the } k\text{th HH in the } a\text{th state}) \\ &= Prob.(\text{selecting the } k\text{th HH} \mid k\text{th HH} \in j\text{th SSU}) \\ &\quad \times Prob.(\text{selecting the } j\text{th SSU} \mid j\text{th SSU} \in i\text{th PSU}) \\ &\quad \times Prob.(\text{selecting the } i\text{th PSU from state } a) \\ &= P_{3kj} \times P_{2ji} \times P_{1ia}\end{aligned}$$

Now, for first-stage selection of PSUs using PPS sampling,

$$\begin{aligned}P_{1ia} &= Prob.(\text{selecting the } i\text{th PSU from state } a) \\ &= \frac{n_a x_i}{\sum_{i \in U_a} x_i};\end{aligned}$$

where n_a is the number of sampled PSUs selected from the ath (sub)state, x_i is the size measure (number of HHs) for the ith PSU, and U_a is the set of all PSUs belonging to the ath (sub)state. They were selected using a stratified sampling design. Selection probabilities were calculated separately for each sub-state region within a state.

Within a selected PSU, SSUs were selected separately from urban and rural areas. Consequently, second-stage selection probabilities were calculated separately for urban and rural areas of a PSU.

$$\begin{aligned}P_{2ji} &= Prob.(\text{selecting the } j\text{th SSU} \mid j\text{th SSU} \in i\text{th PSU}) \\ &= \begin{cases} \dfrac{n_{iR} x_j}{\sum_{j \in U_{iR}} x_j}; & \text{for rural areas,} \\ \dfrac{n_{iU} x_j}{\sum_{j \in U_{iU}} x_j} \times \dfrac{1}{C_j}; & \text{for urban areas,} \end{cases}\end{aligned}$$

where n_{iR} and n_{iU} are the number of sampled villages and urban wards selected from the ith PSU, respectively; x_j is the size measure (number of HHs) for the jth village or urban CEB; U_{iR} and U_{iU} are the set of all villages and urban CEBs belonging to the ith PSU; C_j is the number of CEBs in the jth urban ward.

For third-stage selection of HHs from a selected SSU, we used systematic random sampling (SRS) method. Note that the SSU is a village in rural areas and a CEB in urban areas.

$$P_{3kj} = Prob.(\text{selecting the } k\text{th HH} \mid k\text{th HH} \in j\text{th SSU})$$
$$= \begin{cases} \frac{n_R}{x_{sj}} \times \frac{s_j}{S_j}; & \text{for rural areas,} \\ \frac{n_U}{x_j}; & \text{for urban areas,} \end{cases}$$

where n_R (32) and n_U (35) are the number of sampled HHs from a village (or a village segment) and a CEB, respectively. For large villages (having approximately more than 500 HHs), as known after house-listing, segmentation was considered and s_j segments were randomly selected from the total number of segments (S_j) in the large village. If no segmentation was needed, then $s_j = S_j = 1$. The quantity x_{sj} is the total number of HHs in the selected segments of the jth village and x_j is the total number of HHs in the jth CEB.

To select 32 HHs from a sampled village and 35 HHs from a sampled CEB, 28 or 31 HHs, respectively, were first selected from the total number of HHs listed in the village or CEB. Additionally, 4 HHs were selected from the total number of HHs having at least one member in the age group of 65 or above (after excluding already-selected HHs). Therefore, the selection probabilities for the HHs were calculated separately in these two stages of HH selection.

For each sampled HH, the design weight was calculated as: $1/(P_{3kj} \times P_{2ji} \times P_{1ia})$.

Non-response: Design weight was adjusted to account for non-response at the HH level. In LASI, non-response occurred only at the last stage of sampling (HH selection) as 100% coverage of PSUs (first stage) and SSUs (second stage) was achieved as per the sampling plan.

Non-response-adjusted weight is calculated as HH design weight × (1/response rate). HH-level response rate is defined as the number of HHs which participated in the survey divided by the total number of age-eligible sampled HHs. For HH-level response rate calculation, HH participation was defined as the sampled HH having at least one individual who participated in the survey. For stage 1 of HH selection, the eligibility criterion was defined as the sampled HH having at least one member in the age group of 45 or above. The denominator for stage 1 of HH selection included only age-eligible HHs (identified through HH roster) out of 28 and 31 assigned HHs for rural and urban SSUs, respectively. To calculate the response rate for HHs selected in the second stage of sample selection, the denominator was 4. The numerator for both conditions was the number of HH participated.

Post-stratification: To reduce the bias in estimating outcome indicators due to differential coverage, post-stratification adjustments of the non-response-adjusted weights were performed. To this end, the non-response-adjusted survey weights were multiplied by a constant factor within a post-stratum so that the sum of the post-stratification adjusted weights matches with known external control totals, which are considered more reliable. External control totals were obtained from projections based on the recent census as well as from a survey having a larger sample size so that it can estimate the demographic distribution of the population with better accuracy. In addition to adjusting for sampling distributions, post-stratification also improves the accuracy of estimators by reducing their variability.

2.8.3 Two sets of survey weights

In the LASI, two sets of survey weights are of interest. One set of weights was used for generating national-level indicators, and another set is used to produce state-level indicators. Each set had the following different types of weights:

Household weight: The detailed calculation of non-response-adjusted weights at the HH level was described in the previous section. For the post-stratification adjustment of weights, we considered two post-strata (urban and rural) at the HH level. The external control totals were the number of HHs with at least one-member age 45 or above in specific post-strata (rural or urban). External control total estimates were obtained from NFHS-4 (2015-16).

T_{ma} denotes the known control total number of HHs with at least one member age 45 or above in the mth post-stratum of state (obtained from NFHS-4), and $w_{ka}^{(nr)}$ is the non-response-adjusted HH-level weight for the kth sampled HH from state a, as derived in the previous section. Then, the HH-level post-stratification adjusted weight $w_{ka}^{(p)}$ is defined by

$$w_{ka}^{(p)} = w_{ka}^{(nr)} \frac{T_{ma}}{\sum_j \delta_{jma} w_{ja}^{(nr)}}, \text{for } k \in m\text{th postratum, where}$$

$$\delta_{jma} = \begin{cases} 1, \text{if the } j\text{th household belongs to the } m\text{th poststratum of state } a \\ 0, \text{otherwise} \end{cases}$$

Note that $w_{ka}^{(p)}$ is the final state-level HH weight used for estimating HH-level indicators at the state level.

For the national-level survey weights, non-response-adjusted HH-level weights were multiplied by a constant factor within a post-stratum so that the sum of the post-stratification adjusted weights matches with known external control totals at the national level.

Individual weight: Within a selected HH, all adults and elderly men and women age 45 and above and their spouses, irrespective of age, who resided in the sampled HHs were included in the sample. Hence, the design weight corresponding to the individual was the same as the design weight of the HH, as HH selection was the last stage of sample selection.

The design weight was adjusted for the individual-level non-response rate and subsequently were subject to post-stratification adjustments at the state and national level. It was calculated as individual design weight × (1/response rate). The response rate is defined as the number of individuals who participated individual interviews divided by the total number of age-eligible individuals in the sampled age-eligible HHs. For post-stratification adjustments, the external control totals (total number of individuals age 45 and above in urban and rural areas) were obtained from the population projections based on the 2011 Census.

Response rate: In the LASI, two types of response rates were used: the HH response rate and the individual response rate. The HH response rate is defined as the number of HHs which participated in the survey divided by the total number of age-eligible sampled HHs. The individual response rate is defined as the number of individuals who participated in the survey divided by the total number of eligible individuals in the age-eligible sampled HHs. For stratum 1, the eligibility criteria are defined as individuals age 45 or above. For stratum 2, the eligibility criteria are defined as individuals age 65 or above.

Table 2.4 provides state-wise rural-urban HH and individual response rates by state or union territory. For India as a whole, the overall HH response rate is 96%, and the overall individual response rate is 87%. The HH response rate in urban areas is lower (93%) than the rural response rate (97%). Similarly, the individual response rate is higher in rural (89.6%) than in urban areas (83.6%). Across states, the HH response rate ranges from 99% in Arunachal Pradesh to 85% in Dadra & Nagar Haveli. The individual response rate ranges from 96% in Nagaland to 74% in Chandigarh.

Table 2.6 Percent distribution of sample characteristics of age-eligible households, state/UTs, LASI Wave 1, 2017-18

States/Union Terrotory	HH size			HH having		Place of residence		Religion of the head of HH				Caste of the head of HH				MPCE quintile					
	1-2	3-4	5-6	7 or more	Below 60 members	Above 60 members	Rural	Urban	Hindu	Muslim	Christian	Other	Scheduled tribe	Scheduled caste	Other backward class	None of the above	Poorest	Poorer	Middle	Richer	Richest	Number of households
Chandigarh	15.3	32.0	39.2	13.6	54.9	45.1	1.4	98.6	75.2	3.2	0.8	20.8	1.0	20.3	18.9	59.8	8.8	8.5	16.3	20.3	46.2	651
Delhi	7.3	30.7	39.1	23.0	57.0	43.0	2.1	97.9	75.9	16.3	0.9	6.9	0.8	22.6	22.3	54.3	19.6	23.7	18.3	19.0	19.4	754
Haryana	10.0	23.8	39.4	26.9	58.1	41.9	61.9	38.1	89.2	7.2	0.1	3.6	0.3	21.7	32.8	45.1	15.9	21.6	21.9	24.2	16.3	1,251
Himachal Pradesh	10.4	33.5	39.8	16.4	51.4	48.6	88.6	11.4	98.2	0.4	0.1	1.4	4.8	33.1	15.7	46.4	8.1	14.7	17.6	22.8	36.8	805
Jammu & Kashmir	5.4	21.0	39.3	34.3	59.0	41.0	68.0	32.0	28.8	70.2	0.2	0.8	4.4	9.5	10.2	76.0	4.2	8.7	16.7	29.0	41.3	957
Punjab	10.9	26.9	41.8	20.3	52.4	47.6	76.1	23.9	25.8	0.7	0.7	72.8	0.6	45.9	17.5	36.0	5.2	10.4	20.9	27.4	36.2	1,234
Rajasthan	17.5	22.1	32.5	27.9	54.6	45.4	73.5	26.5	93.8	3.7	0.0	2.5	14.5	22.5	41.8	21.3	19.4	21.2	18.8	21.7	19.0	1,302
Uttarakhand	20.9	29.1	29.8	20.2	50.3	49.7	69.9	30.1	86.8	11.5	0.8	0.9	4.1	20.7	16.5	58.8	20.2	19.5	21.5	19.4	19.5	863
Chhattisgarh	23.1	23.7	32.2	21.0	64.5	35.5	77.0	23.0	96.2	1.8	1.1	0.9	34.7	11.2	46.8	7.3	44.4	25.2	13.0	10.3	7.1	1,189
Madhya Pradesh	21.6	25.6	30.0	22.7	54.3	45.7	70.3	29.8	88.5	9.5	0.2	1.7	14.8	16.6	49.8	18.9	23.2	21.2	16.7	21.5	17.4	1,690
Uttar Pradesh	14.3	21.6	30.7	33.5	54.6	45.4	77.9	22.1	85.8	13.4	0.1	0.7	1.3	27.9	43.0	27.8	26.5	25.3	21.8	14.9	11.6	2,747
Bihar	16.6	19.9	28.3	35.2	53.5	46.5	88.4	11.6	80.2	19.6	0.0	0.2	2.7	21.4	54.3	21.6	30.2	26.5	20.0	13.6	9.8	2,083
Jharkhand	15.1	23.9	32.4	28.7	54.1	45.9	74.8	25.3	79.3	12.0	5.2	3.6	19.4	11.2	52.4	17.0	26.2	26.4	21.2	15.5	10.7	1,408
Odisha	20.9	36.8	29.8	12.6	55.0	45.0	83.2	16.8	88.0	1.1	10.9	0.0	28.0	18.9	34.4	18.8	33.6	22.5	19.2	14.4	10.4	1,645
West Bengal	19.8	35.8	30.6	13.8	55.4	44.6	64.0	36.1	79.5	18.5	0.2	1.8	5.5	30.4	13.2	51.0	17.9	23.8	22.1	20.6	15.7	2,279
Arunachal Pradesh	18.9	30.7	32.4	18.0	74.3	25.7	79.0	21.0	22.1	0.8	52.5	24.7	80.5	4.8	1.2	13.6	14.4	12.0	19.7	21.5	32.3	702
Assam	11.7	37.1	35.4	15.9	64.7	35.4	83.5	16.5	74.6	22.3	2.0	1.1	15.1	9.7	39.6	35.5	23.3	25.0	19.6	18.2	14.0	1,511
Manipur	16.3	31.5	34.1	18.1	45.1	54.9	62.3	37.7	43.6	7.7	32.5	16.2	34.7	9.1	25.2	31.1	7.7	14.9	16.4	25.7	35.4	860
Meghalaya	8.9	24.1	29.2	37.8	54.0	46.1	77.3	22.7	13.5	0.4	81.0	5.2	92.8	3.3	0.4	3.6	27.1	20.9	19.7	15.6	16.7	636
Mizoram	16.2	23.9	32.3	27.6	46.6	53.4	45.7	54.3	0.6	0.2	99.2	0.0	98.4	0.8	0.5	0.3	21.6	20.9	23.2	18.0	16.4	732
Nagaland	33.6	34.2	23.9	8.4	45.5	54.5	72.3	27.8	5.5	5.2	89.3	0.1	89.4	4.5	0.4	5.7	13.2	13.8	14.7	24.7	33.6	799
Tripura	20.6	41.8	26.3	11.3	54.7	45.3	68.3	31.7	88.5	0.4	4.4	6.8	30.3	28.8	25.8	15.1	15.8	17.0	21.9	23.7	21.6	721
Dadra & Nagar Haveli	17.0	30.4	29.7	23.0	69.9	30.2	37.7	62.3	83.1	8.9	5.6	2.4	54.2	1.5	18.9	25.4	29.9	17.1	19.1	14.5	19.3	631
Daman & Diu	22.9	36.7	24.8	15.6	46.1	53.9	11.2	88.8	92.7	3.0	2.3	2.0	15.5	14.7	45.2	24.7	19.1	17.4	18.7	22.8	22.0	577
Goa	14.0	41.0	33.7	11.4	42.9	57.1	37.6	62.4	79.5	3.6	16.8	0.1	14.0	4.9	23.1	58.0	6.3	10.5	18.8	23.4	40.9	877
Gujarat	17.1	26.0	33.2	23.7	54.2	45.8	56.4	43.6	88.2	10.6	0.8	0.5	19.2	11.0	43.0	26.8	17.9	21.2	21.5	22.3	17.1	1,455
Maharashtra	19.0	29.5	32.5	19.0	51.5	48.5	53.9	46.1	77.7	12.4	1.1	8.8	8.1	16.8	35.8	39.3	21.5	22.6	19.8	18.5	17.6	2,421
Andaman & Nicobar Islands	19.3	34.3	33.7	12.7	55.0	45.0	61.2	38.8	59.1	7.2	33.5	0.2	20.0	17.0	21.2	41.8	11.1	13.3	21.8	22.2	31.6	725
Andhra Pradesh	34.3	31.5	27.1	7.1	57.8	42.2	68.7	31.3	81.9	5.2	12.5	0.4	5.9	21.2	46.6	26.3	11.5	15.7	18.8	25.2	28.9	1,511
Karnataka	16.2	35.9	32.7	15.1	57.8	42.2	65.9	34.1	85.2	14.2	0.0	0.6	4.8	15.4	69.4	10.4	9.4	13.5	23.4	22.4	31.4	1,488
Kerala	20.8	39.0	29.5	10.7	44.2	55.8	50.6	49.4	58.3	19.5	22.0	0.3	1.2	8.4	53.3	37.1	15.8	18.6	19.6	19.9	26.1	1,411
Lakshadweep	12.9	25.5	26.8	34.8	47.2	52.8	12.4	87.6	0.5	99.1	0.3	0.0	92.7	1.7	4.8	0.8	37.8	22.2	17.5	11.5	11.0	627
Puducherry	31.2	33.3	29.1	6.4	46.9	53.1	30.9	69.1	90.3	4.9	4.8	0.0	0.9	17.6	73.6	7.9	27.3	25.5	20.4	16.5	10.4	839
Tamil Nadu	37.5	34.3	23.3	5.0	50.6	49.4	49.3	50.7	89.5	3.4	7.0	0.1	1.1	16.7	80.0	2.2	24.8	18.7	20.9	19.5	16.1	2,150
Telangana	30.4	30.2	28.6	10.9	57.6	42.4	63.9	36.1	84.5	10.7	3.5	1.3	5.8	19.4	59.1	15.7	15.7	18.1	19.9	22.5	23.9	1,418
India	**19.8**	**29.1**	**31.0**	**20.2**	**54.7**	**45.3**	**68.4**	**31.6**	**81.1**	**12.4**	**2.9**	**3.5**	**8.9**	**20.1**	**44.9**	**26.1**	**21.1**	**21.1**	**20.3**	**19.1**	**18.5**	**42,949**
Number of households	**8,130**	**12,791**	**13,501**	**8,527**	**24,068**	**18,881**	**27,576**	**15,373**	**31,348**	**5,212**	**4,340**	**2,049**	**7,499**	**7,523**	**16,080**	**11,847**	**8,591**	**8,590**	**8,589**	**8,590**	**8,589**	

2.9 SAMPLE CHARACTERISTICS OF THE LASI AGE-ELIGIBLE HHs

Table 2.6 presents the sample characteristics of LASI age-eligible HHs (at least one-member age 45 and above) for each state and union territory of India. Of all surveyed LASI age-eligible HHs in India, 20% have 1-2 members, 29% have 3-4 members, 31% have 5-6 members, and 20% have more than 7 members. Fifty-five percent of the age-eligible HHs had members with age less than 60, whereas 45% had members age 60 and above. The state pattern shows that the percentage of HHs with members age 60 and above is higher than the national average in the states of Kerala (56%), Lakshadweep (53%), Puducherry (53%), Tamil Nadu (49%), Himachal Pradesh (49%), Punjab (48%), Rajasthan (45%), and Uttarakhand (50%). However, the proportion of HHs with only members less than 60 years of age is comparatively higher than the national average in the states of Assam (65%), Haryana (58%), Jammu & Kashmir (59%), Chhattisgarh (65%), Dadra & Nagar Haveli (70%), Andhra Pradesh (58%), and Karnataka (58%).

By residence, 68% of LASI age-eligible HHs in India are in rural areas, and the remaining 32% are in urban areas. The percentage share of HHs in urban areas in the major states of India range from 51% in Tamil Nadu to 12% in Bihar. Eighty-one percent of the heads of LASI age-eligible HHs in India are Hindus, 12% are Muslim, 3% are Christian, and 4% are another religion. Across the major states of India, the percentage share of LASI age-eligible HHs with heads belonging to the Hindu religion ranges from 98% in Himachal Pradesh to 26% in Punjab. The percentage share of age-eligible HHs with heads belonging to the Muslim religion is comparatively higher in the states of Assam (22%), Kerala and Bihar (20%), West Bengal (19%), and Delhi (16%). The percentage share of LASI age-eligible HHs with Christian heads is comparatively higher in the states of Kerala (22%), Goa (17%), and Andhra Pradesh (12%) and in the north-eastern states of Mizoram (99%), Nagaland (89%), and Meghalaya (81%).

Overall, in India, 9% of heads of LASI age-eligible HHs belong to Scheduled tribe, 20% belong to Scheduled caste, 45% belong to other backward class, and 26% belong to none of these. Across the major states of India, the percentage share of LASI age-eligible HH heads belonging to a Scheduled tribe is comparatively higher in the states of Chhattisgarh (35%), Odisha (28%), Gujarat (19%), Madhya Pradesh (15%), Jharkhand (19%), Rajasthan (15%), and Goa (14%). The percentage share of HH heads belonging to Scheduled caste is higher in the states of Punjab (46%), West Bengal (30%), Andhra Pradesh (21%), Bihar (21%), Uttar Pradesh (28%), Himachal Pradesh (33%), Haryana (22%), Rajasthan (23%), Himachal Pradesh (33%), and Tripura (29%). Across the states of India, the share of HHs in the poorest MPCE quintile is higher in the states of Odisha (34%), Bihar (30%), Uttar Pradesh (27%), Madhya Pradesh (23%), Chhattisgarh (44%), and Rajasthan (19%).

Table 2.7 Percent distribution of sample characteristics of age-eligible individual survey participants, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Age		Sex		Marital status			Place of residence		Religion				Caste			Educational Attainment					Current working status			
	less than 60	Above 60	Male	Female	Currently married	Widowed	Divorced/ Separated/ Deserted/ others	Rural	Urban	Hindu	Muslim	Christian	Others	Scheduled tribe	Scheduled caste	Other backward class	None of them	No School -ing	less than 5 years	5-9 years completed	10 or more years of schooling	Currently working	Worked in the past but currently not working	Never worked	Number
Chandigarh	60.3	39.7	45.0	55.0	77.8	19.2	3.0	1.0	99.0	78.0	2.9	0.8	18.4	1.0	20.3	17.7	61.0	23.3	6.8	23.1	46.8	35.0	22.7	42.3	1,026
Delhi	62.0	38.0	44.8	55.3	81.0	18.0	1.1	1.7	98.3	76.5	16.9	1.1	5.6	0.8	24.2	20.1	55.0	38.1	2.7	24.3	35.0	35.3	20.6	44.1	1,319
Haryana	52.2	47.8	40.6	59.4	74.4	24.2	1.4	63.3	36.7	91.6	5.2	0.0	3.2	0.2	21.7	30.3	47.8	53.8	4.1	21.1	21.0	33.9	26.4	39.7	1,898
Himachal Pradesh	52.7	47.4	40.2	59.8	76.0	21.9	2.1	91.2	8.8	97.2	0.3	0.1	2.4	4.8	25.7	17.4	52.1	34.0	9.5	31.1	25.4	55.2	29.6	15.2	1,388
Jammu & Kashmir	50.9	49.1	43.2	56.9	79.1	19.1	1.7	68.8	31.2	27.8	71.1	0.3	0.8	4.6	8.8	7.8	78.8	63.0	2.3	16.7	18.1	20.6	17.6	61.9	1,613
Punjab	52.2	47.8	43.1	56.9	76.4	21.4	2.2	63.8	36.2	29.9	0.8	0.5	68.8	1.4	38.2	19.1	41.3	43.4	5.2	29.4	22.1	28.3	20.8	50.9	2,124
Rajasthan	50.1	49.9	42.5	57.5	79.0	20.2	0.7	75.0	25.0	93.7	3.3	0.0	3.0	15.0	22.4	40.2	22.5	64.1	7.2	15.9	12.9	45.8	32.7	21.5	2,244
Uttarakhand	50.7	49.3	41.1	58.9	75.2	23.4	1.4	70.9	29.2	86.7	11.8	0.9	0.6	4.5	20.1	16.1	59.4	45.8	6.3	27.6	20.3	41.3	28.1	30.6	1,358
Chhattisgarh	61.6	38.4	44.1	55.9	76.4	21.4	2.2	76.6	23.4	96.3	1.5	1.2	1.0	33.0	11.2	47.2	8.7	60.7	11.2	17.3	10.8	57.1	28.3	14.7	2,055
Madhya Pradesh	52.4	47.6	46.4	53.6	79.0	18.7	2.3	72.5	27.5	87.9	10.2	0.1	1.7	14.3	15.5	51.2	19.1	52.8	12.8	20.6	13.7	48.4	30.8	20.8	2,914
Uttar Pradesh	50.6	49.4	45.5	54.5	75.1	23.0	1.9	79.6	20.4	86.1	13.1	0.0	0.8	1.4	26.6	42.4	29.7	58.3	5.4	19.2	17.1	42.8	22.6	34.6	4,567
Bihar	46.1	53.9	44.1	55.9	80.4	18.5	1.1	88.0	12.0	82.4	17.4	0.0	0.2	2.6	21.5	53.7	22.1	65.5	4.6	16.1	13.8	43.5	23.0	33.5	3,520
Jharkhand	51.8	48.2	42.0	58.0	78.8	19.7	1.5	74.9	25.1	80.2	11.9	4.7	3.2	18.0	10.9	52.7	18.4	55.1	8.6	19.9	16.4	47.3	25.1	27.5	2,464
Odisha	56.0	44.0	43.2	56.8	77.2	20.2	2.6	84.8	15.2	89.2	1.0	9.8	0.0	26.7	18.7	35.3	19.3	45.7	17.7	24.4	12.1	49.5	16.8	33.7	2,917
West Bengal	59.5	40.5	41.2	58.8	77.2	20.5	2.4	62.4	37.7	80.3	17.6	0.2	1.9	4.5	29.8	12.3	53.5	42.2	15.2	24.4	18.2	45.6	20.4	34.0	3,933
Arunachal Pradesh	75.7	24.4	45.6	54.4	82.7	15.1	2.2	79.3	20.7	21.2	0.9	53.5	24.4	80.7	4.9	1.9	12.5	56.1	5.7	21.4	16.7	56.7	7.0	36.3	1,215
Assam	64.1	35.9	40.5	59.5	75.5	21.9	2.6	82.5	17.5	76.2	21.5	1.6	0.7	14.9	9.2	39.0	36.9	38.7	14.7	27.6	19.1	45.9	18.6	35.5	2,366
Manipur	53.3	46.7	42.0	58.0	75.5	20.4	4.1	62.8	37.2	45.3	7.9	32.8	14.0	34.1	8.1	26.5	31.3	40.6	7.2	21.8	30.4	55.9	34.0	10.0	1,369
Meghalaya	57.9	42.1	38.0	62.0	67.6	25.1	7.4	78.6	21.4	12.2	0.8	81.4	5.7	92.9	3.6	0.3	3.3	37.2	24.1	22.4	16.3	55.2	19.7	25.2	969
Mizoram	55.1	45.0	45.9	54.1	74.3	17.6	8.1	47.9	52.1	0.7	0.1	99.2	0.0	98.4	0.6	0.5	0.5	14.1	33.0	33.7	19.2	49.8	27.7	22.5	1,246
Nagaland	51.0	49.0	43.4	56.6	77.9	17.1	5.0	72.7	27.3	6.5	3.6	89.7	0.1	89.3	5.0	0.4	5.4	42.8	11.8	25.0	20.4	51.6	23.0	25.4	1,316
Tripura	60.7	39.3	40.6	59.4	78.1	20.5	1.4	68.6	31.4	89.1	0.2	3.7	7.1	29.3	28.5	24.4	17.8	35.1	16.1	36.7	12.1	50.0	18.3	31.7	1,195
Dadra & Nagar Haveli	61.2	38.8	45.2	54.8	81.0	17.0	2.0	47.2	52.9	82.9	7.7	7.1	2.4	61.7	1.4	18.5	18.4	49.6	13.0	16.9	20.4	66.3	21.5	12.2	1,090
Daman & Diu	52.5	47.5	38.6	61.4	72.4	24.4	3.2	21.3	78.7	93.4	2.8	3.1	0.7	15.7	13.4	46.8	24.1	30.4	15.3	32.3	22.0	37.6	40.9	21.5	991
Goa	54.4	45.7	39.9	60.2	75.5	21.6	2.9	33.5	66.5	77.0	5.3	17.4	0.3	12.4	4.2	22.3	61.1	27.5	14.6	24.9	33.1	26.2	30.2	43.5	1,427
Gujarat	55.0	45.0	41.7	58.3	75.5	22.3	2.2	58.1	41.9	88.9	9.8	0.9	0.5	19.4	12.0	42.2	26.5	40.8	18.0	24.7	16.6	50.9	35.2	14.0	2,341
Maharashtra	51.1	48.9	40.1	59.9	75.2	22.5	2.3	58.2	41.8	79.6	11.4	0.7	8.2	7.8	16.0	36.8	39.5	39.9	15.6	21.4	23.1	51.9	30.5	17.7	3,973
Andaman & Nicobar Islands	59.2	40.8	45.3	54.7	78.6	18.3	3.1	61.6	38.4	58.5	7.8	33.6	0.1	20.2	16.6	19.8	43.5	38.6	10.5	30.3	20.7	28.7	24.7	46.6	1,244
Andhra Pradesh	58.0	42.0	41.9	58.1	76.1	21.4	2.6	70.1	29.9	82.7	5.2	12.0	0.2	6.3	19.1	53.0	21.5	57.2	7.8	19.8	15.3	49.8	30.3	19.9	2,679
Karnataka	59.9	40.1	39.0	61.0	74.4	22.5	3.1	64.8	35.2	86.6	11.1	1.9	0.4	4.0	13.2	73.4	9.4	46.4	13.9	16.9	22.8	51.5	27.9	20.7	2,420
Kerala	48.4	51.6	38.5	61.5	74.6	21.5	3.9	51.8	48.2	58.8	18.5	22.7	0.1	1.3	7.6	52.7	38.4	9.2	19.5	29.9	41.4	27.0	30.5	42.5	2,497
Lakshadweep	52.4	47.6	38.0	62.0	72.9	24.0	3.2	11.9	88.1	0.6	99.3	0.0	0.1	93.1	1.6	4.5	0.7	22.3	19.1	37.0	21.6	19.0	21.2	59.8	1,139
Puducherry	53.1	46.9	39.1	60.9	65.2	23.4	11.4	29.9	70.1	91.3	3.9	4.8	0.0	0.8	17.5	73.9	7.8	31.2	8.0	30.6	30.2	38.5	22.5	39.0	1,428
Tamil Nadu	54.1	45.9	39.6	60.4	65.2	24.8	10.0	50.7	49.4	90.3	3.3	6.2	0.2	1.1	16.1	81.6	1.2	41.5	10.0	28.4	20.1	47.3	26.0	26.7	3,530
Telangana	55.4	44.6	40.7	59.4	72.9	25.1	2.0	64.9	35.1	84.6	10.6	3.6	1.1	5.9	18.1	64.1	12.0	65.8	7.3	11.5	15.5	51.0	32.3	16.8	2,475
India	**53.6**	**46.4**	**42.2**	**57.8**	**75.6**	**21.6**	**2.7**	**67.9**	**32.1**	**82.1**	**11.0**	**3.4**	**3.6**	**8.2**	**19.5**	**44.5**	**27.9**	**49.1**	**10.7**	**21.5**	**18.7**	**45.7**	**26.2**	**28.1**	
Number	**40,786**	**31,464**	**30,569**	**41,681**	**55,396**	**14,593**	**2,261**	**46,534**	**25,716**	**52,973**	**8,667**	**7,215**	**3,395**	**12,509**	**12,046**	**27,184**	**20,511**	**33,211**	**8,054**	**16,909**	**14,076**	**32,990**	**17,964**	**21,296**	**72,250**

2.10 SAMPLE CHARACTERISTICS OF THE LASI AGE-ELIGIBLE INDIVIDUAL OF SURVEY PARTICIPANTS

Table 2.7 presents the sample characteristics of LASI age-eligible individual survey participants age 45 and above, including their spouses less than age 45, by states/UTs. Overall, 54% individuals interviewed in the LASI are age 45–59, including their spouses, and 46% are age 60 and above. Across the states, the percentage share of individuals interviewed age 60 and above is comparatively higher in the states of Haryana (48%), Bihar (54%), Rajasthan (50%), Jharkhand (48%), Uttar Pradesh (49%), and Madhya Pradesh (48%). The percentage share of individuals interviewed age 45-59, including spouses less than 45 is greater than the national average in the states of Delhi (62%), Chhattisgarh (62%), Assam (64%), Karnataka (60%), West Bengal (60%), Odisha (56%), Gujarat (55%), Andhra Pradesh (58%), and Telangana (55%).

Overall, in India 58% of LASI age-eligible participants are women, and 42% are men. The percentage share of female age-eligible survey participants is greater than the national average in the states of West Bengal (59%), Haryana (59%), Himachal Pradesh (60%), Uttarakhand (59%), Assam (60%), Goa (60%), Maharashtra (60%), Karnataka (61%), Kerala (62%), Tamil Nadu (60%), and Telangana (59%).

In India, 68% of LASI age-eligible respondents are from rural areas, and 32% are from urban areas. In the majority of the states, the percentage share of LASI age-eligible respondents from rural areas is higher than the national average. Eighty-two percent of LASI age-eligible individuals are Hindu, 11% are Muslim, 3% are Christian, and 4% are other religions. A higher proportion of age-eligible individuals are Muslims in the states of Assam (22%), Kerala (18%), West Bengal (18%), Bihar (17%), and Delhi (17%).

In India overall, 76% of the age-eligible respondents are currently married, 22% are widowed, and 3% are divorced, separated, or deserted. A higher proportion of age-eligible individuals are widowed in the states of Tamil Nadu (25%), Telangana (25%), Karnataka (23%), Haryana (24%), Uttar Pradesh (23%), and Uttarakhand (23%). The percentage share of divorced, separated, and deserted individuals is higher in the states of Tamil Nadu (10%), Puducherry (11%), and north-eastern states of Meghalaya (7%) and Mizoram (8%).

Forty-nine percent of LASI age-eligible respondents have had no schooling, 11% have had less than 5 years of schooling, 22% have had 5-9 years of schooling and 19% have had 10 or more years of schooling. The percentage share of LASI age-eligible respondents with no schooling is higher than the national average in the states of Uttar Pradesh (58%), Chhattisgarh (61%), Rajasthan (64%), Bihar (66%), Jharkhand (55%), and Telangana (66%), whereas the percentage share of LASI age-eligible respondents with 10 or more years of schooling is comparatively higher in the states of Delhi (35%), Himachal Pradesh (25%), Punjab (22%), Goa (33%), Kerala (41%), Karnataka (23%), and Maharashtra (23%).

Forty-six percent of LASI age-eligible respondents are currently working, 26% worked in the past but are not currently working, and 28% never worked. The percentage of currently working LASI age-eligible respondents is higher than the national average in the states of Himachal Pradesh (55%), Maharashtra (52%), Chhattisgarh (57%), Karnataka (52%), and Telangana (51%).

Figure 2.4 Percentage of age-eligible HHs with age 60 and above members, LASI, Wave 1, 2017-18

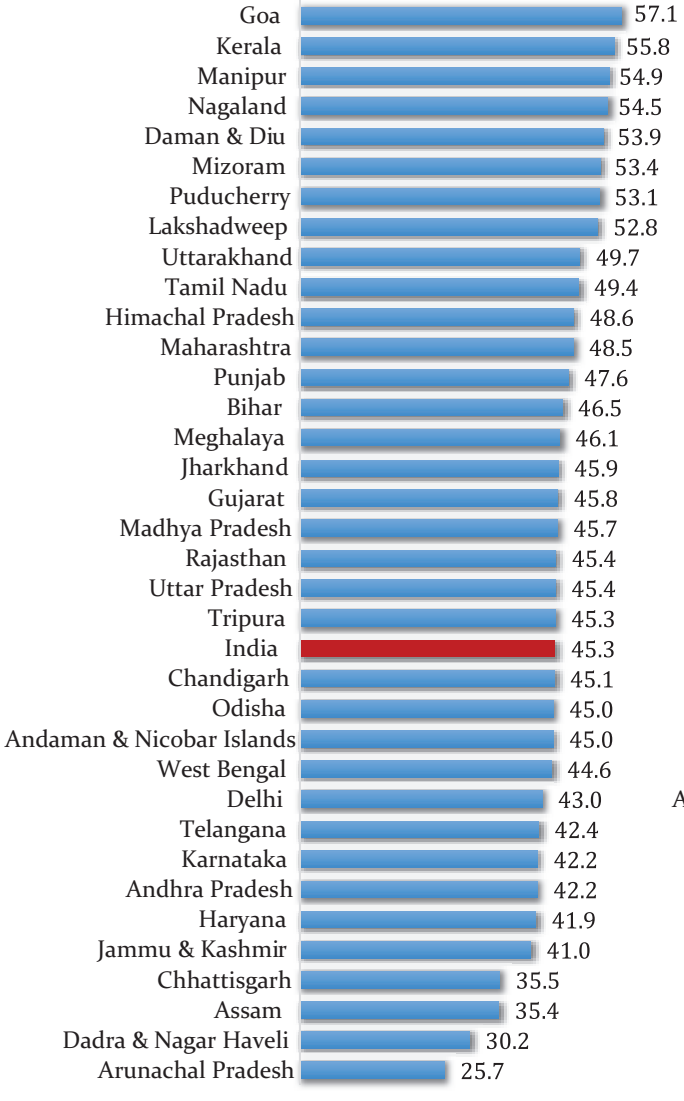
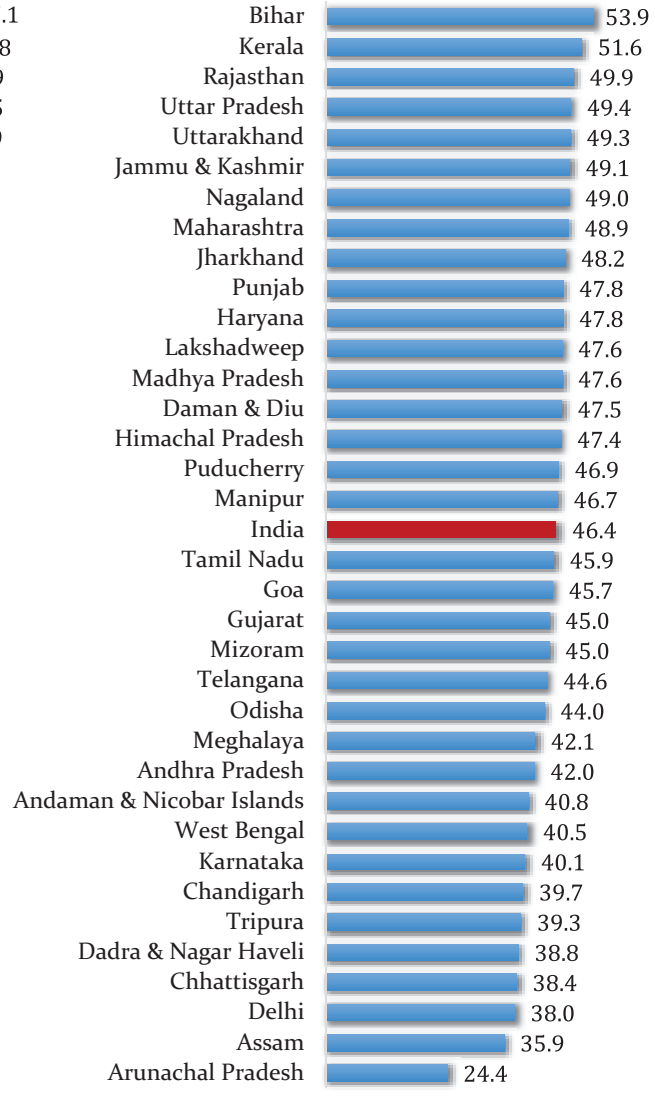


Figure 2.5 Percentage of age-eligible individuals age 60 and above, LASI, Wave 1, 2017-18



3. HOUSEHOLD POPULATION CHARACTERISTICS, HOUSING, AND ENVIRONMENT

In the Longitudinal Aging Survey in India (LASI), a household roster, referred to as 'cover screen', was canvassed among all sampled households to collect a set of key information about each member of the sampled household. The household cover screen included questions on socio-demographics: name of the household member, resident status, relationship to the head of the household, sex, age, educational attainment, and marital status. In addition, information was collected on the caste and religion of the head of the household and on the death of any household member in the two years prior to the survey. This included the name of the deceased, age, sex, year, and month of death, the main cause of death and the decedent's relationship with the head of the household.

The cover screen was completed for all sampled households including age-eligible and non-age-eligible households. The information collected from the cover screen is used in:

- identifying LASI age-eligible households and individuals age 45 years and above and their spouses, regardless of their age.

- identifying the key informant or the most knowledgeable person from the household who would provide information on the household's economic condition.

- establishing baseline household data to serve as a sampling frame for subsequent waves of LASI.

To complete the cover screen accurately, the terms **household, head of the household,** and **member of the household** are defined as follows. These definitions have been adopted from the Census of India.

Household: A 'household' constitutes a group of persons who normally live together and take their meals from a common kitchen unless exigencies of work prevent any of them from doing so. Persons in a household may be related, unrelated, or a mix of both.

Head of the household: 'A member of the household who is recognized to be so by the other household members as the head of the household'. This person may be acknowledged as the head on the basis of age (older), sex (generally, but not necessarily, male), and economic status (main provider) of the member, or any other reason. The household members determine who heads the household.

Member of the household: A household may comprise one person or a group of persons who usually live together and eat from the same kitchen.

Usual resident: A person who has lived at the place of enumeration (this house) for 6 months or more during the last year or intends to live there for at least 6 months in the next year. It also includes those members who were elsewhere at the time of the survey for a short period (less than 6 months) but intend to return in the future.

The resident status of the household members was identified based on the following inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
• A person who has lived at the place of enumeration (this house) for 6 months or more during the last year or intends to live there for at least 6 months in the next year. This may include a pregnant woman who has gone to her natal house for delivery and is expected to return to the household soon and 'rotating' parents, or older people who have lived in the household for more than 6 months during the last year.	• A person who has neither lived at the place of enumeration for 6 months during the last year nor intends to live there for at least 6 months in the future. • People living in institutions such as old age homes, mental asylums, ashrams, and religious homes, and incarcerated people (prison inmates). Institutions are excluded in the LASI sampling realm.

3.1 HOUSEHOLD POPULATION CHARACTERISTICS

3.1.1 Age-sex distribution

In the LASI survey, the total household population is 3,00,017 from 65,506 sampled households. Table 3.1 presents the distribution of the household population of India by five-year age groups and broad age groups by sex and residence. The age-sex distribution of the household population of India is depicted in a population pyramid (Figure 3.1). The proportion of population according to broad age groups is as follows: 27% are children age 0-14 years, 61% are the working-age population age 15-59 years, and 13% are the elderly, age 60 and above. The population pyramid illustrates that India's population is relatively young; however, the pyramid also shows a substantial decline in fertility in India over the last 10 years. The proportion of children aged 0-4 is 9% in rural areas as compared to 7% in urban areas. Urban India has a comparatively higher share (65%) of the working-age population in the age group 15-59 than has rural India (59%).

Figure 3.1 Population pyramid, India, LASI Wave 1, 2017-18

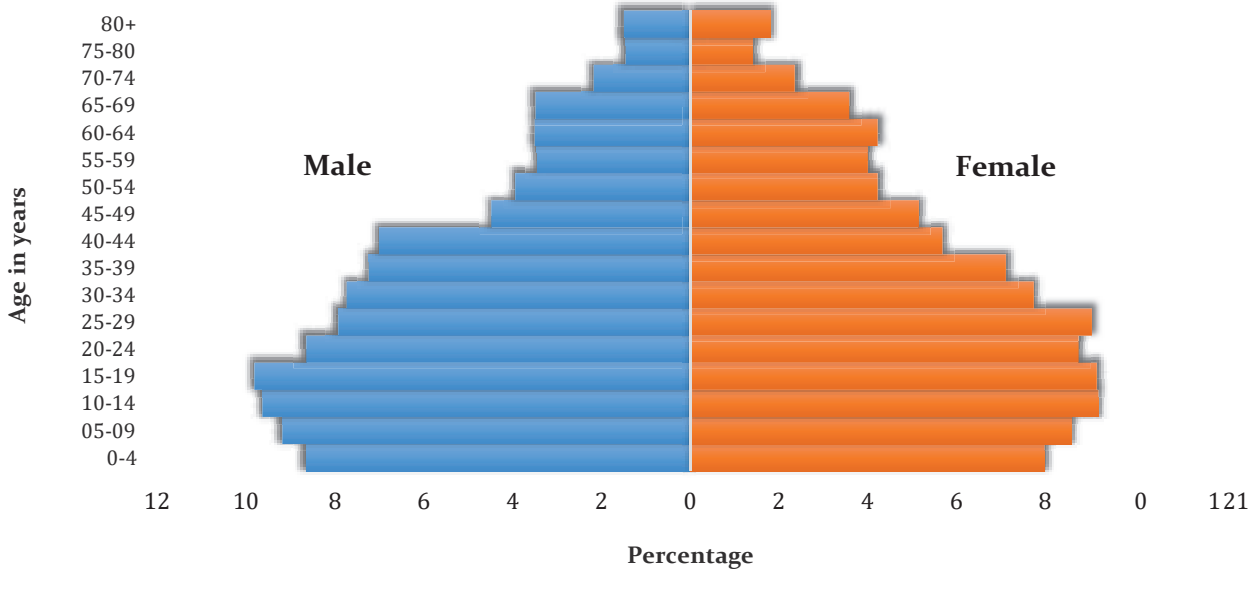


Table 3.1 Percent distribution of household population by sex and place of residence according to age group, India, LASI Wave 1, 2017-18

Age group	Rural			Urban			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Five-year age group									
0-4	9.0	8.7	8.8	7.9	6.6	7.3	8.7	8.0	8.3
5-9	9.9	9.3	9.6	7.8	7.2	7.5	9.2	8.6	8.9
10-14	10.4	9.6	10.0	8.2	8.4	8.3	9.7	9.2	9.4
15-19	10.0	9.9	10.0	9.4	7.6	8.5	9.8	9.2	9.5
20-24	8.7	8.7	8.7	8.5	8.8	8.6	8.7	8.8	8.7
25-29	8.0	8.1	8.1	7.8	11.0	9.3	7.9	9.1	8.5
30-34	6.9	7.2	7.0	9.6	8.9	9.3	7.8	7.7	7.8
35-39	6.8	6.6	6.7	8.1	8.1	8.1	7.3	7.1	7.2
40-44	6.5	5.4	5.9	8.2	6.2	7.2	7.0	5.7	6.4
45-49	4.3	5.0	4.7	4.8	5.6	5.2	4.5	5.2	4.8
50-54	3.7	4.0	3.9	4.4	4.7	4.5	4.0	4.2	4.1
55-59	3.3	4.1	3.7	3.7	3.8	3.8	3.5	4.0	3.7
60-64	3.6	4.2	3.9	3.3	4.2	3.7	3.5	4.2	3.9
65-69	3.6	3.6	3.6	3.3	3.5	3.4	3.5	3.6	3.5
70-74	2.4	2.4	2.4	1.8	2.2	2.0	2.2	2.4	2.3
75-79	1.4	1.5	1.5	1.6	1.2	1.4	1.5	1.4	1.4
80 +	1.5	1.7	1.6	1.6	2.1	1.8	1.5	1.8	1.7
Broad age group									
0-14	29.3	27.5	28.4	24.0	22.2	23.1	27.5	25.8	26.7
15-59	58.3	59.1	58.7	64.5	64.7	64.6	60.3	60.9	60.6
60+	12.4	13.4	12.9	11.6	13.2	12.4	12.1	13.4	12.7
Number	**96,384**	**95,998**	**1,92,383**	**54,804**	**52,825**	**1,07,629**	**1,51,188**	**1,48,823**	**3,00,012**

Table 3.2 Percent distribution of household population by broad age group according to place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Rural				Urban				Total			
	0-14	15-59	60+	Number	0-14	15-59	60+	Number	0-14	15-59	60+	Number
India	**28.4**	**58.7**	**12.9**	**1,92,383**	**23.1**	**64.6**	**12.4**	**1,07,629**	**26.7**	**60.6**	**12.7**	**3,00,012**
North												
Chandigarh	31.1	63.8	5.2	114	21.3	65.4	13.3	4,680	21.5	65.4	13.1	4,794
Delhi	19.5	71.3	9.2	113	25.4	66.3	8.3	5,960	25.3	66.4	8.3	6,073
Haryana	27.7	59.6	12.7	6,304	24.8	64.6	10.6	3,120	26.6	61.5	11.9	9,424
Himachal Pradesh	20.9	62.0	17.1	4,377	21.0	67.8	11.2	756	20.9	62.6	16.5	5,133
Jammu & Kashmir	28.6	60.9	10.5	5,949	20.3	66.5	13.2	1,866	26.2	62.5	11.3	7,815
Punjab	21.3	63.5	15.2	5,881	21.4	65.9	12.7	2,621	21.4	64.4	14.2	8,502
Rajasthan	31.7	56.8	11.5	8,400	25.0	64.7	10.3	2,480	30.0	58.8	11.2	10,880
Uttarakhand	26.8	58.6	14.7	4,002	26.4	62.4	11.2	1,786	26.7	59.8	13.5	5,788
Central												
Chhattisgarh	27.5	61.9	10.6	6,956	25.9	66.1	8.0	1,939	27.1	62.9	10.0	8,895
Madhya Pradesh	27.9	59.7	12.4	9,444	24.9	64.0	11.2	3,759	27.1	60.9	12.1	13,203
Uttar Pradesh	33.8	56.1	10.1	19,787	26.4	63.1	10.5	5,455	32.1	57.7	10.2	25,242
East												
Bihar	36.5	51.4	12.2	15,692	29.4	59.2	11.5	1,790	35.6	52.3	12.1	17,482
Jharkhand	31.6	55.0	13.4	8,985	25.7	62.7	11.6	2,335	30.2	56.9	12.9	11,320
Odisha	24.6	60.9	14.4	7,762	22.5	64.0	13.5	1,645	24.3	61.5	14.3	9,407
West Bengal	24.0	63.7	12.3	7,009	18.9	65.3	15.9	6,310	22.3	64.3	13.5	13,319
Northeast												
Arunachal Pradesh	33.0	60.6	6.5	3,992	24.9	71.5	3.5	1,139	31.0	63.2	5.8	5,131
Assam	27.9	62.5	9.5	8,971	21.1	67.0	12.0	1,154	26.9	63.2	9.9	10,125
Manipur	27.4	60.0	12.6	3,663	21.6	62.2	16.3	1,645	25.3	60.8	13.9	5,308
Meghalaya	38.1	54.9	7.1	5,089	24.9	67.6	7.5	887	35.4	57.5	7.1	5,976
Mizoram	29.9	58.7	11.4	2,824	27.2	62.8	10.0	2,997	28.5	60.9	10.7	5,821
Nagaland	28.2	58.4	13.5	2,956	24.2	63.7	12.2	1,482	26.9	60.1	13.0	4,438
Tripura	24.4	62.7	12.9	3,294	20.1	67.2	12.7	1,051	23.2	64.0	12.8	4,345
West												
Dadra & Nagar Haveli	26.1	63.5	10.4	3,292	24.4	69.5	6.1	2,605	25.0	67.3	7.7	5,897
Daman & Diu	18.6	67.4	14.0	1,331	20.2	66.7	13.1	3,526	20.0	66.8	13.2	4,857
Goa	21.6	64.6	13.8	2,174	19.9	64.4	15.7	2,957	20.5	64.4	15.1	5,131
Gujarat	26.5	61.3	12.2	6,278	22.0	63.5	14.5	4,404	24.5	62.3	13.2	10,682
Maharashtra	23.7	59.0	17.3	6,708	23.4	63.8	12.8	8,500	23.5	61.3	15.2	15,208
South												
Andaman & Nicobar Islands	22.6	64.8	12.6	2,804	23.7	66.5	9.9	1,656	23.0	65.5	11.5	4,460
Andhra Pradesh	21.7	63.2	15.1	6,011	22.5	64.6	12.9	2,590	22.0	63.6	14.4	8,601
Karnataka	24.5	61.3	14.2	6,153	22.3	66.2	11.6	3,130	23.6	63.3	13.1	9,283
Kerala	21.6	57.7	20.7	3,824	20.7	60.8	18.5	3,939	21.2	59.3	19.6	7,763
Lakshadweep	24.9	65.9	9.2	1,069	21.9	65.0	13.1	3,801	22.3	65.1	12.6	4,870
Puducherry	21.7	64.7	13.6	1,468	21.3	61.3	17.4	3,107	21.4	62.4	16.3	4,575
Tamil Nadu	20.1	62.5	17.4	4,250	18.7	65.8	15.5	7,110	19.4	64.2	16.4	11,360
Telangana	23.6	61.5	14.9	5,457	24.9	63.9	11.2	3,447	24.2	62.5	13.4	8,904

Figure 3.2 Percentage of elderly age 60 and above of household population, states/UTs, LASI Wave 1, 2017-18

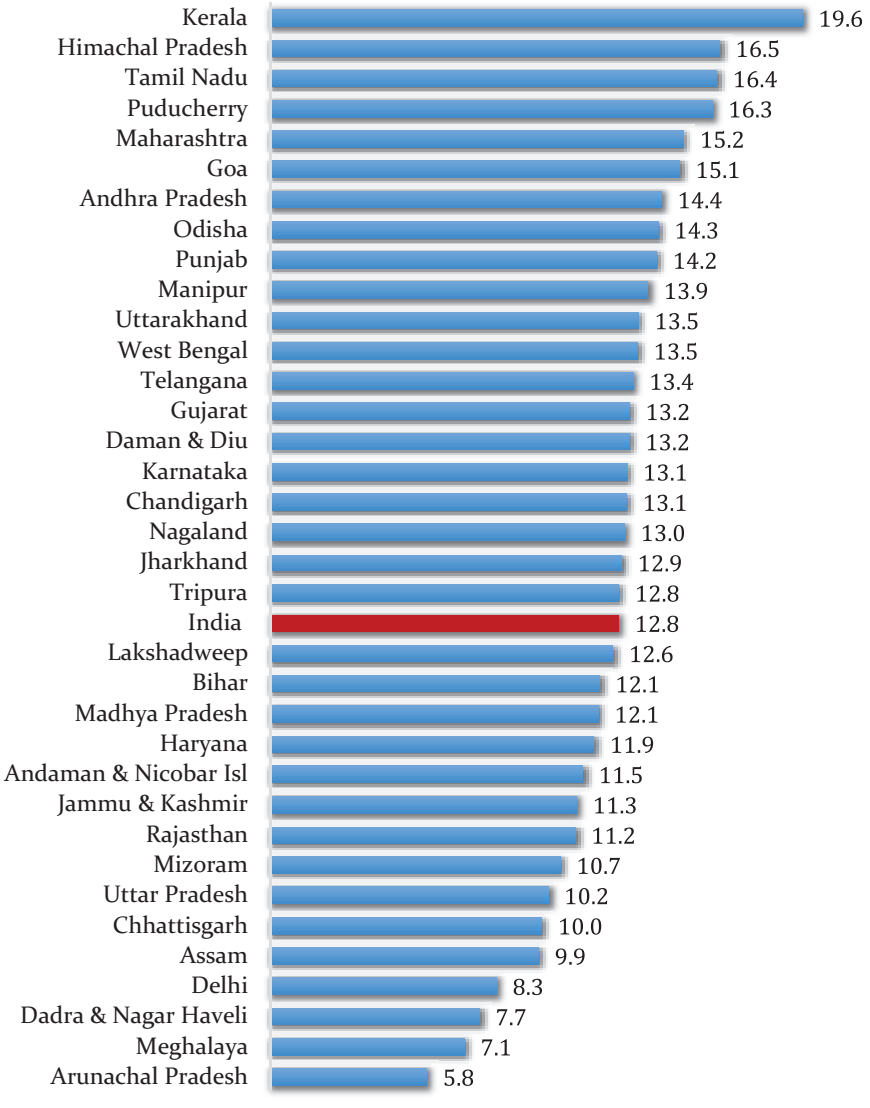


Figure 3.2 shows that of the total household population, the percentage of elderly age 60 and above is comparatively higher in the demographically advanced states of Kerala (20%), Himachal Pradesh (17%), Tamil Nadu (16%), Puducherry (16%), and Goa (15%), and this proportion is lowest in Arunachal Pradesh (6%). In 15 states/union territories, the proportion of elderly is less than the national average of 13%.

3.1.2 Sex ratio and dependency ratio

Figures 3.3 and 3.4 presents the sex ratio and dependency ratio in India according to place of residence.

The overall sex ratio of the household population of India (Figure 3.3) is 984 females per 1000 males. The sex ratio is higher in rural India (996) compared to that in urban India (964). The sex ratio in the children's age group 0-14 years is (932), which is higher in rural (941) than in urban (912) India and is in favour of males. The sex ratio of the elderly population in age 60 and above is 1065; higher in urban (1084) than in rural (1055) India and in favour of females. For the working age group of 15-59 years, the sex ratio is higher in rural areas (1011 females per 1000 males) than the ratio in urban areas (963) with a national average of 993.

The dependency ratio is an indicator of the demographic dependency in a population; that is, the number of 'dependents' needs to be supported by the working-age population, representing the relationship between the economically dependent and the economically active. The ratio specifies the potential effects of changes in the population age structure on social and economic development, pointing to broader trends in need of social support. The dependency ratio is defined as the ratio of the number of children (0-14 years) and older persons (60 and above) per 100 working-age population 15-59 years. The dependency ratio is classified as 'young dependency ratio' (0-14), 'old-age dependency ratio' (60 and above) and 'total dependency ratio' (young and old dependency ratio). The overall dependency ratio in India is 62 per 100 working-age population with young dependency ratio of 19 (Figure 3.4). The overall dependency ratio is slightly higher in rural areas (67 per 100 working-age population) than in urban areas (54 per 100 working-age population). The young dependency ratio is somewhat lower (36 per 100 working-age population) in urban areas than in rural areas (47 per 100 working-age population); on the contrary, the old-age dependency ratio is higher in rural than in urban India.

Figure 3.5 presents the percentage of age-eligible (45 years and above) population enrolled for the Aadhaar card. The Aadhaar card is a 12-digit unique identification number containing the demographic and biometric information of an individual and is issued to the residents of India. The Aadhaar card is issued by the Unique Identification Authority of India (UIDAI), Planning Commission, Government of India. In the LASI survey, information on enrolment for an Aadhaar card was collected from all age-eligible older adults age 45 years and above and their spouses, irrespective of their age. Overall, 94% of the older adults age 45 and above in India possess the Aadhaar card: 95% in urban India compared to 93% in rural India.

Figure 3.3 Sex ratio of household population by age group and place of residence, India, LASI Wave 1, 2017-18

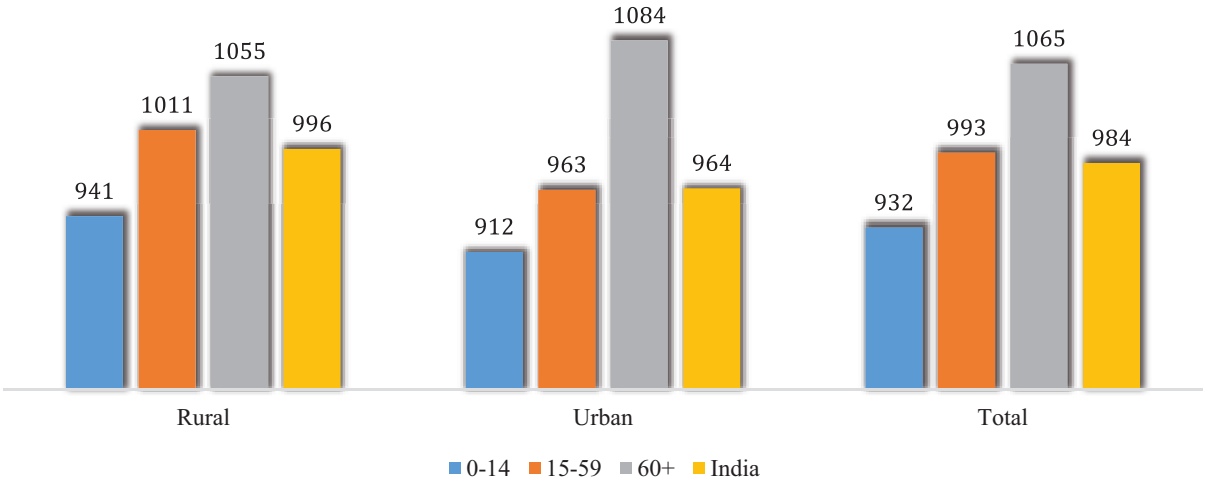


Figure 3.4 Dependency ratio of household population by place of residence, India, LASI Wave 1, 2017-18

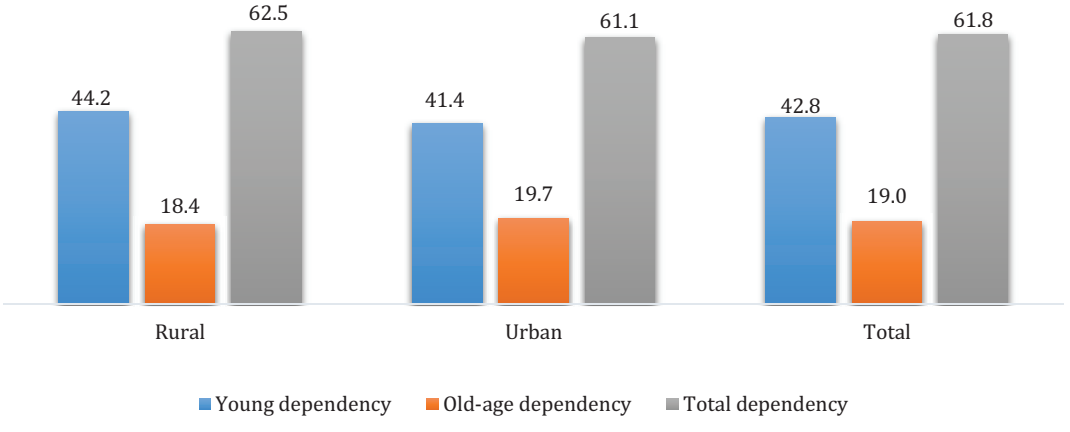


Figure 3.5 Percentage of older adults age 45 and above, including spouses regardless of their age, with Aadhaar card by sex and place of residence, India, LASI Wave 1, 2017-18

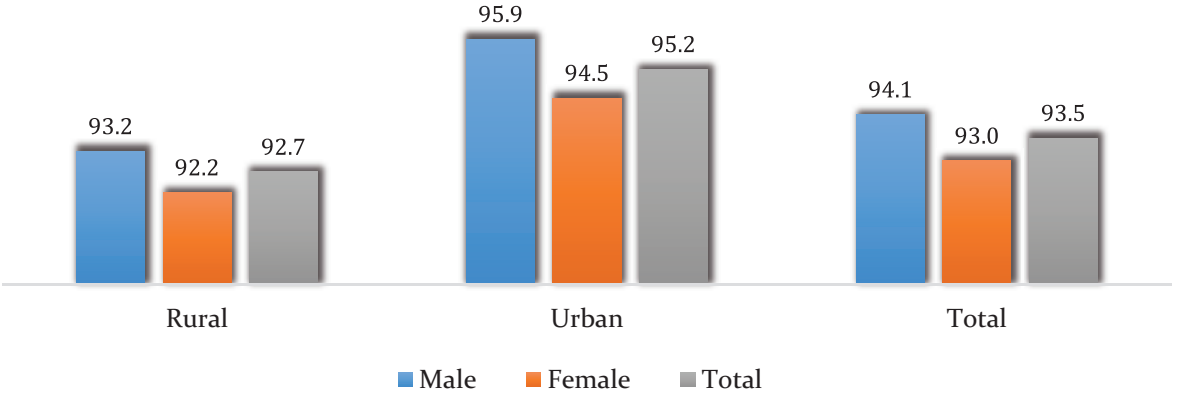


Table 3.3 Sex ratio and dependency ratio of household population (all ages and elderly), states/UTs, LASI Wave 1, 2017-18

States/Union Territories	Sex Ratio				Dependency Ratio		
	0-14	15-59	60+	All ages	Young	Old	Total
India	**932**	**993**	**1066**	**984**	**42.8**	**19.0**	**61.8**
North							
Chandigarh	836	862	1085	879	35.3	17.1	52.4
Delhi	904	887	971	898	38.0	3.7	51.7
Haryana	837	884	1151	898	42.8	18.2	61.0
Himachal Pradesh	866	1055	1033	1008	33.3	22.1	55.4
Jammu & Kashmir	936	973	867	952	40.9	15.8	56.7
Punjab	845	930	947	913	33.8	20.9	54.7
Rajasthan	930	992	1159	990	50.3	18.5	68.8
Uttarakhand	923	1085	1100	1041	44.6	21.0	65.6
Central							
Chhattisgarh	1032	1013	991	1016	42.9	15.5	58.4
Madhya Pradesh	942	924	1070	944	47.7	18.3	66.0
Uttar Pradesh	914	973	926	949	57.2	16.0	73.2
East							
Bihar	924	1062	933	995	69.4	21.1	90.4
Jharkhand	929	987	980	968	53.7	19.7	73.4
Odisha	960	1125	1067	1074	39.3	22.2	61.5
West Bengal	992	1003	1014	1002	33.7	19.8	53.5
Northeast							
Arunachal Pradesh	946	1015	817	980	48.4	10.5	58.9
Assam	987	1030	1072	1022	43.6	14.8	58.4
Manipur	1040	1117	1210	1108	42.1	21.1	63.1
Meghalaya	970	1028	1464	1034	60.8	12.8	73.6
Mizoram	942	1034	986	1002	48.1	16.2	64.3
Nagaland	880	1013	1006	975	44.6	23.8	68.4
Tripura	983	1020	1008	1010	36.6	18.8	55.4
West							
Dadra & Nagar Haveli	864	504	1270	853	39.1	13.5	52.6
Daman & Diu	823	701	1278	774	28.9	15.9	44.8
Goa	1015	1010	1141	1030	31.5	22.9	54.3
Gujarat	880	985	1169	977	40.1	18.7	58.9
Maharashtra	924	971	1133	980	37.7	21.3	59.0
South							
Andaman & Nicobar Islands	1131	970	932	998	33.4	19.4	52.8
Andhra Pradesh	958	1052	1037	1029	34.8	19.4	52.8
Karnataka	935	987	1112	989	38.6	20.8	59.4
Kerala	1018	1122	1203	1113	34.9	29.8	64.7
Lakshadweep	867	1108	1057	1043	34.3	17.9	52.3
Puducherry	917	1118	1299	1096	33.3	23.5	56.8
Tamil Nadu	927	1014	1213	1022	30.4	22.1	52.5
Telangana	934	1049	1084	1025	37.4	20.2	57.6

Table 3.3 presents the sex ratio of the household population by broad age groups in states/UTs. The sex ratio of the household population is comparatively higher in the states of Manipur (1108), Kerala (1113), Puducherry (1096), and Tamil Nadu (1022), and lower in the states/UTs of Dadra & Nagar Haveli (853) and Daman & Diu (774). In 17 states/UTs, the sex ratio is more than 1000, while 13 states have sex ratio ranging from 900 to 1000 and five states have a sex ratio less than 900. The sex ratio among the elderly, age 60 and above, is greater than 1200 in the states/UTs of Puducherry (1299), Daman & Diu (1278), Tamil Nadu (1213), Manipur (1210), and Dadra & Nagar Haveli (1270). The sex ratio of the elderly population age 60 and above is lower in the states/UTs of Arunachal Pradesh (817), Jammu & Kashmir (867), Uttar Pradesh (926), Andaman & Nicobar Islands (932), Bihar (933) and Mizoram (986).

Table 3.3 also presents the dependency ratio across states/UTs. The overall dependency ratio is the highest in Bihar (90), followed by Jharkhand (73) and Uttar Pradesh (73), with the lowest in Dadra & Nagar Haveli (45). Twelve states/UTs have dependency ratio higher than the national average of 62. The young dependency ratio is comparatively higher in the demographically lagging states of Bihar (69), Uttar Pradesh (57), Jharkhand (54), and Rajasthan (50). The dependency ratio of the young population is comparatively lower (range of 30 to 40) in the demographically advanced southern and western Indian states. Other states/UTs from northern (Chandigarh, Delhi, Himachal Pradesh, and Punjab), eastern (Odisha, and West Bengal), and northeast (Tripura) India also have lower young dependency ratio. The old age dependency ratio is highest in Kerala (30) followed by Puducherry (24), Himachal Pradesh (22), and Tamil Nadu (22). In 16 states/UTs, the old age dependency ratio is greater than the national average of 19.

3.1.3 Household size

Table 3.4 presents the household size in rural and urban India by states/UTs. The mean household size in India is 5.7 persons per household; 40% of households have 4-5 members, 16% have 6 members, 28% have 7 and more members, and only 1% are single-member households. The households in urban India are slightly smaller (5.2) in size than those in rural India (5.9). A lesser proportion of urban households (35%) have 6 or more members residing than do rural households (48%).

The mean household size is greater than the national average in 11 states/UTs. The mean household size is as high as 7.3 in Lakshadweep and as low as 4.3 in Tamil Nadu. The mean household size is 6 or more in the states of Meghalaya (6.8), Uttar Pradesh (6.6), Bihar (6.6), Jammu & Kashmir (6.3), Haryana (6.3), Jharkhand (6.0), Mizoram (6.0), Gujarat (6.1), Rajasthan (6.1), and Uttarakhand (5.8).

Table 3.4 Percent distribution of households by household size and mean household size according to place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Household size							Mean household size	Number of HH members
	1	2	3	4	5	6	7+		
India	**1.0**	**5.2**	**9.8**	**19.7**	**20.2**	**15.7**	**28.3**	**5.7**	**3,00,017**
Place of residence									
Rural	1.1	5.2	8.3	17.3	19.7	16.3	32.2	5.9	1,92,386
Urban	0.8	5.3	13.1	24.8	21.3	14.5	20.3	5.2	1,07,631
States/UTs									
North									
Chandigarh	0.7	5.2	9.9	23.3	21.9	19.7	19.4	5.4	4,794
Delhi	0.8	3.0	8.4	20.7	24.9	15.8	26.2	5.6	6,073
Haryana	0.7	2.5	6.3	15.8	20.5	17.8	36.4	6.3	9,424
Himachal Pradesh	0.7	3.2	9.5	17.9	21.2	23.7	23.9	5.7	5,133
Jammu & Kashmir	0.2	1.9	6.0	12.7	21.8	19.2	38.2	6.3	7,816
Punjab	0.5	3.4	9.5	18.7	22.8	18.7	26.4	5.7	8,502
Rajasthan	0.8	4.3	7.2	15.0	19.8	18.9	34.0	6.1	10,880
Uttarakhand	1.5	5.3	10.6	17.2	20.5	14.6	30.3	5.8	5,788
Central									
Chhattisgarh	1.3	5.9	7.5	18.7	21.2	17.2	28.3	5.6	8,895
Madhya Pradesh	0.9	5.1	9.2	19.2	21.1	15.7	28.8	5.6	13,203
Uttar Pradesh	0.6	3.3	5.5	12.8	18.5	16.6	42.7	6.6	25,242
East									
Bihar	0.6	4.2	5.8	12.2	17.4	16.2	43.7	6.6	17,482
Jharkhand	0.6	4.7	7.4	15.9	20.4	18.6	32.5	6.0	11,320
Odisha	1.3	6.7	13.5	24.7	21.1	14.2	18.4	5.0	9,407
West Bengal	1.0	6.2	15.4	22.1	21.6	13.6	20.2	5.1	13,320
Northeast									
Arunachal Pradesh	2.5	6.3	9.9	19.1	20.4	15.9	26.0	5.3	5,132
Assam	1.1	3.6	12.9	22.7	22.5	16.2	21.1	5.3	10,125
Manipur	1.1	4.8	10.0	18.9	20.7	17.7	26.8	5.6	5,308
Meghalaya	0.5	1.9	6.1	11.3	15.9	16.8	47.5	6.8	5,976
Mizoram	1.1	4.3	6.9	13.8	18.7	19.2	36.0	6.0	5,821
Nagaland	3.2	8.4	15.7	19.4	22.6	12.5	18.2	4.8	4,438
Tripura	1.0	7.0	17.3	26.8	18.9	12.5	16.6	4.9	4,345
West									
Dadra & Nagar Haveli	0.8	6.1	11.1	22.1	20.0	13.4	26.5	5.4	5,897
Daman & Diu	2.0	6.9	14.6	21.3	18.4	11.3	25.6	5.3	4,857
Goa	1.1	4.3	11.2	27.6	21.8	15.2	18.9	5.2	5,132
Gujarat	0.8	4.4	7.2	16.7	19.2	17.8	33.9	6.1	10,682
Maharashtra	1.0	5.5	8.7	19.5	20.8	15.8	28.7	5.7	15,208
South									
Andaman & Nicobar Islands	1.2	6.5	15.7	24.3	19.4	14.5	18.4	5.1	4,460
Andhra Pradesh	1.9	10.5	12.0	31.2	20.0	12.8	11.7	4.6	8,601
Karnataka	0.7	4.6	12.6	24.0	20.9	15.1	22.2	5.6	9,284
Kerala	1.2	6.7	13.3	23.9	22.9	13.7	18.2	5.0	7,763
Lakshadweep	1.0	2.6	7.2	11.3	14.7	12.9	50.3	7.3	4,870
Puducherry	1.9	9.8	13.7	31.6	21.8	11.4	9.8	4.5	4,575
Tamil Nadu	3.1	11.8	15.5	32.8	18.3	10.0	8.6	4.3	11,360
Telangana	1.9	8.4	12.5	26.5	20.6	13.3	16.8	5.1	8,904

3.1.4 Literacy rate and educational attainment

In the LASI survey, information on years of schooling and literacy was collected for each household member age 6 and above. Overall, 69% of females and 84% of males age 6 and above in India have ever attended school and 31% of females and 16% of males have never attended school. Seventeen percent of females completed 12 or more years of schooling compared to 23% of males. The percentage of household population with no schooling is higher in rural India than in urban India. The pattern is the same for both males and females. The proportion of both the male and female population that has never attended school shows an increase with age. A higher proportion of elderly men age 60 and above attended school than did elderly women (Table 3.5).

The median years of schooling is 8 years, which is slightly higher among males (9 years) than among females (8 years). The median years of schooling is higher in urban areas (10 years) than in rural areas (8 years). Median years of schooling show a declining trend with age, with a median of 10 years for individuals aged 15-24 and 8 years for those aged 75 and above. Among older adults age 45-59, the median years of schooling is 9 years among men compared to 8 years among women.

The literacy rate in India is 85% among males and 69% among females. The literacy rate was higher in urban India than rural India for both males and females. Among elderly age 75+, the literacy rate is 62% for males and 27% for females, whereas the literacy rate is 73% and 45% among male and female older adults (45-59 years) respectively.

The literacy rate is defined as the number of literate population age 6 years and above of the total population age 6 years and above. This is referred to as the 'effective literacy rate', which is calculated as follows:

Effective literacy rate = (Number of literate persons age 6 and above / population age 6 and above) x 100

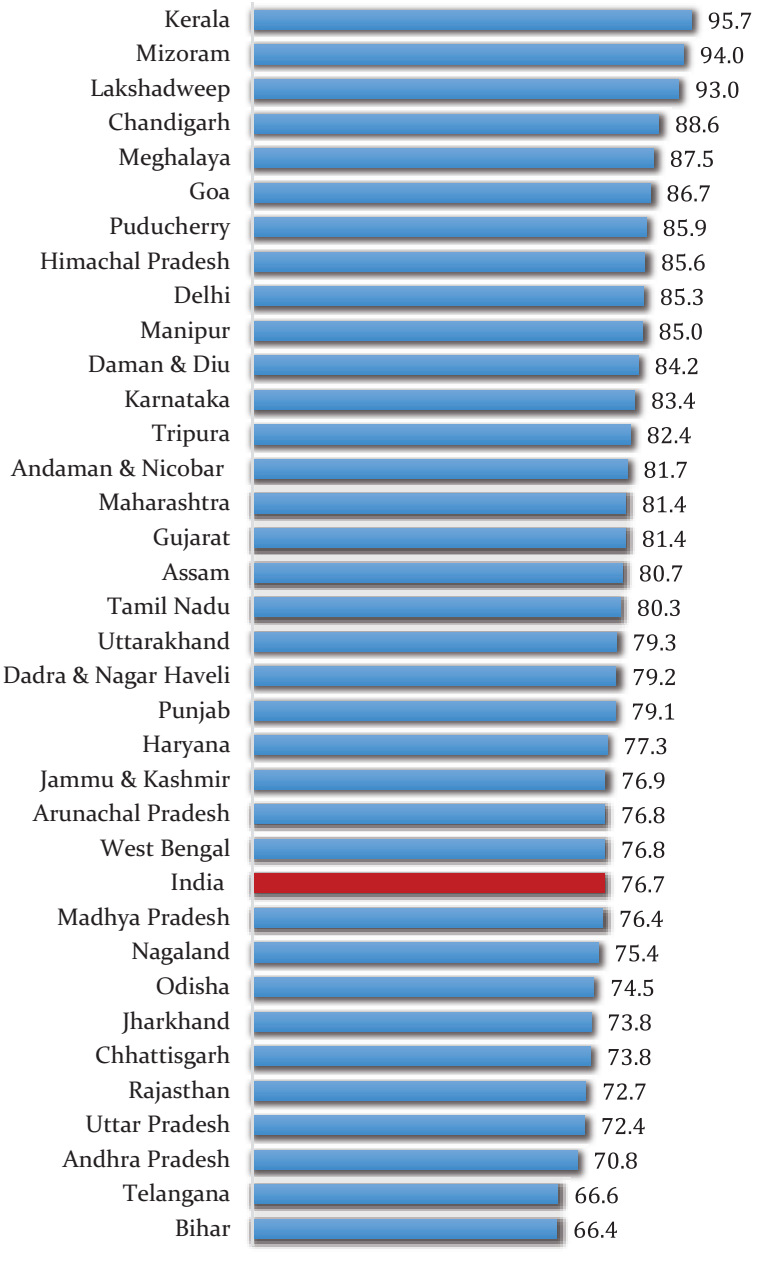
Table 3.5 Literacy rate, median years of schooling, and educational attainment of household population, India, LASI Wave 1, 2017-18

Background characteristics	Literacy rate	Median years of schooling completed	Educational attainment1					
			No schooling	<5 years complete	5-7 years complete	8-9 years complete	10-11 years complete	12 or more years complete
Male								
Age								
<14	94.0	4.0	6.0	51.7	30.4	11.3	0.6	0.0
15-24	94.5	10.0	5.5	3.1	11.1	22.9	22.0	35.4
25-44	86.3	10.0	13.7	6.8	14.5	17.1	15.1	32.9
45-59	72.7	9.0	27.3	10.6	14.3	13.5	13.4	20.9
60-75	63.1	8.0	36.9	12.3	14.7	10.0	12.1	14.0
75+	61.5	8.0	38.4	14.8	12.8	5.6	12.4	16.1
Total	84.4	9.0	15.6	15.8	16.8	15.6	13.1	23.1
Place of residence								
Rural	81.1	8.0	18.9	17.5	18.2	17.1	12.0	16.3
Urban	91.0	10.0	9.0	12.6	13.8	12.7	15.3	36.4
Female								
Age								
<14	93.5	4.0	6.5	49.4	30.9	12.3	0.8	0.1
15-24	91.0	10.0	9.0	3.3	10.3	22.4	22.0	33.0
25-44	70.7	10.0	29.4	6.8	14.4	12.8	11.8	24.9
45-59	44.8	8.0	55.3	9.0	11.7	7.4	7.3	9.5
60-75	31.8	7.0	68.2	8.5	8.8	4.6	5.7	4.2
75+	26.7	7.0	73.3	8.3	5.8	5.3	6.3	1.0
Total	69.0	8.0	31.0	14.3	15.2	12.6	10.3	16.7
Place of residence								
Rural	62.1	8.0	37.9	15.3	15.4	12.9	8.4	10.1
Urban	83.0	10.0	17.0	12.1	14.6	12.0	14.3	30.0
Total								
Age								
<14	93.7	4.0	6.3	50.6	30.7	11.8	0.7	0.0
15-24	92.8	10.0	7.2	3.2	10.7	22.6	22.0	34.2
25-44	78.6	10.0	21.4	6.8	14.4	15.0	13.4	29.0
45-59	58.0	9.0	42.0	9.8	12.9	10.3	10.2	14.9
60-75	46.8	8.0	53.2	10.3	11.6	7.1	8.8	8.9
75+	43.5	8.0	56 .4	11.4	9.2	5.5	9.2	8.3
Total	76.7	8.0	23.3	15.1	16.0	14.1	11.7	19.9
Place of residence								
Rural	71.6	8.0	28.4	16.4	16.8	15.0	10.2	13.2
Urban	87.0	10.0	13.0	12.4	14.2	12.4	14.8	33.3

Note

[1] Education attainment is categorised as: No schooling, <5 years: Less than primary school completed, 5-7 years: Primary school completed, 8-9 years: Middle school completed, 10-11 years: Matriculation/secondary school and above completed, 12 or more years: Intermediate/higher secondary/senior secondary and above completed.

Figure 3.6 Literacy rate of household population, states/UTs, LASI Wave 1, 2017-18



Note
The literacy rate is defined as the number of literate population age 6 years and above of the total population age 6 years and above.

Kerala has the highest literacy rate (96%) followed by Mizoram (94%), Lakshadweep (93%), and Chandigarh (89%), while the literacy rate is the lowest in the states of Uttar Pradesh (72%), Andhra Pradesh (71%), Telangana (67%), and Bihar (66%) (Figure 3.6).

Table 3.6 Percent distribution of households by religion and caste/tribe of head of the household according to place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Religion					Caste/Tribe				Number of head of the household
	Hindu	Muslim	Christian	Sikh	Buddhist/Jain/ Jewish/Parsi	Scheduled caste	Scheduled tribe	Other backward class	None of them	
India	**79.6**	**14.2**	**3.1**	**1.6**	**1.5**	**21.0**	**9.0**	**47.3**	**22.7**	**65,512**
Rural	82.2	11.1	3.4	1.8	1.5	24.9	12.0	44.1	18.9	40,896
Urban	74.6	20.1	2.5	1.1	1.7	13.5	3.2	53.4	29.9	24,616
States/UTs										
North										
Chandigarh	75.6	4.8	0.9	18.0	0.7	22.5	0.7	18.8	58.0	1,064
Delhi	78.7	15.6	0.6	3.9	1.3	27.4	1.1	22.9	48.7	1,270
Haryana	88.5	8.1	0.0	2.9	0.5	24.4	0.5	33.2	41.9	1,820
Himachal Pradesh	98.0	0.6	0.1	1.0	0.3	29.9	5.5	16.9	47.8	1,082
Jammu & Kashmir	27.0	72.2	0.1	0.7	0.1	10.5	5.2	10.9	73.4	1,435
Punjab	34.2	0.7	1.1	63.7	0.3	41.6	1.0	21.1	36.3	1,769
Rajasthan	93.7	3.8	0.0	1.5	1.0	24.0	14.6	42.3	19.1	2,195
Uttarakhand	84.3	13.9	0.6	0.8	0.4	20.1	3.9	19.4	56.7	1,256
Central										
Chhattisgarh	96.4	1.9	0.9	0.2	0.6	11.5	35.4	45.4	7.6	1,943
Madhya Pradesh	89.0	8.8	0.3	0.2	1.7	17.9	15.4	50.6	16.2	2,785
Uttar Pradesh	83.1	16.1	0.1	0.2	0.6	29.1	1.4	43.6	25.9	4,720
East										
Bihar	80.0	19.8	0.0	0.0	0.2	22.3	3.3	54.8	19.7	3,325
Jharkhand	83.9	9.4	4.4	0.1	2.2	18.4	15.2	51.4	15.1	2,237
Odisha	87.4	0.9	11.6	0.0	0.0	19.4	30.1	33.9	16.5	2,311
West Bengal	75.0	23.1	0.1	0.0	1.8	36.5	6.3	14.7	42.5	3,205
Northeast										
Arunachal Pradesh	23.6	1.2	52.0	0.0	23.2	7.2	89.8	1.5	1.4	1,163
Assam	72.3	25.0	2.0	0.0	0.7	12.0	20.8	47.5	19.6	2,281
Manipur	43.0	9.5	33.0	0.0	14.5	8.9	34.8	25.8	30.5	1,180
Meghalaya	11.6	0.3	84.2	0.0	4.0	2.6	96.4	0.3	0.7	1,066
Mizoram	1.1	0.5	98.4	0.0	0.1	0.8	98.6	0.6	0.0	1,188
Nagaland	6.3	12.3	81.3	0.0	0.1	13.1	85.3	0.4	1.2	1,207
Tripura	87.1	0.5	5.2	0.0	7.3	28.1	34.5	25.3	12.1	1,098
West										
Dadra & Nagar Haveli	88.0	6.6	3.7	0.2	1.6	3.1	41.3	29.1	26.5	1,263
Daman & Diu	91.7	5.5	1.7	0.1	1.2	16.4	15.1	43.5	25.0	1,183
Goa	78.8	5.5	15.4	0.1	0.1	6.8	14.9	25.4	53.0	1,181
Gujarat	86.1	12.4	0.9	0.2	0.4	10.9	18.6	43.7	26.9	2,144
Maharashtra	77.7	12.7	0.8	0.0	8.8	17.7	9.7	38.2	34.4	3,300
South										
Andaman & Nicobar Islands	62.4	7.6	29.9	0.1	0.1	20.3	23.9	27.0	28.8	1,090
Andhra Pradesh	81.3	5.8	12.4	0.0	0.5	22.4	6.3	46.3	25.0	2,264
Karnataka	79.9	18.8	0.8	0.0	0.5	13.3	3.7	71.1	11.9	2,023
Kerala	59.0	22.2	18.6	0.0	0.2	9.1	2.7	56.0	32.2	1,877
Lakshadweep	0.5	98.8	0.7	0.0	0.0	1.6	92.3	5.3	0.8	893
Puducherry	91.1	4.6	4.4	0.0	0.0	17.9	1.0	74.0	7.1	1,173
Tamil Nadu	89.5	3.3	7.1	0.0	0.2	18.1	0.9	79.2	1.9	3,249
Telangana	83.3	12.0	3.8	0.4	0.5	19.9	6.4	58.5	15.3	2,272

3.1.5 Religion, caste, and other characteristics of head of the household

Table 3.6 presents the percent distribution of households by religion and caste/tribe of the household head according to place of residence across states/UTs. Four-fifths (80%) of the household heads are Hindu, 14% are Muslim, 3% are Christians, 2% are Sikh, and 2 % are Buddhist/Jain/Jewish/Parsi. The proportion of Muslim headed households is higher in urban areas (20%) than in rural (11%) areas; whereas, the proportion of Christian household heads is higher in rural areas (3%) than in urban areas (2%). More than 90% of heads of household are Hindu in the states of Himachal Pradesh (98%), Chhattisgarh (96%), Rajasthan (94%), and Daman & Diu (92%). Muslim-headed households are predominant in Lakshadweep (99%) and Jammu & Kashmir (72%). Christian-headed households are most common in the states of Mizoram (98%), Nagaland (81%), Meghalaya (84%), and Arunachal Pradesh (52%). In India, 21% of household heads are Scheduled caste, 9% are Scheduled tribe, 47% are Other backward class and 23% are other caste. The percentage of Scheduled caste household heads varies from 42% in Punjab to 0.8% in Mizoram.

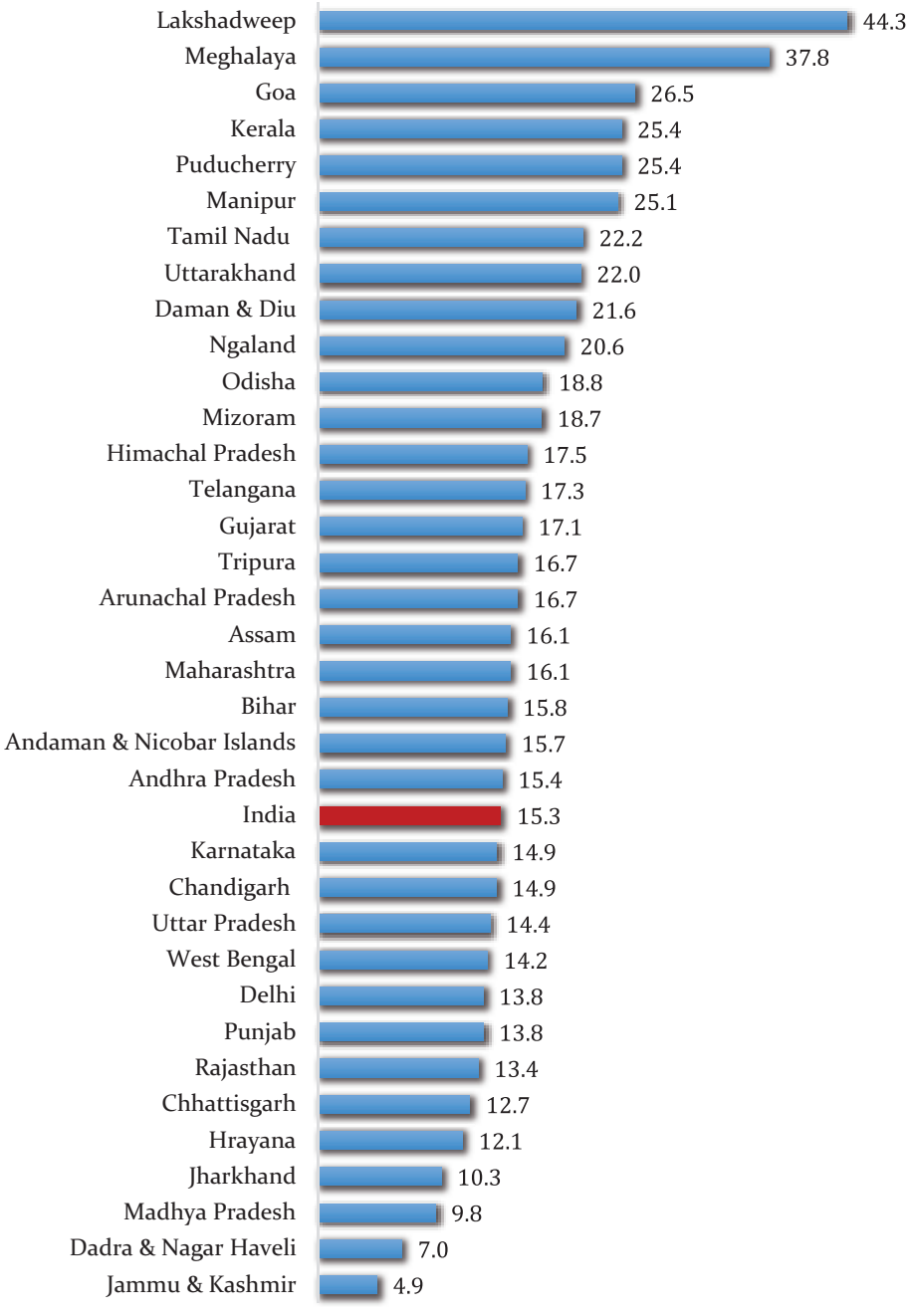
The majority of households surveyed in LASI are headed by males (85%) compared to only 15% by females (Table 3.7). This proportion does not vary by rural-urban residence. Eighty-two percent of household heads are currently married and 15% are widowed. Thirty-one percent of heads of household never attended school while 31% completed 10 or more years of schooling. Fifty-one percent of household heads from urban areas completed 10 or more years of schooling while only 20% of rural household heads completed 10 and more years of schooling. The median years of schooling is 10 years among urban household heads and 8 years among household heads from rural areas.

Table 3.7 Percent distribution of head of the households by sex, marital status, educational attainment, and median years of schooling according to place of residence, India, LASI Wave 1, 2017-18

Characteristics of head of the household	Place of residence		
	Rural	Urban	Total
Household headship			
Male	84.6	85.1	84.7
Female	15.4	14.9	15.3
Marital status of head of household			
Never married	1.3	3.2	2.0
Currently married	82.1	81.3	81.8
Widowed	15.5	14.2	15.0
Others	1.1	1.3	1.2
Educational attainment of head of household			
No schooling	38.2	18.2	31.2
Less than 5 years complete	11.6	7.9	10.3
5-9 years complete	30.4	23.4	27.9
10 or more years complete	19.9	50.6	30.5
Total	100.0	100.0	100.0
Median years of schooling	8.0	10.0	9.0
Number of households	**40,894**	**24,612**	**65,506**

Figure 3.7 shows the percentage of female-headed households by states/UTs. The percentage of female-headed households is higher in the states/UTs of Lakshadweep (44%) and Meghalaya (38%), followed by Goa (27%), Puducherry (25%), and Kerala (25%). Female headship is lower in the states of Bihar (16%), Uttar Pradesh (14%), Rajasthan (13%), Chhattisgarh (13%), Jharkhand (10%), and Madhya Pradesh (10%), and it is lowest in Jammu & Kashmir (5%).

Figure 3.7 Percentage of female-headed households, states/UTs, LASI Wave 1, 2017-18



3.1.6 Household deaths in the last 2 years

In the LASI survey, information was collected on the death of any usual member of the household during the two years prior to the survey. Death rate is calculated as the number of deaths per 1000 mid-year population during the two years prior to the survey. As the reference period in the LASI survey is the two years preceding the survey, the annual average number of deaths was calculated from the total number of deaths. An adjustment factor of 0.015 was used to interpolate the total population at mid-year of the survey period.

Table 3.8 presents the death rates of broad age-groups, by the states/UTs of India. The death rate is 7.7 per 1000 population in India during 2017-18. Among states/UTs, the death rate is higher than the national average in the states of Himachal Pradesh (9.5), West Bengal (9.2), Uttarakhand (8.6), Manipur (8.5), Jharkhand (8.4), Odisha (8.3), and Madhya Pradesh (8.3), and comparatively lower in the states/UTs of Meghalaya (3.6), Dadra & Nagar Haveli (4.6), and Andaman & Nicobar Islands (4.9). The death rate for the elderly population age 60 and above is 38.4 deaths per 1000 population. The death rate for the elderly age 60 and above is higher in the states of Arunachal Pradesh (50.4), Chhattisgarh (47.7), West Bengal (47.0), Madhya Pradesh (45.3), and Uttar Pradesh (44.5), and lower in the states/UTs of Meghalaya (19.7), Daman & Diu (19.9), Chandigarh (23.2), and Kerala (23.2).

Table 3.8 Death rate by broad age group, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Broad age-group			
	0-14	15-59	60+	Total
India	**2.5**	**3.5**	**38.4**	**7.7**
North				
Chandigarh	1.8	2.9	23.2	5.3
Delhi	2.2	1.6	40.0	4.9
Haryana	3.0	4.2	36.0	7.7
Himachal Pradesh	1.3	3.2	43.5	9.5
Jammu & Kashmir	0.3	2.2	41.3	6.1
Punjab	2.8	4.5	31.2	8.0
Rajasthan	3.5	2.9	43.3	7.6
Uttarakhand	2.3	3.5	44.1	8.6
Central				
Chhattisgarh	2.8	3.5	47.7	7.7
Madhya Pradesh	3.4	3.1	45.3	8.3
Uttar Pradesh	3.7	3.9	44.5	7.9
East				
Bihar	2.7	3.2	30.6	6.3
Jharkhand	2.0	4.6	40.3	8.4
Odisha	2.6	3.8	37.5	8.3
West Bengal	1.3	4.1	47.0	9.2
Northeast				
Arunachal Pradesh	4.0	3.0	50.4	6.1
Assam	1.5	4.6	40.8	7.4
Manipur	3.1	4.7	35.4	8.5
Mizoram	1.5	2.9	19.7	3.6
Nagaland	1.3	2.7	28.9	5.1
Tripura	1.1	3.2	38.4	7.2
West				
Dadra & Nagar Haveli	2.8	2.1	32.2	4.6
Daman & Diu	3.9	5.9	19.9	7.4
Goa	0.0	1.3	28.6	5.1
Gujarat	3.0	3.2	41.1	8.1
Maharashtra	0.9	2.8	36.9	7.5
South				
Andaman & Nicobar Islands	1.5	2.0	27.9	4.9
Andhra Pradesh	1.2	4.4	34.3	8.0
Karnataka	3.4	2.8	32.4	6.7
Kerala	0.5	3.2	23.2	6.6
Lakshadweep	0.4	2.6	35.4	6.2
Puducherry	1.0	2.6	28.1	6.4
Tamil Nadu	2.0	2.8	36.3	8.1
Telangana	0.9	4.4	34.3	7.5

Note
Death rate is calculated as the number of deaths per 1000 of the mid-year population during the two years prior to the survey.

Key findings: household population characteristics

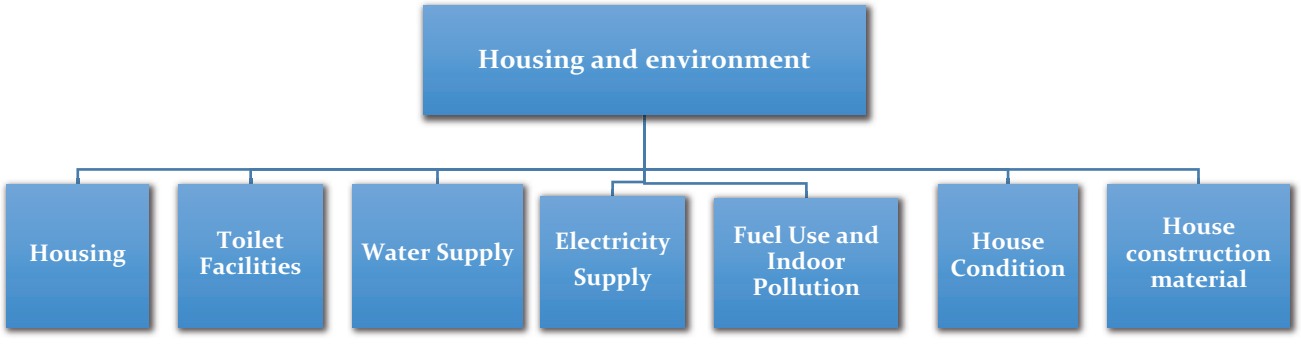
- In India, 27% are children age 0-14 years, 61% are the working-age population age 15-59 years, and 12% are the elderly age 60 and above. The percentage of elderly age 60 and above is higher in the states of Kerala (20%), Himachal Pradesh (17%), Tamil Nadu (16%), Puducherry (16%), and Goa (15%).
- The overall sex ratio of the household population in India is 984 females per 1000 males and that of the elderly population age 60 and above is 1065. The sex ratio of the elderly population age 60 and above is more than 1200 in the states/UTs of Puducherry (1299), Daman & Diu (1278), Dadra & Nagar Haveli (1270), Tamil Nadu (1213), Manipur (1210), and Kerala (1203).
- The overall dependency ratio in India is 62 per 100 working-age population; the young dependency ratio is 43 and the old dependency ratio is 19. The old dependency ratio is highest in Kerala (30) followed by Puducherry (24), and Tamil Nadu (22); in 14 states/UTs, the old dependency ratio is more than the national average of 19.
- Overall, 94% of older adults age 45 and above in India possess the Aadhaar card; this proportion is 95% in urban India and 93% in rural India.
- The mean household size in India is 5.7 persons per household. The mean household size varies from 7.3 in Lakshadweep to 4.3 in Tamil Nadu.
- Overall, 69% of females and 85% of males age 6 and above in India have ever attended school. A higher proportion of elderly men age 60 and above (65%) than women (35%) have attended school. The literacy rate in India is 77%; the highest in Kerala (96%) and the lowest in Bihar (66%).
- Eighty percent of the household heads in India are Hindu, 14% are Muslim, 3% are Christian, 2% are Sikh, and 2% are Buddhist/Jain/Jewish/Parsi. In India, 21% household heads are Scheduled caste, 9% are Scheduled tribe, 47% are other backward class, and 23% are other caste.
- Eighty-five percent of the households in India are headed by males and 15% by females. The percentage of female-headed households is higher in the states/UTs of Lakshadweep (44%) and Meghalaya (39%).
- The death rate in India during two years prior to the survey is 7.7 per 1000 population, which is 38 per 1000 elderly age 60 and above. The death rate for elderly age 60 and above is higher in the states of Arunachal Pradesh (50.4), Chhattisgarh (47.7), West Bengal (47.0), Madhya Pradesh (45.3), and Uttar Pradesh (44.5).

3.2 HOUSING AND ENVIRONMENT

The type of housing and immediate environment where an individual resides determines the quality of life, which serves as an indicator of "basic needs" for development. A positive association exists between housing conditions, basic amenities, and overall development; further, factors like improved water supply, sanitation, electricity, and the type of fuel used in households immensely contribute to health and people's overall well-being. Thus, understanding the overall living conditions of people's households requires a comprehensive description of the immediate environment where a person resides.

This section presents housing related characteristics of LASI households with at least one age eligible respondent age 45 and above. The LASI covers the following components on housing and environment: number of rooms and kitchen, sanitation facilities, drinking water and a method to make water safer for drinking, electricity, main source of fuel, indoor pollution, the use of different products which generate smoke inside the household, house construction material, and general condition of the house (Figure 3.5).

Flowchart: components covered in housing and environment



3.2.1 Water supply

Clean, safe, and affordable water is a fundamental human need; it is required for drinking, cooking, washing, bathing, and keeping the community surroundings clean. In India, 18% households in rural areas still have to fetch drinking water from a source located more than 500 meters away; in urban areas, water sources are usually less than 100 meters away (Census, 2011). According to the WHO, improved drinking water includes: a piped water connection located inside the user's dwelling, plot, yard, or similar location; other drinking water sources include: public taps/standpipes, tube wells/bore wells, protected dug wells, protected springs, and rainwater collection. In the LASI, a set of questions were asked about households' sources of drinking water, location of water source, and the time it took to fetch water if the source was outside their house. Improved drinking water sources include water from pipes, public taps/standpipes, tube wells/bore wells, dug wells, spring water, and rainwater.

Table 3.9 provides information on access to drinking water according to the place of residence. Overall, more than a third (35%) of households in India have access to piped water; 32% of the households have a water tap inside their dwellings. The proportion of households that have access to piped water is higher in urban (61%) than in rural areas (23%); besides piped water, other common water sources in rural areas are tube wells/bore wells (51%), public taps (14%) and dug wells (7%). In India, 48% of the households have access to some sources of drinking water in their dwelling, another 21% have it either in their yard or plot, and a third of households don't have a water source located inside their dwelling or in their own yard.

State/UT level variation in source of drinking water is shown in Figure 3.8. This figure shows the percent distribution of households by three categories, i.e. piped water on the premises of the house, other sources of improved drinking water, and percentage of households using unimproved drinking water. In India, 94% of households have access to an improved source of drinking water. Manipur (57%) has the lowest percentage of households with an improved source of drinking water, while all households in Lakshadweep have access to it; less than 85% of the households have access to an improved source of drinking water in Telangana (74%), Andhra Pradesh (75%) and Daman & Diu (80%).

More than half of the LASI age eligible households in Chhattisgarh (63%), Madhya Pradesh (55%), Odisha (57%) Jharkhand (53%) and West Bengal (53%) do not have a water source located inside the dwelling or in their own yard. Comparatively, most households in Assam (90%), Chandigarh (91%), Jammu & Kashmir (91%), Lakshadweep (92%), Punjab (93%), Kerala (93%), Puducherry (94%), Goa (94%) and Mizoram (95%) have a water source located inside their dwellings (Table 3.10).

More than three-fourths of the households in the states/UTs of Chandigarh (94%), Goa (82%), Himachal Pradesh (79%), and Arunachal Pradesh (75%) have access to piped water on the premises. Less than one-tenth of the households, however, have access to piped water on the premises of their houses in the states/UTs of Bihar (3%), Assam (5%), Jharkhand (7%), and Lakshadweep (7%). The percentage of households that do not have access to improved drinking water is the highest in the states of Manipur (44%), Telangana (26%) and Andhra Pradesh (26%); the percentage of households that have access to other improved drinking water sources but do not have piped water on the premises of their houses is the highest in Bihar (95%), Lakshadweep (93%), Assam (92%) and Odisha (90%).

Figure 3.8 Percent distribution of households with main source of drinking water, states/UTs, LASI Wave 1, 2017-18

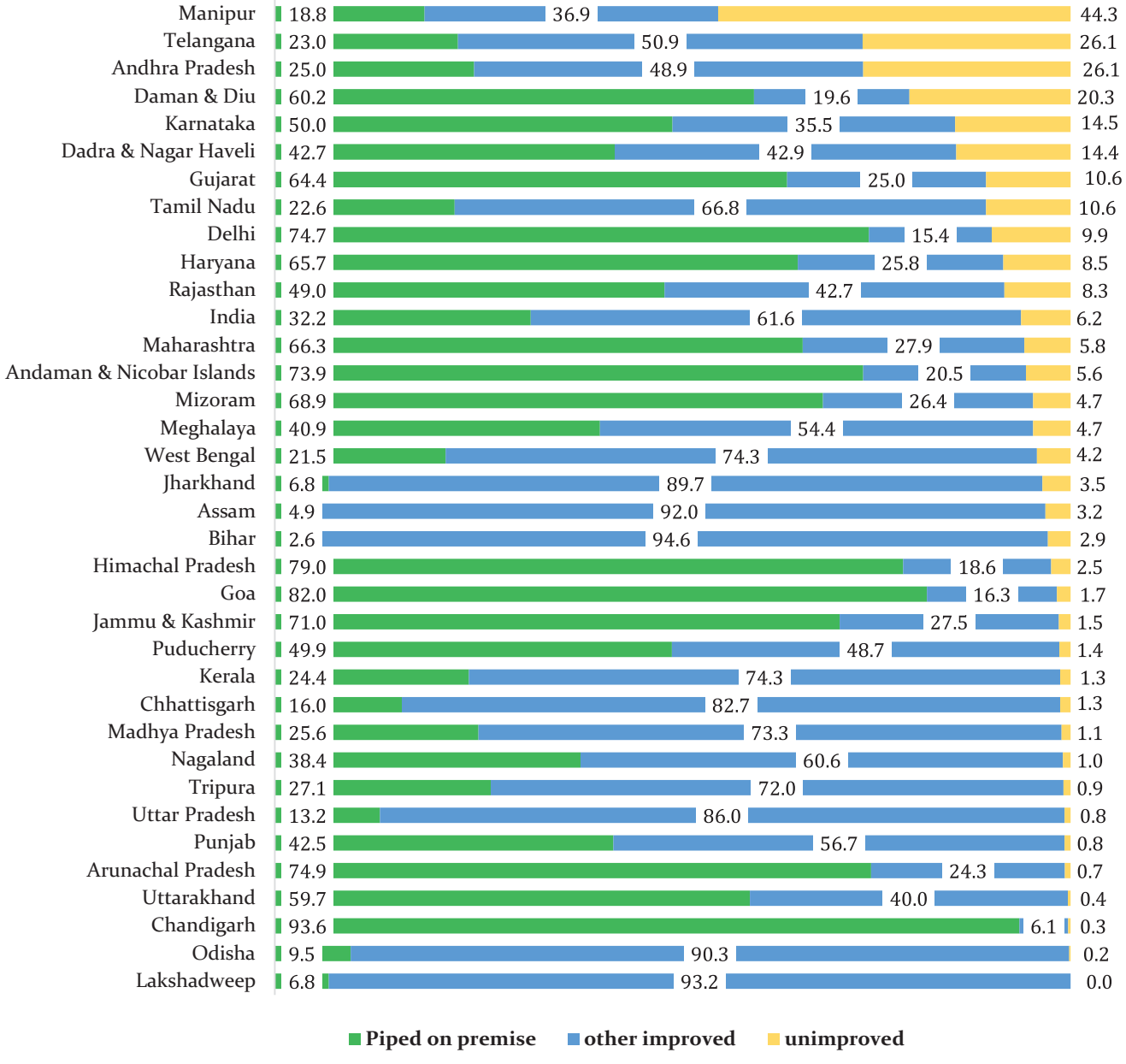
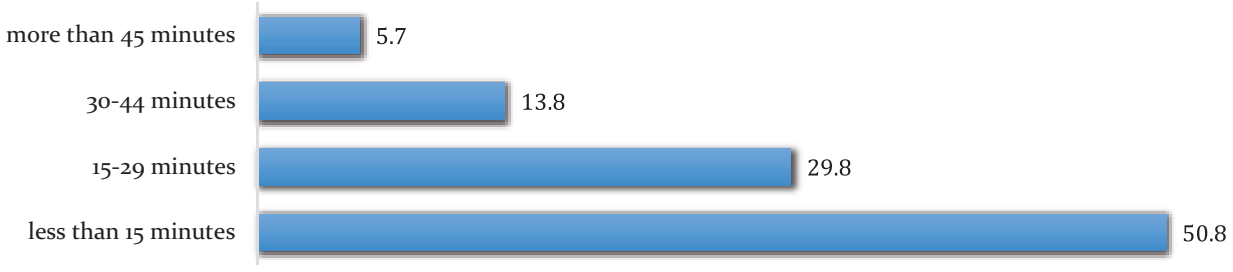


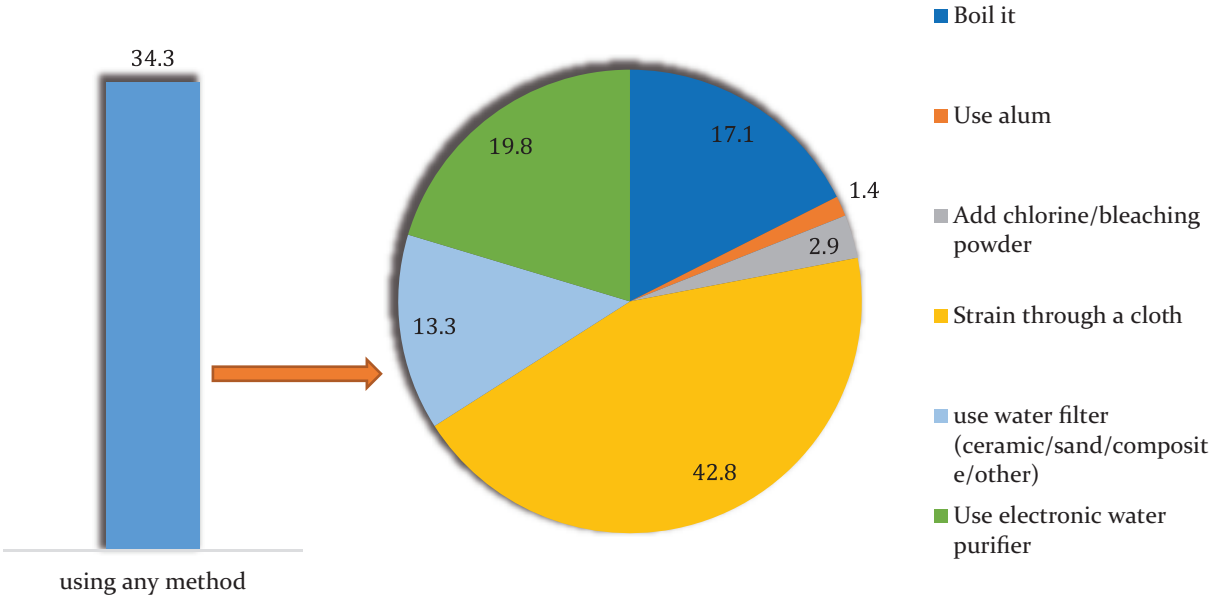
Figure 3.9 Percent distribution of households by time taken to fetch water in single trip, India, LASI Wave 1, 2017-18



Note:
with water facility away from dwelling/yard.

About half of the households that do not have a water source located inside their dwellings or yards spend less than 15 minutes to fetch water in a single trip, while almost 14% of the households spend 30-44 minutes, and around 6% spend more than 45 minutes to do so (Figure 3.9).

Figure 3.10 Percentage of households using any method for purifying drinking water and the methods used, India, LASI Wave 1, 2017-18



Close to one-third of the households (34%) used some method to make water safer for drinking. Among these households, 43% strain the water through a cloth, 20% use electric purifiers, 17% boil the water, 13% use a water filter, 3% add chlorine/bleaching powder and 1% use alum to purify the water (Figure 3.10).

3.2.2 Sanitation facility

Improved sanitation is an important physical/environmental issue in public health. Improved sanitation includes sanitation facilities that hygienically separate human excreta from human contact. As per the WHO, access to improved sanitation is measured as the proportion of people using sewer connections, septic system connections, pour-flush latrines, ventilated improved pit latrines, and pit latrines with a slab/covered pit. Shared facilities (including public toilets) are not considered improved. Open defecation refers to when human faeces are disposed of in fields, forests, bushes, open bodies of water, beaches, and other open spaces.

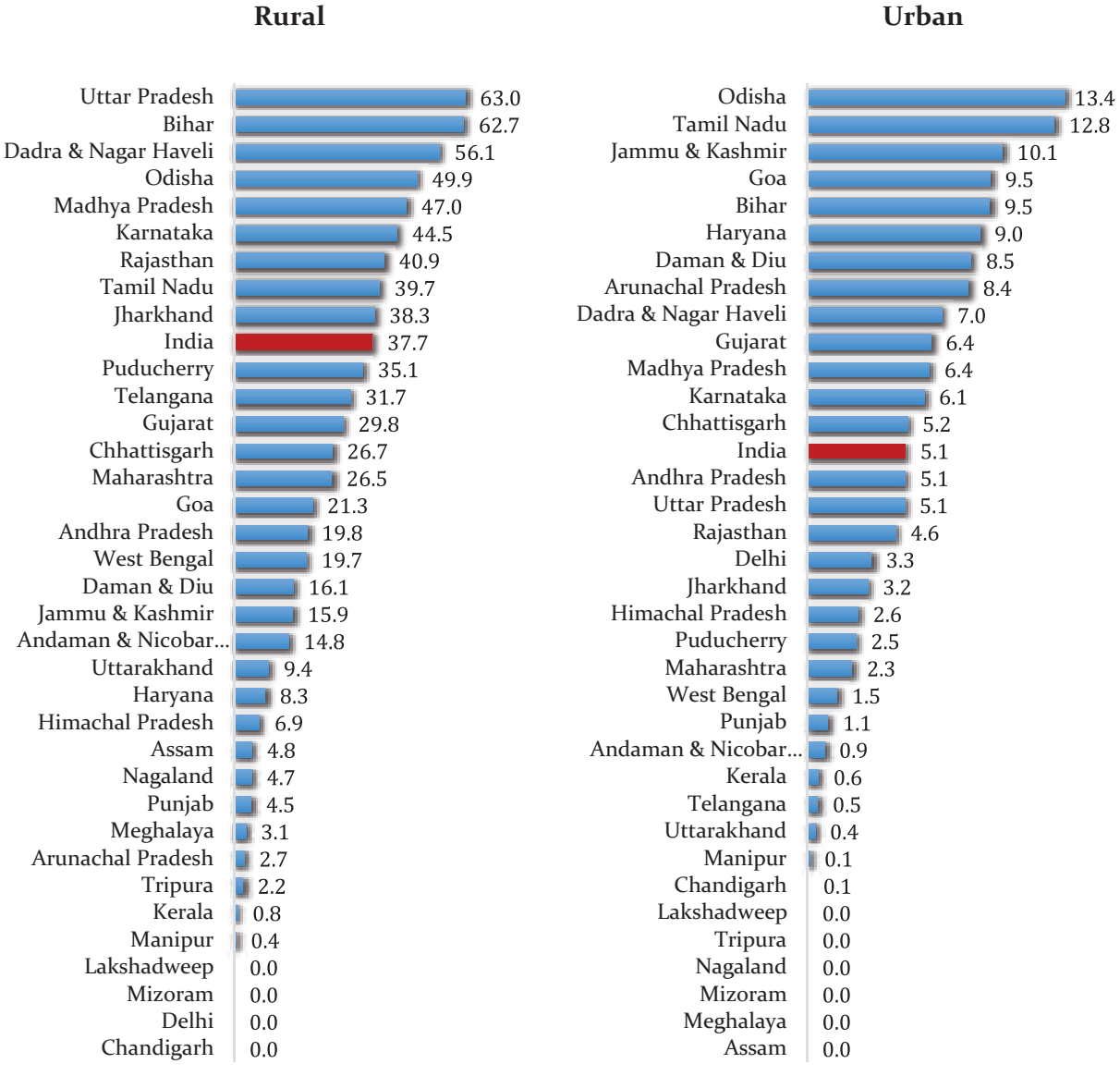
Open defecation and open drainage systems have serious impacts on health and are the leading causes of diseases. To accelerate the efforts to achieve universal sanitation coverage in India and to focus on sanitation, Swachh Bharat Mission was launched on October 2, 2014. In our study, improved sanitation included flush or pour flush toilets (which are flushed to a piped sewer system/septic tank/pit latrine), pit latrines, twin pits, and composting toilets.

About three-fourths of the LASI age eligible households (73%) have access to some type of sanitation facilities (Table 3.9); among these, about 48% of the households use a flush toilet, 22% use a pit latrine and 3% use a composting/twin pit. Further, more than one-fourth (27%) of the households practice open defecation. The proportion of households practicing open defecation is much higher in rural (38%) than urban areas (5%); (Figure 3.11).

Among the states/UTs, almost every household in Chandigarh, Lakshadweep, and Mizoram has access to any type of sanitation facilities; in contrast, Odisha (56%), Uttar Pradesh (50%) and Bihar (43%) are the states with the lowest proportions of households with access to such sanitation facilities.

In rural areas, the proportion of households practising open defecation is the highest in the states/UTs of Uttar Pradesh (63%), Bihar (63%) and Dadra & Nagar Haveli (56%); in urban areas, the states with the highest percentages are Odisha (13%), Tamil Nadu (13%) and Jammu & Kashmir (10%).

Figure 3.11 Percentage of households practicing open defecation by place of residence, states/UTs, LASI Wave 1, 2017-18



3.2.3 Access to electricity

Electricity is a necessity that influences people's everyday life. In the LASI, information was collected about the availability and duration of electricity supply for the households. Most of the LASI age eligible households (92%) have access to electricity; urban areas have a relatively higher proportion (98%) compared to rural areas (89%).

Across the states/UTs, a lower proportion of households have access to electricity in Uttar Pradesh (76%), Bihar (83%), Arunachal Pradesh (86%), Madhya Pradesh (88%), Odisha (89%), and Andaman & Nicobar Islands (90%) (Table 3.10).

3.2.4 Fuel use and indoor pollution

There are two types of fuel used for cooking and non-cooking purposes: clean and unclean. Clean fuels include Liquefied Petroleum Gas (LPG), biogas, and electricity; unclean fuels include kerosene, charcoal, coal, crop residue, wood/shrub, and dung cake (Census, 2011).

Indoor air pollution refers to chemical, biological, and physical contamination of indoor air. In developing countries, the main source of indoor air pollution is biomass smoke which contains suspended particulate matter, nitrogen dioxide, sulphur dioxide, and carbon monoxide (OECD, 2003). Inadequate ventilation allows for the accumulation of a variety of pollutants from building materials, fuel burning, and radon gas emissions (WHO, 2011). In the LASI, indoor pollution refers to households using solid and unclean fuel (for cooking or any other purpose) inside the household, cooking in traditional chullah stoves, or an open fire without any ventilation. Cooking and heating such solid fuels on open fires or traditional stoves results in high levels of indoor smoke, which contains a wide range of health-damaging pollutants. Exposure to such pollutants can lead to various health problems, especially for women, children and the elderly because they spend most of their time indoors (WHO, 2008).

In the LASI, information was collected about the following aspects of fuel use:

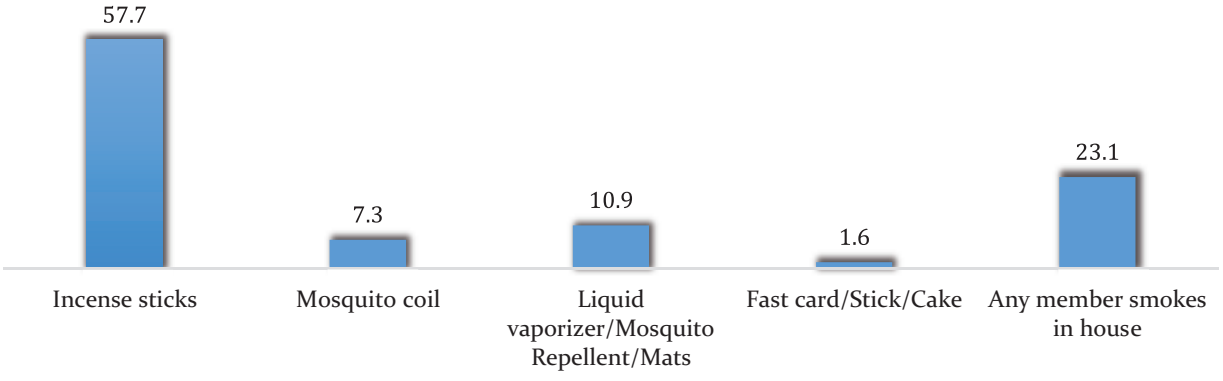
- The main purpose of fuel use: Cooking and other purposes (e.g. boiling water, bathing, lighting, etc.).
- Hours of exposure: Total number of hours and minutes per day exposed to unclean fuels for cooking and other purposes.
- Type of stove used for cooking: Mechanical stove, traditional chullah, or open fire.
- Place of cooking: Cooking usually done inside the household, in a separate building, or outdoors.
- Smoke exhaust system: Traditional chimney, electric chimney, exhaust fan or stove is kept near a window/door.
- Smoke exposure: Use of cigarettes or bidis, incense sticks, mosquito coil, liquid vaporizer, and fast card stick (insect smoke coil) inside the house and the duration (hours) of use.

A half of the LASI age eligible households (52%) use clean cooking fuel (Table 3.9); among these, most households (88%) in urban areas and compared to just about a third (35%) in rural areas use Liquid Petroleum Gas (LPG) for cooking. Less than one-third of the households use clean cooking fuel in Odisha (27%), Chhattisgarh (28%), Meghalaya (29%), Nagaland (31%), Jharkhand (31%) and Bihar (32%). In contrast, more than 80% of the households use such fuel in Goa (81%), Andhra Pradesh (85%), Telangana (86%), Puducherry (88%), Daman & Diu (90%), Chandigarh (98%), and Delhi (99%). Further, in rural areas, more than half of the households (51%) still use wood or shrubs; a smaller proportion (7%) uses cow dung for cooking.

Fourteen percent of households are exposed to indoor pollution. Exposure to indoor pollution is higher in rural areas (19%), compared to urban areas (3%), as rural households often use wood and shrubs as fuel with traditional stoves or open fires (Table 3.9). Among the states/UTs, a high proportion of households are exposed to indoor pollution in the states/UTs of Haryana (27%), Punjab (28%), Uttar Pradesh (31%) and Jharkhand (32%).

It is a common practice among Indian households to use incense sticks inside the house. In India, 58% of the households burn incense sticks inside the house every day; 7% use mosquito coils; 11% use liquid vaporizer/mosquito repellent/mats, and 2% use fast cards/stick/cake inside the house. In 23% of the households, at least one family member exposed to smokes inside the house (Figure 3.12).

Figure 3.12 Percentage of households using various products inside the house every day, India, LASI Wave 1, 2017-18



3.2.5 Housing condition

In the LASI, a pucca house refers to a house where the roof, wall, and floor are made up of pucca (concrete) material. About two-thirds of the LASI age eligible households (65%) live in pucca houses. Four-fifths of the households (80%) in urban areas live in pucca houses, contrasting with the 42% in rural areas. Among the states, Mizoram (27%) and Manipur (28%) have the lowest proportion of households living in *pucca* houses, while in Delhi and Chandigarh, the proportion is more than 90%.

Table 3.9 Percent distribution of rural, urban and total households by household characteristics, India, LASI Wave 1, 2017-18

Background Characteristics	Rural	Urban	Total
Drinking water Characteristics			
Piped Water	22.5	60.5	34.5
Public tap/standpipe	14.2	11.8	13.4
Tube well or bore well	50.5	15.9	39.6
Dug well	6.9	3.9	6.0
Spring water	0.6	0.0	0.4
Rain water	0.1	0.0	0.1
Tanker	1.0	0.9	1.0
Cart with small tank	0.2	0.3	0.2
Surface water (river/dam/lake/ponds/stream/canal/irrigation channel)	0.4	0.1	0.3
Bottled water/pouch water	3.5	6.5	4.5
Location of drinking water source			
In own dwelling	37.6	70.0	47.6
In own yard/plot	23.2	16.4	21.1
Elsewhere (Outside dwelling)	39.3	13.6	31.4
Type of Sanitation Facilities			
Flush or pour flush toilet	34.7	75.2	47.5
Flush to piped sewer system	18.3	45.1	31.7
Flush to septic tank	65.6	49.0	57.3
Flush to pit latrine	15.8	5.3	10.5
Flush to somewhere else	0.3	0.6	0.5
Pit latrine	24.1	18.3	22.3
Twin pit/composting toilet	3.5	1.4	2.8
No facility, use open space or field	37.7	5.1	27.5
Electricity			
Yes	88.6	98.2	91.7
No	11.4	1.8	8.3
Type of House			
Pucca	42.3	80.1	54.2
Semi Pucca	34.6	15.7	28.7
Kachha	23.1	4.2	17.2
Type of Cooking Fuel			
LPG	34.9	88.3	51.7
Biogas	0.5	0.1	0.4
Kerosene	0.3	1.1	0.6
Electric	0.2	0.5	0.3
Charcoal/Lignite/Coal	3.5	1.0	2.7
Crop Residue	2.5	0.1	1.8
Wood/Shrub	50.8	8.0	37.3
Dung Cake	6.9	0.6	4.9
Others	0.0	0.1	0.1
Place for cooking			
In the house	74.4	88.4	78.8
In a separate building	13.2	8.5	11.7
Outdoors	12.5	3.1	9.5
Exposed to indoor smoking	**26.6**	**15.4**	**23.1**
Total number of HHs	**27,465**	**15,273**	**42,738**

Note: 211 cases are missing in this section

Table 3.10 Percentage of households with selected housing characteristics, states/UTs, LASI Wave 1, 2017-18

States/Union Territories	With electricity	With improved source of drinking water[1]	With water facility inside dwelling/ own yard	With improved sanitation Facility[2]	Using clean cooking fuel[3]	Exposed to indoor pollution[4]	Living in pucca house[5]	Number
India	**91.7**	**94.0**	**65.3**	**72.3**	**52.4**	**14.0**	**65.4**	**42,738**
North								
Chandigarh	99.2	99.7	90.7	100.0	98.0	3.5	90.1	646
Delhi	99.3	90.7	79.5	96.7	98.8	1.2	97.5	752
Haryana	98.8	91.7	81.2	91.4	52.5	27.3	86.6	1,241
Himachal Pradesh	99.7	97.6	84.4	93.6	46.3	2.8	82.4	788
Jammu & Kashmir	97.9	98.5	90.6	81.3	67.2	1.3	77.1	957
Punjab	98.9	99.3	92.6	96.2	65.3	28.4	61.7	1,229
Rajasthan	92.3	91.9	65.5	68.4	47.8	10.5	81.1	1,298
Uttarakhand	98.7	99.7	78.8	92.9	50.3	3.0	77.1	862
Central								
Chhattisgarh	92.1	98.7	37.2	78.1	28.2	10.8	59.9	1,187
Madhya Pradesh	88.2	98.9	44.7	65.0	36.1	13.9	61.7	1,689
Uttar Pradesh	75.6	99.2	79.4	49.6	44.6	30.9	60.8	2,744
East								
Bihar	82.9	97.1	86.6	43.2	31.5	23.1	53.6	2,082
Jharkhand	90.6	96.5	46.7	70.6	31.2	32.1	62.2	1,408
Odisha	88.9	99.8	42.5	56.2	26.8	11.0	72.8	1,643
West Bengal	96.0	96.3	47.3	86.8	38.5	15.9	63.5	2,275
Northeast								
Arunachal Pradesh	86.2	99.3	87.9	96.0	53.1	17.4	38.3	702
Assam	91.1	96.8	89.8	95.9	34.1	12.7	62.6	1,509
Manipur	97.9	57.1	59.2	98.6	54.2	3.1	27.8	860
Meghalaya	95.9	95.4	70.8	97.6	29.1	7.5	35.1	634
Mizoram	98.3	95.3	95.2	99.5	62.3	10.2	26.8	723
Nagaland	99.5	99.1	64.6	96.5	30.9	11.7	45.0	793
Tripura	94.1	99.2	72.6	98.5	41.5	10.9	63.0	715
West								
Dadra & Nagar Haveli	95.6	86.0	69.6	74.3	59.6	15.2	57.2	604
Daman & Diu	99.3	80.2	72.6	90.6	90.3	2.6	82.4	564
Goa	99.3	98.3	94.2	86.1	80.6	6.7	79.4	875
Gujarat	96.1	89.5	76.4	80.2	54.5	5.7	64.6	1,432
Maharashtra	96.6	94.4	74.5	84.6	71.8	5.5	69.7	2,419

Continued

Continued

States/Union Territories	With electricity	With improved source of drinking water[1]	With water facility inside dwelling/ own yard	With improved sanitation Facility[2]	Using clean cooking fuel[3]	Exposed to indoor pollution[4]	Living in pucca house[5]	Number
South								
Andaman & Nicobar Islands	89.6	94.5	81.9	90.6	64.9	10.5	53.2	725
Andhra Pradesh	98.9	74.9	49.5	84.7	85.0	7.5	80.4	1,508
Karnataka	97.9	87.0	58.2	68.4	55.2	6.3	53.3	1,484
Kerala	99.5	98.7	92.7	99.2	53.3	5.2	74.6	1,391
Lakshadweep	99.6	100.0	92.1	99.9	38.7	6.4	72.6	619
Puducherry	99.1	98.6	93.9	87.4	88.0	5.1	80.2	838
Tamil Nadu	96.3	89.7	50.6	73.0	79.4	4.1	59.9	2,138
Telangana	98.0	74.4	54.1	78.6	86.0	8.5	57.2	1,404

Notes

[1] Improved drinking water source includes water from pipe, public tap/standpipe, tube well or bore well, dug well, spring water and rain water.

[2] Improved sanitation includes flush or pour flush toilet (which is flushed to piped sewer system/septic tank/ pit latrine), pit latrine, twin pit, composting toilet.

[3] Clean cooking fuel includes LPG, Biogas and Electricity

[4] Indoor pollution refers to households using solid and unclean fuel (for cooking or any other purpose) inside the household and cooking in traditional chullah/stove or open fire without any ventilation. Unclean fuel refers to use of kerosene, charcoal, coal, crop residue, wood/shrub and dung cake.

[5] ***Pucca*** house refers to a house with a roof, wall and floor is made up of ***pucca*** (concrete) material. This indicator is based on the observation of the investigator.

Key findings: housing and environment

- Ninety-four percent of LASI age eligible households in India have an improved drinking water source; this varies by states from 100% in Lakshadweep to 57% in Manipur.
- Sixty-five percent of the households have a water facility inside their dwellings/yards, ranging from 95% in Mizoram to 37% in Chhattisgarh.
- Seventy-three percent of the households have access to an improved sanitation facility. Twenty-seven percent of the households practice open defecation.
- Ninety-two percent of the households have access to electricity; urban areas have a relatively higher proportion (98%) compared to rural areas (89%).
- Fifty-two percent of the households use clean cooking fuel. About 60% of the rural households still depend on wood/shrub/cow dung for cooking.
- Fourteen percent of the households are exposed to indoor pollution; ranging from 32% in Jharkhand to 1% in Delhi.
- Sixty-five percent of the households live in pucca houses.
- In 23% of the households, at least one family member smokes inside the house.

4. HOUSEHOLD ECONOMIC WELL-BEING OF OLDER ADULTS IN INDIA

The economic well-being of households is the key determinant of elderly health. In the absence of a robust and universal social security system, the low coverage of old-age pension, a large share of employment in the informal sector, early retirement from formal employment, and an increasing health expenditure, elderly households in India are economically vulnerable and prone to financial shocks. Furthermore, increasing urbanisation, rural-urban migration, and modernisation have led to several socio-economic changes, including changes in the structure of families and living arrangements. In India, there is a considerable proportion of elderly living alone, especially women. Elderly women, the poor elderly, the elderly living in rural areas, and other marginal groups of society are highly vulnerable. In such wider contexts, the elderly often have to depend on multiple sources, such as remittances from children, personal savings, private insurance, pensions, etc to meet their economic needs. Moreover, the economic well-being of individuals in India is largely dependent on the economic conditions of the family. The extent of poverty is higher among elderly households, compared with non-elderly households (Srivastava and Mohanty 2012). While the longevity of the elderly has been increasing across states and socio-economic groups, comparable data on the economic well-being of the elderly in India are limited.

Economic inequality is also associated with poor health amongst the population, especially among the elderly (Pickett and Wikinson 2015). A large and growing number of studies from both developing and developed countries suggest strong and positive associations between various economic indicators and longevity, nutrition, and health care utilisation (Chetty et al. 2016; Preston 1975). Hospitalisation and out-of-pocket (OOP) expenditures have a strong age gradient, and elderly households are more likely to have high OOP expenditure and catastrophic health spending compared with non-elderly households (Kastor and Mohanty 2018; Pandey et al. 2018). Health care utilisation is a proximate determinant of health, and OOP expenditure on health care is directly associated with the economic well-being of households.

Although large-scale population-based health surveys have bridged the gap in the data on health in India, none of them has collected comprehensive economic indicators of households. The National Sample Survey Organisation (NSSO) regularly collects consumption expenditure data and has been the basis of economic planning in India. The India Human Development Survey (IHDS) is the only population-based survey to collect data on income at the household level. The National Family and Health Surveys (NFHSs) used economic proxies (wealth index) that do not adequately capture the economic well-being of households. Understanding economic differentials in health and health care utilisation is a prerequisite for evidence-based policy especially for the elderly. Considering this particular context, LASI covers economic measures of households more comprehensively than most other surveys in India.

In this chapter, economic well-being is assessed using a comprehensive range of economic measures: per capita consumption expenditure, per capita income (PCI), financial assets and indebtedness, and household health insurance. In addition, household expenditure on inpatient and out-patient care and catastrophic health spending are estimated. Below, we describe comprehensive measures on the economic well-being of households in India and its individual states/UTs.

4.1 HOUSEHOLD CONSUMPTION

In the LASI survey, data on consumption expenditure are collected using the abridged version of the consumption schedule of the National Sample Survey (NSS). Sets of 11 and 29 questions on the expenditures on food and non-food items, respectively, was used to canvas the sample households. Food expenditure was collected based on a reference period of seven days, and non-food expenditure was collected based on reference periods of 30 days and 365 days. Food and non-food expenditures have been standardised to the 30-day reference period. The monthly per capita consumption expenditure (MPCE) is computed and used as the summary measure of consumption.

Table 4.1 Monthly per capita consumption expenditure (MPCE) in (₹) and household non-food expenditure as a share of MPCE by place of residence according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Rural				Urban				Total			
	Monthly per capita expenditure (MPCE)[1] Mean	Monthly per capita expenditure (MPCE) Median	Non-Food expenditure as a share of MPCE (%)	Number	Monthly per capita expenditure (MPCE) Mean	Monthly per capita expenditure (MPCE) Median	Non-Food expenditure as a share of MPCE (%)	Number	Monthly per capita expenditure (MPCE) Mean	Monthly per capita expenditure (MPCE) Median	Non-Food expenditure as a share of MPCE (%)	Number
MPCE quintile												
Poorest	1041	1091	32.4	5,516	1435	1524	40.1	3,075	1163	1168	35.3	8,591
Poorer	1714	1718	37.3	5,515	2487	2506	45.0	3,075	1928	1823	40.0	8,590
Middle	2349	2333	40.8	5,515	3410	3394	50.3	3,074	2662	2496	44.4	8,589
Richer	3272	3235	46.2	5,515	4730	4661	53.3	3,075	3686	3472	48.8	8,590
Richest	6288	5100	60.5	5,515	9430	7613	60.4	3,074	7430	6071	60.4	8,589
Household size												
1-2	3455	2772	41.7	5,391	5667	4765	51.0	2,739	4092	3144	45.4	8,130
3-4	3055	2488	46.0	7,496	4811	3958	55.4	5,295	3749	2986	50.8	12,791
5-6	2646	2106	49.8	8,662	4056	3050	54.3	4,839	3100	2388	51.7	13,501
7 or more	2051	1759	46.0	6,027	2492	2149	48.4	2,500	2153	1826	46.6	8,527
Religion of head of household												
Hindu	2513	2020	47.4	20,414	3722	3073	54.1	10,934	2853	2260	49.8	31,348
Muslim	2483	2062	41.3	2,727	4696	2748	50.9	2,485	3447	2324	47.0	5,212
Christian	2342	1843	43.3	3,062	4342	3423	53.3	1,278	2826	2166	47.0	4,340
Other	3545	2601	53.5	1,373	4084	3256	53.7	676	3703	2829	53.6	2,049
Caste of the head of household												
Scheduled tribe	1989	1587	40.7	5,792	3856	2827	51.4	1,707	2208	1694	42.9	7,499
Scheduled caste	2273	1913	42.7	5,360	3092	2635	48.2	2,163	2444	2030	44.2	7,523
Other backward class	2503	2070	46.4	10,271	4118	2943	53.9	5,809	3029	2329	49.7	16,080
None of the above	3175	2405	52.7	6,153	4055	3305	54.2	5,694	3525	2754	53.4	11,847
Household having												
No member 60+	2539	2066	45.4	11,124	4017	3163	53.2	6,609	3001	2346	48.7	17,733
At least one member 60+	2545	2027	47.7	16,452	3902	2943	53.4	8,764	2948	2255	49.9	25,216
Total	2543	2040	46.9	27,576	3944	3009	53.3	15,373	2967	2287	49.5	42,949

Note

[1] MPCE is defined as total monthly household consumption expenditure divided by household size. Includes household's per capita spending on food and non-food items including spending on health, education, utilities etc.

Table 4.2 Monthly per capita consumption expenditure (MPCE) in (₹) and household non-food expenditure as a share of MPCE by place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Rural				Urban				Total			
	Monthly per capita expenditure (MPCE) Mean	Monthly per capita expenditure (MPCE) Median	Non-Food expenditure as a share of MPCE (%)	Number	Monthly per capita expenditure (MPCE) Mean	Monthly per capita expenditure (MPCE) Median	Non-Food expenditure as a share of MPCE (%)	Number	Monthly per capita expenditure (MPCE) Mean	Monthly per capita expenditure (MPCE) Median	Non-Food expenditure as a share of MPCE (%)	Number
India	**2543**	**2040**	**46.9**	**27,576**	**3944**	**3009**	**53.3**	**15,373**	**2967**	**2287**	**49.5**	**42,949**
North												
Chandigarh	-	-	-	-	-	-	-	-	5691	4639	54	651
Delhi	-	-	-	-	-	-	-	-	3611	2885	45	754
Haryana	2646	2302	47.6	833	3501	3056	56.6	418	2952	2543	51.4	1,251
Himachal Pradesh	3824	2943	54.3	700	4316	3135	59.5	105	3880	2951	55	805
Jammu & Kashmir	4213	3443	46.4	694	4916	4428	46.3	263	4411	3664	46.4	957
Punjab	4273	3139	56.1	871	4331	3711	52	363	4285	3294	55.2	1,234
Rajasthan	2612	2118	52.7	1,025	3615	2974	54.1	277	2882	2427	53.2	1,302
Uttarakhand	2742	2280	50.1	618	3627	2745	54.9	245	3034	2401	52	863
Central												
Chhattisgarh	1597	1366	40.7	971	3073	2580	54.7	218	1945	1499	45.9	1,189
Madhya Pradesh	2535	2096	46.6	1,192	3528	2879	54.2	498	2835	2287	49.5	1,690
Uttar Pradesh	2216	1880	47.1	2,155	2856	2337	52.1	592	2348	1960	48.3	2,747
East												
Bihar	1963	1687	39	1,866	2382	1937	45.7	217	2007	1724	39.8	2,083
Jharkhand	2067	1772	40.3	1,123	3730	2715	52.4	285	2475	1933	44.8	1,408
Odisha	2067	1670	41.5	1,391	3330	2898	55.4	254	2316	1841	45.5	1,645
West Bengal	2455	2057	40.5	1,148	3786	3042	50.8	1,131	2913	2329	45.1	2,279
Northeast												
Arunachal Pradesh	3496	2863	49.6	534	3828	3470	39.4	168	3557	2964	47.6	702
Assam	2437	1942	43.4	1,322	3174	2730	47.4	189	2551	2065	44.2	1,511
Manipur	3578	3196	48.4	574	4659	4180	54.8	286	3990	3520	51.3	860
Meghalaya	2128	1733	41.5	524	4252	3369	49.5	112	2562	2058	44.2	636
Mizoram	2158	1841	51.8	360	4195	3096	55.8	372	3215	2292	54.5	732
Nagaland	3701	2574	50.5	569	5248	4492	52.1	230	4148	3019	51.1	799
Tripura	2671	2357	39.6	555	3881	3170	48.5	166	3074	2592	43.4	721
West												
Dadra & Nagar Haveli	1991	1604	42.2	391	3881	2923	57.2	240	3080	2249	53.1	631
Daman & Diu	3356	3005	34.4	210	3523	3099	38.6	367	3502	3097	38.1	577
Goa	4349	3747	53.9	365	4952	4196	50.9	512	4713	3921	52	877
Gujarat	2720	2346	46.5	857	3421	2914	51.7	598	3011	2553	49	1,455
Maharashtra	2932	2083	58.8	1,159	3687	2777	55.6	1,262	3279	2349	57.1	2,421
South												
Andaman & Nicobar Islands	3509	2403	44.4	451	5942	4003	54.4	274	4418	3135	49.5	725
Andhra Pradesh	3254	2691	47.1	1,107	4084	3595	55.5	404	3517	2918	50.2	1,511
Karnataka	2893	2532	43.9	1,012	6104	4175	56.5	476	3868	2934	50	1,488
Kerala	3331	2713	50.2	709	3539	2908	51.6	702	3435	2798	50.9	1,411
Lakshadweep	2007	1453	46	132	2518	1985	42.9	495	2457	1910	43.2	627
Puducherry	2250	1843	43.6	269	3063	2618	49.7	570	2814	2329	48.2	839
Tamil Nadu	2604	2152	43	891	3436	2980	49	1,259	3036	2557	46.5	2,150
Telangana	2901	2322	48.9	972	4142	3423	55.9	446	3379	2663	52.2	1,418

"-" Rural and urban is not applicable for Delhi and Chandigarh.

Table 4.1 presents estimates of the MPCE and household non-food expenditure as a share of the MPCE by background characteristics. Although LASI estimates on consumption expenditure are not directly comparable with NSS estimates, the pattern remains similar. As per the 2011–12 consumption survey of the NSS, the MPCE for all of India was ₹ 1,764, whereas it was ₹ 1,454 in rural areas and ₹ 2,630 in urban areas. Food expenditure accounted for about 49% of the consumption expenditure, and the Gini index was 0.35.

The estimated mean MPCE of India from LASI age-eligible households (at least one-member age 45 and above) is ₹ 2,967: ₹ 2,543 in rural areas and ₹ 3,944 in urban areas. The Gini index is 0.376: 0.349 in rural areas and 0.370 in urban areas. The mean MPCE decreases with the increase in household size. It is the highest among households belonging to the other religion category (₹ 3,703), followed by Muslim (₹ 3,447), Hindu (₹ 2,853), and Christian (₹ 2,826) households. Among all caste groups, the MPCE is the lowest among Scheduled tribe (₹ 2,208) households, followed by Scheduled caste (₹ 2,444) and other backward class (₹ 3,029). The mean MPCE of households with at least one elderly person age 60 and above is ₹ 2,948, compared with households with no elderly members (₹ 3,001).

Table 4.2 presents the estimates of MPCE and household non-food expenditure as a share of MPCE by states and place of residence in India. The state-wise variation of MPCE reflects the general pattern of economic development observed in India (Mohanty et al. 2019). The MPCE is higher than the national average in economically developed states such as Chandigarh (₹ 5,691), Goa (₹ 4,713), and Punjab (₹ 4,285) and lower than the national average in states such as Chhattisgarh (₹ 1,945), Bihar (₹ 2,007), Odisha (₹ 2,316), and Uttar Pradesh (₹ 2,348). The MPCE in urban areas is higher than that in rural areas across all the states/UTs in India. About half of the consumption expenditure in India is spent on non-food items, although this proportion varies from 40% in the state of Bihar to 55% in the state of Punjab. In general, the share of non-food expenditure is higher in more economically developed states compared with economically less developed states. Figure 4.1 presents the Lorenz curve based on consumption expenditure. It depicts the inequality pattern in the country's consumption expenditure.

Figure 4.1 Lorenz curve of monthly per capita consumption expenditure, India, LASI Wave 1, 2017-18

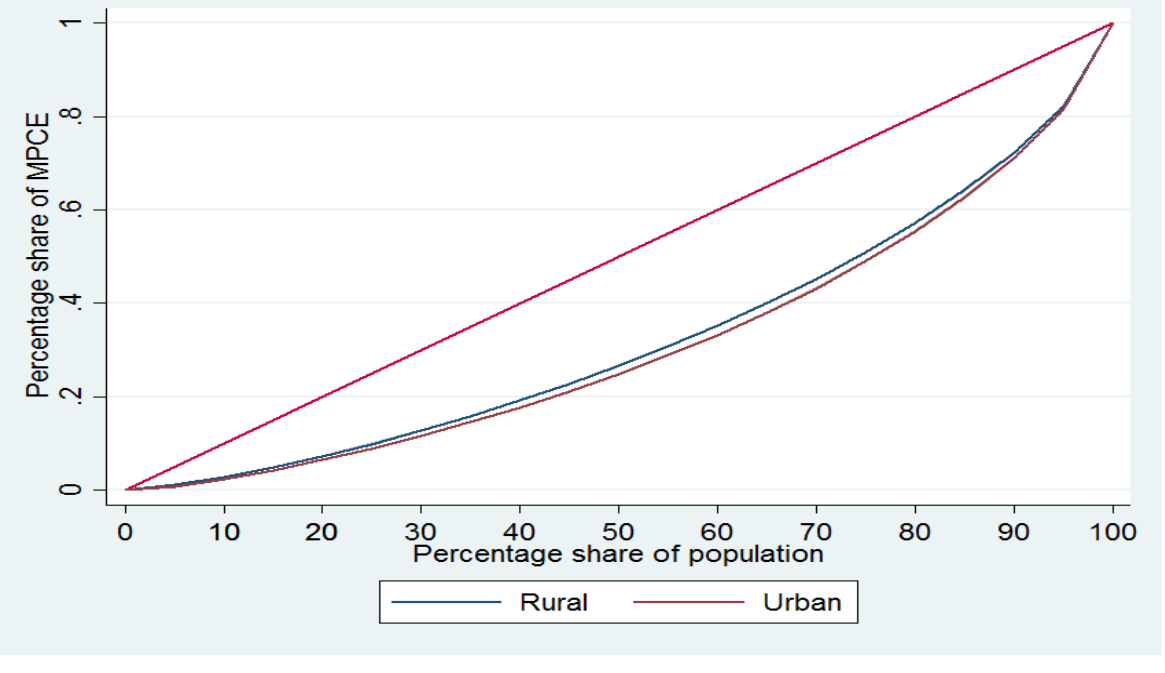


Table 4.3 Monthly per capita out-of-pocket (OOP) expenditure for inpatient and out-patient care in (₹) by place of residence according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Rural			Urban			Total		
	In-patient health expenditure (30 days)	Out-patient health expenditure (30 days)	Total health expenditure (Inpatient & Out-patient) (30 days)	In-patient health expenditure (30 days)	Out-patient health expenditure (30 days)	Total health expenditure (Inpatient & Out-patient) (30 days)	In-patient health expenditure (30 days)	Out-patient health expenditure (30 days)	Total health expenditure (Inpatient & Out-patient) (30 days)
MPCE quintile									
Poorest	12	67	79	19	70	89	14	68	82
Poorer	26	134	160	34	165	199	28	142	171
Middle	55	214	269	64	217	281	57	215	272
Richer	96	364	460	132	363	495	106	363	470
Richest	336	951	1287	532	897	1429	407	931	1338
Household size									
1-2	133	482	615	256	636	892	168	527	695
3-4	89	331	420	138	384	523	109	352	461
5-6	81	282	364	154	271	424	105	279	383
7 or more	67	217	285	83	200	283	71	213	284
Religion of head of household									
Hindu	83	270	353	113	308	421	91	281	372
Muslim	64	338	402	227	294	521	135	319	454
Christian	67	177	244	137	362	499	84	222	306
Other	94	401	495	128	337	465	104	382	486
Caste of the head of household									
Scheduled tribe	39	150	189	119	404	523	49	180	229
Scheduled caste	66	275	341	90	245	335	71	269	340
Other backward class	89	274	363	160	275	434	112	274	386
None of the above	100	362	462	125	371	496	110	365	475
Household having									
No member 60 +	77	263	340	115	263	378	89	263	352
At least one member 60+	83	289	372	149	333	483	102	302	405
Total	**81**	**280**	**361**	**137**	**308**	**444**	**98**	**288**	**386**

Table 4.3 presents the monthly per capita out-of-pocket (OOP) expenditure on inpatient and out-patient care by place of residence and background characteristics in India. Both inpatient and out-patient expenditures are standardised based on the 30-day reference period. The per capita out-patient expenditure is ₹ 288, compared with ₹ 98 for inpatient expenditure. On average, the per capita OOP expenditure in India is ₹ 386, although this figure is ₹ 361 in rural areas and ₹ 444 in urban areas. The per capita OOP expenditure decreases with the increase in household size. It is the highest among households belonging to other religions (₹ 486), followed by Muslim households (₹ 454). Among all caste groups, per capita OOP expenditure is the lowest among Scheduled tribe (₹ 229) households, followed by the Scheduled caste (₹ 340) and other backward class (₹ 386). It should be noted that health expenditure depends on household's ability to pay. The monthly per capita OOP expenditure of a household with at least one elderly person age 60 and above is at least ₹ 53 higher than that of a household with no elderly member.

Table 4.4 Monthly per capita out-of-pocket expenditure for inpatient and out-patient care in (₹) by place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Rural			Urban			Total		
	In-patient health expenditure (30 days)[2]	Out-patient health expenditure (30 days)[3]	Total health expenditure (Inpatient & Out-patient) (30 days)	In-patient health expenditure (30 days)	Out-patient health expenditure (30 days)	Total health expenditure (Inpatient & Out-patient) (30 days)	In-patient health expenditure (30 days)	Out-patient health expenditure (30 days)	Total health expenditure (Inpatient & Out-patient) (30 days)
India	**81**	**280**	**361**	**137**	**308**	**444**	**98**	**288**	**386**
North									
Chandigarh	-	-	-	-	-	-	60	478	538
Delhi	-	-	-	-	-	-	91	242	333
Haryana	53	220	273	95	273	369	68	239	307
Himachal Pradesh	109	434	543	101	586	687	108	451	559
Jammu & Kashmir	183	696	880	72	597	669	152	669	820
Punjab	114	462	576	168	427	596	126	455	580
Rajasthan	86	239	326	120	261	381	95	245	341
Uttarakhand	46	321	367	102	301	403	64	315	379
Central									
Chhattisgarh	22	103	126	23	117	139	22	106	129
Madhya Pradesh	79	267	347	131	218	349	95	252	347
Uttar Pradesh	70	308	378	88	350	438	73	317	390
East									
Bihar	56	241	297	41	203	244	54	237	292
Jharkhand	55	189	243	77	284	361	60	212	272
Odisha	43	229	271	76	356	432	49	254	303
West Bengal	59	342	401	141	522	663	87	404	491
Northeast									
Arunachal Pradesh	119	585	704	26	135	161	102	504	605
Assam	65	266	331	59	254	314	65	264	329
Manipur	105	362	467	127	622	749	113	461	575
Meghalaya	44	146	190	203	394	597	77	197	274
Mizoram	58	136	194	114	319	433	87	231	318
Nagaland	170	134	304	70	312	381	141	185	326
Tripura	57	264	321	107	563	670	74	364	438
West									
Dadra & Nagar Haveli	31	57	87	79	176	255	58	126	184
Daman & Diu	45	132	178	71	106	177	68	109	177
Goa	64	391	455	123	277	400	100	322	422
Gujarat	87	166	253	124	206	330	102	183	285
Maharashtra	113	364	477	159	313	472	134	341	475
South									
Andaman & Nicobar Islands	45	96	140	88	504	592	61	248	309
Andhra Pradesh	137	319	456	97	416	514	124	350	474
Karnataka	108	207	315	254	279	532	152	229	381
Kerala	169	457	626	130	415	545	150	436	586
Lakshadweep	151	132	283	59	171	230	70	167	236
Puducherry	58	82	140	53	176	228	54	147	201
Tamil Nadu	101	154	255	93	204	297	97	180	277
Telangana	146	362	508	104	344	448	130	355	485

Note

"-" Rural and urban is not applicable for Delhi and Chandigarh

[2] The expenditure on inpatient health care visits in the past 30 days includes expenses on hospitalization and nursing home stays, tests (X-ray, ECG, USG, CT scan, MRI, blood test, urine test, etc.), medicine, doctor's fees or any other medical expenses paid during hospitalization.

[3] The expenditure on out-patient health care in the past 30 days includes expenses on medication, tests (X-ray, ECG, USG, CT scan, MRI, blood test, urine test, etc.), doctor's fees or any other medical expenses (such as travel expenses, ambulance, dental care, etc.).

Table 4.4 presents the state differential in inpatient, out-patient, and total health expenditures by place of residence. The state-wise variation in OOP expenditure is large. Among all states/UTs, the OOP expenditure is the highest in Jammu & Kashmir (₹ 820), followed by Arunachal Pradesh (₹ 605), Kerala (₹ 586), and Punjab (₹ 580), and it is the lowest in Chhattisgarh (₹ 129), followed by Daman & Diu (₹ 177). In case of inpatient health expenditure, it is the highest in both Karnataka (₹ 152) and Jammu & Kashmir (₹ 152) and the lowest in Chhattisgarh (₹ 22). Similarly, the OOP expenditure for out-patient care is the highest in Jammu & Kashmir (₹ 669) and the lowest in Chhattisgarh (₹ 106). In general, the developed states show higher OOP expenditure compared with the less developed ones.

As seen in Figure 4.2, on average, a household in India spends 13% of the consumption expenditure on health, which varies from 5% in Daman & Diu to 19% in Jammu & Kashmir.

Figure 4.2 Monthly per capita out-of-pocket expenditure as a share of monthly per capita consumption expenditure (MPCE), India, LASI Wave 1, 2017-18

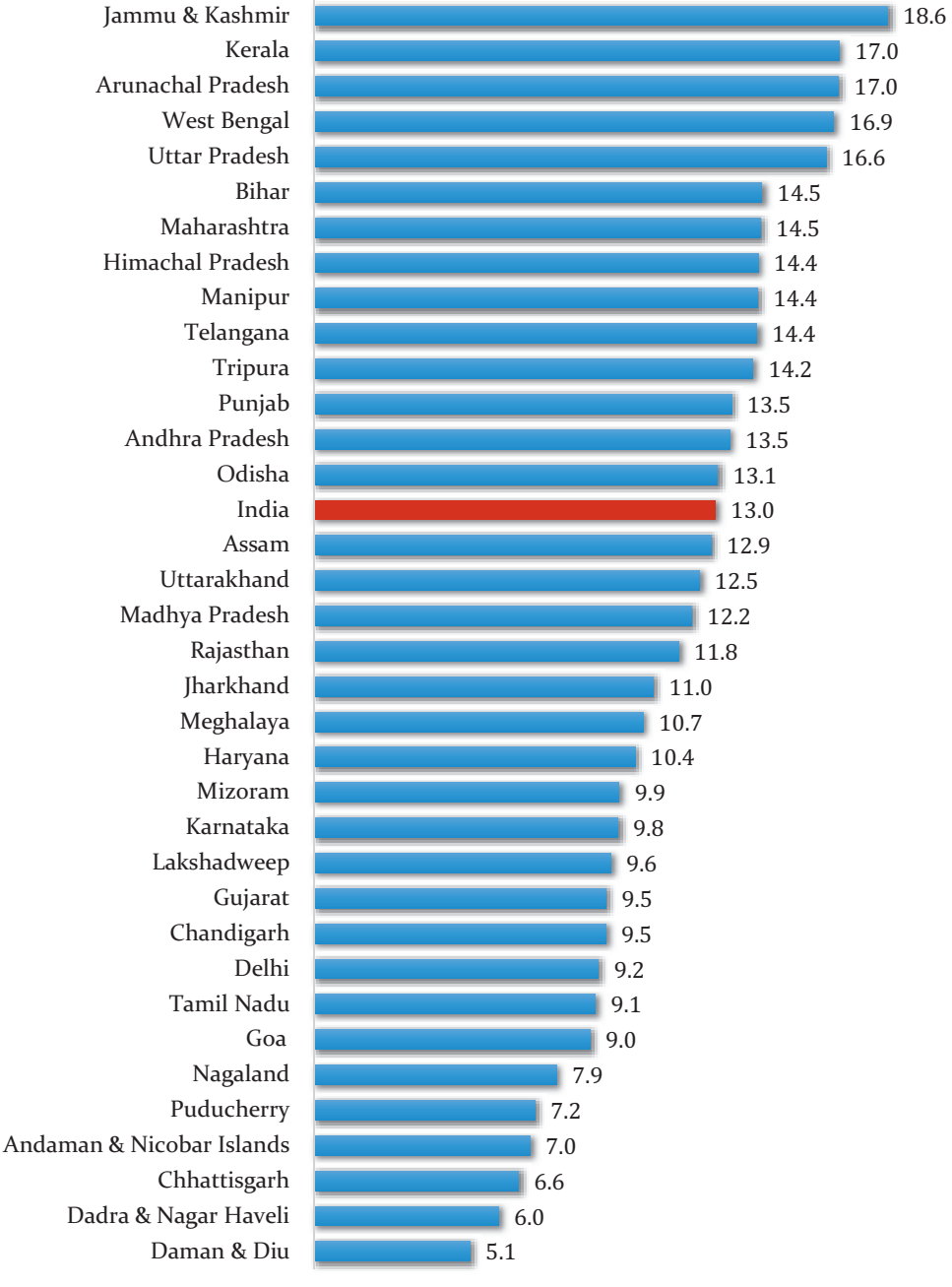


Table 4.5 Percentage of households with any member hospitalized in the past 12 months and households incurring catastrophic health expenditure by place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Rural			Urban			Total		
	Households with any member hospitalised in past 12 months (%)	Households incurring catastrophic health expenditure (%)[4]	Number	Households with any member hospitalised in past 12 months (%)	Households incurring catastrophic health expenditure (%)	Number	Households with any member hospitalised in past 12 months (%)	Households incurring catastrophic health expenditure (%)	Number
India	**21.1**	**36.7**	**27,576**	**21.6**	**31.1**	**15,373**	**21.2**	**34.9**	**42,949**
North									
Chandigarh	-	-	-	-	-	-	16.1	28.1	651
Delhi	-	-	-	-	-	-	16.2	22.5	754
Haryana	18.2	31.5	833	16.0	29.2	418	17.4	30.6	1,251
Himachal Pradesh	30.1	42.5	700	24.8	38.2	105	29.5	42.0	805
Jammu & Kashmir	20.3	54.5	694	12.3	42.5	263	17.7	50.7	957
Punjab	18.7	43.9	871	16.0	36.3	363	18.0	42.1	1,234
Rajasthan	24.6	36.4	1,025	24.5	37.9	277	24.6	36.8	1,302
Uttarakhand	15.6	31.6	618	18.0	29.8	245	16.3	31.1	863
Central									
Chhattisgarh	12.8	19.0	971	10.4	13.8	218	12.2	17.8	1,189
Madhya Pradesh	22.9	34.2	1,192	22.5	25.6	498	22.8	31.6	1,690
Uttar Pradesh	18.0	43.3	2,155	16.4	30.7	592	17.7	40.5	2,747
East									
Bihar	13.5	40.7	1,866	10.0	27.1	217	13.1	39.1	2,083
Jharkhand	15.2	28.8	1,123	15.8	33.4	285	15.3	30.0	1,408
Odisha	16.5	32.0	1,391	22.6	36.4	254	17.5	32.7	1,645
West Bengal	21.6	42.9	1,148	21.4	45.7	1,131	21.5	43.9	2,279
Northeast									
Arunachal Pradesh	34.9	32.0	534	19.3	9.3	168	31.6	27.3	702
Assam	15.3	31.7	1,322	16.0	27.7	189	15.4	31.0	1,511
Manipur	28.9	34.4	574	23.7	48.2	286	26.9	39.6	860
Meghalaya	20.1	21.0	524	30.0	29.9	112	22.3	23.0	636
Mizoram	19.8	21.3	360	20.1	20.9	372	20.0	21.1	732
Nagaland	16.9	15.4	569	9.7	15.2	230	14.9	15.4	799
Tripura	26.7	25.8	555	23.6	44.5	166	25.7	31.8	721
West									
Dadra & Nagar Haveli	24.3	13.2	391	25.3	19.2	240	24.9	17.0	631
Daman & Diu	27.3	18.4	210	22.2	13.7	367	22.7	14.3	577
Goa	28.4	37.1	365	15.8	24.4	512	20.5	29.1	877
Gujarat	23.9	20.7	857	21.2	22.0	598	22.7	21.3	1,455
Maharashtra	30.6	50.7	1,159	27.9	31.8	1,262	29.3	42.0	2,421
South									
Andaman & Nicobar Islands	11.3	5.2	451	8.5	9.4	274	10.2	6.9	725
Andhra Pradesh	28.3	33.7	1,107	26.5	30.2	404	27.7	32.6	1,511
Karnataka	26.1	29.2	1,012	26.2	32.7	476	26.1	30.4	1,488
Kerala	26.5	45.5	709	24.6	41.0	702	25.6	43.3	1,411
Lakshadweep	19.6	20.0	132	11.3	14.3	495	12.3	15.0	627
Puducherry	13.2	15.2	269	14.2	17.1	570	13.9	16.5	839
Tamil Nadu	17.0	22.7	891	13.2	22.2	1,259	15.1	22.5	2,150
Telangana	31.1	38.4	972	27.1	29.1	446	29.7	35.1	1,418

Note

"-" Rural and urban is not applicable for Delhi and Chandigarh

[4] Catastrophic health expenditure is defined as household health spending exceeding 10% of household consumption expenditure.

Figure 4.3 Percentage of households with any member hospitalized in the past 12 months, states/UTs, LASI Wave 1, 2017-18

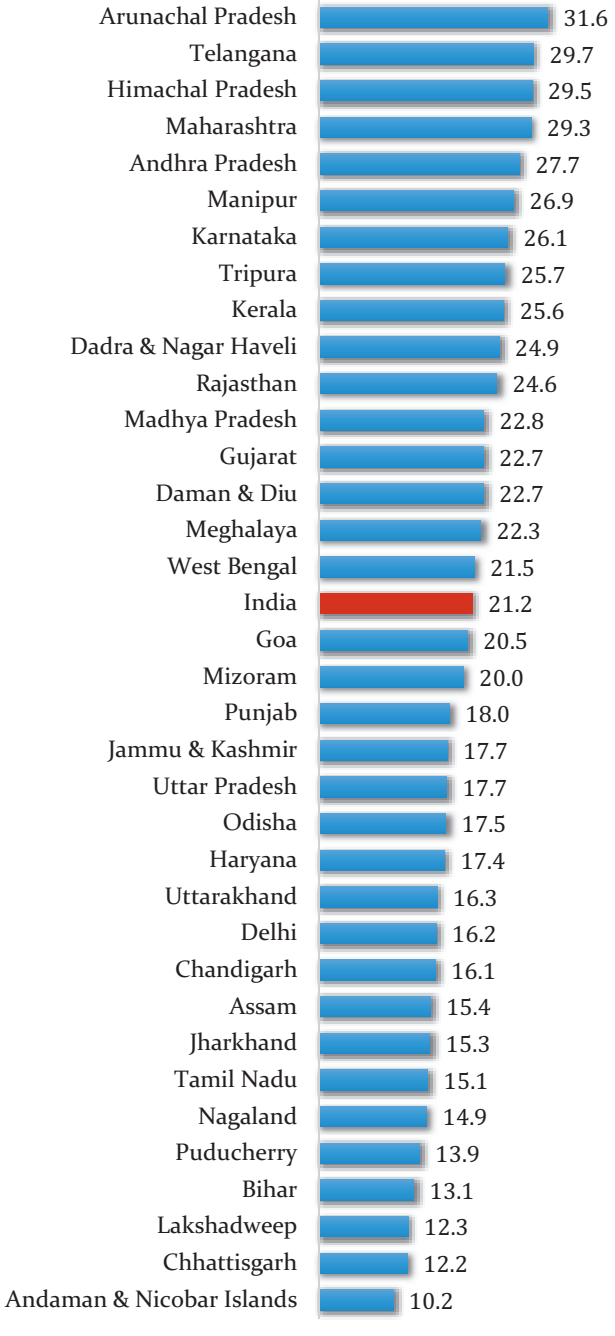


Figure 4.4 Percentage of households incurring catastrophic health expenditure, states/UTs, LASI Wave 1, 2017-18

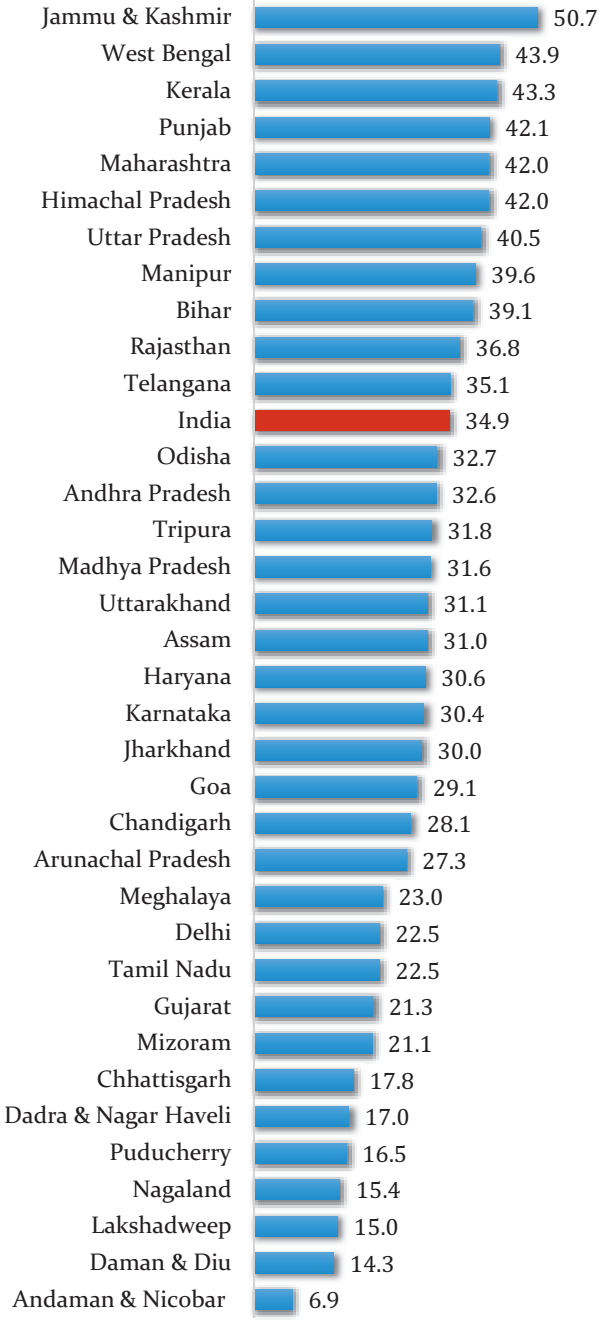


Table 4.5 presents the percentage of households in which at least one member is hospitalised within a reference period of 365 days. In 21% of the households, at least one member is hospitalised during the reference period. This figure varies from 10% in the UTs of Andaman & Nicobar Islands to 32% in the state of Arunachal Pradesh. The states of Kerala, Maharashtra, Uttar Pradesh, and Punjab have health expenditure exceeding 10% of the MPCE. If the share of health expenditure exceeds 10%, this is generally considered catastrophic health spending. About 35% of households in India incur catastrophic health spending (CHS). The proportion of households with CHS is the highest in Jammu & Kashmir (51%), followed by West Bengal (44%), and it is the lowest in Andaman & Nicobar Islands (7%), followed by Daman & Diu (14%).

Figure 4.5 Healthcare expenditure by type of health care services and place of residence, India, LASI Wave 1, 2017-18

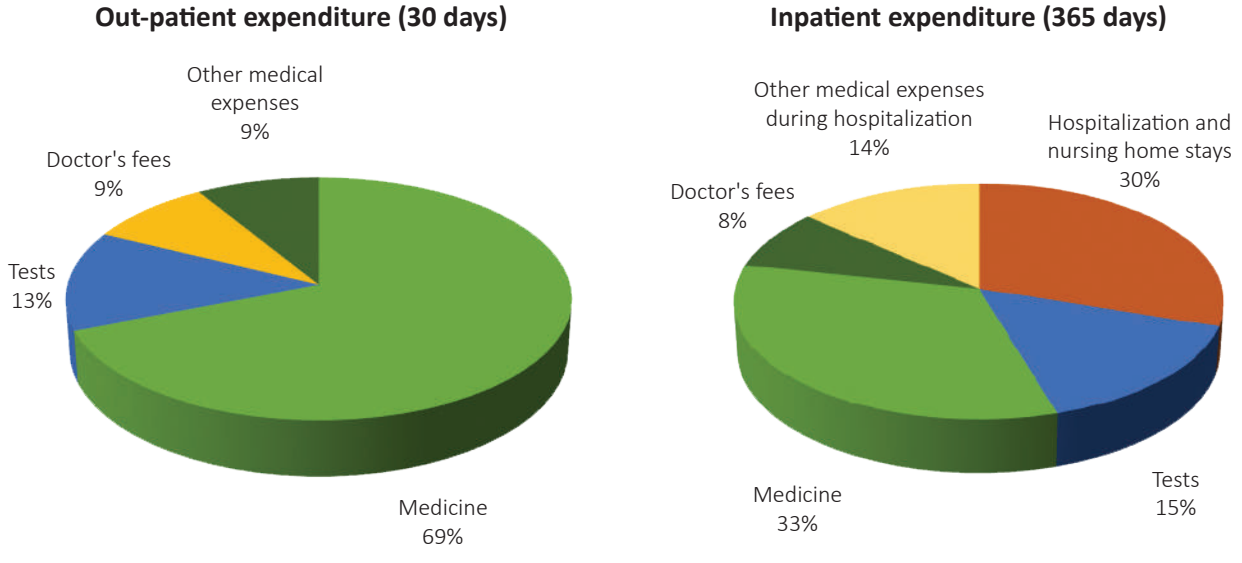


Table 4.6 Percent distribution of monthly healthcare expenditure by type of health care services, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	In the past 30 days, out-patient expenditure on					In the past 365 days, inpatient expenditure on			
	Tests	Medicines	Doctor's fees	Other medical expenses	Hospitalization and nursing home stays	Tests	Medicines	Doctor's fees	Other medical expenses during hospitalization
India	**13.3**	**69.0**	**8.9**	**8.8**	**30.1**	**15.3**	**32.9**	**8.2**	**13.5**
North									
Chandigarh	12.8	77.2	5.1	4.9	15.4	11.5	48.5	8.1	16.4
Delhi	12.0	79.2	6.0	2.8	55.7	16.1	15.0	4.5	8.7
Haryana	10.0	79.4	5.5	5.1	49.6	14.1	26.3	5.0	5.0
Himachal Pradesh	17.1	69.3	2.1	11.5	18.1	14.0	36.7	9.4	22.0
Jammu & Kashmir	15.9	70.8	5.0	8.4	3.7	7.1	14.8	1.1	73.4
Punjab	14.0	75.4	4.8	5.7	29.0	12.1	45.7	4.8	8.4
Rajasthan	10.1	72.4	8.8	8.7	18.4	26.3	31.5	5.8	18.0
Uttarakhand	13.9	72.2	7.1	6.8	31.3	24.0	30.7	7.0	6.9
Central									
Chhattisgarh	6.2	80.1	8.0	5.7	57.7	8.6	21.4	3.3	8.9
Madhya Pradesh	9.8	71.0	8.3	10.9	31.2	9.4	31.4	4.9	23.1
Uttar Pradesh	8.8	78.0	6.6	6.7	28.6	10.0	45.3	7.8	8.3
East									
Bihar	10.7	75.5	7.9	5.9	27.8	13.8	43.7	6.2	8.5
Jharkhand	7.4	79.5	7.7	5.4	46.3	13.0	33.0	3.6	4.1
Odisha	9.5	72.6	6.1	11.8	19.4	13.6	44.0	10.1	12.9
West Bengal	14.3	68.9	9.9	7.0	19.6	17.3	38.8	6.3	17.9
Northeast									
Arunachal Pradesh	9.2	75.6	3.6	11.6	19.1	15.3	46.1	4.2	15.3
Assam	17.7	64.4	6.3	11.7	26.1	22.9	33.1	7.2	10.7
Manipur	20.2	61.0	7.1	11.7	18.0	25.1	35.5	7.4	14.0
Meghalaya	13.4	71.3	6.1	9.2	53.4	14.5	20.7	3.4	8.0
Mizoram	9.0	58.6	2.8	29.6	39.4	14.5	25.8	2.3	18.0
Nagaland	12.0	58.4	5.7	23.9	36.2	19.6	26.6	4.8	12.8
Tripura	19.1	68.4	5.2	7.3	15.7	25.8	33.5	12.0	13.1
West									
Dadra & Nagar Haveli	7.7	77.7	9.4	5.2	17.1	30.1	40.3	3.1	9.4
Daman & Diu	10.1	60.8	20.6	8.5	27.9	17.8	32.2	11.9	10.2
Goa	9.1	67.5	14.1	9.4	26.1	15.0	28.5	16.6	13.8
Gujarat	14.2	74.1	7.1	4.6	36.4	19.7	33.4	8.2	2.4
Maharashtra	12.3	64.9	12.8	10.0	29.4	17.2	32.0	12.7	8.7
South									
Andaman & Nicobar Islands	18.6	56.6	5.3	19.4	22.2	30.7	10.2	26.4	10.5
Andhra Pradesh	18.5	59.0	11.4	11.2	32.4	16.4	33.4	5.9	11.9
Karnataka	18.4	47.2	14.2	20.3	32.5	12.6	15.1	8.6	31.2
Kerala	17.5	64.3	7.8	10.3	41.1	18.5	24.4	3.8	12.3
Lakshadweep	7.9	61.7	3.5	26.9	35.9	14.7	24.4	3.8	21.3
Puducherry	17.4	60.7	12.3	9.6	23.4	22.0	22.8	15.1	16.7
Tamil Nadu	16.2	55.7	15.4	12.7	27.5	19.8	24.8	14.3	13.6
Telangana	25.5	56.3	9.3	8.9	48.0	14.6	21.9	4.6	10.9

Table 4.6 presents the percent distribution of health care expenditure, such as expenditure on medicine, tests, doctors' fees, and other expenses in India. It is computed for those who report expenditure on each of these components. With respect to out-patient care, medicine accounts for over two-thirds (69%) of the total expenditure, followed by tests (13%) and doctors' fees (9%). For inpatient care, the largest share of expenditure is for medicine (33%), followed by costs for hospitalisation and nursing home stays (30%) and doctors' fees (8%). The state pattern of out-patient expenditure suggests that about 80% of expenditure is on medicine in Jharkhand and Chhattisgarh. In the case of inpatient care, the share of hospitalisation in total inpatient health expenditure is the highest in Chhattisgarh (58%), followed by Delhi (56%), and it is the lowest in Jammu & Kashmir (4%). The share of tests on inpatient expenditure also varies from 7% in Jammu & Kashmir to 31% in Andaman & Nicobar Islands.

Table 4.7 Percentage of households having ration card by type of card and use, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Households having ration card (%)	Households having BPL Card (%)	Households using BPL card [5](%)	Households using relative/friend's ration card (%)	Number
India	**84.5**	**44.7**	**65.2**	**0.4**	**42,949**
North					
Chandigarh	52.5	10.6	0.0	0.5	651
Delhi	67.6	29.0	44.6	0.2	754
Haryana	92.7	30.9	34.9	0.0	1,251
Himachal Pradesh	95.1	26.8	88.3	0.7	805
Jammu & Kashmir	98.3	46.7	74.0	0.6	957
Punjab	80.0	8.5	17.5	0.1	1,234
Rajasthan	94.8	25.2	48.7	0.9	1,302
Uttarakhand	90.2	41.7	59.6	0.6	863
Central					
Chhattisgarh	83.6	56.9	76.7	2.1	1,189
Madhya Pradesh	78.7	46.3	55.2	0.5	1,690
Uttar Pradesh	73.6	32.1	52.7	0.1	2,747
East					
Bihar	83.8	51.2	70.9	0.4	2,083
Jharkhand	76.3	48.0	70.8	0.4	1,408
Odisha	79.6	46.4	77.4	0.2	1,645
West Bengal	97.0	56.5	82.8	0.6	2,279
Northeast					
Arunachal Pradesh	79.6	56.0	50.7	3.5	702
Assam	75.7	54.6	74.4	0.1	1,511
Manipur	74.0	30.7	67.7	0.7	860
Meghalaya	79.8	67.0	68.7	0.3	636
Mizoram	95.8	31.9	86.0	4.3	732
Nagaland	66.7	62.1	45.9	1.2	799
Tripura	97.8	46.6	95.3	0.9	721
West					
Dadra & Nagar Haveli	77.8	31.6	44.0	0.0	631
Daman & Diu	77.2	32.9	45.0	0.5	577
Goa	91.3	33.3	72.9	0.5	877
Gujarat	93.6	34.9	56.5	0.5	1,455
Maharashtra	91.1	38.1	61.1	0.5	2,421
South					
Andaman & Nicobar Islands	96.3	20.0	77.5	2.1	725
Andhra Pradesh	92.8	86.0	88.5	0.2	1,511
Karnataka	73.7	60.7	62.5	0.3	1,488
Kerala	95.4	40.8	71.4	1.2	1,411
Lakshadweep	97.2	28.0	83.2	1.6	627
Puducherry	97.9	61.3	46.1	0.2	839
Tamil Nadu	92.6	34.5	87.4	0.5	2,150
Telangana	85.7	79.1	80.0	0.9	1,418

Note

[5] Among those who had BPL Card.

Households having a Below Poverty Line (BPL) card in India are entitled to various welfare benefits, including subsidised rations, free housing, and health insurance, and these benefits are provided by the central and state governments. In the LASI survey, questions related to the type of ration card and its use were asked to each age-eligible household. Table 4.7 presents the percentage of households holding a ration card by type of card. It also shows the use of BPL cards by states/UTs of India. About 85% of households reported having a ration card, while 45% of households have a BPL card. Among households holding a BPL card, 65% have used it in the last 30 days prior to the survey. The use of a ration card belonging to another household is low. The state-level variation in BPL card holders is large. About 86% of households in Andhra Pradesh have a BPL card, compared with only 9% in Punjab. The use of the BPL card in Punjab and Chandigarh is lowest, while it is the highest in Tripura.

Key findings: household consumption expenditure

- The MPCE among older adults in India is ₹2,967: ₹2,543 in rural areas and ₹3,544 in urban areas. The MPCE of households with an elderly member (₹3,001) is lower than that of households without an elderly member (₹2,948).
- The state variation in MPCE is large. MPCE is the highest in Chandigarh (₹5,691) and the lowest in Chhattisgarh (₹2,967).
- Non-food expenditure accounts for about half of the consumption expenditure, and health expenditure accounts for 13%.
- The per capita health spending of a household with an elderly member age 60 and above (₹405) is higher compared with a household without an elderly member (₹352).
- On an average, households in India spend 13% of the consumption expenditure on health, which varies from 5% in Daman & Diu to 19% in Jammu & Kashmir.
- The share of health expenditure is more than 15% of the consumption expenditure in the states/UTs of Uttar Pradesh (17%), West Bengal (17%), Arunachal Pradesh (17%), Kerala (17%), and Jammu & Kashmir (19%).
- About 35% of households in India spend more than 10% of their consumption expenditure on health care, and 25% of households spend more than 15% of their consumption expenditure on health care.
- The largest amount of health spending is on medicine (69% of total health spending).
- Forty-five percent of households have a BPL card, and among those, 65% have used it in the 30 days prior to the survey.

4.2 HOUSEHOLD INCOME

Financial security among the elderly is a matter of concern in most developing countries. This is especially true for India, which is experiencing a fast pace of demographic transition and rapid growth of the elderly population, both in absolute numbers and as a proportion of the total population. Financial security is an important determinant of the overall quality of life, especially in older ages. While financial capabilities and income decline with age, the need for health care and other necessities increases. Moreover, older individuals are often more susceptible to diseases and ill health due to their deteriorating physical and mental conditions. At the same time, the majority of elderly are not a part of the workforce in India and have very limited options for a continued source of income.

Per Capita Income (PCI) is the direct measure of households' economic well-being. Unlike wealth and consumption, income is a flow concept, as it is readily disposable and, therefore, a critical part of financial security for the economic well-being of elderly households. However, the income of an individual or household may fluctuate depending on the movement of the economy. Moreover, in India, collection of data on household income is challenging and tends to be grossly underreported among both the rich and poor.

Information on household income in LASI is useful for understanding the households' overall financial status and aggregate income. Information on sources of personal income and financial status allow a better understanding of the behaviour and patterns of retirement planning among the elderly, including their financial preparedness. Moreover, income data support a better understanding of poverty, inequality, labour market, taxation, and other fiscal policies, which is essential for policymakers. Furthermore, the information is useful to better capture India's idiosyncrasies and validate income, asset, and consumption models.

In LASI, information on household income was collected from nine major sources of income and from all members of the household. The guiding principles used in LASI for income measurement are as follows: salary, wage, pension, and transfer income are considered before tax, while agricultural and non-agricultural business income are considered as gross receipts minus input cost, including taxes. The nine main sources of income on which data were collected in the LASI are described below:

- Household income from agricultural and non-agricultural business:
  - Agricultural income
  - Income from farming assets, forestry, fishing, and livestock
  - Income from non-agricultural business activities, including self-employment

- Individual income:
  - Wage/salary income
  - Income from self-employment
  - Pension income

- Household income from transfer payments/others
  - Income from government transfer
  - Income from private transfer
  - Other household income

Table 4.8 Per-capita income in (₹) by source according to household background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Agricultural and allied activities (in ₹)	Non-agricultural business or self-employed activities (in ₹)	Wages/ salary (in ₹)	Pension (in ₹)	Government/ public transfers(in ₹)	Annual Per capita income (in ₹)
Place of residence						
Rural	12278	2565	12466	2110	1795	35893
Urban	1622	11201	37723	7241	854	65720
Caste of the head of household						
Scheduled tribe	10080	1531	14142	2238	1687	35833
Scheduled caste	7175	2598	16387	2436	1844	35374
Other backward class	9307	5642	21721	3349	1493	46316
None of the above	9913	7753	22387	5708	1259	53309
Religion of head of household						
Hindu	9817	4885	18945	4017	1647	44624
Muslim	4550	6486	26186	1555	904	45632
Christian	6768	3173	24869	4282	1081	42206
Other	12865	8542	19864	3892	1552	52512
Household size						
1-2	15755	6784	20663	11383	3731	75812
3-4	9447	7204	29943	4430	2055	60671
5-6	8427	5041	22000	3612	1298	44666
7 or more	8150	3716	12197	1721	965	29717
MPCE quintile						
Poorest	5527	2306	11159	1053	1231	25825
Poorer	7287	3761	14522	1683	1573	33050
Middle	9077	4413	17556	4378	1415	41733
Richer	11668	6671	26920	4984	1754	59043
Richest	15062	11715	40182	8842	1762	85552
Household having						
No member 60+	9156	6412	24978	1517	1379	49174
At least one member 60+	9189	4577	17524	4903	1624	42819
Types of houses						
Pucca	8802	7352	26819	5725	1330	55593
Semi-pucca	9833	2735	12582	1372	1809	33315
Kaccha	8593	1847	9797	529	1635	27798
Total	**9,063**	**5,155**	**20,065**	**3,649**	**1,513**	**44,901**

* PCI has been calculated by summing up the income of all households from all members and all sources and dividing by household population of LASI age-eligible households.

In this section, information on PCI and income by sources is presented. Per capita household income is computed by aggregating income from all sources and dividing by the number of household members. Income by sources is computed by aggregating income from each source for the respective households and dividing it by the respective number of household members. Table 4.8 presents the PCI in LASI age-eligible households by sources and household background characteristics. Annual PCI for LASI age-eligible households in India is ₹ 44,901. Annual PCI for households having at least one elderly member is ₹ 42,819, compared with those with no elderly members (₹ 49,174).

Annual PCI from agricultural and allied activities is higher in rural areas (₹ 12,278) compared with urban areas (₹ 1,622). By contrast, annual PCI from non-agricultural business activities (₹ 11,201) and wages/salary (₹ 37,723) is higher in urban areas. Annual PCI from non-agricultural business activities, wages/salary, and pension is the lowest among scheduled tribes, whereas annual PCI from agricultural and allied activities is the lowest among the scheduled castes. Annual PCI from agricultural and allied activities, non-agricultural business, wages/salary, pension, and government/public transfers decreases with the increase in household size. Annual PCI from pension is higher amongst households with at least one elderly member (₹ 4,903) compared with those with no elderly members (₹ 1,517). Across MPCE quintiles, annual PCI from agricultural and allied activities is the highest among households in the richest quintile (₹ 15,062) compared with the poorest quintile (₹ 5,527). A similar pattern is observed for all other sources of income. Annual PCI is comparatively lower among households headed by Christian (₹ 42,206), followed by Hindu (₹ 44,624) and Muslim (₹ 45,632).

Table 4.9 Per-capita income by source of income, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Annual Per capita income	Agricultural and allied activities (in ₹)	Non-agricultural business or self-employed activities (in ₹)	Wages/salaries (in ₹)	Pension (in ₹)	Government/ public transfers (in ₹)
India	**44,901**	**9,063**	**5,155**	**20,065**	**3,649**	**1,513**
North						
Chandigarh	1,04,387	2,307	11,276	63,862	22,363	1,111
Delhi	67,432	299	16,290	32,234	4,663	849
Haryana	53,940	15,703	5,245	25,397	2,871	2,757
Himachal Pradesh	62,784	18,445	4,083	24,974	12,385	1,141
Jammu & Kashmir	40,484	6,918	5,088	20,831	5,758	488
Punjab	50,373	13,737	9,113	19,195	3,305	1,106
Rajasthan	49,322	12,078	8,443	20,069	4,299	1,841
Uttarakhand	52,899	5,614	4,578	24,060	12,443	862
Central						
Chhattisgarh	43,685	12,301	4,115	15,044	2,742	1,413
Madhya Pradesh	41,258	12,829	5,888	15,314	2,726	2,077
Uttar Pradesh	28,331	8,155	2,967	11,380	2,933	627
East						
Bihar	26,628	6,477	3,383	11,422	2,137	698
Jharkhand	34,452	7,730	4,668	15,419	3,397	1,679
Odisha	38,697	7,308	7,519	14,021	3,970	2,137
West Bengal	48,588	4,140	5,719	20,086	4,197	2,099
Northeast						
Arunachal Pradesh	46,493	7,513	4,780	24,024	5,051	1,090
Assam	36,349	4,272	4,233	19,685	5,383	1,251
Manipur	45,365	5,369	10,127	30,090	5,237	407
Meghalaya	29,461	3,753	4,839	17,985	1,941	219
Mizoram	50,481	5,639	11,980	24,345	7,173	499
Nagaland	42,868	6,128	1,969	15,561	11,649	357
Tripura	45,916	4,103	5,303	26,243	2,415	1,987
West						
Dadra & Nagar Haveli	48,672	4,506	8,202	27,398	4,073	1,269
Daman & Diu	43,703	4,411	7,132	23,294	5,467	1,399
Goa	62,018	1,621	8,173	32,391	6,617	1,600
Gujarat	56,802	8,053	5,906	19,109	3,525	599
Maharashtra	52,508	9,760	5,130	26,451	4,392	1,813
South						
Andaman & Nicobar Islands	70,753	4,764	16,660	44,765	10,089	2,173
Andhra Pradesh	52,216	13,373	6,502	28,999	3,984	2,341
Karnataka	54,498	11,804	4,741	25,933	2,546	2,130
Kerala	57,731	5,052	6,576	26,972	8,493	2,113
Lakshadweep	44,432	1,685	1,834	25,741	9,376	383
Puducherry	58,173	5,085	3,458	35,236	7,821	4,285
Tamil Nadu	52,824	8,198	6,248	26,841	5,517	2,199
Telangana	52219	15,236	4,211	23,791	3,893	3,037

* PCI for the states/UTs has been calculated by summing up the income of all households from all sources and dividing by household population of LASI age-eligible households for the respective states/UTs.

Table 4.9 presents state-wise variations in annual PCI from different sources of income, such as agricultural and allied activities, non-agricultural business or self-employed activities, wages/salary, pension, and government/public transfers. Annual PCI is the highest in Chandigarh (₹ 1,04,387), followed by Andaman & Nicobar Islands (₹ 70,753), whereas it is lower than the national average of ₹ 44,901 in the states of Bihar (₹ 26,628), Uttar Pradesh (₹ 28,331), Meghalaya (₹ 29,461), and Jharkhand (₹ 34,452). Annual PCI is ₹ 20,065 from wages and salary, ₹ 9,063 from agricultural and allied activities, ₹ 5,155 from non-agricultural business, (₹ 3,649) from pension, and ₹ 1,513 from government transfers. Annual PCI from agricultural and allied activities is higher than the national average in the states of Himachal Pradesh (₹ 18,445), Punjab (₹ 13,737), Haryana (₹ 15,703), Telangana (₹ 15,236), and Andhra Pradesh (₹ 13,373). Annual PCI from non-agricultural business activities and wages/salary is higher in the states/UTs of Chandigarh, Andaman & Nicobar Islands, Goa, Delhi, Manipur, and Dadra & Nagar Haveli. Annual PCI from pension is higher in the states/UTs of Chandigarh (₹ 22,363), Uttarakhand (₹ 12,443), Himachal Pradesh (₹ 12,385), Nagaland (₹ 11,649), and Andaman & Nicobar Islands (₹ 10,089).

Table 4.10 Percent distribution of households by single and multiple sources of income, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Single source	Multiple source	Number	Households with income from single source only				
				Agricultural and allied activities	Non-agricultural business or self-employed activities	Wages/ salaries	Pension	Private transfers
India	**65.1**	**34.9**	**36,702**	**19.0**	**3.3**	**70.1**	**4.5**	**3.1**
North								
Chandigarh	76.6	23.4	550	0.4	2.1	84.6	13.0	0.0
Delhi	77.6	22.5	580	0.0	13.2	80.0	5.5	1.3
Haryana	75.5	24.5	1,117	19.5	2.4	74.8	2.7	0.6
Himachal Pradesh	38.2	61.8	713	48.1	2.7	39.6	7.2	2.4
Jammu & Kashmir	67.3	32.7	791	16.8	6.8	66.9	8.2	1.4
Punjab	86.5	13.5	1,053	16.2	3.7	75.0	4.5	0.7
Rajasthan	60.3	39.7	1,156	32.7	4.6	56.5	2.9	3.4
Uttarakhand	55.8	44.2	786	18.6	4.3	60.6	11.8	4.8
Central								
Chhattisgarh	54.3	45.7	1,047	31.0	5.0	60.1	2.4	1.6
Madhya Pradesh	64.9	35.1	1,426	21.4	4.8	69.4	3.3	1.2
Uttar Pradesh	57.3	42.7	2,429	31.4	2.8	57.9	3.5	4.4
East								
Bihar	57.5	42.5	1,944	22.2	4.8	62.7	2.3	8.1
Jharkhand	47.9	52.1	1,264	26.9	2.9	63.5	3.2	3.5
Odisha	40.6	59.4	1,534	18.4	12.1	54.4	4.1	11.0
West Bengal	68.9	31.1	2,104	8.6	4.3	79.7	5.2	2.1
Northeast								
Arunachal Pradesh	79.2	20.8	533	35.4	5.7	55.8	1.8	1.4
Assam	61.2	38.8	1,376	14.6	2.9	75.3	6.4	0.9
Manipur	64.4	35.6	774	8.2	2.1	84.3	4.8	0.7
Meghalaya	63.2	36.8	482	15.5	3.3	70.2	9.0	1.9
Mizoram	77.2	22.8	511	46.0	8.3	40.9	2.5	2.3
Nagaland	76.4	23.6	542	45.1	0.9	34.1	15.1	4.9
Tripura	73.3	26.7	625	2.9	1.2	90.0	4.8	1.1
West								
Dadra & Nagar Haveli	58.9	41.1	549	17.1	2.1	77.0	2.7	1.2
Daman & Diu	80.4	19.6	471	3.9	3.5	79.7	8.9	4.1
Goa	66.1	33.9	703	4.5	2.4	68.4	23.1	1.6
Gujarat	64.0	36.0	1,290	22.0	2.8	68.8	3.6	2.8
Maharashtra	73.4	26.6	2,178	16.6	3.0	74.3	4.5	1.6
South								
Andaman & Nicobar Islands	74.9	25.1	548	15.0	2.4	74.4	7.1	1.2
Andhra Pradesh	73.2	26.9	1,214	10.0	1.2	79.6	6.4	2.8
Karnataka	63.6	36.4	1,346	27.2	1.8	65.0	3.1	2.8
Kerala	72.9	27.1	1,011	5.5	3.5	66.6	21.1	3.4
Lakshadweep	83.0	17.1	460	0.1	1.2	64.5	30.6	3.6
Puducherry	80.1	19.9	693	1.6	1.4	81.7	13.1	2.2
Tamil Nadu	83.7	16.4	1,814	5.1	1.1	84.4	5.5	3.9
Telangana	63.4	36.6	1,088	22.2	1.8	67.0	7.6	1.5

Table 4.10 shows the percentage of households reporting single and multiple sources of income. Sixty-five percent of the households in India reported that they have only a single source of income, whereas 35% of the households reported that they have more than one source of income. Among households with only one source of income, 70% have income from wages and salary, 19% from an agricultural source, 5% from pension, and 3% each from private transfers and a non-agricultural source. Among the states/UTs, Punjab (87%), Tamil Nadu (84%), and Lakshadweep (83%) have the higher percentage of households with a single source of income. Moreover, the states of Odisha (59%), Himachal Pradesh (62%), and Jharkhand (52%) have the higher percentage of households with multiple sources of income.

Table 4.11 Percent distribution of households by perceived financial status according to household background characteristics, India, LASI Wave 1, 2017-18

Background Characteristics	Well below average	Below average	About the average	Well off	Very well off	Number
Place of residence						
Rural	8.9	34.1	47.3	8.7	1.1	27,196
Urban	7.3	27.0	48.8	11.2	5.7	14,989
Caste of the head of household						
Scheduled tribe	9.3	38.6	43.9	6.6	1.6	7,388
Scheduled caste	11.3	37.9	43.3	6.7	0.7	7,431
Other backward class	7.7	29.2	50.0	10.0	3.1	15,790
None of the above	7.0	29.3	48.8	11.7	3.3	11,576
Religion of head of household						
Hindu	8.6	31.8	47.4	9.8	2.4	30,779
Muslim	7.6	32.0	48.4	8.4	3.6	5,122
Christian	7.0	31.9	54.1	5.7	1.3	4,275
Other	8.3	32.1	49.7	8.6	1.3	2,009
Household size						
1-2	14.5	36.6	40.2	7.3	1.4	8,043
3-4	8.5	31.9	47.5	9.3	2.9	12,521
5-6	6.3	30.3	50.3	9.8	3.3	13,252
7 or more	5.3	29.5	51.9	11.4	1.9	8,369
MPCE quintile						
Poorest	11.2	38.2	44.6	5.6	0.5	8,430
Poorer	8.6	34.5	48.2	7.9	0.8	8,449
Middle	7.6	32.0	48.7	9.4	2.4	8,439
Richer	6.4	30.6	48.1	11.7	3.2	8,434
Richest	7.9	22.9	49.6	13.5	6.1	8,433
Household having						
No member 60+	7.2	33.4	49.8	8.5	1.0	17,379
At least one member 60+	9.1	31.0	46.5	10.1	3.4	24,806
Types of houses						
Pucca	5.4	25.1	52.8	12.5	4.2	22,240
Semi-pucca	9.2	37.9	45.3	6.9	0.7	11,755
Kaccha	16.2	42.9	36.1	4.5	0.2	7,904
Total	**8.4**	**31.9**	**47.8**	**9.5**	**2.5**	**42,185**

Table 4.11 shows the percent distribution of households based on their perceived financial status. About half of the households perceive their financial status as 'about the average'. Ten percent of the households perceive themselves to be well off, followed by only 2.5% households who consider themselves to be in the 'very well off' category. About 47% of households in rural areas perceive that they are 'about the average'. Six percent of households in urban areas perceive their financial status to be very well off, compared with only 1% in rural areas. About half of the households whose heads belong to other backward class perceive their status to be 'about the average'. A higher proportion of households in the richest MPCE quintile perceive their financial status to be 'very well off'.

Key findings: household income

- Annual PCI for LASI age-eligible households in India is ₹44,901. Annual PCI is ₹20,065 from wages and salary, ₹9,063 from agricultural and allied activities, ₹5,155 from non-agricultural business, ₹3,649 from pension, and ₹1,513 from government transfers.
- Annual PCI for households having at least one elderly member age 60 and above is ₹42,819, compared to those with no elderly member (₹49,174).
- Sixty-five percent of the households in India report that they have only a single source of income, whereas 35% of the household's report that they have more than one source of income.
- About two-thirds of household depends on wge and salary for their livelihood.
- About half of the households perceive their financial status as 'about the average'. Ten percent of the households perceive themselves to be well off, followed by only 2.5% households who consider themselves to be in the 'very well off' category.

4.3 HOUSEHOLD ASSETS AND DEBTS

Household assets are used as measure for assessing the financial capabilities of households, and their economic vulnerability can be assessed based on the amount of debt they owe. Dependence on assets and debt requires more attention on the context of ageing, as elders often use their wealth to support themselves as their flow of income ceases. In the LASI, information collected on household assets includes ownership of houses, agricultural assets, land properties, wealth stock (financial and non-financial assets), and business assets that may be acquired or inherited over a period of time. Household debt includes loans and other financial obligations the household owes to others.

Table 4.12 Percentage of households owning current residence and its distribution across categories of acquisition, Rural, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Ownership of houses (%)	Number	Percent distribution among those who have purchased/received the house					Number
			Purchased	self-built	Inherited/ received from family	Received from the state/ central govt	Others	
India	**94.6**	**27,576**	**5.3**	**46.9**	**41.5**	**6.1**	**0.2**	**25,880**
North								
Chandigarh	-	-	-	-	-	-	-	-
Delhi	-	-	-	-	-	-	-	-
Haryana	95.0	833	6.0	12.8	78.8	2.4	0.1	793
Himachal Pradesh	92.0	700	0.9	65.6	33.1	0.5	0.0	645
Jammu & Kashmir	98.7	694	1.4	71.2	27.2	0.2	0.0	685
Punjab	94.6	871	3.2	64.4	31.4	0.9	0.2	831
Rajasthan	96.4	1,025	2.2	72.8	24.1	0.9	0.0	984
Uttarakhand	95.4	618	2.7	49.2	48.0	0.1	0.0	594
Central								
Chhattisgarh	98.5	971	2.1	55.6	40.9	1.3	0.1	955
Madhya Pradesh	93.1	1,192	9.3	45.1	41.7	3.8	0.1	1,136
Uttar Pradesh	98.2	2,155	5.8	21.2	70.7	1.8	0.5	2,112
East								
Bihar	98.6	1,866	5.5	18.5	73.2	2.7	0.1	1,838
Jharkhand	98.2	1,123	0.9	40.2	56.0	2.7	0.1	1,103
Odisha	97.9	1,391	1.9	53.6	39.0	5.6	0.0	1,358
West Bengal	92.9	1,148	13.5	25.5	57.4	3.6	0.1	1,030
Northeast								
Arunachal Pradesh	85.7	534	2.0	88.9	7.1	2.0	0.0	448
Assam	94.6	1,322	0.9	83.6	3.5	12.0	0.1	1,253
Manipur	92.9	574	20.9	31.3	45.3	2.1	0.4	536
Meghalaya	91.5	524	3.9	45.6	49.7	0.4	0.3	489
Mizoram	94.3	360	7.7	75.7	14.6	2.0	0.0	337
Nagaland	87.1	569	8.8	42.3	44.6	1.3	3.0	533
Tripura	89.8	555	17.6	28.9	50.3	2.8	0.3	498
West								
Dadra & Nagar Haveli	89.3	391	0.0	90.3	6.5	3.2	0.0	349
Daman & Diu	81.7	210	4.7	56.3	38.8	0.2	0.0	175
Goa	92.3	365	4.0	53.5	38.8	3.0	0.8	332
Gujarat	91.6	857	3.1	62.0	28.7	6.1	0.1	777
Maharashtra	93.5	1,159	5.7	49.5	37.8	6.9	0.2	1,077
South								
Andaman & Nicobar Islands	88.4	451	6.0	34.9	9.6	48.3	1.2	398
Andhra Pradesh	92.1	1,107	7.9	46.9	26.0	18.9	0.4	1,024
Karnataka	90.0	1,012	6.2	49.6	37.8	6.3	0.1	901
Kerala	87.8	709	23.1	37.6	36.3	2.6	0.4	621
Lakshadweep	86.2	132	0.9	46.6	52.6	0.0	0.0	120
Puducherry	88.3	269	11.7	68.4	7.6	12.3	0.0	242
Tamil Nadu	88.4	891	12.5	59.5	21.7	6.3	0.0	789
Telangana	93.0	972	5.6	68.3	18.2	7.7	0.1	898

"-" Rural and urban is not applicable for Delhi and Chandigarh

Table 4.13 Percentage of households owning current residence and its distribution across categories of acquisition, Urban, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Ownership of houses (%)	Number	Percent distribution among those who have purchased/received the house					Number
			Purchased	self-built	Inherited/ received from family	Received from the state/ central govt	Others	
India	**76.9**	**15,373**	**23.7**	**44.7**	**27.3**	**3.3**	**0.9**	**11,776**
North								
Chandigarh	-	-	-	-	-	-	-	-
Delhi	-	-	-	-	-	-	-	-
Haryana	83.1	418	40.4	11.5	47.2	0.8	0.2	358
Himachal Pradesh	78.2	105	1.4	71.5	25.0	2.2	0.0	86
Jammu & Kashmir	98.5	263	4.4	70.1	25.6	0.0	0.0	258
Punjab	84.7	363	6.8	56.7	33.9	0.0	2.6	310
Rajasthan	91.7	277	24.0	67.0	7.2	0.7	1.0	255
Uttarakhand	88.2	245	15.2	48.4	35.4	0.6	0.4	205
Central								
Chhattisgarh	86.8	218	16.5	49.3	24.5	8.8	0.9	192
Madhya Pradesh	85.5	498	20.3	44.4	32.1	3.1	0.2	429
Uttar Pradesh	89.1	592	27.3	23.2	40.7	6.3	2.6	531
East								
Bihar	95.1	217	14.5	16.8	67.2	0.9	0.6	205
Jharkhand	79.2	285	8.2	59.5	30.8	1.3	0.3	242
Odisha	82.8	254	3.3	55.6	39.5	0.9	0.6	211
West Bengal	84.3	1,131	26.8	25.7	46.8	0.6	0.1	763
Northeast								
Arunachal Pradesh	26.8	168	1.4	71.8	1.4	20.1	5.4	61
Assam	77.0	189	0.5	90.3	5.0	3.4	0.8	143
Manipur	91.5	286	10.2	34.4	52.6	1.7	1.2	261
Meghalaya	66.9	112	18.1	39.5	42.3	0.0	0.0	74
Mizoram	72.2	372	12.9	69.4	16.9	0.8	0.0	278
Nagaland	75.4	230	33.4	36.7	28.6	0.2	1.2	184
Tripura	83.0	166	31.5	20.1	46.3	1.5	0.6	138
West								
Dadra & Nagar Haveli	60.3	240	35.6	50.4	10.0	4.0	0.0	148
Daman & Diu	68.0	367	10.8	47.5	40.5	0.4	0.8	219
Goa	84.7	512	24.7	35.3	38.4	1.1	0.6	435
Gujarat	80.8	598	24.9	49.7	21.7	3.4	0.3	461
Maharashtra	79.4	1,262	38.5	38.9	18.6	3.3	0.9	1,013
South								
Andaman & Nicobar Islands	76.7	274	29.8	29.3	16.9	23.8	0.2	214
Andhra Pradesh	58.0	404	19.3	50.7	20.4	7.3	2.3	240
Karnataka	60.9	476	33.3	56.6	5.1	5.0	0.1	311
Kerala	83.6	702	25.4	38.3	35.5	0.6	0.3	578
Lakshadweep	91.7	495	4.4	21.0	74.6	0.0	0.0	454
Puducherry	70.1	570	20.6	63.9	11.0	4.5	0.0	439
Tamil Nadu	64.3	1,259	22.0	60.2	16.2	1.6	0.1	761
Telangana	63.2	446	10.8	67.2	19.1	1.2	1.7	281

"-" Rural and urban is not applicable for Delhi and Chandigarh

Tables 4.12 and 4.13 present the percentage of households owning their current residence and its distribution across categories of acquisition according to the place of residence by the states/UTs of India. In India, 95% of rural households own their residence, compared with 77% of households in urban areas. In rural areas, among those who own their house, 47% built the house, 42% inherited or received it from family, and 5% purchased the house. However, in urban areas, 45% built their house, 27% inherited or received it from family, and 24% purchased the house. The percentage of households purchased is higher in the urban than in the rural areas.

Table 4.14 Percentage of households owning current residence and its distribution across categories of acquisition, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Ownership of houses (%)	Number	Percent distribution among those who have purchased/received the house					Number
			Purchased	self-built	Inherited/ received from family	Received from the state/central govt.	Others	
India	**89.0**	**42,949**	**10.9**	**46.0**	**37.9**	**4.7**	**0.5**	**37,656**
North								
Chandigarh	75.8	651	37.4	34.1	13.2	11.6	3.6	474
Delhi	77.2	754	46.7	25.6	18.6	6.1	3.1	583
Haryana	90.5	1,251	18.0	12.3	67.7	1.8	0.1	1,151
Himachal Pradesh	90.4	805	0.9	66.2	32.3	0.6	0.0	731
Jammu & Kashmir	98.7	957	2.4	70.9	26.7	0.1	0.0	943
Punjab	92.2	1,234	4.0	62.7	31.9	0.7	0.7	1,141
Rajasthan	95.2	1,302	7.8	71.3	19.8	0.8	0.3	1,239
Uttarakhand	93.3	863	6.2	48.9	44.5	0.3	0.1	799
Central								
Chhattisgarh	95.8	1,189	5.1	54.3	37.4	2.9	0.3	1,147
Madhya Pradesh	90.8	1,690	12.4	44.9	39.0	3.6	0.1	1,565
Uttar Pradesh	96.2	2,747	10.2	21.6	64.6	2.7	0.9	2,643
East								
Bihar	98.2	2,083	6.6	18.3	72.5	2.5	0.2	2,043
Jharkhand	93.4	1,408	2.5	44.3	50.6	2.4	0.1	1,345
Odisha	95.4	1,645	2.1	53.9	39.0	4.9	0.1	1,569
West Bengal	89.8	2,279	18.0	25.5	53.8	2.6	0.1	1,793
Northeast								
Arunachal Pradesh	73.3	702	2.0	87.6	6.7	3.4	0.4	509
Assam	91.7	1,511	0.8	84.5	3.7	10.8	0.2	1,396
Manipur	92.4	860	16.9	32.5	48.0	1.9	0.7	797
Meghalaya	85.9	636	6.4	44.6	48.4	0.3	0.2	563
Mizoram	82.3	732	10.2	72.7	15.7	1.4	0.0	615
Nagaland	83.9	799	14.9	40.9	40.6	1.0	2.6	717
Tripura	87.6	721	21.8	26.3	49.1	2.4	0.4	636
West								
Dadra & Nagar Haveli	71.2	631	18.7	69.4	8.3	3.6	0.0	497
Daman & Diu	69.5	577	10.0	48.7	40.3	0.3	0.7	394
Goa	87.5	877	16.5	42.5	38.6	1.8	0.7	767
Gujarat	86.9	1,455	12.0	57.0	25.9	5.0	0.2	1,238
Maharashtra	87.0	2,421	19.5	45.0	29.7	5.4	0.5	2,090
South								
Andaman & Nicobar Islands	83.9	725	14.5	32.9	12.2	39.6	0.8	612
Andhra Pradesh	81.4	1,511	10.4	47.8	24.8	16.3	0.8	1,264
Karnataka	80.1	1,488	13.2	51.4	29.3	5.9	0.1	1,212
Kerala	85.7	1,411	24.2	37.9	35.9	1.6	0.3	1,199
Lakshadweep	91.0	627	4.0	24.0	72.0	0.0	0.0	574
Puducherry	75.8	839	17.4	65.5	9.8	7.3	0.0	681
Tamil Nadu	76.2	2,150	16.6	59.8	19.3	4.3	0.1	1,550
Telangana	82.2	1,418	7.0	68.0	18.5	5.9	0.6	1,179

Table 4.14 presents the percentage of households owning their current residence and its distribution across categories of acquisition by states/UTs of India. About 89% of households in India own a house; this proportion varies from 99% in Jammu & Kashmir to 70% in Daman & Diu. The percentage of households owning a house is comparatively lower in the more urbanised states of India.

Table 4.15 Percent distribution of households by type of land (cultivated/non-cultivated) and mean land size, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	% of household owning:				Mean size of land holdings (in acres)			
	No Land	Only cultivated land	Only non-cultivated land	Either cultivated or non-cultivated land	Only cultivated land	Only non-cultivated land	Either cultivated or non-cultivated land	Number
India	**46.1**	**39.8**	**2.9**	**42.7**	**2.8**	**2.0**	**2.7**	**42,949**
North								
Chandigarh	87.4	7.9	1.1	9.0	3.0	1.7	2.8	651
Delhi	83.5	11.0	1.1	12.1	3.7	4.4	3.8	754
Haryana	54.8	36.7	3.1	39.8	4.6	2.5	4.5	1,251
Himachal Pradesh	12.3	41.6	2.9	44.5	2.7	1.5	3.4	805
Jammu & Kashmir	36.0	46.1	4.8	50.9	1.7	0.9	1.8	957
Punjab	73.0	22.3	0.5	22.8	4.4	2.9	4.2	1,234
Rajasthan	39.1	56.1	2.0	58.1	4.1	3.8	4.0	1,302
Uttarakhand	45.2	39.0	4.1	43.1	1.8	0.5	1.9	863
Central								
Chhattisgarh	32.2	64.0	1.4	65.4	3.1	3.0	3.1	1,189
Madhya Pradesh	50.9	43.7	1.1	44.7	3.8	3.2	3.7	1,690
Uttar Pradesh	34.7	57.7	1.3	59.0	2.0	1.4	2.0	2,747
East								
Bihar	45.6	48.5	2.3	50.8	1.7	0.8	1.6	2,083
Jharkhand	31.5	60.6	2.8	63.4	1.8	1.3	1.7	1,408
Odisha	34.3	55.8	1.6	57.3	2.0	0.9	2.0	1,645
West Bengal	65.1	32.1	0.8	32.9	1.4	1.3	1.4	2,279
Northeast								
Arunachal Pradesh	42.5	28.3	5.5	33.8	1.9	1.7	1.9	702
Assam	45.9	35.4	8.9	44.3	2.2	0.8	1.9	1,511
Manipur	51.7	21.7	10.6	32.3	2.7	1.9	2.3	860
Meghalaya	63.1	19.7	7.3	27.0	1.7	1.7	1.5	636
Mizoram	44.3	38.4	11.6	50.0	2.6	3.1	2.8	732
Nagaland	40.3	43.2	4.5	47.7	4.5	2.9	4.3	799
Tripura	72.7	20.5	2.7	23.2	2.9	4.5	2.8	721
West								
Dadra & Nagar Haveli	38.0	48.0	4.5	52.5	2.3	4.0	2.5	631
Daman & Diu	73.5	17.1	2.0	19.1	4.1	1.9	4.1	577
Goa	77.1	15.9	3.5	19.4	4.3	1.0	4.1	877
Gujarat	54.2	37.4	2.2	39.6	3.8	1.5	3.7	1,455
Maharashtra	57.9	29.8	6.8	36.6	3.9	2.7	3.7	2,421
South								
Andaman & Nicobar Islands	85.2	8.1	4.9	13.0	2.5	1.0	2.1	725
Andhra Pradesh	69.8	25.2	3.6	28.7	2.7	2.4	2.6	1,511
Karnataka	48.6	45.1	2.2	47.3	4.0	3.2	3.8	1,488
Kerala	70.8	23.1	2.4	25.5	2.2	2.5	2.3	1,411
Lakshadweep	89.7	7.3	0.9	8.1	3.0	2.3	2.9	627
Puducherry	93.1	3.9	2.6	6.6	2.4	1.1	1.9	839
Tamil Nadu	79.9	15.7	3.0	18.7	3.1	2.1	2.8	2,150
Telangana	52.7	37.9	4.1	42.0	3.3	2.7	3.2	1,418

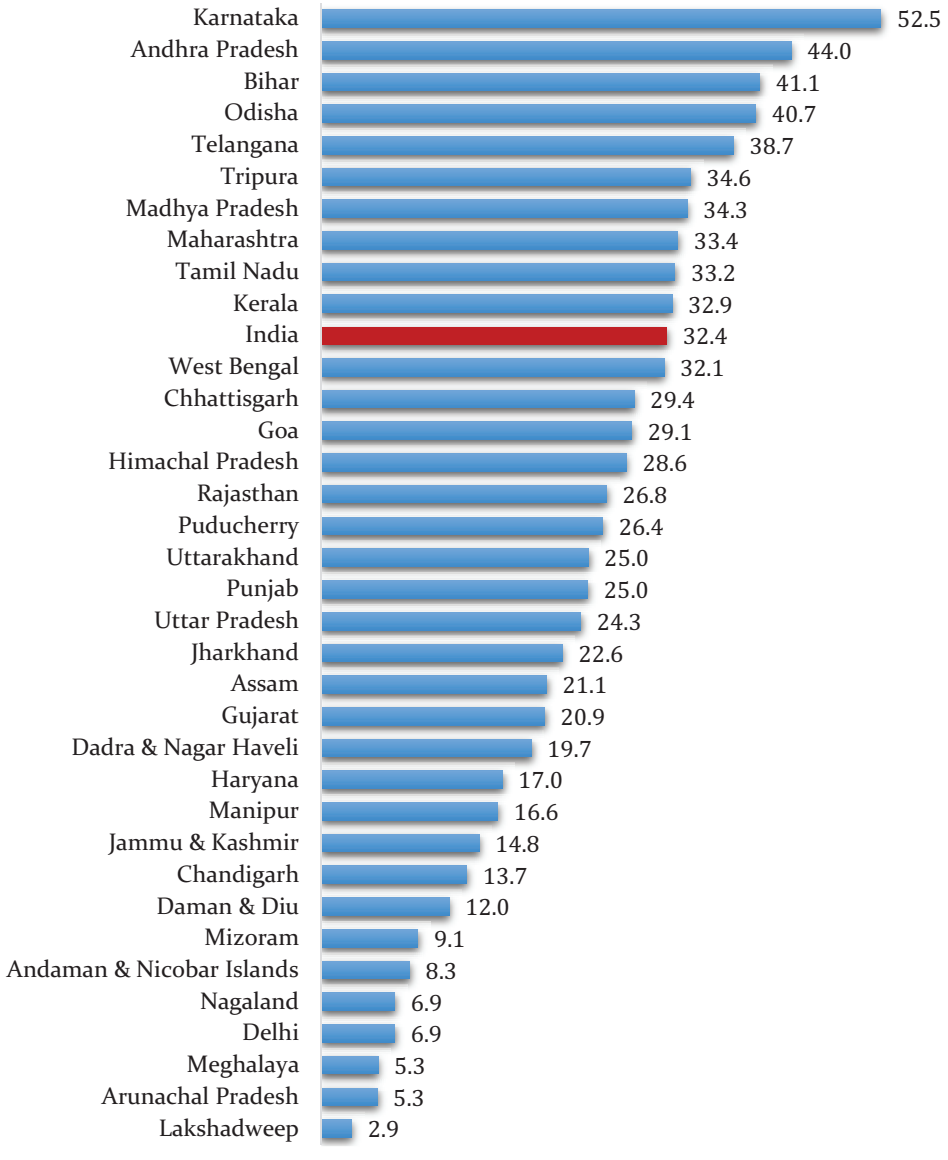
Table 4.15 presents the percentage of LASI age-eligible households that own land in the states/UTs of India. About half of the households in India do not own land (46%), 3% of households own non-cultivable land, and 43% of households own either cultivable or non-cultivable land. The mean size of cultivable land holding is 2.8 acres and non-cultivable land is 2.0 acres. About 93% of households in Puducherry do not own any land, compared with only 12% in Himachal Pradesh. The most common form of land ownership is cultivable land. The mean size of cultivable land varies from 1.4 acres in West Bengal to 4.6 acres in Haryana. The mean size of non-cultivable land varies from 0.5 acres in Uttarakhand to 4.5 acres in Tripura.

Table 4.16 Percentage of households possessing various non-financial assets and mean value of all non-financial assets by place of residence, India, LASI Wave 1, 2017-18

Household Possessions	Rural	Urban	Total
Household goods			
Electric fan	78.0	94.8	83.3
Radios/transistors	4.6	6.9	5.3
Stereo Systems	0.8	7.3	2.8
Cameras, Camcorders	3.0	13.0	6.1
Television	56.0	88.8	66.3
Sewing machine	18.0	30.9	22.1
Mobile Phones	84.1	93.6	87.1
Musical Instruments	2.1	3.6	2.6
Furniture	48.5	68.9	54.9
Computer	2.9	20.5	8.4
Refrigerator	19.0	63.3	32.9
Air conditioner/cooler	15.3	40.3	23.1
Washing machine	5.6	35.7	15.0
Jewellery, precious metals and ornaments	59.2	63.2	60.5
Water Purifiers	3.9	26.0	10.9
Antiques, valuable paintings	2.3	7.9	4.1
Others (such as Juicer & Mixtures, Microwave oven, Geysers)	18.1	45.9	26.8
Means of Transport			
Bicycle	48.6	28.7	42.4
Motorcycle/Scooter/Mopeds	37.6	61.2	45.0
Car	3.3	16.6	7.5
None of the above	3.0	0.4	2.2
Number	**27,576**	**15,373**	**42,949**
Mean Value of all Assets (in ₹)	**72,684**	**2,60,131**	**1,26,490**

In the LASI, data were collected on the ownership of 21 consumer durables from sampled households. Table 4.16 presents the percentage of households possessing various assets by type of residence in India. The penetration of mobile phones shows that phones are the most prevalent consumer durable in Indian households. About 87% of households in India have a mobile phone; 94% in urban households and 84% in rural households. The second most commonly owned consumer durable is an electric fan (83%). About three-fifths (60%) of the households own precious metal, such as jewellery and ornaments, and one-third (33%) have a refrigerator. About half of the households have a motorised vehicle (either a two-wheeler or car), and only 7% of households have a car. Ownership of most of the consumer durable assets is more common in urban households compared with rural households. Moreover, 3% of households in rural areas and less than 1% of households in urban areas do not own any of these specified items.

Figure 4.6 Percentage of households who have taken any loan/debt, states/UTs, LASI Wave 1, 2017-18



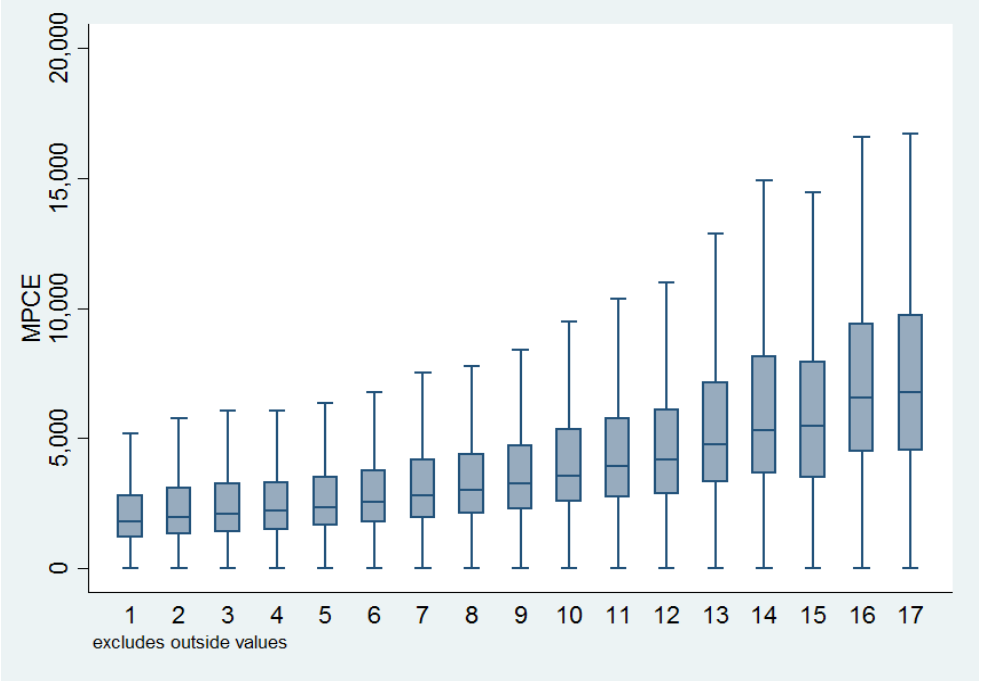
In India, 32% of households do not have any loans or debts, and the percentage varies from 3% in Lakshadweep to 53% in Karnataka (Figure 4.6).

Table 4.17 Percentage of households with debt by the purpose of loan according to place of residence, India, LASI Wave 1, 2017-18

Purpose of Loan	Rural	Urban	Total
Percent distribution of households by purpose of loan			
1st largest loan			
Consumer durables (TV, refrigerator, etc.)	0.9	3.1	1.3
Construction/Purchase of other housing or commercial buildings	1.9	3.4	2.2
Purchase of livestock	3.0	0.4	2.4
Education	3.5	5.6	4.0
Purchase of agricultural land	8.1	2.0	6.8
Living expenses	7.1	6.4	6.9
Purchase of business assets	5.9	11.7	7.1
Construction/Purchase of current residence	8.6	11.2	9.1
Home improvement/ Renovation	10.3	15.7	11.5
Purchase of agricultural assets	19.2	2.1	15.5
Marriage expenses	16.9	13.1	16.1
Health care expenses	14.6	25.5	17.0
Number	**8,794**	**2,937**	**11,731**
2nd largest loan			
Consumer durables (TV, refrigerator, etc.)	0.9	3.8	1.4
Construction/Purchase of other housing or commercial buildings	2.2	1.7	2.1
Purchase of livestock	3.5	0.4	2.9
Education	5.1	7.5	5.6
Purchase of agricultural land	6.6	2.5	5.8
Purchase of business assets	5.4	10.9	6.4
Construction/Purchase of current residence	8.9	7.9	8.8
Home improvement/ Renovation	9.0	15.0	10.1
Living expenses	9.8	14.6	10.7
Purchase of agricultural assets	14.6	2.9	12.4
Health care expenses	17.2	15.8	16.9
Marriage expenses	16.9	17.0	16.9
Number	**3,195**	**909**	**4,104**
3rd largest loan			
Consumer durables (TV, refrigerator, etc.)	0.7	2.6	1.1
Construction/Purchase of other housing or commercial buildings	1.4	2.3	1.6
Purchase of livestock	2.9	0.7	2.5
Purchase of agricultural land	4.9	0.5	4.2
Purchase of business assets	4.9	9.6	5.7
Education	6.3	7.5	6.5
Construction/Purchase of current residence	7.3	9.9	7.7
Home improvement/ Renovation	7.6	10.1	8.0
Purchase of agricultural assets	11.3	2.8	9.8
Living expenses	13.4	26.3	15.6
Health care expenses	18.8	15.2	18.2
Marriage expenses	20.6	12.4	19.2
Number	**1,308**	**342**	**1,650**
Mean of original 1st largest loan amount (in ₹)	1,42,569	4,71,763	2,13,282
Mean of original 2nd largest loan amount (in ₹)	63,803	1,48,496	79,310
Mean of original 3rd largest loan amount (in ₹)	45,596	91,402	53,352
Mean/ median of total outstanding loan amount (in ₹)	1,08,964	2,72,094	1,43,890

In LASI, information was also collected on household indebtedness by type and magnitude (Table 4.17). The mean household loan amount (first largest loan) is ₹ 2,13,282: ₹ 1,42,569 in rural areas and ₹ 4,71,763 in urban areas. Similarly, the mean household loan amount (second largest loan) is ₹ 63,803 in rural areas and ₹ 1,48,496 in urban areas. The mean outstanding loan amount is ₹ 1,43,890 in India: ₹ 1,08,964 in rural areas and ₹ 2,72,094 in urban areas. The purchase of agricultural assets is the single largest purpose of taking loans in rural areas, followed by marriage expenses and health care expenses. In urban areas, health-related expense is the single largest expense, followed by renovation of houses and marriage expenses. Purchase of agricultural assets, health-related expenses, and marriage expenses constitute the most dominant cause for household indebtedness.

Figure 4.7 Box plot of monthly per capita consumption expenditure by number of consumer durables, India, LASI Wave 1, 2017-18



Key findings: household assets & debts

- Ninety-five percent of households in India's rural areas, compared with 77% in urban areas, own a house.
- About half of the households in India do not own land.
- Mobile phone is the most prevalent (87%) consumer durable in Indian households. About half of households have a motorised vehicle (either a two-wheeler or car), and only 8% of households have a car.
- In urban areas, health-related expense is the most frequent reason for indebtedness (26%), followed by renovation of house (16%) and marriage expenses (13%), whereas the purchase of agricultural assets (19%) is the main reason for indebtedness in rural India.

4.4 HOUSEHOLD HEALTH INSURANCE

In the LASI survey, information was collected on the awareness, accessibility and coverage of various health insurance schemes provided by the central and state governments and private insurers. The awareness of and accessibility to health insurance schemes is important for all households, irrespective of their socio-economic status, as it will help people to improve their health-seeking behaviour and prevent catastrophic health expenditure. This section presents results related to the coverage of the selected public and private health insurance schemes at the household level in India and its states/UTs (Table 4.18).

4.4.1 Type of the health insurance: state differentials

In India, 26% of the households are covered by any health insurance. More than half of the households are covered by health insurance in Assam (65%), Mizoram (66%), Dadra & Nagar Haveli (55%), Goa (56%), Odisha (62%), Rajasthan (52%), Chhattisgarh (53%), and Telangana (52%). Health insurance coverage is less than 10% in Jammu & Kashmir, Punjab, Madhya Pradesh, Uttar Pradesh, Bihar, Manipur, Nagaland, Andaman & Nicobar Islands, and Puducherry.

4.4.2 Central Government Health Scheme

The Central Government Health Scheme (CGHS) is a contributory health scheme for central government employees and their dependents. CGHS offers comprehensive health services through allopathic, homeopathic, and traditional forms of medicines in India such as Ayurveda, Unani, Yoga, and Siddha. The CGHS coverage in India is 2.4%. This coverage is higher in the states/UTs of Jharkhand (26%), Assam (15%), Daman & Diu (12%), and Lakshadweep (9%). The coverage is less than 1% in the remaining 19 states/UTs in India.

4.4.3 Employee State Insurance Scheme

The Employee State Insurance Scheme (ESIS) is applicable to all types of establishments with 10 or more workers. ESIS is a self-financing social security and health insurance scheme, and it mainly covers medical and cash benefits. A little more than 2% of the total households have insurance through ESIS. The ESIS coverage is higher in the states/UTs of Karnataka (7%), Chandigarh (5%), Himachal Pradesh (5%), Goa (5%), Rajasthan (4%), Haryana (4%), and Delhi (4%). Similar to CGHS, the coverage of ESIS in many north-eastern states is almost negligible (less than 1%). A negligible proportion of households from eastern states such as Bihar (0.5%), Jharkhand (0.7%), and Odisha (0.2 %) are covered under ESIS. Other states/UTs with insignificant coverage of ESIS include Punjab (0.2%), Uttar Pradesh (0.4%), Dadra & Nagar Haveli (0.3%), Maharashtra (0.8%), Andaman & Nicobar Islands (0.7%), and Puducherry (0.9%). Lakshadweep and Daman & Diu have no coverage of ESIS.

4.4.4 Rashtriya Swasthya Bima Yojana and allied schemes

The Rashtriya Swasthya Bima Yojana (RSBY) and allied schemes have emerged as the most common health insurance schemes in India. Initiated by the Government of India and several state governments, the RSBY and the state-specific allied public health insurance schemes provide protection to all households against health expenses. About 21% of households in India are beneficiaries of RSBY and allied schemes. RSBY and allied schemes are popular in several states/UTs such as Mizoram (65%), Odisha (62%), Assam (59%), Dadra & Nagar Haveli (56%), and Goa (54%), where at least half of the total households are covered under these health insurance schemes. RSBY and other allied schemes have no or negligible presence in the states/UTs of Andaman & Nicobar Islands, Delhi, Uttar Pradesh, Manipur, and Haryana.

4.4.5 Community Cooperative Health Insurance Schemes

Community-based health insurance offers protection to individuals and households against uncertain risks of medical expenses. The coverage of community-based health insurance across India is negligible (0.2%). As it is a community-owned model, it can potentially include the excluded and marginalised sections of people who are unable to access formal health insurance schemes. Such models need to be promoted and supported, so that low-income households can experience improved access to health care services.

4.4.6 Medical Reimbursement/Health Insurance through an Employer

Employer-sponsored health promotion schemes, such as individual/group health insurance or medical reimbursement, are offered to eligible employees and their dependents. These forms of reimbursement or insurance generally consist of expenditure compensation for doctors' visits, surgery, medicine, medical treatment travel, etc. In India, the coverage of employer-sponsored health promotion schemes is 1.2%. Only the states/UTs of Himachal Pradesh, Karnataka, Goa, Dadra & Nagar Haveli, Gujarat, and Telangana have more than 2% of households covered under such employer-sponsored health promotion schemes.

4.4.7 Privately Purchased Commercial Health Insurance

Commercial health insurance is provided by private insurance companies for profit, and it varies widely in the amount and type of coverage. About 1% of households have purchased health insurance from private insurance companies. Only in the state/UTs of Kerala, Chandigarh, and Delhi are more than 5% of households protected under any privately purchased commercial health insurance scheme.

It may be noted that the LASI survey was launched before the implementation of "Ayushman Bharat" and not captured in the survey.

Table 4.18 Percentage of households covered by type of health insurance, states/UTs, LASI Wave 1, 2017-18

States/Union Territories	Types of health insurance							
	Any Health Insurance*	Central Government Health Scheme (CGHS)	Employees State Insurance Scheme (ESIS)	Rashtriya Swasthya Bima Yojana (RSBY) and allied schemes	Community Cooperative Health Insurance Schemes	Medical reimbursement from an employer/ health insurance through an employer	Privately Purchased Commercial Health Insurance	Number
India	**26.2**	**2.4**	**2.1**	**20.7**	**0.2**	**1.2**	**1.4**	**42,949**
North								
Chandigarh	21.1	8.6	4.8	2.2	0.5	2.0	5.3	651
Delhi	22.9	11.8	3.8	0.4	0.0	2.1	7.2	754
Haryana	10.2	3.1	3.7	0.7	0.0	1.2	2.1	1,251
Himachal Pradesh	21.5	3.5	4.7	9.9	0.5	5.2	0.7	805
Jammu & Kashmir	3.0	0.2	1.4	1.2	0.0	0.1	0.2	957
Punjab	8.3	1.5	0.2	6.3	0.2	0.1	0.6	1,234
Rajasthan	51.7	2.4	4.3	44.9	0.1	1.0	0.6	1,302
Uttarakhand	21.4	4.8	1.1	13.5	0.3	1.4	1.3	863
Central								
Chhattisgarh	52.6	2.4	1.6	48.3	0.1	0.9	0.7	1,189
Madhya Pradesh	8.9	1.2	1.5	3.5	0.1	1.4	1.7	1,690
Uttar Pradesh	2.9	1.4	0.4	0.6	0.0	0.0	0.6	2,747
East								
Bihar	3.2	0.8	0.5	1.4	0.1	0.2	0.3	2,083
Jharkhand	28.4	25.6	0.7	1.4	0.0	1.0	0.3	1,408
Odisha	62.0	0.4	0.2	61.6	0.2	0.2	0.5	1,645
West Bengal	24.8	1.9	1.8	18.8	1.0	1.0	2.2	2,279
Northeast								
Arunachal Pradesh	10.4	0.4	0.0	9.6	0.0	0.8	0.6	702
Assam	64.5	14.7	0.6	58.7	0.2	0.6	1.9	1,511
Manipur	1.5	0.6	0.2	0.6	0.0	0.4	0.1	860
Meghalaya	55.2	0.9	0.5	54.0	0.5	0.9	0.1	636
Mizoram	66.0	0.0	0.1	65.2	0.0	1.7	0.8	732
Nagaland	1.1	0.0	0.0	1.1	0.0	0.0	0.0	799
Tripura	38.7	0.4	0.2	38.4	0.0	0.7	0.2	721
West								
Dadra & Nagar Haveli	55.3	7.2	0.3	55.8	0.0	3.0	3.1	631
Daman & Diu	18.9	12.3	0.0	12.2	0.0	1.5	3.4	577
Goa	58.5	1.3	4.8	53.7	0.2	3.5	1.4	877
Gujarat	38.5	0.9	2.0	34.0	0.1	2.3	3.4	1,455
Maharashtra	11.4	1.7	0.8	6.5	0.1	1.2	2.0	2,421
South								
Andaman & Nicobar Islands	1.2	0.9	0.7	0.0	0.0	0.0	0.2	725
Andhra Pradesh	41.8	0.5	2.3	39.4	0.1	0.7	0.5	1,511
Karnataka	29.5	1.0	6.8	22.6	0.2	3.0	0.5	1,488
Kerala	44.2	2.3	1.9	35.7	0.3	1.9	5.3	1,411
Lakshadweep	14.4	9.0	0.0	7.6	0.2	0.3	2.0	627
Puducherry	8.7	0.9	0.9	5.5	0.0	0.1	1.7	839
Tamil Nadu	48.5	1.5	1.3	44.3	0.2	0.5	2.6	2,150
Telangana	51.8	3.7	2.9	44.4	0.0	2.3	0.7	1,418

**Any health insurance includes one or more types of health insurance.*

Key findings: household health insurance

- Twenty-six percent of households are covered by some form of health insurance in India.
- About 21% of households in India are beneficiaries of RSBY and allied schemes. RSBY and allied schemes are popular in several states/UTs such as Mizoram (65%), Odisha (62%), Assam (59%), Dadra & Nagar Haveli (56%), and Goa (54%)

5. DEMOGRAPHICS

Demographic and socio-economic characteristics of a study population provide essential background information for assessing the health and well-being of the older adult populations across the socio-economic spectrum. These characteristics are also key for tracking the LASI survey participants. In the LASI survey, information was collected on the following characteristics of older adults: age, sex, education, religion, caste, marital status, number of marriages, remarriage, and migration status. This chapter presents information on the demographic and socio-economic characteristics of the LASI survey participants age 45 and above, and their spouses, irrespective of their age. The characteristics include age and sex distribution, level of schooling, caste, religion, marital status, and migration status in the current place of residence.

5.1 AGE-SEX DISTRIBUTION OF OLDER ADULTS

Age and sex are vital characteristics, as they not only affect various demographic parameters but also influence the assessment of the social, economic, political, and health characteristics in a population. Age and sex also provide insight into the status and role of an individual in the family and society. Information on the distribution of the population by age and sex also helps in the effective projection and planning for various social welfare programs. In LASI, a total of 72,250 individual respondents, including age-eligible respondents (45 years and above) and their spouses (irrespective of age), were interviewed from 28 states and 6 union territories of India. Of these, 30,569 are males, and 41,681 are females. Fifteen percent of the female respondents and a small number of male respondents are less than 45 years of age. Among the male respondents, 18% are less than 49 years, and 31% are in the 50-59 age group. More than half of the male respondents are elderly age 60 and above (30% age 60-69, 16% age 70-79, and 6% age 80 years and above). In contrast, a little less than one-third of the female respondents (32%) are less than 49 years of age while 27% are in the age group 50-59 followed by 25% in the age group 60-69, 12% in the age group 70-79, and 5% are age 80 and above. By residence, in both rural and urban India, an almost similar proportion of respondents were interviewed across various age groups (Table 5.1).

Table 5.1 Age distribution of older adults* (five-year age group) by sex and place of residence, India, LASI Wave 1, 2017-18

Age groups	Sex		Place of residence			Number
	Male	Female	Rural	Urban	Total	
<45	0.1	14.9	8.2	9.6	8.7	6688
45-49	17.5	17.0	16.7	18.3	17.2	13182
50-54	16.4	13.5	14.1	16.1	14.7	10912
55-59	14.2	13.1	13.5	13.6	13.5	10004
60-64	15.2	12.6	14.5	12.1	13.7	10132
65-69	14.7	12.0	13.3	12.7	13.1	8842
70-74	9.8	7.8	8.8	8.2	8.6	5741
75-79	6.4	4.4	5.3	5.1	5.3	3360
80+	5.7	4.8	5.5	4.4	5.2	3389
Total	**30,569**	**41,681**	**46,534**	**25,716**	**100**	**72,250**

** Including spouse irrespective of age.*

Table 5.2 presents the age distribution of the older adults and median age by states/UTs of India. A large proportion of respondents (17%) in almost all the states/UTs belong to the age group 45-49 years. More than a fifth of older adults are in the age group 45-49 years in Arunachal Pradesh (30%), Delhi (27%), Dadra & Nagar Haveli (23%), Assam (22%), Meghalaya (22%), Chandigarh (21%), Tripura (20%), and Chhattisgarh (21%). Between 13-16% of the total respondents in all the states and union territories belong to age 50-54 (except Chhattisgarh;19%), whereas this percentage ranges from 10-16% in the age group 55-59 years. Except for Arunachal Pradesh and Karnataka, in all other states and union territories more than 11% of the older adults are in the age group 60-64 years. Most states/UTs have 2-7% oldest old elderly (aged 75 and above). Nagaland (9%), Jammu & Kashmir (7%), Mizoram (7%), Rajasthan (7%), Manipur (6%), and Kerala (6%) have a relatively higher proportion of older adults aged 80 and above.

Table 5.2 Age distribution of older adults* (five-year age group), states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Age groups										Number
	Median Age	<45	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+	
India	**58.0**	**8.7**	**17.2**	**14.7**	**13.5**	**13.7**	**13.1**	**8.6**	**5.3**	**5.2**	**72,250**
North											
Chandigarh	56.0	8.2	20.7	15.9	15.4	12.6	8.6	7.4	5.8	5.4	1,026
Delhi	53.0	11.0	27.3	14.1	9.7	12.8	11.8	7.0	3.4	2.9	1,319
Haryana	59.0	6.9	17.9	14.8	12.6	15.2	13.1	9.2	5.7	4.7	1,898
Himachal Pradesh	58.0	9.5	17.0	13.0	13.2	13.9	11.9	8.9	6.5	6.2	1,388
Jammu & Kashmir	59.0	7.4	17.0	14.0	12.5	14.0	14.3	8.5	5.8	6.6	1,613
Punjab	58.0	7.0	17.8	14.5	12.9	13.3	13.5	10.0	5.1	5.8	2,124
Rajasthan	59.0	5.0	15.1	15.1	14.9	16.2	12.7	8.8	5.4	6.9	2,244
Uttarakhand	59.0	6.7	18.4	13.1	12.6	16.8	15.0	9.5	4.6	3.4	1,358
Central											
Chhattisgarh	55.0	7.3	19.9	18.8	15.6	14.0	11.0	6.2	3.4	3.8	2,055
Madhya Pradesh	58.0	7.9	18.8	14.0	11.8	14.3	12.6	7.7	6.6	6.5	2,914
Uttar Pradesh	59.0	5.7	16.3	14.0	14.6	14.6	14.0	9.9	5.2	5.7	4,567
East											
Bihar	60.0	5.6	14.3	13.2	13.0	17.0	14.7	10.4	5.9	6.0	3,520
Jharkhand	58.0	9.4	15.5	14.4	12.5	18.1	12.4	8.3	4.5	5.1	2,464
Odisha	57.0	9.7	17.6	15.0	13.8	14.9	11.5	7.4	5.3	5.0	2,917
West Bengal	56.0	12.9	18.2	14.3	14.0	12.8	10.2	7.3	5.2	5.1	3,933
Northeast											
Arunachal Pradesh	50.0	18.8	29.9	15.0	12.1	8.2	6.3	5.4	1.6	2.8	1,215
Assam	54.0	14.5	21.5	15.1	13.1	10.8	11.0	6.4	4.4	3.3	2,366
Manipur	58.0	8.7	16.5	14.7	13.4	12.5	13.0	8.8	6.1	6.4	1,369
Meghalaya	56.0	9.3	21.5	13.7	13.4	13.7	9.5	8.0	5.3	5.6	969
Mizoram	58.0	8.0	14.9	14.4	17.7	13.1	11.7	7.3	6.2	6.6	1,246
Nagaland	59.0	8.2	17.5	13.9	11.5	14.5	13.6	7.4	4.5	9.0	1,316
Tripura	55.0	12.8	20.0	13.6	14.4	14.0	10.0	6.1	4.1	5.2	1,195
West											
Dadra & Nagar Haveli	55.0	9.8	22.7	16.1	12.6	12.6	12.6	7.8	3.3	2.6	1,090
Daman & Diu	58.0	7.8	16.9	14.4	13.4	13.9	14.5	9.8	5.8	3.5	991
Goa	58.0	10.9	16.8	14.2	12.4	13.4	12.0	8.6	7.0	4.6	1,427
Gujarat	58.0	8.1	17.2	15.0	14.6	15.5	15.0	7.2	3.5	3.8	2,341
Maharashtra	59.0	8.8	16.3	13.7	12.4	13.6	14.5	10.3	5.4	5.2	3,973
South											
Andaman & Nicobar Islands	56.0	12.3	19.0	14.7	13.2	14.5	10.9	7.0	4.2	4.2	1,244
Andhra Pradesh	56.0	10.6	19.0	14.7	13.7	13.7	13.9	6.8	3.8	3.8	2,679
Karnataka	56.0	12.2	17.1	16.7	13.8	9.4	13.1	7.6	5.7	4.3	2,420
Kerala	60.0	7.4	14.0	14.5	12.5	14.4	14.7	9.8	6.7	6.1	2,497
Lakshadweep	58.0	5.7	15.8	17.4	13.6	17.5	12.6	9.1	5.4	3.1	1,139
Puducherry	58.0	9.0	14.3	14.3	15.5	15.0	12.9	9.1	4.5	5.4	1,428
Tamil Nadu	57.0	9.1	16.6	15.3	13.2	13.6	12.6	9.2	5.9	4.7	3,530
Telangana	57.0	8.7	18.4	14.2	14.1	11.9	14.6	9.0	3.5	5.7	2,475

** Including spouse irrespective of age.*

5.2 OLDER ADULTS BY BACKGROUND CHARACTERISTICS

Table 5.3 presents the older adults interviewed in LASI Wave 1 by background characteristics. More than half of the respondents (54%) are less than 60 years of age, and 46% are age 60 and above. Sixty-eight percent of the older adults are from rural areas, while 32% are from urban areas. Among older adults age 45 years and above, 76% are currently married, 22% are widowed, and 3% are divorced/separated/deserted/other. More than a third (36%) of the elderly age 60 and above are widowed compared to only 9% in the older adults age 45-59. The proportion of widowed is three times higher among women older adults (30%) than men older adults (10%). This proportion is more than 50% among the women elderly as compared to only 17% among the men elderly. The living arrangements of older adults indicate that in India merely 3% of older adults live alone, and another 4% live with other relatives without a spouse and children. The majority of older adults age 45 and above (75%) live with their spouse, either with or without their children, and with other relatives. Approximately 28% of the elderly are living with children without a spouse. The living arrangements of the elderly age 60 and above are very different from those of older adults age 45-59. Six percent of the elderly age 60 and above live alone compared to 1% of the older adults age 45-59. Similarly, a large proportion of women elderly live alone (9%) or with their children and others (41%) than the men elderly (3% and 13%). Eighty-two percent of older adults belong to Hindu religion. Forty-six percent of the older adults belong to other backward classes. The proportion of older adults from Scheduled tribe is 9% and Scheduled caste is 19%.

Table 5.3 Percent distribution of older adults by age according to sex and background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male			Female			Total			Number
	Age 45-59*	Age ≥ 60	Total	Age 45-59*	Age ≥ 60	Total	Age 45-59*	Age ≥ 60	Total	
Place of Residence										
Rural	67.1	72.1	69.7	65.7	69.2	67.2	66.2	70.6	68.2	46,534
Urban	32.9	28.0	30.4	34.3	30.8	32.9	33.8	29.5	31.8	25,716
Marital status										
Currently married	93.5	81.1	87.1	83.8	44.1	67.3	87.4	61.6	75.6	55,396
Widowed	3.3	16.5	10.1	13.0	54.0	30.0	9.4	36.2	21.7	14,593
Divorced/Separated/Deserted/Other	3.2	2.4	2.8	3.2	2.0	2.7	3.2	2.2	2.7	2,261
Living arrangement										
Living alone	0.9	2.5	1.8	1.7	8.5	4.5	1.4	5.7	3.4	2,313
Living with spouse and/or others	12.0	26.0	19.3	12.3	15.2	13.5	12.2	20.3	15.9	10,838
Living with spouse and children	80.8	54.4	67.1	70.2	28.2	52.7	74.2	40.6	58.8	43,663
Living with children and others	3.5	13.2	8.6	12.8	40.7	24.4	9.4	27.6	17.7	12,494
Living with others only	2.8	3.9	3.3	3.0	7.4	4.9	2.9	5.7	4.2	2,942
Religion										
Hindu	82.2	82.0	82.1	81.3	82.4	81.8	81.7	82.2	81.9	52,973
Muslim	11.7	11.7	11.7	12.2	10.9	11.7	12.0	11.3	11.7	8,667
Christian	2.7	2.6	2.6	3.3	3.1	3.2	3.1	2.9	3.0	7,215
Others	3.4	3.7	3.6	3.2	3.6	3.4	3.3	3.6	3.5	3,395
Caste										
Scheduled tribe	9.4	7.7	8.5	8.6	8.5	8.6	8.9	8.1	8.5	12,509
Scheduled caste	19.1	18.8	18.9	19.5	19.0	19.3	19.4	18.9	19.2	12,046
Other backward class	45.6	45.9	45.7	45.8	44.7	45.3	45.7	45.2	45.5	27,184
None of them	26.0	27.6	26.9	26.1	27.8	26.8	26.1	27.7	26.8	20,511
Total	**48.2**	**51.8**	**42.0**	**58.5**	**41.6**	**58.0**	**54.1**	**45.9**	**100.0**	**72,250**

** Including spouse irrespective of age.*

5.3 LEVEL OF EDUCATION

Table 5.4 presents the older adults by level of education according to sex and background characteristics. All the respondents were asked whether they ever attended school, and if yes, the number of years of schooling they completed, and the highest level of schooling they attained. Half of the older adults age 45 and above did not have any formal education, 4% obtained a college degree, 2% possessed a professional course/degree and another 5% completed higher secondary school. The level of education is higher among older adults living in urban than those living in rural areas. Nearly 60% of older adults from rural areas do not have any formal schooling compared to 29% of those living in urban areas. Nearly 14% of older adults from urban and 2% from rural India completed college or attained a professional education. Forty-four percent of older adults age 45-59 and 57% of the elderly had no schooling. Only 4% of the elderly age 60 and above have had up to college/professional level education while 7% of older adults age 45-59 did so.

Table 5.4 Percent distribution of older adults* age 45 and above by level of education according to sex and background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	No schooling	Less than primary school	Primary school completed	Secondary school completed	Higher secondary school completed	College and above	Professional course/ degree	Number
Male								
Place of residence								
Rural	40.6	15.2	15.5	19.9	4.9	3.1	0.7	19,945
Urban	18.1	9.1	13.4	30.0	10.2	13.7	5.6	10,624
Age								
Less than 60	28.6	12.0	15.0	25.6	8.6	7.7	2.5	15,471
More than 60	38.6	14.5	14.8	20.5	4.6	5.1	1.9	15,098
Religion								
Hindu	32.0	13.5	15.0	23.3	7.0	6.8	2.5	22,483
Muslim	45.3	12.7	14.3	19.9	3.7	3.4	0.7	3,555
Christian	39.4	13.3	15.1	22.6	3.8	4.2	1.7	3,041
Others	33.6	11.2	15.0	24.4	7.0	7.4	1.5	1,490
Caste								
Scheduled tribe	49.6	16.3	12.7	14.9	2.8	3.4	0.5	5,303
Scheduled caste	46.2	14.3	13.4	18.2	4.9	2.4	0.7	5,056
Other backward class	33.4	13.8	16.8	22.2	6.3	4.9	2.6	11,537
None of them	20.7	10.8	13.4	30.2	9.4	12.5	3.1	8,673
MPCE quintile								
Poorest	44.1	15.0	13.9	20.5	3.5	2.6	0.6	5,976
Poorer	37.4	15.9	15.8	20.9	4.7	4.5	0.8	6,103
Middle	33.4	13.1	15.1	24.1	6.1	6.1	2.1	6,119
Richer	29.7	12.4	15.9	24.8	8.1	7.0	2.0	6,227
Richest	22.9	9.7	13.6	24.9	10.9	12.2	5.9	6,144
Total	**33.8**	**13.3**	**14.9**	**23.0**	**6.6**	**6.3**	**2.2**	**30,569**
Female								
Place of residence								
Rural	72.9	8.9	8.7	7.8	1.1	0.5	0.1	26,589
Urban	36.3	9.2	14.4	22.2	7.7	6.9	3.3	15,092
Age								
Less than 60	52.5	9.3	12.5	15.8	4.6	3.7	1.7	25,315
More than 60	72.7	8.7	7.9	7.9	1.4	1.1	0.4	16,366
Religion								
Hindu	60.6	9.2	10.4	13.0	3.2	2.8	1.0	30,490
Muslim	66.8	9.0	11.1	8.7	0.8	0.9	2.7	5,112
Christian	52.2	7.9	10.2	11.9	13.9	2.9	1.0	4,174
Others	55.7	7.4	13.4	15.7	4.0	3.5	0.3	1,905
Caste								
Scheduled tribe	78.0	8.9	4.8	6.2	1.1	0.9	0.1	7,206
Scheduled caste	77.4	7.4	6.5	6.9	1.1	0.7	0.2	6,990
Other backward class	59.5	8.9	11.8	12.2	3.7	1.9	1.9	15,647
None of them	45.9	10.5	13.3	19.2	4.7	5.6	0.9	11,838

Continued

Continued

Background characteristics	No schooling	Less than primary school	Primary school completed	Secondary school completed	Higher secondary school completed	College and above	Professional course/ degree	Number
Female								
MPCE quintile								
Poorest	75.3	7.5	8.0	6.4	1.3	1.0	0.5	8,182
Poorer	66.4	9.6	10.8	10.1	1.9	1.1	0.2	8,427
Middle	60.5	9.0	11.3	13.2	3.6	1.9	0.4	8,418
Richer	53.6	10.4	11.2	16.1	5.1	3.0	0.6	8,459
Richest	45.7	8.7	11.9	17.9	4.6	6.7	4.5	8,195
Total	**60.9**	**9.0**	**10.6**	**12.5**	**3.3**	**2.6**	**1.1**	**41,681**
Total								
Place of residence								
Rural	59.1	11.6	11.6	13.0	2.7	1.6	0.4	46,534
Urban	29.0	9.2	14.0	25.3	8.7	9.6	4.2	25,716
Age								
Less than 60*	43.6	10.3	13.4	19.5	6.1	5.2	2.0	40,786
More than 60	56.5	11.4	11.2	13.9	2.9	3.0	1.1	31,464
Religion								
Hindu	48.6	11.0	12.3	17.3	4.8	4.5	1.6	52,973
Muslim	57.7	10.6	12.5	13.4	2.1	2.0	1.8	8,667
Christian	47.4	9.9	12.0	15.9	10.1	3.4	1.2	7,215
Others	46.1	9.0	14.1	19.5	5.3	5.2	0.8	3,395
Caste								
Scheduled tribe	66.1	12.0	8.1	9.8	1.8	2.0	0.3	12,509
Scheduled caste	64.4	10.2	9.4	11.6	2.7	1.4	0.4	12,046
Other backward class	48.5	11.0	13.9	16.4	4.8	3.2	2.2	27,184
None of them	35.3	10.7	13.3	23.8	6.7	8.5	1.8	20,511
MPCE quintile								
Poorest	62.4	10.6	10.4	12.3	2.2	1.6	0.5	14,158
Poorer	54.3	12.2	12.9	14.6	3.1	2.5	0.4	14,530
Middle	49.1	10.7	12.9	17.8	4.7	3.7	1.1	14,537
Richer	43.7	11.2	13.2	19.8	6.4	4.6	1.2	14,686
Richest	35.9	9.1	12.6	20.9	7.3	9.0	5.1	14,339
Total	**49.5**	**10.8**	**12.4**	**16.9**	**4.6**	**4.2**	**1.6**	**72,250**

** Including spouse irrespective of age.*

By religion, the proportion of adults with no formal education is the highest among Muslims (58%) and lowest among Christians (47%). The older adults from Scheduled tribe and Scheduled caste have a lower level of education than older adults from other caste groups. The percentage of older adults with no schooling decreases drastically with the increase in MPCE quintiles. In India, 62% of older adults from the poorest household consumption quintile did not attend any formal schooling as compared to 36% within the richest quintile. The educational attainment of men and women older adults is much different. Older adult men are more educated than their female counterparts. About 61% of older adult women did not have any formal schooling compared to 34% of men older adults.

State-wise educational attainment shows that more than half of the older adults do not have any formal education in the states of Telangana (66%), Bihar (66%), Rajasthan (64%), Jammu & Kashmir (63%), Chhattisgarh (61%), Uttar Pradesh (58%), Andhra Pradesh (57%), Arunachal Pradesh (56%), Jharkhand (55%), Haryana (54%), and Madhya Pradesh (53%). About a third of respondents in Kerala (36%), Puducherry (30%), and Goa (29%) have completed education up to the secondary level. Among all the states/UTs, Chandigarh (18%), Delhi (12%), and Manipur (12%) have the highest proportion of older adults with education up to college and above. Lakshadweep has the lowest percentage of older adults (0.9%) with a college-level education (Table 5.5).

Table 5.5 Percent distribution of older adults* age 45 and above by level of education, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	No schooling	Less than Primary school	Primary school completed	Secondary school completed	Higher secondary school completed	College and above	Professional course/ degree	Number
India	**49.5**	**10.8**	**12.4**	**16.9**	**4.6**	**4.2**	**1.6**	**72,250**
North								
Chandigarh	23.3	6.8	13.0	26.9	6.1	18.3	5.6	1,026
Delhi	38.1	2.7	13.4	23.2	8.9	12.2	1.5	1,319
Haryana	53.8	4.1	12.7	20.3	3.5	4.2	1.4	1,898
Himachal Pradesh	34.0	9.5	20.4	26.8	3.4	4.2	1.7	1,388
Jammu & Kashmir	63.0	2.3	6.0	21.5	2.4	3.9	0.9	1,613
Punjab	43.4	5.2	18.1	25.9	3.6	2.8	1.0	2,124
Rajasthan	64.1	7.2	9.9	11.0	2.7	3.9	1.2	2,244
Uttarakhand	45.8	6.3	14.8	19.3	6.1	7.3	0.4	1,358
Central								
Chhattisgarh	60.7	11.2	10.2	11.2	3.3	2.6	0.9	2,055
Madhya Pradesh	52.8	12.8	13.4	11.2	4.9	4.2	0.7	2,914
Uttar Pradesh	58.3	5.4	10.0	15.0	5.5	4.6	1.2	4,567
East								
Bihar	65.5	4.6	9.1	14.0	3.0	3.4	0.4	3,520
Jharkhand	55.1	8.6	11.2	16.6	3.8	4.1	0.7	2,464
Odisha	45.7	17.7	16.0	14.3	2.6	3.0	0.8	2,917
West Bengal	42.2	15.2	9.7	22.2	4.5	5.6	0.5	3,933
Northeast								
Arunachal Pradesh	56.1	5.7	9.2	19.2	4.9	4.0	0.8	1,215
Assam	38.7	14.7	11.0	24.9	5.7	4.8	0.3	2,366
Manipur	40.6	7.2	7.5	24.3	7.1	12.3	1.0	1,369
Meghalaya	37.2	24.2	11.7	16.7	4.6	5.5	0.2	969
Mizoram	14.1	33.0	16.1	27.7	2.4	5.8	0.9	1,246
Nagaland	42.8	11.8	13.5	24.5	4.0	3.3	0.1	1,316
Tripura	35.1	16.1	16.3	24.7	4.5	3.1	0.3	1,195
West								
Dadra & Nagar Haveli	49.6	13.0	11.2	15.2	4.3	4.6	2.1	1,090
Daman & Diu	30.4	15.3	21.4	20.9	5.9	4.9	1.2	991
Goa	27.5	14.6	12.8	29.0	6.6	7.3	2.3	1,427
Gujarat	40.8	18.0	15.6	17.6	2.7	4.0	1.5	2,341
Maharashtra	39.9	15.6	12.9	19.7	6.0	4.5	1.4	3,973
South								
Andaman & Nicobar Islands	38.6	10.5	17.2	22.7	6.5	3.4	1.2	1,244
Andhra Pradesh	57.2	7.8	15.8	10.9	3.5	3.8	1.1	2,679
Karnataka	46.4	13.9	11.3	14.5	6.4	2.9	4.5	2,420
Kerala	9.2	19.5	18.9	36.0	6.8	5.6	4.0	2,497
Lakshadweep	22.3	19.1	25.7	26.1	4.0	0.9	1.9	1,139
Puducherry	31.2	8.0	15.0	29.8	6.7	6.2	3.2	1,428
Tamil Nadu	41.5	10.0	18.4	20.2	4.7	3.6	1.6	3,530
Telangana	65.8	7.3	8.8	9.7	3.3	4.5	0.6	2,475

* Including spouse irrespective of age.

5.4 CASTE

Table 5.6 presents the distribution of older adults age 45 and above by caste in states and union territories of India. In Mizoram (98%), Lakshadweep (93%), Meghalaya (93%), Nagaland (89%) and Arunachal Pradesh (81%), the majority of the older adults belong to Scheduled tribe. A large proportion of the population in the states of Punjab (38%), West Bengal (30%), Tripura (29%), Uttar Pradesh (27%), and Himachal Pradesh (26%) belong to Scheduled caste. Additionally, the proportion of older adults belonging to other backward class is very high in all the south Indian states, such as Tamil Nadu (82%), Puducherry (74%), Karnataka (73%), Telangana (64%), Andhra Pradesh (53%), and Kerala (53%), and also in a few northern states such as Bihar (54%), Jharkhand (53%), and Madhya Pradesh (51%).

5.5 RELIGION

Table 5.6 also presents the percentage distribution of older adults according to their religion. The majority of older adults belong to the Hindu religion (82%) followed by Muslim (12%), Christian (3%), and Sikh (2%). The proportion of older adults belonging to Buddhist/Neo-Buddhist, Jain, and other religions is less than 1%. More than 90% of older adults from states such as Himachal Pradesh (97%), Chhattisgarh (96%), Rajasthan (94%), Daman & Diu (93%), Haryana (92%), Puducherry (91%), and Tamil Nadu (90%) are Hindu. Nearly all older adults in Lakshadweep (99%) and 71% in Jammu & Kashmir are Muslim. More than 69% of older adult in Punjab belongs to the Sikh religion. The majority of older adults from Mizoram (99%), Nagaland (90%), and Meghalaya (82%), half of the respondents from Arunachal Pradesh (54%), and a third of those from Andaman & Nicobar Islands (34%) are Christian.

5.6 MARITAL STATUS

Table 5.7 presents the marital status of older adults across the states and union territories of India. At the time of the survey, three-fourths of the total older adults (76%) were currently married, 22% were widowed, 1% was separated/ divorced/deserted, and almost 2% were either never married or in a live-in relationship. Except for Meghalaya (68%), Puducherry (65%), and Tamil Nadu (65%), in all the states/UTs, the proportion of currently married older adults all the states/UTs are more than 70%. These three states have a relatively higher proportion of older adults who are either widowed, divorced, separated, deserted, or never married or are in a live-in relationship. Across all the states/UTs, the proportion of older adults women who are currently married is the highest in Arunachal Pradesh (76%) followed by Bihar (75%), and Jammu & Kashmir (75%) and lowest in Puducherry (55%); while the proportion of women who are widowed is higher in Meghalaya (36%), Tamil Nadu (35%), Puducherry (35%), Telangana (35%), and Daman & Diu (35%).

5.7 MIGRATION

Table 5.8 presents the duration of stay in the current place of residence among older adults by sex and states/UTs. To understand the migration status of older adults, a question was asked about the number of years they have lived in the current town/village at the time of the survey. Almost half of the older adults said that they have been staying at their current place of residence for a duration exceeding 50 years or since birth—41% since birth, and 11% for more than 50 years. Around 34% have stayed in the same place for 25-49 years and 15% for less than 25 years. A similar pattern is observed across a majority of the states/UTs, except for Chandigarh, Delhi, and Tripura, where a lesser proportion of older adults have lived in their current place of residence since birth. In the states of Jammu & Kashmir (67%), Nagaland (66%), Manipur (64%), and Meghalaya (64%), more than three-fifths of the older adults have stayed in their current place of residence since birth. The pattern of the duration of stay in the current place of residence varies for men and women older adults. In the country overall, 69% of men older adults have lived in their current place of residence since birth as compared to 20% of women older adults. The scenario is almost the same in a large number of states/UTs with a few exceptions. For example, in Delhi (9%), Chandigarh (12%), and Kerala (22%), the majority of the men older adults have migrated to their current place of residence. In some states, such as Arunachal Pradesh, Meghalaya, Mizoram, Nagaland, and Andaman & Nicobar Islands, an almost similar proportion of older adults women and men have resided in their current place of residence since birth.

5.8 LANGUAGE

Table 5.9 shows the languages spoken by older adults age 45 and above in the states/UTs of India. Hindi, the national language, is the predominant language (spoken by 34% of the population) across India with a specific state patterns. After Hindi, Bengali is the second most spoken (10%) language followed by Marathi (9%), Tamil (8%), and Telugu (7%) (Table 5.9). In the northern part (Delhi, Haryana, Himachal Pradesh, and Uttarakhand) and in the central part of India (Chhattisgarh, Madhya Pradesh, and Uttar Pradesh), Hindi is the universally spoken language. Languages like Punjabi, Oriya, Bengali, Gujarati, Marathi, Telugu, Kannada, Malayalam, Tamil, and Telugu exhibit state-specific dominance. Other state-specific local dialects are spoken mostly in the east and north-eastern states/UTs of India.

Table 5.6 Percent distribution of older adults* age 45 and above by caste and religion, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Caste				Religion							
	Scheduled tribe	Scheduled caste	Other backward class	None of them	Hindu	Muslim	Christian	Sikh	Buddhist/ Neo-Buddhist	Jain	Other	Total Adults
India	8.5	19.2	45.5	26.8	81.9	11.7	3.0	1.8	0.9	0.3	0.5	72,250
North												
Chandigarh	1.0	20.3	17.7	61.0	78.0	2.9	0.8	18.2	0.2	0.0	0.0	1,026
Delhi	0.8	24.2	20.1	55.0	76.5	16.9	1.1	4.5	0.0	0.8	0.3	1,319
Haryana	0.2	21.7	30.3	47.8	91.6	5.2	0.0	2.9	0.1	0.1	0.1	1,898
Himachal Pradesh	4.8	25.7	17.4	52.1	97.2	0.3	0.1	1.7	0.6	0.0	0.1	1,388
Jammu & Kashmir	4.6	8.8	7.8	78.8	27.8	71.1	0.3	0.8	0.0	0.0	0.0	1,613
Punjab	1.4	38.2	19.1	41.3	29.9	0.8	0.5	68.6	0.0	0.0	0.2	2,124
Rajasthan	15.0	22.4	40.2	22.5	93.7	3.3	0.0	1.6	0.0	1.2	0.2	2,244
Uttarakhand	4.5	20.1	16.1	59.4	86.7	11.8	0.9	0.5	0.0	0.1	0.0	1,358
Central												
Chhattisgarh	33.0	11.2	47.2	8.7	96.3	1.5	1.2	0.2	0.4	0.2	0.2	2,055
Madhya Pradesh	14.3	15.5	51.2	19.1	87.9	10.2	0.1	0.2	0.2	1.1	0.2	2,914
Uttar Pradesh	1.4	26.6	42.4	29.7	86.1	13.1	0.0	0.3	0.1	0.0	0.4	4,567
East												
Bihar	2.6	21.5	53.7	22.1	82.4	17.4	0.0	0.0	0.0	0.0	0.2	3,520
Jharkhand	18.0	10.9	52.7	18.4	80.2	11.9	4.7	0.3	0.3	0.0	2.7	2,464
Odisha	26.7	18.7	35.3	19.3	89.2	1.0	9.8	0.0	0.0	0.0	0.0	2,917
West Bengal	4.5	29.8	12.3	53.5	80.3	17.6	0.2	0.0	0.0	0.1	1.8	3,933
Northeast												
Arunachal Pradesh	80.7	4.9	1.9	12.5	21.2	0.9	53.5	0.0	3.1	0.0	21.3	1,215
Assam	14.9	9.2	39.0	36.9	76.2	21.5	1.6	0.1	0.6	0.0	0.1	2,366
Manipur	34.1	8.1	26.5	31.3	45.3	7.9	32.8	0.0	0.2	0.0	13.8	1,369
Meghalaya	92.9	3.6	0.3	3.3	12.2	0.8	81.6	0.0	0.0	0.0	5.4	969
Mizoram	98.4	0.6	0.5	0.5	0.7	0.1	99.2	0.0	0.0	0.0	0.0	1,246
Nagaland	89.3	5.0	0.4	5.4	6.5	3.6	89.7	0.0	0.1	0.0	0.0	1,316
Tripura	29.3	28.5	24.4	17.8	89.1	0.2	3.7	0.0	6.8	0.0	0.3	1,195
West												
Dadra & Nagar Haveli	61.7	1.4	18.5	18.4	82.9	7.7	7.1	0.0	0.0	0.0	2.4	1,090
Daman & Diu	15.7	13.4	46.8	24.1	93.4	2.8	3.1	0.0	0.0	0.6	0.0	991
Goa	12.4	4.2	22.3	61.1	77.0	5.3	17.4	0.2	0.0	0.0	0.2	1,427
Gujarat	19.4	12.0	42.2	26.5	88.9	9.8	0.9	0.1	0.0	0.4	0.0	2,341
Maharashtra	7.8	16.0	36.8	39.5	79.6	11.4	0.7	0.1	7.1	0.9	0.2	3,973
South												
Andaman & Nicobar Islands	20.2	16.6	19.8	43.5	58.5	7.8	33.6	0.0	0.0	0.0	0.1	1,244
Andhra Pradesh	6.3	19.1	53.0	21.5	82.7	5.2	12.0	0.0	0.0	0.2	0.0	2,679
Karnataka	4.0	13.2	73.4	9.4	86.6	11.1	1.9	0.0	0.0	0.4	0.0	2,420
Kerala	1.3	7.6	52.7	38.4	58.8	18.5	22.7	0.0	0.0	0.0	0.1	2,497
Lakshadweep	93.1	1.6	4.5	0.7	0.6	99.3	0.0	0.0	0.0	0.0	0.1	1,139
Puducherry	0.8	17.5	73.9	7.8	91.3	3.9	4.8	0.0	0.0	0.0	0.0	1,428
Tamil Nadu	1.1	16.1	81.6	1.2	90.3	3.3	6.2	0.0	0.0	0.1	0.1	3,530
Telangana	5.9	18.1	64.1	12.0	84.6	10.6	3.6	0.7	0.0	0.1	0.3	2,475

** Including spouse irrespective of age.*

Table 5.7 Percent distribution of older adults* age 45 and above by marital status according to sex, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Male					Female					Total				
	Currently married	Widowed	Divorced/ Separated/ Deserted	Others	Number	Currently married	Widowed	Divorced/ Separated/ Deserted	Others	Number	Currently married	Widowed	Divorced/ Separated/ Deserted	Others	Number
India	**87.1**	**10.1**	**0.8**	**2.0**	**30,569**	**67.3**	**30.0**	**1.4**	**1.3**	**41,681**	**75.6**	**21.7**	**1.1**	**1.6**	72,250
North															
Chandigarh	83.6	12.6	1.9	2.0	452	73.1	24.6	0.9	1.4	574	77.8	19.2	1.4	1.7	1,026
Delhi	88.6	10.2	0.5	0.8	599	74.9	24.3	0.1	0.8	720	81.0	18.0	0.3	0.8	1,319
Haryana	85.3	12.2	1.1	1.4	792	66.9	32.4	0.6	0.1	1,106	74.4	24.2	0.8	0.6	1,898
Himachal Pradesh	87.2	10.2	0.8	1.7	562	68.4	29.8	1.4	0.4	826	76.0	21.9	1.2	0.9	1,388
Jammu & Kashmir	85.1	11.8	0.7	2.4	711	74.6	24.7	0.6	0.1	902	79.1	19.1	0.6	1.1	1,613
Punjab	80.3	15.6	1.6	2.6	927	73.5	25.8	0.7	0.0	1,197	76.4	21.4	1.1	1.1	2,124
Rajasthan	90.9	8.0	0.4	0.7	970	70.2	29.3	0.3	0.1	1,274	79.0	20.2	0.3	0.4	2,244
Uttarakhand	86.6	10.8	1.0	1.6	556	67.3	32.2	0.5	0.0	802	75.2	23.4	0.7	0.7	1,358
Central															
Chhattisgarh	86.5	11.9	1.2	0.4	906	68.4	29.0	2.2	0.5	1,149	76.4	21.4	1.7	0.5	2,055
Madhya Pradesh	84.6	11.9	1.1	2.5	1,324	74.2	24.6	0.9	0.3	1,590	79.0	18.7	1.0	1.3	2,914
Uttar Pradesh	80.5	16.7	0.8	2.1	2,081	70.7	28.3	0.9	0.2	2,486	75.1	23.0	0.8	1.0	4,567
East															
Bihar	86.9	12.1	0.1	0.8	1,555	75.2	23.6	1.2	0.0	1,965	80.4	18.5	0.7	0.4	3,520
Jharkhand	89.0	9.5	0.4	1.1	1,043	71.4	27.1	0.8	0.7	1,421	78.8	19.7	0.6	0.9	2,464
Odisha	87.9	9.6	1.1	1.4	1,255	69.1	28.2	1.5	1.2	1,662	77.2	20.2	1.3	1.3	2,917
West Bengal	89.3	7.8	0.5	2.4	1,620	68.7	29.4	0.9	1.1	2,313	77.2	20.5	0.8	1.6	3,933
Northeast															
Arunachal Pradesh	90.3	7.0	0.7	2.0	552	76.4	21.9	1.3	0.4	663	82.7	15.1	1.0	1.2	1,215
Assam	90.8	7.0	0.9	1.4	973	65.2	32.1	0.9	1.9	1,393	75.5	21.9	0.9	1.7	2,366
Manipur	88.2	9.1	1.1	1.7	581	66.3	28.6	1.9	3.3	788	75.5	20.4	1.5	2.6	1,369
Meghalaya	87.0	7.6	1.1	4.4	368	55.7	35.8	6.2	2.3	601	67.6	25.1	4.3	3.1	969
Mizoram	81.0	10.9	4.2	4.0	563	68.6	23.3	4.0	4.1	683	74.3	17.6	4.1	4.0	1,246
Nagaland	87.7	7.7	2.1	2.5	589	70.3	24.3	1.4	4.0	727	77.9	17.1	1.7	3.3	1,316
Tripura	91.1	7.6	0.6	0.8	491	69.3	29.3	1.2	0.3	704	78.1	20.5	0.9	0.5	1,195
West															
Dadra & Nagar Haveli	90.7	7.6	0.8	0.9	475	73.0	24.8	2.0	0.2	615	81.0	17.0	1.5	0.5	1,090
Daman & Diu	90.1	8.1	0.5	1.3	410	61.2	34.7	1.7	2.4	581	72.4	24.4	1.2	2.0	991
Goa	90.1	6.6	0.5	2.9	568	65.8	31.6	0.8	1.9	859	75.5	21.6	0.7	2.3	1,427
Gujarat	87.3	10.5	1.2	1.1	989	67.1	30.7	1.6	0.6	1,352	75.5	22.3	1.4	0.8	2,341
Maharashtra	90.3	8.2	0.7	0.8	1,607	65.1	32.1	1.7	1.1	2,366	75.2	22.5	1.3	1.0	3,973
South															
Andaman & Nicobar Islands	86.9	8.7	2.1	2.3	566	71.7	26.3	1.5	0.5	678	78.6	18.3	1.7	1.3	1,244
Andhra Pradesh	90.5	7.5	0.8	1.1	1,120	65.6	31.4	2.2	0.8	1,559	76.1	21.4	1.6	1.0	2,679
Karnataka	93.2	5.3	0.8	0.8	973	62.4	33.6	1.7	2.4	1,447	74.4	22.5	1.3	1.7	2,420
Kerala	91.8	4.6	1.2	2.4	991	63.8	32.1	2.0	2.1	1,506	74.6	21.5	1.7	2.2	2,497
Lakshadweep	87.6	10.3	1.2	1.0	446	63.9	32.3	3.0	0.8	693	72.9	24.0	2.3	0.9	1,139
Puducherry	81.7	5.5	1.3	11.5	552	54.7	34.8	2.9	7.7	876	65.2	23.4	2.3	9.1	1,428
Tamil Nadu	79.5	8.9	1.8	9.9	1,394	55.7	35.3	2.4	6.5	2,136	65.2	24.8	2.2	7.8	3,530
Telangana	87.4	11.1	1.0	0.5	1,008	62.9	34.8	1.9	0.4	1,467	72.9	25.1	1.6	0.4	2,475

** Including spouse irrespective of age.*

Table 5.8 Percent distribution of older adults* age 45 and above by sex and duration of stay in the current place of residence, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Male					Female					Total				
	Since birth	<25 years	25-49 years	50 years or more	Number	Since birth	<25 years	25-49 years	50 years or more	Number	Since birth	<25 years	25-49 years	50 years or more	Number
India	**69.3**	**10.2**	**13.2**	**7.3**	**30,569**	**19.6**	**18.9**	**48.7**	**12.8**	**41,681**	**40.5**	**15.2**	**33.8**	**10.5**	**72,250**
North															
Chandigarh	11.7	38.7	43.7	6.0	452	4.7	49.0	43.1	3.1	574	7.9	44.4	43.4	4.4	1,026
Delhi	8.5	35.9	48.2	7.4	599	2.4	45.8	48.4	3.3	720	5.2	41.4	48.3	5.2	1,319
Haryana	60.4	9.3	18.1	12.3	792	1.1	16.1	66.3	16.5	1,106	25.2	13.3	46.7	14.8	1,898
Himachal Pradesh	82.4	8.0	7.7	2.0	562	18.6	22.0	47.8	11.5	826	44.3	16.4	31.7	7.7	1,388
Jammu & Kashmir	91.6	3.7	4.3	0.4	711	48.6	9.0	34.1	8.3	902	67.1	6.7	21.2	4.9	1,613
Punjab	71.7	7.6	13.3	7.5	927	10.4	21.8	56.0	11.8	1,197	36.8	15.7	37.6	10.0	2,124
Rajasthan	77.2	9.6	11.0	2.2	970	18.0	14.9	55.1	12.0	1,274	43.2	12.6	36.4	7.8	2,244
Uttarakhand	74.6	14.9	8.8	1.7	556	22.4	19.3	46.8	11.5	802	43.9	17.5	31.2	7.5	1,358
Central															
Chhattisgarh	77.2	9.4	10.8	2.6	906	22.4	13.3	55.7	8.6	1,149	46.6	11.6	35.9	5.9	2,055
Madhya Pradesh	80.1	7.6	8.7	3.6	1,324	22.3	17.3	46.4	14.0	1,590	49.1	12.8	28.9	9.2	2,914
Uttar Pradesh	83.7	5.2	6.6	4.5	2,081	9.1	12.3	60.9	17.7	2,486	43.1	9.1	36.2	11.7	4,567
East															
Bihar	87.8	3.3	5.0	4.0	1,555	11.8	9.7	60.5	18.0	1,965	45.3	6.9	36.0	11.8	3,520
Jharkhand	80.4	7.2	9.1	3.4	1,043	12.7	16.1	56.5	14.8	1,421	41.1	12.3	36.6	10.0	2,464
Odisha	80.2	8.2	8.6	3.0	1,255	14.2	19.9	50.8	15.1	1,662	42.7	14.9	32.5	9.9	2,917
West Bengal	54.5	7.6	22.9	15.0	1,620	12.9	20.8	51.5	14.8	2,313	30.0	15.3	39.8	14.9	3,933
Northeast															
Arunachal Pradesh	37.7	26.1	25.5	10.7	552	24.2	39.5	31.6	4.7	663	30.4	33.4	28.8	7.4	1,215
Assam	81.1	7.4	10.1	1.5	973	38.4	22.5	33.9	5.2	1,393	55.7	16.4	24.3	3.7	2,366
Manipur	81.6	9.7	6.8	1.9	581	51.8	20.4	21.4	6.5	788	64.3	15.9	15.2	4.6	1,369
Meghalaya	57.4	10.8	28.2	3.6	368	68.5	12.9	15.5	3.2	601	64.3	12.1	20.3	3.3	969
Mizoram	40.5	27.6	26.3	5.7	563	38.0	33.5	25.0	3.5	683	39.2	30.8	25.6	4.5	1,246
Nagaland	69.0	18.7	11.7	0.6	589	64.0	24.0	11.3	0.7	727	66.2	21.7	11.5	0.7	1,316
Tripura	26.2	17.4	34.5	22.0	491	8.6	30.5	49.0	11.8	704	15.7	25.2	43.1	16.0	1,195
West															
Dadra & Nagar Haveli	42.2	27.3	21.7	8.9	475	21.7	28.0	43.3	7.1	615	30.9	27.7	33.5	7.9	1,090
Daman & Diu	63.9	24.3	8.4	3.4	410	43.6	20.5	28.1	7.8	581	51.4	22.0	20.5	6.1	991
Goa	48.9	23.5	19.4	8.3	568	9.6	36.3	42.4	11.7	859	25.3	31.2	33.2	10.3	1,427
Gujarat	69.8	13.6	14.7	1.9	989	22.8	20.2	48.7	8.3	1,352	42.4	17.5	34.5	5.6	2,341
Maharashtra	72.8	8.1	14.3	4.9	1,607	19.7	17.4	49.0	13.9	2,366	41.0	13.7	35.1	10.3	3,973

Continued

Continued

States/Union Territory	Male					Female					Total				
	Since birth	<25 years	25-49 years	50 years or more	Number	Since birth	<25 years	25-49 years	50 years or more	Number	Since birth	<25 years	25-49 years	50 years or more	Number
South															
Andaman & Nicobar Islands	51.4	19.3	23.7	5.6	566	46.7	23.9	26.4	3.0	678	48.8	21.8	25.2	4.2	1,244
Andhra Pradesh	72.1	12.3	12.9	2.7	1,120	33.5	20.9	40.3	5.4	1,559	49.7	17.3	28.8	4.3	2,679
Karnataka	48.1	17.0	15.4	19.5	973	21.5	27.0	39.8	11.8	1,447	31.9	23.1	30.3	14.8	2,420
Kerala	21.8	27.0	27.7	23.5	991	8.9	33.6	43.3	14.2	1,506	13.9	31.0	37.3	17.8	2,497
Lakshadweep	32.3	13.0	19.3	35.3	446	31.5	11.3	21.2	36.0	693	31.8	12.0	20.5	35.7	1,139
Puducherry	58.8	14.7	18.0	8.4	552	44.6	20.1	26.8	8.5	876	50.2	18.0	23.4	8.5	1,428
Tamil Nadu	44.7	17.8	23.3	14.1	1,394	31.8	22.8	36.1	9.3	2,136	36.9	20.8	31.1	11.2	3,530
Telangana	76.9	10.5	10.7	1.9	1,008	32.2	18.9	41.3	7.6	1,467	50.4	15.5	28.8	5.3	2,475

** Including spouse irrespective of age.*

Table 5.9 Languages spoken by older adults* age 45 and above, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Most spoken language (%)	Second most spoken language (%)	Number
India	**Hindi (34)**	**Bengali (10)**	**72,250**
North			
Chandigarh	Hindi (59)	Punjabi (35)	1,026
Delhi	Hindi (91)	Punjabi (5)	1,319
Haryana	Hindi (96)	Punjabi (3)	1,898
Himachal Pradesh	Hindi (90)	Other (6)	1,388
Jammu & Kashmir	Kashmiri (66)	Other (32)	1,613
Punjab	Punjabi (94)	Hindi (5)	2,124
Rajasthan	Rajasthani (53)	Hindi (40)	2,244
Uttarakhand	Hindi (84)	Other (13)	1,358
Central			
Chhattisgarh	Hindi (91)	Other (8)	2,055
Madhya Pradesh	Hindi (97)	Other (1)	2,914
Uttar Pradesh	Hindi (96)	Others (3)	4,567
East			
Bihar	Hindi (69)	Other (29)	3,520
Jharkhand	Hindi (50)	Others (39)	2,464
Odisha	Oriya (93)	Telugu (4)	2,917
West Bengal	Bengali (94)	Other (3)	3,933
Northeast			
Arunachal Pradesh	Other (83)	Hindi (5)	1,215
Assam	Assamese (44)	Bengali (33)	2,366
Manipur	Manipuri (59)	Others (40)	1,369
Meghalaya	Other (94)	Bengali (3)	969
Mizoram	Other (99)	Nepali (0.22)	1,246
Nagaland	Other (91)	Bengali (5)	1,316
Tripura	Bengali (67)	Other (29)	1,195
West			
Dadra & Nagar Haveli	Gujarati (41)	Konkani (13)	1,090
Daman & Diu	Gujarati (84)	Hindi (6)	991
Goa	Konkani (76)	Kannada (8)	1,427
Gujarat	Gujarati (88)	Konkani (4)	2,341
Maharashtra	Marathi (79)	Hindi (12)	3,973
South			
Andaman & Nicobar Islands	Others (27)	Bengali (26)	1,244
Andhra Pradesh	Telugu (90)	Urdu (4)	2,679
Karnataka	Kannada (73)	Urdu (10)	2,420
Kerala	Malayalam (99)	Tamil (1)	2,497
Lakshadweep	Other (60)	Malayalam (40)	1,139
Puducherry	Tamil (85)	Telugu (7)	1,428
Tamil Nadu	Tamil (94)	Telugu (4)	3,530
Telangana	Telugu (83)	Urdu (9)	2,475

** Including spouse irrespective of age.*

Key findings: demographics

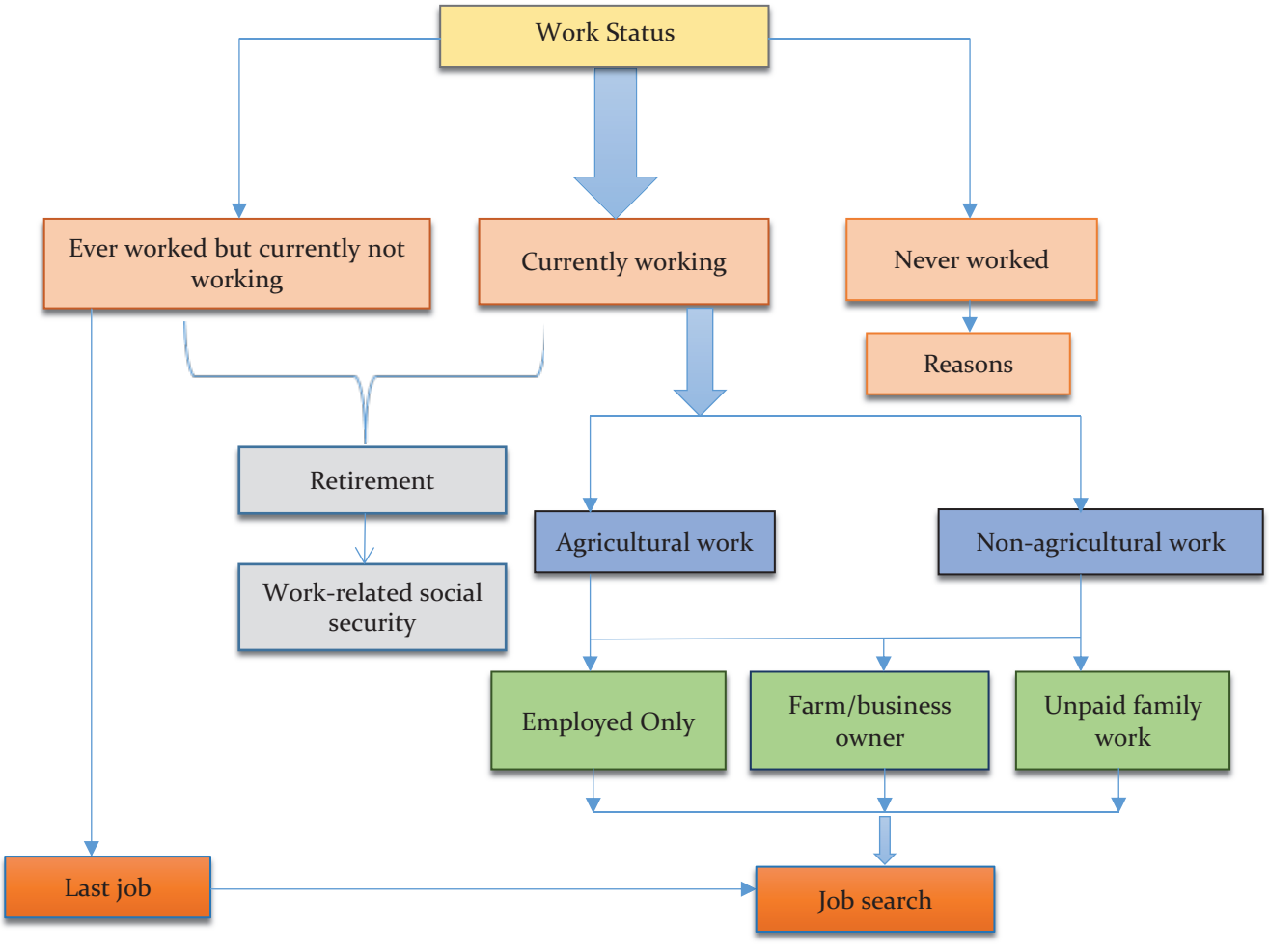
- In the LASI, overall in India, 72,250 individual respondents were interviewed (42% men and 58% women). Among them 46% are elderly (age 60 and above), 40% are older adults in the age group 45-59, and 9% are below the age of 45. Eleven percent of LASI age eligible individuals are 75 years and above.
- Among the women respondents, 15% are below age 45 years, while among the men, the percentage is lesser. The women respondents age less than 45 years are primarily the spouse of the age-eligible men respondents age 45 and above.
- Educational attainment is much lower among women older adults and among those from the rural areas in India. A higher share of the elderly age 60 and above across the states of India have had no education compared to older adults age 45-59 and above. Particularly in Telangana, Bihar, Rajasthan, Jammu & Kashmir, Chhattisgarh, Uttar Pradesh, Andhra Pradesh, Arunachal Pradesh, Jharkhand, Haryana, and Madhya Pradesh more than half the older adults have not had any formal education.
- Almost one in ten older adults age 45 and above are Scheduled tribe, 19% are Scheduled caste, 46% are from other backward class, and 27% belong to none of the above caste categories. The majority of the older adults age 45 and above are Hindu (82%) followed by Muslim (12%), Christian (3%), and others (3%).
- Nearly three-fourths of the older adults are currently married and 22% are widowed.
- Two-fifths (41%) of the older adults age 45 and above have been staying in their current place of their residence since birth whereas the majority of older adult women have migrated to their spousal residence.
- The most spoken languages in the country are Hindi (34%) and Bengali (10%).

6. WORK, RETIREMENT AND PENSION

Active ageing is the process of optimising opportunities for health, participation, and security to enhance the quality of life of people as they age. The word 'active' refers to one's continuing participation in social, economic, cultural, spiritual, and civic affairs. Thus, engaging in the workforce is an important aspect of active aging. Opportunities for participation in labour activities, social protection, and security in old age, as well as positive dynamics in the workplace are key to achieving a productive ageing society. The overall wellbeing of older persons depends largely on their economic conditions and work participation, along with their social and health factors (WHO, 2002). Research shows that formal work is an important cushion against disability and a critical determinant of well-being, physical activity, and how active life is for the elderly. Furthermore, retirement from employment is a critical point in the life of a working individual. It brings about various socio-psychological and economic changes.

This chapter provides information on the work status, retirement, and pension of older adults age 45 years and above. In the LASI, information was collected on the following aspects of work: ever work and current work, reasons for not working, information related to current work such as type of work, main job and/or side job, characteristics of the main job, type of industry and occupation, job search details, and information about the last job of current non-workers. As regards social security related to work, information was also collected on social insurance coverage, provident fund coverage, and retirement benefits (including type of retirement, retirement age, work unit before retirement, reasons for early retirement, and types of pension benefits including lump sum amounts).

Schematic representation of sections covered



6.1 EVER AND CURRENT WORK

The Census of India 2011 defines 'work' as participation in any economically productive activity with or without compensation, wages, or profit. In LASI, work includes all types of labour, such as agricultural work, wage/salaried work, self-employed activities, and unpaid family business work. However, it excludes one's own housework, irrespective of whether one receives wages. Older adults are classified into three categories: currently working (at the time of the survey), worked in the past but not currently working, and never worked (never engaged in any income-generating activities continuously for at least three months in their lifetime).

• Work	LASI follows the census definition of work. Work refers to participation in any economically productive activity with or without compensation, wages, or profit. Unpaid helpers who assist in the operation of an economic activity on the household farm or in non-farm activities are also considered as workers.
• Ever work	In LASI, ever work means that a person has worked continuously for at least three months in his or her lifetime. Work includes agricultural work, wage work, self-employed activities, and unpaid family business work.
• Current work	Current work refers to the work status of the respondent at the time of the survey. It includes those working at the time of the survey or those who are temporarily laid off, sick, or in training.

Table 6.1 presents the work status of older adults in India by selected background characteristics. Overall, in India, almost three-quarters (73%) of older adults age 45 and above have ever worked, and half of them (50%) are currently working. About three-fifths (62%) of the older adults age 45–59 and a little more than one-third (36%) of the elderly age 60 and above are currently working. The proportion of the elderly age 60 and above who are currently working is higher in rural areas (40%) than in urban areas (26%). Gender differences are notable in the current work status of older adults and their work-related characteristics: 70% of older adult men and 35% of older adult women age 45 and above are currently working; among elderly age 60 and above, 50% of men compared with 22% of women are currently working. By caste, the proportion of elderly age 60 and above currently working is the highest among the Scheduled tribe (48%), followed by the Scheduled caste (40%) and other backward classes (37%); and the proportion is lowest among those belonging to none of these caste/class groups. Current work participation of older adults varies inversely with the MPCE quintile.

Table 6.2 presents cross-state variations in the work status of older adults age 45 and above. A higher proportion of older adults are currently working in the states/UTs of Dadra & Nagar Haveli (68%), Karnataka (60%), and Chhattisgarh (60%). Similarly, there is a higher proportion of elderly age 60 and above who have worked in the past and are not currently working in the states/UTs of Daman & Diu (58%), Manipur (53%), and Gujarat (50%), whereas this proportion is comparatively lower in Arunachal Pradesh (14%), Jammu & Kashmir (27%), and Odisha (30%).

Table 6.1 Percent distribution of older adults by work status according to age and background characteristics, India, LASI Wave 1, 2017-180

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Currently working	Worked in the past but currently not working	Never worked	Number	Currently working	Worked in the past but currently not working	Never worked	Number	Currently working	Worked in the past but currently not working	Never worked	Number
Place of residence												
Rural	66.4	9.2	24.4	25,809	39.9	37.8	22.2	20,725	53.9	22.8	23.4	46,534
Urban	52.9	10.5	36.6	14,977	25.6	38.0	36.4	10,739	41.3	22.1	36.5	25,716
Sex												
Male	91.5	6.2	2.3	15,471	50.9	45.3	3.8	15,098	70.4	26.5	3.1	30,569
Female	44.2	11.6	44.2	25,315	22.0	31.1	46.8	16,366	35.0	19.7	45.3	41,681
Marital status												
Currently married	62.6	8.8	28.6	35,476	43.4	36.0	20.7	19,920	55.4	19.0	25.6	55,396
Widowed	55.3	16.5	28.2	3,874	22.4	41.1	36.5	10,719	30.1	35.3	34.6	14,593
Divorced/Separated/Deserted/Others	59.7	10.8	29.5	1,436	39.9	38.0	22.1	825	52.4	20.7	26.8	2,261
Religion												
Hindu	63.5	9.7	26.8	29,936	36.0	38.6	25.4	23,037	50.8	23.0	26.2	52,973
Muslim	52.2	9.6	38.2	4,936	35.2	32.3	32.6	3,731	44.7	19.7	35.7	8,667
Christian	62.2	8.0	29.8	4,065	39.6	36.2	24.2	3,150	52.2	20.5	27.3	7,215
Others	56.8	7.7	35.5	1,849	28.5	39.3	32.2	1,546	43.1	23.0	33.9	3,395
Caste/tribe												
Scheduled tribe	74.9	8.6	16.5	7,336	48.0	38.0	14.1	5,173	63.2	21.4	15.4	12,509
Scheduled caste	66.2	10.2	23.7	6,906	40.0	39.0	21.0	5,140	54.3	23.2	22.5	12,046
Other backward class	62.8	9.8	27.4	15,298	36.6	37.9	25.5	11,886	50.9	22.6	26.5	27,184
None of the above	52.5	9.2	38.3	11,246	27.7	37.1	35.2	9,265	40.7	22.4	36.9	20,511
Education												
No schooling	60.9	11.2	27.9	16,322	34.0	37.3	28.7	16,889	46.8	24.8	28.3	33,211
Less than 5 years complete	67.0	10.0	23.0	4,273	38.7	37.9	23.5	3,781	53.3	23.5	23.2	8,054
5-9 years complete	60.5	8.2	31.3	10,892	39.6	32.8	27.7	6,017	52.4	17.7	29.9	16,909
10 or more years complete	62.8	7.8	29.4	9,299	35.2	46.6	18.2	4,777	53.0	21.5	25.5	14,076
MPCE quintile												
Poorest	64.6	9.3	26.1	7,674	35.5	39.8	24.7	6,484	50.6	24.0	25.5	14,158
Poorer	61.5	10.5	28.0	8,053	35.9	37.5	26.6	6,477	49.5	23.2	27.3	14,530
Middle	61.7	9.1	29.3	8,121	38.8	36.6	24.6	6,416	50.9	22.0	27.1	14,537
Richer	60.6	10.3	29.1	8,516	36.2	36.9	27.0	6,170	49.6	22.3	28.1	14,686
Richest	60.9	8.7	30.4	8,422	31.3	38.5	30.2	5,917	48.5	21.1	30.3	14,339
Total	**61.9**	**9.6**	**28.6**	**40,786**	**35.7**	**37.9**	**26.4**	**31,464**	**49.9**	**22.6**	**27.6**	**72,250**

* Including spouse irrespective of age.

Table 6.2 Percent distribution of older adults by work status and age, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Currently working	Worked in the past but currently not working	Never worked	Number	Currently working	Worked in the past but currently not working	Never worked	Number	Currently working	Worked in the past but currently not working	Never worked	Number
India	**61.9**	**9.6**	**28.6**	**40,786**	**35.7**	**37.9**	**26.4**	**31,464**	**49.9**	**22.6**	**27.6**	**72,250**
North												
Chandigarh	49.6	7.4	43.0	632	19.0	39.8	41.2	394	37.5	20.3	42.3	1,026
Delhi	48.1	6.7	45.3	824	21.6	36.4	42.1	495	38.0	17.9	44.1	1,319
Haryana	50.0	11.8	38.3	1,050	18.9	39.8	41.3	848	35.1	25.2	39.7	1,898
Himachal Pradesh	73.4	10.6	16.0	767	40.5	45.2	14.3	621	57.8	27.0	15.2	1,388
Jammu & Kashmir	30.4	4.2	65.5	882	15.1	26.8	58.1	731	22.9	15.3	61.9	1,613
Punjab	39.4	8.4	52.2	1,120	19.3	31.3	49.4	1,004	29.8	19.3	50.9	2,124
Rajasthan	63.5	14.7	21.8	1,166	31.9	47.0	21.2	1,078	47.7	30.8	21.5	2,244
Uttarakhand	54.8	10.5	34.7	717	29.8	43.8	26.4	641	42.5	26.9	30.6	1,358
Central												
Chhattisgarh	73.5	11.1	15.4	1,275	38.2	48.4	13.4	780	59.9	25.4	14.7	2,055
Madhya Pradesh	64.0	13.7	22.3	1,601	35.2	45.7	19.2	1,313	50.3	28.9	20.8	2,914
Uttar Pradesh	55.6	7.4	36.9	2,398	32.9	35.0	32.1	2,169	44.4	21.0	34.6	4,567
East												
Bihar	55.9	6.7	37.4	1,712	36.0	33.9	30.1	1,808	45.2	21.4	33.5	3,520
Jharkhand	60.5	7.3	32.2	1,296	37.1	40.4	22.6	1,168	49.2	23.3	27.5	2,464
Odisha	61.3	4.0	34.7	1,680	37.3	30.2	32.5	1,237	50.7	15.6	33.7	2,917
West Bengal	56.0	9.0	35.0	2,389	32.5	35.1	32.4	1,544	46.5	19.6	34.0	3,933
Northeast												
Arunachal Pradesh	62.5	4.4	33.1	897	40.1	13.7	46.2	318	57.1	6.6	36.3	1,215
Assam	57.4	6.7	36.0	1,550	30.4	34.9	34.8	816	47.7	16.8	35.5	2,366
Manipur	76.7	12.6	10.7	763	38.1	52.7	9.3	606	58.7	31.3	10.0	1,369
Meghalaya	73.1	6.4	20.6	557	35.3	33.3	31.4	412	57.1	17.7	25.2	969
Mizoram	68.3	9.0	22.7	715	32.1	45.8	22.2	531	52.0	25.5	22.5	1,246
Nagaland	60.3	9.6	30.1	708	43.8	35.7	20.5	608	52.2	22.4	25.4	1,316
Tripura	59.2	6.7	34.1	734	36.1	35.9	28.0	461	50.1	18.2	31.7	1,195
West												
Dadra & Nagar Haveli	76.8	10.3	12.9	639	54.6	34.3	11.1	451	68.2	19.6	12.2	1,090
Daman & Diu	56.1	19.9	24.1	557	23.0	58.4	18.7	434	40.4	38.1	21.5	991
Goa	38.3	17.7	44.1	790	17.9	39.2	42.9	637	29.0	27.5	43.5	1,427
Gujarat	66.1	19.5	14.5	1,350	37.1	49.5	13.4	991	53.0	33.0	14.0	2,341
Maharashtra	71.2	10.2	18.7	2,183	41.1	42.3	16.6	1,790	56.4	25.9	17.7	3,973
South												
Andaman & Nicobar Islands	40.4	10.2	49.4	721	16.4	41.0	42.6	523	30.6	22.8	46.6	1,244
Andhra Pradesh	67.1	11.9	21.1	1,574	45.6	36.1	18.3	1,105	58.1	22.1	19.9	2,679
Karnataka	70.9	8.8	20.3	1,416	44.4	34.4	21.3	1,004	60.2	19.1	20.7	2,420
Kerala	44.0	13.2	42.8	1,288	25.4	32.5	42.1	1,209	34.4	23.1	42.5	2,497
Lakshadweep	31.2	3.8	65.0	637	10.7	35.3	54.1	502	21.4	18.8	59.8	1,139
Puducherry	56.2	5.5	38.3	788	29.7	30.5	39.8	640	43.8	17.2	39.0	1,428
Tamil Nadu	65.6	8.2	26.2	1,996	39.2	33.6	27.2	1,534	53.5	19.9	26.7	3,530
Telangana	71.8	11.0	17.1	1,414	43.3	40.4	16.3	1,061	59.1	24.1	16.8	2,475

* Including spouse irrespective of age.

Table 6.3 Percentage of older adults* age 45 and above by work status and sex, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Male				Female			
	Currently working	Worked in the past but currently not working	Never worked	Number	Currently working	Worked in the past but currently not working	Never worked	Number
India	**70.4**	**26.5**	**3.1**	**30,569**	**35.0**	**19.7**	**45.3**	**41,681**
North								
Chandigarh	59.7	32.4	7.9	452	19.3	10.3	70.4	574
Delhi	68.1	30.7	1.2	599	13.7	7.6	78.8	720
Haryana	63.7	34.9	1.4	792	15.6	18.5	65.9	1,106
Himachal Pradesh	67.7	30.6	1.7	562	51.2	24.6	24.3	826
Jammu & Kashmir	49.7	32.4	18.0	711	2.6	2.3	95.1	902
Punjab	56.1	35.8	8.1	927	9.9	6.9	83.3	1,197
Rajasthan	66.9	31.2	1.9	970	33.6	30.5	35.9	1,274
Uttarakhand	62.5	34.9	2.7	556	28.5	21.4	50.1	802
Central								
Chhattisgarh	76.1	22.7	1.2	906	47.2	27.5	25.3	1,149
Madhya Pradesh	67.3	27.8	4.9	1,324	35.5	29.9	34.6	1,590
Uttar Pradesh	66.4	29.4	4.2	2,081	26.0	14.0	59.9	2,486
East								
Bihar	69.2	29.3	1.5	1,555	26.2	15.2	58.7	1,965
Jharkhand	69.4	29.7	0.9	1,043	34.5	18.6	46.8	1,421
Odisha	78.0	19.1	2.9	1,255	30.0	12.9	57.2	1,662
West Bengal	70.2	25.5	4.3	1,620	29.8	15.4	54.8	2,313
Northeast								
Arunachal Pradesh	68.4	6.9	24.8	552	47.6	6.4	46.0	663
Assam	76.8	20.2	3.0	973	27.9	14.5	57.7	1,393
Manipur	68.7	27.3	4.0	581	51.4	34.2	14.4	788
Meghalaya	69.4	14.7	15.9	368	49.6	19.5	30.9	601
Mizoram	62.8	31.0	6.3	563	42.9	20.9	36.2	683
Nagaland	62.0	29.4	8.6	589	44.7	17.0	38.2	727
Tripura	72.7	21.1	6.2	491	34.8	16.2	49.1	704
West								
Dadra & Nagar Haveli	81.2	18.2	0.6	475	57.5	20.8	21.7	615
Daman & Diu	54.0	44.2	1.8	410	31.8	34.3	33.9	581
Goa	55.0	36.0	9.0	568	11.7	21.9	66.4	859
Gujarat	69.1	28.9	2.0	989	41.6	35.9	22.6	1,352
Maharashtra	69.8	28.7	1.5	1,607	47.5	24.0	28.5	2,366
South								
Andaman & Nicobar Islands	53.3	36.3	10.3	566	11.8	11.5	76.7	678
Andhra Pradesh	76.6	21.5	2.0	1,120	44.7	22.5	32.8	1,559
Karnataka	81.9	17.6	0.5	973	46.4	20.0	33.7	1,447
Kerala	62.6	33.4	4.0	991	16.8	16.7	66.5	1,506
Lakshadweep	48.8	42.4	8.8	446	4.6	4.4	91.0	693
Puducherry	71.4	27.7	1.0	552	26.1	10.6	63.4	876
Tamil Nadu	71.7	24.9	3.4	1,394	41.5	16.5	41.9	2,136
Telangana	72.8	23.6	3.6	1,008	49.7	24.5	25.8	1,467

* Including spouse irrespective of age.

Table 6.3 presents the variation in the percent distribution of older adult men and women based on work status across states/UTs. Work participation among older adult women age 45 and above is much higher in the states/UTs of Dadra & Nagar Haveli (58%), Manipur (51%), Himachal Pradesh (51%), and Telangana (50%), while it is lower in Jammu & Kashmir (3%), Lakshadweep (5%), Punjab (10%), and Goa (12%).

Figure 6.1 Percent distribution of older adults by work status according to age, India, LASI Wave 1, 2017-18

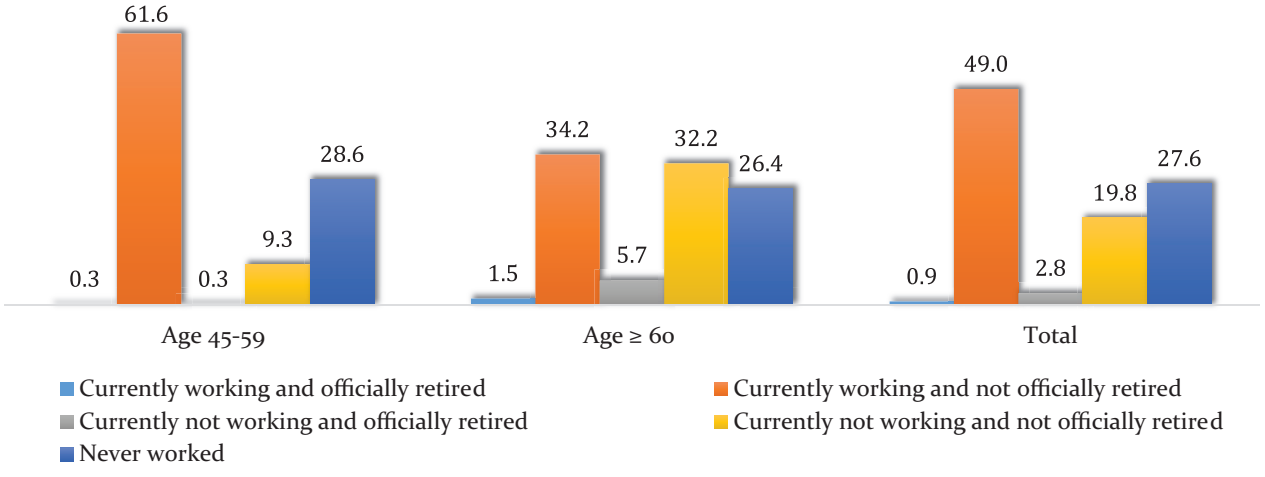


Figure 6.1 compares the percent distribution of older adults age 45–59 and the elderly age 60 and above in India by work status according to age. Among older adults age 45–59, 62% are currently working, and 9% (who have ever worked) are neither currently working nor officially retired in India. Among the elderly age 60 and above, 34% are currently working, followed by 32% who are neither working currently nor officially retired. A very small proportion of older adults (1%) age 45 and above in India continue to work after retirement as well.

6.2 MAIN JOB AND SIDE JOB

Information on current workforce participation of older adults by type of main job is presented in this section. The main jobs are classified as follows: farm/fishery/forestry owner, agricultural labourer, business owner, self-employed, wage/salaried worker, and non-paid family worker.

• **Main job**	Main job is defined as a paid job at which a person works for the longest hours.
• **Wage/salaried workers**	Wage/salaried workers are persons working on another's non-agricultural farm or non-farm enterprise (both household and non-household and in the public or private sector) who receive salary or wages.
• **Self-employed**	Self-employed includes two categories of workers: own account worker and non-agricultural business owner. Own account worker refers to an individual who works for him/herself, without employees. Non-agricultural business owner includes entities with one or more employees, wherein the business entity is owned by the respondent.
• **Side job**	Side job is defined as any job other than the respondent's main job.
• **Occupation**	Occupation refers to a specific task or set of tasks with which a person is engaged. LASI follows the abridged version of the National Classification of Occupation, 2015 (www.ncs.gov.in).
• **Industry**	An industry refers to the type of firm for which a person works. LASI follows the abridged version of the National Classification of Industry, 2015 (www.mospi.nic.in).

6.2.1 Type of main job

More than half of the older adults age 45 and above are engaged in agricultural and allied activities (56%), while 17% are self-employed. In India, more than a fourth (27%) of older adults age 45 and above are engaged in wage/salaried work. Among the elderly age 60 and above, the majority are engaged in agricultural and allied activities (65%), less than one-fifth (19%) are engaged in wage/salaried work, and 17% are self-employed (Figure 6.2).

Figure 6.2 Percent distribution of older adults by type of main job, India, LASI Wave 1, 2017- 18

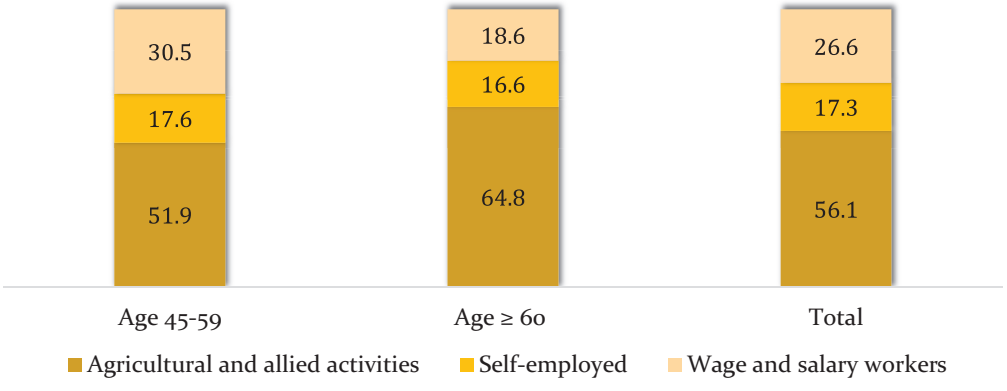


Figure 6.3 presents the percent distribution of currently working older adults by type of main job according to sex and residence. Overall, in India, 37% and 14% of older adult men age 45 and above are engaged in farm/fishery/forestry (own/family) and as agricultural labourers, respectively. In rural areas, 47% and 25% of older adults age 45 and above are engaged in farm/fishery/forestry (own/family) and as agricultural labourers, respectively. Half of the older adults in urban areas (51%) are engaged in wage/salaried work, followed by small business, that is, own account work (28%).

Figure 6.3 Percent distribution of currently working older adults age 45 and above by type of main job according to sex and place of residence, India, LASI Wave 1, 2017-18

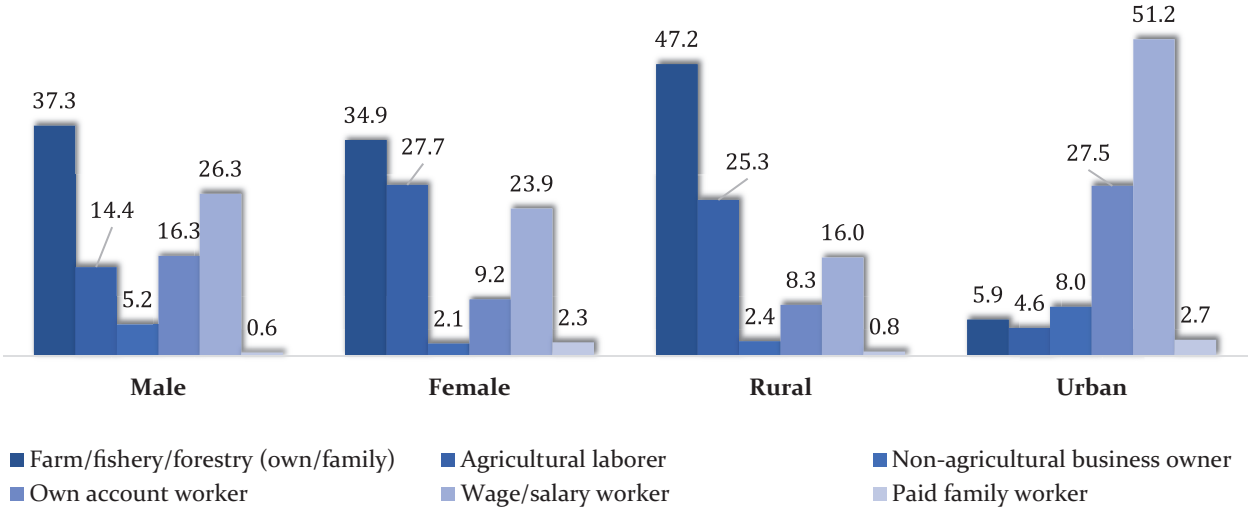


Table 6.4 presents the percent distribution of currently working older adults by type of main job according to their background characteristics. Most older adults age 45 and above are engaged in agricultural and allied activities (63% of women, and 52% of men). Regardless of age, the proportion of women engaged in agricultural and allied activities is higher than that of their male counterparts; the proportion of men who are self-employed is higher than that of their female counterparts. By caste, older adults age 45 and above belonging to Scheduled tribe (76%) and Scheduled caste (59%) mostly engage in agricultural and allied activities, followed by those belonging to other backward class (55%).

It is also observed that, as the level of education and MPCE quintile increases, there is a decrease in the proportion of older adults age 45 and above engaged in agricultural and allied activities and an increase in the proportion of self-employed and those in wage/salaried work.

Table 6.4 Percent distribution of currently working older adults by type of main job according to age and background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Agricultural and allied activities	Self-employed	Wage and salary workers	Number	Agricultural and allied activities	Self-employed	Wage and salary workers	Number	Agricultural and allied activities	Self-employed	Wage and salary workers	Number
Place of residence												
Rural	70.0	10.8	19.3	16,698	77.1	10.8	12.2	7,951	72.5	10.8	16.8	24,649
Urban	7.6	34.4	58.0	7,620	18.8	38.7	42.5	2,687	10.5	35.5	53.9	10,307
Sex												
Male	45.4	22.5	32.1	13,859	62.3	19.6	18.1	7,237	51.7	21.4	26.9	21,096
Female	60.0	11.6	28.5	10,459	70.0	10.5	19.5	3,401	62.6	11.3	26.1	13,860
Marital status												
Currently married	52.3	17.7	30.0	21,345	66.6	16.9	16.5	8,092	56.5	17.5	26.1	29,437
Widowed	51.2	17.5	31.3	2,080	60.4	15.3	24.4	2,256	56.4	16.2	27.4	4,336
Divorced/Separated/ Deserted/Others	44.0	15.1	41.0	893	50.2	22.5	27.3	290	45.7	17.1	37.2	1,183
Religion												
Hindu	54.5	16.0	29.6	18,391	66.3	15.5	18.2	8,016	58.3	15.8	25.9	26,407
Muslim	31.1	32.7	36.3	2,188	54.3	25.9	19.8	1,007	39.1	30.3	30.6	3,195
Christian	51.8	10.3	37.9	2,702	60.7	12.4	27.0	1,196	54.7	11.0	34.3	3,898
Others	50.6	21.0	28.4	1,037	66.1	18.0	15.9	419	55.6	20.0	24.4	1,456
Caste/tribe												
Scheduled tribe	73.6	6.5	19.9	5,085	81.1	6.8	12.1	2,170	76.1	6.6	17.3	7,255
Scheduled caste	53.9	14.6	31.5	4,362	68.8	10.7	20.5	1,907	58.9	13.3	27.8	6,269
Other backward class	50.8	18.3	30.9	9,257	64.1	18.1	17.8	4,247	55.1	18.2	26.6	13,504
None of the above	41.9	24.4	33.7	5,614	54.1	24.3	21.7	2,314	45.8	24.4	29.9	7,928
Education												
No schooling	67.8	11.6	20.6	9,634	73.4	10.6	16.0	5,550	70.0	11.2	18.9	15,184
Less than 5 years complete	58.0	17.7	24.3	2,753	63.1	20.5	16.4	1,402	59.8	18.7	21.5	4,155
5-9 years complete	46.6	23.1	30.3	6,264	58.4	23.1	18.5	2,269	50.1	23.1	26.9	8,533
10 or more years complete	24.1	23.5	52.4	5,667	42.4	27.1	30.5	1,417	28.4	24.3	47.3	7,084
MPCE quintile												
Poorest	54.9	15.7	29.3	4,799	66.0	14.8	19.3	2,287	58.7	15.4	25.9	7,086
Poorer	54.6	17.8	27.6	4,859	65.5	16.5	18.0	2,290	58.3	17.4	24.3	7,149
Middle	53.6	18.8	27.6	4,842	62.3	18.2	19.5	2,206	56.7	18.6	24.7	7,048
Richer	53.7	15.8	30.6	5,026	64.2	17.4	18.4	2,085	57.1	16.3	26.6	7,111
Richest	42.2	20.0	37.8	4,792	66.9	16.1	17.1	1,770	48.8	19.0	32.2	6,562
Total	**51.9**	**17.6**	**30.5**	**24,318**	**64.8**	**16.6**	**18.6**	**10,638**	**56.1**	**17.3**	**26.6**	**34,956**

* Including spouse irrespective of age.

Table 6.5 shows state-wise differentials of currently working older adults by type of main job. In almost all the states/UTs, a larger proportion of elderly workers are engaged in agricultural and allied activities than their younger counterparts. In Nagaland (90%), Himachal Pradesh (81%), Chhattisgarh (77%), and Jharkhand (76%), more than three-fourths of the elderly are engaged in agricultural and allied activities. However, in Delhi (59%), Jammu & Kashmir (41%), and Goa (38%), a sizeable proportion of elderly workers are self-employed, and two-thirds of the elderly in Chandigarh (66%) are engaged as salaried workers.

Table 6.5 Percent distribution of currently working older adults by type of main job according to age, states/ UTs, LASI Wave 1, 2017-18

States/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Agricultural and allied activities	Self-employed	Wage and salary workers	Number	Agricultural and allied activities	Self-employed	Wage and salary workers	Number	Agricultural and allied activities	Self-employed	Wage and salary workers	Number
India	**51.9**	**17.6**	**30.5**	**24,318**	**64.8**	**16.6**	**18.6**	**10,638**	**56.1**	**17.3**	**26.6**	**34,956**
North												
Chandigarh	1.7	31.3	67.0	319	1.6	32.8	65.6	75	1.7	31.6	66.8	394
Delhi	1.4	42.3	56.3	404	1.6	59.0	39.5	108	1.5	45.8	52.7	512
Haryana	43.6	19.4	37.0	542	58.3	26.2	15.5	175	47.4	21.2	31.4	717
Himachal Pradesh	68.0	6.5	25.4	559	81.3	8.9	9.8	259	72.4	7.3	20.2	818
Jammu & Kashmir	30.7	30.1	39.2	277	40.9	41.0	18.1	125	34.0	33.6	32.5	402
Punjab	41.0	29.4	29.7	469	52.5	27.8	19.7	215	44.5	28.9	26.6	684
Rajasthan	58.3	15.8	25.9	754	68.6	15.1	16.4	361	61.7	15.6	22.7	1,115
Uttarakhand	42.0	19.9	38.1	388	59.8	21.6	18.6	191	48.1	20.5	31.4	579
Central												
Chhattisgarh	71.3	8.7	20.0	945	76.8	9.7	13.6	307	72.7	8.9	18.4	1,252
Madhya Pradesh	58.3	15.7	26.0	1,042	70.9	12.3	16.8	472	62.5	14.6	22.9	1,514
Uttar Pradesh	64.2	13.2	22.5	1,314	69.4	13.9	16.7	726	66.1	13.5	20.4	2,040
East												
Bihar	60.7	15.5	23.9	938	73.8	12.9	13.3	640	66.2	14.4	19.4	1,578
Jharkhand	62.2	17.2	20.6	796	76.4	15.8	7.8	446	67.3	16.7	15.9	1,242
Odisha	60.1	13.6	26.4	1,013	72.2	14.7	13.2	450	64.0	13.9	22.1	1,463
West Bengal	28.3	28.8	42.9	1,327	42.1	27.4	30.6	456	32.2	28.4	39.4	1,783
Northeast												
Arunachal Pradesh	42.4	16.3	41.3	577	47.7	23.4	28.9	128	43.3	17.5	39.2	705
Assam	33.5	30.7	35.8	889	48.9	28.6	22.5	253	37.0	30.3	32.7	1,142
Manipur	37.8	32.8	29.4	594	50.3	29.5	20.2	259	41.6	31.8	26.6	853
Meghalaya	46.9	21.3	31.8	393	45.9	36.9	17.2	151	46.6	25.4	28.0	544
Mizoram	46.9	26.5	26.7	485	67.3	17.1	15.6	184	52.5	23.9	23.6	669
Nagaland	68.6	9.0	22.4	533	90.1	2.6	7.3	314	77.4	6.4	16.3	847
Tripura	31.9	17.7	50.4	447	37.0	17.5	45.5	168	33.4	17.7	49.0	615
West												
Dadra & Nagar Haveli	51.9	9.7	38.5	510	76.4	13.3	10.4	258	59.5	10.8	29.7	768
Daman & Diu	20.7	28.7	50.6	310	41.7	34.7	23.6	115	26.4	30.3	43.3	425
Goa	8.6	27.3	64.1	295	24.4	38.0	37.5	98	13.0	30.3	56.6	393
Gujarat	56.7	13.9	29.4	904	58.5	17.1	24.5	380	57.3	14.9	27.8	1,284
Maharashtra	59.1	16.7	24.2	1,471	68.8	16.2	14.9	704	62.6	16.5	20.9	2,175
South												
Andaman & Nicobar Islands	20.6	19.7	59.8	295	43.0	17.1	39.9	82	25.5	19.1	55.4	377
Andhra Pradesh	50.7	17.2	32.1	1,067	56.5	14.2	29.3	506	52.6	16.2	31.2	1,573
Karnataka	59.5	13.8	26.8	1,006	79.8	12.8	7.4	462	65.5	13.5	21.1	1,468
Kerala	19.3	30.8	49.9	553	39.5	27.3	33.2	298	26.9	29.5	43.6	851
Lakshadweep	15.1	9.6	75.3	207	31.4	32.4	36.2	54	18.8	14.9	66.3	261
Puducherry	28.8	10.6	60.5	423	46.1	17.1	36.7	190	34.3	12.7	53.0	613
Tamil Nadu	42.9	16.6	40.5	1,236	51.8	17.8	30.5	570	45.9	17.0	37.1	1,806
Telangana	63.0	16.1	20.9	1,036	66.8	15.8	17.4	458	64.3	16.0	19.8	1,494

* Including spouse irrespective of age.

6.2.2 Characteristics of the main job

The characteristics of the main job include the workplace, duration of work in a year, duration of hours of work, number of employees of the self-employed, and type of employer for wage/salaried workers. Table 6.6 presents the percentage of currently working older adults age 45 and above by characteristics of the main job.

Place of the current main job: A relatively higher proportion of older adults age 45 and above are working in their own farm or business (32%), and 13% are working in their own dwelling. About 18% of elderly age 60 and above are working in a workplace without a fixed location.

Duration of work in a year: Among the currently working older adults age 45 and above, 85% are engaged in work for at least six months in a year.

Type of employer of wage/salaried workers: Among the wage/salaried workers, almost half (50%) of the older adults age 45 and above are engaged in work for a private sector company/organisation; 24% work in the government sector, and about one-fifth (20%) work in individual households.

Number of employees: Almost four-fifths (78%) of the self-employed older adults age 45 and above function without an employee, indicating a high proportion of 'own account workers' in India.

Table 6.6 Percent distribution of currently working older adults by characteristics of main job, India, LASI Wave 1, 2017-18

Characteristics of main job	Age 45-59*	Age ≥ 60	Total
Place of current main job			
Own dwelling	13.2	13.3	13.2
Own farm or business	29.3	38.5	32.3
Employer's dwelling	4.2	3.9	4.1
Employer's workplace	12.3	9.7	11.4
Construction site	2.7	2.0	2.5
Place with fixed location	19.3	14.7	17.8
Place without fixed location	19.1	18.0	18.7
Number of working older adults	**24,354**	**10,675**	**35,029**
Duration of work in a year			
Less than 6 months	13.6	18.1	15.0
6 months and more	86.4	82.0	85.0
Number of working older adults	**24,325**	**10,669**	**34,994**
Type of employer of wage and salary workers			
Government sector	25.8	16.7	23.8
Private sector/organization/entrepreneur	50.4	49.6	50.2
Cooperatives	1.8	1.7	1.8
NGO/ Trust	4.1	5.1	4.3
Individual household	17.9	26.9	19.9
Number of wage and salary workers	**7,325**	**1,921**	**9,246**
Number of employees among self employed			
No employee	77.4	78.0	77.6
1 –20 employees	21.8	21.6	21.7
More than 20 employees	0.8	0.4	0.7
Number of self employed	**9,012**	**4,989**	**14,001**
Duration of hours of work			
Same in each week	37.8	28.8	34.9
Vary a little	38.2	42.3	39.5
Vary a lot	24.0	28.9	25.6
Number of working older adults	**24,356**	**10,687**	**35,043**

* Including spouse irrespective of age.

6.2.3 Earnings by the main job

The mean monthly individual earnings of older adults age 45 and above is ₹ 5,117 for those engaged in agricultural and allied activities, ₹ 9,119 for the self-employed, and ₹ 10,996 for wage/salaried workers. The mean monthly earnings of the elderly age 60 and above who are engaged in any type of work are lower than that of older adults age 45–59 (Figure 6.4). For example, the mean monthly earnings of the elderly age 60 and above who are wage/salaried workers is ₹ 7,012.

Figure 6.4 Mean monthly earnings of currently working older adults (in ₹) from work related activities by age and main job, India, LASI Wave 1, 2017-18

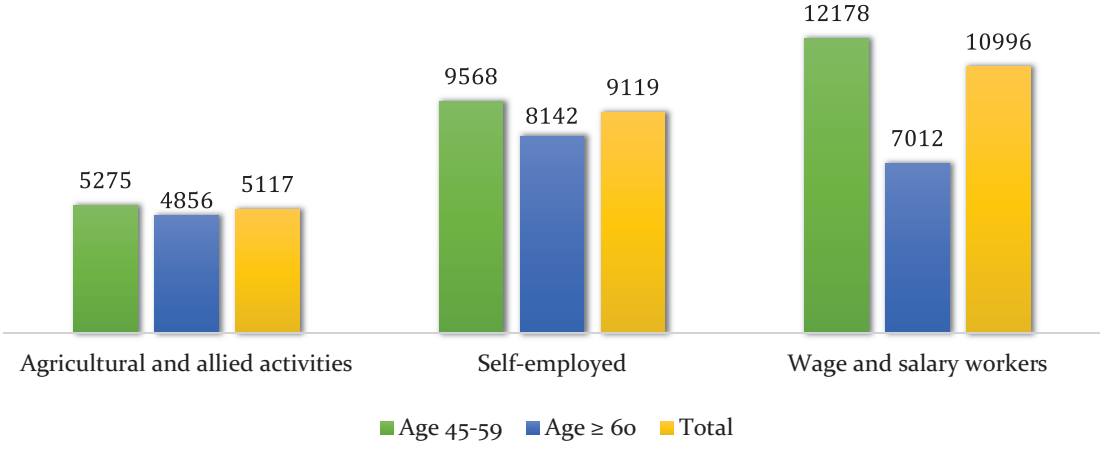


Table 6.7 presents the mean monthly individual earnings from work-related activities for currently working older adults by age and main job across the states/UTs. The mean monthly individual earnings from agricultural and allied activities are the highest in Lakshadweep (₹ 10,589), followed by Kerala (₹ 10,501), Jammu & Kashmir (₹ 9,738), and Punjab (₹ 8,704). Comparatively, the mean monthly earnings are lower in the states/UTs of Dadra & Nagar Haveli (₹ 3,286), Chhattisgarh (₹ 3,523), and Odisha (₹ 4,090). Whereas the mean monthly individual earnings from wage/salaried workers are the highest in the states/UTs of Mizoram (₹ 31,300), Lakshadweep (₹ 28,785), Andaman & Nicobar Islands (₹ 27,660), they are the lowest in the states of West Bengal (₹ 6,993), Andhra Pradesh (₹ 8,873), and Bihar (₹ 8,975).

Table 6.7 Mean monthly earnings of currently working older adults (in ₹) from work related activities by age and main job, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Mean monthly earnings from work related activities**								
	Age 45-59*			Age ≥ 60			Total		
	Agricultural and allied activities	Self-employed	Wage and salary workers	Agricultural and allied activities	Self-employed	Wage and salary workers	Agricultural and allied activities	Self-employed	Wage and salary workers
India	**5,275**	**9,568**	**12,178**	**4,856**	**8,142**	**7,012**	**5,117**	**9,119**	**10,996**
North									
Chandigarh	9,398	14,227	25,782	6,516	26,344	14,502	8,847	16,979	23,502
Delhi	9,592	13,785	17,419	5,723	13,458	10,804	8,688	13,701	16,383
Haryana	8,651	12,066	14,508	7,396	11,588	7,383	8,258	11,910	13,613
Himachal Pradesh	5,680	12,718	20,665	6,098	9,508	7,496	5,837	11,424	18,549
Jammu & Kashmir	9,878	12,629	20,153	9,513	11,080	21,568	9,738	12,021	20,407
Punjab	9,773	11,577	10,408	6,854	8,678	6,123	8,704	10,729	9,441
Rajasthan	5,471	10,007	14,900	5,068	8,951	6,809	5,329	9,666	12,963
Uttarakhand	4,728	9,800	18,083	4,791	9,025	8,391	4,755	9,514	16,092
Central									
Chhattisgarh	3,478	8,038	16,260	3,654	7,841	9,338	3,523	7,987	15,020
Madhya Pradesh	5,140	8,310	10,855	4,250	8,142	5,548	4,803	8,263	9,566
Uttar Pradesh	5,070	9,097	12,115	4,623	6,146	6,007	4,896	7,993	10,383
East									
Bihar	4,720	9,278	10,273	4,493	6,340	5,765	4,613	8,180	8,975
Jharkhand	4,334	10,618	12,817	4,024	5,972	7,419	4,206	9,028	11,853
Odisha	4,235	9,235	9,936	3,838	7,015	7,148	4,090	8,485	9,398
West Bengal	4,505	7,494	7,525	4,021	6,482	5,112	4,325	7,216	6,993
Northeast									
Arunachal Pradesh	6,997	15,087	23,147	4,643	8,172	7,695	6,556	13,517	21,213
Assam	5,219	7,859	10,633	4,341	5,543	11,051	4,962	7,356	10,699
Manipur	5,856	12,092	14,872	5,004	5,829	17,710	5,541	10,332	15,523
Meghalaya	6,547	14,284	17,824	4,906	11,698	16,240	6,113	13,376	17,583
Mizoram	5,704	12,918	30,735	5,576	10,799	33,994	5,660	12,452	31,300
Nagaland	4,667	14,169	25,086	3,516	21,458	20,028	4,097	15,159	24,086
Tripura	5,393	13,320	11,749	4,245	5,687	4,483	5,033	11,177	9,820
West									
Dadra & Nagar Haveli	3,546	13,508	15,960	2,892	26,099	12,601	3,286	18,338	15,581
Daman & Diu	7,325	9,658	13,554	5,265	7,215	7,191	6,426	8,896	12,606
Goa	7,939	14,423	15,650	7,627	14,764	11,985	7,776	14,546	14,968
Gujarat	5,057	8,816	10,323	4,175	10,859	8,024	4,774	9,558	9,688
Maharashtra	5,382	9,527	12,650	4,997	8,507	7,961	5,232	9,170	11,456
South									
Andaman & Nicobar Islands	8,757	18,429	30,764	8,210	6,353	10,512	8,555	16,277	27,660
Andhra Pradesh	6,059	10,854	10,062	5,247	10,096	6,121	5,775	10,629	8,873
Karnataka	5,575	10,835	17,030	5,057	8,502	7,014	5,384	10,171	15,871
Kerala	11,634	12,760	17,417	9,544	10,953	10,510	10,501	12,142	15,548
Lakshadweep	11,257	10,500	31,578	9,541	13,205	10,029	10,589	11,866	28,785
Puducherry	6,277	13,036	17,927	6,508	8,380	12,846	6,376	11,038	16,816
Tamil Nadu	6,206	11,084	9,755	6,742	9,487	7,186	6,410	10,521	9,046
Telangana	4,923	8,977	13,499	5,510	6,365	6,374	5,121	8,137	11,514

* Including spouse irrespective of age.
**Monthly earning includes earning from main and side job.

6.2.4 Occupation and industry of the main job

Occupation refers to a specific task or set of tasks with which a person is engaged. Industry refers to the type of firm for which a person works. Following the National Classification of Occupation, the categories of occupation in LASI are: legislators, senior officials and managers, professional/ technical workers, clerical workers, sales and services, skilled agricultural workers, craft and related trade workers, plant and machine operators, and elementary occupations. Following the National Classification of Industry, in LASI, the categories of industry are agriculture, forestry, and fishing; mining and quarrying; manufacturing; electricity; water supply; construction; wholesale and retail trade; transportation and storage; information and communication; financial activities, professional, scientific, and technical activities; public administration; education; and human health activities. Table 6.8 presents the percent distribution of currently working older adults by type of occupation and industry of their main job.

Industry: Most older adults age 45 and above are engaged in agriculture, forestry, and fishing (52% for men, and 64% for women), followed by wholesale and retail trade and transportation, accommodation and information & communication (17% for men, and 9% for women).

Occupation: Most older adults age 45 and above in India work as skilled agriculture/fishery workers, followed by those in elementary occupations. Elementary occupations involve the performance of simple and routine tasks that may require the use of hand-held tools and considerable physical effort. The proportion of women in agriculture/fishery and elementary occupations is much higher than their male counterparts. The proportion of older adults age 45 and above engaged as senior officials, managers, technicians is less than 6%. Nonetheless, men dominate these occupations, and the share of women in these areas is much lower.

Table 6.8 Percent distribution of currently working older adults by type of occupation and industry of main job according to age and sex, India, LASI Wave 1, 2017-1

Occupation/Industry	Male			Female			Total
	Age 45-59*	Age ≥ 60	Total	Age 45-59	Age ≥ 60	Total	
Industry							
Agriculture, forestry, fishing	45.7	63.4	52.3	62.0	70.8	64.3	57.2
Quarrying and mining	1.4	0.9	1.2	0.5	0.6	0.6	1.0
Manufacturing	5.1	3.1	4.3	3.9	2.4	3.5	4.0
Electricity, gas, water supply	2.1	1.4	1.8	1.1	0.8	1.0	1.5
Construction	7.3	4.6	6.3	3.2	2.6	3.1	5.0
Wholesale and retail, transportation, accommodation and information & communication	18.1	14.0	16.6	9.2	8.3	9.0	13.5
Financial, real estate and professional services	4.1	1.7	3.2	1.4	0.9	1.3	2.4
Administrative and public administration and defence services	4.7	2.1	3.7	1.0	0.5	0.8	2.6
Other services**	11.5	8.8	10.5	17.8	13.1	16.6	13.0
Number	**13,870**	**7,258**	**21,128**	**10,479**	**3,416**	**13,895**	**35,023**
Occupation							
Legislators, senior officials and managers	1.9	0.5	1.4	0.6	0.1	0.5	1.0
Professionals	5.6	2.6	4.4	6.8	1.0	5.3	4.8
Technicians and associate professionals	3.1	1.0	2.3	0.7	0.3	0.6	1.6
Clerks	2.6	1.1	2.1	0.8	0.3	0.6	1.5
Service workers and shop and market sales workers	13.2	12.3	12.9	8.0	7.2	7.8	10.8
Skilled agricultural and fishery workers	42.8	57.1	48.2	53.7	60.5	55.4	51.1
Craft and related trade workers	5.1	4.2	4.8	5.0	3.3	4.6	4.7
Plant and machine operators and assemblers	5.5	1.8	4.1	0.3	0.2	0.3	2.5
Elementary occupations	20.2	19.6	20.0	24.1	27.1	24.9	22.0
Number	**11,702**	**6,316**	**18,018**	**8,976**	**2,924**	**11,900**	**29,918**

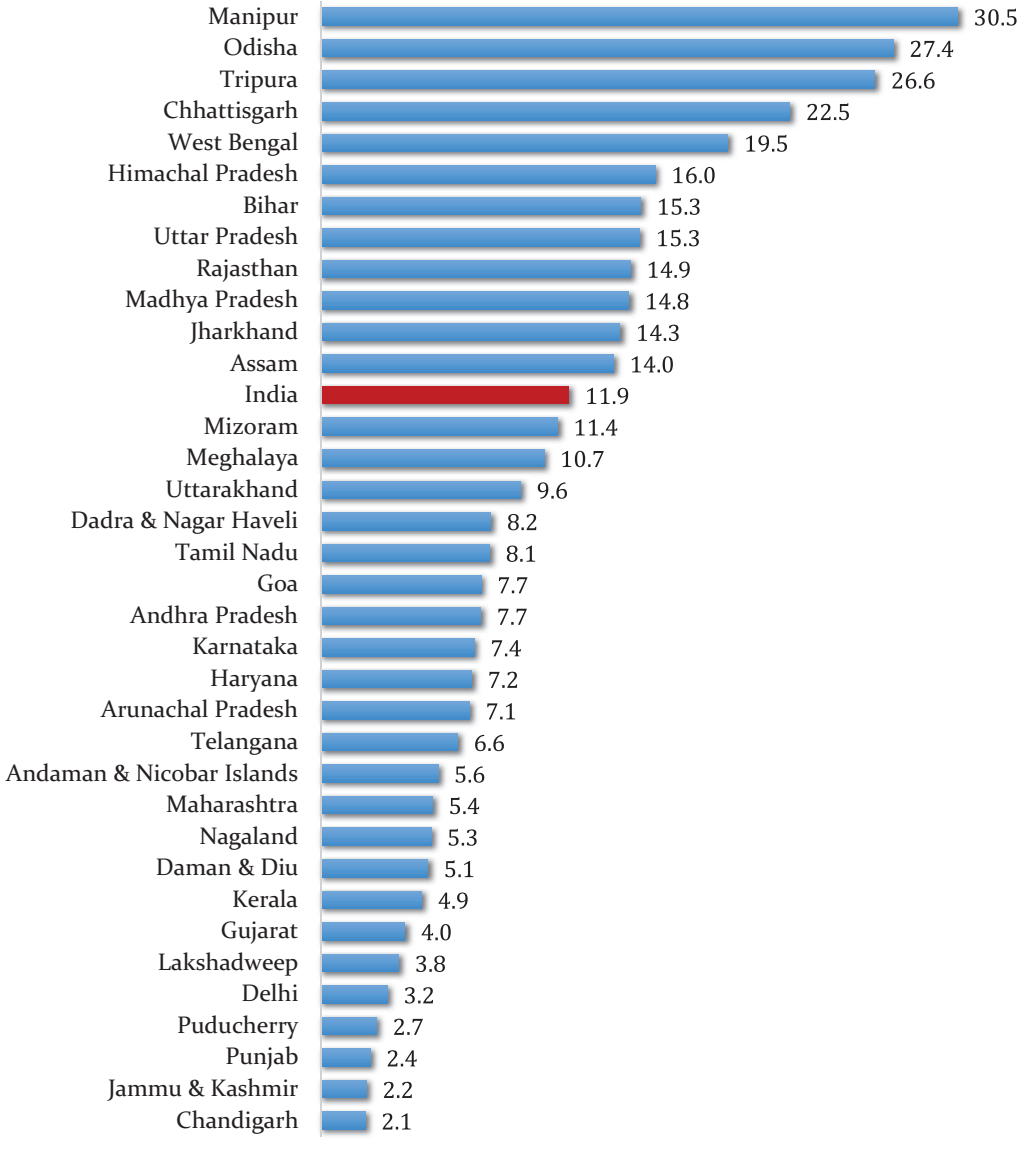
* Including spouse irrespective of age.

***Other services include education, human health and social work activities, art, entertainment, and recreation, other services activities, activities of households as employers, activities of extraterritorial organizations and other.*

6.2.5 Side job

Figure 6.5 shows the percentage of older adults engaged in side jobs. Twelve percent of the currently working older adults age 45 and above in India are engaged in side jobs, alongside their main jobs. In states such as Manipur (31%), Odisha (27%), Tripura (27%), and Chhattisgarh (23%), more than one-fifth of the older adults age 45 and above are also engaged in a side job. By contrast, this proportion is much lower in Chandigarh, Puducherry, Jammu & Kashmir, and Punjab at 3%.

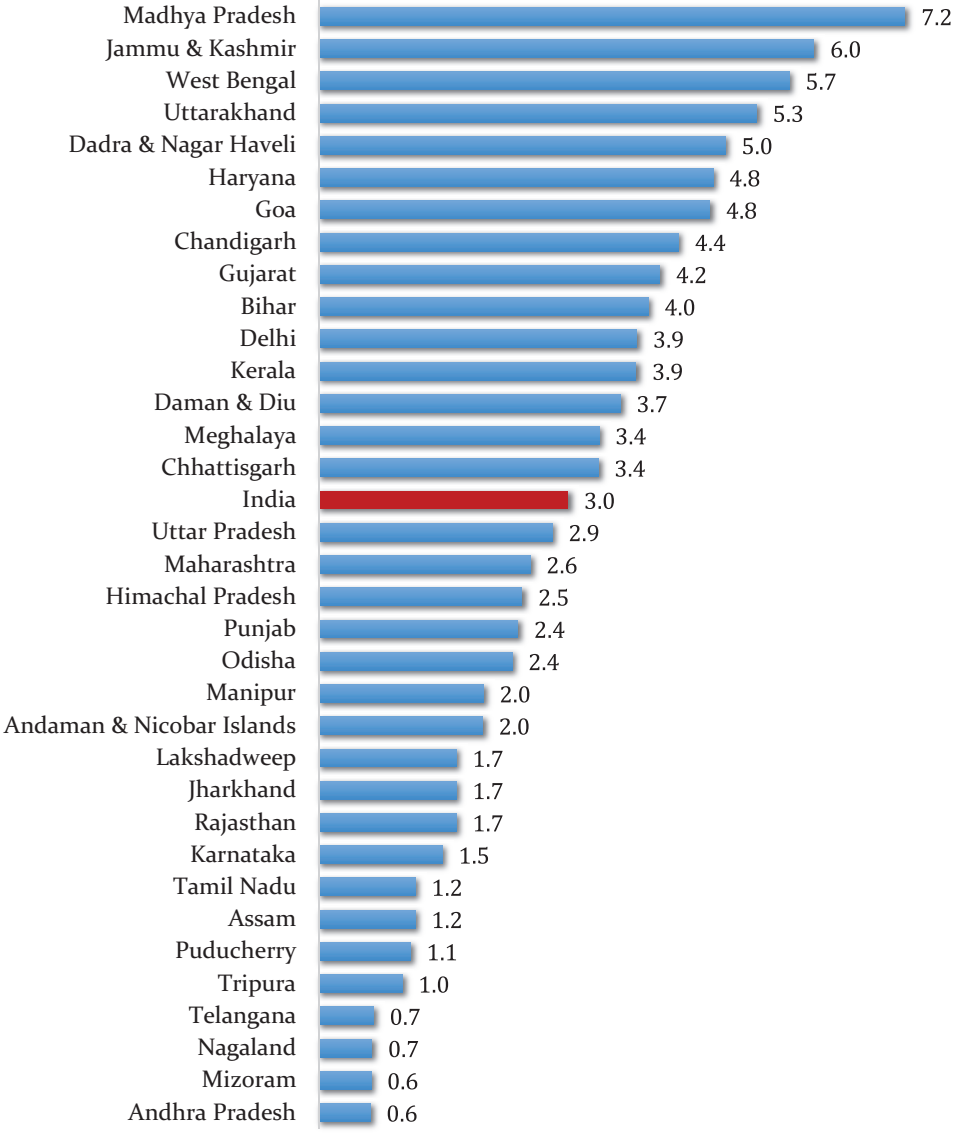
Figure 6.5 Percentage of currently working older adults age 45 and above engaged in side job, states/UTs, LASI Wave 1, 2017-18



6.3 JOB SEARCH

In LASI, older adults who ever worked were asked about their job search. Specifically, they were asked whether they were searching for a job at the time of the survey and whether they were registered in the employment exchange or under the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Respondents were also asked what type of jobs they were looking for. In India, a small proportion (3%) of ever-worked older adults are searching for a job. This percentage is the highest in Madhya Pradesh (7%), followed by Jammu & Kashmir (6%) and West Bengal (6%) (Figure 6.6).

Figure 6.6 Percentage of ever-worked older adults age 45 and above seeking for alternative employment opportunities, states/UTs, LASI Wave 1, 2017-18



6.4 WORK-RELATED SOCIAL SECURITY COVERAGE

In LASI, work-related social insurance coverage focuses on six categories of social security schemes, that is, work-related pension, provident fund, work-related health insurance (but not life insurance), medical re-imbursement from employer, worker's employment insurance, and worker's injury insurance.

• Social insurance	Work-related social insurance includes pension, provident fund, health insurance, injury/accident insurance, and any other benefits related to work. It includes both contributory and government-funded schemes.

Figure 6.7 Percentage of ever worked older adults age 45 and above by work related social insurance, India, LASI Wave 1, 2017-18

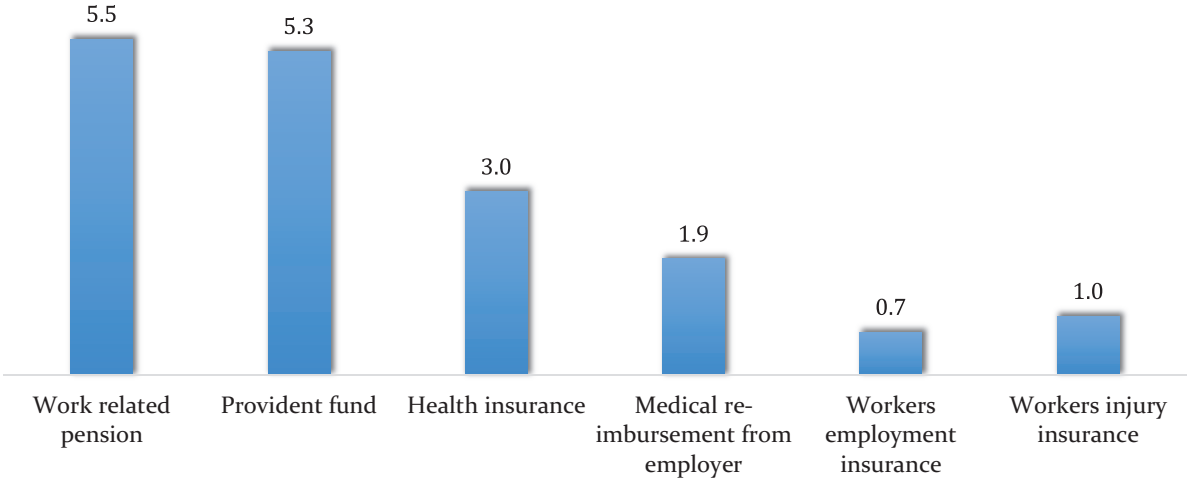


Table 6.9 presents the percentage of ever-worked older adults covered under social insurance across the states/UTs. In India, 6% of the older adults age 45 and above who have ever worked are covered under a work-related pension, and 5% are covered under provident fund scheme. The remaining types of coverage (i.e. health insurance, medical re-imbursement from an employer, worker's employment, and injury insurance) are provided to only a small percentage of the population (2% or below); (Figure 6.7). The percentage of people who have a work-related pension or provident fund scheme is higher among the elderly age 60 and above than among older adults age 45–59. The proportion of ever-worked older adults age 45 and above who are covered under a work-related pension is the highest in Lakshadweep (38%). Moreover, a higher proportion of older adults age 45 and above is covered under a work-related pension in Chandigarh (21%), Mizoram (17%), Goa (16%) and Kerala (15%). Similarly, a higher percentage of older adults is covered under a provident fund in Lakshadweep (33%), Goa (20%), Chandigarh (19%), Mizoram (17%) and Daman & Diu (17%)

Table 6.9 Percentage of ever worked older adults covered under work related social insurance, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Age 45-59*			Age ≥ 60			Total		
	Work related pension	Provident fund	Number	Work related pension	Provident fund	Number	Work related pension	Provident fund	Number
India	**2.8**	**4.7**	**28,222**	**8.6**	**6.0**	**22,645**	**5.5**	**5.3**	**50,867**
North									
Chandigarh	5.7	13.2	362	42.6	26.2	218	20.8	18.5	580
Delhi	6.6	11.0	459	25.2	12.0	290	14.0	11.4	749
Haryana	4.8	8.0	664	14.7	11.8	513	9.4	9.7	1,177
Himachal Pradesh	6.6	6.9	640	23.2	15.4	527	14.6	11.0	1,167
Jammu & Kashmir	9.6	11.6	319	11.7	10.2	336	10.7	10.9	655
Punjab	1.9	1.3	545	9.2	2.3	518	5.5	1.8	1,063
Rajasthan	3.9	4.3	924	7.9	5.8	873	5.9	5.0	1,797
Uttarakhand	5.4	6.6	460	22.6	9.6	469	14.4	8.1	929
Central									
Chhattisgarh	4.3	3.9	1,091	6.0	4.3	679	5.0	4.1	1,770
Madhya Pradesh	2.2	3.8	1,273	6.8	3.3	1,064	4.5	3.5	2,337
Uttar Pradesh	1.6	2.0	1,487	10.2	3.6	1,469	6.0	2.8	2,956
East									
Bihar	1.6	1.9	1,095	5.6	4.2	1,301	3.9	3.2	2,396
Jharkhand	2.9	4.0	898	10.8	10.4	917	7.0	7.3	1,815
Odisha	1.7	2.8	1,085	5.5	4.1	828	3.4	3.4	1,913
West Bengal	4.1	4.9	1,527	11.3	10.9	1,056	7.1	7.4	2,583
Northeast									
Arunachal Pradesh	8.2	4.2	607	4.4	1.9	171	7.4	3.7	778
Assam	4.5	7.2	986	13.1	9.7	528	7.6	8.1	1,514
Manipur	3.2	4.3	674	12.1	9.7	544	7.4	6.8	1,218
Meghalaya	3.4	4.2	430	13.4	5.2	283	7.2	4.6	713
Mizoram	15.0	16.9	548	19.2	18.2	410	16.9	17.5	958
Nagaland	8.9	6.8	578	16.5	11.9	526	12.8	9.4	1,104
Tripura	7.3	9.5	496	11.7	10.9	330	9.1	10.0	826
West									
Dadra & Nagar Haveli	3.2	11.3	568	6.1	7.9	416	4.3	9.9	984
Daman & Diu	1.9	17.5	428	12.3	15.7	352	7.0	16.6	780
Goa	10.9	18.9	438	22.0	21.8	351	16.0	20.2	789
Gujarat	3.0	8.6	1157	6.6	10.6	870	4.6	9.5	2027
Maharashtra	2.9	4.9	1707	9.5	7.8	1460	6.2	6.3	3167
South									
Andaman & Nicobar Islands	7.0	9.3	364	20.4	6.9	302	12.9	8.3	666
Andhra Pradesh	1.7	2.8	1264	3.8	3.6	911	2.6	3.1	2175
Karnataka	1.9	4.3	1150	5.7	1.9	855	3.4	3.4	2005
Kerala	11.1	14.0	729	18.5	11.5	718	15.0	12.7	1447
Lakshadweep	28.5	31.7	234	46.7	33.8	240	38.4	32.8	474
Puducherry	3.4	3.5	475	19.5	7.4	384	10.9	5.3	859
Tamil Nadu	2.3	5.7	1370	11.0	6.4	1057	6.3	6.0	2427
Telangana	1.9	2.7	1190	4.6	2.3	879	3.1	2.6	2069

* Including spouse irrespective of age.

Key findings: work and social security coverage

- About three-fifths (62%) of older adults age 45–59 and a little more than one-third (36%) of the elderly age 60 and above are currently working. Gender differences are notable in the current work status of older adults and their work-related characteristics: 70% of older adult men and 35% of older adult women age 45 and above are currently working; among elderly age 60 and above, 50% of men compared with 22% of women are currently working. The proportion of elderly age 60 and above who are currently working is higher in rural areas (40%) than urban areas (26%).

- Ten percent of older adults age 45–59 and 38% of elderly age 60 and above have ever worked and are currently not working. Twelve percent of older adult women and 6% of older adult men age 45–59 have ever worked and are currently not working.

- Work participation among women age 45 and above is much higher in Dadra & Nagar Haveli (58%), Manipur (51%), Himachal Pradesh (51%), and Telangana (50%), while it is lower in states such as Jammu & Kashmir (3%), Lakshadweep (5%), Punjab (10%), and Goa (12%).

- Regardless of age, the proportion of women engaged in agricultural and allied activities is higher than that of their male counterparts.

- More than half of the older adults age 45 and above are engaged in agricultural and allied activities, while 17% are self-employed. Among the elderly age 60 and above, the majority are engaged in agricultural and allied activities (65%).

- One-fourth of adults age 45 and above and less than one-fifth of the elderly age 60 and above who are currently working are engaged in wage/salaried work. Moreover, 17% of the elderly age 60 and above are self-employed.

- Among the currently working older adults age 45 and above, 85% are engaged in work for at least six months in a year.

- Among the wage/salaried workers, half of the older adults age 45 and above are working in the private sector or a private organization, followed by 24% in the government sector.

- The mean monthly earnings of the elderly age 60 and above engaged in any type of work are lower than those of older adults age 45–59. The mean monthly individual earnings of currently working older adults age 45 and above is ₹5,117 from agricultural and allied activities, ₹9,119 for those who are self-employed, and ₹10,996 for wage/salaried workers. The mean income from different types of main jobs varies from ₹4,090 in Odisha to ₹10,589 in Lakshadweep.

- Twelve percent of older adults age 45 and above in India are engaged in side jobs alongside their main jobs.

- Almost four-fifths (78%) of the self-employed older adults are functioning without an employee, indicating a high prevalence of 'own account workers' in India.

- In India, 6% of older adults age 45 and above who have ever worked are covered under work-related pension and 5% are covered under the provident fund scheme. The proportion of older adults age 45 and above who have ever worked and are covered under a work-related pension is the highest in Lakshadweep (38%), followed by Chandigarh (21%), and it is the lowest in Andhra Pradesh (3%).

6.5 RETIREMENT AND PENSION

In LASI, information on planning for retirement or stopping work was collected from those who ever worked. Stopping work refers to the point at which the respondent intends to stop all income-earning activities and does not intend to engage in any other income-earning activities in the future. Further information on pension and retirement was collected from those who had officially retired.

• Official retirement	Official retirement refers to retirement from an organised sector of employment, including the government, state-owned enterprises, and private sector enterprises. An organised sector provides employment terms that ar xed or regular and up to a specific age. Moreover, official retirement is usually applicable for permanent employees.
• Work-related pension	Pension is a fixed sum paid regularly to a retired person in connection to his/her work once the person retires. There are different types of pensions, including defined benefit plans and defined contribution plans.

Figure 6.8 presents the percentage of elderly age 60 and above who are officially retired from the organised sector of employment. In India, 7% of the elderly age 60 and above have officially retired from the organised sector of employment. Figure 6.9 indicates the officially retired elderly who are currently receiving a pension across the states/UTs. Only 6% of the officially retired elderly age 60 and above are currently receiving pension. The proportion of the elderly who are officially retired from the organised sector of employment is the highest in Chandigarh (28%), followed by Himachal Pradesh (23%), Uttarakhand (16%), and Lakshadweep (15%). It is the lowest in the state of Arunachal Pradesh (3%), followed by Karnataka (3%) and Telangana (5%). A similar state-wise pattern is observed for elderly age 60 and above who are currently receiving a pension.

Table 6.10 presents the mean monthly pension received by elderly age 60 and above who officially retired from an organised sector of employment. In India, the mean monthly pension received by elderly age 60 and above who have retired is ₹16,498 from the central government, ₹16,949 from the state government, and ₹6,128 from an employer-funded pension scheme. The mean monthly pension received by elderly age 60 and above is higher in Chandigarh (₹ 25,951), Jammu & Kashmir (₹ 23,181), and Delhi (₹21,427), whereas it is lower in the states of Tamil Nadu (₹10,224), Jharkhand (₹10,860), and Tripura (₹11,220).

Table 6.11 presents the percent distribution of elderly age 60 and above who have ever worked and officially retired by their work-related pension status according to their background characteristics. In India, about one-fifth (19%) of the elderly age 60 and above who are officially retired are currently receiving a pension; an additional 3% are expected to receive it, and a large proportion (78%) are neither receiving nor expected to receive a pension. The proportion of elderly age 60 and above who are currently receiving a pension is higher in urban areas (39%) than in rural areas (11%). More elderly men (23%) than women (8%) age 60 and above are currently receiving a pension. Only 4% of the elderly with no schooling are receiving a pension, compared with 54% of the elderly with 10 or more years of schooling. Thirty-seven percent of the elderly age 60 and above belonging to the richest MPCE quintile who are officially retired are currently receiving a pension or expected to receive it, compared with 12% of the elderly in the poorest MPCE quintile.

Table 6.12 shows the percent distribution of the elderly age 60 and above who have ever worked and officially retired by their work-related pension status according to states/UTs. In India, 78% of the elderly age 60 and above who have ever worked and retired are neither receiving nor expected to receive a pension. This proportion is higher than the national average in the states/UTs of Arunachal Pradesh (92%), Odisha (87%), Andhra Pradesh (87%), and Bihar (86%). The proportion of the elderly age 60 and above who have ever worked and are currently receiving pension is much higher in the states/UTs of Haryana (93%), Delhi (80%), and Chandigarh (65%).

Figure 6.8 Percentage of elderly age 60 and above who officially retired from organized sector of employment, states/UTs, LASI Wave 1, 2017-18

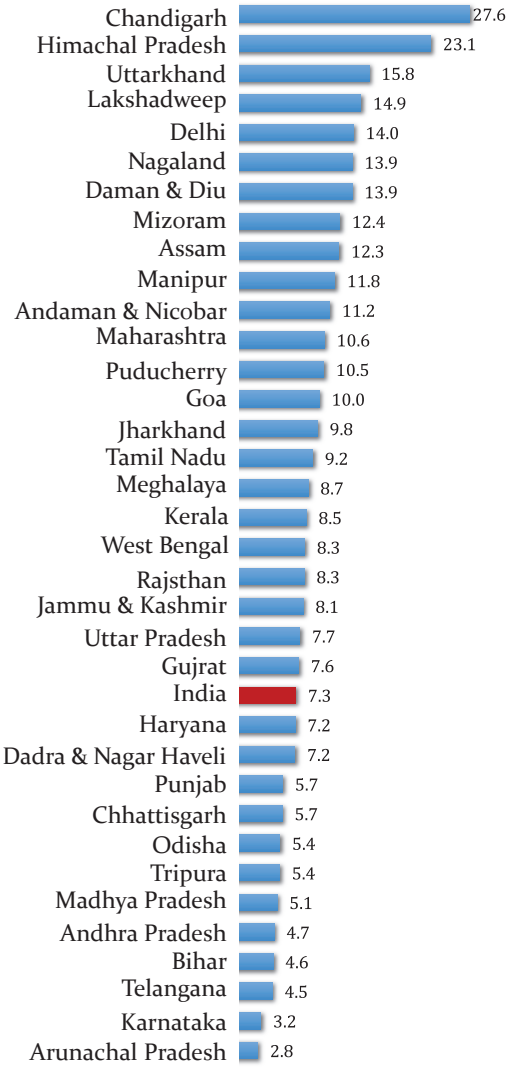
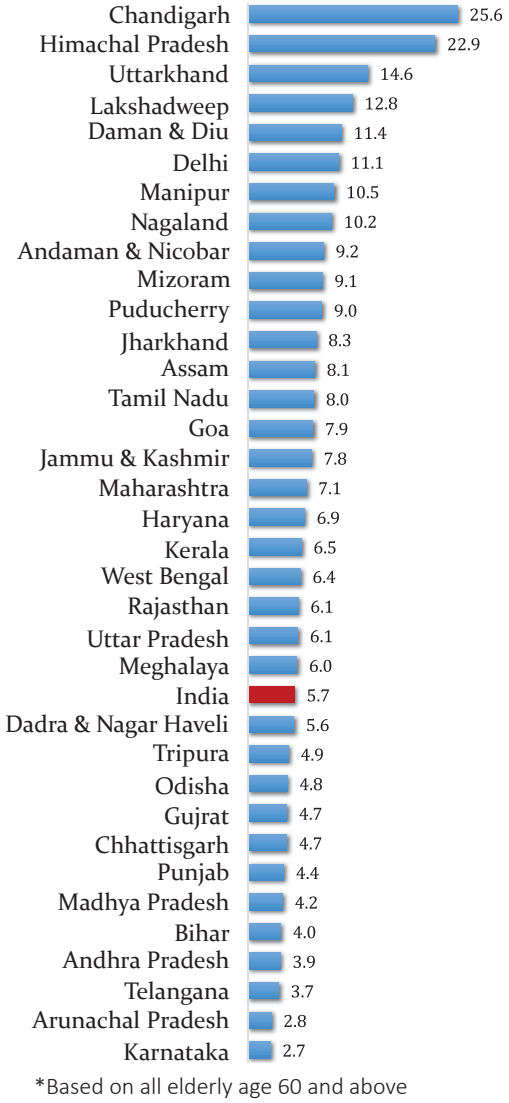


Figure 6.9 Percentage of elderly age 60 and above* currently receiving pension, states/UTs, LASI Wave 1, 2017-18



*Based on all elderly age 60 and above

Table 6.10 Mean monthly pension (in ₹) of officially retired elderly age 60 and above, states/UTs, LASI Wave 1, 2017-1

States/Union Territory	Central Government Pension Schemes	State Government Pension Schemes	Employer Funded Pension Schemes
India	**16,498**	**16,949**	**6,128**
North			
Chandigarh	25,951	22,001	5,426
Delhi	21,427	14,330	4,536
Haryana	14,743	17,083	4,100
Himachal Pradesh	16,177	14,349	18,978
Jammu & Kashmir	23,181	19,750	
Punjab	17,384	24,085	22,900
Rajasthan	17,030	17,310	13,679
Uttarakhand	14,354	18,799	19,740
Central			
Chhattisgarh	11,838	13,554	4,955
Madhya Pradesh	15,756	14,813	12,325
Uttar Pradesh	19,265	15,836	7,699
East			
Bihar	16,456	16,486	4,672
Jharkhand	10,860	16,328	5,788
Odisha	15,032	15,840	-
West Bengal	15,259	16,977	8,635
Northeast			
Arunachal Pradesh	15,148	35,229	-
Assam	16,250	20,072	-
Manipur	17,634	14,410	8,461
Meghalaya	18,838	15,638	
Mizoram	27,868	18,755	-
Nagaland	13,923	21,861	-
Tripura	11,220	14,603	-
West			
Dadra & Nagar Haveli	16,259	9,161	8,000
Daman & Diu	15,067	12,771	1,357
Goa	13,522	18,283	10,677
Gujarat	15,753	11,231	1,192
Maharashtra	18,108	15,063	4,939
South			
Andaman & Nicobar Islands	13,498	10,615	1,887
Andhra Pradesh	18,844	25,042	5,702
Karnataka	12,960	24,592	11,030
Kerala	17,600	15,397	7,409
Lakshadweep	14,582	4,208	-
Puducherry	17,949	13,889	7,537
Tamil Nadu	10,224	16,385	4,455
Telangana	15,908	20,529	-

"-" indicates less number of cases/ no cases.

Table 6.11 Percent distribution of ever worked elderly age 60 and above who have officially retired by work-related pension status according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Currently receiving pension*	Expected to receive pension in future*	Neither currently receiving nor expected to receive in future*	Number
Place of residence				
Rural	11.3	2.9	85.8	6,757
Urban	39.2	3.5	57.3	3,280
Sex				
Male	23.2	3.1	73.7	7,224
Female	7.8	2.9	89.2	2,813
Marital status				
Currently married	19.3	3.4	77.3	5,743
Widowed	16.8	2.2	81.1	1,517
Divorced/Separated/Deserted/Others	15.8	0.6	83.6	216
Caste/tribe				
Scheduled tribe	9.3	2.8	87.9	2,030
Scheduled caste	12.8	3.0	84.2	1,690
Other backward class	17.3	3.2	79.5	3,592
None of the above	28.7	2.9	68.5	2,725
Religion				
Hindu	19.4	3.0	77.6	7,324
Muslim	13.5	2.9	83.6	951
Christian	16.3	3.5	80.3	1,322
Others	19.0	2.5	78.5	440
Education				
No schooling	4.0	2.3	93.7	4,272
Less than 5 years complete	6.7	3.4	90.0	1,146
5-9 years complete	18.3	3.5	78.2	2,131
10 or more years complete	53.9	3.9	42.2	2,488
MPCE quintile				
Poorest	9.4	2.4	88.2	1,876
Poorer	13.4	3.3	83.4	2,002
Middle	19.4	2.7	77.9	2,062
Richer	20.8	3.2	75.9	2,063
Richest	32.8	3.7	63.6	2,034
Total	**18.7**	**3.0**	**78.3**	**10,037**

**Elderly age 60 and above who ever worked and have officially retired from organized sector of employment.*

Table 6.12 Percent distribution of ever worked elderly age 60 and above who have officially retired by work-related pension status, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Currently receiving pension*	Expected to receive pension in future*	Neither currently receiving nor expected to receive in future*	Number
India	**18.7**	**3.0**	**78.3**	**10,037**
North				
Chandigarh	64.6	5.1	30.4	144
Delhi	80.3	3.8	15.9	73
Haryana	93.1	2.8	4.1	57
Himachal Pradesh	42.7	4.7	52.6	323
Jammu & Kashmir	43.0	2.5	54.5	165
Punjab	19.3	1.3	79.4	239
Rajasthan	24.2	3.3	72.5	278
Uttarakhand	34.6	9.9	55.4	260
Central				
Chhattisgarh	18.6	4.7	76.7	195
Madhya Pradesh	25.6	5.8	68.6	238
Uttar Pradesh	26.3	2.4	71.3	504
East				
Bihar	10.6	3.0	86.4	717
Jharkhand	19.1	2.8	78.2	511
Odisha	12.1	0.7	87.2	476
West Bengal	16.5	3.0	80.5	562
Northeast				
Arunachal Pradesh	7.0	1.0	92.0	132
Assam	21.5	6.2	72.4	311
Manipur	22.9	4.1	73.0	290
Meghalaya	14.5	3.2	82.4	167
Mizoram	21.8	8.4	69.7	218
Nagaland	18.4	8.5	73.1	378
Tripura	12.0	1.4	86.6	187
West				
Dadra & Nagar Haveli	15.9	2.6	81.5	139
Daman & Diu	50.8	2.7	46.5	107
Goa	39.4	2.8	57.8	124
Gujarat	20.7	6.1	73.2	257
Maharashtra	16.1	1.0	82.9	785
South				
Andaman & Nicobar Islands	41.3	6.3	52.4	110
Andhra Pradesh	11.0	2.2	86.8	399
Karnataka	21.6	1.6	76.9	144
Kerala	29.2	7.0	63.8	279
Lakshadweep	62.3	7.2	30.5	100
Puducherry	28.7	1.2	70.1	202
Tamil Nadu	20.8	4.3	74.9	602
Telangana	10.8	3.8	85.4	364

**Elderly age 60 and above who ever worked and have officially retired from organized sector of employment.*

Key findings: retirement and pension

- Seven percent of the elderly age 60 and above are officially retired from any organised sector of employment.
- The proportion of the elderly age 60 and above who have officially retired from the organised sector of employment is the highest in Chandigarh (27%), followed by Himachal Pradesh (23%), Uttarakhand (16%), and Lakshadweep (15%). This proportion is low in the states of Arunachal Pradesh (3%), Karnataka (3%), and Telangana (5%). A similar state-wise pattern is observed for the elderly age 60 and above who are currently receiving a pension.
- One-fifth (19%) of officially retired elderly age 60 and above are currently receiving a pension. This figure ranges from 93% in Haryana, followed by 80% in Delhi, 11% in Bihar, and 7% in Arunachal Pradesh.
- More than half of the elderly age 60 and above (54%) with 10 or more years of schooling who are officially retired are receiving a pension, compared with just 4% of those with no schooling.

7. Chronic Health Conditions

Ageing is a multifactorial process characterised by a decline in physical and mental health, occurrence of degenerative changes including decline in body functions, and high vulnerability to chronic diseases and health conditions. The burden of disability and death increases with age and, by age of 60, the prevalence of age-related losses in hearing, vision, and mobility become prominent. In addition, the occurrence of non-communicable diseases (NCDs), including heart disease, stroke, chronic respiratory disorders, cancer, and dementia, adds to the burden of disease in a significant way in older age. These diseases are not only prevalent in higher-income countries; in fact, the burden associated with these conditions in older people is generally far higher in low and middle-income countries (WHO, 2015). The prevalence of chronic non-communicable diseases (NCDs) is increasing worldwide. In 2016, NCDs are estimated to account for 71% of 57 million global deaths, with cardiovascular diseases (CVDs) contributing to 31% (NCD Countdown 2030 collaborators, 2018).

Studies show that India's burden of non-communicable diseases (NCDs) is escalating (Arokiasamy, 2018). In India, NCDs account for 63% of all deaths; deaths from CVDs, chronic respiratory diseases, cancers, and other NCDs account for 27%, 11%, 9%, and 13%, respectively (WHO, 2018a). Also, while NCDs typically occur in individuals aged 55 years or older in many developed countries, their onset occurs a decade earlier in India and are quite prevalent in the ages 45-55 years. Exacerbating this problem are the issues of multiple chronic conditions and the fact many disceases remain undiagnosed due to lack of awareness and insufficient health-care access (Sen, 2002; Vellakkal et al., 2013; Arokiasamy et al., 2017). At the same time, infectious and parasitic diseases still pose substantial challenges to the public health system in India, resulting in a double burden of disease and a substantial share of the global burden of disease (Arokiasamy, 2018).

Understanding the burden of chronic health conditions such as cardiovascular diseases, diabetes, chronic respiratory diseases, bone diseases, and cancers, as well as their risk factors, is important for developing appropriate and effective healthcare policies for the prevention and control of NCDs. However, there is a lack of population-based estimates of chronic health conditions for India and its states/UTs and by socioeconomic spectrum based on internationally comparable designs and tools. In consideration of this void, one of the main objectives of the LASI is to assess chronic health conditions of the older adult population in India by states/UTs including socioeconomic differentials in health. To address the lack of comparable data on physical and mental health conditions, in the LASI, comprehensive data was collected on chronic health conditions and other health measures using internationally comparable design and standardised instruments and survey protocols. This chapter presents the health profile of older adults age 45-59 and the elderly age 60 and above including self-reported chronic health conditions and organ-related health conditions in India

7.1 GENERAL HEALTH STATUS

In the LASI, general health status was measured using self-rated health (SRH) question, which is a subjective assessment of health status. SRH is simple, easy to administer, and a known predictor of mortality (Idler and Benyamini, 1997; DeSalvo et al., 2006). Measurement of SRH is an essential component of health assessment of the elderly age 60 and above. Self-rated health captures the full range of illnesses a person has and the possible symptoms of undiagnosed diseases (Idler and Benyamini, 1997). In the LASI, respondents were asked, 'Overall, how is your health in general? Would you say it is very good, good, fair, poor or very poor?' The five possible responses were categorised into three groups as follows: good ('very good' and 'good'), moderate (fair), and poor ('poor' and 'very poor').

Table 7.1 presents the percent distribution of older adults and elderly by self-rated health (SRH) status: good, moderate, and poor. Overall, about two fifths (39%) of older adults age 45 and above in India reported good SRH, and a sixth of older adults age 45 and above (18%) reported poor SRH; the remaining proportion of older adults reported moderate health (44%). The prevalence of poor SRH is two times higher among the elderly age 60 and above (24%) than older adults age 45-59 (12%). Among the elderly age 60 and above, the prevalence of poor SRH is higher among women (26%) than men (22%), and the prevalence rate shows a decreasing trend among the elderly with educational attainment, from 27% among those with no schooling to 16% among those with 10 or more years of schooling. The prevalence of poor SRH does not show any consistent pattern with MPCE quintile. Compared to those who worked in past but currently not working (30%) and never worked (26%), currently working (16%) elderly age 60 and above have lower prevalence of poor SRH.

Among the elderly age 60 and above, the prevalence of good SRH is higher among those residing in urban areas (34%) compared to those in rural areas (29%). The prevalence is also higher among elderly men (34%) than among elderly women (28%). A higher proportion of currently married elderly (34%) and those living with spouse and children only (35%) reported good SRH.

Cross-state variations in self-rated health indicate that the prevalence of poor SRH among older adults age 45 and above is a quarter or more in the demographically advanced states/UTs of Kerala (39%), Tamil Nadu (38%), and Puducherry (25%) (Table 7.2), whereas more than half of elderly age 60 and above reported poor SRH in the states of Kerala (53%) and Tamil Nadu (53%). More than half of elderly age 60 and above reported good SRH in Meghalaya (65%), Daman & Diu (56%), Nagaland (54%), Gujarat (53%), and Arunachal Pradesh (52%).

Key findings: general health status

- Overall in India, a quarter of elderly age 60 and above and a sixth of older adults age 45 and above reported poor self-rated health (SRH). More than half of elderly age 60 and above reported poor SRH in the states of Kerala (53%) and Tamil Nadu (53%).
- Among elderly age 60 and above, women than men, those with no schooling than those with 10 or more years of schooling and those currently not working compared to those working are more likely to report poor SRH.

Table 7.1 Self-rated health[1]: percent distribution of older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Good	Moderate	Poor	Number	Good	Moderate	Poor	Number	Good	Moderate	Poor	Number
Place of residence												
Rural	44.0	43.1	12.9	25,636	29.4	45.3	25.2	20,289	37.2	44.1	18.7	45,925
Urban	48.3	41.3	10.4	14,877	33.7	44.6	21.7	10,509	42.2	42.7	15.2	25,386
Sex												
Male	49.6	38.8	11.6	15,348	33.9	43.9	22.3	14,778	41.5	41.4	17.1	30,126
Female	43.0	44.6	12.3	25,165	27.8	46.2	26.0	16,020	36.8	45.3	17.9	41,185
Marital status												
Currently married	46.9	41.7	11.4	35,287	33.7	44.2	22.1	19,629	42.0	42.6	15.4	54,916
Widowed	37.9	45.8	16.3	3,847	25.5	47.1	27.3	10,376	28.5	46.8	24.7	14,223
Divorced/Separated/ Deserted/Others	29.6	53.7	16.7	1,379	29.0	37.9	33.1	793	29.4	48.0	22.7	2,172
Living arrangement												
Living alone	36.1	48.3	15.6	686	24.1	40.9	35.1	1,597	26.8	42.5	30.6	2,283
Living with spouse and/or others	42.1	45.5	12.5	4,514	32.0	43.7	24.4	6,091	36.2	44.4	19.4	10,605
Living with spouse and children	47.5	41.2	11.3	30,122	34.6	44.4	20.9	13,305	43.5	42.2	14.4	43,427
Living with children and others	38.3	45.0	16.8	4,055	26.1	48.7	25.2	8,167	29.6	47.6	22.7	12,222
Living with others only	34.7	53.3	12.0	1,136	26.1	42.0	31.9	1,638	29.4	46.2	24.4	2,774
Religion												
Hindu	46.2	42.2	11.6	29,744	31.2	45.3	23.5	22,585	39.3	43.6	17.1	52,329
Muslim	41.9	42.5	15.5	4,898	29.3	43.9	26.7	3,637	36.5	43.1	20.3	8,535
Christian	43.9	43.2	12.9	4,038	26.2	37.3	36.5	3,053	36.1	40.6	23.3	7,091
Others	42.8	47.7	9.5	1,833	26.4	51.5	22.1	1,523	34.9	49.5	15.6	3,356
Caste/tribe												
Scheduled tribe	51.7	39.8	8.5	7,300	33.5	48.1	18.4	5,044	43.9	43.4	12.7	12,344
Scheduled caste	42.3	44.0	13.7	6,855	27.9	44.6	27.5	5,026	35.8	44.3	19.9	11,881
Other backward class	45.1	42.3	12.6	15,203	30.6	44.0	25.4	11,657	38.6	43.0	18.4	26,860
None of the above	46.4	42.6	11.0	11,155	31.8	46.4	21.7	9,071	39.5	44.4	16.1	20,226
Education												
No schooling	42.4	43.8	13.9	16,194	28.0	45.4	26.5	16,463	34.9	44.6	20.4	32,657
Less than 5 years complete	41.0	44.7	14.3	4,246	30.1	44.3	25.7	3,713	35.7	44.5	19.8	7,959
5-9 years complete	46.6	41.1	12.3	10,846	32.1	45.3	22.6	5,919	41.1	42.7	16.2	16,765
10 or more years complete	52.4	40.4	7.2	9,227	40.0	44.3	15.7	4,703	48.1	41.7	10.1	13,930
Work status												
Currently working	48.5	42.3	9.2	23,579	37.3	47.1	15.6	9,258	45.1	43.8	11.2	32,837
Worked in past but currently not working	34.2	39.1	26.8	4,515	28.0	42.3	29.6	12,967	29.6	41.5	28.9	17,482
Never worked	44.0	44.2	11.8	12,419	27.0	47.2	25.8	8,573	36.6	45.5	17.9	20,992
MPCE quintile												
Poorest	46.9	42.6	10.5	7,621	27.8	45.8	26.4	6,318	37.8	44.1	18.1	13,939
Poorer	46.7	42.2	11.0	7,985	30.2	45.7	24.2	6,332	39.0	43.8	17.1	14,317
Middle	44.6	42.5	12.9	8,074	33.5	44.6	22.0	6,288	39.5	43.5	17.1	14,362
Richer	45.2	42.3	12.5	8,471	31.0	44.9	24.0	6,053	38.9	43.5	17.7	14,524
Richest	43.9	42.7	13.4	8,362	31.3	44.3	24.4	5,807	38.7	43.4	17.9	14,169
Total	**45.5**	**42.5**	**12.1**	**40,513**	**30.7**	**45.1**	**24.2**	**30,798**	**38.8**	**43.7**	**17.6**	**71,311**

Notes

** Including spouse irrespective of age*

[1] Self-rated health includes five possible responses grouped into three categories: good (includes respondent's choices 'very good' & 'good'), moderate (includes respondent's choice 'fair') and poor (includes respondent's choices 'poor' & 'very poor').

Table 7.2 Self-rated health1: percent distribution of older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Good	Moderate	Poor	Number	Good	Moderate	Poor	Number	Good	Moderate	Poor	Number
India	**45.5**	**42.5**	**12.1**	**40,513**	**30.7**	**45.1**	**24.2**	**30,798**	**38.8**	**43.7**	**17.6**	**71,311**
North												
Chandigarh	63.7	31.2	5.2	625	43.8	39.9	16.3	388	55.8	34.6	9.6	1,013
Delhi	64.4	28.6	7.1	822	40.5	44.8	14.7	495	55.3	34.7	10.0	1,317
Haryana	52.5	34.6	12.9	1,042	36.8	40.3	23.0	835	45.0	37.3	17.7	1,877
Himachal Pradesh	48.8	38.9	12.4	760	30.1	44.1	25.9	609	40.0	41.3	18.7	1,369
Jammu & Kashmir	42.9	43.5	13.5	878	30.9	37.1	32.0	714	37.1	40.4	22.5	1,592
Punjab	32.6	53.5	13.9	1,103	21.6	55.6	22.8	991	27.4	54.5	18.1	2,094
Rajasthan	58.7	28.6	12.7	1,158	38.6	40.9	20.6	1,069	48.6	34.8	16.6	2,227
Uttarakhand	34.8	54.1	11.1	715	23.5	57.2	19.3	637	29.2	55.6	15.2	1,352
Central												
Chhattisgarh	62.6	33.4	4.0	1,270	42.6	47.6	9.8	760	55.0	38.8	6.2	2,030
Madhya Pradesh	50.4	32.9	16.7	1,595	40.4	36.6	23.0	1,290	45.7	34.7	19.7	2,885
Uttar Pradesh	44.5	41.2	14.3	2,379	28.8	46.1	25.1	2,096	36.8	43.6	19.5	4,475
East												
Bihar	53.8	37.1	9.1	1,703	34.3	44.3	21.5	1,769	43.3	41.0	15.7	3,472
Jharkhand	59.1	30.9	10.1	1,293	36.3	43.6	20.1	1,153	48.1	37.0	14.9	2,446
Odisha	48.0	44.1	7.9	1,668	24.2	53.1	22.7	1,212	37.6	48.0	14.4	2,880
West Bengal	29.4	56.1	14.5	2,374	17.5	48.5	34.0	1,501	24.6	53.0	22.3	3,875
Northeast												
Arunachal Pradesh	70.3	25.8	3.9	896	52.3	36.8	10.9	316	66.0	28.5	5.6	1,212
Assam	54.0	38.3	7.6	1,539	28.9	47.9	23.2	798	45.1	41.7	13.1	2,337
Manipur	57.1	37.1	5.8	757	37.5	47.7	14.8	589	48.1	42.0	9.9	1,346
Meghalaya	77.7	19.9	2.4	552	65.3	29.9	4.8	410	72.5	24.1	3.4	962
Mizoram	57.1	34.8	8.1	709	49.3	37.7	13.1	491	53.7	36.0	10.2	1,200
Nagaland	60.4	33.0	6.6	705	53.7	36.3	10.0	591	57.1	34.6	8.3	1,296
Tripura	32.3	56.6	11.2	732	17.0	58.4	24.6	459	26.3	57.3	16.5	1,191
West												
Dadra & Nagar Haveli	61.9	30.8	7.3	633	47.9	35.3	16.7	446	56.4	32.5	11.0	1,079
Daman & Diu	66.4	25.4	8.2	556	55.9	31.6	12.5	425	61.4	28.3	10.2	981
Goa	59.5	27.8	12.7	784	36.2	31.9	31.9	619	49.1	29.6	21.3	1,403
Gujarat	64.8	27.1	8.1	1,336	53.2	33.1	13.7	968	59.6	29.8	10.6	2,304
Maharashtra	45.2	48.1	6.7	2,165	28.7	54.9	16.4	1,762	37.1	51.4	11.5	3,927
South												
Andaman & Nicobar Islands	68.2	26.6	5.2	717	48.4	43.5	8.1	494	60.3	33.3	6.4	1,211
Andhra Pradesh	48.4	40.9	10.6	1,560	33.0	42.6	24.4	1,085	42.0	41.6	16.4	2,645
Karnataka	50.4	42.9	6.7	1,408	40.1	48.9	11.0	978	46.4	45.3	8.4	2,386
Kerala	31.3	44.4	24.3	1,272	13.5	33.7	52.9	1,174	22.2	38.9	39.0	2,446
Lakshadweep	62.8	29.4	7.9	633	41.8	40.2	18.0	495	52.8	34.5	12.7	1,128
Puducherry	26.7	58.2	15.0	783	15.4	48.7	35.9	625	21.5	53.8	24.8	1,408
Tamil Nadu	21.0	53.7	25.4	1,988	11.0	35.8	53.1	1,508	16.4	45.6	38.0	3,496
Telangana	50.3	39.1	10.6	1,403	37.1	41.6	21.3	1,046	44.4	40.2	15.4	2,449

Notes

** Including spouse irrespective of age*

[1] Self-rated health includes five possible responses grouped into three categories: good (includes respondent's choices 'very good' & 'good'), moderate (includes respondent's choice 'fair') and poor (includes respondent's choices 'poor' & 'very poor').

7.2 SELF-REPORTED DIAGNOSED CHRONIC HEALTH CONDITIONS

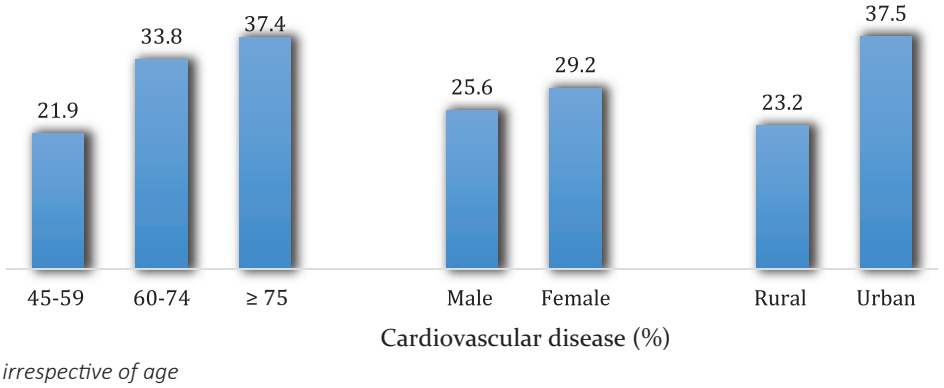
To assess the prevalence of chronic health conditions, information was collected on nine self-reported diagnosed chronic health conditions. The prevalence of chronic health conditions/diseases was assessed based on ever diagnosed condition/disease and diagnosed by health professionals such as MBBS, MD, BDS, and AYUSH only. Respondents were asked 'Has any health professional ever diagnosed/ told you that you have the following chronic conditions or diseases'? The nine chronic conditions included hypertension (HT) or high blood pressure, diabetes or high blood sugar, cancer or a malignant tumour, chronic lung disease, chronic heart diseases, stroke, bone/joint disease, neurological/psychiatric diseases, and high cholesterol. For those who reported that they have been diagnosed with a disease by a medical professional, a set of additional questions relating to the diagnosing physician, the date of diagnosis, and if currently taking treatment were asked. Furthermore, information was collected on other chronic conditions such as thyroid, skin, chronic gastrointestinal, and organ-related diseases. In this chapter, the self-reported prevalence for each chronic disease (conditions diagnosed by a health professional including MBBS, BDS or AYUSH) is presented.

7.2.1 Cardiovascular diseases

Cardiovascular diseases (CVDs) are a group of disorders of the heart and blood vessels. They include hypertension, stroke, and chronic heart diseases such as rheumatic heart disease, congenital/structural disorder, conduction disorder/cardiac arrhythmias, congestive heart failure, and coronary heart disease/ blockage. In 2016, CVDs contributed to 28% of the total deaths and 14% of the total disability-adjusted life years (DALYs) in India, the largest share of mortality and morbidity (Prabhakaran et al., 2018).

The self-reported prevalence of CVDs presented in this section is calculated by considering any one of the self-reported diagnosed conditions of hypertension, stroke, and chronic heart diseases. Table 7.3 presents the self-reported prevalence of diagnosed CVDs in India by background characteristics. Overall, the self-reported prevalence of diagnosed CVDs is 28% for the older adults age 45 and above. The prevalence rate increases with age from 22% in those age 45-59 to 34% in those age 60-74 and further to 37% in those age 75 and above (Figure 7.1). Among the elderly age 60 and above, the self-reported prevalence of diagnosed CVDs is higher among women (38%) than among men (31%) and is much higher among those residing in urban areas (50%) than in rural areas (29%). Among the elderly age 60 and above, the self-reported prevalence of diagnosed CVDs increases with education from 28% among those with no schooling to 50% in those with 10 or more years of schooling. Similarly, the prevalence increases with MPCE quintile from 27% in the poorest quintile to 45% in the richest quintile.

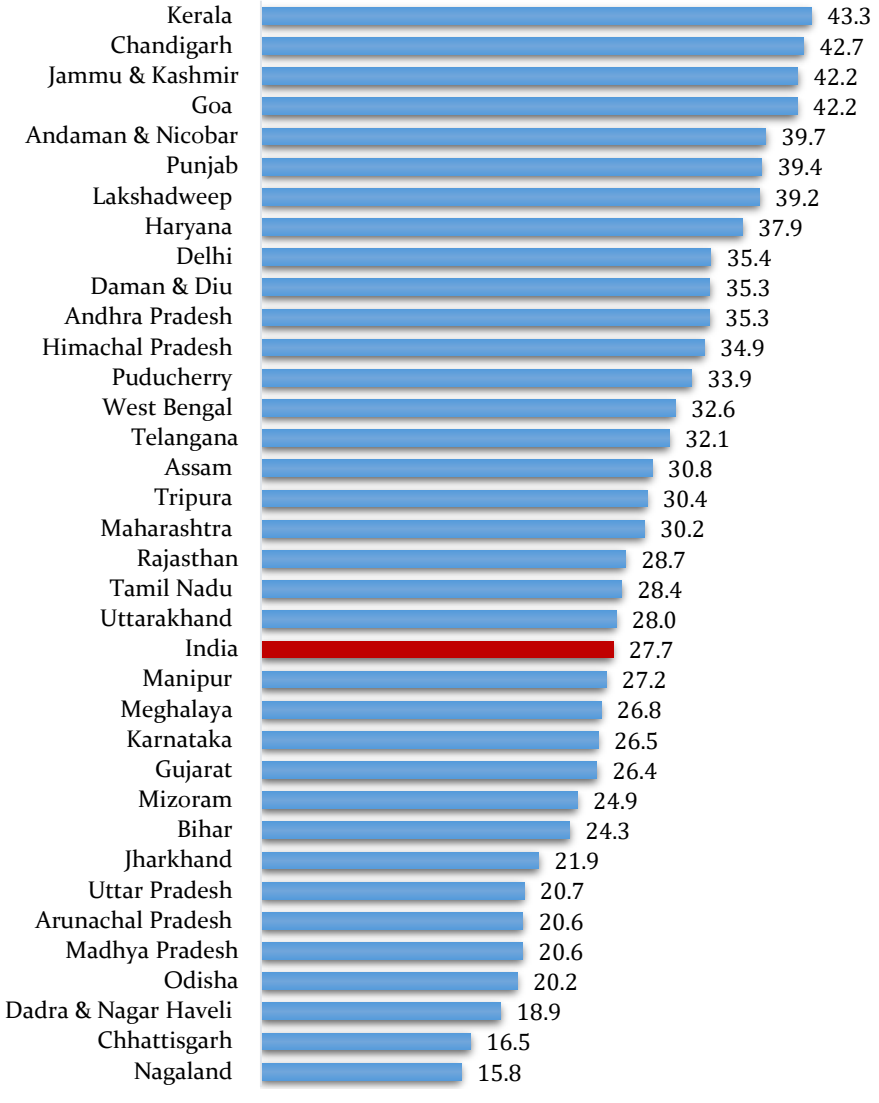
Figure 7.1 Self-reported prevalence (%) of diagnosed cardiovascular diseases (CVDs) among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

Cross-state variations show that the self-reported prevalence of diagnosed CVDs among older adults age 45 and above varies widely, ranging from 43% in Kerala and Chandigarh to 16% in Nagaland (Table 7.4). More than half of the elderly age 60 and above reported that they have been diagnosed with CVDs in the states/UTs of Goa (60%), Kerala (57%), Chandigarh (55%), Andaman & Nicobar (51%), and Jammu and Kashmir (51%).

Figure 7.2 Self-reported prevalence (%) of diagnosed cardiovascular diseases (CVDs) among older adults age 45 and above*, states/UTs, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

7.2.2 Hypertension

Hypertension is a long-term medical condition in which the blood pressure in the arteries is persistently elevated. The prevalence of hypertension tends to increase with age. Hypertension has long been recognised as one of the major risk factors for cardiovascular disease and premature deaths worldwide. Further, hypertension is one of the most common lifestyle 'silent killer' diseases today, diagnosed in every third person. Fewer than half of those with hypertension are aware of their condition. Hypertension is estimated to account for 10.8% of all deaths and 4.6% of DALYs in India (MoHFW, 2018)

Table 7.3 presents the self-reported prevalence of diagnosed hypertension in India by background characteristics. The self-reported prevalence of diagnosed hypertension among older adults age 45 and above is 26%; the prevalence rate is higher for elderly age 60 and above (32%) than older adults age 45-59 (21%). Among elderly age 60 and above, self-reported diagnosed hypertension is more prevalent among women (36%) than men (27%) and among those residing in urban areas (47%) than those in rural areas (26%).

More than a third (36%) of widowed elderly age 60 and above have been diagnosed with hypertension. The prevalence of diagnosed hypertension increases with education and MPCE quintile; 47% of the elderly age 60 and above with 10 or more years of schooling compared with 26% among those with no schooling and 42% of those in the richest MPCE quintile compared to 25% of those in the poorest MPCE quintile reported that they have been diagnosed with hypertension.

The self-reported prevalence rate of diagnosed hypertension among older adults age 45 and above ranges from 41% in Goa to 15% in Nagaland (Table 7.4). The self-reported prevalence of diagnosed hypertension is higher in northern and demographically advanced southern states than that in other states. More than half of the elderly age 60 and above reported that they have been diagnosed with hypertension in the demographically advanced states/UTs of Goa (58%), Kerala (53%), and Chandigarh (50%). In comparison, the self-reported prevalence of hypertension is lower in the states/UTs of Bihar (25%), Dadra & Nagar Haveli (24%), Madhya Pradesh (22%), Uttar Pradesh (20%), Chhattisgarh (20%), and Nagaland (15%).

7.2.3 Chronic heart diseases

In the LASI, information was collected on chronic heart diseases including rheumatic heart disease, congenital/structural disorder, conduction disorder/ cardiac arrhythmias, congestive heart failure, and coronary artery disease/blockage. The self-reported prevalence of diagnosed chronic heart diseases in India among older adults age 45 and above is 3.6%. The prevalence is more than two times higher among elderly age 60 and above (5.2%) than among older adults age 45-59 (2.2%) (Table 7.3). The rural-urban difference is more pronounced among elderly age 60 or above, with 9% residing in urban areas having been diagnosed with chronic heart diseases compared with only 4% in rural areas. Further, the prevalence rate of diagnosed heart diseases is lower among elderly women (4.6%) than among elderly men (5.8%) age 60 and above. The self-reported prevalence of diagnosed heart disease among elderly age 60 and above increases with education and MPCE quintile. One in ten of the elderly age 60 and above with 10 or more years of schooling (12%) and in the richest MPCE quintile (10%) reported that they have been diagnosed with chronic heart diseases.

Table 7.4 presents the prevalence of chronic heart diseases across states/UTs of India. Overall, the self-reported prevalence of diagnosed chronic heart diseases is markedly higher in the states/UTs of Jammu & Kashmir (8.8%), Chandigarh (8.8%) and Kerala (8.4%). More than 10% of elderly age 60 and above in the states/UTs of Chandigarh (17%), Kerala (13%), and Jammu & Kashmir (11%) reported that they have been diagnosed with chronic heart diseases.

7.2.4 Stroke

Stroke, also known as cerebrovascular accident, is caused by a sudden partial or total disruption of blood supply to a part of the brain. This may result from either blockage (ischemic stroke) or rupture of a blood vessel (haemorrhagic stroke). It can cause permanent or temporary paralysis (inability to move, usually one side of the body), loss of speech, and unconsciousness. According to the GBD study, stroke accounted for 7.1% of total deaths and 3.5% of total DALYs in India (Prabhakaran et al., 2018).

The LASI survey participants who reported that they have been diagnosed with stroke were asked if they are currently receiving any physical or occupational therapy and on subsequent stroke and any disability due to stroke. Table 7.3 presents the self-reported prevalence of stroke by background characteristics in India. Overall, the self-reported prevalence of diagnosed stroke among older adults age 45 and above is 2%. The prevalence rate of stroke is higher among elderly age 60 and above (2.7%) compared to older adults age 45-59 (1.0%). Among elderly age 60 years and above, the prevalence of self-reported stroke is slightly higher among men (3.3%) than women (2.2%) and among those in urban areas (3.1%) than those in rural areas (2.5%).

The cross-state variations in the prevalence of stroke among older adults age 45 and above are shown in Table 7.4. The self-reported prevalence of diagnosed stroke ranges from 3.5% in West Bengal to 0.5% in Meghalaya. The self-reported prevalence of stroke among elderly age 60 and above is markedly higher in Goa (6.4%), West Bengal (6.0%), and Lakshadweep (4.6%).

Table 7.3 Self-reported prevalence (%) of diagnosed hypertension, heart diseases, stroke and cardiovascular diseases (CVDs) among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number
Place of residence															
Rural	17.0	1.9	0.9	18.4	25,740	25.9	3.7	2.5	28.5	20,679	21.2	2.8	1.7	23.2	46,419
Urban	27.4	2.8	1.3	28.7	14,923	46.9	8.7	3.1	49.6	10,688	35.6	5.3	2.0	37.5	25,611
Sex															
Male	18.1	2.5	1.7	20.1	15,419	27.4	5.8	3.3	30.9	15,035	22.9	4.2	2.5	25.6	30,454
Female	21.9	2.1	0.6	23.0	25,244	36.2	4.6	2.2	38.0	16,332	27.8	3.1	1.3	29.2	41,576
Marital status															
Currently married	20.0	2.1	1.1	21.4	35,368	29.9	5.6	2.6	32.8	19,856	23.7	3.4	1.7	25.6	55,224
Widowed	26.4	3.7	0.7	27.7	3,863	36.0	4.6	2.8	38.2	10,690	33.7	4.4	2.3	35.7	14,553
Divorced/Separated/Deserted/Others	16.9	1.1	0.7	18.0	1,432	25.4	2.2	1.5	27.1	821	20.0	1.5	1.0	21.3	2,253
Living arrangement															
Living alone	24.3	1.9	[0.3]	26.0	689	32.7	2.7	2.0	34.3	1,618	30.8	2.5	1.6	32.5	2,307
Living with spouse and/or others	19.9	2.0	0.9	21.0	4,532	30.5	5.6	2.3	33.6	6,165	26.1	4.1	1.7	28.3	10,697
Living with spouse and children	20.0	2.1	1.1	21.5	30,182	29.6	5.6	2.8	32.4	13,452	23.0	3.2	1.7	24.9	43,634
Living with children and others	25.3	3.5	0.7	26.5	4,074	37.0	5.1	2.8	39.1	8,413	33.6	4.6	2.2	35.5	12,487
Living with others only	17.7	1.4	0.6	18.8	1,186	30.3	3.0	3.1	33.0	1,719	25.5	2.4	2.2	27.6	2,905
Religion															
Hindu	19.0	2.0	1.0	20.3	29,846	31.1	4.9	2.5	33.6	22,971	24.6	3.3	1.7	26.4	52,817
Muslim	30.0	3.2	1.3	32.2	4,918	35.9	6.9	3.1	39.0	3,716	32.6	4.8	2.1	35.2	8,634
Christian	17.3	4.1	0.2	17.8	4,058	36.6	5.9	3.4	39.3	3,138	25.8	4.9	1.6	27.3	7,196
Others	24.7	1.4	1.3	26.0	1,841	38.5	5.4	4.1	42.1	1,542	31.4	3.3	2.7	33.8	3,383
Caste/tribe															
Scheduled tribe	11.8	0.9	0.6	12.6	7,325	18.2	1.3	1.8	19.1	5,160	14.6	1.1	1.1	15.5	12,485
Scheduled caste	19.4	2.5	1.2	20.9	6,887	26.6	3.8	2.9	29.6	5,128	22.7	3.1	2.0	24.8	12,015
Other backward class	20.9	1.9	0.9	22.1	15,253	32.4	5.6	2.4	34.9	11,846	26.2	3.6	1.6	27.9	27,099
None of the above	23.4	3.0	1.2	25.4	11,198	39.2	6.5	3.2	42.2	9,233	30.9	4.7	2.2	33.4	20,431
Education															
No schooling	19.5	2.0	1.0	20.6	16,280	26.0	3.1	2.3	28.3	16,849	22.9	2.6	1.7	24.6	33,129
Less than 5 years complete	18.0	2.5	1.1	19.9	4,261	34.5	5.5	3.1	37.1	3,771	26.0	4.0	2.1	28.2	8,032
5-9 years complete	21.2	2.5	1.2	22.9	10,867	38.4	6.3	3.2	41.5	5,996	27.9	4.0	2.0	30.1	16,863
10 or more years complete	22.8	2.2	0.8	24.2	9,255	46.5	11.7	3.2	49.7	4,751	31.0	5.4	1.7	33.0	14,006
Work status															
Currently working	16.5	1.7	0.5	17.6	23,611	20.6	2.9	1.2	22.4	9,282	17.7	2.0	0.8	19.0	32,893
Worked in past but currently not working	31.1	4.8	3.6	34.1	4,564	34.1	5.9	4.0	37.7	13,321	33.3	5.6	3.9	36.8	17,885
Never worked	24.4	2.3	0.9	25.6	12,488	42.1	6.6	2.2	44.0	8,764	32.2	4.2	1.5	33.7	21,252

Continued

Continued

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number
MPCE quintile															
Poorest	14.4	1.5	0.7	15.7	7,647	25.1	3.4	2.1	27.1	6,456	19.5	2.4	1.4	21.2	14,103
Poorer	18.2	2.2	0.9	19.4	8,025	28.2	3.5	2.5	30.5	6,457	22.9	2.8	1.6	24.6	14,482
Middle	20.3	1.8	1.3	21.5	8,104	31.0	4.9	2.7	34.4	6,396	25.3	3.3	2.0	27.5	14,500
Richer	22.1	2.2	1.0	23.7	8,494	36.9	5.2	2.7	39.2	6,157	28.8	3.5	1.8	30.7	14,651
Richest	27.6	3.4	1.2	29.3	8,393	41.9	9.9	3.6	45.1	5,901	33.6	6.1	2.2	35.9	14,294
Total	**20.5**	**2.2**	**1.0**	**21.9**	**40,663**	**32.0**	**5.2**	**2.7**	**34.6**	**31,367**	**25.8**	**3.6**	**1.8**	**27.7**	**72,030**

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

For all chronic conditions, the reference period is ever diagnosed and diagnosed by MBBS, BDS or AYUSH health professionals.

[1] Cardiovascular diseases (CVDs) *include hypertension, heart diseases and stroke (any one or more).*

Table 7.4 Self-reported prevalence (%) of diagnosed hypertension, heart diseases, stroke and cardiovascular diseases (CVDs) among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number
India	**20.5**	**2.2**	**1.0**	**21.9**	**40,663**	**32.0**	**5.2**	**2.7**	**34.6**	**31,367**	**25.8**	**3.6**	**1.8**	**27.7**	**72,030**
North															
Chandigarh	31.7	3.4	1.4	34.4	625	50.1	16.8	4.2	55.3	389	39.0	8.8	2.5	42.7	1,014
Delhi	27.0	2.5	[0.3]	28.1	819	45.3	9.2	4.3	47.4	492	33.9	5.0	1.8	35.4	1,311
Haryana	33.1	2.4	[0.4]	34.2	1,048	39.8	4.4	1.1	41.9	847	36.3	3.4	0.7	37.9	1,895
Himachal Pradesh	26.5	2.9	1.5	27.9	765	38.4	8.8	3.1	42.7	618	32.1	5.7	2.2	34.9	1,383
Jammu & Kashmir	30.9	7.2	0.7	33.6	881	47.8	10.5	4.0	51.2	730	39.2	8.8	2.3	42.2	1,611
Punjab	31.2	2.3	1.5	32.6	1,112	44.2	6.5	3.1	46.8	1,004	37.4	4.3	2.3	39.4	2,116
Rajasthan	22.9	2.5	0.8	24.7	1,160	31.4	2.8	1.5	32.7	1,076	27.2	2.6	1.2	28.7	2,236
Uttarakhand	24.9	1.7	0.8	25.8	715	27.7	4.2	1.2	30.2	641	26.3	2.9	1.0	28.0	1,356
Central															
Chhattisgarh	12.9	[0.2]	1.2	13.7	1,275	20.1	1.2	1.7	20.9	779	15.7	0.5	1.4	16.5	2,054
Madhya Pradesh	17.4	2.3	0.5	18.3	1,599	21.9	2.9	1.2	23.1	1,313	19.6	2.6	0.8	20.6	2,912
Uttar Pradesh	18.3	1.0	1.1	19.1	2,391	20.4	2.3	2.6	22.4	2,164	19.3	1.6	1.9	20.7	4,555
East															
Bihar	18.7	2.2	0.7	20.0	1,709	24.8	7.2	1.5	28.1	1,806	22.0	4.9	1.1	24.3	3,515
Jharkhand	16.1	1.4	-	16.5	1,294	26.3	2.8	1.2	27.7	1,168	21.0	2.1	0.6	21.9	2,462
Odisha	13.3	0.9	0.5	13.8	1,675	27.0	1.3	2.3	28.2	1,235	19.4	1.1	1.3	20.2	2,910
West Bengal	22.7	3.6	1.7	25.4	2,383	37.8	8.0	6.0	43.2	1,538	28.8	5.4	3.5	32.6	3,921
Northeast															
Arunachal Pradesh	17.6	[0.4]	1.3	18.7	897	26.4	[0.3]	2.1	26.6	318	19.7	[0.4]	1.5	20.6	1,215
Assam	23.4	1.9	0.5	24.6	1,543	40.2	4.3	2.8	41.8	810	29.4	2.7	1.4	30.8	2,353
Manipur	21.5	1.7	1.2	22.4	761	30.1	3.8	3.5	32.7	605	25.5	2.7	2.3	27.2	1,366
Meghalaya	19.2	0.8	[0.2]	20.0	556	35.6	1.4	[0.9]	36.2	411	26.1	1.0	0.5	26.8	967
Mizoram	17.1	1.4	[1.4]	18.1	714	31.7	1.2	3.0	33.2	531	23.7	1.3	2.1	24.9	1,245
Nagaland	15.3	[0.6]	[0.5]	15.5	708	15.2	[0.4]	1.7	16.0	605	15.2	0.5	1.1	15.8	1,313
Tripura	22.5	2.3	1.0	23.9	732	38.1	4.3	4.2	40.4	460	28.6	3.1	2.3	30.4	1,192
West															
Dadra & Nagar Haveli	14.6	1.1	1.4	15.3	635	24.0	[1.1]	[0.5]	24.4	450	18.3	1.1	1.0	18.9	1,085
Daman & Diu	27.3	1.5	1.3	28.3	557	39.5	3.5	2.3	43.3	429	33.1	2.4	1.8	35.3	986
Goa	26.3	1.2	0.9	27.0	788	58.1	7.2	6.4	60.3	634	40.8	3.9	3.4	42.2	1,422
Gujarat	18.5	2.1	1.2	20.1	1,343	31.1	5.3	2.6	34.2	984	24.2	3.5	1.8	26.4	2,327
Maharashtra	18.1	2.5	1.1	19.7	2,175	37.5	6.8	4.2	41.1	1,785	27.6	4.6	2.6	30.2	3,960

Continued

Continued

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number	Hypertension	Heart Diseases	Stroke	CVDs[1]	Number
South															
Andaman & Nicobar Islands	31.3	1.0	1.7	32.3	721	49.0	5.4	2.6	50.5	520	38.5	2.8	2.1	39.7	1,241
Andhra Pradesh	25.1	2.8	0.9	27.2	1,569	44.1	4.5	3.0	46.5	1,101	33.1	3.5	1.8	35.3	2,670
Karnataka	20.0	2.0	1.3	21.0	1,409	32.6	6.8	2.7	35.0	1,000	25.0	3.9	1.8	26.5	2,409
Kerala	26.1	3.7	1.3	28.5	1,277	53.2	12.8	3.0	57.1	1,205	40.1	8.4	2.2	43.3	2,482
Lakshadweep	29.2	3.5	2.3	31.8	637	44.8	6.6	4.6	47.4	500	36.6	5.0	3.4	39.2	1,137
Puducherry	22.8	3.1	0.9	23.9	787	43.5	7.8	0.7	45.2	638	32.5	5.3	0.8	33.9	1,425
Tamil Nadu	19.7	2.3	1.0	21.2	1,995	34.5	4.6	1.7	36.8	1,530	26.5	3.4	1.3	28.4	3,525
Telangana	21.9	1.5	0.6	22.6	1,408	42.8	3.6	2.5	44.1	1,051	31.2	2.4	1.4	32.1	2,459

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

For all chronic conditions, the reference period is ever diagnosed and diagnosed by MBBS, BDS and AYUSH health professionals.

[1]*Cardiovascular* diseases (CVDs) include hypertension, heart diseases and stroke (any one or more).

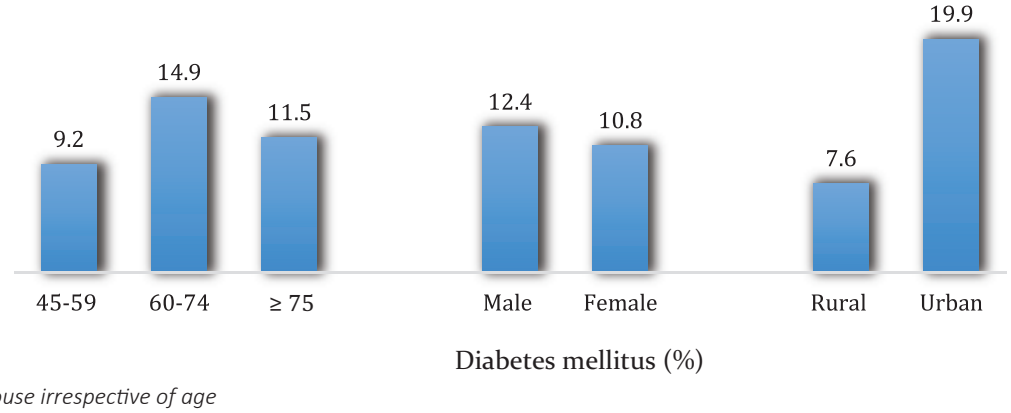
7.2.5 Diabetes mellitus, high cholesterol, and anaemia

In the LASI, information was collected for older adults who have ever been diagnosed with diabetes mellitus and high cholesterol. Information on diagnosed anaemia in the past two years was also collected.

A. Diabetes mellitus

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in insulin production by the pancreas or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damage many body systems, particularly the blood vessels and nerves. The number of persons with diabetes in India has increased from 26 million in 1990 to 65 million in 2016, and diabetes is the third major contributor to the burden of NCD mortality and morbidity in India (Tandon et al., 2018).

Figure 7.3 Self-reported prevalence (%) of diagnosed diabetes mellitus among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18

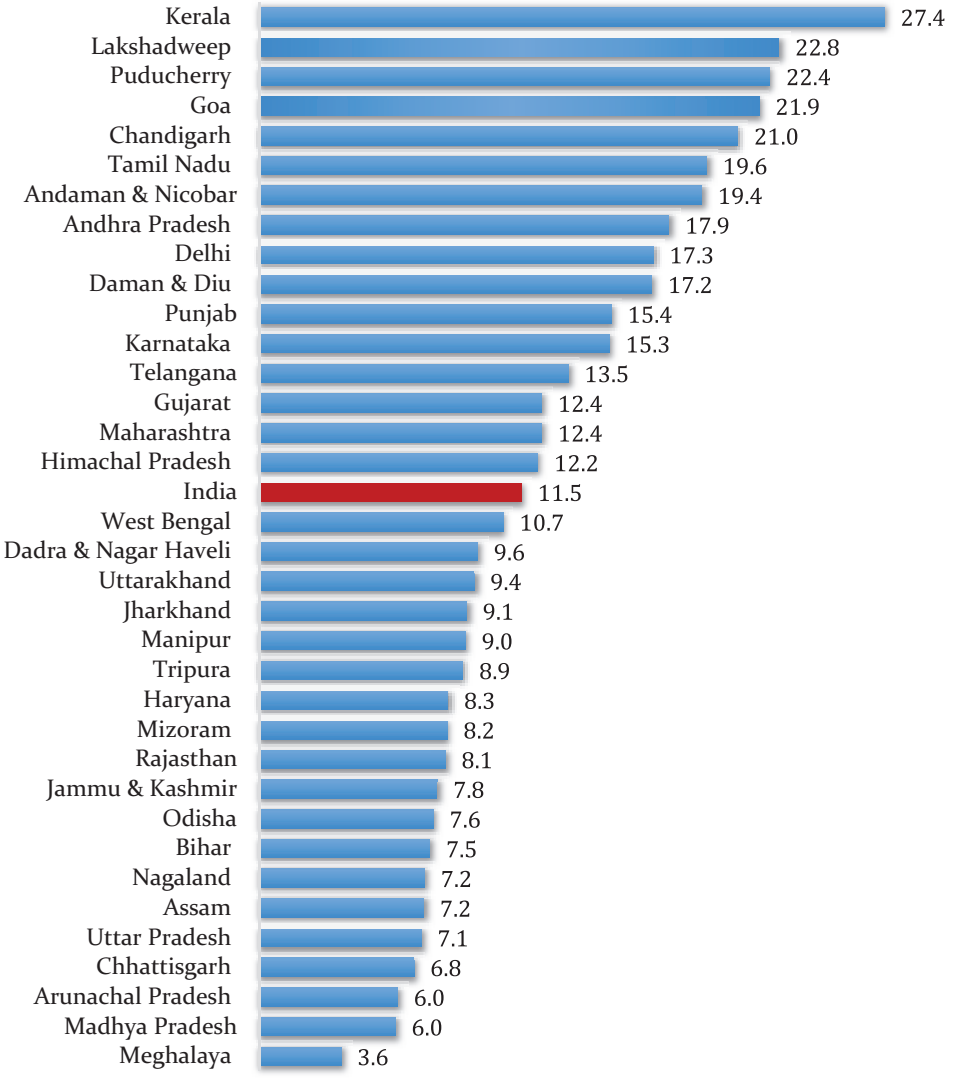


** Including spouse irrespective of age*

Table 7.5 presents the self-reported prevalence of diagnosed diabetes by background characteristics. The self-reported prevalence of diagnosed diabetes mellitus in India is 12%, with the prevalence being higher among elderly age 60 and above (14%) than among older adults age 45-59 (9%). Among elderly age 60 and above, the prevalence of diagnosed diabetes is three times higher in those living in urban areas (26%) than those living in rural areas (9%) and slightly higher among men (15%) than among women (14%). The prevalence rate of diagnosed diabetes increases with educational attainment ranging from 8% among elderly with no schooling to 30% among those with 10 or more years of schooling. Among elderly age 60 and above, the prevalence is two times higher in the richest MPCE quintile (23%) than in the poorest quintile (10%). Currently working elderly age 60 and above have lower prevalence rate of diagnosed diabetes (9%) than those who worked in past but currently not working (16%) and never worked (18%).

Cross-state variations in the prevalence of diabetes are presented in Table 7.6. Overall, the self-reported prevalence of diagnosed diabetes mellitus is markedly higher in south Indian states/UTs where more than 15% of older adults age 45 and above have been diagnosed with diabetes. More than a fourth of elderly age 60 and above reported that they have been diagnosed with diabetes mellitus in the states/UTs of Kerala (35%), Puducherry (28%), Lakshadweep (28%), Goa (27%) Delhi (26%), Tamil Nadu (26%), and Chandigarh (25%).

Figure 7.4 Self-reported prevalence (%) of diagnosed diabetes mellitus among older adults age 45 and above*, states/UTs, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

B. High cholesterol

High blood cholesterol is a condition that causes extremely high levels of bad cholesterol such as low-density lipoprotein (LDL) and triglycerides in the blood. This condition is usually caused by lifestyle factors, such as diet, combined with hereditary factors and also by medical conditions or certain drugs.

Table 7.5 presents the self-reported prevalence of diagnosed high cholesterol by background characteristics. The self-reported prevalence rate of diagnosed high cholesterol among older adults age 45 and above in India is 2.1%, with the prevalence rate higher among elderly age 60 and above (2.5%) compared to older adults age 45-59 (1.9%). Among elderly age 60 years and above, the self-reported prevalence of diagnosed high cholesterol is markedly higher among those in urban areas (5.5%) than among those in rural areas (1.2%). Further, the prevalence rate increases with educational attainment and MPCE quintile, ranging from 1% among those with no schooling to more than 5% among those with 10 or more years of schooling (6.8%) and from 1.5% in the poorest to 5.2% in the richest MPCE quintile.

Cross-state variations in the self-reported prevalence of diagnosed high cholesterol among older adults age 45 and above shows a much higher prevalence in the states/UTs of Kerala (24%), Lakshadweep (19%), and Punjab (12%). The prevalence rate is less than 1% in Chhattisgarh, Rajasthan, Uttar Pradesh, Jharkhand, Arunachal Pradesh, Assam Andhra Pradesh, and Telangana (Table 7.6).

C. Anaemia

The self-reported prevalence of diagnosed anaemia by background characteristics is presented in Table 7.5. Overall, anaemia is prevalent in 4.7% of older adults age 45 and above in India, with slightly higher prevalence in rural (5%) than urban areas (4.1%). Among the elderly age 60 years above, the self-reported prevalence of diagnosed anaemia is higher among women (6%) than men (3.3%) and among widowed (5.6%) than currently married (4.2%). The self-reported prevalence of diagnosed anaemia is higher among elderly age 60 and above with no schooling (5.2%) than those with 10 or more years of schooling (3%) and those in the richest MPCE quintile (6.1%) than those in the poorest MPCE quintile (4%).

Cross-state variations presented in Table 7.6 shows that the Northern and Central Indian states of Himachal Pradesh (8.8%), Punjab (8.8%), Bihar (8.7%), Gujarat (8.5%), and Madhya Pradesh (7.4%) have comparatively higher prevalence of self-reported diagnosed anaemia than other states.

Table 7.5 Self-reported prevalence (%) of diagnosed diabetes mellitus, high cholesterol and anaemia among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Diabetes Mellitus	High Cholesterol	Anaemia	Number	Diabetes Mellitus	High Cholesterol	Anaemia	Number	Diabetes Mellitus	High Cholesterol	Anaemia	Number
Place of residence												
Rural	6.1	1.2	5.3	25,745	9.3	1.2	4.8	20,684	7.6	1.2	5.0	46,429
Urban	15.4	3.3	3.6	14,925	26.1	5.5	4.7	10,692	19.9	4.2	4.1	25,617
Sex												
Male	10.2	1.8	2.9	15,420	14.5	2.6	3.3	15,035	12.4	2.2	3.1	30,455
Female	8.7	1.9	5.9	25,250	13.9	2.3	6.0	16,341	10.8	2.1	5.9	41,591
Marital status												
Currently married	9.2	1.9	4.8	35,374	14.8	2.8	4.2	19,864	11.3	2.2	4.5	55,238
Widowed	10.1	2.0	5.3	3,864	13.2	2.0	5.6	10,692	12.5	2.0	5.6	14,556
Divorced/Separated/ Deserted/Others	7.3	1.2	2.8	1,432	13.1	2.5	4.3	820	9.4	1.7	3.3	2,252
Living arrangement												
Living alone	7.8	1.7	2.4	689	12.6	1.7	5.7	1,618	11.5	1.7	5.0	2,307
Living with spouse and/or others	10.5	2.0	3.6	4,534	16.3	2.4	4.0	6,166	13.9	2.2	3.8	10,700
Living with spouse and children	9.0	1.9	4.9	30,186	14.0	2.9	4.3	13,458	10.6	2.2	4.7	43,644
Living with children and others	10.6	1.9	5.6	4,075	13.7	2.1	5.8	8,415	12.8	2.1	5.7	12,490
Living with others only	5.2	1.8	3.0	1,186	11.2	2.2	4.0	1,719	9.0	2.1	3.6	2,905
Religion												
Hindu	8.2	1.6	4.6	29,853	14.0	2.2	4.6	22,977	10.8	1.9	4.6	52,830
Muslim	17.1	2.5	5.8	4,918	13.3	3.1	5.8	3,720	15.4	2.8	5.8	8,638
Christian	7.9	2.5	2.1	4,058	21.1	5.3	3.1	3,137	13.7	3.7	2.6	7,195
Others	8.5	5.6	5.8	1,841	15.5	5.2	4.6	1,542	11.9	5.4	5.2	3,383
Caste/tribe												
Scheduled tribe	3.6	0.6	3.6	7,326	6.1	0.7	3.9	5,160	4.7	0.6	3.7	12,486
Scheduled caste	7.0	1.2	5.3	6,889	9.4	1.6	4.4	5,129	8.1	1.3	4.9	12,018
Other backward class	10.7	1.7	4.6	15,255	15.9	2.6	4.8	11,848	13.0	2.1	4.7	27,103
None of the above	10.2	3.2	5.0	11,200	17.0	3.4	5.1	9,239	13.4	3.3	5.0	20,439
Education												
No schooling	7.1	0.7	5.3	16,282	8.1	1.1	5.2	16,856	7.6	0.9	5.2	33,138
Less than 5 years complete	9.7	2.1	5.2	4,263	15.1	2.7	4.7	3,772	12.3	2.4	5.0	8,035
5-9 years complete	9.1	2.3	5.2	10,867	20.4	3.3	4.6	5,997	13.5	2.7	5.0	16,864
10 or more years complete	13.4	3.5	2.9	9,258	30.0	6.8	3.0	4,751	19.1	4.6	2.9	14,009

Continued

Continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Diabetes Mellitus	High Cholesterol	Anaemia	Number	Diabetes Mellitus	High Cholesterol	Anaemia	Number	Diabetes Mellitus	High Cholesterol	Anaemia	Number
Work status												
Currently working	7.5	1.4	4.0	23,616	8.8	1.4	4.2	9,282	7.9	1.4	4.0	32,898
Worked in past but currently not working	14.7	2.2	6.7	4,565	15.5	2.7	4.4	13,324	15.3	2.5	5.0	17,889
Never worked	10.6	2.7	5.5	12,489	18.2	3.5	5.8	8,770	14.0	3.1	5.7	21,259
MPCE quintile												
Poorest	6.0	0.9	3.9	7,647	9.7	1.5	4.0	6,463	7.7	1.2	4.0	14,110
Poorer	7.1	1.4	4.2	8,032	10.3	2.0	4.9	6,458	8.6	1.7	4.5	14,490
Middle	8.4	1.7	5.2	8,103	12.6	1.8	4.2	6,397	10.3	1.8	4.7	14,500
Richer	9.8	2.0	5.4	8,496	18.1	2.6	4.8	6,158	13.5	2.3	5.1	14,654
Richest	15.3	3.3	5.0	8,392	22.5	5.2	6.1	5,900	18.3	4.1	5.4	14,292
Total	**9.2**	**1.9**	**4.7**	**40,670**	**14.2**	**2.5**	**4.7**	**31,376**	**11.5**	**2.1**	**4.7**	**72,046**

Note

** Including spouse irrespective of age*

Table 7.6 Self-reported prevalence (%) of diagnosed diabetes mellitus, high cholesterol and anaemia among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Diabetes Mellitus	High Cholesterol	Anaemia	Number	Diabetes Mellitus	High Cholesterol	Anaemia	Number	Diabetes Mellitus	High Cholesterol	Anaemia	Number
India	**9.2**	**1.9**	**4.7**	**40,670**	**14.2**	**2.5**	**4.7**	**31,376**	**11.5**	**2.1**	**4.7**	**72,046**
North												
Chandigarh	18.3	8.0	4.9	625	25.0	10.8	1.8	389	21.0	9.1	3.7	1,014
Delhi	11.6	1.1	4.9	822	26.4	1.6	3.1	495	17.3	1.3	4.2	1,317
Haryana	6.2	1.0	3.8	1,048	10.5	2.1	3.1	847	8.3	1.5	3.5	1,895
Himachal Pradesh	8.7	2.8	9.4	765	16.1	4.9	8.1	618	12.2	3.8	8.8	1,383
Jammu & Kashmir	6.2	5.8	6.7	881	9.4	3.6	5.0	730	7.8	4.7	5.9	1,611
Punjab	11.1	11.7	9.4	1,112	20.2	12.8	8.2	1,004	15.4	12.2	8.8	2,116
Rajasthan	6.9	0.8	4.1	1,160	9.3	1.1	3.8	1,076	8.1	0.9	3.9	2,236
Uttarakhand	8.4	2.5	4.3	715	10.4	0.6	3.5	641	9.4	1.6	3.9	1,356
Central												
Chhattisgarh	5.2	[0.3]	5.8	1,275	9.2	[0.2]	5.7	779	6.8	0.3	5.7	2,054
Madhya Pradesh	4.2	1.4	8.3	1,599	7.9	2.3	6.5	1,313	6.0	1.8	7.4	2,912
Uttar Pradesh	6.2	0.6	5.2	2,390	8.0	0.7	4.6	2,164	7.1	0.6	4.9	4,554
East												
Bihar	6.6	1.8	9.2	1,709	8.2	1.6	8.3	1,807	7.5	1.7	8.7	3,516
Jharkhand	6.1	0.6	2.9	1,294	12.3	0.4	1.8	1,168	9.1	0.5	2.3	2,462
Odisha	5.8	1.6	3.6	1,676	9.9	1.5	2.9	1,235	7.6	1.5	3.3	2,911
West Bengal	8.9	2.2	2.7	2,384	13.3	1.8	1.6	1,540	10.7	2.1	2.3	3,924
Northeast												
Arunachal Pradesh	5.3	[0.3]	1.9	897	8.2	-	[2.7]	318	6.0	[0.2]	2.1	1,215
Assam	6.3	0.4	2.5	1,542	8.8	0.5	2.1	812	7.2	0.4	2.4	2,354
Manipur	7.7	4.6	2.6	761	10.6	4.4	1.5	605	9.0	4.5	2.1	1,366
Meghalaya	1.9	[1.1]	2.7	556	5.9	[1.2]	[0.7]	411	3.6	1.1	1.9	967
Mizoram	5.6	2.0	3.5	714	11.4	1.0	3.6	531	8.2	1.6	3.6	1,245
Nagaland	6.7	3.0	0.9	708	7.8	[0.7]	[0.6]	604	7.2	1.9	0.8	1,312
Tripura	7.0	1.8	1.6	732	11.9	[1.1]	1.9	460	8.9	1.5	1.7	1,192
West												
Dadra & Nagar Haveli	8.6	3.9	3.4	635	11.1	3.2	3.0	450	9.6	3.6	3.2	1,085
Daman & Diu	14.7	3.3	2.7	557	20.0	7.4	[0.8]	429	17.2	5.2	1.8	986
Goa	17.4	6.1	2.6	788	27.3	9.3	3.9	634	21.9	7.6	3.2	1,422
Gujarat	8.1	2.9	8.7	1,344	17.6	3.7	8.3	984	12.4	3.3	8.5	2,328
Maharashtra	8.3	1.4	4.0	2,176	16.6	1.5	3.9	1,785	12.4	1.5	4.0	3,961
South												
Andaman & Nicobar Islands	16.4	4.1	3.8	721	23.7	3.6	1.7	521	19.4	3.9	3.0	1,242
Andhra Pradesh	15.9	0.6	1.9	1,569	20.8	1.0	2.7	1,100	17.9	0.8	2.2	2,669
Karnataka	12.9	1.0	6.5	1,411	19.1	2.9	10.2	1,002	15.3	1.8	8.0	2,413
Kerala	19.5	20.0	3.3	1,277	34.7	26.8	3.8	1,205	27.4	23.5	3.5	2,482
Lakshadweep	18.0	17.3	[0.4]	637	28.1	20.0	[0.7]	500	22.8	18.6	[0.5]	1,137
Puducherry	17.1	4.2	[0.2]	787	28.4	7.4	-	638	22.4	5.7	[0.1]	1,425
Tamil Nadu	14.6	2.4	1.8	1,995	25.5	3.0	1.7	1,530	19.6	2.6	1.7	3,525
Telangana	11.9	0.9	1.4	1,408	15.6	[0.4]	0.5	1,051	13.5	0.7	1.0	2,459

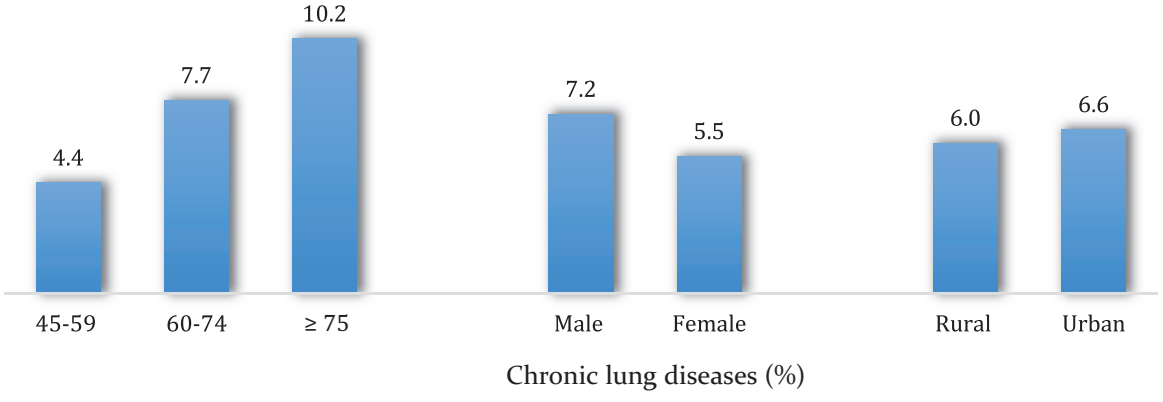
Note

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

7.2.6 Chronic lung diseases

Chronic lung disease is the second largest contributor to the burden of mortality and morbidity in India (Salvi et al., 2018). According to global burden of disease study, the number of cases of chronic obstructive lung disease in India has increased from 28 million in 1990 to 55 million in 2016, and the mortality rate is twice as high in the less-developed states than in the more-developed states (Salvi et al., 2018). In the LASI, information was collected on diagnosed chronic lung diseases including chronic obstructive pulmonary disease (COPD), chronic bronchitis, and asthma.

Figure 7.5 Self-reported prevalence (%) of diagnosed chronic lung disease among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

Tables 7.7 and 7.8 show the self-reported prevalence of diagnosed chronic lung diseases by background characteristics and states/UTs, respectively. In India, the self-reported prevalence of any diagnosed chronic lung disease among older adults age 45 and above is 6%. The most prevalent lung disease is asthma (4.4%) followed by COPD (2.1%) and bronchitis (1.1%). The self-reported prevalence of any diagnosed chronic lung disease is markedly higher among elderly age 60 and above (8.3%) than among older adults age 45-59 (4.4%). Similarly, the prevalence of asthma, bronchitis, and COPD is higher among elderly age 60 and above (5.9%, 1.6%, and 2.8%, respectively) than in older adults age 45-59 (3.1%, 0.7%, and 1.6%, respectively). Among the elderly age 60 years and above, chronic lung diseases are more prevalent among men (8.9%) than women (7.7%), among former workers (10%) than those currently working (5.5%), and those in the richest MPCE quintile (11.9%) than those in the poorest MPCE quintile (6.8%). Among the elderly age 60 and above, the proportion of those who have been diagnosed with bronchitis and COPD is higher in urban areas (2.7% and 3.8%) than in rural areas (1.2% and 2.4% respectively). In contrast, the prevalence of asthma is higher in rural (6.1%) than in urban areas (5.3%). The prevalence of bronchitis and COPD is higher among elderly age 60 and above with 10 or more years of schooling (4.3% and 5.4% respectively) than in those with no schooling (1.1% and 2.2% respectively) and higher among those in the richest MPCE quintile (3.8% and 5.5% respectively) than those in the poorest quintile (0.8% and 1.4% respectively).

Across the states/UTs, the self-reported prevalence of any diagnosed chronic lung disease among older adults age 45 and above ranges from 11% in Puducherry to less than 1% in Nagaland and Meghalaya. More than one in ten elderly age 60 and above have been diagnosed with any chronic lung diseases in Rajasthan (15%), Puducherry (13%), Kerala (12%), West Bengal (11%), and Karnataka (10%). Among elderly age 60 and above, the self-reported prevalence of bronchitis and COPD is highest in Karnataka (6.2% and 7.6% respectively) followed by that in Puducherry (4.1% and 7.1% respectively). On the other hand, the self-reported prevalence of diagnosed asthma is the highest in Rajasthan (12%) followed by that in Dadra & Nagar Haveli (8.9%), Kerala (8.2%), and West Bengal (8.2%).

Figure 7.6 Self-reported prevalence (%) of diagnosed chronic lung diseases among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18

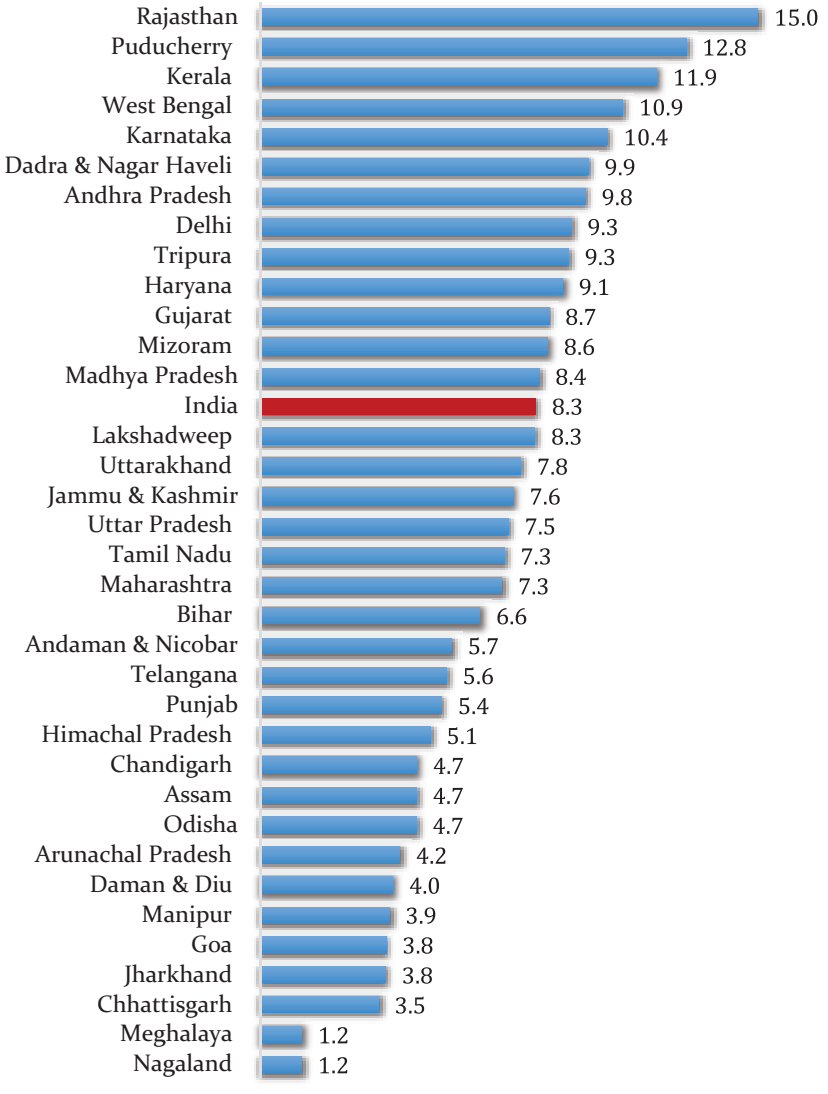


Table 7.7 Self-reported prevalence (%) of diagnosed chronic lung diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number
Place of residence															
Rural	2.8	0.7	1.5	4.1	25,754	6.1	1.2	2.4	8.1	20,689	4.4	0.9	1.9	6.0	46,443
Urban	3.9	0.7	1.7	5.0	14,928	5.3	2.7	3.8	8.7	10,694	4.5	1.6	2.6	6.6	25,622
Sex															
Male	3.8	0.7	1.7	5.3	15,427	6.5	1.4	2.8	8.9	15,041	5.2	1.1	2.3	7.2	30,468
Female	2.7	0.7	1.5	3.9	25,255	5.4	1.8	2.8	7.7	16,342	3.8	1.2	2.0	5.5	41,597
Marital status															
Currently married	3.1	0.7	1.5	4.4	35,386	5.9	1.2	2.4	7.9	19,869	4.1	0.9	1.9	5.7	55,255
Widowed	4.2	1.4	2.0	5.2	3,864	6.0	2.3	3.6	9.1	10,693	5.6	2.1	3.2	8.2	14,557
Divorced/Separated/Deserted/ Others	2.6	1.1	1.4	3.8	1,432	4.7	0.7	1.5	5.9	821	3.3	1.0	1.4	4.6	2,253
Living arrangement															
Living alone	4.6	0.8	1.8	6.1	689	6.3	1.4	2.0	7.6	1,618	5.9	1.2	1.9	7.2	2,307
Living with spouse and/or others	6.6	0.7	1.5	7.9	4,535	5.8	1.2	2.2	7.6	6,168	6.1	1.0	1.9	7.8	10,703
Living with spouse and children	2.5	0.7	1.5	3.8	30,197	5.7	1.3	2.5	7.9	13,461	3.5	0.9	1.9	5.1	43,658
Living with children and others	3.4	1.4	2.0	4.4	4,075	6.0	2.6	4.1	9.6	8,417	5.3	2.3	3.5	8.1	12,492
Living with others only	3.4	1.0	1.4	4.5	1,186	6.3	0.5	1.5	7.7	1,719	5.2	0.7	1.5	6.5	2,905
Religion															
Hindu	3.3	0.8	1.5	4.5	29,856	5.9	1.6	2.7	8.1	22,982	4.5	1.2	2.1	6.2	52,838
Muslim	2.6	0.6	1.6	4.2	4,927	6.5	1.7	3.5	9.5	3,721	4.3	1.1	2.4	6.5	8,648
Christian	1.5	0.4	1.0	2.5	4,058	6.3	1.5	2.6	9.0	3,138	3.6	0.9	1.7	5.4	7,196
Others	2.8	0.3	2.6	4.5	1,841	3.7	1.4	3.3	7.0	1,542	3.2	0.8	2.9	5.7	3,383
Caste/tribe															
Scheduled tribe	2.3	0.3	0.6	2.7	7,327	5.0	0.6	1.6	6.5	5,160	3.5	0.4	1.1	4.4	12,487
Scheduled caste	3.6	1.0	1.7	4.8	6,889	6.2	1.1	2.6	8.2	5,129	4.7	1.0	2.1	6.3	12,018
Other backward class	3.4	0.8	1.8	4.9	15,258	6.0	2.2	3.1	8.8	11,853	4.6	1.4	2.4	6.6	27,111
None of the above	2.6	0.6	1.4	3.9	11,208	5.7	1.3	2.8	8.1	9,241	4.1	0.9	2.1	5.9	20,449
Education															
No schooling	3.0	0.6	1.6	4.2	16,288	6.1	1.1	2.2	7.8	16,859	4.6	0.8	1.9	6.1	33,147
Less than 5 years complete	3.1	0.9	2.1	4.8	4,264	7.7	1.6	2.7	9.9	3,774	5.4	1.2	2.4	7.3	8,038
5-9 years complete	3.1	1.2	2.0	4.7	10,872	6.0	1.2	2.8	8.4	5,997	4.3	1.2	2.3	6.1	16,869
10 or more years complete	3.5	0.5	0.9	4.4	9,258	3.2	4.3	5.4	8.7	4,753	3.4	1.8	2.4	5.9	14,011
Work status															
Currently working	3.1	0.5	1.3	4.1	23,623	4.1	0.9	1.7	5.5	9,283	3.4	0.7	1.4	4.6	32,906
Worked in past but currently not working	5.1	1.8	3.2	7.4	4,566	7.6	1.5	3.0	10.0	13,331	7.0	1.6	3.0	9.3	17,897
Never worked	2.5	0.7	1.4	3.8	12,493	5.3	2.5	3.9	8.7	8,769	3.7	1.5	2.5	6.0	21,262

Continued

Continued

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number
MPCE quintile															
Poorest	2.5	0.5	1.1	3.5	7,652	5.6	0.8	1.4	6.8	6,463	4.0	0.6	1.2	5.1	14,115
Poorer	2.5	0.5	1.1	3.4	8,033	6.1	1.5	2.7	8.1	6,459	4.2	1.0	1.8	5.6	14,492
Middle	3.0	1.2	2.0	4.4	8,104	5.6	1.3	2.6	7.7	6,400	4.2	1.3	2.2	6.0	14,504
Richer	3.3	0.7	2.2	4.8	8,498	5.5	1.0	2.6	7.7	6,160	4.3	0.8	2.4	6.1	14,658
Richest	4.6	0.8	1.5	6.0	8,395	6.9	3.8	5.5	11.9	5,901	5.5	2.0	3.2	8.5	14,296
Total	**3.1**	**0.7**	**1.6**	**4.4**	**40,682**	**5.9**	**1.6**	**2.8**	**8.3**	**31,383**	**4.4**	**1.1**	**2.1**	**6.2**	**72,065**

Notes

** Including spouse irrespective of age*

[1]Chronic lung diseases include chronic obstructive pulmonary disease (COPD), asthma and bronchitis (any one or more).

Table 7. 8 Self-reported prevalence (%) of diagnosed chronic lung diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number
India	**3.1**	**0.7**	**1.6**	**4.4**	**40,682**	**5.9**	**1.6**	**2.8**	**8.3**	**31,383**	**4.4**	**1.1**	**2.1**	**6.2**	**72,065**
North															
Chandigarh	1.0	[0.4]	1.3	2.3	625	1.2	2.2	3.5	4.7	389	1.1	1.1	2.1	3.3	1,014
Delhi	4.0	[0.2]	1.1	5.1	822	7.1	[0.7]	2.3	9.3	495	5.2	0.4	1.6	6.7	1,317
Haryana	3.1	0.4	1.4	4.6	1,048	6.3	1.0	2.7	9.1	847	4.6	0.7	2.0	6.8	1,895
Himachal Pradesh	1.1	[0.2]	0.8	1.9	765	3.7	0.5	1.3	5.1	618	2.3	0.3	1.0	3.4	1,383
Jammu & Kashmir	1.0	0.7	1.3	2.5	881	2.5	2.2	4.8	7.6	730	1.7	1.4	3.0	5.0	1,611
Punjab	1.7	0.5	2.5	4.2	1,112	1.9	1.2	3.6	5.4	1,004	1.8	0.8	3.0	4.8	2,116
Rajasthan	4.8	0.4	1.0	5.6	1,161	12.4	1.8	3.0	15.0	1,077	8.6	1.1	2.0	10.3	2,238
Uttarakhand	2.6	1.8	4.0	6.4	715	5.0	1.6	3.1	7.8	641	3.8	1.7	3.5	7.1	1,356
Central															
Chhattisgarh	1.5	0.4	0.6	2.0	1,275	3.2	[0.2]	0.4	3.5	779	2.1	0.3	0.5	2.6	2,054
Madhya Pradesh	3.4	1.2	1.7	4.6	1,599	6.4	0.9	2.3	8.4	1,313	4.8	1.0	2.0	6.4	2,912
Uttar Pradesh	2.0	1.0	1.7	3.8	2,395	5.0	1.5	2.6	7.5	2,167	3.5	1.2	2.1	5.6	4,562
East															
Bihar	3.1	0.6	1.1	4.0	1,709	5.6	0.7	1.0	6.6	1,806	4.5	0.7	1.0	5.4	3,515
Jharkhand	0.8	0.6	1.0	1.8	1,294	2.8	0.8	1.1	3.8	1,168	1.8	0.7	1.0	2.8	2,462
Odisha	2.2	[0.2]	0.3	2.5	1,676	4.3	0.4	0.8	4.7	1,235	3.1	0.3	0.5	3.5	2,911
West Bengal	3.2	0.6	2.0	4.9	2,384	8.2	1.7	4.5	10.9	1,540	5.2	1.0	3.0	7.3	3,924
Northeast															
Arunachal Pradesh	1.0	[0.5]	0.9	1.9	897	1.6	-	[1.4]	4.2	318	1.1	[0.4]	1.0	2.4	1,215
Assam	1.2	[0.2]	0.3	1.6	1,548	3.9	[0.2]	0.7	4.7	814	2.2	0.2	0.5	2.7	2,362
Manipur	1.9	[0.2]	[0.2]	2.4	761	2.6	[0.2]	0.9	3.9	605	2.2	[0.2]	0.5	3.1	1,366
Meghalaya	[0.2]	-	[0.2]	[0.2]	556	1.0	-	0.7	1.2	411	0.6	-	[0.4]	0.7	967
Mizoram	2.1	[0.3]	0.8	3.0	714	3.4	1.5	5.1	8.6	531	2.6	0.8	2.8	5.5	1,245
Nagaland	[0.2]	-	-	[0.2]	708	1.2	-	-	1.2	604	0.7	-	-	0.7	1,312
Tripura	5.0	[0.2]	[0.4]	5.3	732	5.9	[0.8]	3.5	9.3	460	5.4	0.5	1.6	6.9	1,192
West															
Dadra & Nagar Haveli	3.1	-	[0.9]	4.0	635	8.9	[0.8]	1.6	9.9	450	5.4	[0.3]	1.2	6.3	1,085
Daman & Diu	3.2	-	1.1	4.5	557	2.9	[0.4]	1.3	4.0	429	3.0	[0.2]	1.2	4.3	986
Goa	0.9	[0.2]	[0.2]	1.1	788	3.0	[0.7]	[0.8]	3.8	634	1.8	[0.4]	0.5	2.3	1,422
Gujarat	3.2	0.4	1.0	3.9	1,344	7.6	0.5	1.6	8.7	984	5.2	0.4	1.2	6.1	2,328
Maharashtra	2.7	[0.1]	1.3	3.8	2,176	6.2	0.3	1.5	7.3	1,786	4.4	0.2	1.4	5.5	3,962

Continued

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State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number	Asthma	Bronchitis	COPD	Any Chronic Lung Disease[1]	Number
South															
Andaman & Nicobar Islands	1.6	-	[1.0]	2.7	721	4.6	[0.6]	1.2	5.7	521	2.8	0.3	1.1	3.9	1,242
Andhra Pradesh	3.3	[0.2]	1.4	4.7	1,569	7.4	1.1	3.3	9.8	1,100	5.0	0.6	2.2	6.8	2,669
Karnataka	4.9	1.2	2.5	6.3	1,411	3.6	6.2	7.6	10.4	1,002	4.4	3.2	4.5	7.9	2,413
Kerala	3.0	1.2	2.4	5.9	1,277	8.2	2.0	3.6	11.9	1,206	5.7	1.6	3.0	9.0	2,483
Lakshadweep	2.4	[0.4]	1.1	3.4	637	5.9	0.8	2.2	8.3	500	4.0	0.6	1.6	5.7	1,137
Puducherry	3.7	4.0	5.1	8.8	787	6.0	4.1	7.1	12.8	638	4.8	4.0	6.0	10.7	1,425
Tamil Nadu	2.2	2.2	2.4	4.4	1,995	4.8	2.5	3.0	7.3	1,530	3.4	2.3	2.7	5.8	3,525
Telangana	2.8	-	0.5	3.2	1,408	4.2	[0.2]	1.5	5.6	1,051	3.4	0.1	1.0	4.2	2,459

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Chronic lung diseases include chronic obstructive pulmonary disease (COPD), asthma and bronchitis (any one or more).

7.2.7 Neurological or psychiatric problems

Neuropsychiatric conditions refer to mental disorders attributable to diseases of the nervous system. Mental disorders include schizophrenia, depression, autism, eating disorders, degenerative diseases (including dementia, Parkinson's disease, and Alzheimer's disease), mood disorders (including depression, unipolar depression, bipolar disorder/manic depression, dysthymia, cyclothymia, and mania), and neurotic disorders (including anxiety disorder, obsessive–compulsive disorder, and trichotillomania).

In the LASI, respondents were asked 'Has any health professional ever told you that you have any neurological or psychiatric problems'? Among respondents who answered yes to this question, information was also collected for which disease or condition they were diagnosed with (depression, Alzheimer's disease, dementia, psychiatric problems such as unipolar/bipolar disorder, schizophrenia and, neurological problems such as neuropathy, convulsions, migraine, Parkinson's). Information was also collected on treatment by asking 'Are you currently taking any psychiatric or psychological treatment or therapy?' and 'Are you taking any tranquilizers, antidepressants or other type of medications for neurological/ psychiatric problem?'

Table 7.9 presents the self-reported prevalence of diagnosed neurological or psychiatric problems in India by background characteristics. The self-reported prevalence of any diagnosed neurological or psychiatric problem among older adults age 45 and above in India is 2.2%. The prevalence of any neurological or psychiatric problems is slightly higher among elderly age 60 and above (2.6%) than among older adults age 45-59 (1.9%). Among elderly age 60 and above, the prevalence of any neurological or psychiatric problems does not markedly vary by place of residence, sex, educational level, and MPCE quintile. In contrast, the prevalence increases with MPCE quintile among older adults age 45-59. The prevalence is also higher among elderly age 60 and above living with others (3.3%) and those who never worked (3.1%).

Overall, other neurological and psychiatric problems is prevalent in 1.4% and 0.4% of older adults age 45 and above, respectively, in India. Further, 0.7% of the older adults age 45 and above reported that they have been diagnosed with Alzheimer's disease and dementia. A further 0.6% reported that they have been diagnosed with depression. The self-reported prevalence of diagnosed depression as well as Alzheimer's disease & dementia is slightly higher among elderly age 60 and above residing in rural areas (0.9% and 1.1% respectively) than those in urban areas (0.6% and 0.7% respectively). The prevalence of both Alzheimer's disease and dementia are also higher among elderly women age 60 and above than elderly men. The prevalence rate of depression (1.3%) and Alzheimer's disease and dementia (2%) is also higher among elderly age 60 years and above who are living with others.

Table 7.10 presents the cross-state variations in the self-reported prevalence of diagnosed neurological or psychiatric problems. The prevalence of any neurological or psychiatric problem among older adults age 45 and above ranges from to 6.1% in West Bengal and 6.0% in Telangana to 0.5% in Bihar and Chhattisgarh. Among the elderly age 60 and above, the prevalence of any neurological or psychiatric problem is more than 5% in West Bengal (8.1%), Telangana (7.0%), Puducherry (6.9%), and Jammu & Kashmir (5.3%). A higher proportion of elderly age 60 and above in West Bengal are diagnosed with depression (3.4%), other psychiatric problems (1.1%) and Alzheimer's disease and dementia (5.4%). In contrast, the prevalence of other neurological problems is higher in Telangana (6.4%) followed by that in Puducherry (4.2%).

Figure 7.7 Self-reported prevalence (%) of diagnosed neurological or psychiatric conditions among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18

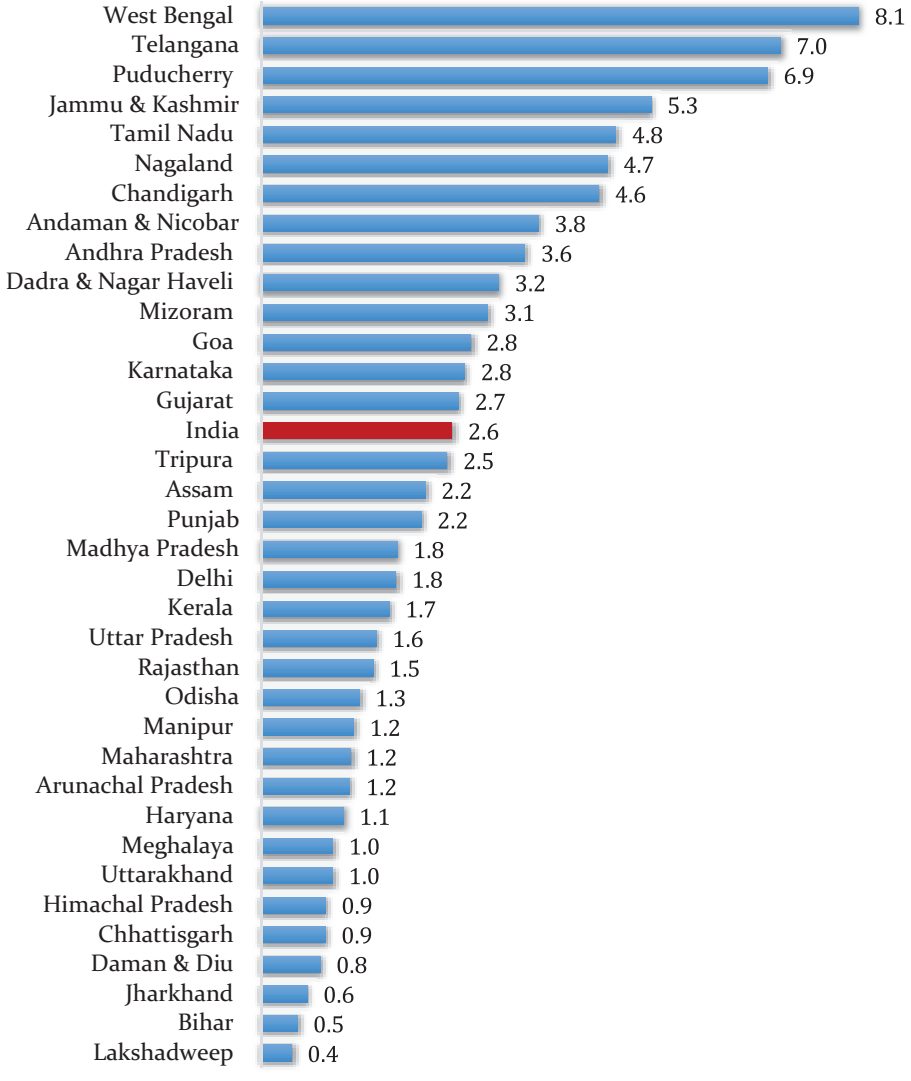


Table 7.9 Self-reported prevalence (%) of diagnosed neurological or psychiatric conditions among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*						Age ≥ 60						Total					
	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number
Place of residence																		
Rural	0.5	0.3	0.5	1.2	1.7	25,752	0.9	0.4	1.1	1.6	2.6	20,687	0.7	0.3	0.8	1.4	2.1	46,439
Urban	0.5	0.6	0.3	1.6	2.3	14,923	0.6	0.4	0.7	1.6	2.6	10,694	0.5	0.5	0.5	1.6	2.4	25,617
Sex																		
Male	0.4	0.5	0.4	1.5	2.1	15,425	0.6	0.4	0.7	1.8	2.5	15,039	0.5	0.5	0.5	1.6	2.3	30,464
Female	0.5	0.3	0.4	1.2	1.8	25,250	0.9	0.3	1.2	1.4	2.6	16,342	0.7	0.3	0.7	1.3	2.2	41,592
Marital status																		
Currently married	0.4	0.4	0.4	1.3	1.9	35,381	0.7	0.4	0.7	1.6	2.4	19,867	0.5	0.4	0.5	1.4	2.1	55,248
Widowed	0.7	0.3	0.5	1.4	2.0	3,864	0.9	0.4	1.4	1.5	2.8	10,693	0.8	0.3	1.2	1.5	2.6	14,557
Divorced/Separated/Deserted/Others	0.9	0.9	0.8	1.5	2.9	1,430	1.0	0.7	1.7	2.8	3.9	821	1.0	0.8	1.1	2.0	3.3	2,251
Living arrangement																		
Living alone	1.0	-	0.7	1.9	2.0	688	[0.4]	[0.2]	1.1	1.7	3.0	1,618	0.6	[0.1]	1.0	1.8	2.7	2,306
Living with spouse and/or others	0.5	0.2	0.7	1.1	1.9	4,535	0.7	0.3	0.5	1.9	2.6	6,167	0.6	0.3	0.6	1.6	2.3	10,702
Living with spouse and children	0.4	0.4	0.3	1.3	1.9	30,192	0.8	0.4	0.8	1.5	2.3	13,460	0.5	0.4	0.5	1.4	2.0	43,652
Living with children and others	0.6	0.3	0.5	1.2	1.9	4,075	0.9	0.4	1.3	1.5	2.7	8,417	0.8	0.4	1.1	1.4	2.5	12,492
Living with others only	1.1	1.0	0.6	1.8	3.2	1,185	1.3	0.7	2.0	1.6	3.3	1,719	1.2	0.8	1.5	1.7	3.2	2,904
Religion																		
Hindu	0.4	0.3	0.4	1.3	1.9	29,852	0.8	0.3	1.0	1.6	2.6	22,981	0.6	0.3	0.6	1.4	2.2	52,833
Muslim	0.5	0.3	0.6	1.2	1.8	4,924	0.7	0.8	0.9	1.8	2.8	3,721	0.6	0.5	0.7	1.5	2.3	8,645
Christian	0.5	3.1	0.3	3.4	4.2	4,058	0.4	0.1	1.3	2.0	3.1	3,138	0.5	1.8	0.7	2.8	3.7	7,196
Others	0.8	0.4	0.6	0.6	1.4	1,841	0.6	[0.2]	0.7	0.9	1.5	1,541	0.7	0.3	0.7	0.8	1.4	3,382
Caste/tribe																		
Scheduled tribe	0.2	0.1	0.3	0.6	1.0	7,326	0.6	0.2	0.5	1.5	1.8	5,160	0.4	0.2	0.4	1.0	1.3	12,486
Scheduled caste	0.5	0.3	0.4	1.4	1.8	6,889	1.1	0.3	1.7	1.6	3.1	5,128	0.8	0.3	1.0	1.5	2.4	12,017
Other backward class	0.5	0.4	0.4	1.3	2.0	15,254	0.8	0.3	0.8	1.6	2.6	11,853	0.6	0.4	0.6	1.4	2.3	27,107
None of the above	0.5	0.4	0.5	1.5	2.3	11,206	0.7	0.5	0.9	1.6	2.5	9,240	0.6	0.4	0.7	1.5	2.4	20,446
Education																		
No schooling	0.5	0.5	0.4	1.1	1.7	16,286	1.0	0.4	1.2	1.5	2.7	16,857	0.8	0.4	0.8	1.3	2.2	33,143
Less than 5 years complete	0.5	0.5	0.7	1.5	2.4	4,263	0.4	0.2	0.6	1.9	2.6	3,774	0.4	0.4	0.7	1.7	2.5	8,037
5-9 years complete	0.5	0.4	0.4	1.6	2.3	10,870	0.6	0.3	0.8	1.7	2.5	5,997	0.5	0.4	0.6	1.6	2.4	16,867
10 or more years complete	0.4	0.1	0.2	1.3	1.8	9,256	0.6	0.4	0.5	1.3	2.3	4,753	0.4	0.2	0.3	1.3	2.0	14,009
Work status																		
Currently working	0.3	0.2	0.3	0.9	1.3	23,620	0.2	0.1	0.4	1.3	1.6	9,283	0.3	0.2	0.3	1.0	1.4	32,903
Worked in past but currently not working	1.1	1.4	1.0	2.8	3.9	4,564	0.9	0.5	1.0	1.9	3.0	13,329	0.9	0.7	1.0	2.1	3.2	17,893
Never worked	0.6	0.4	0.4	1.5	2.3	12,491	1.3	0.4	1.5	1.4	3.1	8,769	0.9	0.4	0.9	1.5	2.7	21,260

Continued

Continued

Background characteristics	Age 45-59*						Age ≥ 60						Total					
	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number
MPCE quintile																		
Poorest	0.3	0.2	0.3	0.7	1.1	7,651	1.0	0.3	1.1	1.3	2.6	6,463	0.6	0.2	0.7	1.0	1.8	14,114
Poorer	0.5	0.7	0.4	1.5	2.0	8,033	0.9	0.3	1.1	1.2	2.3	6,458	0.7	0.5	0.7	1.3	2.1	14,491
Middle	0.4	0.3	0.3	1.1	1.7	8,102	0.7	0.5	0.8	1.7	2.5	6,399	0.5	0.4	0.5	1.4	2.1	14,501
Richer	0.5	0.4	0.5	1.4	2.3	8,496	0.6	0.4	0.9	2.1	2.9	6,160	0.6	0.4	0.7	1.7	2.6	14,656
Richest	0.6	0.3	0.5	1.9	2.5	8,393	0.7	0.3	0.9	1.8	2.6	5,901	0.7	0.3	0.6	1.8	2.5	14,294
Total	**0.5**	**0.4**	**0.4**	**1.3**	**1.9**	**40,675**	**0.8**	**0.4**	**1.0**	**1.6**	**2.6**	**31,381**	**0.6**	**0.4**	**0.7**	**1.4**	**2.2**	**72,056**

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Any psychiatric problem includes unipolar or bipolar disorder, schizophrenia.

[2]Any neurological problem includes neuropathy, convulsion, migraine, Parkinson's etc. (any one or more).

[3]Any neurological/psychiatric problem includes depression, Alzheimer's disease, dementia or psychiatric problem or neurological problem.

Table 7.10 Self-reported prevalence (%) of diagnosed neurological or psychiatric conditions among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*						Age ≥ 60						Total					
	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number
India	0.5	0.4	0.4	1.3	1.9	40,675	0.8	0.4	1.0	1.6	2.6	31,381	0.6	0.4	0.7	1.4	2.2	72,056
North																		
Chandigarh	0.8	[0.1]	[0.4]	[0.2]	1.5	625	[2.1]	[0.3]	2.0	[0.6]	4.6	389	1.3	[0.2]	1.1	0.4	2.7	1,014
Delhi	[0.3]	[0.1]	[0.4]	1.0	1.9	821	[0.2]	[0.2]	[0.3]	[1.3]	1.8	495	[0.3]	[0.1]	[0.3]	1.1	1.9	1,316
Haryana	[0.3]	-	[0.1]	[0.4]	0.6	1,048	[0.2]	[0.3]	[0.2]	0.5	1.1	847	0.3	[0.2]	[0.1]	0.4	0.8	1,895
Himachal Pradesh	[0.4]	[0.4]	0.1	[0.3]	0.9	765	0.8	[0.1]	-	[0.5]	0.9	618	0.6	[0.2]	-	[0.4]	0.9	1,383
Jammu & Kashmir	0.4	[0.2]	0.8	1.4	2.7	880	1.3	[0.5]	1.0	2.9	5.3	730	0.9	0.4	0.9	2.1	4.0	1,610
Punjab	1.3	0.4	0.7	0.8	2.4	1,112	0.6	0.4	1.2	1.6	2.2	1,003	1.0	0.4	0.9	1.2	2.3	2,115
Rajasthan	0.5	[0.2]	[0.3]	[0.2]	0.8	1,161	[0.2]	-	-	1.1	1.5	1,077	0.3	[0.1]	[0.1]	0.7	1.2	2,238
Uttarakhand	[0.1]	[0.1]	-	[0.3]	[0.4]	715	[0.2]	-	[0.7]	[0.7]	[1.0]	641	[0.2]	-	[0.3]	0.5	0.7	1,356
Central																		
Chhattisgarh	[0.1]	[0.1]	[0.1]	[0.1]	0.3	1,275	[0.3]	[0.1]	[0.1]	0.6	0.9	779	[0.1]	[0.1]	[0.1]	0.3	0.5	2,054
Madhya Pradesh	0.6	[0.1]	[0.2]	0.4	0.9	1,599	1.3	0.3	0.2	0.9	1.8	1,313	0.9	0.2	0.2	0.6	1.4	2,912
Uttar Pradesh	0.4	[0.1]	0.2	1.1	1.4	2,394	0.7	0.4	0.7	1.3	1.6	2,167	0.6	0.2	0.5	1.2	1.5	4,561
East																		
Bihar	[0.1]	[0.2]	[0.2]	[0.2]	0.4	1,709	[0.2]	-	-	0.4	0.5	1,807	0.1	[0.1]	[0.1]	0.3	0.5	3,516
Jharkhand	[0.1]	[0.5]	[0.1]	[0.3]	1.0	1,294	[0.1]	[0.1]	[0.1]	0.3	[0.6]	1,168	[0.1]	0.3	[0.1]	0.3	0.8	2,462
Odisha	[0.2]	[0.1]	-	0.7	1.0	1,676	[0.1]	0.7	[0.1]	0.6	1.3	1,235	0.2	0.4	-	0.6	1.1	2,911
West Bengal	0.7	0.8	1.3	3.3	4.7	2,383	3.4	1.1	5.4	3.3	8.1	1,540	1.8	0.9	3.0	3.3	6.1	3,923
Northeast																		
Arunachal Pradesh	-	-	[0.1]	[0.3]	[0.4]	897	-	-	-	[1.2]	[1.2]	318	-	-	[0.1]	0.5	0.6	1,215
Assam	[0.4]	[0.2]	0.4	1.0	1.7	1,548	[0.2]	[0.5]	0.9	1.3	2.2	814	[0.3]	0.3	0.6	1.1	1.9	2,362
Manipur	[0.3]	-	-	[0.9]	[1.2]	761	[0.3]	[0.1]	[0.5]	[0.3]	1.2	605	[0.3]	[0.1]	[0.2]	0.6	1.2	1,366
Meghalaya	[0.3]	[0.1]	-	-	[0.3]	556	-	[0.2]	-	[0.8]	[1.0]	411	[0.2]	[0.2]	-	[0.3]	0.6	967
Mizoram	[0.2]	[0.1]	[0.2]	[0.4]	[0.4]	714	-	[0.1]	1.6	2.7	3.1	531	[0.1]	[0.1]	0.8	1.4	1.6	1,245
Nagaland	-	-	-	[0.3]	[0.3]	708	-	-	[4.7]	-	[4.7]	604	-	-	[2.3]	[0.1]	2.4	1,312
Tripura	-	[0.3]	-	[0.5]	0.8	732	[0.6]	[0.8]	[0.6]	2.4	2.5	460	[0.2]	0.5	[0.2]	1.3	1.5	1,192
West																		
Dadra & Nagar Haveli	-	[0.5]	[0.1]	1.6	2.0	635	[0.6]	[0.2]	[0.3]	2.5	3.2	450	[0.2]	[0.4]	[0.2]	1.9	2.5	1,085
Daman & Diu	[0.1]	-	[0.2]	2.3	2.6	556	-	[0.6]	-	[0.2]	0.8	429	[0.1]	[0.3]	[0.1]	1.3	1.7	985
Goa	[0.3]	[0.2]	[0.1]	-	0.8	788	1.0	[0.3]	[1.0]	1.0	2.8	634	0.6	[0.2]	0.5	0.4	1.8	1,422
Gujarat	0.6	1.2	0.6	1.6	2.7	1,344	[0.2]	0.4	[0.1]	2.4	2.7	984	0.4	0.8	0.4	1.9	2.7	2,328
Maharashtra	0.3	0.2	0.2	0.6	0.7	2,176	-	0.3	0.3	0.7	1.2	1,786	0.2	0.2	0.2	0.6	0.9	3,962

Continued

Continued

State/Union Territory	Age 45-59*						Age ≥ 60						Total					
	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number	Depression	Other Psychiatric Problem[1]	Alzheimer's Disease & Dementia	Other Neurological Problem[2]	Any Neurological /Psychiatric Problem[3]	Number
South																		
Andaman & Nicobar Islands	[0.6]	[0.4]	[0.5]	1.0	2.3	721	1.8	[0.2]	1.0	2.0	3.8	521	1.1	[0.3]	0.7	1.4	2.9	1,242
Andhra Pradesh	0.6	[0.2]	0.8	1.8	2.4	1,569	0.7	[0.3]	1.1	2.5	3.6	1,098	0.6	0.3	0.9	2.1	2.9	2,667
Karnataka	[0.3]	0.8	[0.1]	1.9	2.4	1,411	0.3	0.4	0.4	2.3	2.8	1,002	0.3	0.6	[0.2]	2.0	2.5	2,413
Kerala	1.2	0.6	[0.2]	1.0	2.9	1,276	0.3	0.5	[0.7]	0.5	1.7	1,206	0.8	0.5	0.4	0.7	2.3	2,482
Lakshadweep	[0.5]	0.8	-	[0.1]	1.4	637	-	-	-	[0.4]	[0.4]	500	[0.2]	0.4	-	0.2	0.9	1,137
Puducherry	[0.3]	[0.2]	0.5	1.1	1.9	787	1.3	1.0	1.8	4.2	6.9	638	0.8	0.6	1.1	2.6	4.2	1,425
Tamil Nadu	0.5	[0.1]	0.3	1.6	2.6	1,995	0.9	[0.2]	1.1	3.1	4.8	1,530	0.7	0.2	0.7	2.3	3.6	3,525
Telangana	2.5	0.6	2.1	4.3	5.2	1,407	2.8	0.5	2.9	6.4	7.0	1,051	2.6	0.6	2.4	5.2	6.0	2,458

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Any psychiatric problem includes unipolar or bipolar disorder, schizophrenia.

[2] Any neurological problem includes neuropathy, convulsion, migraine, Parkinson's etc. (any one or more).

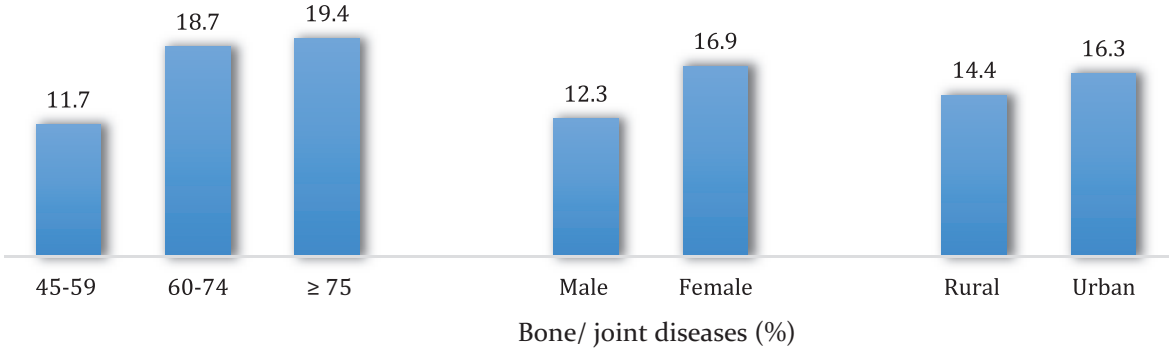
[3] Any neurological/psychiatric problem includes depression, Alzheimer's disease, dementia or psychiatric problem or neurological problem.

7.2.8 Bone or joint diseases

Bone or joint diseases include arthritis, osteoporosis, osteomalacia (softening of the bone), gout, bone fracture, joint displacement, and bursitis, with arthritis being the most commonly reported bone/joint disease. Arthritis involves inflammation of one or more joints, and its two most common types are osteoarthritis and rheumatoid arthritis. Osteoporosis is a progressive bone disease that is characterised by a decrease in bone mass and density. In the LASI, respondents were asked questions on bone or joint diseases particularly about arthritis, rheumatism, and osteoporosis. Apart from a standard set of questions on bone or joint diseases, information was also collected for osteoporosis regarding who diagnosed and when diagnosed.

Table 7.11 presents the self-reported prevalence of chronic bone or joint diseases in India by background characteristics. Overall, the self-reported prevalence of any bone or joint disease among older adults age 45 years and above in India is 15%. The self-reported prevalence of diagnosed arthritis, rheumatism, and osteoporosis is 9%, 6%, and 0.9%, respectively. The self-reported prevalence of any bone or joint disease is higher among elderly age 60 and above (19%) than in older adults age 45-59 (12%). Among elderly age 60 and above, the prevalence of any bone/joint disease is higher among women (22%) than among men (16%) and higher among those residing in urban areas (22%) than in rural areas (17%). Further, the prevalence rate increases with MPCE quintile, but does not show any pattern according to educational level. Overall, 11% of the elderly age 60 and above in India reported arthritis, and 8% reported rheumatism; whereas, only 7% and 5%, respectively, of older adults age 45-59 reported such conditions. Among elderly age 60 and above, the prevalence of arthritis and rheumatism is higher in urban areas than in rural areas and higher among women than among men. The prevalence of diagnosed osteoporosis is higher among elderly age 60 and above (1.3%) than among older adults age 45-59 (0.6%).

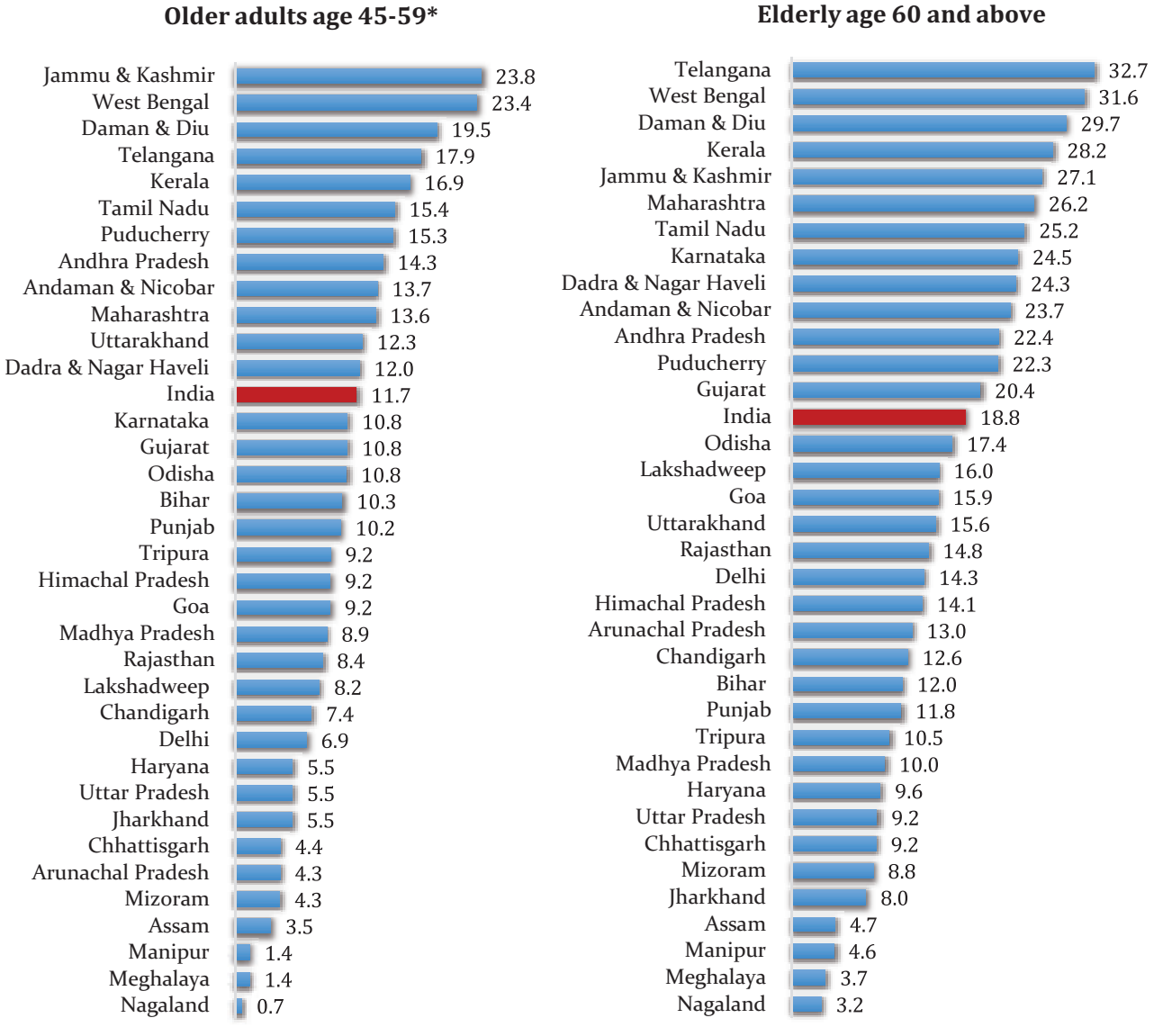
Figure 7.8 Self-reported prevalence (%) of diagnosed chronic bone/Joint disease among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

The prevalence of any chronic bone or joint disease shows considerable variations across states/UTs of India (Table 7.12). More than 20% of older adults age 45 and above in the states/UTs of West Bengal (27%), Jammu & Kashmir (25%), Telangana (25%), Daman & Diu (24%), and Kerala (23%) reported that they have bone or joint disease. Among elderly age 60 and above, the prevalence rate of any bone disease ranges from 33% in Telangana to 3% in Nagaland. The prevalence of diagnosed arthritis is the highest in Jammu & Kashmir (22%), and the prevalence rate is more than 10% in all south Indian states/UTs. Among elderly age 60 and above, the prevalence of diagnosed rheumatism is the highest in West Bengal (23%), while the prevalence of diagnosed osteoporosis is the highest in Kerala (4.3%).

Figure 7.9 Self-reported prevalence (%) of diagnosed chronic bone/joint diseases among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

Table 7.11 Self-reported prevalence (%) of diagnosed chronic bone/joint diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Arthritis	Rheumatism	Osteoporosis	Any Bone/ Joint Disease[1]	Number	Arthritis	Rheumatism	Osteoporosis	Any Bone/ Joint Disease[1]	Number	Arthritis	Rheumatism	Osteoporosis	Any Bone/ Joint Disease[1]	Number
Place of residence															
Rural	6.7	5.1	0.7	11.7	25,754	9.7	7.4	1.3	17.4	20,690	8.1	6.2	1.0	14.4	46,444
Urban	7.5	3.9	0.5	11.9	14,928	13.3	7.8	1.3	22.4	10,694	10.0	5.5	0.8	16.3	25,622
Sex															
Male	5.7	2.8	0.5	8.8	15,427	8.5	6.2	1.2	15.5	15,041	7.1	4.5	0.9	12.3	30,468
Female	7.8	5.8	0.7	13.5	25,255	12.8	8.8	1.4	21.8	16,343	9.9	7.0	1.0	16.9	41,598
Marital status															
Currently married	6.8	4.7	0.6	11.7	35,386	9.5	7.2	1.3	17.3	19,869	7.8	5.6	0.8	13.8	55,255
Widowed	9.0	5.1	0.9	13.5	3,864	13.0	8.3	1.4	21.7	10,694	12.1	7.5	1.3	19.7	14,558
Divorced/Separated/Deserted/ Others	5.7	3.3	0.6	8.5	1,432	8.1	5.4	0.6	13.1	821	6.6	4.0	0.6	10.2	2,253
Living arrangement															
Living alone	8.1	5.2	1.0	14.1	689	12.7	8.3	2.5	21.5	1,618	11.7	7.6	2.1	19.8	2,307
Living with spouse and/or others	10.5	5.3	0.6	16.0	4,535	10.3	7.2	1.3	18.3	6,168	10.4	6.5	1.0	17.3	10,703
Living with spouse and children	6.3	4.6	0.6	11.0	30,197	9.1	7.2	1.3	16.9	13,461	7.2	5.4	0.8	12.9	43,658
Living with children and others	8.3	5.1	0.7	12.9	4,075	13.1	8.3	1.1	21.8	8,417	11.7	7.4	1.0	19.3	12,492
Living with others only	6.2	3.6	1.1	9.2	1,186	10.5	6.8	1.2	17.0	1,720	8.9	5.6	1.2	14.1	2,906
Religion															
Hindu	7.0	4.6	0.6	11.8	29,856	10.9	7.5	1.4	18.7	22,983	8.8	5.9	0.9	15.0	52,839
Muslim	7.9	6.4	0.9	13.1	4,927	11.1	10.0	1.2	21.5	3,721	9.3	7.9	1.0	16.8	8,648
Christian	4.6	1.5	0.4	7.0	4,058	10.6	3.8	1.0	17.4	3,138	7.3	2.5	0.6	11.6	7,196
Others	6.3	2.9	0.1	10.1	1,841	7.5	5.0	0.9	14.6	1,542	6.9	3.9	0.5	12.3	3,383
Caste/tribe															
Scheduled tribe	4.8	3.3	0.8	7.5	7,327	6.7	5.0	1.0	11.7	5,160	5.6	4.0	0.9	9.3	12,487
Scheduled caste	6.6	5.0	0.6	11.2	6,889	10.5	7.4	1.4	17.6	5,130	8.4	6.1	1.0	14.1	12,019
Other backward class	7.6	3.8	0.5	12.2	15,258	12.1	6.8	1.4	20.1	11,853	9.7	5.2	0.9	15.8	27,111
None of the above	6.9	6.4	0.7	12.7	11,208	9.9	9.6	1.2	19.7	9,241	8.3	7.9	0.9	16.0	20,449
Education															
No schooling	6.8	5.1	0.6	12.0	16,288	10.0	7.7	1.3	18.1	16,860	8.5	6.5	0.9	15.2	33,148
Less than 5 years complete	8.5	5.6	0.8	13.8	4,264	11.9	8.5	1.5	20.5	3,774	10.1	7.0	1.1	17.1	8,038
5-9 years complete	6.9	4.8	0.6	11.8	10,872	11.8	7.2	1.3	20.0	5,997	8.8	5.7	0.8	15.0	16,869
10 or more years complete	6.7	3.3	0.7	10.3	9,258	11.4	6.7	1.4	19.1	4,753	8.4	4.4	0.9	13.3	14,011
Work status															
Currently working	6.4	3.7	0.5	10.1	23,623	7.9	5.3	0.8	13.9	9,283	6.9	4.2	0.6	11.3	32,906
Worked in past but currently not working	8.8	7.0	0.9	16.0	4,566	11.5	8.5	1.6	20.3	13,331	10.8	8.1	1.4	19.2	17,897
Never worked	7.4	5.8	0.8	13.4	12,493	12.9	8.7	1.3	22.1	8,770	9.8	7.0	1.0	17.2	21,263

Continued

Continued

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Arthritis	Rheumatism	Osteoporosis	Any Bone/ Joint Disease[1]	Number	Arthritis	Rheumatism	Osteoporosis	Any Bone/ Joint Disease[1]	Number	Arthritis	Rheumatism	Osteoporosis	Any Bone/ Joint Disease[1]	Number
MPCE quintile															
Poorest	5.5	3.5	0.3	8.9	7,652	8.5	5.4	0.9	14.7	6,463	6.9	4.4	0.6	11.7	14,115
Poorer	7.0	5.8	0.7	12.2	8,033	9.8	8.1	1.3	18.1	6,460	8.3	6.9	1.0	14.9	14,493
Middle	6.8	4.7	0.6	11.6	8,104	10.3	7.6	1.0	17.8	6,400	8.4	6.0	0.8	14.5	14,504
Richer	7.0	5.0	0.7	12.1	8,498	12.4	8.5	1.6	21.6	6,160	9.5	6.6	1.1	16.4	14,658
Richest	8.6	4.4	0.7	13.9	8,395	13.5	8.5	1.8	23.3	5,901	10.7	6.1	1.2	17.8	14,296
Total	**7.0**	**4.7**	**0.6**	**11.7**	**40,682**	**10.7**	**7.6**	**1.3**	**18.8**	**31,384**	**8.7**	**6.0**	**0.9**	**15.0**	**72,066**

Notes

** Including spouse irrespective of age*

[1] Bone /joint diseases include arthritis, rheumatism and osteoporosis (any one or more).

Table 7.12 Self-reported prevalence (%) of diagnosed chronic bone/ joint diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Arthritis	Rheumatism	Osteoporosis	Any bone/ joint disease1	Number	Arthritis	Rheumatism	Osteoporosis	Any bone/ joint disease1	Number	Arthritis	Rheumatism	Osteoporosis	Any bone/ joint disease1	Number
India	**7.0**	**4.7**	**0.6**	**11.7**	**40,682**	**10.7**	**7.6**	**1.3**	**18.8**	**31,384**	**8.7**	**6.0**	**0.9**	**15.0**	**72,066**
North															
Chandigarh	2.9	[0.5]	[0.2]	7.4	625	4.0	[1.7]	[1.5]	12.6	389	3.3	1.0	[0.7]	9.4	1,014
Delhi	4.1	1.4	[0.1]	6.9	822	5.9	2.0	-	14.3	495	4.8	1.6	[0.1]	9.7	1,317
Haryana	2.0	1.2	-	5.5	1,048	2.4	4.7	[0.3]	9.6	847	2.2	2.9	[0.2]	7.5	1,895
Himachal Pradesh	4.3	1.5	0.8	9.2	765	7.3	3.4	2.5	14.1	618	5.8	2.4	1.6	11.5	1,383
Jammu & Kashmir	19.7	3.4	0.6	23.8	881	21.9	6.8	[0.5]	27.1	730	20.8	5.1	0.5	25.4	1,611
Punjab	4.1	[0.3]	[0.2]	10.2	1,112	3.8	[0.1]	0.6	11.8	1,004	3.9	0.2	0.4	11.0	2,116
Rajasthan	4.6	3.6	1.3	8.4	1,161	7.6	6.2	2.1	14.8	1,077	6.1	4.9	1.7	11.6	2,238
Uttarakhand	3.6	2.2	0.3	12.3	715	3.5	3.5	[0.5]	15.6	641	3.6	2.8	0.4	13.9	1,356
Central															
Chhattisgarh	1.5	2.4	0.2	4.4	1,275	3.9	5.6	0.7	9.2	779	2.4	3.6	0.4	6.2	2,054
Madhya Pradesh	3.5	4.1	1.8	8.9	1,599	2.8	5.1	2.8	10.0	1,313	3.2	4.6	2.3	9.4	2,912
Uttar Pradesh	2.1	3.0	0.2	5.5	2,395	3.1	4.8	1.1	9.2	2,167	2.6	3.9	0.6	7.4	4,562
East															
Bihar	3.6	6.5	1.0	10.3	1,709	4.6	7.0	1.2	12.0	1,807	4.1	6.8	1.1	11.2	3,516
Jharkhand	2.1	1.9	[0.1]	5.5	1,294	3.7	2.2	0.9	8.0	1,168	2.9	2.1	0.5	6.7	2,462
Odisha	10.2	1.6	-	10.8	1,676	16.7	1.8	0.3	17.4	1,235	13.1	1.7	0.1	13.7	2,911
West Bengal	12.1	15.9	1.3	23.4	2,384	16.9	23.4	2.4	31.6	1,540	14.1	19.0	1.8	26.7	3,924
Northeast															
Arunachal Pradesh	3.0	[0.2]	[0.3]	4.3	897	9.6	[1.8]	[3.2]	13.0	318	4.6	0.6	1.0	6.5	1,215
Assam	2.2	0.9	-	3.5	1,548	3.0	1.2	-	4.7	814	2.5	1.0	-	3.9	2,362
Manipur	1.0	-	-	1.4	761	2.8	[0.1]	-	4.6	605	1.8	-	-	2.9	1,366
Meghalaya	1.4	0.4	-	1.4	556	3.7	0.9	-	3.7	411	2.3	[0.6]	-	2.3	967
Mizoram	3.2	1.0	-	4.3	714	5.8	3.4	[0.1]	8.8	531	4.4	2.1	[0.1]	6.4	1,245
Nagaland	[0.7]	[0.5]	-	0.7	708	[2.9]	[0.7]	-	3.2	604	1.7	[0.6]	-	1.9	1,312
Tripura	4.1	5.6	[0.5]	9.2	732	4.1	7.2	1.3	10.5	460	4.1	6.2	0.8	9.7	1,192
West															
Dadra & Nagar Haveli	8.2	1.3	-	12.0	635	16.1	2.0	[1.2]	24.3	450	11.3	1.6	[0.5]	16.8	1,085
Daman & Diu	10.1	3.7	[1.0]	19.5	557	13.7	6.6	[0.4]	29.7	429	11.8	5.0	0.7	24.3	986
Goa	8.1	1.5	[0.2]	9.2	788	14.1	2.1	[0.2]	15.9	634	10.8	1.8	[0.2]	12.2	1,422
Gujarat	4.2	3.8	0.7	10.8	1,344	8.8	6.7	1.3	20.4	984	6.3	5.1	0.9	15.1	2,328
Maharashtra	8.5	7.1	0.3	13.6	2,176	15.0	14.8	0.8	26.2	1,786	11.7	10.9	0.5	19.8	3,962

Continued

Continued

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Arthritis	Rheumatism	Osteoporosis	Any bone/ joint disease1	Number	Arthritis	Rheumatism	Osteoporosis	Any bone/ joint disease1	Number	Arthritis	Rheumatism	Osteoporosis	Any bone/ joint disease1	Number
South															
Andaman & Nicobar Islands	7.2	5.0	[0.7]	13.7	721	15.0	8.8	[0.8]	23.7	521	10.4	6.6	0.8	17.8	1,242
Andhra Pradesh	8.9	5.1	0.5	14.3	1,569	14.0	7.4	1.3	22.4	1,100	11.0	6.1	0.8	17.7	2,669
Karnataka	9.5	1.0	0.2	10.8	1,411	18.6	3.7	1.3	24.5	1,002	13.1	2.1	0.6	16.2	2,413
Kerala	12.5	3.4	2.5	16.9	1,277	19.1	8.6	4.3	28.2	1,206	15.9	6.1	3.4	22.8	2,483
Lakshadweep	6.3	1.1	1.1	8.2	637	12.0	1.2	1.1	16.0	500	9.0	1.1	1.1	11.9	1,137
Puducherry	11.7	0.8	[0.1]	15.3	787	15.7	2.6	0.8	22.3	638	13.6	1.7	0.5	18.6	1,425
Tamil Nadu	11.8	0.4	[0.5]	15.4	1,995	17.9	0.5	0.9	25.2	1,530	14.6	0.5	0.7	19.9	3,525
Telangana	9.2	8.6	0.6	17.9	1,408	20.1	11.4	1.3	32.7	1,051	14.0	9.8	0.9	24.5	2,459

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1]Bone /joint diseases include arthritis, rheumatism and osteoporosis (any one or more).

7.2.9 Cancer

Cancer is defined as any new and abnormal growth, specifically one in which cell multiplication is uncontrolled and progressive. In the LASI, respondents were asked 'Has any health professional ever told you that you had diagnosed cancer?' If the respondent answered yes, then a series of questions were asked about 'who diagnosed', 'when was it diagnosed' and 'which organ is affected by cancer'. Treatment information for cancer included type of treatment such as chemotherapy, surgery, radiation, medication, and palliative treatment in the past 2 years prior to the survey.

Table 7.13 presents the prevalence of cancer in India by background characteristics. Overall, the self-reported prevalence of cancer in India is 0.6% in older adults age 45 and above, 0.7% among elderly age 60 and above, and 0.5% among older adults age 45-59. Among elderly age 60 and above, the self-reported prevalence of diagnosed cancer is higher among women (0.8%) than among men (0.6%), in urban areas (1.1%) than in rural areas (0.5%), among widowed (0.9%) than currently married (0.6%), and those in the richest quintile (1.4%) than those in the poorest quintile (0.2%).

Table 7.14 presents the cross-state variations in the prevalence of cancer. The self-reported prevalence of diagnosed cancer is the highest in Himachal Pradesh (2.2%) followed by that in Kerala (1.6%), Uttarakhand (1.3%), and Tripura (1.2%). In Delhi, Manipur, Mizoram, Goa, Karnataka, and Telangana, the self-reported prevalence of cancer is almost twice higher among elderly age 60 and above compared to older adults age 45-59. On the other hand, cancer is prevalent in more than 1% of older adults age 45-59 in Himachal Pradesh (1.6%), Tripura (1.6%), Kerala (1.3%), Uttarakhand (1.2%), Andaman & Nicobar (1.2%), and Arunachal Pradesh (1.1%).

Key findings: chronic health conditions

- Overall, 28% of older adults age 45 and above in India reported that they have been diagnosed with cardiovascular diseases (CVDs). A third (35%) of elderly age 60 and above in India are diagnosed with CVDs. More than a half of elderly age 60 and above in Goa (60%), Kerala (57%), Chandigarh (55%), Andaman & Nicobar (51%), and Jammu and Kashmir (51%) reported that they have been diagnosed with CVDs.

- In India, 14% of elderly age 60 compared to 9% older adults age 45-59 reported that they have been diagnosed with diabetes mellitus. Diabetes mellitus is more prevalent among elderly men than women, currently married, more educated and elderly belonging to richest wealth quintile. Among elderly age 60 and above, diabetes mellitus is more prevalent in the demographically advanced states/UTs of Kerala (35%), Puducherry (28%), Lakshadweep (28%), Goa (27%), Delhi (26%), Tamil Nadu (26%), and Chandigarh (25%).

- Overall in India, among the elderly age 60 and above, the self-reported prevalence of diagnosed asthma is 5.9%, chronic obstructive pulmonary disease (COPD) 2.8% and bronchitis 1.6%. Eight percent of elderly age 60 and above reported any chronic lung diseases. Any chronic lung disease is more prevalent in the states/UTs of Rajasthan (15%), Puducherry (13%), Kerala (12%), West Bengal (11%), and Karnataka (10%).

- Overall, the self-reported prevalence of diagnosed any neurological/psychiatric problems among the elderly age 60 and above in India is 2.6% and that of depression is 0.8%. Elderly living with others (1.3%) and divorced/deserted/separated (1%) are more likely to be diagnosed with depression. The prevalence of neurological or psychiatric problems among the elderly is more than 5% in the states/UTs of West Bengal (8.1%), Telangana (7%), Puducherry (6.9%), and Jammu & Kashmir (5.3%).

- One in five (19%) elderly age 60 and above reported chronic bone/ joint diseases in which arthritis (11%) is a major contributor. Around a third of elderly reported bone/joint diseases in the states of Telangana (33%) and West Bengal (32%). In India, 0.7% of elderly age 60 and above have been diagnosed with cancer, and the prevalence of cancer is higher in the states of Himachal Pradesh (2.9%), Kerala (1.8%), Gujarat (1.5%), Uttarakhand (1.4%), and Mizoram (1.4%).

- CVDs, diabetes mellitus and respiratory diseases contribute to a major share of chronic health conditions among older adults as well as elderly age 60 and above. The prevalence of heart disease, stroke, diabetes mellitus, chronic lung disease and neurological problems are higher among elderly men; whereas, elderly women are more likely to be diagnosed with hypertension, anaemia, bronchitis, depression, Alzheimer's diseases and dementia, any bone/ joint disease and cancer.

Table 7.13 Self-reported prevalence (%) of diagnosed cancer or malignant tumour among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Self-reported prevalence of diagnosed cancer or malignant tumour					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	0.5	25,753	0.5	20,688	0.5	46,441
Urban	0.6	14,926	1.1	10,694	0.8	25,620
Sex						
Male	0.4	15,427	0.6	15,039	0.5	30,466
Female	0.7	25,252	0.8	16,343	0.7	41,595
Marital status						
Currently married	0.5	35,383	0.6	19,868	0.6	55,251
Widowed	1.0	3,864	0.9	10,694	0.9	14,558
Divorced/Separated/Deserted/Others	[0.3]	1,432	-	820	0.2	2,252
Living arrangement						
Living alone	0.5	689	0.1	1,618	0.2	2,307
Living with spouse and/or others	0.8	4,535	0.5	6,167	0.6	10,702
Living with spouse and children	0.5	30,194	0.7	13,461	0.5	43,655
Living with children and others	0.9	4,075	0.9	8,417	0.9	12,492
Living with others only	0.7	1,186	1.0	1,719	0.9	2,905
Religion						
Hindu	0.5	29,854	0.7	22,982	0.6	52,836
Muslim	0.7	4,926	0.7	3,720	0.7	8,646
Christian	0.9	4,058	0.6	3,138	0.8	7,196
Others	0.5	1,841	1.2	1,542	0.8	3,383
Caste/tribe						
Scheduled tribe	0.3	7,327	0.4	5,160	0.4	12,487
Scheduled caste	0.6	6,887	0.5	5,130	0.6	12,017
Other backward class	0.5	15,258	0.5	11,852	0.5	27,110
None of the above	0.7	11,207	1.3	9,240	1.0	20,447
Education						
No schooling	0.5	16,286	0.5	16,858	0.5	33,144
Less than 5 years complete	0.8	4,263	1.3	3,774	1.1	8,037
5-9 years complete	0.5	10,872	0.8	5,997	0.6	16,869
10 or more years complete	0.5	9,258	0.9	4,753	0.7	14,011
Work status						
Currently working	0.4	23,622	0.4	9,283	0.4	32,905
Worked in past but currently not working	0.8	4,565	0.8	13,329	0.8	17,894
Never worked	0.6	12,492	0.9	8,770	0.8	21,262
MPCE quintile						
Poorest	0.5	7,650	0.2	6,463	0.4	14,113
Poorer	0.5	8,033	0.4	6,459	0.5	14,492
Middle	0.4	8,104	0.5	6,399	0.5	14,503
Richer	0.7	8,497	1.1	6,160	0.9	14,657
Richest	0.7	8,395	1.4	5,901	1.0	14,296
Total	**0.5**	**40,679**	**0.7**	**31,382**	**0.6**	**72,061**

Note

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

Table 7.14 Self-reported prevalence (%) of diagnosed cancer or malignant tumour among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Self-reported prevalence of diagnosed cancer or malignant tumour					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**0.5**	**40,679**	**0.7**	**31,382**	**0.6**	**72,061**
North						
Chandigarh	0.7	625	[0.9]	389	0.7	1,014
Delhi	[0.1]	822	[0.7]	495	[0.3]	1,317
Haryana	0.7	1,048	0.9	847	0.8	1,895
Himachal Pradesh	1.6	765	2.9	618	2.2	1,383
Jammu & Kashmir	[0.2]	881	[0.3]	730	0.2	1,611
Punjab	0.6	1,112	0.7	1,004	0.6	2,116
Rajasthan	[0.2]	1,161	0.6	1,077	0.4	2,238
Uttarakhand	1.2	715	1.4	641	1.3	1,356
Central						
Chhattisgarh	[0.3]	1,275	[0.5]	779	0.4	2,054
Madhya Pradesh	0.5	1,599	[0.2]	1,313	0.4	2,912
Uttar Pradesh	0.5	2,393	0.3	2,166	0.4	4,559
East						
Bihar	[0.2]	1,709	0.3	1,807	0.2	3,516
Jharkhand	1.0	1,294	0.7	1,168	0.8	2,462
Odisha	0.5	1,676	0.4	1,235	0.5	2,911
West Bengal	1.0	2,383	1.2	1,540	1.1	3,923
Northeast						
Arunachal Pradesh	1.1	897	[0.5]	318	1.0	1,215
Assam	0.3	1,548	[0.4]	813	0.3	2,361
Manipur	[0.4]	761	1.1	605	0.7	1,366
Meghalaya	[0.2]	556	[0.2]	411	[0.2]	967
Mizoram	0.6	714	1.4	531	0.9	1,245
Nagaland	[0.1]	708	[0.1]	604	[0.1]	1,312
Tripura	1.6	732	0.6	460	1.2	1,192
West						
Dadra & Nagar Haveli	[0.2]	635	[0.2]	450	[0.2]	1,085
Daman & Diu	[0.2]	557	[0.7]	429	0.4	986
Goa	[0.4]	788	[0.9]	634	0.6	1,422
Gujarat	0.8	1,344	1.5	984	1.1	2,328
Maharashtra	0.7	2,176	0.8	1,786	0.8	3,962
South						
Andaman & Nicobar Islands	1.2	721	1.1	521	1.1	1,242
Andhra Pradesh	0.4	1,569	0.3	1,100	0.4	2,669
Karnataka	0.3	1,411	1.2	1,002	0.7	2,413
Kerala	1.3	1,277	1.8	1,206	1.6	2,483
Lakshadweep	[0.5]	637	[0.6]	500	0.5	1,137
Puducherry	[0.3]	787	[0.4]	638	0.3	1,425
Tamil Nadu	0.6	1,995	0.1	1,530	0.4	3,525
Telangana	[0.2]	1,408	0.6	1,051	0.4	2,459

Note

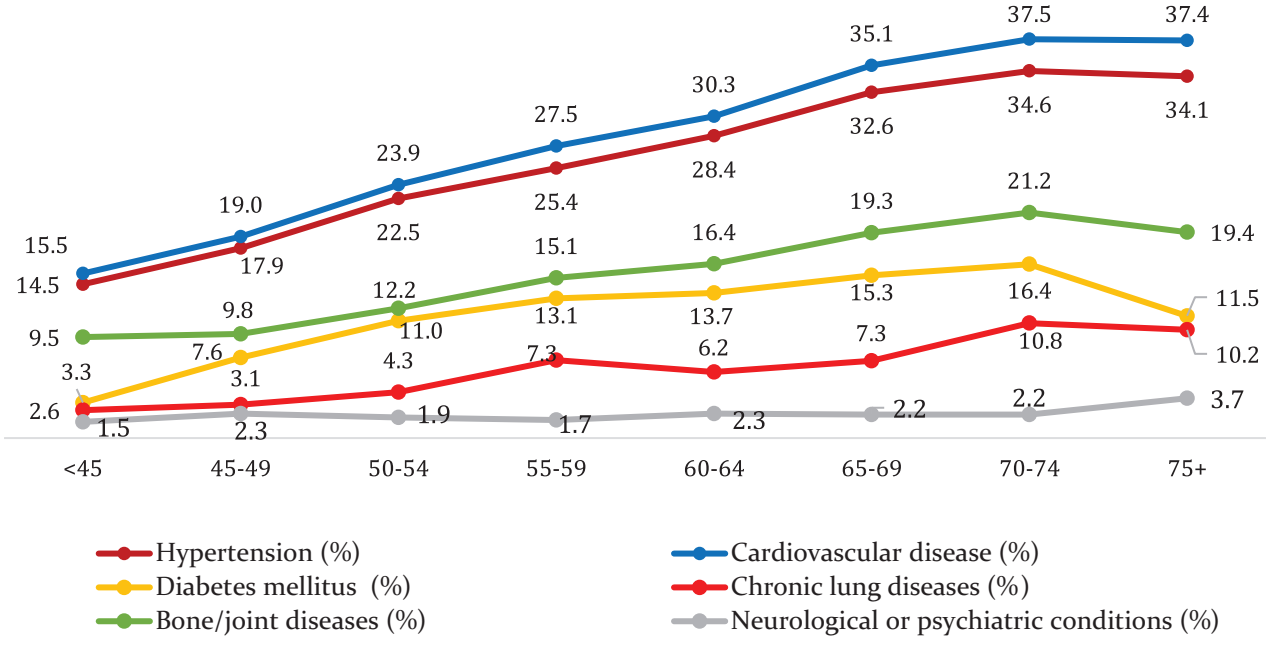
** Including spouse irrespective of age, "*[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

Age patterns in the self-reported prevalence of chronic health conditions

Along with factors such as urbanisation, changing dietary patterns, and health risk factors, age is one of the most important predictors of chronic diseases. Increasing age is associated with higher risk of chronic health conditions. However, the onset of chronic diseases differs according to demographic and epidemiological transition as well as behavioural and health risk profile of the population of countries.

Figure 7.10 shows the age pattern in self-reported diagnosed chronic health conditions in India. The prevalence of chronic health conditions increases markedly with age. The age-associated increase in the prevalence of chronic health conditions is more profound for cardiovascular and lung diseases in India. The prevalence of CVD shows a two-fold increase from older adults age 45-49 (19%) to elderly age 70-74 (38%). The prevalence of diabetes also shows a two-fold increase from older adults age 45-49 (7.6%) to 16% among elderly age 70 and above.

Figure 7.10 Self-reported diagnosed major chronic health conditions among older adults by age, India, LASI Wave 1, 2017-18



7.2.10 Treatment rates

In the LASI, survey participants who answered yes for a given diagnosed chronic disease/condition were asked about current treatment and specific treatment/management for each disease/condition. These include salt and diet restrictions in hypertension; special diets and injectable insulin in diabetes; type of treatment including chemotherapy, surgery, radiation, and palliative care in cancer; physical/occupational therapy in stroke; and tranquilizer/antidepressants in neurological or psychiatric conditions. Treatment rates for chronic diseases are calculated for those respondents who reported that they were diagnosed with a disease or condition.

Table 7.15 presents the treatment rates for hypertension, chronic heart diseases, stroke, and diabetes mellitus by background characteristics. Overall, more than three quarters of older adults age 45 and above are currently taking treatment for their diagnosed diseases of hypertension (72%), chronic heart diseases (73%), and diabetes mellitus (82%), whereas only 58% of older adults diagnosed with stroke are on treatment. Treatment rates are higher among elderly age 60 and above than older adults age 45-59. The treatment rates for chronic heart diseases and stroke are higher among older adult men compared to women, while the treatment rate for diabetes mellitus is higher among older adult women than men. Among older adults age 45 and above, the treatment rate for hypertension does not vary by sex. Among the elderly age 60 and above, treatment rates for chronic diseases (i.e., hypertension, chronic heart diseases, stroke and diabetes mellitus) are higher in urban areas than in rural areas; in those with 10 or more years of schooling than those with no schooling; and those in the richer/richest MPCE quintile than those in poorest MPCE quintile. With respect to treatment rate for stroke according to work status, it is very low among older adults age 45-59 years who never worked (36%) and is also lower among currently working elderly age 60 and above (42%).

Cross-state variations in treatment rates for hypertension, chronic heart diseases, stroke, and diabetes mellitus are presented in Table 7.16. The treatment rates for hypertension is higher in most of the South Indian and West Indian states where more than 80% of those diagnosed received treatment. In contrast, the treatment rate for hypertension is less than 50% in Mizoram (49%), Bihar (48%), and Arunachal Pradesh (30%). More than 90% of elderly age 60 and above are currently on treatment for hypertension in Goa (97%), Andhra Pradesh (92%), Puducherry (92%), and Kerala (91%). The treatment rate for chronic heart diseases among older adults age 45 and above ranges from 92% in Lakshadweep to 43% in Tripura. The treatment rate for stroke is comparatively lower in the eastern and northeast Indian states/UTs. The proportion of older adults age 45 and above who were diagnosed with diabetes and currently receiving treatment for diabetes mellitus ranges from 70% to 90% across India, except for Gujarat (68%), Assam (63%), and Arunachal Pradesh (44%).

Table 7.17 presents the treatment rates for chronic lung diseases, bone diseases, neurological and psychiatric diseases, and cancer by background characteristics. Overall, treatment seeking is lower for neurological and psychiatric diseases conditions (47%) in India. Among older adults age 45 and above, the treatment rate is 70% for chronic lung disease, 76% for cancer, and 54% for bone diseases. The treatment rates for chronic lung diseases, bone diseases, and cancer are higher in elderly age 60 and above than that in older adults age 45-59. In contrast, the treatment rate for neurological or psychiatric diseases is lower among elderly age 60 and above (41%) than in older adults age 45-59 (53%). Among older adults age 45-59, the treatment rate for chronic lung diseases, neurological & psychiatric diseases and cancer is higher among those living in urban areas than those living in rural areas. Among elderly age 60 and above, the treatment rate for cancer is higher among women than among men, whereas the treatment rate for neurological and psychiatric diseases is higher among men than among women.

Table 7.18 presents the cross-state variations in treatment rates for chronic lung disease, bone disease, neurological and psychiatric diseases, and cancer. The treatment rate for chronic lung diseases ranges from more than 85% in Delhi (90%) to less than 25% in Arunachal Pradesh (24%) and Mizoram (18%). More than three quarters of elderly age 60 and above are currently receiving treatment for bone diseases in Delhi (78%), Assam (77%), and Jammu & Kashmir (76%). The treatment rate for neurological and psychiatric conditions among elderly age 60 and above are currently taking treatment in West Bengal (29%), Mizoram (25%) Andaman & Nicobar (21%), and Nagaland (3%). Overall, across the states/UTs, more than half of older adults age 45 and above are currently taking treatment for cancer except in Assam where the treatment rate is only 25%.

Key findings: age pattern of chronic health conditions and treatment rates

- Age-associated rise in the prevalence of chronic health conditions is steady and consistent and more pronounced for cardiovascular and lung diseases. Age is also associated with an increased risk of experiencing more than one chronic health conditions at the same time.

- Overall in India, around three quarters of elderly age 60 and above who were diagnosed with chronic conditions have been treated for hypertension (77%), chronic heart diseases (74%), diabetes mellitus (83%), chronic lung diseases (72%) and cancer (75%); more than half of elderly have been treated for stroke (58%) and bone/joint diseases (56%); whereas, the treatment rate for neurological & psychiatric diseases among the elderly is the lowest (41%).

- More than 90% of the elderly age 60 and above who reported that they have been diagnosed with hypertension are currently on treatment for hypertension in the states/UTs of Goa (97%), Andhra Pradesh (92%), Puducherry (92%) and Kerala (91%). The treatment rate for hypertension is lower in Arunachal Pradesh (28%), Bihar (54%), Mizoram (54%), Uttarakhand (60%), Haryana (60%), Nagaland (61%), Uttar Pradesh (63%), Rajasthan (65%), Himachal Pradesh (67%), and Jharkhand (69%). The proportion of the elderly age 60 and above diagnosed with diabetes mellitus who are currently receiving treatment for diabetes mellitus ranges from 70-90% across states of India, except for Gujarat (69%), Assam (67%), Uttar Pradesh (67%), Mizoram (64%) and Arunachal Pradesh (36%).

- The treatment rate for all chronic health conditions is higher among elderly in urban areas than those in rural, those with 10 or more years of schooling than those with no schooling and those in the richest than the poorest MPCE quintile.

Table 7.15 Treatment rate1 for hypertension, chronic heart diseases, stroke and diabetes mellitus among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Hypertension				Chronic heart diseases				Stroke				Diabetes mellitus			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
Place of residence																
Rural	56.5	70.7	64.7	10,919	60.5	66.6	64.4	1,207	45.0	51.8	49.9	712	75.3	76.8	76.2	3,762
Urban	74.1	86.7	81.1	8,958	81.4	82.2	82.0	1,234	69.7	71.9	71.1	508	86.0	88.9	87.6	4,952
Sex																
Male	64.8	75.8	71.6	7,535	69.9	74.8	73.4	1,280	63.6	59.5	60.9	720	81.4	80.9	81.1	4,051
Female	64.1	78.4	71.8	12,342	68.9	73.6	71.8	1,161	41.2	57.1	52.6	500	81.2	85.4	83.5	4,663
Marital status																
Currently married	63.7	76.3	69.6	14,043	67.2	73.2	70.9	1,832	54.5	59.0	57.2	876	81.2	83.2	82.2	6,589
Widowed	70.6	79.1	77.5	5,256	81.9	76.0	77.2	557	56.5	56.7	56.7	315	81.7	83.3	83.0	1,860
Divorced/Separated/Deserted/ Others	56.9	71.8	63.7	578	51.8	83.9	69.4	52	81.2	86.0	83.9	29	84.6	82.5	83.5	265
Living arrangement																
Living alone	69.8	74.3	73.5	728	51.7	85.5	79.1	71	[100]	42.5	45.0	32	75.5	79.7	79.1	269
Living with spouse and/or others	69.7	75.7	73.8	3,110	62.0	64.3	63.9	444	50.7	56.3	55.1	197	80.6	82.8	82.1	1,625
Living with spouse and children	62.8	76.8	68.5	10,697	68.3	77.4	73.3	1,370	55.5	60.3	58.1	669	81.4	83.5	82.3	4,877
Living with children and others	68.2	80.5	77.8	4,454	83.5	76.6	78.1	467	51.8	62.7	61.7	254	81.9	84.4	83.8	1,604
Living with others only	61.5	72.1	69.3	888	48.5	66.8	62.8	89	72.0	44.4	47.4	68	83.2	79.8	80.5	339
Religion																
Hindu	61.8	76.9	70.6	13,921	69.4	73.2	72.0	1,681	56.7	55.5	55.9	853	79.7	82.8	81.5	6,116
Muslim	73.4	78.4	75.8	2,931	64.7	81.0	74.9	490	38.7	73.0	60.9	186	85.3	85.0	85.2	1,344
Christian	71.4	84.5	79.6	1,801	86.3	79.8	82.8	161	53.3	61.8	61.1	106	85.2	85.9	85.7	803
Others	67.1	78.2	73.6	1,224	55.7	63.6	61.9	109	88.6	64.9	71.0	75	88.4	84.3	85.8	451
Caste/tribe																
Scheduled tribe	51.3	67.5	60.0	2,424	48.5	65.1	57.6	170	50.0	51.9	51.3	164	71.3	75.5	73.7	857
Scheduled caste	60.5	69.7	65.4	3,073	78.6	61.1	68.8	346	45.7	45.9	45.8	217	80.6	77.9	79.1	1,148
Other backward class	67.2	78.1	73.3	7,436	67.3	77.1	74.3	911	63.8	61.4	62.1	425	83.0	85.7	84.5	3,509
None of the above	64.5	81.4	74.6	6,944	68.0	76.0	73.3	1,014	51.7	63.7	60.2	414	79.8	82.5	81.4	3,200
Education																
No schooling	60.2	71.4	66.9	8,343	70.1	68.2	68.9	823	55.1	52.1	52.9	514	79.4	77.4	78.2	2,654
Less than 5 years complete	64.4	78.8	73.6	2,261	55.7	76.5	69.9	289	35.7	63.2	56.1	160	78.5	79.2	78.9	1,027
5-9 years complete	62.8	82.4	73.1	4,811	66.4	68.6	67.7	682	62.8	62.2	62.4	285	81.4	88.2	85.4	2,349
10 or more years complete	72.9	85.3	79.3	4,462	78.6	84.0	82.6	647	55.2	68.8	64.3	261	84.3	87.1	85.8	2,684
Work status																
Currently working	61.5	67.4	63.6	6,349	64.2	66.5	65.2	659	54.4	41.6	48.0	257	81.5	78.8	80.6	2,713
Worked in past but currently not working	70.0	78.4	76.4	6,402	76.9	74.8	75.2	1,018	68.1	60.1	61.9	666	82.4	81.1	81.4	2,990
Never worked	65.2	81.6	74.7	7,126	70.2	77.4	75.2	764	35.6	64.6	54.3	297	80.5	88.8	85.2	3,011

Continued

Continued

Background characteristics	Hypertension				Chronic heart diseases				Stroke				Diabetes mellitus			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
MPCE quintile																
Poorest	52.0	69.6	62.9	2,956	61.8	66.3	64.8	331	50.4	37.1	40.7	183	79.4	77.4	78.2	1,181
Poorer	57.5	75.2	67.6	3,551	68.9	75.0	72.4	372	39.4	56.6	51.7	228	74.1	79.0	76.9	1,419
Middle	64.4	75.7	70.8	4,006	74.1	66.7	68.9	467	59.6	61.8	61.0	253	76.4	81.5	79.3	1,694
Richer	64.8	81.4	74.4	4,485	59.9	68.8	65.8	548	60.4	66.0	64.2	252	80.9	87.0	84.6	2,012
Richest	75.4	82.9	79.3	4,879	76.6	85.5	82.6	723	61.4	66.8	65.2	304	88.7	86.9	87.8	2,408
Total	**64.3**	**77.4**	**71.7**	**19,877**	**69.3**	**74.2**	**72.6**	**2,441**	**55.2**	**58.4**	**57.5**	**1,220**	**81.3**	**83.2**	**82.4**	**8,714**

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1]Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem

Table 7.16 Treatment rate1 for hypertension, chronic heart diseases, stroke and diabetes mellitus among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Hypertension				Chronic heart diseases				Stroke				Diabetes mellitus			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
India	**64.3**	**77.4**	**71.7**	**19,877**	**69.3**	**74.2**	**72.6**	**2,441**	**55.2**	**58.4**	**57.5**	**1,220**	**81.3**	**83.2**	**82.4**	**8,714**
North																
Chandigarh	72.4	86.3	79.5	397	58.5	84.1	78.0	80	86.2	58.7	67.7	19	84.8	91.9	88.2	220
Delhi	50.6	79.8	65.4	430	67.6	91.0	83.9	57	[67.0]	91.0	88.7	12	89.3	89.7	89.6	230
Haryana	47.6	59.6	53.9	709	74.7	79.3	77.6	65	[24.8]	54.2	46.2	13	84.0	85.9	85.1	156
Himachal Pradesh	56.4	67.4	62.7	429	55.6	81.4	74.5	66	93.7	47.0	63.2	27	71.0	75.2	73.6	161
Jammu & Kashmir	82.5	86.5	84.9	615	82.5	83.1	82.8	135	67.0	77.5	75.9	31	88.5	91.9	90.5	135
Punjab	70.8	77.5	74.5	898	74.8	84.1	81.5	91	76.1	54.0	61.6	46	88.5	90.6	89.8	319
Rajasthan	50.5	65.2	59.0	596	73.5	72.2	72.8	59	60.5	44.9	50.4	28	70.1	83.1	77.5	178
Uttarakhand	54.5	60.2	57.5	365	69.1	79.1	76.2	45	[33.9]	59.1	49.0	13	67.9	74.2	71.4	126
Central																
Chhattisgarh	61.3	75.9	68.4	316	-	72.9	60.4	12	42.4	74.3	58.1	29	79.9	86.0	83.1	135
Madhya Pradesh	53.7	72.0	63.5	585	68.2	83.6	76.5	73	63.0	80.6	75.3	29	70.6	84.5	79.4	173
Uttar Pradesh	49.1	62.6	56.1	946	83.0	78.3	79.8	77	48.1	64.1	59.2	88	71.9	66.6	68.9	328
East																
Bihar	38.1	54.3	47.9	883	57.1	60.3	59.6	137	[26.4]	47.9	42.0	46	69.4	69.9	69.7	254
Jharkhand	55.6	68.9	63.6	498	73.0	69.7	70.9	48		30.8	30.8	13	74.5	77.3	76.3	207
Odisha	57.8	72.5	66.8	581	55.3	91.9	74.8	35	[50.8]	59.4	57.6	35	70.9	77.9	74.9	229
West Bengal	68.7	80.7	75.1	1,179	70.1	56.7	62.2	222	38.9	49.3	46.2	149	81.5	77.0	79.3	487
Northeast																
Arunachal Pradesh	30.9	27.9	29.9	225	[92.4]	-	[76.7]	4	[44.2]	[10.4]	32.4	11	48.4	35.9	44.3	57
Assam	52.5	74.2	63.2	664	49.5	72.8	62.6	55	79.3	59.6	64.6	30	59.4	66.5	62.5	159
Manipur	54.2	75.1	65.8	351	58.1	80.2	72.6	34	54.1	45.7	48.2	31	75.7	76.7	76.2	129
Meghalaya	71.4	82.0	77.5	237	[90.5]	[44.4]	64.4	10	[100]	[100]	100	5	94.6	85.7	88.5	33
Mizoram	39.7	54.4	48.5	291	54.4	75.8	63.1	15	[12.7]	44.1	32.9	17	82.8	63.8	70.9	96
Nagaland	55.5	60.9	58.2	166	[16.7]	[100]	[49.9]	6	[94.5]	53.3	62.3	15	70.9	82.8	77.2	59
Tripura	60.8	75.5	68.5	332	40.2	44.5	42.5	35	[68.4]	56.1	59.4	25	70.1	72.9	71.6	103
West																
Dadra & Nagar Haveli	69.6	70.5	70.1	155	86.4	[96.4]	90.4	11	[57.4]	29.2	51.6	9	72.3	88.2	79.5	88
Daman & Diu	68.4	87.1	79.0	308	74.1	79.6	77.8	27	[55.3]	92.9	78.3	13	89.2	87.9	88.5	171
Goa	91.9	97.3	95.4	561	76.4	93.2	90.5	53	75.3	83.1	81.9	37	92.1	94.3	93.3	316
Gujarat	52.5	76.5	66.4	551	60.3	61.2	60.9	76	47.1	43.7	45.0	43	66.2	69.0	68.0	261
Maharashtra	76.8	89.9	85.5	1,113	64.9	77.1	73.7	182	39.0	63.0	58.0	103	82.1	86.5	85.0	549

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State/Union Territory	Hypertension				Chronic heart diseases				Stroke				Diabetes mellitus			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
South																
Andaman & Nicobar Islands	70.0	83.5	77.0	468	[80.6]	49.5	55.9	29	60.1	70.0	65.2	22	80.3	80.4	80.3	220
Andhra Pradesh	83.1	92.0	88.1	870	65.3	69.4	67.5	94	91.9	76.9	81.4	45	91.7	92.6	92.2	470
Karnataka	83.5	88.2	86.0	538	80.8	84.0	83.0	85	72.6	57.4	63.7	47	89.4	91.9	90.6	307
Kerala	70.4	91.0	84.5	969	65.2	84.1	80.1	204	74.1	89.3	84.8	57	80.4	86.6	84.5	686
Lakshadweep	73.7	80.3	77.5	424	88.0	94.8	92.3	55	100	88.7	92.7	35	84.3	88.2	86.6	264
Puducherry	82.2	91.6	88.1	490	78.9	70.3	72.9	77	65.7	40.9	55.7	16	89.2	94.8	92.5	338
Tamil Nadu	70.7	80.0	76.3	995	70.7	78.6	75.7	136	74.4	49.6	59.8	45	87.2	90.8	89.3	764
Telangana	85.7	88.8	87.6	742	77.0	73.9	74.9	51	[43.9]	80.0	71.6	36	93.4	90.6	92.0	306

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1]Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem

Table 7.17 Treatment rate1 for chronic lung diseases, bone/joint diseases, neurological & psychiatric diseases and cancer among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Chronic lung diseases				Bone/joint diseases				Neurological & psychiatric diseases				Cancer			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
Place of residence																
Rural	62.5	68.3	66.2	2,541	52.4	52.3	52.4	6,313	50.7	36.4	42.4	949	71.4	61.9	66.9	265
Urban	77.4	79.2	78.4	1,360	52.5	61.9	57.9	3,882	55.5	54.3	55.0	620	87.3	90.1	89.0	207
Sex																
Male	69.8	71.4	70.8	1,896	41.2	52.0	48.3	3,451	57.0	49.0	52.5	700	71.2	71.5	71.4	163
Female	66.7	71.7	69.6	2,005	56.8	57.7	57.3	6,744	49.7	35.0	42.1	869	78.9	77.6	78.3	309
Marital status																
Currently married	67.0	71.1	69.1	2,768	51.2	55.7	53.3	7,179	52.9	46.3	50.0	1,073	74.0	65.7	70.5	356
Widowed	79.2	71.9	72.9	1,022	62.7	55.7	56.8	2,712	49.0	32.9	35.7	407	90.0	87.3	88.0	109
Divorced/Separated/Deserted/ Others	57.7	79.2	68.1	111	50.4	43.5	47.3	304	55.6	58.8	57.1	89	[100]	0.7	82.7	7
Living arrangement																
Living alone	60.1	62.7	62.2	132	56.3	59.0	58.5	416	38.4	30.7	32.1	60	100	100	100	10
Living with spouse and/or others	81.9	73.7	77.2	654	47.8	56.2	53.0	1,755	61.5	49.8	53.8	255	84.7	57.7	72.0	88
Living with spouse and children	62.1	69.4	65.7	2,077	52.0	55.7	53.5	5,318	51.6	44.7	49.1	802	70.4	68.2	69.5	262
Living with children and others	79.9	75.9	76.5	858	62.8	55.3	56.8	2,227	46.3	34.4	36.9	343	88.7	84.3	85.5	92
Living with others only	70.1	62.3	64.3	180	47.5	48.3	48.1	479	63.8	40.0	48.3	109	100	96.2	97.4	20
Religion																
Hindu	68.4	71.3	70.2	2,929	51.4	54.3	53.1	7,690	50.1	39.4	44.3	1,172	78.9	78.1	78.5	335
Muslim	66.8	70.1	68.9	567	57.9	65.2	62.0	1,494	55.6	56.1	55.9	207	57.9	70.3	63.6	61
Christian	63.8	80.1	76.0	255	43.7	43.5	43.6	627	83.8	34.4	64.4	112	95.5	76.2	88.5	51
Others	66.3	73.6	70.7	150	62.8	58.4	60.3	384	40.0	47.9	43.9	78	88.5	44.1	57.7	25
Caste/tribe																
Scheduled tribe	66.7	62.2	63.8	438	41.4	44.2	42.9	1,020	34.9	38.9	37.3	173	81.0	75.0	77.9	53
Scheduled caste	62.9	69.2	66.6	723	55.6	52.1	53.6	1,678	51.8	31.3	39.5	264	55.8	66.2	60.0	68
Other backward class	69.7	71.0	70.5	1,636	49.2	53.6	51.7	4,303	52.7	43.7	48.0	657	83.4	76.1	80.0	157
None of the above	69.9	76.4	74.1	1,104	58.1	62.9	60.9	3,194	55.7	47.0	51.3	475	82.5	77.0	79.2	194
Education																
No schooling	65.0	65.8	65.5	1,869	55.1	55.1	55.1	4,958	54.6	35.1	42.0	735	67.0	72.8	70.0	172
Less than 5 years complete	60.9	72.7	68.7	524	53.4	52.7	53.0	1,256	60.2	54.5	57.2	175	73.9	88.9	82.8	69
5-9 years complete	65.6	78.0	72.1	939	52.9	51.3	52.1	2,270	56.1	45.6	51.8	383	84.7	63.2	74.3	127
10 or more years complete	80.5	84.3	82.5	569	45.0	65.6	55.1	1,711	38.8	53.6	44.9	276	91.5	76.5	84.2	104

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Background characteristics	Chronic lung diseases				Bone/joint diseases				Neurological & psychiatric diseases				Cancer			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
Work status																
Currently working	67.3	68.0	67.6	1,279	48.6	49.9	49.1	3,405	46.2	51.7	48.2	486	70.7	67.6	69.9	134
Worked in past but currently not working	71.5	71.4	71.4	1,568	58.8	57.1	57.5	3,334	69.9	42.5	50.7	600	76.3	76.1	76.2	168
Never worked	67.2	74.5	71.8	1,054	55.3	57.3	56.4	3,456	48.4	32.9	40.4	483	86.7	77.1	81.6	170
MPCE quintile																
Poorest	57.3	62.7	60.8	668	48.5	51.9	50.6	1,644	46.2	26.8	33.2	259	51.5	85.7	61.7	55
Poorer	64.6	64.3	64.4	763	53.6	52.1	52.8	1,906	60.4	37.1	48.6	285	96.3	83.8	90.8	75
Middle	69.0	74.7	72.4	797	53.5	55.2	54.4	2,026	57.4	49.4	52.8	315	61.3	57.5	59.3	81
Richer	68.0	73.0	70.9	810	55.1	53.7	54.3	2,264	61.6	46.7	53.8	329	83.1	89.4	86.7	104
Richest	76.3	81.3	79.2	863	50.6	64.5	58.2	2,355	37.2	48.6	42.1	381	86.3	64.5	73.2	157
Total	**68.1**	**71.5**	**70.2**	**3,901**	**52.5**	**55.5**	**54.2**	**10,195**	**52.6**	**41.4**	**46.6**	**1,569**	**77.0**	**75.1**	**76.0**	**472**

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1]Treatment rate refers to older adults who are currently taking any medication/treatment for the diagnosed condition/problem

Table 7.18 Treatment rate1 for chronic lung diseases, bone/joint diseases, neurological & psychiatric diseases and cancer among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Chronic lung diseases				Bone/joint diseases				Neurological & psychiatric diseases				Cancer			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
India	**68.1**	**71.5**	**70.2**	**3,901**	**52.5**	**55.5**	**54.2**	**10,195**	**52.6**	**41.4**	**46.6**	**1,569**	**77.0**	**75.1**	**76.0**	**472**
North																
Chandigarh	54.4	84.8	71.8	35	71.4	62.2	66.6	85	[23.5]	44.7	37.6	24	71.6	[89.7]	79.9	9
Delhi	81.6	97.1	89.8	67	56.8	78.1	68.6	131	71.7	[61.6]	68.1	20	100	[100]	[100]	4
Haryana	72.4	66.3	68.4	130	62.1	67.1	65.2	160	69.4	54.2	59.6	19	89.4	100	95.3	15
Himachal Pradesh	74.9	72.3	73.0	54	56.3	60.2	58.5	159	[53.5]	87.1	69.4	11	100	67.7	80.0	22
Jammu & Kashmir	48.0	52.8	51.6	81	69.1	75.5	72.5	400	55.4	56.7	56.3	57	[100]	[100]	100	5
Punjab	57.4	66.9	62.6	100	57.8	61.9	60.0	303	42.8	36.3	39.7	61	100	[46.3]	71.5	14
Rajasthan	67.1	69.9	69.1	213	62.7	63.0	62.9	264	100	59.9	73.8	23	[100]	86.5	89.6	9
Uttarakhand	48.8	73.9	62.4	105	70.3	56.9	62.9	208	[100]	[84.4]	89.4	8	100	[38.3]	68.2	17
Central																
Chhattisgarh	52.5	60.6	56.7	50	67.3	53.0	59.4	128	[76.9]	[39.0]	51.8	13	[100]	[25.9]	61.6	7
Madhya Pradesh	68.9	61.0	63.9	172	51.2	35.7	43.4	300	45.4	50.4	48.6	57	85.4	[100]	89.3	12
Uttar Pradesh	61.5	74.3	69.9	282	56.3	62.7	60.3	402	36.8	44.8	41.3	82	93.1	72.3	84.2	22
East																
Bihar	65.6	70.4	68.8	229	50.0	55.9	53.4	442	[65.5]	[32.0]	45.3	18	[13.4]	100	71.5	9
Jharkhand	63.3	71.2	68.5	71	59.4	61.4	60.6	166	61.6	[41.7]	54.4	18	82.3	70.2	77.7	22
Odisha	66.0	64.9	65.3	104	45.2	57.6	52.2	417	41.1	38.8	39.9	36	66.2	100	79.7	15
West Bengal	61.5	70.8	67.1	286	59.4	47.5	53.7	1,025	54.6	29.0	40.7	221	35.1	74.3	52.5	41
Northeast																
Arunachal Pradesh	[34.7]	[9.8]	24.3	22	19.5	16.0	17.9	62	[58.9]	[57.3]	[58.1]	8	[68.5]	-	[59.1]	9
Assam	59.5	77.0	70.5	58	47.3	76.7	60.2	120	54.8	78.6	64.9	44	[29.2]	[19.0]	[25.0]	9
Manipur	60.1	36.2	46.5	43	67.7	62.6	64.2	43	[70.5]	[34.6]	53.2	10	[100]	100	100	8
Meghalaya	-	[46.5]	[33.9]	10	[18.7]	42.0	33.7	25	[36.1]	[39.3]	[38.5]	6	[100]	[100]	[100]	2
Mizoram	-	25.3	17.8	60	21.9	25.4	24.0	82	15.9	[24.7]	22.8	24	100	82.3	88.3	12
Nagaland	-	[49.3]	[40.9]	10	[41.7]	33.5	35.1	12	[100]	[2.8]	[8.0]	5	[77.6]	[100]	[87.9]	3
Tripura	51.4	58.7	55.2	80	40.9	44.6	42.4	123	85.7	68.0	73.6	17	100	[41.6]	88.0	9
West																
Dadra & Nagar Haveli	79.9	72.5	75.3	65	55.5	40.7	47.1	177	53.8	41.4	47.6	29	[100]	[26.5]	[70.1]	3
Daman & Diu	68.7	67.7	68.3	50	44.8	53.1	49.6	254	95.1	[78.9]	91.6	15	[42.8]	[68.9]	61.3	7
Goa	71.6	89.3	84.3	29	67.1	70.2	69.0	183	66.4	43.4	49.4	26	[100]	[87.1]	91.7	7
Gujarat	73.4	74.2	73.9	153	42.3	49.2	46.4	357	47.3	44.2	45.9	69	94.0	73.4	81.5	20
Maharashtra	55.4	65.9	62.2	204	61.7	62.6	62.3	753	73.5	41.6	52.9	43	91.0	54.4	71.7	38

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State/Union Territory	Chronic lung diseases				Bone/joint diseases				Neurological & psychiatric diseases				Cancer			
	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number	Age 45-59*	Age ≥ 60	Total	Number
South																
Andaman & Nicobar Islands	67.1	77.8	73.5	49	61.7	63.7	62.8	210	92.6	20.7	54.5	31	66.7	89.0	75.5	17
Andhra Pradesh	71.8	79.8	76.5	188	52.9	52.3	52.6	507	68.4	58.3	63.3	77	100	[70.2]	89.3	13
Karnataka	86.0	80.2	83.0	154	36.7	53.8	46.9	373	48.1	40.4	44.8	60	100	74.7	81.9	13
Kerala	45.2	68.5	61.2	228	56.2	60.6	59.1	557	53.9	56.9	55.1	60	88.1	88.7	88.5	38
Lakshadweep	71.8	88.0	82.9	62	65.4	64.8	65.0	148	70.6	[100]	76.8	13	[100]	[100]	100	7
Puducherry	59.5	60.5	60.1	152	44.5	49.8	47.5	286	24.4	31.2	29.6	62	[100]	[80.4]	89.3	8
Tamil Nadu	60.8	67.8	64.9	193	44.5	48.5	46.8	710	56.7	45.6	49.9	118	92.5	100	93.5	15
Telangana	68.3	78.6	74.2	112	54.0	56.4	55.4	623	45.2	37.3	41.0	184	[100]	82.4	86.6	11

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1]Treatment rate refers to older adults who are currently taking any medication/treatment for diagnosed condition/problem

7.2.11 Thyroid, gastrointestinal, and skin diseases

In the LASI, information was collected on other chronic health conditions that include thyroid disorders, gastrointestinal problems (gastroesophageal reflux disease, constipation, indigestion, piles, and peptic ulcer), and skin diseases. Table 7.19 shows the prevalence of thyroid, gastrointestinal, and skin diseases in India by background characteristics.

Overall, the self-reported prevalence of thyroid disorders, gastrointestinal problems, and skin diseases among older adults age 45 and above in India is 3.1%, 18%, and 5.2%, respectively (Table 7.19). The self-reported prevalence of thyroid disorders is higher among older adults age 45-59 (3.8%) than elderly age 60 and above (2.2%), among older adult women (4.4%) than among men (1.2%) age 45 and above, and among older adults residing in urban areas (5.7%) than in those residing in rural areas (1.8%). Among older adults age 45 and above, thyroid disorders are more prevalent among those with 10 or more years of schooling (5.6%) than those with no schooling (1.9%) and higher among those in the richest MPCE quintile (4.9%) than those in the poorest quintile (1.6%). Gastrointestinal problems are more prevalent among elderly age 60 and above (19%) than among older adults age 45-59 (17%) and in rural areas (19%) than in urban areas (15%). Among elderly age 60 and above, the prevalence of diagnosed gastrointestinal diseases is higher among currently married (20%), those living with spouse and children (21%), Muslim (22%), and those never worked (20%). With respect to skin diseases among the elderly age 60 and above, they are slightly more prevalent among men (6%) than women (5%), those living alone or living with spouse and children (6%), and those in religions other than Hindu, Muslim, and Christian (7%).

Cross-state differences in the prevalence rate of thyroid, gastrointestinal, and skin diseases are presented in Table 7.20. One in every ten older adults age 45-59 from Jammu & Kashmir (11%) and Kerala (11%) reported thyroid disorder. Among older adults age 45 and above, the self-reported prevalence of thyroid disorders is more than 5% in the states/UTs of Kerala (9.1%), Jammu & Kashmir (8.7%), Chandigarh (8.2%), Delhi (6.5%), West Bengal (5.4%), and Lakshadweep (5.4%). A markedly higher prevalence of gastrointestinal problems is reported among older adults age 45 and above in Tripura (33%), Odisha (33%), Haryana (32%), and Andaman & Nicobar (31%). The prevalence of skin diseases by state varies from 10% in Haryana and Punjab to less than 1% in Meghalaya.

Table 7.19 Self-reported prevalence (%) of diagnosed thyroid, gastrointestinal and skin diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Thyroid disorder	Gastrointestinal problem	Skin diseases	Number	Thyroid disorder	Gastrointestinal problem	Skin diseases	Number	Thyroid disorder	Gastrointestinal problem	Skin diseases	Number
Place of residence												
Rural	2.3	18.8	5.0	25,746	1.3	20.0	5.3	20,685	1.8	19.4	5.1	46,431
Urban	6.7	12.8	5.4	14,920	4.5	16.8	5.1	10,686	5.7	14.5	5.3	25,606
Sex												
Male	1.4	17.1	5.9	15,422	1.1	19.6	5.9	15,038	1.2	18.4	5.9	30,460
Female	5.2	16.6	4.7	25,244	3.3	18.6	4.6	16,333	4.4	17.4	4.6	41,577
Marital status												
Currently married	3.8	17.2	5.3	35,373	2.2	19.8	5.6	19,862	3.2	18.2	5.4	55,235
Widowed	3.8	14.7	3.1	3,862	2.4	18.3	4.7	10,688	2.7	17.5	4.3	14,550
Divorced/ Separated/ Deserted/ Others	2.7	11.6	4.8	1,431	0.3	12.4	4.1	821	1.8	11.9	4.5	2,252
Living arrangement												
Living alone	2.9	18.7	2.5	689	1.9	15.9	6.0	1,618	2.1	16.5	5.2	2,307
Living with spouse and/ or others	3.4	16.0	5.6	4,530	2.2	18.1	4.8	6,165	2.7	17.3	5.1	10,695
Living with spouse and children	3.8	17.3	5.3	30,189	2.3	20.6	6.0	13,457	3.3	18.3	5.5	43,646
Living with children and others	4.3	15.1	3.8	4,074	2.3	18.7	4.5	8,413	2.8	17.6	4.3	12,487
Living with others only	1.9	11.1	4.2	1,184	2.6	17.1	4.0	1,718	2.3	14.8	4.1	2,902
Religion												
Hindu	3.6	16.6	4.6	29,845	2.1	18.8	5.1	22,974	2.9	17.6	4.9	52,819
Muslim	5.1	17.6	8.6	4,924	3.2	21.7	5.1	3,720	4.3	19.4	7.1	8,644
Christian	4.1	17.7	3.9	4,058	3.7	16.9	5.7	3,136	3.9	17.3	4.7	7,194
Others	3.4	16.8	5.7	1,839	2.4	20.4	7.3	1,541	3.0	18.5	6.5	3,380
Caste/tribe												
Scheduled tribe	1.1	15.2	4.3	7,325	1.7	14.4	4.7	5,157	1.4	14.8	4.5	12,482
Scheduled caste	2.8	17.8	4.3	6,885	1.1	20.4	5.5	5,128	2.0	19.0	4.8	12,013
Other backward class	3.8	14.6	5.0	15,252	1.8	17.5	4.9	11,851	2.9	15.9	5.0	27,103
None of the above	5.3	20.3	6.2	11,204	3.9	22.1	5.8	9,235	4.7	21.1	6.0	20,439
Education												
No schooling	2.3	16.5	4.7	16,278	1.5	18.8	4.5	16,854	1.9	17.7	4.6	33,132
Less than 5 years complete	2.9	19.8	6.3	4,264	3.0	20.5	6.8	3,772	3.0	20.1	6.6	8,036
5-9 years complete	4.3	18.2	5.5	10,870	2.8	20.1	6.7	5,995	3.7	19.0	6.0	16,865
10 or more years complete	6.4	14.3	4.9	9,254	4.1	17.9	4.9	4,750	5.6	15.5	4.9	14,004
Work status												
Currently working	2.2	16.2	4.5	23,617	1.3	17.7	5.6	9,280	1.9	16.7	4.9	32,897
Worked in past but currently not working	6.0	17.0	7.9	4,563	2.1	19.4	5.1	13,325	3.0	18.8	5.8	17,888
Never worked	6.1	17.7	5.2	12,486	3.7	20.2	5.0	8,766	5.1	18.8	5.1	21,252
MPCE quintile												
Poorest	2.1	14.6	4.3	7,651	1.1	16.8	4.0	6,463	1.6	15.6	4.2	14,114
Poorer	2.8	16.5	5.2	8,030	1.9	20.1	5.2	6,459	2.4	18.2	5.2	14,489
Middle	3.3	17.0	4.6	8,100	1.6	18.8	5.6	6,395	2.5	17.8	5.0	14,495
Richer	5.0	18.7	5.0	8,493	3.5	19.8	5.7	6,157	4.3	19.2	5.4	14,650
Richest	5.7	16.9	6.5	8,392	3.7	20.4	5.9	5,897	4.9	18.4	6.3	14,289
Total	**3.8**	**16.8**	**5.1**	**40,666**	**2.2**	**19.1**	**5.2**	**31,371**	**3.1**	**17.8**	**5.2**	**72,037**

Note

** Including spouse irrespective of age*

Table 7.20 Self-reported prevalence (%) of diagnosed thyroid, gastrointestinal and skin diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Thyroid disorder	Gastrointestinal problem	Skin diseases	Number	Thyroid disorder	Gastrointestinal problem	Skin diseases	Number	Thyroid disorder	Gastrointestinal problem	Skin diseases	Number
India	**3.8**	**16.8**	**5.1**	**40,666**	**2.2**	**19.1**	**5.2**	**31,371**	**3.1**	**17.8**	**5.2**	**72,037**
North												
Chandigarh	9.7	14.4	5.5	624	5.8	19.4	6.2	386	8.2	16.4	5.8	1,010
Delhi	8.3	21.5	1.4	820	3.5	20.2	3.2	495	6.5	21.0	2.1	1,315
Haryana	4.2	27.6	8.0	1,048	1.5	36.8	11.7	847	2.9	32.0	9.8	1,895
Himachal Pradesh	3.1	23.4	7.3	765	3.8	21.6	7.7	618	3.4	22.6	7.5	1,383
Jammu & Kashmir	11.4	20.5	4.1	881	6.0	19.5	1.9	729	8.7	20.0	3.0	1,610
Punjab	5.4	22.7	8.2	1,112	2.1	27.8	10.8	1,004	3.8	25.2	9.5	2,116
Rajasthan	1.9	16.3	4.4	1,161	1.5	21.0	5.3	1,077	1.7	18.7	4.8	2,238
Uttarakhand	4.1	24.6	4.2	715	1.2	24.5	4.5	641	2.6	24.5	4.3	1,356
Central												
Chhattisgarh	0.9	13.8	6.7	1,275	[0.2]	10.2	3.9	779	0.6	12.4	5.6	2,054
Madhya Pradesh	4.6	10.6	4.6	1,598	3.3	11.5	5.2	1,313	4.0	11.0	4.9	2,911
Uttar Pradesh	1.7	20.6	3.4	2,395	0.9	21.6	4.3	2,167	1.3	21.1	3.8	4,562
East												
Bihar	2.7	27.7	3.4	1,708	1.7	28.9	4.9	1,807	2.2	28.3	4.2	3,515
Jharkhand	3.1	21.4	3.2	1,294	2.0	22.8	5.3	1,167	2.5	22.1	4.2	2,461
Odisha	2.5	32.9	8.5	1,674	1.3	32.4	10.1	1,235	1.9	32.7	9.2	2,909
West Bengal	6.3	20.8	8.5	2,384	4.1	24.7	7.8	1,539	5.4	22.4	8.2	3,923
Northeast												
Arunachal Pradesh	1.9	11.5	2.0	896	[0.8]	12.4	[1.7]	317	1.6	11.7	1.9	1,213
Assam	2.7	25.4	6.6	1,548	1.2	24.6	5.8	814	2.2	25.1	6.3	2,362
Manipur	2.4	16.1	6.1	761	4.3	22.0	3.6	604	3.3	18.8	4.9	1,365
Meghalaya	1.0	7.1	[0.8]	556	[0.6]	5.8	[1.1]	409	0.8	6.5	0.9	965
Mizoram	2.9	26.6	0.7	714	2.8	23.4	2.8	530	2.9	25.2	1.7	1,244
Nagaland	-	6.1	[0.1]	708	[0.2]	5.7	[3.0]	605	[0.1]	5.9	1.5	1,313
Tripura	3.6	34.0	10.8	732	[0.8]	30.5	4.5	459	2.5	32.6	8.3	1,191
West												
Dadra & Nagar Haveli	4.7	8.4	4.9	635	2.6	5.3	5.2	450	3.9	7.2	5.0	1,085
Daman & Diu	3.5	11.2	9.0	557	2.9	13.9	8.5	429	3.2	12.5	8.8	986
Goa	5.2	11.8	1.5	787	3.0	14.1	1.6	634	4.2	12.8	1.5	1,421
Gujarat	2.9	7.2	7.4	1,344	2.6	9.9	8.7	982	2.8	8.4	8.0	2,326
Maharashtra	2.6	14.3	3.9	2,175	2.6	14.5	3.4	1,785	2.6	14.4	3.6	3,960
South												
Andaman & Nicobar islands	4.6	31.3	8.9	720	2.9	29.8	8.5	521	3.9	30.7	8.7	1,241
Andhra Pradesh	5.5	24.2	3.4	1,569	2.2	26.6	4.7	1,101	4.1	25.2	4.0	2,670
Karnataka	4.3	5.8	5.0	1,410	2.1	9.7	2.9	1,002	3.5	7.4	4.2	2,412
Kerala	10.7	11.3	4.9	1,275	7.6	15.7	8.3	1,206	9.1	13.6	6.7	2,481
Lakshadweep	6.0	10.9	1.4	636	4.7	14.6	1.9	500	5.4	12.7	1.6	1,136
Puducherry	4.2	6.8	2.8	787	3.4	6.9	2.6	638	3.8	6.8	2.7	1,425
Tamil Nadu	3.1	5.1	1.9	1,995	1.7	6.5	1.3	1,530	2.5	5.7	1.7	3,525
Telangana	4.1	13.3	2.8	1,407	1.6	16.3	4.1	1,051	2.9	14.7	3.4	2,458

Note

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

7.3 FAMILY MEDICAL HISTORY

Family medical history represents the record of health information about a person and his/her close relatives. A complete record includes information about three generations of the respondent including children, brothers and sisters, parents, aunts and uncles, nieces and nephews, grandparents, and cousins. Families have many health-influencing factors in common, including their genes, environment, and lifestyle. Together, these factors can inform about the common medical conditions in the family. Family medical history can identify people with a higher risk of having common disorders, such as heart disease, high blood pressure, stroke, certain cancers, and diabetes. These complex disorders are influenced by a combination of genetic factors, environmental conditions, and lifestyle choices. A family history also can provide information about the risk of rare conditions caused by gene mutation, such as cystic fibrosis and sickle cell anaemia (NIH, 2019).

In the LASI, information was collected about the respondent's family (father, mother, brother, sister, grandparents, aunts/uncles, nephews, or niece) medical history to understand the genetic risk factors for hypertension, diabetes, heart disease, stroke, cancer, Alzheimer's disease, Parkinson's disease, and psychotic disorders.

Table 7.21 presents the family medical history by background characteristics. More than a fifth of older adults age 45 and above reported that they have at least one family member diagnosed with hypertension; 16% have family history of diabetes mellitus; 8%, heart disease; 6%, stroke and neurological/psychiatric conditions; and 5%, cancer. The proportion of older adults reporting having family members diagnosed with medical conditions are higher in urban areas for all the diseases/conditions, except neurological/psychiatric conditions. The percentage of older adults with family history of any of the chronic condition increases with educational attainment.

Cross-state variations among older adults having family medical history of different health conditions are shown in Table 7.22. The proportion of older adults with family history of hypertension is much higher in the states of Kerala (55%), Lakshadweep (43%), Assam (42%), Chandigarh (39%), and Goa (38%). In West Bengal (17%) and Manipur (11%), one in ten older adults reported having family members who experienced stroke. More than a quarter of older adults reported family history of diabetes mellitus, and this is more common in south Indian states besides Goa and Chandigarh. A higher proportion of older adults in Mizoram (20%) and Kerala (15%) reported that their family members have been diagnosed with cancer. The proportion of older adults reporting any neurological/psychiatric problems among family members ranges from 10% in Bihar to 0.5% in Nagaland.

Key findings: family medical history

- In India, nearly a quarter of older adults age 45 and above reported family history of hypertension; 16% reported diabetes mellitus, eight percent reported heart disease; whereas five to six percent have family history of stroke, cancer, and neurological/psychiatric conditions.
- Elderly residing in urban areas and with higher education are more likely to report family history of medical conditions.
- A higher proportion of older adults age 45 and above in Kerala reported family history of hypertension (55%), heart disease (21%) as well as diabetes mellitus (52%). A higher proportion of family members are diagnosed with stroke in West Bengal (17%); with neurological & psychiatric conditions in Bihar (10%); and with cancer in Mizoram (20%) and Kerala (15%).

Table 7.21 Percentage of older adults with family medical history by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age > 45*						
	Hypertension	Heart Disease	Stroke	Diabetes Mellitus	Neurological/ Psychiatric Conditions	Cancer	Number
Place of residence							
Rural	18.5	6.7	5.6	11.3	5.7	4.4	46,213
Urban	31.1	11.7	6.3	25.4	4.9	6.6	25,489
Sex							
Male	21.8	8.3	6.3	14.9	6.0	4.9	30,340
Female	23.0	8.2	5.5	16.3	5.1	5.3	41,362
Marital status							
Currently married	23.4	8.9	6.2	16.2	5.7	5.0	55,027
Widowed	19.1	6.0	4.8	13.8	4.8	5.7	14,436
Divorced/Separated/Deserted Others	25.2	7.3	5.3	16.9	4.8	4.2	2,239
Living arrangement							
Living alone	17.0	5.6	4.3	12.9	3.9	3.4	2,292
Living with spouse and/or others	20.9	8.5	5.2	15.8	5.0	4.4	10,555
Living with spouse and children	24.0	9.0	6.5	16.4	5.9	5.1	43,586
Living with children and others	20.8	6.2	5.1	15.0	5.0	6.4	12,410
Living with others only	18.6	6.9	4.3	11.3	5.0	3.3	2,859
Religion							
Hindu	21.8	7.7	5.7	15.2	5.4	5.1	52,581
Muslim	26.7	12.8	7.1	19.6	7.1	5.1	8,585
Christian	22.7	5.3	4.8	16.2	3.6	3.9	7,166
Others	25.9	9.3	7.1	16.1	3.2	6.3	3,370
Caste/tribe							
Scheduled tribe	11.7	4.0	3.7	6.1	3.6	3.2	12,420
Scheduled caste	18.3	6.8	5.4	10.7	5.7	3.9	11,948
Other backward class	24.0	8.2	5.5	18.0	5.7	5.4	26,989
None of the above	26.5	10.7	7.4	18.5	5.5	6.2	20,345
Education							
No schooling	15.6	5.9	4.6	9.7	5.3	3.5	32,920
Less than 5 years complete	22.1	8.5	7.5	14.7	6.8	6.2	8,007
5-9 years complete	27.2	9.6	7.1	19.9	5.7	6.8	16,807
10 or more years complete	35.7	12.7	6.9	27.7	5.0	7.0	13,968
Work status							
Currently working	22.4	8.3	5.9	14.8	5.4	4.8	32,776
Worked in past but currently not working	19.2	7.8	6.4	14.4	5.9	4.8	17,810
Never worked	25.8	8.5	5.3	18.6	5.2	5.9	21,116
MPCE quintile							
Poorest	16.0	5.4	4.4	9.6	5.3	3.2	14,034
Poorer	19.9	7.8	5.8	13.3	5.2	4.7	14,426
Middle	22.0	8.7	5.9	15.6	5.3	4.8	14,427
Richer	25.1	8.4	6.4	17.3	5.5	6.6	14,587
Richest	30.7	11.3	6.8	24.0	6.2	6.6	14,228
Total	**22.5**	**8.2**	**5.9**	**15.7**	**5.5**	**5.1**	**71,702**

Notes

** Including spouse irrespective of age*

[1]Family includes biological family members- father, mother, brother, sister, children and grandchildren.

Table 7.22 Percentage of older adults with family medical history, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age > 45*						
	Hypertension	Heart Disease	Stroke	Diabetes Mellitus	Neurological/ Psychiatric Conditions	Cancer	Number
India	**22.5**	**8.2**	**5.9**	**15.7**	**5.5**	**5.1**	**71,702**
North							
Chandigarh	39.2	13.5	4.2	30.3	7.8	7.5	1,003
Delhi	19.3	9.2	1.7	18.3	3.2	2.0	1,315
Haryana	25.6	7.1	1.4	13.8	2.8	3.8	1,893
Himachal Pradesh	21.3	10.2	4.4	14.0	7.6	5.6	1,380
Jammu & Kashmir	34.1	11.5	2.9	12.3	3.3	3.1	1,603
Punjab	25.8	10.6	5.6	17.9	2.9	6.9	2,105
Rajasthan	16.3	4.9	2.4	9.8	3.9	3.8	2,233
Uttarakhand	15.2	7.4	2.2	10.5	3.9	5.4	1,354
Central							
Chhattisgarh	10.0	2.1	4.5	6.5	2.8	2.4	2,052
Madhya Pradesh	13.0	5.9	3.7	9.3	5.8	3.5	2,907
Uttar Pradesh	11.8	5.0	4.6	9.1	5.0	4.1	4,520
East							
Bihar	23.9	8.3	2.9	13.6	10.1	4.0	3,512
Jharkhand	11.5	2.5	0.8	7.5	4.5	2.2	2,450
Odisha	16.2	3.1	2.6	9.5	4.1	3.5	2,898
West Bengal	33.2	17.2	17.4	19.0	7.7	7.1	3,897
Northeast							
Arunachal Pradesh	21.9	3.7	1.9	9.3	1.0	0.9	1,212
Assam	41.7	5.8	4.7	12.6	5.0	6.0	2,333
Manipur	27.2	8.1	10.5	14.7	4.8	8.4	1,362
Meghalaya	25.1	2.4	4.3	10.5	1.0	2.1	967
Mizoram	27.1	7.8	4.2	14.3	4.5	19.6	1,241
Nagaland	7.9	1.0	2.5	2.6	0.5	1.7	1,304
Tripura	19.9	5.2	8.9	10.3	2.7	5.0	1,177
West							
Dadra & Nagar Haveli	8.0	8.8	3.8	13.2	3.1	6.6	1,073
Daman & Diu	11.4	7.6	3.0	18.5	4.5	6.6	981
Goa	37.5	14.0	8.0	27.8	7.1	3.8	1,418
Gujarat	8.6	10.1	5.8	14.4	5.7	7.6	2,308
Maharashtra	24.9	10.0	8.3	16.3	4.1	5.4	3,952
South							
Andaman & Nicobar Islands	22.2	3.3	2.5	15.2	3.0	2.4	1,240
Andhra Pradesh	23.0	4.5	3.4	16.6	3.2	2.4	2,656
Karnataka	31.4	11.9	9.2	25.1	7.6	8.8	2,375
Kerala	54.5	20.5	7.8	51.9	7.9	15.0	2,460
Lakshadweep	42.7	7.3	4.6	34.2	2.0	3.4	1,130
Puducherry	30.3	8.4	1.8	26.9	3.2	3.1	1,422
Tamil Nadu	23.3	4.4	3.7	22.4	4.4	3.3	3,520
Telangana	22.3	3.3	2.2	13.1	3.2	3.3	2,449

Notes

** Including spouse irrespective of age*

[1]Family includes biological family members- father, mother, brother, sister, children and grandchildren.

7.4 SELF-REPORTED DIAGNOSED ORGAN-RELATED DISEASES

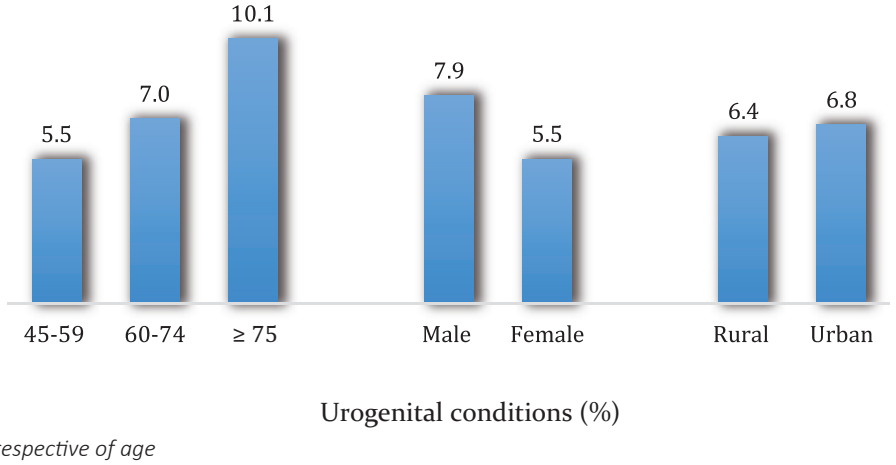
Ageing is also associated with decrease in functional capacity of different body organ systems as well as the sensory system. This section focuses on health conditions associated with the urogenital system along with the sensory system such as the eyes (vision), ears (hearing), and mouth (oral health).

7.4.1 Urogenital diseases or conditions

Urogenital diseases are conditions that usually affect the urinary system and genital area. These include nephritis and nephrosis, renal stones, benign prostatic hypertrophy, incontinence, kidney failure, genital infections, and urogenital prolapse. In the LASI, information was collected on chronic urogenital diseases or conditions including chronic renal failure, incontinence, kidney stones, and benign prostatic hyperplasia (BPH) in men. Further, information is also collected on whether the respondent was on dialysis in the preceding 2 years of survey. Symptomatic information of urinary incontinence while sneezing, coughing, laughing, or lifting heavy weights was also gathered.

Table 7.23 shows the prevalence of urogenital diseases or conditions by background characteristics. Overall, 6.5% of older adults age 45 and above are diagnosed with any urogenital condition: 0.6% reported chronic renal failure, 2.6% reported kidney stones, and 3.1% reported urinary incontinence. The self-reported prevalence of diagnosed any urogenital condition, incontinence, and chronic renal failure is higher in elderly age 60 and above (7.7%, 4.1%, and 0.8%, respectively) than in older adults age 45-59 (5.5%, 2.2%, and 0.4%, respectively). Among the elderly age 60 and above, the prevalence of any urogenital condition is higher among men (9.6%) than women (6%) and Muslims (9.7%) than religions other than Hindu, Muslim and Christian (4.8%).

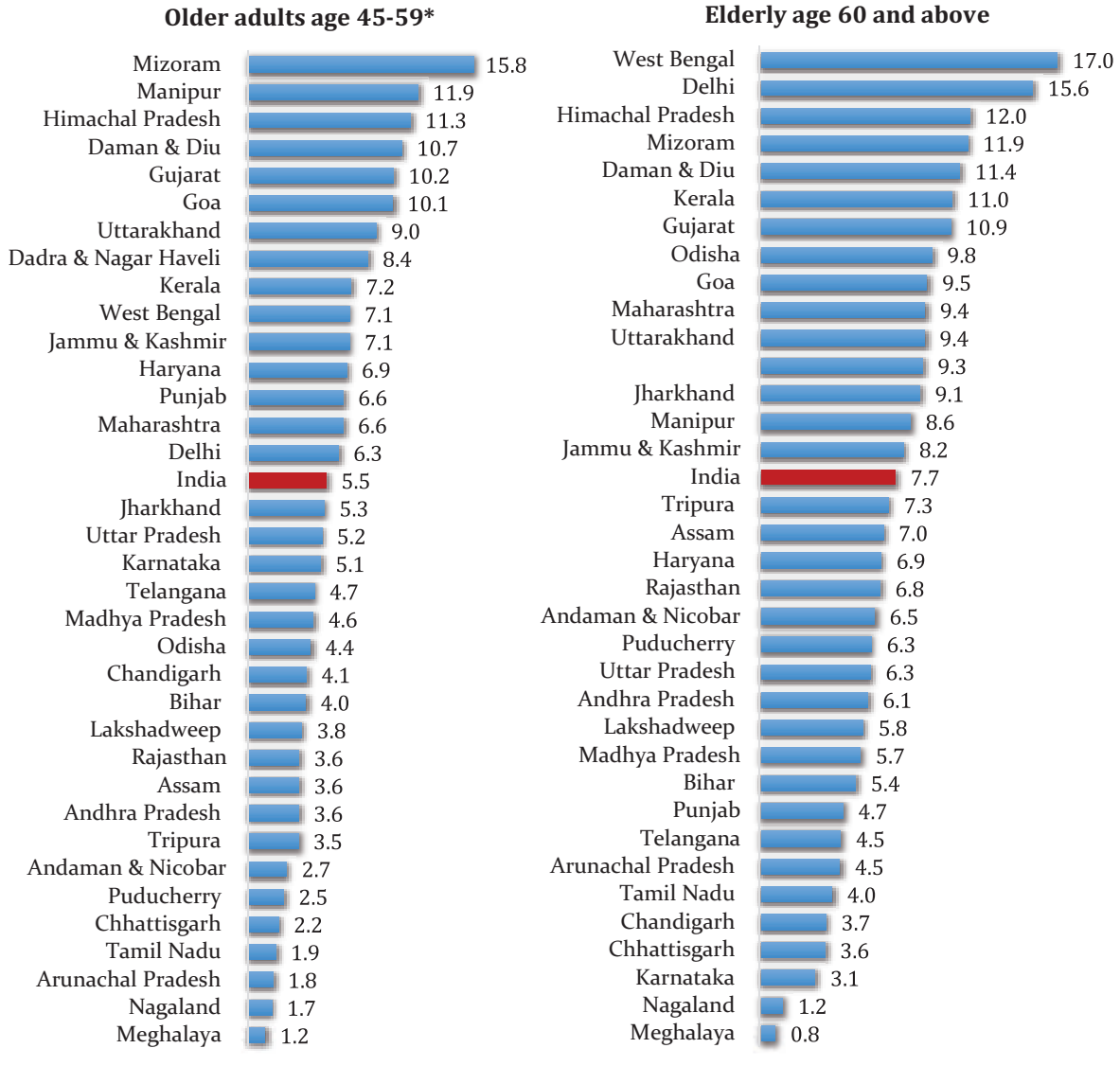
Figure 7.11 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

Table 7.24 presents the state-wise prevalence of urogenital diseases. The self-reported prevalence of any urogenital condition among older adults age 45 and above is more than 10% in Mizoram (14%), Himachal Pradesh (12%), West Bengal (11%), Gujarat (11%), Daman & Diu (11%), and Manipur (10%). Among elderly age 60 and above, the prevalence rate ranges from 17% in West Bengal to less than 1% in Meghalaya. Among the elderly age 60 and above, the self-reported prevalence of chronic renal failure is highest in the state of Mizoram (6%) followed by that in Goa (2.4%). Among elderly age 60 and above, the self-reported prevalence of urinary incontinence is highest in West Bengal (13%) followed by that in Delhi (11%), Odisha (7.4%), Jharkhand (6.6%), Dadra & Nagar Haveli (5.1%), Tripura (5.1%), and Kerala (5%). The self-reported prevalence of kidney stones is highest in Manipur (8.5%) followed by that in Daman & Diu (8.2%), Himachal Pradesh (7.4%), and Gujarat (7.1%).

Figure 7.12 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

Figure 7.13 shows the state-wise self-reported prevalence of benign prostatic hyperplasia (BPH) among elderly men. Overall, the benign prostatic hyperplasia (BPH) is prevalent in 2.1% of the elderly men age 60 and above. The prevalence of BPH among elderly men age 60 and above is highest in Arunachal Pradesh (7.4%) followed by that in West Bengal (4.4%), Jammu & Kashmir (3.8%), Kerala (3.8%), and Gujarat (3.7%).

Figure 7.13 Self-reported prevalence (%) of diagnosed benign prostatic hypertrophy (BPH) among elderly men age 60 and above, states/UTs, LASI Wave 1, 2017-18

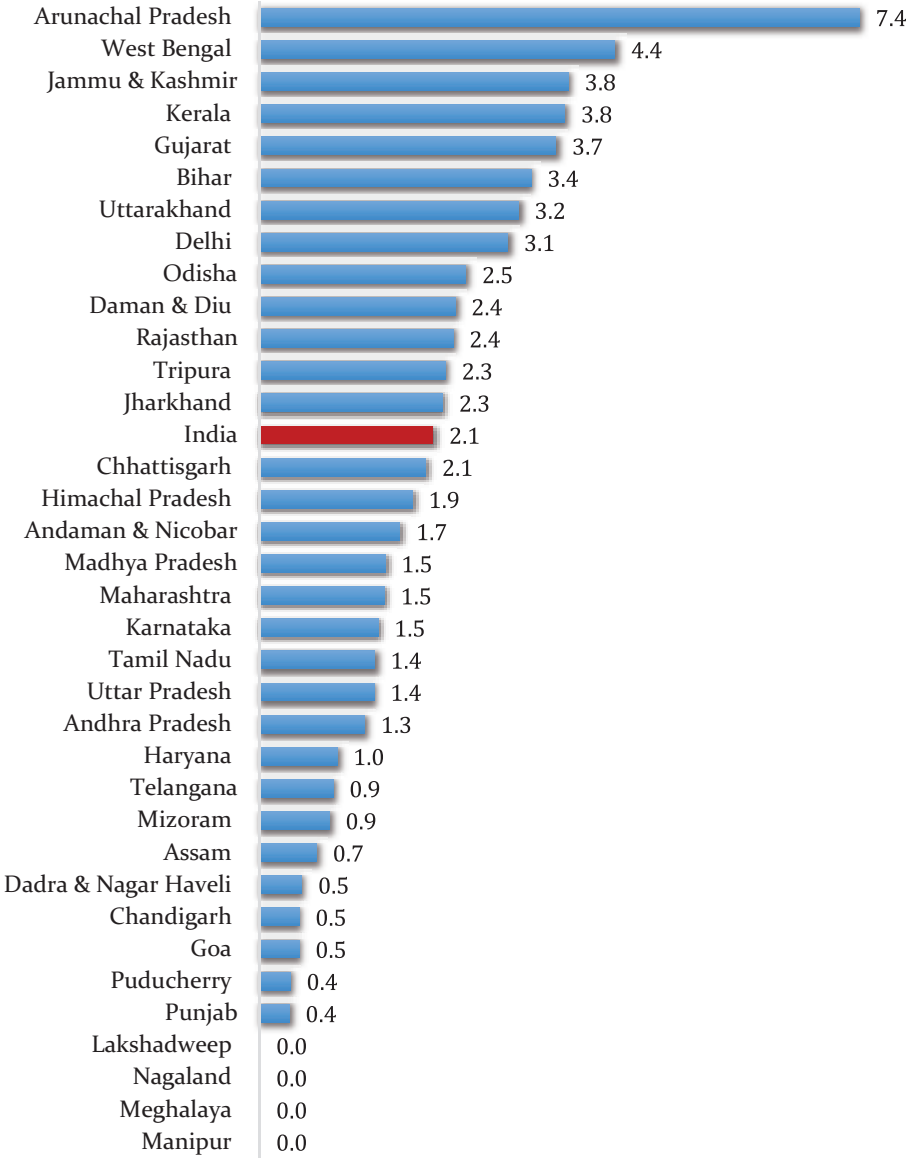


Table 7.23 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Chronic Renal Failure	Kidney Stones	Incontinence	Any Urogenital Condition	Number	Chronic Renal Failure	Kidney Stones	Incontinence	Any Urogenital Condition	Number	Chronic Renal Failure	Kidney Stones	Incontinence	Any Urogenital Condition	Number
Place of residence															
Rural	0.4	2.6	2.1	5.3	25,742	0.7	2.2	4.2	7.5	20,687	0.6	2.4	3.1	6.4	46,429
Urban	0.5	2.8	2.5	5.8	14,924	1.1	2.9	3.8	8.2	10,689	0.7	2.9	3.0	6.8	25,613
Sex															
Male	0.5	3.3	1.6	6.1	15,422	1.2	3.0	4.4	9.6	15,041	0.8	3.1	3.0	7.9	30,463
Female	0.4	2.3	2.6	5.1	25,244	0.5	1.9	3.8	6.0	16,335	0.5	2.2	3.1	5.5	41,579
Marital status															
Currently married	0.5	2.9	2.3	5.7	35,373	1.0	3.0	3.9	8.3	19,866	0.7	2.9	2.9	6.7	55,239
Widowed	0.4	1.6	2.0	4.1	3,863	0.5	1.5	4.4	6.7	10,688	0.5	1.5	3.9	6.1	14,551
Divorced/ Separated/ Deserted/ Others	0.2	1.2	2.2	3.7	1,430	0.6	2.8	3.4	7.2	822	0.3	1.8	2.6	5.0	2,252
Living arrangement															
Living alone	-	2.1	2.3	4.4	689	0.5	1.2	2.8	4.6	1,619	0.4	1.4	2.7	4.6	2,308
Living with spouse and/ or others	0.5	2.5	1.8	4.8	4,528	1.2	2.6	4.0	8.3	6,165	0.9	2.6	3.1	6.8	10,693
Living with spouse and children	0.5	3.0	2.3	5.9	30,191	0.9	3.2	3.8	8.3	13,461	0.6	3.0	2.8	6.6	43,652
Living with children and others	0.5	1.5	2.0	3.9	4,075	0.6	1.7	4.9	7.4	8,413	0.5	1.6	4.0	6.4	12,488
Living with others only	0.2	0.9	2.6	4.0	1,183	0.5	1.5	3.7	6.0	1,718	0.4	1.3	3.3	5.2	2,901
Religion															
Hindu	0.4	2.6	2.2	5.3	29,844	0.8	2.4	4.0	7.6	22,976	0.6	2.5	3.0	6.4	52,820
Muslim	0.3	2.6	3.1	6.0	4,924	1.4	2.6	6.0	9.7	3,720	0.8	2.6	4.3	7.6	8,644
Christian	0.8	4.2	1.2	6.2	4,058	0.7	2.0	2.6	6.5	3,139	0.7	3.2	1.8	6.3	7,197
Others	0.7	4.6	2.1	6.9	1,840	0.8	2.0	2.0	4.8	1,541	0.7	3.3	2.1	5.9	3,381
Caste/tribe															
Scheduled tribe	0.3	2.2	1.4	3.9	7,325	0.7	2.1	3.5	5.9	5,160	0.5	2.1	2.3	4.8	12,485
Scheduled caste	0.6	2.7	2.1	5.5	6,886	0.8	1.8	4.5	7.2	5,124	0.7	2.3	3.1	6.3	12,010
Other backward class	0.4	2.4	2.1	5.1	15,250	0.7	2.4	3.1	6.6	11,851	0.6	2.4	2.6	5.8	27,101
None of the above	0.4	3.4	2.9	6.7	11,205	1.1	3.0	5.6	10.3	9,241	0.7	3.2	4.1	8.4	20,446
Education															
No schooling	0.5	2.4	1.9	4.6	16,277	0.6	1.8	3.8	6.3	16,853	0.5	2.1	2.9	5.5	33,130
Less than 5 years complete	0.6	3.2	2.9	6.5	4,263	1.4	3.4	6.6	11.1	3,775	1.0	3.3	4.7	8.7	8,038
5-9 years complete	0.4	3.1	2.0	5.9	10,870	1.0	2.8	3.9	8.2	5,995	0.6	3.0	2.7	6.8	16,865
10 or more years complete	0.4	2.6	2.8	6.3	9,256	1.3	3.6	3.4	9.7	4,753	0.7	3.0	3.0	7.5	14,009

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Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Chronic Renal Failure	Kidney Stones	Incontinence	Any Urogenital Condition	Number	Chronic Renal Failure	Kidney Stones	Incontinence	Any Urogenital Condition	Number	Chronic Renal Failure	Kidney Stones	Incontinence	Any Urogenital Condition	Number
Work status															
Currently working	0.3	2.6	2.3	5.7	23,615	0.8	2.5	2.9	6.7	9,284	0.5	2.6	2.5	6.0	32,899
Worked in past but currently not working	0.7	4.2	2.2	6.8	4,565	1.0	2.5	4.8	8.9	13,326	0.9	2.9	4.2	8.4	17,891
Never worked	0.5	2.2	2.1	4.6	12,486	0.7	2.3	4.3	6.9	8,766	0.6	2.2	3.1	5.6	21,252
MPCE quintile															
Poorest	0.4	1.7	1.5	3.6	7,649	0.9	1.8	3.7	6.5	6,462	0.7	1.7	2.6	5.0	14,111
Poorer	0.3	3.0	1.7	5.2	8,032	0.4	2.1	3.8	6.7	6,460	0.3	2.6	2.7	5.9	14,492
Middle	0.4	2.4	2.2	5.1	8,100	0.9	2.5	4.6	8.2	6,396	0.6	2.4	3.3	6.5	14,496
Richer	0.6	3.4	2.2	6.2	8,494	1.0	2.8	4.1	8.1	6,156	0.7	3.1	3.0	7.1	14,650
Richest	0.6	3.1	3.6	7.3	8,391	1.2	3.2	4.4	9.4	5,902	0.8	3.1	3.9	8.2	14,293
Total	**0.4**	**2.7**	**2.2**	**5.5**	**40,666**	**0.8**	**2.4**	**4.1**	**7.7**	**31,376**	**0.6**	**2.6**	**3.1**	**6.5**	**72,042**

Note

** Including spouse irrespective of age,* "-" indicates less number of cases/no cases.

Table 7.24 Self-reported prevalence (%) of diagnosed urogenital conditions/diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/union territory	Age 45-59*					Age ≥ 60					Total				
	Chronic renal failure	Kidney stones	Incontinence	Any urogenital condition	Number	Chronic renal failure	Kidney stones	Incontinence	Any urogenital condition	Number	Chronic renal failure	Kidney Stones	Incontinence	Any urogenital condition	Number
India	**0.4**	**2.7**	**2.2**	**5.5**	**40,666**	**0.8**	**2.4**	**4.1**	**7.7**	**31,376**	**0.6**	**2.6**	**3.1**	**6.5**	**72,041**
North															
Chandigarh	[0.3]	2.8	1.0	4.1	624	[0.5]	2.1	1.1	3.7	388	[0.4]	2.5	1.0	3.9	1,012
Delhi	1.1	1.0	4.5	6.3	822	1.2	3.2	11.0	15.6	494	1.1	1.8	6.9	9.8	1,316
Haryana	0.6	4.6	0.9	6.9	1,048	0.4	4.7	1.8	6.9	847	0.5	4.7	1.3	6.9	1,895
Himachal Pradesh	0.4	9.2	2.0	11.3	765	[0.4]	7.4	4.1	12.0	618	0.4	8.3	3.0	11.6	1,383
Jammu & Kashmir	-	4.3	2.3	7.1	881	[0.3]	3.3	3.7	8.2	730	[0.1]	3.8	3.0	7.6	1,611
Punjab	[0.1]	5.5	1.2	6.6	1,112	[0.2]	2.5	2.0	4.7	1,004	[0.1]	4.1	1.6	5.7	2,116
Rajasthan	[0.1]	2.7	0.7	3.6	1,160	0.8	3.0	2.7	6.8	1,076	0.5	2.9	1.7	5.2	2,236
Uttarakhand	0.6	6.4	2.0	9.0	715	[0.5]	4.8	3.4	9.4	641	0.5	5.6	2.7	9.2	1,356
Central															
Chhattisgarh	[0.1]	1.2	0.6	2.2	1,275	[0.3]	0.8	1.6	3.6	779	0.2	1.0	1.0	2.7	2,054
Madhya Pradesh	0.7	1.9	1.8	4.6	1,598	0.8	1.8	3.4	5.7	1,313	0.7	1.9	2.6	5.1	2,911
Uttar Pradesh	0.5	2.5	2.0	5.2	2,395	0.7	2.2	3.0	6.3	2,166	0.6	2.3	2.5	5.7	4,561
East															
Bihar	0.3	1.8	1.6	4.0	1,708	0.6	1.2	2.3	5.4	1,806	0.4	1.5	2.0	4.8	3,514
Jharkhand	[0.3]	2.1	1.8	5.3	1,294	[0.2]	1.4	6.6	9.1	1,167	0.2	1.7	4.1	7.2	2,461
Odisha	0.2	0.8	2.9	4.4	1,674	0.6	1.2	7.4	9.8	1,235	0.4	1.0	4.9	6.8	2,909
West Bengal	0.7	1.4	4.9	7.1	2,384	1.3	1.1	13.4	17.0	1,539	0.9	1.3	8.3	11.1	3,923
Northeast															
Arunachal Pradesh	-	0.7	[0.3]	1.8	896	[0.1]	[1.3]	-	4.5	318	[0.1]	0.9	[0.2]	2.4	1,214
Assam	[0.3]	1.8	1.6	3.6	1,548	1.2	1.7	4.5	7.0	814	0.6	1.8	2.7	4.8	2,362
Manipur	[0.2]	11.7	-	11.9	760	-	8.5	[0.1]	8.6	605	[0.1]	10.2	-	10.3	1,365
Meghalaya	-	1.2	-	[1.2]	556	-	[0.8]	-	0.8	411	-	1.0	-	1.0	967
Mizoram	8.2	2.9	4.9	15.8	714	6.0	2.2	3.7	11.9	531	7.2	2.6	4.4	14.0	1,245
Nagaland	-	1.7	-	1.7	708	-	1.2	-	1.2	606	-	1.5	-	1.5	1,314
Tripura	[0.4]	1.4	2.2	3.5	732	1.3	[0.9]	5.1	7.3	460	0.7	1.2	3.3	5.0	1,192
West															
Dadra & Nagar Haveli	1.2	5.4	2.0	8.4	635	[0.9]	3.8	5.1	9.3	450	1.1	4.7	3.2	8.7	1,085
Daman & Diu	1.5	7.1	2.5	10.7	557	1.8	8.2	1.5	11.4	429	1.6	7.6	2.0	11.1	986
Goa	2.1	7.8	1.1	10.1	787	2.4	6.7	1.0	9.5	634	2.3	7.3	1.0	9.8	1,421
Gujarat	1.0	8.0	1.8	10.2	1,344	1.6	7.1	1.8	10.9	982	1.3	7.6	1.8	10.5	2,326
Maharashtra	0.4	4.3	1.9	6.6	2,176	1.0	4.3	4.5	9.4	1,784	0.7	4.3	3.2	8.0	3,960

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State/union territory	Age 45-59*					Age ≥ 60					Total				
	Chronic renal failure	Kidney stones	Incontinence	Any urogenital condition	Number	Chronic renal failure	Kidney stones	Incontinence	Any urogenital condition	Number	Chronic renal failure	Kidney Stones	Incontinence	Any urogenital condition	Number
South															
Andaman & Nicobar Islands	0.3	1.0	1.2	2.7	720	1.6	2.1	1.9	6.5	521	0.8	1.4	1.5	4.3	1,241
Andhra Pradesh	0.6	2.1	0.8	3.6	1,568	1.3	2.2	2.1	6.1	1,101	0.9	2.2	1.4	4.6	2,669
Karnataka	0.4	1.6	2.8	5.1	1,410	1.0	0.9	1.5	3.1	1,002	0.6	1.3	2.3	4.3	2,412
Kerala	[0.3]	4.7	2.4	7.2	1,276	0.7	4.3	5.0	11.0	1,206	0.5	4.5	3.8	9.2	2,482
Lakshadweep	[0.4]	1.2	2.0	3.8	637	[0.2]	2.3	3.7	5.8	500	[0.3]	1.8	2.8	4.8	1,137
Puducherry	[0.3]	0.6	1.6	2.5	787	1.1	3.4	4.0	6.3	638	0.7	1.9	2.7	4.3	1,425
Tamil Nadu	[0.3]	1.1	0.4	1.9	1,994	1.0	1.1	1.8	4.0	1,530	0.6	1.1	1.1	2.9	3,524
Telangana	0.6	2.8	1.2	4.7	1,406	0.8	1.7	2.0	4.5	1,051	0.7	2.3	1.6	4.6	2,457

Note

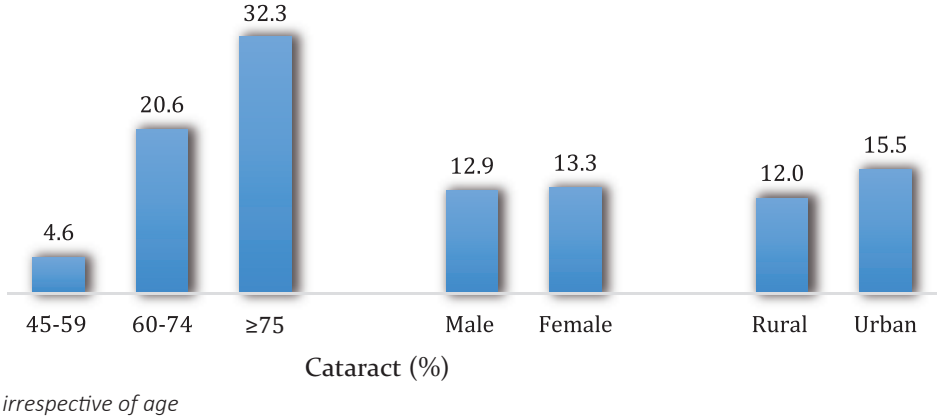
** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

7.4.2 Visual impairment and eye-related problems

All the LASI survey participants were asked if they have been diagnosed with any eye or vision-related conditions such as cataracts, glaucoma and refractive errors (presbyopia, myopia, and hypermetropia). Further, detailed information was collected: one eye or both eyes have been affected, treatment was taken, and the quality of vision to see nearly placed objects as well as at a distance.

Table 7.25 presents the prevalence of visual impairment and eye-related problems by background characteristics. Overall, the self-reported prevalence of any eye- or vision-related condition among older adults age 45 and above in India is 46%. Majority of visual impairment conditions is due to refractive errors, with more than one-third (35%) of older adults age 45 and above reporting refractive errors and 13% reporting cataract. The self-reported prevalence of cataract (reported surgery) is almost five times higher among elderly age 60 and above (23%) than among older adults age 45-59 (4.6%). Almost a third of older old (32%) age 75+ have been diagnosed with cataract. Overall, the self-reported prevalence of diagnosed glaucoma is 2%, and the rate is higher among elderly age 60 and above (2.5%) than among older adults age 45-59 (1.3%). Eye or vision-related conditions are more prevalent among urban older adults than their rural counterparts, and this urban-rural difference is more pronounced in refractory errors. Among elderly age 60 and above, the prevalence of cataract is higher among women (25%) than men (21%), whereas the prevalence of refractive errors is slightly higher among men (36%) than women (35%). The prevalence of refractive errors increases with education and MPCE quintiles, whereas the prevalence of cataract and glaucoma does not show any pattern with education and MPCE quintiles.

Figure 7.14 Self-reported prevalence (%) of diagnosed cataract among older adults by age, sex and place of residence, India, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

The prevalence of visual impairment and eye-related problems by states/UTs in India is presented in Table 7.26. More than two-thirds of older adults age 45 and above in Punjab (78%), Chandigarh (76%), Kerala (68%), Daman and Diu (67%), and Goa (66%) reported eye- or vision-related conditions. In contrast, only less than a quarter reported these conditions in Nagaland (24%) and Chhattisgarh (23%). In most of the states/UTs, one in every ten older adults age 45 and above reported that they have been diagnosed with cataract. More than quarter of the elderly age 60 and above reported cataract in Daman & Diu (44%), Gujarat (44%), Maharashtra (29%), Kerala (28%), Himachal Pradesh (27%), Uttarakhand (26%), Uttar Pradesh (26%), and Tamil Nadu (25%). The self-reported prevalence of diagnosed glaucoma among elderly age 60 and above is higher in Andhra Pradesh (5.2%), Assam (4.9%), Telangana (4.7%), and Andaman & Nicobar (4.5%).

Figure 7.15 Self-reported prevalence (%) of cataract among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18

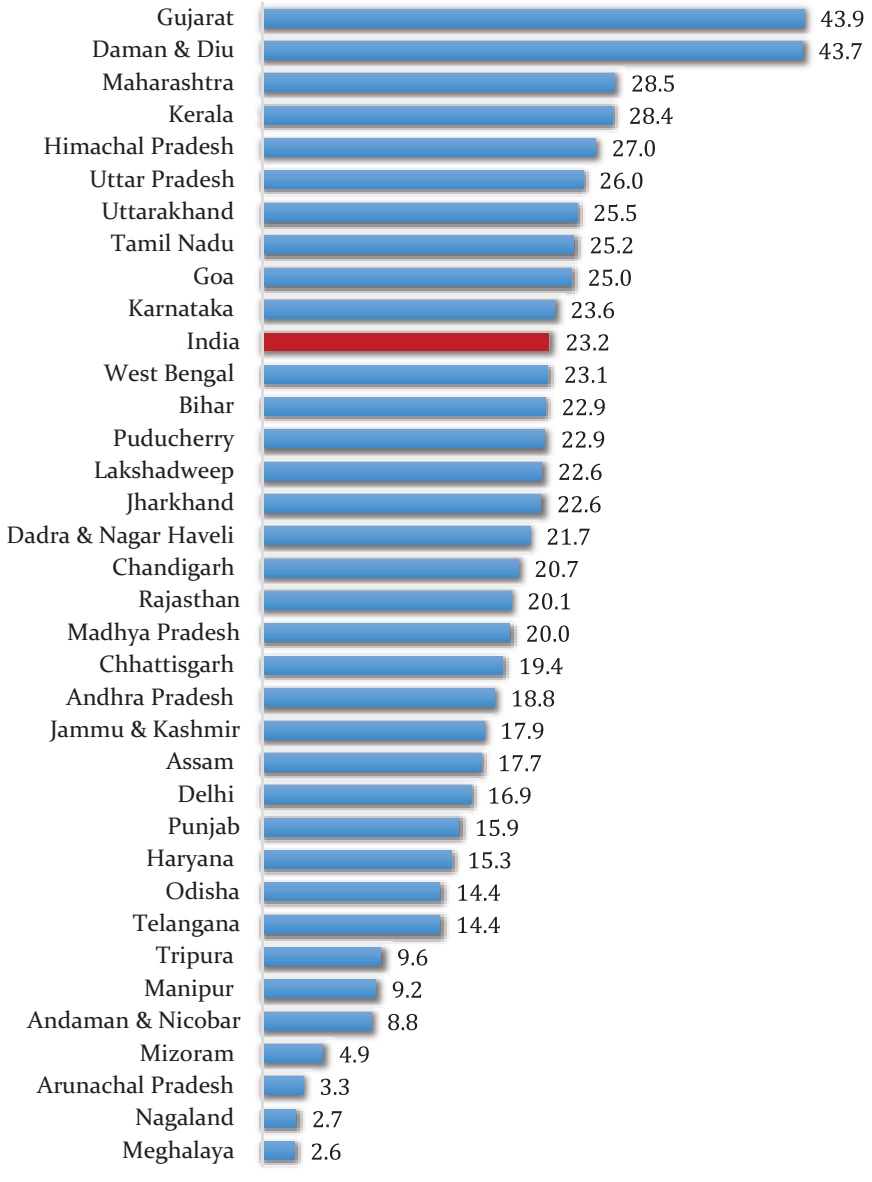


Table 7.25 Self-reported prevalence (%) of visual impairment or any eye problem among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number
Place of residence															
Rural	4.3	28.3	1.3	33.1	25,748	20.5	31.4	2.4	49.4	20,691	12.0	29.8	1.8	40.9	46,439
Urban	5.2	45.0	1.1	49.7	14,924	29.8	45.0	2.6	69.7	10,687	15.5	45.0	1.8	58.1	25,611
Sex															
Male	3.9	37.1	1.3	41.4	15,423	21.3	36.1	2.4	54.3	15,041	12.9	36.6	1.9	48.1	30,464
Female	5.0	32.0	1.2	37.1	25,249	25.0	34.8	2.5	56.3	16,337	13.3	33.2	1.8	45.1	41,586
Marital status															
Currently married	4.2	34.2	1.2	38.7	35,377	20.5	35.2	2.1	52.9	19,864	10.3	34.6	1.6	44.0	55,241
Widowed	7.5	32.9	1.4	40.1	3,864	27.8	35.9	3.0	59.8	10,692	23.1	35.2	2.6	55.2	14,556
Divorced/Separated/Deserted/ Others	7.4	29.9	1.7	35.4	1,431	24.0	32.8	2.2	50.7	822	13.4	31.0	1.9	41.0	2,253
Living arrangement															
Living alone	8.6	35.9	2.2	44.7	689	28.2	35.1	3.0	58.7	1,620	23.8	35.3	2.8	55.6	2,309
Living with spouse and/or others	5.0	33.7	1.5	39.0	4,526	21.5	33.5	2.4	52.4	6,161	14.7	33.6	2.0	46.8	10,687
Living with spouse and children	4.1	34.2	1.2	38.6	30,197	20.0	36.1	2.0	53.2	13,463	9.1	34.8	1.5	43.2	43,660
Living with children and others	7.8	33.9	1.5	40.7	4,076	28.0	36.3	2.9	60.3	8,417	22.2	35.6	2.5	54.7	12,493
Living with others only	4.5	27.9	1.2	33.0	1,184	24.3	33.0	2.8	53.8	1,717	16.9	31.1	2.2	45.9	2,901
Religion															
Hindu	4.4	32.7	1.3	37.3	29,851	23.4	34.3	2.6	54.7	22,976	13.2	33.4	1.9	45.3	52,827
Muslim	5.5	37.0	1.2	42.8	4,924	24.6	36.1	2.2	56.1	3,720	13.8	36.6	1.7	48.6	8,644
Christian	7.2	31.5	1.2	39.2	4,058	16.7	37.4	1.3	50.3	3,140	11.4	34.1	1.2	44.1	7,198
Others	4.2	55.8	1.3	59.2	1,839	19.5	56.1	1.7	70.6	1,542	11.6	55.9	1.5	64.7	3,381
Caste/tribe															
Scheduled tribe	2.7	18.4	0.9	21.1	7,327	13.9	24.1	2.0	35.9	5,159	7.6	20.9	1.4	27.6	12,486
Scheduled caste	4.9	31.5	1.5	36.7	6,888	22.5	31.7	2.6	52.3	5,130	12.9	31.6	2.0	43.8	12,018
Other backward class	4.6	32.6	1.2	37.5	15,252	23.4	34.6	2.2	55.1	11,848	13.2	33.5	1.6	45.5	27,100
None of the above	5.0	43.4	1.4	48.5	11,205	26.1	42.4	2.9	63.5	9,241	15.0	43.0	2.1	55.6	20,446
Education															
No schooling	5.0	22.8	1.3	28.1	16,281	22.0	29.4	2.6	48.7	16,860	13.9	26.2	2.0	38.9	33,141
Less than 5 years complete	6.6	34.9	1.2	40.1	4,264	25.1	38.2	2.3	59.4	3,775	15.5	36.5	1.7	49.5	8,039
5-9 years complete	4.4	39.8	1.6	44.7	10,871	24.8	40.7	2.0	61.2	5,991	12.3	40.1	1.8	51.1	16,862
10 or more years complete	3.1	49.1	0.9	52.6	9,256	24.9	50.9	2.5	71.5	4,752	10.6	49.7	1.5	59.1	14,008
Work status															
Currently working	3.9	33.3	1.2	37.3	23,620	15.9	32.2	1.6	45.6	9,283	7.6	33.0	1.3	39.9	32,903
Worked in past but currently not working	7.9	40.4	1.9	48.4	4,565	26.7	37.1	3.1	60.0	13,329	22.0	37.9	2.8	57.1	17,894
Never worked	4.6	32.5	1.2	37.6	12,487	26.2	36.3	2.4	59.2	8,766	14.1	34.2	1.7	47.1	21,253

Continued

Continued

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number
MPCE quintile															
Poorest	4.6	25.1	1.0	29.9	7,650	22.2	26.8	2.5	47.4	6,464	13.1	25.9	1.7	38.3	14,114
Poorer	4.9	30.9	1.2	35.8	8,033	23.3	32.5	2.7	52.6	6,458	13.5	31.6	1.9	43.7	14,491
Middle	4.4	32.6	1.4	37.6	8,101	22.9	37.3	1.8	55.6	6,397	13.0	34.8	1.6	46.0	14,498
Richer	5.0	38.2	1.5	43.1	8,496	24.2	38.8	2.5	60.0	6,157	13.7	38.5	1.9	50.7	14,653
Richest	4.0	43.3	1.3	47.6	8,392	23.8	44.0	2.9	63.7	5,902	12.3	43.6	2.0	54.3	14,294
Total	**4.6**	**33.9**	**1.3**	**38.7**	**40,672**	**23.2**	**35.4**	**2.5**	**55.3**	**31,378**	**13.1**	**34.6**	**1.8**	**46.3**	**72,050**

Notes

** Including spouse irrespective of age*

[1]Refractive errors include presbyopia, myopia and hypermetropia with or without astigmatism.

Table 7.26 Self-reported prevalence (%) of visual impairment or any eye problem among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number
India	**4.6**	**33.9**	**1.3**	**38.7**	**40,672**	**23.2**	**35.4**	**2.5**	**55.3**	**31,378**	**13.1**	**34.6**	**1.8**	**46.3**	**72,050**
North															
Chandigarh	5.0	69.2	[0.4]	71.7	625	20.7	76.6	[0.7]	82.4	389	11.3	72.2	0.5	76.0	1,014
Delhi	1.5	50.9	0.9	52.9	822	16.9	58.1	[0.5]	71.9	495	7.3	53.7	0.8	60.1	1,317
Haryana	2.5	39.9	0.9	42.0	1,048	15.3	45.6	3.4	61.6	847	8.6	42.6	2.1	51.4	1,895
Himachal Pradesh	3.3	37.8	3.1	41.9	765	27.0	40.0	4.2	62.4	618	14.5	38.9	3.6	51.6	1,383
Jammu & Kashmir	6.4	19.8	0.9	26.0	881	17.9	27.1	1.4	42.8	730	12.1	23.4	1.1	34.3	1,611
Punjab	3.1	72.8	1.4	74.7	1,111	15.9	74.6	1.4	81.9	1,004	9.2	73.7	1.4	78.1	2,115
Rajasthan	3.6	22.1	0.9	26.6	1,161	20.1	25.6	3.0	44.6	1,077	11.8	23.8	1.9	35.6	2,238
Uttarakhand	6.5	26.4	2.1	33.6	716	25.5	25.8	2.3	49.2	641	15.8	26.1	2.2	41.3	1,357
Central															
Chhattisgarh	2.8	11.2	0.8	15.1	1,275	19.4	15.0	1.8	34.6	779	9.2	12.7	1.2	22.5	2,054
Madhya Pradesh	3.3	22.5	2.4	26.1	1,599	20.0	19.0	2.5	35.7	1,313	11.3	20.8	2.5	30.7	2,912
Uttar Pradesh	4.7	22.3	0.6	27.3	2,395	26.0	20.7	2.0	46.0	2,167	15.2	21.5	1.3	36.5	4,562
East															
Bihar	4.7	24.4	1.5	30.6	1,708	22.9	25.1	1.7	48.1	1,807	14.5	24.8	1.6	40.1	3,515
Jharkhand	4.3	16.4	1.7	22.9	1,294	22.6	15.1	2.1	38.7	1,167	13.1	15.8	1.9	30.5	2,461
Odisha	2.3	14.2	2.2	19.6	1,675	14.4	16.7	2.6	33.4	1,235	7.6	15.3	2.3	25.7	2,910
West Bengal	5.4	51.3	0.8	55.6	2,384	23.1	52.3	2.6	68.2	1,540	12.6	51.7	1.5	60.7	3,924
Northeast															
Arunachal Pradesh	2.3	27.8	-	29.5	896	3.3	32.2	-	34.9	318	2.5	28.9	-	30.8	1,214
Assam	4.6	23.5	3.1	31.4	1,548	17.7	29.1	4.9	47.5	814	9.3	25.5	3.8	37.2	2,362
Manipur	3.5	48.9	[0.1]	51.4	761	9.2	53.1	[0.6]	57.5	605	6.2	50.9	0.3	54.3	1,366
Meghalaya	1.0	27.2	[0.7]	28.6	556	2.6	41.5	[1.1]	43.8	411	1.6	33.2	0.9	35.0	967
Mizoram	2.6	26.6	0.1	27.6	714	4.9	33.8	3.6	36.5	531	3.6	29.8	1.7	31.6	1,245
Nagaland	[0.3]	18.1	[0.4]	19.6	708	2.7	26.7	[0.3]	29.2	606	1.5	22.3	[0.3]	24.3	1,314
Tripura	2.3	35.2	1.7	38.7	732	9.6	38.5	1.5	46.6	459	5.2	36.5	1.6	41.8	1,191
West															
Dadra & Nagar Haveli	2.6	50.6	1.5	53.3	635	21.7	41.3	2.3	58.3	449	10.1	46.9	1.8	55.3	1,084
Daman & Diu	2.3	57.3	1.1	60.2	557	43.7	45.4	3.1	75.2	429	21.8	51.7	2.1	67.2	986
Goa	3.6	57.4	[0.7]	61.3	788	25.0	53.0	1.3	72.0	634	13.4	55.4	1.0	66.2	1,422
Gujarat	6.3	38.1	1.5	43.8	1,343	43.9	34.9	2.9	66.0	982	23.2	36.7	2.1	53.8	2,325
Maharashtra	4.3	51.0	1.0	54.9	2,176	28.5	50.5	3.0	72.7	1,783	16.2	50.7	2.0	63.6	3,959

Continued

Continued

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number	Cataract	Refractive errors[1]	Glaucoma	Any eye problem	Number
South															
Andaman & Nicobar Islands	1.9	51.7	1.7	55.5	720	8.8	60.8	4.5	71.0	521	4.7	55.4	2.9	61.8	1,241
Andhra Pradesh	5.6	48.7	2.6	54.7	1,568	18.8	52.9	5.2	68.9	1,101	11.2	50.5	3.7	60.7	2,669
Karnataka	5.3	32.1	0.5	35.6	1,410	23.6	39.5	1.6	56.8	1,001	12.5	35.0	1.0	44.0	2,411
Kerala	4.3	52.2	0.9	59.3	1,276	28.4	48.8	0.6	76.0	1,206	16.8	50.4	0.7	68.0	2,482
Lakshadweep	4.3	53.0	[0.6]	58.6	637	22.6	48.7	[0.5]	70.9	500	13.0	51.0	0.5	64.4	1,137
Puducherry	7.4	32.0	[0.5]	38.7	787	22.9	35.2	1.8	55.9	638	14.7	33.5	1.1	46.8	1,425
Tamil Nadu	6.2	22.6	1.3	30.6	1,994	25.2	30.1	2.0	53.3	1,530	14.9	26.1	1.6	41.0	3,524
Telangana	5.9	49.9	1.9	54.5	1,407	14.4	59.7	4.7	71.8	1,051	9.6	54.3	3.1	62.2	2,458

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

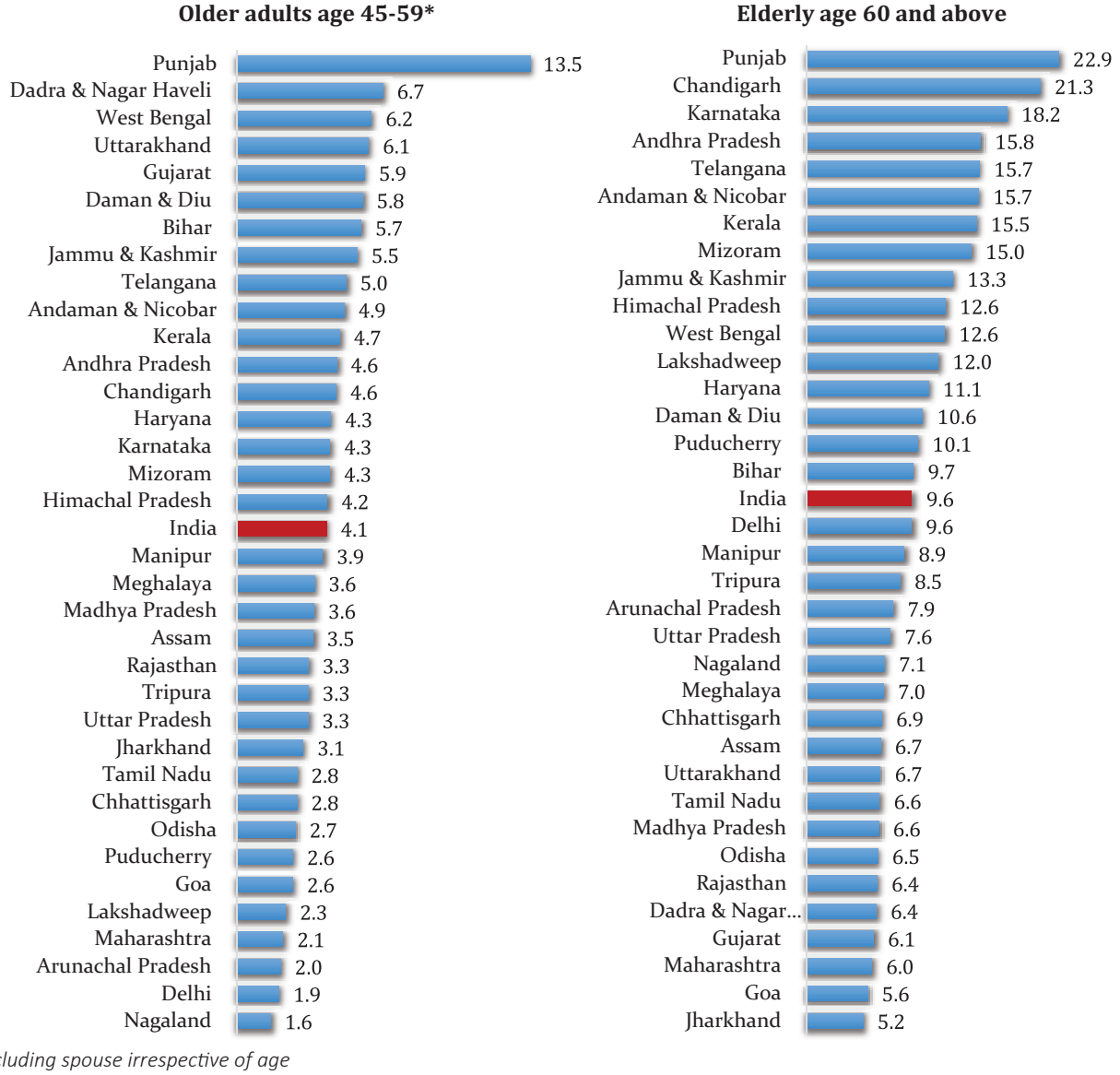
[1] Refractive errors include presbyopia, myopia and hypermetropia with or without astigmatism.

7.4.3 Hearing problems

All the LASI survey participants were asked about diagnosis of any ear or hearing-related problem in one or both ears, whether participants had taken any treatment, and the type of treatment taken. Table 7.27 presents the self-reported prevalence of diagnosed hearing problems by background characteristics. Overall, the self-reported prevalence of any ear or hearing-related problem in India is 6.6%. This prevalence is much higher in elderly age 60 and above (9.6%) than in older adults age 45-59 (4.1%). Among the elderly age 60 and above, the prevalence rate of hearing problems is higher among those who are widowed (12%), living with children and others (12%), worked in the past but currently not working (12%), the elderly with 10 or more years of schooling (12%), and those from the richest MPCE quintile (14%).

State-wise differences in the prevalence of any ear or hearing-related problem are shown in Table 7.28. The self-reported prevalence of any ear or hearing-related problem among older adults age 45 and above ranges from 18% in Punjab to 3.4% in Arunachal Pradesh. The proportion of elderly age 60 and above with ear or hearing-related problem is higher than 20% in Punjab (23%) and Chandigarh (21%). The prevalence rate is higher in the north and south Indian states.

Figure 7.16 Self-reported prevalence (%) of diagnosed ear or hearing-related problem among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



** Including spouse irrespective of age*

Table 7.27 Self-reported prevalence (%) of diagnosed any hearing or ear related problem among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Any hearing or ear related problem					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	4.4	25,744	9.3	20,690	6.7	46,434
Urban	3.6	14,921	10.2	10,686	6.4	25,607
Sex						
Male	3.9	15,420	9.8	15,040	6.9	30,460
Female	4.3	25,245	9.5	16,336	6.4	41,581
Marital status						
Currently married	4.0	35,371	8.3	19,862	5.6	55,233
Widowed	5.5	3,864	11.9	10,692	10.4	14,556
Divorced/Separated/Deserted/Others	2.6	1,430	8.4	822	4.8	2,252
Living arrangement						
Living alone	3.9	689	10.6	1,620	9.1	2,309
Living with spouse and/or others	4.0	4,519	8.8	6,159	6.8	10,678
Living with spouse and children	4.0	30,198	8.1	13,463	5.3	43,661
Living with children and others	5.3	4,076	12.4	8,417	10.4	12,493
Living with others only	3.9	1,183	9.1	1,717	7.1	2,900
Religion						
Hindu	4.0	29,843	9.5	22,975	6.5	52,818
Muslim	4.5	4,924	8.9	3,718	6.4	8,642
Christian	2.3	4,058	9.1	3,141	5.3	7,199
Others	7.4	1,840	15.0	1,542	11.0	3,382
Caste/tribe						
Scheduled tribe	3.8	7,326	5.9	5,160	4.7	12,486
Scheduled caste	4.7	6,887	10.8	5,130	7.5	12,017
Other backward class	3.9	15,248	9.7	11,845	6.5	27,093
None of the above	4.2	11,204	9.8	9,241	6.8	20,445
Education						
No schooling	4.4	16,279	9.5	16,857	7.1	33,136
Less than 5 years complete	4.2	4,262	9.7	3,775	6.9	8,037
5-9 years complete	4.6	10,871	8.4	5,991	6.0	16,862
10 or more years complete	3.2	9,253	11.5	4,753	6.0	14,006
Work status						
Currently working	3.7	23,615	6.3	9,282	4.5	32,897
Worked in past but currently not working	5.0	4,565	11.5	13,328	9.9	17,893
Never worked	4.5	12,485	10.5	8,766	7.1	21,251
MPCE quintile						
Poorest	3.8	7,648	8.2	6,463	5.9	14,111
Poorer	3.8	8,032	8.5	6,458	6.0	14,490
Middle	4.3	8,100	8.7	6,396	6.3	14,496
Richer	4.4	8,494	9.7	6,157	6.8	14,651
Richest	4.4	8,391	13.9	5,902	8.4	14,293
Total	**4.1**	**40,665**	**9.6**	**31,376**	**6.6**	**72,041**

Note

** Including spouse irrespective of age*

Table 7.28 Self-reported prevalence (%) of diagnosed any hearing or ear related problem among older adults, states/UTs LASI Wave 1, 2017-18

State/Union Territory	Any hearing or ear related problem					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**4.1**	**40,665**	**9.6**	**31,376**	**6.6**	**72,041**
North						
Chandigarh	4.6	624	21.3	388	11.2	1,012
Delhi	1.9	822	9.6	495	4.8	1,317
Haryana	4.3	1,048	11.1	847	7.6	1,895
Himachal Pradesh	4.2	765	12.6	617	8.2	1,382
Jammu & Kashmir	5.5	881	13.3	730	9.4	1,611
Punjab	13.5	1,112	22.9	1,004	18.0	2,116
Rajasthan	3.3	1,161	6.4	1,077	4.9	2,238
Uttarakhand	6.1	716	6.7	641	6.4	1,357
Central						
Chhattisgarh	2.8	1,274	6.9	779	4.3	2,053
Madhya Pradesh	3.6	1,598	6.6	1,313	5.0	2,911
Uttar Pradesh	3.3	2,395	7.6	2,167	5.4	4,562
East						
Bihar	5.7	1,708	9.7	1,807	7.9	3,515
Jharkhand	3.1	1,293	5.2	1,167	4.1	2,460
Odisha	2.7	1,674	6.5	1,235	4.4	2,909
West Bengal	6.2	2,384	12.6	1,540	8.8	3,924
Northeast						
Arunachal Pradesh	2.0	896	7.9	318	3.4	1,214
Assam	3.5	1,548	6.7	814	4.7	2,362
Manipur	3.9	761	8.9	605	6.3	1,366
Meghalaya	3.6	556	7.0	411	5.0	967
Mizoram	4.3	714	15.0	531	9.1	1,245
Nagaland	1.6	708	7.1	607	4.3	1,315
Tripura	3.3	732	8.5	459	5.4	1,191
West						
Dadra & Nagar Haveli	6.7	635	6.4	449	6.6	1,084
Daman & Diu	5.8	557	10.6	429	8.0	986
Goa	2.6	788	5.6	634	3.9	1,422
Gujarat	5.9	1,342	6.1	981	6.0	2,323
Maharashtra	2.1	2,176	6.0	1,783	4.0	3,959
South						
Andaman & Nicobar Islands	4.9	720	15.7	521	9.3	1,241
Andhra Pradesh	4.6	1,567	15.8	1,101	9.3	2,668
Karnataka	4.3	1,410	18.2	1,001	9.8	2,411
Kerala	4.7	1,276	15.5	1,206	10.3	2,482
Lakshadweep	2.3	637	12.0	500	6.9	1,137
Puducherry	2.6	787	10.1	638	6.1	1,425
Tamil Nadu	2.8	1,994	6.6	1,530	4.6	3,524
Telangana	5.0	1,406	15.7	1,051	9.8	2,457

Note

** Including spouse irrespective of age*

7.4.4 Oral health

Oral health conditions are important determinants of ageing and markers of overall health and wellbeing. Oral health in older age has an important role in determining chewing ability, communication, health, and nutrition. In the LASI, information was collected about various oral health problems during 12 months prior to the survey. Respondents were also asked about loss of natural teeth (partial and complete edentulism) and chewing ability.

Table 7.29 presents the oral health problems by background characteristics. The self-reported prevalence of common oral health problems among older adults age 45 and above in India is 47%: the prevalence of dental caries and periodontal diseases is 19% and 16%, respectively. The prevalence of common oral health problems is higher among elderly age 60 and above (51%) than among older adults age 45-59 (44%). Among elderly age 60 and above, the prevalence of dental caries and common oral health problems is higher among women than men and in urban areas than in rural areas. In contrast, the prevalence of periodontal disease is higher in rural areas (17%) than in urban areas (14%).

The prevalence of complete edentulism (loss of all-natural teeth) among older adults age 45 and above in India is 7%. The prevalence rate is higher among elderly age 60 and above (11%) than in older adults age 45-59 (3%). Almost three quarters (72%) of elderly age 60 and above reported partial edentulism, compared to 49% among older adults age 45-59.

Table 7.30 presents the cross-state variations in oral health problems. The common oral health problems are more common in the elderly age 60 and above, with the prevalence rate ranging from 32% in Daman & Diu to 73% in Arunachal Pradesh. The prevalence rate of dental caries among elderly age 60 and above is higher in the states/UTs of Chandigarh (45%), Kerala (43%), and Puducherry (42%). The prevalence of complete edentulism is higher in north Indian states: more than 20% of elderly age 60 and above in Himachal Pradesh (26%), Punjab (25%), Haryana (23%), and Gujarat (21%) have lost all-natural teeth.

Key findings: organ related conditions

- Overall in India, any urogenital condition, incontinence, and chronic renal failure are more prevalent among elderly age 60 and above: 7.7%, 4.1% and 0.8% respectively; whereas, kidney stones are slightly more prevalent (2.7%) among older adults age 45-59. The prevalence of any urogenital condition is higher among elderly men (9.6%) than women (6%).
- A higher proportion of elderly men than women age 60 and above reported refractive errors and hearing or ear related problems; whereas, the prevalence of cataract, oral health problems, edentulism is higher among elderly women than men.
- Visual impairment conditions are majorly due to refractive errors and cataract. Among elderly age 60 and above, the prevalence of cataract is more than 25% in the states/UTs of Daman & Diu (44%), Gujarat (44%), Maharashtra (29%), Kerala (28%), Himachal Pradesh (27%), Uttarakhand (26%), Uttar Pradesh (26%), and Tamil Nadu (25%).
- Among elderly age 60 and above, the overall prevalence of ear or hearing related problem in India is 9.6%; the prevalence of hearing problem is higher in the north and southern Indian states of Punjab (23%), Chandigarh (21%), Karnataka (18%), Andhra Pradesh (16%), Telangana (16%), Andaman & Nicobar (16%), and Kerala (16%).
- The prevalence of complete edentulism (loss of all teeth) is higher in the north Indian states; more than one in every five elderly age 60 and above have lost all natural teeth in Himachal Pradesh (26%), Punjab (25%), Haryana (23%), and Gujarat (21%).

Table 7.29 Self-reported prevalence (%) of diagnosed oral health conditions among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*						Age ≥ 60						Total					
	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number
Place of residence																		
Rural	16.9	18.0	44.7	47.5	3.1	25,745	17.8	16.8	51.0	72.0	11.1	20,689	17.3	17.4	47.7	59.1	6.9	46,434
Urban	20.7	10.5	43.2	51.3	3.0	14,920	23.8	13.9	52.0	72.0	11.3	10,685	22.0	11.9	46.9	60.0	6.5	25,605
Sex																		
Male	15.8	13.4	41.3	49.0	3.4	15,421	18.3	15.1	48.8	71.2	11.1	15,039	17.1	14.2	45.2	60.5	7.4	30,460
Female	19.6	16.7	45.9	48.7	2.8	25,244	20.6	16.8	53.5	72.6	11.3	16,335	20.0	16.7	49.1	58.6	6.3	41,579
Marital status																		
Currently married	18.0	15.8	44.0	47.9	3.0	35,369	19.6	16.5	50.8	72.2	9.2	19,861	18.6	16.0	46.5	56.9	5.3	55,230
Widowed	18.8	15.1	47.0	58.2	3.7	3,864	19.4	15.2	51.6	71.5	14.7	10,691	19.3	15.2	50.5	68.4	12.2	14,555
Divorced/Separated/Deserted/Others	21.5	8.0	41.9	46.0	2.2	1,432	20.7	14.1	59.3	73.3	9.2	822	21.2	10.2	48.2	55.9	4.7	2,254
Living arrangement																		
Living alone	21.5	11.7	47.9	56.6	2.6	689	17.2	13.7	56.5	69.3	13.9	1,620	18.2	13.3	54.6	66.4	11.4	2,309
Living with spouse and/or others	22.4	14.6	48.2	51.9	2.9	4,519	17.8	15.5	50.9	73.2	8.6	6,158	19.7	15.1	49.8	64.4	6.2	10,677
Living with spouse and children	17.3	15.9	43.3	47.2	3.0	30,197	20.4	17.0	50.7	71.7	9.4	13,463	18.3	16.3	45.7	54.9	5.1	43,660
Living with children and others	20.2	15.5	48.6	58.0	3.6	4,076	20.3	15.8	51.3	72.1	14.5	8,417	20.3	15.7	50.5	68.1	11.4	12,493
Living with others only	15.0	9.1	34.4	43.1	2.3	1,184	18.3	13.0	51.0	72.2	14.1	1,716	17.1	11.5	44.7	61.2	9.6	2,900
Religion																		
Hindu	18.1	15.4	44.0	48.6	2.8	29,842	19.5	16.1	51.4	71.6	11.4	22,973	18.7	15.7	47.4	59.2	6.8	52,815
Muslim	19.0	17.2	48.2	51.2	4.4	4,924	20.1	17.7	50.3	74.9	9.1	3,718	19.4	17.4	49.1	61.5	6.5	8,642
Christian	19.5	8.1	38.9	44.4	3.8	4,058	24.0	10.1	60.6	75.6	7.0	3,141	21.5	9.0	48.5	58.2	5.2	7,199
Others	15.0	16.3	40.3	47.9	4.2	1,841	15.6	13.0	45.2	68.9	15.7	1,542	15.3	14.7	42.7	58.1	9.7	3,383
Caste/tribe																		
Scheduled tribe	14.7	13.4	37.8	44.1	3.2	7,327	18.0	16.8	51.1	70.5	8.7	5,160	16.2	14.9	43.6	55.6	5.6	12,487
Scheduled caste	16.4	17.6	42.8	46.6	3.4	6,887	18.6	18.0	51.2	72.9	10.2	5,130	17.4	17.8	46.6	58.5	6.5	12,017
Other backward class	18.9	14.2	46.5	50.8	3.0	15,248	20.3	15.3	53.2	72.2	10.8	11,843	19.5	14.7	49.5	60.5	6.5	27,091
None of the above	19.3	16.8	43.3	48.5	2.9	11,203	19.5	15.4	48.3	71.4	13.3	9,241	19.4	16.1	45.7	59.4	7.8	20,444
Education																		
No schooling	17.4	18.0	46.3	50.5	3.9	16,280	18.2	17.4	52.1	72.2	11.6	16,856	17.9	17.7	49.3	61.9	7.9	33,136
Less than 5 years complete	19.9	15.9	46.0	50.6	3.6	4,263	22.3	15.1	52.3	74.3	10.3	3,774	21.1	15.5	49.1	62.1	6.8	8,037
5-9 years complete	18.4	16.0	43.3	47.7	2.6	10,870	20.7	14.1	53.0	70.8	11.8	5,992	19.3	15.2	47.0	56.6	6.2	16,862
10 or more years complete	18.4	9.6	40.2	45.8	1.7	9,252	21.2	13.2	44.8	70.5	9.7	4,752	19.4	10.9	41.8	54.3	4.4	14,004
Work status																		
Currently working	17.1	14.0	42.9	48.3	2.4	23,615	18.8	15.7	49.2	71.6	6.2	9,281	17.6	14.5	44.8	55.4	3.6	32,896
Worked in past but currently not working	19.5	17.2	50.0	53.2	5.5	4,565	19.1	14.7	51.6	71.9	14.0	13,327	19.2	15.3	51.2	67.2	11.8	17,892
Never worked	19.8	17.6	44.4	48.0	3.4	12,485	21.2	18.3	53.1	72.6	12.5	8,766	20.4	17.9	48.2	58.8	7.4	21,251

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Background characteristics	Age 45-59*						Age ≥ 60						Total					
	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number
MPCE quintile																		
Poorest	14.9	15.7	39.4	47.8	2.6	7,649	17.7	16.1	49.3	73.6	11.0	6,462	16.3	15.9	44.2	60.2	6.7	14,111
Poorer	17.7	16.3	43.1	48.2	2.6	8,032	19.8	16.2	50.6	72.4	11.2	6,458	18.7	16.3	46.6	59.5	6.7	14,490
Middle	19.1	15.9	44.4	50.7	2.8	8,099	18.8	15.7	50.9	70.9	13.0	6,397	18.9	15.8	47.4	60.1	7.5	14,496
Richer	18.6	15.1	44.3	46.1	2.7	8,494	20.0	13.7	53.0	71.1	10.3	6,155	19.2	14.5	48.2	57.4	6.1	14,649
Richest	20.6	14.1	49.9	51.2	4.6	8,391	22.1	18.4	53.3	71.5	10.1	5,902	21.2	15.9	51.3	59.7	6.9	14,293
Total	**18.1**	**15.5**	**44.2**	**48.8**	**3.0**	**40,665**	**19.5**	**16.0**	**51.3**	**72.0**	**11.2**	**31,374**	**18.8**	**15.7**	**47.4**	**59.4**	**6.8**	**72,039**

Notes

** Including spouse irrespective of age*

[1]Periodontal disease includes bleeding gums, swelling gums or ulcers lasting more than two weeks (any one or more).

[2]Common oral health problems include painful teeth, ulcers lasting more than two weeks, bleeding gums, swelling gums, loose teeth, dental cavity/dental caries & soreness or cracks in the corner of the mouth in the past 12 months (any one or more).

Table 7.30 Self-reported prevalence (%) of diagnosed oral health conditions among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*						Age ≥ 60						Total					
	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease1	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number
India	**18.1**	**15.5**	**44.2**	**48.8**	**3.0**	**40,665**	**19.5**	**16.0**	**51.3**	**72.0**	**11.2**	**31,374**	**18.8**	**15.7**	**47.4**	**59.4**	**6.8**	**72,039**
North																		
Chandigarh	32.4	9.0	49.0	51.7	3.2	624	44.6	10.5	63.2	69.9	19.0	387	37.2	9.6	54.6	58.9	9.5	1,011
Delhi	9.7	7.8	41.1	42.8	2.7	822	8.8	12.6	52.1	72.4	12.2	495	9.4	9.7	45.3	54.1	6.3	1,317
Haryana	12.5	21.1	51.2	56.4	3.2	1,048	12.3	18.6	49.0	69.7	23.2	847	12.4	19.9	50.1	62.8	12.8	1,895
Himachal Pradesh	30.4	23.2	60.1	73.7	4.3	765	22.8	13.4	46.6	70.8	26.2	617	26.8	18.6	53.7	72.3	14.7	1,382
Jammu & Kashmir	23.0	19.9	54.7	71.9	1.0	881	24.3	19.2	56.0	83.1	8.2	730	23.6	19.6	55.4	77.4	4.5	1,611
Punjab	9.9	20.7	43.6	64.5	7.0	1,111	9.7	16.4	43.8	64.6	25.2	1,004	9.8	18.6	43.7	64.6	15.7	2,115
Rajasthan	13.4	18.0	36.0	45.4	2.0	1,161	12.8	17.6	42.6	65.4	12.7	1,077	13.1	17.8	39.3	55.4	7.4	2,238
Uttarakhand	25.8	17.4	51.8	66.1	3.5	716	21.7	18.1	53.3	82.5	11.7	641	23.8	17.8	52.6	74.2	7.5	1,357
Central																		
Chhattisgarh	9.4	12.8	38.2	44.1	1.8	1,274	11.4	12.8	47.9	74.0	7.5	779	10.2	12.8	41.9	55.6	4.0	2,053
Madhya Pradesh	11.1	24.5	41.4	48.8	3.2	1,598	15.7	24.8	47.2	69.2	12.8	1,313	13.3	24.6	44.2	58.5	7.8	2,911
Uttar Pradesh	10.8	22.1	42.8	60.6	2.7	2,395	10.6	18.2	42.5	76.1	13.9	2,167	10.7	20.2	42.6	68.2	8.2	4,562
East																		
Bihar	15.9	31.2	52.6	50.9	1.9	1,708	17.4	27.3	53.9	79.2	8.6	1,807	16.7	29.1	53.3	66.2	5.5	3,515
Jharkhand	16.0	14.4	38.2	50.4	2.3	1,293	16.3	13.9	45.8	82.2	5.8	1,167	16.1	14.2	41.9	65.8	4.0	2,460
Odisha	13.5	11.5	31.8	39.9	12.0	1,675	14.0	12.2	39.7	76.1	7.8	1,234	13.7	11.8	35.2	55.9	10.1	2,909
West Bengal	26.2	21.2	49.1	37.2	2.8	2,384	33.6	23.3	59.3	73.3	9.7	1,541	29.2	22.0	53.3	51.8	5.6	3,925
Northeast																		
Arunachal Pradesh	9.8	11.9	46.0	37.9	1.1	897	13.1	13.3	73.1	78.0	3.5	318	10.6	12.2	52.6	47.7	1.7	1,215
Assam	9.6	11.9	34.9	32.6	1.0	1,548	7.3	11.8	42.5	67.7	9.6	814	8.8	11.8	37.6	45.2	4.1	2,362
Manipur	32.4	12.7	55.5	42.4	3.2	761	35.6	11.0	64.6	77.2	7.0	605	33.9	11.9	59.7	58.7	5.0	1,366
Meghalaya	8.0	5.7	27.5	27.5	[0.5]	556	10.6	5.0	61.5	75.5	3.4	411	9.0	5.4	41.8	47.7	1.7	967
Mizoram	30.1	19.3	49.8	64.4	1.9	714	28.5	20.6	58.2	86.9	7.5	531	29.3	19.9	53.6	74.5	4.5	1,245
Nagaland	16.9	5.4	27.4	47.7	[0.6]	708	24.4	3.1	32.7	80.6	2.0	607	20.6	4.3	30.0	63.8	1.3	1,315
Tripura	27.3	15.3	48.1	46.2	2.6	732	22.1	11.4	54.0	68.8	14.2	459	25.3	13.8	50.4	55.1	7.1	1,191
West																		
Dadra & Nagar Haveli	29.0	12.4	49.6	66.5	2.2	634	29.1	9.2	53.7	77.1	12.3	449	29.0	11.1	51.2	70.6	6.2	1,083
Daman & Diu	16.2	10.4	38.6	58.2	3.1	557	12.0	3.9	31.9	66.9	13.8	429	14.2	7.3	35.5	62.3	8.1	986
Goa	26.9	6.9	40.4	55.8	3.2	788	25.8	7.6	41.4	71.6	18.7	634	26.4	7.2	40.9	63.0	10.3	1,422
Gujarat	24.1	13.6	45.5	59.6	4.3	1,342	23.0	11.1	44.9	66.1	21.3	981	23.6	12.5	45.2	62.5	12.0	2,323
Maharashtra	17.3	10.0	32.1	42.3	1.4	2,176	23.0	12.0	43.6	68.6	8.7	1,783	20.1	11.0	37.8	55.2	4.9	3,959

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State/Union Territory	Age 45-59*						Age ≥ 60						Total					
	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease[1]	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number	Dental Caries	Periodontal Disease1	Common Oral Health Problems[2]	Partial Edentulism	Complete Edentulism	Number
South																		
Andaman & Nicobar Islands	17.6	14.2	39.9	29.2	0.9	720	27.4	16.1	56.6	69.8	8.7	521	21.6	15.0	46.7	45.7	4.1	1,241
Andhra Pradesh	12.6	5.2	40.3	37.9	1.9	1,567	12.7	4.6	62.0	66.7	5.5	1,100	12.7	5.0	49.4	50.0	3.4	2,667
Karnataka	21.4	9.7	51.8	52.9	3.5	1,410	27.3	13.4	60.0	68.1	8.5	1,001	23.7	11.1	55.0	58.9	5.5	2,411
Kerala	37.8	9.5	51.6	72.3	1.6	1,276	43.2	8.3	63.8	82.0	11.1	1,206	40.6	8.9	57.9	77.3	6.5	2,482
Lakshadweep	32.5	3.8	51.0	67.3	2.7	637	37.0	2.0	52.1	78.2	6.3	500	34.6	2.9	51.5	72.5	4.4	1,137
Puducherry	32.3	4.1	49.9	49.2	1.0	787	42.2	6.3	64.8	68.7	11.7	638	37.0	5.1	56.9	58.4	6.0	1,425
Tamil Nadu	31.4	6.8	54.6	46.0	1.8	1,994	27.3	5.5	70.2	70.3	11.8	1,530	29.5	6.2	61.8	57.1	6.4	3,524
Telangana	10.5	6.5	37.7	31.7	0.6	1,406	10.5	9.5	64.9	64.4	4.6	1,051	10.5	7.9	49.8	46.2	2.4	2,457

Notes

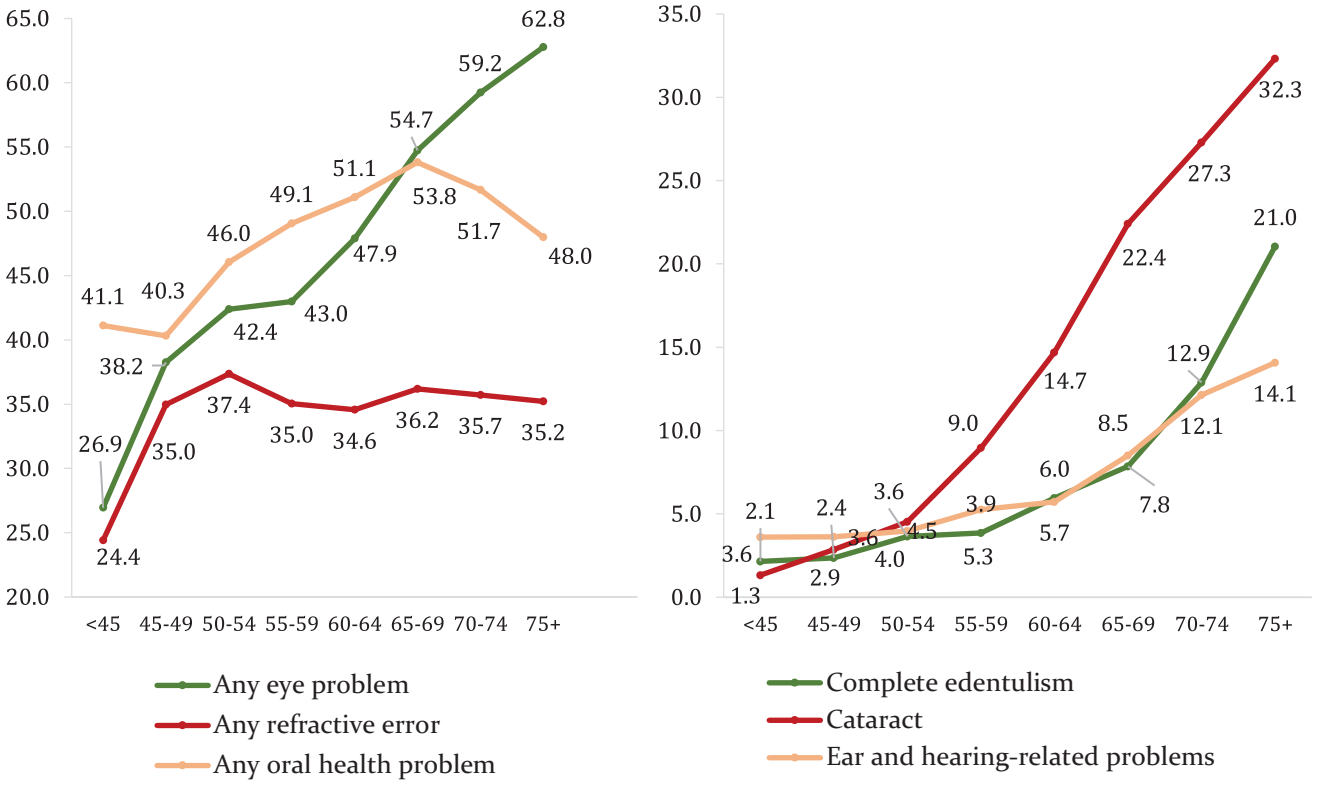
** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] Periodontal disease includes bleeding gums, swelling gums or ulcers lasting more than two weeks (any one or more).

[2] Common oral health problems include painful teeth, ulcers lasting more than two weeks, bleeding gums, swelling gums, loose teeth, dental cavity/dental caries & soreness or cracks in the corner of the mouth in the past 12 months (any one or more).

Figure 7.17 shows the age patterns for diagnosed organ-related conditions. The prevalence rates of all organ-related conditions sharply increases with age, except for the prevalence of refractive errors. The prevalence of any oral health problem shows a declining trend after age 70 as there is a sharp increase in prevalence of complete edentulism after age 70.

Figure 7.17 Self-reported diagnosed organ-related conditions among older adults by age, India, LASI Wave 1, 2017-18



7.5 MULTI-MORBIDITY

Multi-morbidity is defined as the simultaneous presence of two or more chronic health conditions in an individual. Ageing is associated with an increased risk of experiencing more than one chronic health condition at the same time (Arokiasamy et al., 2015). Multi-morbidity has been associated with adverse health outcomes, such as reduced physical function, poor quality of life, general health, increased use of inpatient and ambulatory care, and mortality (Arokiasamy et al., 2015; Nunes et al., 2016)

In the context of population ageing in India, a special focus on multi-morbidity is necessary to understand the comprehensive health profile of older adults. This section provides insight into the prevalence of a single morbidity and multi-morbidity conditions. Information on nine chronic health conditions are included in the measure of multi-morbidity: hypertension, chronic heart diseases, stroke, any chronic lung disease, diabetes, cancer or malignant tumour, any bone/joint disease, any neurological/ psychiatric disease, and high cholesterol. Multi-morbidity is considered if the respondent is diagnosed by a health professional with at least two chronic health conditions.

Table 7.31 presents the self-reported prevalence of single and multi-morbidity conditions by background characteristics. In India, 26% of older adults age 45 and above have single morbidity condition, while 18% have multi-morbidity. The prevalence of multi-morbidity conditions is higher among elderly age 60 and above (23%) than among older adults age 45-59 (13%). Among elderly age 60 and above, the prevalence of multi-morbidity is much higher in those living in urban areas (36%) than those living in rural areas (18%) and higher among women (25%) than among men (22%). The prevalence of multi-morbidity conditions increases with education and MPCE quintiles, ranging from 18% among those with no schooling to 37% among those with 10 or more years of schooling and from 16% in the poorest MPCE quintile to 35% in the richest quintile. Age-specific differences in single morbidity and multi-morbidity are shown in Figure 7.18. The prevalence of single morbidity and multi-morbidity conditions increases with age.

Figure 7.18 Multi-morbidity conditions (%) among older adults by age, India, LASI Wave 1, 2017-18

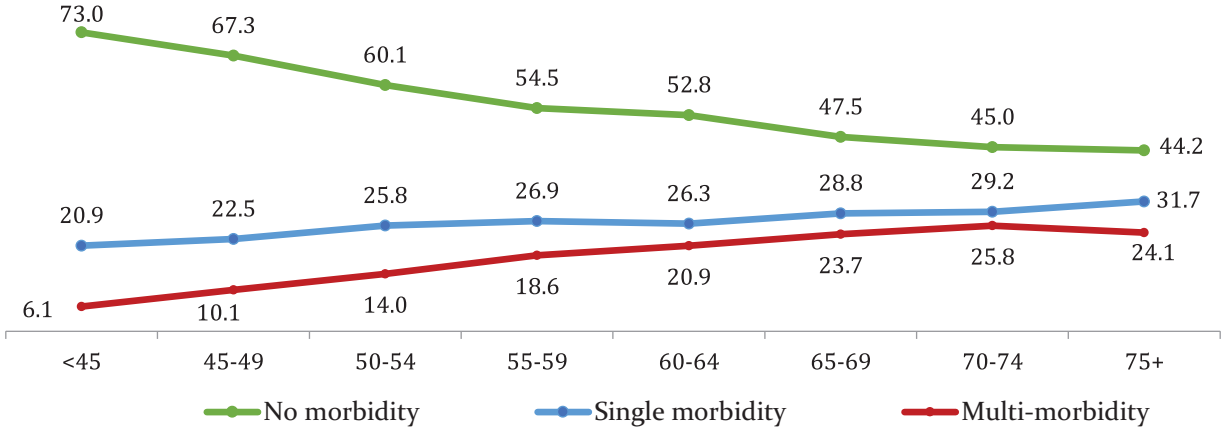


Table 7.32 presents the state-wise differences in multi-morbidity conditions. The prevalence of multi-morbidity conditions among older adults age 45 and above is higher in the demographically advanced states/UTs, with the highest being in Kerala (40%) followed by that in Lakshadweep (31%), Jammu & Kashmir (28%), Puducherry (27%), Chandigarh (27%), and Andaman & Nicobar Islands (27%). In comparison, the prevalence is lower in the north-eastern states such as in Arunachal Pradesh (9%), Nagaland (7%), and Mizoram (6%) besides Chhattisgarh (7%). One in every five elderly age 60 and above reported single chronic condition in all states/UTs of India, except in Nagaland (14%). The prevalence of multi-morbidity among elderly age 60 and above is higher in the states/UTs of Kerala (52%), Chandigarh (41%), Lakshadweep (40%), Goa (39%), and Andaman & Nicobar Islands (38%).

Key findings: multi-morbidity

- In India, almost a quarter (23%) of elderly age 60 and above have been diagnosed with multi-morbidity conditions and; elderly women are more likely to have multi-morbidity conditions.
- Elderly age 60 and above living in urban areas (36%), those with 10+ years of schooling (37%) and in the richest MPCE quintile (35%) are more likely to diagnosed with multi-morbidity conditions.
- A higher proportion of elderly age 60 and above have been diagnosed with multi-morbidity in the states/UTs of Kerala (52%), Chandigarh (41%), Lakshadweep (40%), Goa (39%), Andaman & Nicobar (38%), and Puducherry (36%).

Table 7.31 Self-reported prevalence (%) of diagnosed multi-morbidity conditions1 among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number
Place of residence												
Rural	67.1	23.4	9.6	25,754	54.2	27.5	18.2	20,691	61.0	25.3	13.7	46,445
Urban	55.2	26.0	18.7	14,928	32.4	31.9	35.7	10,695	45.6	28.5	25.9	25,623
Sex												
Male	65.0	22.4	12.6	15,427	50.2	27.8	22.0	15,043	57.4	25.2	17.4	30,470
Female	61.9	25.4	12.7	25,255	45.8	29.7	24.6	16,343	55.2	27.2	17.6	41,598
Marital status												
Currently married	63.4	24.1	12.5	35,386	49.0	28.4	22.7	19,870	58.0	25.7	16.3	55,256
Widowed	57.9	26.8	15.3	3,864	45.5	29.7	24.7	10,694	48.4	29.0	22.5	14,558
Divorced/Separated/ Deserted/Others	68.8	22.1	9.1	1,432	56.3	25.3	18.4	822	64.2	23.3	12.5	2,254
Living arrangement												
Living alone	57.8	29.1	13.0	689	45.8	31.7	22.5	1,619	48.6	31.1	20.3	2,308
Living with spouse and/or others	58.4	25.4	16.2	4,535	47.8	28.7	23.5	6,169	52.2	27.3	20.5	10,704
Living with spouse and children	64.2	23.8	12.0	30,197	49.6	28.1	22.3	13,461	59.6	25.2	15.2	43,658
Living with children and others	59.1	26.3	14.6	4,075	45.4	29.0	25.6	8,417	49.3	28.3	22.4	12,492
Living with others only	68.6	22.0	9.4	1,186	49.8	29.8	20.4	1,720	56.9	26.9	16.2	2,906
Religion												
Hindu	64.6	24.0	11.5	29,856	48.8	28.6	22.6	22,984	57.3	26.1	16.6	52,840
Muslim	52.2	26.9	20.9	4,927	43.1	30.7	26.1	3,721	48.2	28.6	23.2	8,648
Christian	70.3	18.5	11.2	4,058	45.4	23.9	30.7	3,139	59.3	20.9	19.8	7,197
Others	58.7	27.5	13.8	1,841	43.6	30.5	25.9	1,542	51.4	28.9	19.7	3,383
Caste/tribe												
Scheduled tribe	78.1	16.5	5.4	7,327	66.4	22.7	10.9	5,160	73.0	19.2	7.8	12,487
Scheduled caste	65.0	24.2	10.7	6,889	52.5	29.0	18.4	5,130	59.4	26.4	14.2	12,019
Other backward class	61.8	24.4	13.8	15,258	46.9	28.7	24.5	11,854	55.0	26.3	18.7	27,112
None of the above	58.7	26.8	14.5	11,208	40.9	30.6	28.4	9,242	50.3	28.6	21.1	20,450
Education												
No schooling	65.4	23.6	11.0	16,288	54.5	27.9	17.5	16,860	59.7	25.9	14.4	33,148
Less than 5 years complete	62.3	24.9	12.8	4,264	42.3	32.2	25.5	3,775	52.6	28.4	19.0	8,039
5-9 years complete	61.9	25.5	12.7	10,872	41.3	28.8	29.8	5,997	53.9	26.8	19.3	16,869
10 or more years complete	60.3	23.9	15.8	9,258	33.7	29.4	36.9	4,754	51.1	25.8	23.1	14,012
Work status												
Currently working	68.2	22.3	9.5	23,623	61.3	25.4	13.3	9,284	66.1	23.2	10.6	32,907
Worked in past but currently not working	47.3	29.2	23.5	4,566	42.5	31.1	26.5	13,332	43.7	30.6	25.7	17,898
Never worked	59.0	26.3	14.8	12,493	40.9	29.1	30.0	8,770	51.0	27.5	21.5	21,263

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Background characteristics	Age 45-59*				Age ≥ 60				Total			
	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number
MPCE quintile												
Poorest	71.6	21.1	7.2	7,652	56.9	27.5	15.6	6,463	64.5	24.2	11.3	14,115
Poorer	65.4	24.8	9.8	8,033	51.0	29.2	19.8	6,460	58.6	26.8	14.5	14,493
Middle	63.9	23.9	12.1	8,104	48.7	29.3	22.0	6,400	56.8	26.4	16.7	14,504
Richer	60.4	26.4	13.1	8,498	42.7	30.1	27.2	6,160	52.5	28.1	19.5	14,658
Richest	53.7	25.0	21.3	8,395	36.9	27.8	35.2	5,903	46.7	26.2	27.1	14,298
Total	**63.1**	**24.3**	**12.7**	**40,682**	**47.9**	**28.8**	**23.3**	**31,386**	**56.1**	**26.3**	**17.5**	**72,068**

Notes

* *Including spouse irrespective of age*

[1]Multi-morbidity conditions refer to the presence of two or more chronic diseases which include hypertension, chronic heart diseases, stroke, any chronic lung disease, diabetes, cancer or malignant tumor, any bone/joint disease, any neurological/psychiatric disease or high cholesterol

Table 7.32 Self-reported prevalence (%) of diagnosed multi-morbidity conditions1 among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number
India	**63.1**	**24.3**	**12.7**	**40,682**	**47.9**	**28.8**	**23.3**	**31,386**	**56.1**	**26.3**	**17.5**	**72,068**
North												
Chandigarh	51.0	30.5	18.5	625	33.2	25.8	41.0	389	43.9	28.6	27.4	1,014
Delhi	60.1	27.3	12.6	822	38.6	30.2	31.2	495	51.9	28.4	19.7	1,317
Haryana	57.9	31.5	10.5	1,048	44.5	37.1	18.4	847	51.5	34.2	14.3	1,895
Himachal Pradesh	61.5	25.3	13.2	765	43.8	31.6	24.7	618	53.1	28.3	18.6	1,383
Jammu & Kashmir	49.1	30.9	20.0	881	33.5	31.2	35.3	730	41.5	31.0	27.5	1,611
Punjab	51.9	27.2	20.9	1,112	39.6	29.0	31.4	1,004	46.0	28.1	26.0	2,116
Rajasthan	62.9	27.6	9.5	1,161	48.7	30.9	20.4	1,077	55.8	29.2	15.0	2,238
Uttarakhand	59.2	26.6	14.2	715	50.3	32.9	16.8	641	54.8	29.7	15.4	1,356
Central												
Chhattisgarh	79.3	15.7	5.0	1,275	66.4	22.5	11.2	779	74.3	18.3	7.4	2,054
Madhya Pradesh	70.0	22.5	7.5	1,599	63.4	22.6	14.0	1,313	66.8	22.6	10.6	2,912
Uttar Pradesh	71.2	20.8	8.0	2,395	63.7	24.1	12.2	2,167	67.5	22.4	10.1	4,562
East												
Bihar	66.8	23.8	9.3	1,709	59.7	24.8	15.5	1,807	63.0	24.4	12.7	3,516
Jharkhand	74.3	18.8	6.9	1,294	61.1	26.1	12.9	1,168	67.9	22.3	9.8	2,462
Odisha	73.3	19.1	7.7	1,676	56.8	26.0	17.1	1,235	66.0	22.1	11.8	2,911
West Bengal	52.6	29.0	18.4	2,384	35.9	29.0	35.1	1,540	45.9	29.0	25.2	3,924
Northeast												
Arunachal Pradesh	77.0	15.4	7.7	897	62.6	24.4	13.0	318	73.5	17.6	9.0	1,215
Assam	68.1	25.6	6.3	1,548	52.5	31.5	16.0	814	62.5	27.7	9.8	2,362
Manipur	70.4	21.4	8.2	761	56.6	28.0	15.4	605	64.0	24.5	11.6	1,366
Meghalaya	77.3	20.0	2.7	556	61.8	27.8	10.4	411	70.8	23.3	5.9	967
Mizoram	73.8	18.7	7.5	714	52.0	30.4	17.6	531	64.0	24.0	12.0	1,245
Nagaland	81.8	12.2	6.0	708	78.5	14.2	7.3	605	80.2	13.2	6.6	1,313
Tripura	62.8	27.3	9.9	732	47.2	31.5	21.3	460	56.6	29.0	14.4	1,192
West												
Dadra & Nagar Haveli	68.1	19.9	12.0	635	52.7	26.2	21.1	450	62.1	22.4	15.5	1,085
Daman & Diu	52.5	26.9	20.5	557	35.4	31.6	33.0	429	44.4	29.2	26.4	986
Goa	55.0	29.7	15.3	788	26.6	34.5	38.8	634	42.1	31.9	26.0	1,422
Gujarat	64.6	23.6	11.7	1,344	46.0	28.1	25.8	984	56.3	25.7	18.1	2,328
Maharashtra	63.6	25.2	11.2	2,176	37.6	34.0	28.4	1,786	50.9	29.5	19.6	3,962

Continued

Continued

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number	No Morbidity	Single Health Condition	Two or More Health Conditions	Number
South												
Andaman & Nicobar Islands	52.0	28.8	19.3	721	31.3	30.4	38.3	521	43.6	29.4	27.0	1,242
Andhra Pradesh	53.3	30.1	16.6	1,569	35.0	32.6	32.5	1,101	45.6	31.1	23.2	2,670
Karnataka	64.1	19.5	16.4	1,411	44.8	28.4	26.8	1,002	56.5	23.0	20.5	2,413
Kerala	43.5	30.1	26.4	1,277	21.4	26.4	52.2	1,206	32.1	28.2	39.8	2,483
Lakshadweep	50.1	27.5	22.4	637	31.8	28.5	39.6	500	41.4	28.0	30.6	1,137
Puducherry	52.9	27.7	19.4	787	33.1	30.7	36.2	638	43.7	29.1	27.3	1,425
Tamil Nadu	57.1	27.9	15.0	1,995	36.9	32.5	30.6	1,530	47.8	30.0	22.1	3,525
Telangana	57.7	27.0	15.3	1,408	33.8	35.5	30.7	1,051	47.1	30.8	22.2	2,459

Notes

** Including spouse irrespective of age*

[1] Multi-morbidity conditions refer to the presence of two or more chronic diseases which include hypertension, chronic heart diseases, stroke, any chronic lung disease, diabetes, cancer or malignant tumor, any bone/joint disease, any neurological/psychiatric disease or high cholesterol

8. SYMPTOMS, INJURIES, ENDEMIC DISEASES, AND WOMEN'S HEALTH

India is currently facing a double burden of disease. On one hand, the prevalence of non-communicable diseases is growing fast; on the other hand, the prevalence of infectious disease, common health conditions such as pain and sleep, injury, falls, and women's health problems are contributing significantly to disease burden in India (Arokiasamy, 2018; Paul and Singh, 2017; Williams et al., 2015). Endemic diseases continue to be important public health issues in India. In addition, the prevalence of sleep problems was 15% among older adults in India in 2006-2007 (Koyanagi et al., 2014), and body pain is also common among older Indian adults. (Williams et al., 2015; Saxena, Jain and Bhatnagar, 2018). However, elderly persons do not consider pain as a problem, and previous studies have shown that people in general do not seek treatment for sleep. Measuring sleep or pain has several limitations, such as underreporting or being considered as a normal aspect of ageing. However, the health implications of sleep and pain are serious, because these conditions are closely linked with cognitive impairment, morbidity, and mortality (Macfarlane et al., 2001; Rod et al., 2010). Furthermore, the older population is vulnerable to natural disasters, such as heat waves, seasonal floods, and tsunami, which have significant health implications (Bukvic et al., 2018). Therefore, understanding the health implications of natural disasters will be beneficial from a public policy perspective.

In LASI, information was collected on symptom-based health conditions: angina, sleep, and pain. Information was also collected on other health domains such as endemic diseases, health events (injury and falls), health problems due to disaster. There is another domain of ill health that is often underreported and is left unaddressed – women's health, which primarily involve the changes that occur in women's body especially after menopause, and as they age. In LASI, questions were asked only to the women on their reproductive health issues.

8.1 SYMPTOM-BASED HEALTH CONDITIONS

Inadequate health-care services and low health awareness are likely to contribute to lower rates of diagnosis and treatment of chronic diseases, and a rising disease burden due to these conditions (Samb et al., 2010). To assess the disease burden that remains undiagnosed, it is necessary to develop tools that can identify chronic health conditions based on an algorithm of the symptomatic patterns of particular diseases. Apart from the self-reported diagnosed conditions described in the previous chapter on chronic health conditions, in the LASI, an additional set of symptom-based questions were asked to assess the prevalence of angina pectoris, pain, and sleep problems.

8.1.1 Angina pectoris

Angina, a risk factor for ischaemic heart disease, refers to chest pain or discomfort, which occurs when the area surrounding the heart muscles does not receive oxygen sufficiently. This arterial blockage interrupts or stops the blood flow to the heart muscles, eventually resulting in the occurrence of angina. Those with symptoms suggestive of angina are at higher risk of ischaemic heart diseases (IHD) and therefore, is considered to be an alarming sign of increased risk of heart attack. In the LASI, the World Health Organisation's Rose Angina Questionnaire (Rose, 1962) was used for the symptom-based assessment of angina pectoris. The Rose questionnaire is a screening tool that has been shown to be predictive of ischaemic heart disease. Details of the questions included in the questionnaire and the algorithm followed in measuring angina are shown in the flowchart below:

Chart 8.1: The Rose questionnaire algorithm used to calculate the prevalence of symptom-based angina pectoris in the LASI

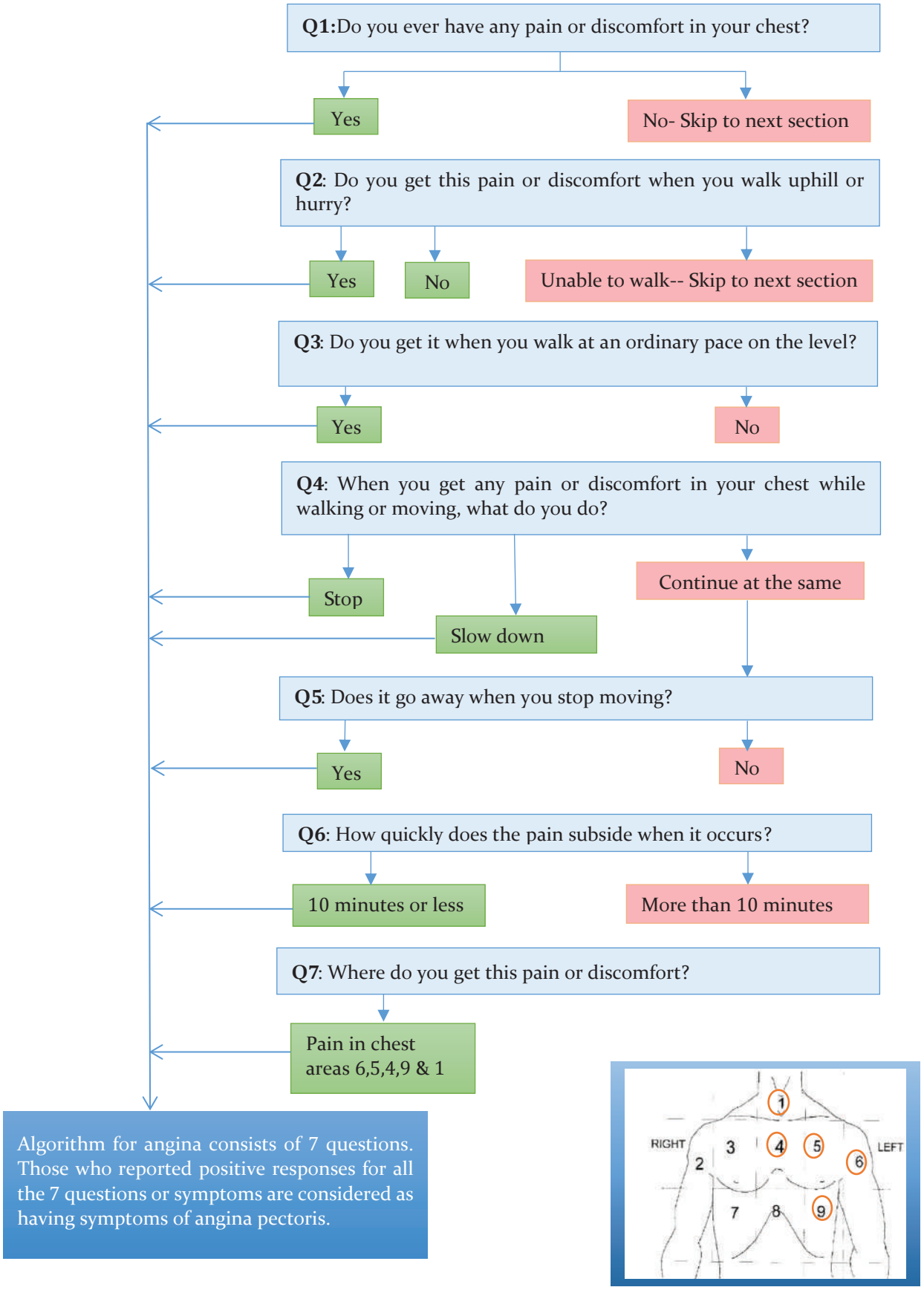
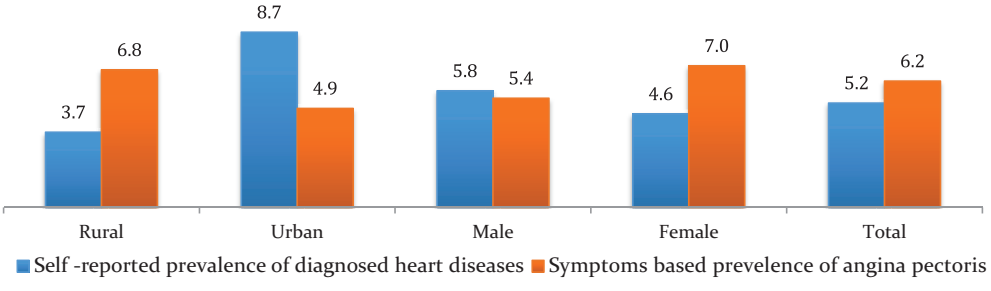


Table 8.1 presents the symptom-based prevalence of angina pectoris in India by background characteristics. The overall prevalence of angina pectoris among older adults age 45 and above is 6%; the prevalence of angina is slightly higher among the elderly age 60 and above (6%) compared to older adults age 45-59 (5%). Among the elderly age 60 and above, the prevalence of angina pectoris is higher in rural (7%) than urban areas (5%); women (7%) have higher prevalence of angina than men (5%). The prevalence of angina among both older adults age 45-59 and elderly age 60 and above decreases as educational attainment increases.

Figure 8.1 shows the comparison of the self-reported diagnosed prevalence of heart disease and prevalence of angina pectoris based on the Rose questionnaire's symptom-based algorithm. The prevalence of angina is much higher than the prevalence of diagnosed heart disease among rural elderly and elderly women. However, the diagnosed prevalence of heart disease is higher than symptom-based prevalence of angina among urban elderly and elderly men. This pattern suggests that the burden of undiagnosed heart diseases in India is much higher among rural elderly and elderly women.

Figure 8.1 Self-reported diagnosed prevalence of heart disease and symptom-based prevalence of angina pectoris among elderly age 60 and above by place of residence and sex, India, LASI Wave 1, 2017-18



Cross-state variations in the prevalence of angina is shown in Table 8.2. The prevalence of angina pectoris among older adults age 45 and above varied from approximately 19% in Himachal Pradesh to 2% in Lakshadweep and Haryana. More than one in ten elderly age 60 and above have symptomatic angina in the states/UTs of Himachal Pradesh (20%), Meghalaya (15%), Uttarakhand (13%), and Maharashtra (10%). However, the prevalence of symptomatic angina is relatively lower among elderly age 60 and above in the southern Indian states/UTs of Karnataka (4%), Tamil Nadu (4%), Telangana (3%), Andhra Pradesh (3%), and Lakshadweep (2%).

8.1.2 Sleep problems and pain

Sleep disturbance and the experience of pain are both common among elderly adults (Zimmerman et al., 2015). Natural age-related changes in sleep patterns and the circadian rhythm, which further contribute to insomnia, including advanced sleep related disorders, are characterised by falling asleep early and waking-up early (Koffel et al., 2019).

In the LASI, sleep problem was defined as difficulty in falling or staying asleep or having sleep that is non-restorative and which results in significant daytime impairment. Information related to sleep included questions on quality of sleep in the month prior to the interview, medications or other form of treatment taken to help the respondent sleep, and whether these medications or treatments were recommended by a health professional. Questions on quality of sleep included a total of five domains: trouble falling asleep, waking up at night and having trouble getting back to sleep, waking too early in the morning and not being able to fall asleep, feeling unrested during the day, and taking a nap during the day.

Information on the frequency of each of these, such as rarely (1-2 nights per week), occasionally (3-4 nights per week), and frequently (5 or more nights per week), was also collected. If respondents reported that all problems described in the quality of sleep questions occurred frequently, they are considered as having symptom-based sleep problems.

The symptom-based prevalence of any type of sleep problem among older adults age 45 and above in India is 13% (Table 8.1). This prevalence is higher among elderly age 60 and above (15%) compared to older adults age 45-59 (11%). The prevalence of symptom-based sleep problems among elderly age 60 and above is also higher in rural (16%) than urban area areas (13%), as well as higher among women (16%) than men (14%). The prevalence of symptom-based sleep problems decreases as educational attainment increases.

Table 8.2 presents variations by state in the prevalence of any sleep problem among older adults. In most Indian states/UTs, the prevalence of any sleep problem is higher among elderly age 60 and above compared to that among older adults age 45-59. Among all the states/UTs, the prevalence of sleep problems among older adults age 45 and above is highest in Madhya Pradesh (19%), followed by Puducherry (18%) and Gujarat (18%). Around a fifth of the elderly age 60 and above have sleep problems in the states/UTs of Madhya Pradesh (22%), Punjab (21%), Puducherry (21%), Kerala (20%), and Delhi (20%). In the north-eastern states of Manipur (4%), Mizoram (3%) and Nagaland (2%), less than 5% of the elderly age 60 and above reported sleep problems.

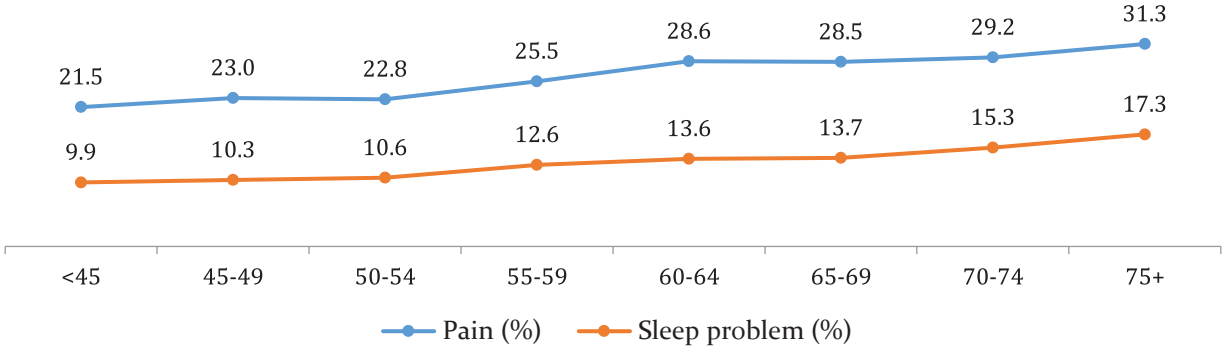
In the LASI, all respondents were asked whether they are often troubled with pain. Those who reported problem of pain were further asked about the frequency of pain, any medication taken to get relief from pain, type of treatment taken for relief, and whether the pain interferes with activities of daily household chores or work. Pain was considered as a problem when the respondent reported that they were troubled by pain and they required some form of medication or treatment for relief of pain.

The symptom-based prevalence of pain among older adults is presented in Tables 8.1 and 8.2 by background characteristics and by states/UTs, respectively. In India, a little more than a quarter of older adults age 45 and above (26%) reported having pain that required treatment. The prevalence of pain is higher among elderly (29%) than among older adults age 45-59 (23%). Among the elderly age 60 and above, the prevalence of pain is higher in rural areas (30%) and among women (33%) than their respective counterparts (27% in urban areas and 25% among men). Approximately one third of the elderly age 60 and above living alone (33%) and Muslim (34%) elderly reported being troubled by pain.

The prevalence of pain among older adults age 45 and above is highest in the states/UTs of Puducherry (48%), followed by Odisha (43%), Jharkhand (41%), Daman & Diu (35%), Himachal Pradesh (35%), and Bihar (33%). Around half of the elderly age 60 and above in the states/UTs of Puducherry (54%), Odisha (49%), and Jharkhand (47%) reported having trouble with pain; however, less than 10% of the elderly age 60 and above in Meghalaya (8%) and Mizoram (1.3%) reported having trouble with pain.

Figure 8.2 shows the prevalence of sleep problems and pain by age. A steady increase in the prevalence of pain as well as the prevalence of any sleep problem is found to correspond with advancing age. In particular, a sharper increase is noted after age 55. For pain, the prevalence varies from 23% among older adults age 45-49 to 31% among oldest old age 75 and above. For any sleep problem, the prevalence varied from 10% among older adults age 45-49 to 17% among the elderly age 75 and above.

Figure 8.2 Prevalence (%) of sleep problem and pain among older adults by age, India, LASI Wave 1, 2017-18



Key findings: angina, sleep, and pain

- Overall, among the elderly age 60 and above, symptom-based prevalence of angina pectoris is 6%. The prevalence of angina is much higher than diagnosed prevalence of heart disease among rural elderly and elderly women age 60 and above. Whereas, the diagnosed prevalence of heart disease is higher compared with symptom-based prevalence among urban elderly and elderly men age 60 and above. This pattern of evidence suggest that burden of undiagnosed heart diseases is much higher among elderly in rural area and elderly women.
- More than one in ten elderly age 60 and above have symptomatic angina in the states/UTs of Himachal Pradesh (20%), Meghalaya (15%), Uttarakhand (13%), and Maharashtra (10%).
- In India, 15% of elderly age 60 and above have sleep problems and around a fifth of elderly age 60 and above have sleep problems in the states/UTs of Madhya Pradesh (22%), Punjab (21%), Puducherry (21%), Kerala (20%), and Delhi (20%).
- More than a quarter of elderly age 60 and above experienced pain (29%) and around half of elderly age 60 and above from Puducherry (54%), Odisha (49%) and Jharkhand (47%) reported trouble with pain.

Table 8.1 Self-reported prevalence (%) of symptom-based health conditions: angina pectoris, pain and sleep problem among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number
Place of residence												
Rural	6.5	25.4	11.8	25,740	6.8	30.2	15.6	20,678	6.6	27.7	13.6	46,418
Urban	3.2	19.3	9.0	14,908	4.9	27.2	12.8	10,680	3.9	22.6	10.6	25,588
Sex												
Male	3.9	17.8	9.8	15,413	5.4	25.1	13.9	15,031	4.7	21.6	11.9	30,444
Female	6.3	26.6	11.5	25,235	7.0	33.0	15.6	16,327	6.6	29.3	13.2	41,562
Marital status												
Currently married	5.4	23.2	10.4	35,355	6.5	28.9	13.8	19,852	5.8	25.3	11.7	55,207
Widowed	6.5	26.1	16.0	3,863	6.0	30.4	16.5	10,684	6.1	29.4	16.4	14,547
Divorced/Separated/Deserted/ Others	3.8	18.0	8.5	1,430	4.0	22.0	12.2	822	3.8	19.5	9.8	2,252
Living arrangement												
Living alone	4.6	26.4	14.4	689	5.8	32.7	18.6	1,618	5.6	31.3	17.7	2,307
Living with spouse and/or others	5.4	23.5	10.7	4,504	6.7	29.4	14.0	6,149	6.1	26.9	12.7	10,653
Living with spouse and children	5.3	23.1	10.4	30,198	6.4	28.8	13.6	13,463	5.7	24.9	11.4	43,661
Living with children and others	6.6	26.0	14.7	4,075	5.9	30.0	16.1	8,415	6.1	28.8	15.7	12,490
Living with others only	3.8	19.0	10.5	1,182	5.3	26.5	15.1	1,713	4.8	23.7	13.4	2,895
Religion												
Hindu	5.3	23.3	10.8	29,831	6.1	28.8	14.6	22,960	5.6	25.8	12.6	52,791
Muslim	6.8	25.4	11.5	4,920	7.1	34.2	15.6	3,718	6.9	29.2	13.3	8,638
Christian	3.7	17.0	9.9	4,056	4.8	29.3	11.2	3,139	4.2	22.4	10.5	7,195
Others	5.5	23.1	11.7	1,841	8.6	25.6	18.6	1,541	7.0	24.3	15.1	3,382
Caste/tribe												
Scheduled tribe	5.3	22.6	10.1	7,325	6.3	27.8	13.1	5,156	5.7	24.9	11.4	12,481
Scheduled caste	5.8	25.4	13.2	6,884	6.2	29.4	17.6	5,128	6.0	27.2	15.2	12,012
Other backward caste	5.0	22.6	10.3	15,240	6.2	29.0	14.2	11,836	5.5	25.5	12.1	27,076
None of the above	6.0	23.3	10.5	11,199	6.2	30.3	14.2	9,238	6.1	26.6	12.3	20,437
Education												
No schooling	6.8	25.3	12.4	16,275	6.7	30.9	15.5	16,850	6.7	28.2	14.0	33,125
Less than 5 years complete	5.8	29.2	13.1	4,260	7.3	33.1	15.6	3,772	6.5	31.1	14.3	8,032
5-9 years complete	5.0	23.6	11.2	10,866	6.2	27.3	13.7	5,988	5.5	25.0	12.1	16,854
10 or more years complete	3.0	16.4	6.7	9,247	3.5	22.3	12.3	4,748	3.2	18.5	8.6	13,995
Work status												
Currently working	5.2	21.6	10.0	23,603	6.1	26.5	11.8	9,277	5.5	23.1	10.5	32,880
Worked in past but currently not working	6.8	29.7	16.2	4,563	5.7	31.0	17.3	13,320	6.0	30.7	17.0	17,883
Never worked	5.3	24.1	10.6	12,482	7.3	29.9	14.2	8,761	6.2	26.7	12.2	21,243

continued

continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number
MPCE quintile												
Poorest	4.9	22.4	9.9	7,646	6.2	28.8	14.6	6,460	5.5	25.5	12.1	14,106
Poorer	5.9	23.3	11.2	8,027	5.3	29.3	15.1	6,452	5.6	26.1	13.0	14,479
Middle	5.2	23.9	11.0	8,096	6.8	30.4	14.5	6,395	5.9	27.0	12.6	14,491
Richer	6.2	23.9	11.4	8,489	6.4	28.3	13.9	6,153	6.3	25.9	12.5	14,642
Richest	4.8	23.0	10.9	8,390	6.7	29.9	15.9	5,898	5.6	25.9	13.0	14,288
Total	**5.4**	**23.3**	**10.9**	**40,648**	**6.2**	**29.3**	**14.8**	**31,358**	**5.8**	**26.1**	**12.7**	**72,006**

Notes

**Including spouse irrespective of age*

[1] Angina pectoris refers to, "a chest pain or discomfort with all the following symptoms: (a) the pain must include either the sternum (any level) or the left arm and left anterior chest (defined as the anterior chest wall between the levels of clavicle and lower end of sternum), (b) pain must be provoked by either hurrying or walking uphill (or by walking on the level, for those who never attempt more), (c) when pain occurs on walking it must make the person either stop or slacken pace, (d) pain must disappear on a majority of occasions in 10 min or less from the time when the person stands still.

[2] Pain refers to those who reported that they were troubled by pain and they required some form of medication or treatment for relief of pain.

[3] Sleep problem refers to difficulty in falling asleep or staying asleep throughout the night and also feeling unrested during the day (anyone or more).

Table 8.2 Self-reported prevalence (%) of symptom-based health conditions: angina pectoris, pain and sleep problem among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number
India	**5.4**	**23.3**	**10.9**	**40,648**	**6.2**	**29.3**	**14.8**	**31,358**	**5.8**	**26.1**	**12.7**	**72,006**
North												
Chandigarh	1.9	22.0	8.2	624	3.5	25.5	8.6	387	2.5	23.4	8.4	1,011
Delhi	3.5	23.7	9.3	822	7.0	32.9	20.3	495	4.8	27.2	13.5	1,317
Haryana	1.8	12.1	10.6	1,048	2.2	15.2	16.5	847	2.0	13.6	13.4	1,895
Himachal Pradesh	17.5	35.6	9.9	765	19.6	34.2	15.7	617	18.5	34.9	12.6	1,382
Jammu & Kashmir	8.7	19.2	6.6	881	7.6	26.2	11.1	730	8.1	22.6	8.8	1,611
Punjab	4.9	23.8	14.2	1,110	5.5	20.6	20.7	1,002	5.2	22.2	17.3	2,112
Rajasthan	4.7	21.2	7.9	1,161	5.7	24.2	10.1	1,077	5.2	22.7	9.0	2,238
Uttarakhand	11.4	23.8	10.6	716	13.4	32.1	16.8	641	12.4	27.9	13.6	1,357
Central												
Chhattisgarh	5.1	18.4	7.8	1,274	5.7	22.3	11.5	779	5.3	19.9	9.2	2,053
Madhya Pradesh	8.6	26.7	16.0	1,597	8.7	33.4	21.7	1,312	8.6	29.9	18.7	2,909
Uttar Pradesh	6.5	19.6	13.8	2,395	6.6	24.8	16.7	2,166	6.5	22.2	15.2	4,561
East												
Bihar	8.8	31.5	9.4	1,708	9.3	34.7	13.2	1,806	9.1	33.2	11.4	3,514
Jharkhand	5.3	34.6	9.8	1,293	5.5	47.2	11.7	1,166	5.4	40.7	10.7	2,459
Odisha	2.4	38.2	11.0	1,675	4.4	49.3	11.0	1,233	3.3	43.1	11.0	2,908
West Bengal	4.1	26.5	15.3	2,383	2.9	31.1	16.9	1,541	3.7	28.3	15.9	3,924
Northeast												
Arunachal Pradesh	3.6	14.7	4.0	897	8.4	19.9	10.8	318	4.8	16.0	5.7	1,215
Assam	4.9	24.7	3.6	1,547	5.4	29.0	9.0	814	5.1	26.2	5.5	2,361
Manipur	3.7	23.2	4.7	760	3.0	33.9	4.2	605	3.4	28.2	4.5	1,365
Meghalaya	11.3	4.5	2.3	556	14.5	7.6	6.1	411	12.6	5.8	3.9	967
Mizoram	2.4	[0.4]	2.3	713	3.6	1.3	3.1	531	2.9	0.8	2.7	1,244
Nagaland	6.2	18.3	2.2	707	6.6	21.8	1.6	606	6.4	20.0	1.9	1,313
Tripura	6.4	27.4	9.3	732	9.3	30.6	8.2	459	7.5	28.7	8.9	1,191
West												
Dadra & Nagar Haveli	4.8	18.9	14.2	632	5.7	19.1	17.2	448	5.2	19.0	15.4	1,080
Daman & Diu	5.7	31.3	15.3	557	5.7	39.9	18.8	428	5.7	35.3	17.0	985
Goa	5.5	20.9	11.8	788	7.0	26.5	11.6	634	6.2	23.4	11.7	1,422
Gujarat	4.6	25.4	17.7	1,338	4.8	27.7	17.8	979	4.7	26.5	17.7	2,317
Maharashtra	9.2	28.6	7.5	2,175	10.4	36.7	13.6	1,782	9.8	32.5	10.5	3,957

continued

continued

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number	Angina pectoris[1]	Pain[2]	Sleep problem[3]	Number
South												
Andaman & Nicobar Islands	4.6	20.7	15.5	720	8.3	30.9	15.7	521	6.1	24.8	15.6	1,241
Andhra Pradesh	4.0	11.6	8.7	1,566	2.5	12.7	12.0	1,100	3.4	12.1	10.1	2,666
Karnataka	2.5	16.2	9.5	1,410	3.8	23.8	15.2	1,000	3.0	19.2	11.8	2,410
Kerala	5.6	20.0	12.4	1,275	6.7	31.0	20.4	1,205	6.2	25.7	16.5	2,480
Lakshadweep	1.4	17.9	4.0	637	1.8	33.9	7.0	500	1.6	25.5	5.4	1,137
Puducherry	3.0	43.5	14.9	787	4.2	53.7	21.2	638	3.5	48.3	17.9	1,425
Tamil Nadu	2.9	21.4	8.9	1,993	3.6	25.3	12.8	1,530	3.2	23.2	10.7	3,523
Telangana	3.8	16.8	8.6	1,406	3.1	20.3	13.6	1,050	3.5	18.4	10.8	2,456

Notes

**Including spouse irrespective of age*

[1] Angina pectoris refers to, "a chest pain or discomfort with all the following symptoms: (a) the pain must include either the sternum (any level) or the left arm and left anterior chest (defined as the anterior chest wall between the levels of clavicle and lower end of sternum), (b) pain must be provoked by either hurrying or walking uphill (or by walking on the level, for those who never attempt more), (c) when pain occurs on walking it must make the person either stop or slacken pace, (d) pain must disappear on a majority of occasions in 10 min or less from the time when the person stands still.

[2] Pain refers to those who reported that they were troubled by pain and they required some form of medication or treatment for relief of pain.

[3] Sleep problem refers to difficulty in falling asleep or staying asleep throughout the night and also feeling unrested during the day (anyone or more).

8.2 INJURY, FALLS, AND DISASTERS

8.2.1 Injuries and falls

A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor, or other lower level. Globally, falls are a major public health problem. An estimated 646,000 fatal falls occur each year; making falls the second leading cause of unintentional injury-related death after road traffic injuries. In all regions of the world, death rates from falls are highest among adults over the age of 60 years (WHO, 2018c). Older people have the highest risk of death or serious injury arising from a fall; this risk increases with age, which may in part be due to physical, sensory, and cognitive changes associated with ageing, in combination with environments that are not adapted for an ageing population.

In the LASI, detailed information on falls and injury was collected. Respondents were asked whether they sustained any major injury or fall in the past two years. For all those who reported major injuries, further information was collected on cause of injury such as traffic accident, poisoning, struck by person/ object, animal attack/ bite, fire, flame, burn, electric shock, drowning or fall and medical treatment taken. For all cases of falls, related information on number of falls, whether fall was with or without injury, any fracture of bones/joints due to the fall, surgery related to bones/joints, and the bone/ joint for which surgery was done was collected.

Table 8.3 presents the self-reported prevalence of injury and falls by background characteristics. The overall self-reported prevalence of injuries and falls among older adults age 45 and above is 16% and 19%, respectively. In India, a fifth of older adults age 45 and above (21%) reported that they have either sustained any injury or had falls. A higher proportion of the elderly age 60 and above (25%) reported any major injury or falls compared to older adults age 45-59 (18%). Among the elderly age 60 and above, the prevalence of falls (23%) is higher than that of injuries (19%) and that of falls among older adults age 45-59 (17%). Among older adults age 45-59, as well as among the elderly age 60 and above, the self-reported prevalence of either injury or falls is higher in rural (21% and 26%, respectively) than urban areas (14% and 21%, respectively). Among the elderly age 60 and above, a higher proportion of women (27%) than men (22%) reported injury/fall, and the prevalence of injury or fall is higher among widowed (28%) and among those living alone (29%).

Table 8.4 shows substantial cross-state variations in the prevalence of injury and falls. The self-reported prevalence of any injury or fall among older adults age 45 and above is comparatively higher in the east Indian states and lower in the north-eastern states, with a prevalence rate ranging from 31% in Odisha and Bihar to 4% in Mizoram. More than 30% of elderly age 60 and above in Odisha (36%), Bihar (32%), Kerala (31%), Punjab (31%), and Assam (30%) reported any injury or fall. Among the elderly age 60 and above, the prevalence of falls is higher in Odisha (35%), Punjab (31%), Kerala (30%), Assam (29%), and Bihar (29%). The prevalence of falls is lower than 10% in most of the north-eastern states, including Manipur (9%), Nagaland (8%), Meghalaya (6%), and Mizoram (3%). A quarter of elderly age 60 and above reported injuries in Bihar (27%), Assam (25%), and West Bengal (25%).

Table 8.3 Self-reported prevalence (%) of injury and falls among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Injury[1]	Falls	Any injury and/or fall	Number	Injury[1]	Falls	Any injury and/or fall	Number	Injury[1]	Falls	Any injury and/or fall	Number
Place of residence												
Rural	15.7	18.6	20.7	25,743	19.6	23.9	25.7	20,686	17.5	21.1	23.1	46,429
Urban	10.6	12.3	13.8	14,919	16.7	20.5	21.4	10,682	13.2	15.7	17.0	25,601
Sex												
Male	14.7	15.4	18.7	15,419	16.7	19.9	21.9	15,036	15.7	17.7	20.3	30,455
Female	13.5	17.1	18.2	25,243	20.6	25.6	26.8	16,332	16.5	20.7	21.8	41,575
Marital status												
Currently married	13.9	16.3	18.2	35,369	17.2	20.8	22.7	19,857	15.1	18.0	19.9	55,226
Widowed	14.9	18.3	20.1	3,863	21.8	26.9	27.9	10,689	20.2	24.9	26.1	14,552
Divorced/Separated/ Deserted/Others	12.0	16.4	17.9	1,430	12.3	15.9	16.8	822	12.1	16.2	17.5	2,252
Living arrangement												
Living alone	18.8	20.5	23.3	689	20.9	27.2	28.5	1,620	20.4	25.7	27.3	2,309
Living with spouse and/or others	14.0	15.7	18.0	4,518	18.2	21.3	23.6	6,155	16.4	19.0	21.3	10,673
Living with spouse and children	13.8	16.3	18.2	30,198	16.7	20.4	22.2	13,463	14.7	17.6	19.4	43,661
Living with children and others	14.5	18.2	19.6	4,075	21.9	26.6	27.6	8,416	19.8	24.2	25.3	12,491
Living with others only	12.5	17.6	19.6	1,182	18.2	23.4	24.6	1,714	16.1	21.2	22.7	2,896
Religion												
Hindu	14.1	16.7	18.5	29,841	18.9	22.9	24.5	22,969	16.3	19.6	21.3	52,810
Muslim	14.1	15.0	17.7	4,923	19.2	22.9	24.6	3,718	16.3	18.5	20.7	8,641
Christian	6.6	11.1	11.7	4,058	10.6	17.1	18.4	3,140	8.3	13.8	14.7	7,198
Others	16.0	22.3	23.5	1,840	21.5	27.0	28.3	1,541	18.7	24.6	25.8	3,381
Caste/tribe												
Scheduled tribe	12.3	15.5	17.1	7,327	15.5	19.7	21.7	5,159	13.7	17.3	19.1	12,486
Scheduled caste	16.3	19.4	21.4	6,886	21.3	25.1	26.8	5,130	18.6	22.0	23.9	12,016
Other backward caste	12.7	15.1	16.9	15,246	18.1	22.0	23.6	11,841	15.2	18.2	20.0	27,087
None of the above	15.0	17.1	19.1	11,203	19.0	23.7	25.1	9,238	16.9	20.3	21.9	20,441
Education												
No schooling	14.5	17.5	19.1	16,278	19.2	23.6	25.2	16,854	17.0	20.7	22.3	33,132
Less than 5 years complete	16.0	18.9	21.0	4,263	21.0	27.1	28.2	3,774	18.4	22.9	24.5	8,037
5-9 years complete	16.1	18.0	20.6	10,870	17.9	21.0	23.2	5,991	16.8	19.1	21.6	16,861
10 or more years complete	9.7	11.8	13.4	9,251	16.1	18.9	20.2	4,749	11.9	14.3	15.8	14,000
Work status												
Currently working	14.4	16.4	18.7	23,613	17.6	21.5	23.6	9,281	15.4	17.9	20.2	32,894
Worked in past but currently not working	15.5	18.9	20.8	4,565	19.1	23.2	24.9	13,326	18.2	22.1	23.9	17,891
Never worked	12.4	15.8	16.6	12,484	19.5	24.0	24.8	8,761	15.5	19.4	20.2	21,245
MPCE quintile												
Poorest	12.7	14.9	16.6	7,649	16.6	21.3	22.5	6,462	14.6	18.0	19.4	14,111
Poorer	13.8	16.4	18.5	8,031	18.3	23.5	24.7	6,457	15.9	19.7	21.4	14,488
Middle	14.2	16.9	18.5	8,098	19.3	22.4	24.6	6,395	16.5	19.4	21.3	14,493
Richer	15.2	18.0	20.1	8,494	18.5	22.4	24.3	6,153	16.7	20.0	22.0	14,647
Richest	13.9	16.3	18.3	8,390	21.9	25.3	26.9	5,901	17.3	20.1	21.9	14,291
Total	**13.9**	**16.5**	**18.4**	**40,662**	**18.8**	**22.9**	**24.5**	**31,368**	**16.1**	**19.4**	**21.2**	**72,030**

Notes

**Including spouse irrespective of age*

[1] Injury includes injuries sustained due to any traffic accident, violence, animal attack or fall in the past 2 years (any one or more).

Table 8.4 Self-reported prevalence (%) of injury and falls among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Injury[1]	Falls	Any injury and/or fall	Number	Injury[1]	Falls	Any injury and/or fall	Number	Injury[1]	Falls	Any injury and/or fall	Number
India	**13.9**	**16.5**	**18.4**	**40,662**	**18.8**	**22.9**	**24.5**	**31,368**	**16.1**	**19.4**	**21.2**	**72,030**
North												
Chandigarh	9.8	12.5	13.3	624	15.8	19.5	19.9	387	12.2	15.3	15.9	1,011
Delhi	7.2	10.1	11.7	822	12.2	13.2	15.4	494	9.1	11.3	13.1	1,316
Haryana	9.4	10.9	12.9	1,048	13.0	18.1	18.8	847	11.1	14.3	15.7	1,895
Himachal Pradesh	14.9	18.9	21.8	765	15.1	20.6	22.5	617	15.0	19.7	22.1	1,382
Jammu & Kashmir	10.1	9.6	11.3	881	10.4	10.0	12.5	730	10.2	9.8	11.9	1,611
Punjab	18.7	26.8	28.6	1,112	21.6	30.8	31.3	1,004	20.1	28.7	29.9	2,116
Rajasthan	9.4	9.6	12.1	1,161	11.1	12.4	13.7	1,077	10.2	11.0	12.9	2,238
Uttarakhand	17.2	20.9	23.3	716	12.9	19.0	20.1	641	15.1	19.9	21.7	1,357
Central												
Chhattisgarh	8.8	13.1	14.2	1,274	12.3	17.6	19.3	779	10.2	14.8	16.2	2,053
Madhya Pradesh	13.8	15.7	18.3	1,597	17.4	18.7	22.0	1,312	15.6	17.1	20.0	2,909
Uttar Pradesh	17.0	20.0	22.0	2,395	20.7	25.9	27.9	2,166	18.8	22.9	24.9	4,561
East												
Bihar	23.4	27.0	29.3	1,707	26.9	28.7	32.4	1,807	25.3	27.9	31.0	3,514
Jharkhand	18.7	24.1	26.0	1,293	19.9	26.6	28.0	1,166	19.3	25.3	27.0	2,459
Odisha	17.7	26.1	27.4	1,675	23.3	34.5	35.9	1,233	20.2	29.8	31.1	2,908
West Bengal	18.9	19.4	22.2	2,384	24.8	27.5	28.8	1,541	21.3	22.7	24.9	3,925
Northeast												
Arunachal Pradesh	6.1	10.2	10.9	896	9.2	17.0	17.0	317	6.9	11.8	12.4	1,213
Assam	19.0	20.9	22.7	1,548	25.4	28.9	30.0	814	21.3	23.8	25.3	2,362
Manipur	5.9	5.8	8.0	761	9.5	8.6	11.5	605	7.6	7.1	9.6	1,366
Meghalaya	2.7	4.3	4.8	556	3.6	5.8	5.8	411	3.1	4.9	5.2	967
Mizoram	2.4	2.1	2.6	714	3.9	2.9	4.7	531	3.1	2.5	3.6	1,245
Nagaland	3.6	9.9	10.6	708	4.2	7.7	7.8	607	3.9	8.9	9.3	1,315
Tripura	13.7	16.2	18.0	732	15.7	19.5	21.6	459	14.5	17.5	19.4	1,191
West												
Dadra & Nagar Haveli	9.3	13.4	15.1	634	16.4	23.4	25.1	449	12.1	17.3	19.0	1,083
Daman & Diu	13.3	16.6	17.9	557	20.5	24.5	25.7	429	16.7	20.3	21.6	986
Goa	9.4	9.8	13.7	788	11.1	15.2	17.5	634	10.2	12.3	15.4	1,422
Gujarat	14.7	18.1	20.5	1,341	17.3	23.3	24.7	981	15.9	20.5	22.4	2,322
Maharashtra	13.7	17.2	18.0	2,176	18.6	23.5	24.1	1,783	16.1	20.3	21.0	3,959
South												
Andaman & Nicobar Islands	10.0	10.3	10.9	720	13.5	13.2	14.8	521	11.4	11.5	12.5	1,241
Andhra Pradesh	9.9	10.6	11.6	1,567	14.1	15.3	16.4	1,100	11.7	12.5	13.6	2,667
Karnataka	7.8	9.3	10.9	1,410	18.3	21.2	22.0	1,001	12.0	14.0	15.3	2,411
Kerala	11.7	20.4	22.0	1,276	15.7	29.5	30.5	1,206	13.8	25.1	26.4	2,482
Lakshadweep	4.1	6.8	7.6	637	9.6	10.7	10.9	500	6.8	8.7	9.2	1,137
Puducherry	11.9	14.0	14.3	787	15.4	18.2	18.5	638	13.6	16.0	16.3	1,425
Tamil Nadu	8.6	11.2	12.6	1,994	10.9	15.9	16.6	1,530	9.6	13.4	14.5	3,524
Telangana	7.9	8.4	10.3	1,406	10.4	11.3	12.6	1,051	9.0	9.7	11.3	2,457

Notes

**Including spouse irrespective of age*

[1] Injury includes injuries sustained due to any traffic accident, violence, animal attack or fall in the past 2 years (any one or more).

8.2.2 Health conditions due to natural and man-made disasters

A disaster is a natural or man-made event that negatively affects life, health, property, livelihood, or industry. Disasters are highly disruptive events that cause suffering, deprivation, hardship, injury, and even death as a result of direct injury and disease conditions. Disasters can be caused by naturally occurring events, which are called natural disasters, such as landslides, droughts, earthquakes, hurricane/cyclone, flooding, or tornadoes/tsunami, or they can be due to man-made events, either accidental (such as an accidental toxic spill, nuclear power plant event, building collapse, fire, or traffic accident) or deliberately caused (such as a terrorist bombing, poisoning, riot, or stampede).

In the LASI, information was collected on health consequences of either man-made or natural disaster in the last 5 years preceding the survey, such as permanent physical disability, psychological trauma and mental health problems, and chronic illness.

Table 8.5 presents health conditions due to natural and man-made disasters by background characteristics. The overall prevalence of any health problem due to natural and man-made disasters is 4% among older adults age 45 and above. Overall, the prevalence of psychological problems due to disaster is 2%, whereas the prevalence of chronic illness and permanent physical disabilities is less than 1% (0.6% and 0.3%, respectively). Older adults age 45-59 and the elderly age 60 and above are found to be equally affected by health problems due to disaster. The prevalence of health problems due to natural and man-made disasters among older adults age 45 and above in rural areas (4.4%) is more than twice than that in urban areas (1.7%). Among older adults age 45-59, the prevalence of health problems due to disaster is higher in men (4.4%) than in women (3%).

Table 8.6 presents health conditions due to natural and man-made disasters by states/UTs. The prevalence of health problems among older adults age 45-59, as well as that among elderly age 60 and above due to disaster, are higher in the states/UTs of Bihar, Uttar Pradesh, Madhya Pradesh, and Jammu & Kashmir. Around 1% of the elderly age 60 and above reported permanent physical disability in Madhya Pradesh and Assam; 3% reported chronic illness in Mizoram and Nagaland and more than 5% of the elderly age 60 and above reported psychological problems due to either man-made or natural disaster in the states of Bihar (6.3%) and Madhya Pradesh (5.8%).

Key findings: health events: injuries, falls, and disaster

- The self-reported prevalence of injuries and falls among older adults age 45 and above is 16% and 19% respectively; one in four elderly age 60 and above have experienced any injury and /or falls. Among elderly age 60 and above, women, widowed and elderly living alone are more prone to injuries and/or falls.
- The prevalence of falls among the elderly age 60 and above is higher in Odisha (35%), Punjab (31%), Kerala (30%), Assam (29%) and Bihar (29%).
- Elderly age 60 and above are more likely to have psychological problems (2.3%) than permanent physical disability (0.4%) and chronic illness (0.6%) due to natural and man-made disaster.

Table 8.5 Self-reported health conditions due to natural and man-made disasters among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Health problems due to natural and man-made disaster[1]														
	Age 45-59*					Age ≥ 60					Total				
	Permanent physical disability	Psycho-logical problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psycho-logical problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psycho-logical problems	Chronic illness	Any health problem	Number
Place of residence															
Rural	0.4	3.0	0.8	4.6	25,739	0.4	2.7	0.7	4.3	20,684	0.4	2.9	0.8	4.4	46,423
Urban	0.1	0.9	0.4	1.5	14,916	0.3	1.1	0.4	1.9	10,683	0.2	1.0	0.4	1.7	25,599
Sex															
Male	0.4	2.6	1.0	4.4	15,419	0.4	2.3	0.7	3.7	15,037	0.4	2.5	0.8	4.0	30,456
Female	0.2	2.1	0.5	3.0	25,236	0.4	2.2	0.6	3.4	16,330	0.2	2.2	0.5	3.2	41,566
Marital status															
Currently married	0.3	2.3	0.7	3.5	35,361	0.3	2.3	0.7	3.6	19,856	0.3	2.3	0.7	3.6	55,217
Widowed	0.1	2.0	0.6	3.3	3,864	0.5	2.1	0.5	3.5	10,689	0.4	2.1	0.5	3.4	14,553
Divorced/Separated/ Deserted/Others	0.2	3.1	0.1	4.1	1,430	[0.2]	2.3	0.5	3.7	822	0.2	2.8	0.2	4.0	2,252
Living arrangement															
Living alone	-	1.7	0.6	2.8	689	0.5	1.8	0.6	3.4	1,620	0.4	1.7	0.6	3.2	2,309
Living with spouse and/or others	0.5	1.8	0.7	3.3	4,513	0.4	2.1	0.9	3.5	6,153	0.4	2.0	0.8	3.4	10,666
Living with spouse and children	0.3	2.3	0.7	3.5	30,195	0.3	2.5	0.6	3.7	13,463	0.3	2.4	0.7	3.6	43,658
Living with children and others	0.2	2.5	0.5	3.9	4,076	0.4	2.2	0.5	3.5	8,416	0.3	2.3	0.5	3.6	12,492
Living with others only	[0.2]	3.0	0.3	3.8	1,182	[0.8]	2.1	0.3	3.4	1,715	0.6	2.4	0.3	3.5	2,897
Religion															
Hindu	0.3	2.2	0.6	3.5	29,836	0.4	2.3	0.7	3.6	22,966	0.3	2.2	0.7	3.5	52,802
Muslim	0.2	3.4	0.7	4.6	4,921	0.4	2.6	0.5	3.8	3,718	0.3	3.1	0.6	4.2	8,639
Christian	-	2.8	0.7	3.7	4,058	[0.1]	2.7	0.9	4.0	3,141	0.1	2.8	0.8	3.8	7,199
Others	[0.1]	0.5	0.8	1.6	1,840	[0.1]	0.5	0.1	1.0	1,542	0.1	0.5	0.5	1.3	3,382
Caste/tribe															
Scheduled tribe	0.3	2.0	0.4	2.8	7,327	0.2	2.9	0.8	3.9	5,159	0.3	2.4	0.6	3.3	12,486
Scheduled caste	0.3	2.8	0.8	4.2	6,886	0.5	2.1	0.6	3.6	5,130	0.4	2.5	0.7	4.0	12,016
Other backward caste	0.3	2.4	0.6	3.7	15,243	0.4	2.7	0.7	4.2	11,839	0.3	2.5	0.7	4.0	27,082
None of the above	0.2	1.9	0.7	2.9	11,199	0.3	1.5	0.5	2.3	9,239	0.2	1.7	0.6	2.6	20,438
Education															
No schooling	0.4	2.9	0.6	4.3	16,274	0.4	2.7	0.6	4.1	16,853	0.4	2.8	0.6	4.2	33,127
Less than 5 years complete	0.1	1.7	0.6	2.7	4,261	0.5	1.8	1.2	3.6	3,774	0.3	1.8	0.9	3.1	8,035
5-9 years complete	0.3	2.3	0.8	3.7	10,870	0.3	1.6	0.3	2.6	5,990	0.3	2.1	0.6	3.3	16,860
10 or more years complete	0.1	1.4	0.6	2.3	9,250	0.2	1.7	0.7	2.7	4,750	0.1	1.5	0.6	2.4	14,000
Work status															
Currently working	0.3	2.5	0.7	3.8	23,611	0.3	2.9	0.8	4.3	9,280	0.3	2.6	0.7	4.0	32,891
Worked in past but currently not working	0.4	1.8	1.1	3.3	4,564	0.6	2.1	0.7	3.6	13,326	0.5	2.0	0.8	3.5	17,890
Never worked	0.2	2.1	0.4	3.1	12,480	0.2	1.7	0.3	2.6	8,761	0.2	1.9	0.4	2.9	21,241

continued

continued

Background characteristics	Health problems due to natural and man-made disaster[1]														
	Age 45-59*					Age ≥ 60					Total				
	Permanent physical disability	Psycho-logical problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psycho-logical problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psycho-logical problems	Chronic illness	Any health problem	Number
MPCE quintile															
Poorest	0.2	1.8	0.4	2.6	7,648	0.5	2.3	0.6	3.6	6,462	0.3	2.0	0.5	3.1	14,110
Poorer	0.2	2.5	0.5	3.6	8,030	0.5	2.3	0.7	3.7	6,455	0.3	2.4	0.6	3.6	14,485
Middle	0.5	3.3	0.7	4.8	8,097	0.3	2.5	0.4	3.4	6,395	0.4	2.9	0.6	4.1	14,492
Richer	0.3	2.2	0.5	3.3	8,491	0.1	2.0	0.7	3.1	6,154	0.2	2.1	0.6	3.2	14,645
Richest	0.2	1.7	1.1	3.4	8,389	0.5	2.2	0.8	4.2	5,901	0.4		1.0	3.7	14,290
Total	**0.3**	**2.3**	**0.7**	**3.5**	**40,655**	**0.4**	**2.3**	**0.6**	**3.6**	**31,367**	**0.3**		**0.6**	**3.5**	**72,022**

Notes

**Including spouse irrespective of age*, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Reference period for natural and man-made disaster is past 5 years preceding the survey.

Table 8.6 Self-reported health conditions due to natural and man-made disasters among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Health problems due to natural and man-made disaster1														
	Age 45-59*					Age ≥ 60					Total				
	Permanent physical disability	Psychological and mental health problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psychological and mental health problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psychological and mental health problems	Chronic illness	Any health problem	Number
India	**0.3**	**2.3**	**0.7**	**3.5**	**40,655**	**0.4**	**2.3**	**0.6**	**3.6**	**31,367**	**0.3**	**2.3**	**0.6**	**3.5**	**72,022**
North															
Chandigarh	[0.6]	-	[0.4]	1.0	624	[0.3]	[0.4]	[1.2]	[2.0]	387	[0.5]	[0.2]	[0.8]	1.4	1,011
Delhi	[0.1]	-	[0.3]	0.5	822	-	-	-	[0.2]	495	[0.1]	-	[0.2]	0.4	1,317
Haryana	-	0.4	0.6	1.0	1,048	[0.1]	[0.2]	[0.3]	0.6	847	[0.1]	0.3	0.5	0.8	1,895
Himachal Pradesh	[0.7]	3.0	1.4	5.1	765	[0.2]	2.9	[0.2]	3.1	617	[0.5]	2.9	0.8	4.1	1,382
Jammu & Kashmir	[0.1]	2.8	0.7	5.4	881	[0.1]	3.8	1.3	7.2	730	[0.1]	3.3	1.0	6.3	1,611
Punjab	[0.2]	0.5	[0.1]	0.8	1,112	[0.3]	0.6	[0.2]	1.1	1,004	0.3	0.6	[0.1]	0.9	2,116
Rajasthan	0.3	0.4	0.3	1.3	1,161	[0.4]	0.9	0.8	2.3	1,077	0.4	0.7	0.6	1.8	2,238
Uttarakhand	[0.2]	1.2	[0.3]	1.8	716	[0.4]	1.4	[0.1]	1.9	641	0.3	1.3	[0.2]	1.9	1,357
Central															
Chhattisgarh	[0.2]	1.8	[0.4]	2.7	1,274	[0.4]	2.5	[0.2]	3.5	779	0.3	2.1	0.3	3.0	2,053
Madhya Pradesh	0.7	5.2	0.6	6.5	1,597	1.4	5.8	0.5	7.9	1,312	1.1	5.5	0.6	7.2	2,909
Uttar Pradesh	0.4	6.1	0.4	9.1	2,394	0.5	4.4	0.3	6.6	2,165	0.4	5.3	0.4	7.9	4,559
East															
Bihar	[0.2]	8.1	0.5	8.8	1,708	0.3	6.3	0.5	7.2	1,806	0.2	7.2	0.5	7.9	3,514
Jharkhand	[0.1]	5.8	[0.1]	5.9	1,293	-	4.9	[0.1]	5.0	1,166	[0.1]	5.4	[0.1]	5.5	2,459
Odisha	0.9	2.6	0.4	4.0	1,675	0.7	2.7	0.3	4.1	1,233	0.8	2.6	0.4	4.0	2,908
West Bengal	[0.2]	0.6	1.0	1.8	2,383	[0.2]	0.4	0.8	1.3	1,541	0.2	0.5	0.9	1.6	3,924
Northeast															
Arunachal Pradesh	[0.2]	0.9	[0.3]	1.4	896	-	1.1	[1.3]	2.4	318	[0.2]	1.0	0.6	1.7	1,214
Assam	0.4	[0.1]	1.2	1.7	1,548	1.1	[0.1]	1.0	2.2	814	0.7	[0.1]	1.1	1.9	2,362
Manipur	[0.1]	[0.2]	2.6	3.7	760	[0.1]	[0.1]	2.0	2.5	605	0.1	[0.1]	2.3	3.1	1,365
Meghalaya	[0.2]	-	[0.4]	0.9	556	-	[0.1]	[0.1]	[0.3]	411	[0.1]	[0.1]	[0.3]	0.6	967
Mizoram	[0.1]	[0.4]	1.2	1.9	714	-	[0.1]	2.8	3.2	531	0.1	[0.3]	1.9	2.5	1,245
Nagaland	-	[0.3]	2.0	2.7	708	-	-	2.5	2.8	607	-	[0.2]	2.2	2.8	1,315
Tripura	-	1.3	[0.2]	1.3	732	[0.4]	[0.8]	[0.8]	2.0	459	[0.2]	1.1	0.4	1.6	1,191
West															
Dadra & Nagar Haveli	[0.5]	0.6	2.1	3.3	633	[0.7]	[0.2]	[1.0]	2.0	449	[0.6]	0.4	1.7	2.8	1,082
Daman & Diu	[0.2]	[0.4]	2.7	3.5	557	[0.1]	[1.5]	[0.3]	1.9	429	[0.2]	0.9	1.6	2.7	986
Goa	[0.1]	[0.5]		0.8	788	[0.1]	-	[0.1]	[0.1]	634	-	[0.1]	[0.3]	0.5	1,422
Gujarat	[0.2]	1.0	0.6	1.8	1,340	[0.2]	[0.3]	1.1	1.6	980	0.2	0.7	0.8	1.7	2,320
Maharashtra	-	0.2	0.7	0.9	2,176	[0.1]	0.4	1.0	1.3	1,783	0.1	0.3	0.8	1.1	3,959

continued

continued

State/Union Territory	Health problems due to natural and man-made disaster1														
	Age 45-59*					Age ≥ 60					Total				
	Permanent physical disability	Psychological and mental health problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psychological and mental health problems	Chronic illness	Any health problem	Number	Permanent physical disability	Psychological and mental health problems	Chronic illness	Any health problem	Number
South															
Andaman & Nicobar Islands	[0.1]	-	[0.2]	[0.3]	720	[0.2]	-	-	[0.3]	521	0.1	-	[0.1]	0.3	1,241
Andhra Pradesh	[0.2]	0.4	1.1	2.0	1,565	[0.3]	1.0	1.3	3.1	1,100	0.2	0.6	1.2	2.5	2,665
Karnataka	[0.2]	0.5	1.3	1.9	1,410	0.5	0.3	0.9	1.9	1,001	0.3	0.4	1.2	1.9	2,411
Kerala	[0.1]	[0.2]	1.4	2.3	1,276	-	[0.1]	0.9	1.1	1,206	0.1	0.2	1.1	1.7	2,482
Lakshadweep	-	-	-	[0.3]	637	-	-	[0.1]	[0.3]	500	-	-	-	0.3	1,137
Puducherry	[0.2]	[0.2]	0.3	0.8	787	0.6	[0.4]	[0.1]	1.1	638	[0.4]	0.3	0.2	0.9	1,425
Tamil Nadu	0.3	2.6	[0.1]	3.4	1,994	[0.3]	2.0	[0.2]	2.8	1,530	[0.3]	2.3	0.1	3.1	3,524
Telangana	0.4	0.6	1.1	2.1	1,405	[0.3]	0.9	1.2	2.3	1,051	0.3	0.7	1.1	2.2	2,456

Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Reference period for natural and man-made disaster is past 5 years.

8.3 SELF-REPORTED DIAGNOSED ENDEMIC DISEASES

An endemic disease is one that is always present in certain population or region. In the LASI, information was collected on the following three categories of endemic diseases in two years prior to the interview:

- Water-borne diseases - jaundice/hepatitis, typhoid, diarrhoea/gastroenteritis
- Vector-borne diseases -malaria, dengue, chikungunya
- Other infectious diseases - tuberculosis, urinary tract infection

The proportion of older adults age 45 and above who suffered from any endemic disease in the two years prior to the survey is presented in Tables 8.7 and 8.8 by background characteristics and states/UTs, respectively. One in every four older adults age 45 and above reported at least one of these endemic diseases (26%). A higher proportion of older adults age 45 and above in rural (30%) than in urban (19%) areas reported having experienced at least one endemic disease in the two years prior to the interview. The proportion of older adults age 45 and above reporting any endemic disease does not vary much by age, sex, or MPCE quintile; however, this proportion shows a declining trend with an increase in educational attainment.

Cross-state variations (Table 8.8) show that almost half of older adults age 45 and above reported having any endemic disease in Chhattisgarh (49%), followed by Rajasthan (47%), Dadra & Nagar Haveli (46%), and Haryana (45%) while about 5% of older adults in Nagaland and Lakshadweep reported that they were diagnosed with any endemic disease. Among elderly age 60 and above, the prevalence of self-reported diagnosed endemic disease is comparatively lower in the demographically advanced south Indian states/UTs, such as Kerala (11%), Tamil Nadu (11%), Puducherry (8%), and Lakshadweep (5%) besides Goa (8%) and Nagaland (5%); however, a large proportion of elderly age 60 and above reported any endemic disease in Chhattisgarh (49%), Dadra & Nagar Haveli (49%), Rajasthan (48%), Haryana (46%), and Madhya Pradesh (44%).

Table 8.7 Self-reported prevalence (%) of endemic diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number
Place of residence															
Rural	20.9	11.8	2.9	28.8	25,744	22.5	12.3	3.5	30.4	20,679	21.7	12.0	3.2	29.6	46,423
Urban	12.3	7.6	2.5	18.9	14,915	12.4	7.4	3.4	19.1	10,681	12.3	7.5	2.8	19.0	25,596
Sex															
Male	18.3	10.7	2.9	25.9	15,419	19.2	10.4	4.2	26.9	15,031	18.7	10.5	3.6	26.4	30,450
Female	17.8	10.3	2.6	25.3	25,240	19.9	11.2	2.8	27.3	16,329	18.7	10.7	2.7	26.1	41,569
Marital status															
Currently married	18.3	10.5	2.8	25.9	35,364	19.6	11.5	3.7	27.7	19,853	18.8	10.9	3.1	26.6	55,217
Widowed	16.8	10.6	2.2	24.1	3,864	19.8	9.6	3.2	26.5	10,686	19.1	9.9	2.9	25.9	14,550
Divorced/Separated/ Deserted/Others	12.4	7.6	1.8	17.4	1,431	15.6	11.6	1.6	23.4	821	13.6	9.0	1.8	19.6	2,252
Living arrangement															
Living alone	16.8	10.0	1.7	23.0	689	20.2	10.3	2.8	27.3	1,616	19.4	10.2	2.5	26.4	2,305
Living with spouse and/or others	18.5	9.4	2.6	25.9	4,513	17.2	11.3	3.7	25.5	6,150	17.7	10.5	3.2	25.7	10,663
Living with spouse and children	18.2	10.7	2.9	25.9	30,198	20.7	11.7	3.7	28.8	13,463	19.0	11.0	3.1	26.8	43,661
Living with children and others	16.8	10.7	2.3	24.1	4,076	19.2	9.8	3.1	26.0	8,417	18.5	10.1	2.8	25.5	12,493
Living with others only	14.7	7.1	2.1	19.6	1,183	20.9	8.5	3.3	26.3	1,714	18.6	8.0	2.9	23.7	2,897
Religion															
Hindu	18.3	10.9	2.7	26.0	29,838	19.7	11.2	3.4	27.5	22,962	18.9	11.0	3.1	26.7	52,800
Muslim	18.0	7.8	2.7	23.8	4,922	21.1	9.3	3.9	27.1	3,718	19.4	8.5	3.2	25.2	8,640
Christian	10.3	9.9	2.4	18.2	4,058	11.9	8.9	2.8	19.3	3,139	11.0	9.4	2.6	18.7	7,197
Others	18.4	8.7	2.8	25.0	1,841	18.6	8.7	3.1	25.3	1,541	18.5	8.7	2.9	25.1	3,382
Caste/tribe															
Scheduled tribe	20.8	16.8	3.1	31.3	7,327	22.8	16.0	3.5	31.4	5,156	21.7	16.5	3.2	31.4	12,483
Scheduled caste	18.8	11.6	3.2	26.6	6,886	22.0	11.3	3.6	30.1	5,128	20.2	11.4	3.3	28.2	12,014
Other backward caste	17.8	9.4	2.5	24.8	15,245	19.2	10.6	3.2	26.6	11,838	18.4	9.9	2.8	25.6	27,083
None of the above	16.8	9.2	2.7	23.8	11,201	17.7	9.4	3.8	24.8	9,238	17.2	9.3	3.2	24.3	20,439
Education															
No schooling	20.2	12.7	3.0	29.1	16,279	22.3	12.5	3.1	30.4	16,850	21.3	12.6	3.1	29.8	33,129
Less than 5 years complete	18.7	10.4	3.2	26.2	4,261	18.7	9.2	4.2	25.4	3,773	18.7	9.8	3.7	25.8	8,034
5-9 years complete	17.2	9.7	2.5	24.0	10,869	16.8	9.7	3.9	24.0	5,989	17.0	9.7	3.0	24.0	16,858
10 or more years complete	14.2	6.6	2.1	19.6	9,250	12.6	7.0	3.6	19.2	4,748	13.6	6.8	2.7	19.5	13,998

continued

continued

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number
Work status															
Currently working	18.4	11.0	2.5	25.9	23,612	20.8	11.9	3.3	28.6	9,278	19.1	11.3	2.8	26.7	32,890
Worked in past but currently not working	19.3	11.6	4.2	28.5	4,564	19.2	10.5	4.0	27.1	13,320	19.2	10.8	4.1	27.4	17,884
Never worked	16.7	8.8	2.6	23.5	12,483	18.7	10.2	2.7	25.6	8,762	17.6	9.4	2.6	24.4	21,245
MPCE quintile															
Poorest	18.2	11.7	2.4	25.9	7,648	21.0	11.4	3.4	27.9	6,460	19.5	11.6	2.9	26.8	14,108
Poorer	19.6	10.4	2.1	26.5	8,030	21.7	11.9	2.8	29.2	6,453	20.6	11.1	2.4	27.8	14,483
Middle	18.2	10.8	3.6	26.3	8,098	18.5	9.5	2.9	25.7	6,395	18.4	10.2	3.2	26.0	14,493
Richer	16.7	10.6	2.8	24.8	8,492	18.6	9.7	3.1	25.5	6,154	17.6	10.2	2.9	25.1	14,646
Richest	17.2	8.4	2.8	23.9	8,391	17.3	11.8	5.5	27.3	5,898	17.2	9.8	4.0	25.3	14,289
Total	**18.0**	**10.4**	**2.7**	**25.5**	**40,659**	**19.6**	**10.8**	**3.5**	**27.1**	**31,360**	**18.7**	**10.6**	**3.1**	**26.3**	**72,019**

Notes

**Including spouse irrespective of age*

Reference period for any endemic disease is the 2 years prior to the survey.

[1] Water borne diseases include diarrhea/gastroenteritis, typhoid, jaundice or hepatitis (any one or more).

[2] Vector borne diseases include malaria, dengue or chikungunya (any one or more).

[3] Other infectious diseases include tuberculosis and urinary tract infection (any one or both).

Table 8.8 Self-reported prevalence (%) of endemic diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number
India	**18.0**	**10.4**	**2.7**	**25.5**	**40,659**	**19.6**	**10.8**	**3.5**	**27.1**	**31,360**	**18.7**	**10.6**	**3.1**	**26.3**	**72,019**
North															
Chandigarh	12.8	9.1	2.3	21.2	624	11.7	9.8	3.7	22.7	387	12.4	9.4	2.8	21.8	1,011
Delhi	19.1	19.8	3.1	35.7	822	17.2	19.3	3.0	34.4	495	18.4	19.6	3.0	35.2	1,317
Haryana	29.6	22.4	1.3	43.8	1,048	34.3	20.1	3.2	46.3	847	31.9	21.3	2.2	45.0	1,895
Himachal Pradesh	26.5	1.3	4.3	28.9	765	29.1	1.8	3.7	31.8	617	27.7	1.5	4.0	30.3	1,382
Jammu & Kashmir	9.6	0.8	6.3	14.3	881	9.3	[0.1]	4.7	12.9	730	9.5	0.4	5.5	13.6	1,611
Punjab	24.4	6.7	4.1	29.7	1,112	22.7	5.7	3.5	27.5	1,003	23.6	6.2	3.8	28.6	2,115
Rajasthan	32.3	27.4	2.5	46.6	1,161	32.7	29.3	3.2	47.7	1,077	32.5	28.3	2.9	47.1	2,238
Uttarakhand	19.8	8.4	1.4	26.0	716	12.2	4.1	1.6	16.8	641	16.0	6.2	1.5	21.4	1,357
Central															
Chhattisgarh	35.7	23.3	1.8	49.1	1,274	36.9	20.0	1.6	48.5	779	36.1	22.0	1.7	48.9	2,053
Madhya Pradesh	28.0	22.6	3.6	39.3	1,597	33.6	22.7	4.8	43.5	1,312	30.7	22.6	4.2	41.3	2,909
Uttar Pradesh	28.9	17.7	2.9	41.0	2,395	32.3	15.5	3.4	41.3	2,166	30.6	16.6	3.2	41.2	4,561
East															
Bihar	35.6	9.5	4.0	41.8	1,708	34.1	10.3	6.2	40.6	1,806	34.8	9.9	5.2	41.1	3,514
Jharkhand	16.1	16.0	1.6	27.3	1,293	16.7	17.4	3.1	29.1	1,166	16.4	16.7	2.3	28.2	2,459
Odisha	11.5	12.5	3.0	21.4	1,675	10.7	11.4	3.1	20.3	1,233	11.2	12.0	3.0	21.0	2,908
West Bengal	12.1	2.6	1.9	15.8	2,383	13.1	2.4	3.5	16.7	1,541	12.5	2.5	2.6	16.1	3,924
Northeast															
Arunachal Pradesh	16.8	12.4	4.9	26.2	897	23.1	14.9	5.4	33.3	318	18.3	13.0	5.0	27.9	1,215
Assam	11.8	1.7	2.7	14.7	1,548	11.6	1.6	3.0	14.3	814	11.7	1.7	2.8	14.5	2,362
Manipur	19.7	[0.4]	4.8	23.1	760	21.5	1.1	4.3	25.9	605	20.5	0.7	4.6	24.4	1,365
Meghalaya	9.6	6.8	1.7	14.5	556	8.7	7.9	1.6	14.7	411	9.2	7.3	1.7	14.6	967
Mizoram	32.3	3.6	14.2	41.2	714	35.3	1.6	13.6	41.5	531	33.6	2.7	13.9	41.3	1,245
Nagaland	5.7	1.3	1.0	6.8	708	1.6	1.2	2.8	4.8	605	3.7	1.2	1.9	5.8	1,313
Tripura	10.3	3.8	2.7	15.1	732	12.2	3.9	3.1	17.3	459	11.1	3.8	2.8	15.9	1,191
West															
Dadra & Nagar Haveli	37.6	17.8	3.2	44.1	633	43.7	16.8	1.3	48.6	448	40.0	17.4	2.5	45.9	1,081
Daman & Diu	23.8	10.7	1.4	30.7	557	14.4	8.3	2.4	21.5	428	19.4	9.6	1.8	26.4	985
Goa	4.0	[0.1]	1.4	5.3	788	5.6	[0.9]	2.6	7.9	634	4.7	[0.5]	1.9	6.5	1,422
Gujarat	19.1	20.4	7.0	32.2	1,340	19.1	20.7	6.4	31.1	980	19.1	20.5	6.7	31.7	2,320
Maharashtra	11.7	4.9	1.6	15.7	2,176	9.6	6.4	2.4	16.1	1,782	10.7	5.6	2.0	15.9	3,958

continued

continued

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number	Water-borne diseases[1]	Vector-borne diseases[2]	Other infectious diseases[3]	Any endemic disease	Number
South															
Andaman & Nicobar Islands	26.3	9.9	7.4	35.6	720	23.2	6.2	3.8	29.6	521	25.0	8.4	5.9	33.2	1,241
Andhra Pradesh	9.0	7.5	2.0	14.9	1,566	7.8	5.4	2.1	13.1	1,099	8.5	6.6	2.0	14.2	2,665
Karnataka	10.0	4.1	2.0	14.1	1,410	11.2	4.1	2.2	15.2	1,001	10.5	4.1	2.1	14.6	2,411
Kerala	1.4	1.9	3.3	7.2	1,276	3.7	1.3	5.0	10.8	1,206	2.6	1.6	4.2	9.1	2,482
Lakshadweep	2.1	0.8	2.3	5.4	637	2.0	[0.2]	2.4	5.2	500	2.0	0.5	2.3	5.3	1,137
Puducherry	6.0	2.1	0.8	8.6	787	3.6	1.7	2.3	7.9	638	4.9	1.9	1.5	8.2	1,425
Tamil Nadu	6.3	3.0	1.0	9.9	1,994	6.4	3.4	1.7	11.0	1,530	6.4	3.2	1.4	10.4	3,524
Telangana	8.3	5.2	1.6	16.0	1,406	8.8	6.4	2.3	18.9	1,050	8.5	5.8	1.9	17.3	2,456

Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

Reference period for any endemic disease is the 2 years prior to the survey.

[1] Water borne diseases include diarrhea/gastroenteritis, typhoid, jaundice or hepatitis (any one or more).

[2] Vector borne diseases include malaria, dengue or chikungunya (any one or more).

[3] Other infectious diseases include tuberculosis and urinary tract infection (any one or both).

8.3.1 Water-borne diseases

Water-borne diseases are those that are transmitted by drinking water contaminated with pathogenic microorganisms, such as protozoa, viruses, bacteria, and intestinal parasites. Most water-borne diseases are characterised by diarrhoea and can result in dehydration and, in very serious cases, even death. In the LASI, water-borne diseases included jaundice/hepatitis, typhoid, and diarrhoea/gastroenteritis diagnosed by a health professional in the past two years.

Tables 8.7 and 8.8 present self-reported prevalence of water-borne diseases by background characteristics and states/UTs. Overall, the prevalence of water-borne disease among older adults age 45 and above is 19%; among elderly age 60 and above, this rate is slightly higher (20%) than among older adults age 45-59 (18%). The prevalence of water-borne diseases among older adults age 45 and above residing in rural areas is almost twice (22%) the rate among those in urban areas (12%). By religion and caste, Hindu and Muslims (19% each) and Scheduled tribe (22%) have higher prevalence rates of water-borne diseases. The prevalence of water-borne disease is lower among older adults age 45 and above with a higher level of education and in higher MPCE quintiles.

The self-reported prevalence of water-borne diseases among older adults age 45 and above is higher in the demographically less advanced states of India and much lower in the demographically advanced states, ranging from more than 35% in Dadra & Nagar Haveli (40%) and Chhattisgarh (36%) to 2% in Lakshadweep. More than a third of elderly age 60 and above reported at least one water-borne disease in Dadra & Nagar Haveli (44%), Chhattisgarh (37%), Mizoram (35%), Madhya Pradesh (34%), Bihar (34%), Haryana (34%), Rajasthan (33%), and Uttar Pradesh (32%).

Table 8.9 presents the self-reported prevalence of jaundice/hepatitis, diarrhoea, and typhoid by background characteristics. Overall, the prevalence of jaundice/hepatitis, diarrhoea, and typhoid is 3%, 13%, and 6%, respectively. The prevalence of diarrhoea is higher among elderly age 60 and above (15%) compared to older adults age 45-59 (12%); the prevalence of jaundice/hepatitis and typhoid does not show much variation by age. Among the elderly age 60 and above, the prevalence of jaundice/hepatitis and typhoid is higher among the elderly belonging to a religion other than Hindu, Muslim, or Christian (4% and 8%, respectively) while that of diarrhoeal diseases is higher among Muslims (16%). Educational attainment of older adults age 45 and above is negatively related with the prevalence of water-borne diseases, with prevalence rate among those with no schooling that was nearly double that of those with 10 or more years of schooling.

Cross-state variations in self-reported prevalence of jaundice/hepatitis, diarrhoea, and typhoid are presented in Table 8.10. The self-reported prevalence of diagnosed jaundice/hepatitis is higher in Dadra & Nagar Haveli (29%) and Andaman & Nicobar (10%), and at least one in ten older adults age 45 and above reported typhoid in Haryana (14%), Punjab (14%), Himachal Pradesh (11%), and Madhya Pradesh (10%). The prevalence of diarrhoea varies from around 30% in Mizoram (31%), Bihar (31%), and Chhattisgarh (30%) to less than 1% in Nagaland (0.4%).

Table 8.9 Self-reported prevalence (%) of diagnosed water-borne diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Jaundice/ hepatitis	Diarrhea	Typhoid	Number	Jaundice/ hepatitis	Diarrhea	Typhoid	Number	Jaundice/ hepatitis	Diarrhea	Typhoid	Number
Place of residence												
Rural	3.6	13.8	7.3	25,744	2.7	17.1	6.5	20,679	3.2	15.3	6.9	46,423
Urban	2.0	8.4	3.6	14,915	1.9	9.4	3.2	10,681	2.0	8.8	3.4	25,596
Sex												
Male	3.3	12.4	5.8	15,419	2.7	14.8	4.8	15,031	3.0	13.6	5.3	30,450
Female	3.0	11.7	6.2	25,240	2.4	14.9	6.1	16,329	2.7	13.0	6.2	41,569
Marital status												
Currently married	3.1	12.3	6.1	35,364	2.7	14.5	5.6	19,853	2.9	13.1	5.9	55,217
Widowed	3.3	10.5	6.3	3,864	2.2	15.4	5.5	10,686	2.5	14.3	5.6	14,550
Divorced/Separated/Deserted/ Others	2.8	8.2	4.2	1,431	2.6	13.1	2.8	821	2.7	10.0	3.7	2,252
Living arrangement												
Living alone	2.9	10.6	5.8	689	2.8	15.5	4.1	1,616	2.8	14.4	4.4	2,305
Living with spouse and/or others	2.8	13.6	4.1	4,513	2.5	13.0	4.6	6,150	2.6	13.2	4.4	10,663
Living with spouse and children	3.1	12.0	6.4	30,198	2.8	15.3	6.1	13,463	3.0	13.0	6.3	43,661
Living with children and others	3.4	10.9	6.6	4,076	2.1	14.9	5.5	8,417	2.5	13.8	5.8	12,493
Living with others only	2.7	10.3	3.6	1,183	2.4	16.4	5.6	1,714	2.6	14.1	4.8	2,897
Religion												
Hindu	3.0	12.5	5.9	29,838	2.4	15.1	5.5	22,962	2.7	13.7	5.7	52,800
Muslim	4.1	11.5	6.7	4,922	3.0	16.3	5.2	3,718	3.6	13.6	6.1	8,640
Christian	1.9	5.8	4.0	4,058	1.2	7.3	4.8	3,139	1.6	6.5	4.4	7,197
Others	2.8	7.7	10.6	1,841	3.7	9.2	7.9	1,541	3.3	8.4	9.3	3,382
Caste/tribe												
Scheduled tribe	4.6	14.3	5.7	7,327	4.8	16.2	6.1	5,156	4.7	15.1	5.9	12,483
Scheduled caste	3.2	11.7	7.0	6,886	2.9	15.8	7.3	5,128	3.0	13.5	7.1	12,014
Other backward caste	2.6	12.3	5.9	15,245	2.0	15.0	4.9	11,838	2.3	13.5	5.4	27,083
None of the above	3.5	10.8	5.8	11,201	2.4	13.6	5.2	9,238	2.9	12.1	5.5	20,439
Education												
No schooling	3.4	13.7	6.7	16,279	2.7	16.8	6.2	16,850	3.0	15.3	6.5	33,129
Less than 5 years complete	4.4	11.2	6.9	4,261	3.1	13.9	5.0	3,773	3.8	12.5	6.0	8,034
5-9 years complete	3.0	11.0	6.2	10,869	2.2	13.4	5.0	5,989	2.7	11.9	5.7	16,858
10 or more years complete	2.0	10.1	4.2	9,250	1.7	9.3	3.6	4,748	1.9	9.8	4.0	13,998
Work status												
Currently working	3.0	12.3	6.2	23,612	2.9	15.6	5.8	9,278	2.9	13.3	6.1	32,890
Worked in past but currently not working	3.8	12.5	6.9	4,564	2.4	14.8	5.1	13,320	2.8	14.2	5.6	17,884
Never worked	3.1	11.1	5.4	12,483	2.2	13.9	5.8	8,762	2.7	12.3	5.5	21,245
MPCE quintile												
Poorest	3.5	12.7	5.6	7,648	2.6	15.8	5.9	6,460	3.0	14.2	5.7	14,108
Poorer	3.2	13.5	6.1	8,030	2.6	17.0	5.5	6,453	2.9	15.1	5.8	14,483
Middle	3.6	11.5	6.3	8,098	2.1	14.1	4.9	6,395	2.9	12.7	5.7	14,493
Richer	2.8	10.6	6.1	8,492	2.8	13.6	5.9	6,154	2.8	12.0	6.0	14,646
Richest	2.4	11.6	6.1	8,391	2.4	12.9	5.3	5,898	2.4	12.2	5.8	14,289
Total	**3.1**	**12.0**	**6.1**	**40,659**	**2.5**	**14.8**	**5.5**	**31,360**	**2.8**	**13.3**	**5.8**	**72,019**

Note

**Including spouse irrespective of age*

Table 8.10 Self-reported prevalence (%) of diagnosed water-borne diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Jaundice/ hepatitis	Diarrhea	Typhoid	Number	Jaundice/ hepatitis	Diarrhea	Typhoid	Number	Jaundice/ hepatitis	Diarrhea	Typhoid	Number
India	**3.1**	**12.0**	**6.1**	**40,659**	**2.5**	**14.8**	**5.5**	**31,360**	**2.8**	**13.3**	**5.8**	**72,019**
North												
Chandigarh	1.7	5.5	6.1	624	0.7	8.6	3.2	387	[1.3]	6.7	4.9	1,011
Delhi	1.1	14.4	5.3	822	0.2	12.7	5.0	495	[0.8]	13.8	5.2	1,317
Haryana	2.7	18.4	14.4	1,048	1.7	24.7	13.8	847	2.2	21.4	14.1	1,895
Himachal Pradesh	2.5	15.4	11.8	765	3.6	20.3	9.6	617	3.0	17.7	10.8	1,382
Jammu & Kashmir	1.7	6.8	3.7	881	1.0	7.4	1.8	730	1.4	7.1	2.8	1,611
Punjab	2.6	10.1	15.7	1,112	1.4	11.8	12.1	1,003	2.1	10.9	14.0	2,115
Rajasthan	2.9	28.3	5.3	1,161	1.2	30.0	3.8	1,077	2.0	29.1	4.5	2,238
Uttarakhand	1.5	11.6	9.8	716	1.0	7.9	5.2	641	1.3	9.7	7.5	1,357
Central												
Chhattisgarh	2.1	30.1	7.5	1,274	1.6	30.6	9.6	779	1.9	30.3	8.3	2,053
Madhya Pradesh	6.2	21.0	9.2	1,597	5.7	28.7	10.6	1,312	6.0	24.7	9.9	2,909
Uttar Pradesh	3.2	20.7	10.0	2,395	2.1	26.4	8.9	2,166	2.6	23.5	9.4	4,561
East												
Bihar	3.9	32.0	7.4	1,708	3.2	30.2	6.0	1,806	3.5	31.1	6.6	3,514
Jharkhand	1.1	10.2	6.7	1,293	1.4	11.1	6.2	1,166	1.3	10.6	6.5	2,459
Odisha	1.9	5.0	6.1	1,675	0.9	6.1	4.6	1,233	1.5	5.5	5.4	2,908
West Bengal	4.8	5.5	2.9	2,383	4.3	7.5	3.3	1,541	4.6	6.3	3.1	3,924
Northeast												
Arunachal Pradesh	4.0	9.1	6.5	897	8.4	15.3	4.1	318	5.1	10.6	5.9	1,215
Assam	6.6	5.4	1.0	1,548	6.2	6.4	1.2	814	6.4	5.8	1.1	2,362
Manipur	1.6	17.2	2.1	760	0.9	19.8	1.5	605	1.3	18.4	1.8	1,365
Meghalaya	[0.2]	7.6	2.8	556	[0.9]	6.1	3.2	411	0.5	7.0	3.0	967
Mizoram	1.1	29.4	2.9	714	[0.5]	33.6	3.1	531	0.8	31.3	3.0	1,245
Nagaland	0.8	0.8	4.3	708	[0.4]	[0.1]	1.3	605	0.6	0.4	2.8	1,313
Tripura	4.7	4.1	2.5	732	5.5	5.8	2.2	459	5.0	4.7	2.4	1,191
West												
Dadra & Nagar Haveli	27.1	15.0	3.9	633	30.8	21.9	1.8	448	28.6	17.7	3.1	1,081
Daman & Diu	12.0	13.1	1.9	557	5.7	7.5	1.8	428	9.0	10.4	1.8	985
Goa	1.0	1.8	1.2	788	2.6	2.5	1.4	634	1.7	2.1	1.3	1,422
Gujarat	7.9	12.7	6.9	1,340	6.4	15.5	4.9	980	7.2	14.0	6.0	2,320
Maharashtra	3.6	3.8	6.1	2,176	2.1	4.2	4.5	1,782	2.9	4.0	5.4	3,958
South												
Andaman & Nicobar Islands	12.1	16.7	4.3	720	7.8	18.7	1.6	521	10.3	17.5	3.2	1,241
Andhra Pradesh	1.0	0.7	7.8	1,566	1.0	1.4	5.6	1,099	1.0	1.0	6.9	2,665
Karnataka	0.7	7.1	3.0	1,410	1.2	8.8	1.8	1,001	0.9	7.8	2.5	2,411
Kerala	[0.2]	1.1	[0.2]	1,276	[0.4]	3.2	[0.1]	1,206	0.3	2.2	0.1	2,482
Lakshadweep	[0.2]	1.7	[0.2]	637	[0.4]	1.3	[0.2]	500	0.3	1.5	[0.2]	1,137
Puducherry	3.6	1.7	1.0	787	0.9	1.7	1.1	638	2.3	1.7	1.0	1,425
Tamil Nadu	0.6	4.3	2.0	1,994	0.8	4.9	1.0	1,530	0.7	4.6	1.5	3,524
Telangana	0.7	1.1	6.6	1,406	1.1	0.9	7.1	1,050	0.9	1.0	6.8	2,456

Note

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

8.3.2 Vector-borne diseases

Vector-borne diseases are human illnesses caused by parasites, viruses, and bacteria that are transmitted by mosquitoes, sand-flies, blackflies, ticks, tsetse flies, mites, snails and lice. Together, the major vector-borne diseases account for nearly 17% of all infectious diseases globally. The burden of these diseases is highest in tropical and subtropical areas, and disproportionately affects the poorest populations (WHO, 2017c). Around 95% of the Indian population lives in areas with a high risk of malaria. Dengue is mostly an urban public health problem; however, outbreaks are also being increasingly documented in rural areas (WHO, 2014a).

In the LASI, information was collected on the reported prevalence of vector-borne diseases malaria, dengue, and chikungunya in the two years prior to the survey.

Tables 8.7 and 8.8 present the prevalence of vector-borne diseases (at least one) among older adults in India. The prevalence of any vector-borne disease among older adults age 45 and above in India is 11%. The prevalence of vector-borne disease is higher in rural (12%) than urban areas (8%); this rate is also higher among Hindu (11%) and Scheduled tribe (17%) compared to their respective counterparts. The prevalence rate is higher among currently working older adults age 45-59 and elderly age 60 and above compared to those currently not working. The prevalence of vector-borne diseases does not show much variation by age or sex; however, the prevalence rate shows a declining trend with increase in educational attainment and MPCE quintile.

The prevalence of vector-borne disease ranges from 28% in Rajasthan to less than 1% in Goa, Manipur, Jammu & Kashmir, and Lakshadweep. More than a fifth of elderly age 60 and above in Rajasthan (29%), Madhya Pradesh (23%), Gujarat (21%), Chhattisgarh (20%), and Haryana (20%) have been diagnosed with at least one vector-borne disease in the two years prior to the survey.

Table 8.11 presents the self-reported prevalence of malaria, dengue, and chikungunya by background characteristics. The overall prevalence of malaria, dengue, and chikungunya among older adults age 45 and above in India is 8.1%, 1.1%, and 2.4% respectively. The prevalence of malaria among older adults age 45 and above is higher in rural areas (10%) than in urban areas (4.1%), whereas the prevalence of dengue and chikungunya is slightly higher in urban (1.3% and 3.1%, respectively) than rural areas (0.9% and 2.2%, respectively). Older adults age 45 and above belonging to Scheduled tribe (16%) have much higher prevalence of malaria than most of the sub-groups of older adults by different characteristics. The prevalence of malaria decreases with increasing levels of education and MPCE quintile of households; however, the prevalence of dengue and chikungunya does not show any consistent variation with education and MPCE quintile.

Cross-state variations (Table 8.12) show that the self-reported prevalence of malaria among older adults age 45 and above is comparatively lower in southern Indian states than in northern Indian states. One in five older adults age 45 and above from Rajasthan (24%), Chhattisgarh (21%), and Madhya Pradesh (21%) reported having had malaria. The reported prevalence of dengue is relatively higher in Delhi (5.6%), Gujarat (4.1%), Chandigarh (3.1%), and Dadra & Nagar Haveli (3.1%), whereas the prevalence of chikungunya is reportedly higher among older adults age 45 and above in the states of Delhi (14%) and Haryana (7%).

Table 8.11 Self-reported prevalence (%) of diagnosed vector-borne diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Malaria	Dengue	Chickun-gunya	Number	Malaria	Dengue	Chickun-gunya	Number	Malaria	Dengue	Chickun-gunya	Number
Place of residence												
Rural	9.6	0.9	2.4	25,744	10.3	0.9	1.9	20,679	10.0	0.9	2.2	46,423
Urban	3.9	1.3	3.3	14,915	4.6	1.4	2.7	10,681	4.1	1.3	3.1	25,596
Sex												
Male	8.3	1.1	2.3	15,419	8.4	0.8	2.1	15,031	8.4	0.9	2.2	30,450
Female	7.3	1.1	2.9	25,240	8.8	1.3	2.2	16,329	7.9	1.2	2.6	41,569
Marital status												
Currently married	7.8	1.1	2.7	35,364	9.2	1.0	2.4	19,853	8.3	1.0	2.6	55,217
Widowed	8.0	0.9	2.7	3,864	7.7	1.2	1.7	10,686	7.8	1.1	2.0	14,550
Divorced/Separated/ Deserted/Others	4.7	1.1	2.9	1,431	6.9	1.0	4.1	821	5.5	1.0	3.3	2,252
Living arrangement												
Living alone	8.0	0.9	2.0	689	8.5	0.4	1.9	1,616	8.4	0.5	1.9	2,305
Living with spouse and/or others	6.8	1.1	2.4	4,513	9.0	1.0	2.6	6,150	8.1	1.0	2.5	10,663
Living with spouse and children	7.9	1.1	2.7	30,198	9.4	1.0	2.2	13,463	8.4	1.1	2.6	43,661
Living with children and others	7.8	1.1	2.8	4,076	7.8	1.2	1.8	8,417	7.8	1.1	2.1	12,493
Living with others only	4.9	0.5	2.4	1,183	6.2	1.7	2.3	1,714	5.7	1.2	2.3	2,897
Religion												
Hindu	8.0	1.1	2.9	29,838	9.0	1.0	2.3	22,962	8.5	1.1	2.6	52,800
Muslim	5.5	1.1	1.9	4,922	7.2	1.2	1.8	3,718	6.2	1.1	1.9	8,640
Christian	8.8	0.4	0.9	4,058	7.3	1.3	0.6	3,139	8.1	0.8	0.8	7,197
Others	5.6	1.4	2.0	1,841	6.0	0.6	2.2	1,541	5.8	1.0	2.1	3,382
Caste/tribe												
Scheduled tribe	16.1	0.8	1.3	7,327	14.9	0.8	1.8	5,156	15.6	0.8	1.5	12,483
Scheduled caste	8.2	1.5	3.4	6,886	9.0	1.1	2.2	5,128	8.5	1.3	2.9	12,014
Other backward caste	7.1	0.7	2.2	15,245	8.2	0.9	2.0	11,838	7.6	0.8	2.1	27,083
None of the above	5.5	1.4	3.6	11,201	7.3	1.3	2.4	9,238	6.3	1.4	3.0	20,439
Education												
No schooling	9.7	1.2	3.0	16,279	10.0	1.0	2.1	16,850	9.9	1.1	2.5	33,129
Less than 5 years complete	8.2	0.8	2.4	4,261	7.9	1.2	1.4	3,773	8.1	1.0	1.9	8,034
5-9 years complete	7.3	1.0	2.4	10,869	7.6	1.2	2.5	5,989	7.4	1.1	2.4	16,858
10 or more years complete	3.9	1.1	2.6	9,250	4.8	1.0	2.6	4,748	4.2	1.1	2.6	13,998
Work status												
Currently working	8.2	1.0	2.7	23,612	9.9	0.8	2.3	9,278	8.7	0.9	2.6	32,890
Worked in past but currently not working	9.0	1.4	2.9	4,564	8.4	0.9	2.1	13,320	8.6	1.0	2.3	17,884
Never worked	6.0	1.1	2.6	12,483	7.5	1.6	2.2	8,762	6.7	1.3	2.4	21,245
MPCE quintile												
Poorest	9.5	1.3	2.3	7,648	9.6	0.7	1.9	6,460	9.6	1.0	2.1	14,108
Poorer	8.2	0.8	2.1	8,030	9.6	1.1	2.2	6,453	8.9	0.9	2.1	14,483
Middle	7.5	0.9	3.4	8,098	7.7	0.9	1.7	6,395	7.6	0.9	2.6	14,493
Richer	7.3	1.3	3.3	8,492	7.2	1.1	2.0	6,154	7.3	1.2	2.7	14,646
Richest	5.8	1.1	2.4	8,391	8.9	1.5	3.2	5,898	7.1	1.3	2.7	14,289
Total	**7.7**	**1.1**	**2.7**	**40,659**	**8.6**	**1.0**	**2.2**	**31,360**	**8.1**	**1.1**	**2.4**	**72,019**

Note

**Including spouse irrespective of age*

Table 8.12 Self-reported prevalence (%) of diagnosed vector-borne diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Malaria	Dengue	Chickun-gunya	Number	Malaria	Dengue	Chickun-gunya	Number	Malaria	Dengue	Chickun-gunya	Number
India	**7.7**	**1.1**	**2.7**	**40,659**	**8.6**	**1.0**	**2.2**	**31,360**	**8.1**	**1.1**	**2.4**	**72,019**
North												
Chandigarh	3.2	3.6	2.8	624	4.0	2.5	3.4	387	3.6	3.1	3.1	1,011
Delhi	2.2	4.5	14.6	822	2.0	7.5	13.9	495	2.1	5.6	14.3	1,317
Haryana	13.1	2.1	9.5	1,048	13.3	2.8	5.1	847	13.2	2.4	7.4	1,895
Himachal Pradesh	1.0	[0.2]	[0.3]	765	1.5	-	[0.2]	617	1.2	[0.1]	0.2	1,382
Jammu & Kashmir	0.6	[0.1]	[0.1]	881	[0.1]	-	-	730	0.4	[0.1]	-	1,611
Punjab	3.0	2.7	1.3	1,112	3.2	2.0	0.8	1,003	3.1	2.4	1.0	2,115
Rajasthan	21.7	1.2	6.1	1,161	25.2	1.3	4.0	1,077	23.5	1.2	5.1	2,238
Uttarakhand	3.3	2.4	3.5	716	2.0	1.2	1.6	641	2.6	1.8	2.6	1,357
Central												
Chhattisgarh	22.6	0.7	0.5	1,274	18.9	[0.3]	1.3	779	21.2	0.5	0.8	2,053
Madhya Pradesh	20.6	0.7	3.4	1,597	21.8	1.5	2.6	1,312	21.2	1.1	3.0	2,909
Uttar Pradesh	10.8	2.2	6.6	2,395	11.1	1.7	3.9	2,166	10.9	2.0	5.3	4,561
East												
Bihar	9.0	0.4	[0.2]	1,708	9.6	0.6	0.3	1,806	9.3	0.5	0.3	3,514
Jharkhand	15.4	[0.2]	[0.3]	1,293	17.3	[0.2]	[0.2]	1,166	16.3	0.2	0.3	2,459
Odisha	12.1	[0.3]	0.4	1,675	11.1	[0.3]	[0.1]	1,233	11.7	0.3	0.3	2,908
West Bengal	1.1	1.4	0.3	2,383	1.8	0.6	[0.1]	1,541	1.4	1.1	0.2	3,924
Northeast												
Arunachal Pradesh	12.4	-	-	897	14.9	-	-	318	13.0	-	-	1,215
Assam	1.7	-	-	1,548	1.5	-	[0.1]	814	1.6	-	-	2,362
Manipur	[0.4]	-	-	760	0.9	[0.3]	[0.1]	605	0.6	[0.1]	-	1,365
Meghalaya	6.8	-	-	556	7.9	-	-	411	7.3	-	-	967
Mizoram	3.3	[0.2]	-	714	1.6	-	-	531	2.6	[0.1]	-	1,245
Nagaland	1.2	-	-	708	1.2	-	-	605	1.2	-	-	1,313
Tripura	3.8	-	-	732	3.9	-	-	459	3.8	-	-	1,191
West												
Dadra & Nagar Haveli	14.8	3.9	[0.2]	633	15.1	2.0	[0.1]	448	14.9	3.1	[0.2]	1,081
Daman & Diu	9.4	[0.4]	1.2	557	7.3	[0.4]	0.7	428	8.4	0.4	0.9	985
Goa	-	-	[0.1]	788	[0.8]	[0.1]	-	634	[0.4]	-	[0.1]	1,422
Gujarat	18.2	4.3	5.9	1,340	19.1	3.9	5.1	980	18.6	4.1	5.5	2,320
Maharashtra	2.6	0.5	1.9	2,176	3.6	0.3	2.7	1,782	3.1	0.4	2.3	3,958
South												
Andaman & Nicobar Islands	7.1	1.6	2.0	720	5.0	[0.5]	1.4	521	6.2	1.2	1.8	1,241
Andhra Pradesh	6.0	0.4	1.3	1,566	4.5	[0.1]	0.9	1,099	5.4	0.3	1.1	2,665
Karnataka	1.2	0.4	2.8	1,410	1.0	0.5	2.7	1,001	1.1	0.4	2.8	2,411
Kerala	-	1.2	0.7	1,276	-	0.9	0.4	1,206	-	1.0	0.5	2,482
Lakshadweep	-	[0.4]	[0.4]	637	[0.2]	-	-	500	[0.1]	[0.2]	[0.2]	1,137
Puducherry	-	1.8	0.3	787	[0.4]	[0.4]	0.8	638	[0.2]	1.2	0.5	1,425
Tamil Nadu	-	0.5	2.6	1,994	[0.1]	0.8	2.6	1,530	0.1	0.7	2.6	3,524
Telangana	3.6	0.4	1.7	1,406	5.1	0.6	0.8	1,050	4.3	0.5	1.3	2,456

Note

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

8.3.3 Other infectious diseases

The self-reported prevalence of other infectious diseases, which include tuberculosis and urinary tract infections, in the past two years are presented in Tables 8.7 and 8.8. The overall prevalence of other infectious diseases in India is 3%, which is slightly higher among elderly age 60 and above (3.5%) than among older adults age 45-59 (2.7%). The prevalence rate is higher among older men (3.6%) than older women (2.7%). A higher proportion of older adults age 45-59 and elderly age 60 and above who worked in the past but are currently not working reported infectious disease (4%).The prevalence of other infectious diseases among elderly age 60 and above is highest in Mizoram (14%), followed by Gujarat (6%) and Bihar (6%).

Table 8.13 presents the prevalence of tuberculosis by background characteristics. The prevalence of tuberculosis among older adults age 45 and above in India is 1%. Among elderly age 60 and above, tuberculosis prevalence is higher among men (1.3%) than women (0.9%), and is higher in Scheduled tribe (1.6%). Table 8.14 presents cross-state variations in the reported prevalence for tuberculosis. More than 2% of older adults age 45 and above reported having had tuberculosis in the states of Gujarat (4.8%), Arunachal Pradesh (3.1%), Andaman & Nicobar (2.3%), and Bihar (2%).

Around 2% of older adults age 45 and above reported having had urinary tract infection (2.3%) (Table 8.13); this rate is slightly higher among elderly age 60 and above (2.5%) than among older adults age 45-59 (2.0%). Among older adults age 45-59, women (2.2%) have a higher prevalence of urinary tract infection than men (1.8%), while among elderly age 60 and above, men (3.1%) have a higher prevalence than women (2.1%). The prevalence of urinary tract infection among older adults age 45 and above is highest in Mizoram (13%), followed by Jammu & Kashmir (5%) and Gujarat (4.8%) (Table 8.14).

Key findings: endemic diseases

- The overall prevalence of water-borne diseases in India among elderly age 60 and above is 20%, the prevalence of vector-borne diseases is 11% and that of other infectious diseases is 4%.
- Elderly age 60 and above residing in rural area, women, living with spouse and children, Scheduled tribe and those currently working are more prone to endemic diseases.
- Among the elderly age 60 and above, the self-reported prevalence of endemic diseases is lower in the demographically advanced south Indian states/UTs of Kerala (11%), Tamil Nadu (11%), Puducherry (8%), and Lakshadweep (5%) besides Goa (8%) and Nagaland (5%); vector-borne diseases are more prevalent in the states of Rajasthan (29%), Madhya Pradesh (23%), Gujarat (21%), Chhattisgarh (20%) and Haryana (20%); whereas, water-borne diseases are more common in the demographically less advanced states/UTs of Dadra & Nagar Haveli (44%), Chhattisgarh (37%), Mizoram (35%), Madhya Pradesh (34%), Bihar (34%), Rajasthan (33%), and Uttar Pradesh (32%) besides Haryana (34%).
- By caste, the prevalence of water-borne and vector-borne diseases are pronounced among Scheduled tribe indicating vulnerable environmental, water and sanitation conditions among tribal communities.

Table 8.13 Self-reported prevalence (%) of diagnosed other infectious diseases among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*			Age ≥ 60			Total		
	Tubercu-losis	Urinary tract infection	Number	Tubercu-losis	Urinary tract infection	Number	Tubercu-losis	Urinary tract infection	Number
Place of residence									
Rural	0.9	2.1	25,744	1.1	2.5	20,679	1.0	2.3	46,423
Urban	0.8	1.9	14,915	1.0	2.7	10,681	0.9	2.2	25,596
Sex									
Male	1.4	1.8	15,419	1.3	3.1	15,031	1.3	2.4	30,450
Female	0.6	2.2	25,240	0.9	2.1	16,329	0.7	2.2	41,569
Marital status									
Currently married	0.9	2.1	35,364	1.2	2.7	19,853	1.0	2.3	55,217
Widowed	1.0	1.4	3,864	0.9	2.4	10,686	0.9	2.2	14,550
Divorced/Separated/Deserted/ Others	0.8	1.2	1,431	0.6	1.0	821	0.7	1.1	2,252
Living arrangement									
Living alone	[0.1]	1.6	689	1.2	1.6	1,616	0.9	1.6	2,305
Living with spouse and/or others	0.9	1.8	4,513	1.0	2.7	6,150	1.0	2.3	10,663
Living with spouse and children	0.9	2.2	30,198	1.4	2.7	13,463	1.0	2.4	43,661
Living with children and others	1.0	1.4	4,076	0.8	2.3	8,417	0.9	2.1	12,493
Living with others only	0.9	1.6	1,183	0.8	2.9	1,714	0.8	2.4	2,897
Religion									
Hindu	0.9	2.0	29,838	1.1	2.5	22,962	1.0	2.3	52,800
Muslim	0.7	2.2	4,922	0.9	2.9	3,718	0.8	2.5	8,640
Christian	0.6	1.9	4,058	0.9	1.9	3,139	0.7	1.9	7,197
Others	0.3	2.4	1,841	1.6	2.1	1,541	0.9	2.3	3,382
Caste/tribe									
Scheduled tribe	1.1	2.1	7,327	1.6	2.2	5,156	1.4	2.1	12,483
Scheduled caste	1.0	2.5	6,886	1.1	2.6	5,128	1.0	2.5	12,014
Other backward caste	0.8	1.7	15,245	1.0	2.2	11,838	0.9	2.0	27,083
None of the above	0.8	2.3	11,201	1.0	3.1	9,238	0.9	2.7	20,439
Education									
No schooling	1.1	2.1	16,279	1.1	2.1	16,850	1.1	2.1	33,129
Less than 5 years complete	1.0	2.5	4,261	1.0	3.5	3,773	1.0	3.0	8,034
5-9 years complete	0.7	2.0	10,869	1.2	3.1	5,989	0.9	2.4	16,858
10 or more years complete	0.5	1.8	9,250	1.0	3.0	4,748	0.7	2.2	13,998
Work status									
Currently working	0.7	2.0	23,612	1.1	2.5	9,278	0.8	2.2	32,890
Worked in past but currently not working	2.4	2.1	4,564	1.2	2.9	13,320	1.5	2.7	17,884
Never worked	0.7	2.0	12,483	0.9	2.0	8,762	0.8	2.0	21,245
MPCE quintile									
Poorest	0.8	1.9	7,648	1.5	2.2	6,460	1.2	2.1	14,108
Poorer	0.7	1.5	8,030	0.9	2.0	6,453	0.8	1.8	14,483
Middle	1.4	2.4	8,098	0.7	2.3	6,395	1.1	2.4	14,493
Richer	0.9	2.0	8,492	0.6	2.5	6,154	0.8	2.2	14,646
Richest	0.6	2.3	8,391	1.7	4.0	5,898	1.1	3.0	14,289
Total	**0.9**	**2.0**	**40,659**	**1.1**	**2.5**	**31,360**	**1.0**	**2.3**	**72,019**

Note

**Including spouse irrespective of age*

Table 8.14 Self-reported prevalence (%) of diagnosed other infectious diseases among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*			Age ≥ 60			Total		
	Tubercu-losis	Urinary tract infection	Number	Tubercu-losis	Urinary tract infection	Number	Tubercu-losis	Urinary tract infection	Number
India	**0.9**	**2.0**	**40,659**	**1.1**	**2.5**	**31,360**	**1.0**	**2.3**	**72,019**
North									
Chandigarh	[0.7]	1.6	624	1.7	2.0	387	1.1	1.8	1,011
Delhi	[0.5]	2.6	822	1.2	1.8	495	0.8	2.3	1,317
Haryana	0.4	1.0	1,048	0.8	2.4	847	0.6	1.7	1,895
Himachal Pradesh	1.0	3.4	765	0.9	2.9	617	0.9	3.1	1,382
Jammu & Kashmir	[0.3]	6.0	881	0.8	4.0	730	0.5	5.0	1,611
Punjab	0.5	3.6	1,112	1.4	2.2	1,003	0.9	2.9	2,115
Rajasthan	0.9	1.6	1,161	0.6	2.7	1,077	0.8	2.1	2,238
Uttarakhand	0.9	0.7	716	[0.4]	1.2	641	0.6	1.0	1,357
Central									
Chhattisgarh	0.7	1.1	1,274	[0.5]	1.1	779	0.6	1.1	2,053
Madhya Pradesh	1.0	2.7	1,597	0.6	4.2	1,312	0.8	3.4	2,909
Uttar Pradesh	0.9	2.1	2,395	1.0	2.5	2,166	0.9	2.3	4,561
East									
Bihar	1.1	3.0	1,708	2.8	3.6	1,806	2.0	3.3	3,514
Jharkhand	0.3	1.2	1,293	1.4	1.7	1,166	0.9	1.5	2,459
Odisha	0.6	2.4	1,675	0.7	2.5	1,233	0.7	2.4	2,908
West Bengal	0.3	1.7	2,383	0.5	3.3	1,541	0.4	2.3	3,924
Northeast									
Arunachal Pradesh	3.2	1.7	897	2.9	2.5	318	3.1	1.9	1,215
Assam	0.5	2.3	1,548	0.7	2.3	814	0.6	2.3	2,362
Manipur	1.4	3.5	760	2.1	2.3	605	1.7	2.9	1,365
Meghalaya	[0.2]	1.5	556	[0.5]	1.1	411	[0.4]	1.3	967
Mizoram	0.8	13.4	714	[0.6]	13.0	531	0.7	13.2	1,245
Nagaland	0.6	[0.5]	708	2.0	[0.8]	605	1.3	0.6	1,313
Tripura	[0.5]	2.2	732	[0.1]	3.0	459	0.3	2.5	1,191
West									
Dadra & Nagar Haveli	[0.4]	2.9	633	1.2	[0.2]	448	0.7	1.8	1,081
Daman & Diu	[0.5]	0.8	557	1.7	[0.7]	428	1.0	0.8	985
Goa	[0.3]	1.1	788	[0.6]	2.3	634	[0.4]	1.7	1,422
Gujarat	5.2	5.2	1,340	4.3	4.3	980	4.8	4.8	2,320
Maharashtra	[0.2]	1.5	2,176	0.4	2.0	1,782	0.3	1.7	3,958
South									
Andaman & Nicobar Islands	3.2	4.1	720	1.0	2.8	521	2.3	3.6	1,241
Andhra Pradesh	0.4	1.5	1,566	0.6	1.6	1,099	0.5	1.6	2,665
Karnataka	0.8	1.2	1,410	1.1	1.2	1,001	0.9	1.2	2,411
Kerala	[0.3]	3.1	1,276	0.9	4.0	1,206	0.6	3.6	2,482
Lakshadweep	[0.1]	2.2	637	[0.1]	2.3	500	[0.1]	2.2	1,137
Puducherry	[0.4]	0.4	787	1.0	1.3	638	0.7	0.8	1,425
Tamil Nadu	[0.3]	0.7	1,994	0.5	1.2	1,530	0.4	1.0	3,524
Telangana	0.7	0.9	1,406	[0.2]	2.1	1,050	0.5	1.4	2,456

Note

**Including spouse irrespective of age*, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

8.4 WOMEN'S HEALTH

Women's health in middle and later life undergoes several changes related to the reproductive system; changes such as menopause (hot flashes, moodiness, headaches, and trouble sleeping), vaginal dryness, urinary tract changes osteoporosis etc. can have significant health implications (NIH, 2018). In India, the prevalence of hysterectomy, premature menopause, and cervical cancer is rising (Pallikadavath et al., 2016; Jungari and Chauhan, 2017; Prusty et al., 2018).

In the LASI, female participants age 45-59 were asked about their reproductive health conditions, including menstrual, menopausal, or gynaecological health concerns. These questions covered menstrual bleeding and reproductive health problems in the last 12 months, and whether treatment was taken for these problems. Information on hysterectomy and reason for hysterectomy was also collected. Additionally, information was collected on screening tests, such as pap smear for cervical cancer and mammography for breast cancer, in the past two years prior to the survey.

8.4.1 Reproductive health problems

Results about reproductive health problems among older women, including hot flashes, irregular vaginal discharge, genital prolapse, fibroids, cysts, and vaginal dryness in the past 12 months, are presented in this section.

Table 8.15 presents the self-reported prevalence of diagnosed reproductive health problems by background characteristics. In India, about 16% of older women age 45-59 reported having at least one reproductive health problem. Older women age 45-59 in rural areas (17%) reported higher prevalence of any reproductive health problem than older adult women in urban areas (14%). Currently married women (17%) and those living with a spouse and children (17%) have a higher prevalence of any reproductive health problems. By religion and caste, Muslim (21%) and Scheduled caste (17%) reported higher prevalence of any reproductive health problem.

State variations (Table 8.16) show that half of the older women age 45-59 from Mizoram (52%) and about a third of women in Himachal Pradesh (32%) reported having any reproductive health problem. The prevalence of any reproductive health problem is less than 5% in the states of Tripura (5%) and Andhra Pradesh (4%).

Genital prolapse occurs when the uterus sags or slips from its normal position and into the vagina. Fibroids are the most frequent tumours of the female reproductive system. Fibroids, also known as uterine myomas, leiomyomas, or fibromas, are firm, compact tumours that are made of smooth muscle cells and fibrous connective tissue that develop in the uterus.

The self-reported prevalence of genital prolapse and uterine fibroid/cyst by background characteristics and states/UTs is presented in Tables 8.15 and 8.16, respectively. Overall, the prevalence of genital prolapse and uterine fibroids/cysts among older adult women age 45-59 in India is 3% and 1%, respectively. The prevalence of genital prolapse is higher among older women age 45-59 who are currently married (2.9%) and those living with spouse and children (3%). By religion and caste, Muslim women (5.9%) and women from other backward caste (3.4%) reported relatively higher prevalence rates of genital prolapse. The reported prevalence of uterine fibroids/cysts is slightly higher among rural women (1.4%) than urban women (1.1%).

Table 8.16 presents cross-state variations in the prevalence of genital prolapse and uterine fibroids/cyst. The prevalence of genital prolapse is higher in the states/UTs of Uttar Pradesh (4.6%) and Bihar (4.2%). The prevalence of uterine fibroids/cysts in most states is lower than 2%, however a relatively larger proportion of older adult women age 45-59 reported having uterine fibroid/cyst in Punjab (6.7%), Goa (3.8%), and Kerala (3.8%).

Table 8.15 Self-reported prevalence (%) of diagnosed reproductive health problems among older adult women age < 60 years by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age < 60 years*			Number
	Genital prolapse	Uterine fibroids/ cysts	Any reproductive health problem[1]	
Place of residence				
Rural	2.7	1.4	17.1	15,829
Urban	2.7	1.1	13.5	9,307
Marital status				
Currently married	2.9	1.3	16.7	20,954
Widowed	1.6	1.2	11.4	3,363
Divorced/Separated/Deserted/Others	[0.7]	1.2	10.0	819
Living arrangement				
Living alone	1.4	0.4	11.4	462
Living with spouse and/or others	2.5	1.3	13.8	2,853
Living with spouse and children	3.0	1.4	17.2	17,682
Living with children and others	1.3	1.1	11.5	3,451
Living with others only	1.8	1.9	11.5	688
Religion				
Hindu	2.3	1.2	15.3	18,406
Muslim	5.9	1.2	20.9	3,154
Christian	0.5	1.5	9.1	2,476
Others	1.7	3.5	17.6	1,100
Caste/tribe				
Scheduled tribe	1.3	0.8	12.5	4,440
Scheduled caste	2.5	1.5	17.0	4,275
Other backward caste	3.4	1.3	14.8	9,476
None of the above	2.0	1.4	17.8	6,945
Education				
No schooling	2.4	1.5	15.2	12,211
Less than 5 years complete	2.1	0.9	18.2	2,368
5-9 years complete	2.3	1.4	16.9	6,099
10 or more years complete	4.3	1.0	15.1	4,458
Work status				
Currently working	3.2	1.4	17.1	10,103
Worked in past but currently not working	1.9	1.4	17.2	3,113
Never worked	2.4	1.2	14.2	11,920
MPCE quintile				
Poorest	1.9	0.9	13.2	4,698
Poorer	2.5	1.5	15.8	4,982
Middle	1.9	0.9	15.5	5,028
Richer	2.1	1.6	15.4	5,238
Richest	5.2	1.7	19.5	5,190
Total	**2.7**	**1.3**	**15.8**	**25,136**

Notes

* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

These questions are asked only to women of age < 60 years. This also Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

[1]Reproductive health problems include hot flashes, irregular vaginal discharge, uterine prolapse, fibroids, cysts, and vaginal dryness in the past 12 months (any one or more)

Table 8.16 Self-reported prevalence (%) of diagnosed reproductive health problems among older adult women age < 60 years, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age < 60 years*			Number
	Genital prolapse	Uterine fibroids/ cysts	Any reproductive health problem[1]	
India	**2.7**	**1.3**	**15.8**	**25,136**
North				
Chandigarh	1.3	3.2	13.4	366
Delhi	-	1.0	16.9	475
Haryana	2.6	2.6	22.5	616
Himachal Pradesh	1.7	1.7	31.5	507
Jammu & Kashmir	2.8	1.0	16.4	551
Punjab	3.9	6.7	23.8	690
Rajasthan	1.8	1.0	9.2	699
Uttarakhand	3.9	[0.7]	22.7	464
Central				
Chhattisgarh	0.6	0.8	15.8	756
Madhya Pradesh	3.3	2.9	22.6	915
Uttar Pradesh	4.6	1.6	20.4	1,426
East				
Bihar	4.2	1.5	19.6	1,075
Jharkhand	3.0	0.9	21.3	834
Odisha	1.5	[0.2]	8.5	1,019
West Bengal	2.3	0.3	20.0	1,514
Northeast				
Arunachal Pradesh	[1.9]	[1.0]	22.8	521
Assam	0.5	[0.1]	9.3	956
Manipur	[1.4]	[0.7]	14.6	438
Meghalaya	-	[0.4]	11.8	348
Mizoram	[0.7]	[1.6]	52.2	414
Nagaland	[0.8]	[0.4]	10.8	418
Tripura	[0.8]	[0.2]	4.7	468
West				
Dadra & Nagar Haveli	[1.2]	2.7	15.3	358
Daman & Diu	1.7	[0.3]	11.0	330
Goa	[0.5]	3.8	9.9	507
Gujarat	0.8	1.2	12.8	804
Maharashtra	0.9	0.5	14.3	1,393
South				
Andaman & Nicobar Islands	3.8	1.0	7.3	426
Andhra Pradesh	1.3	0.9	3.8	991
Karnataka	3.9	1.4	18.5	918
Kerala	1.1	3.8	20.3	824
Lakshadweep	-	1.6	18.9	423
Puducherry	1.1	2.9	14.3	510
Tamil Nadu	3.0	1.6	10.2	1,280
Telangana	1.0	2.7	5.6	902

Notes

*"[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

These questions are asked only to women of age < 60 years. This also Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

[1]Reproductive health problems include hot flashes, irregular vaginal discharge, uterine prolapse, fibroids, cysts, and vaginal dryness in the past 12 months (any one or more)

8.4.2 Hysterectomy

Hysterectomy, the surgical removal of uterus, is the second most frequently performed non-obstetric surgery after caesarean section in many parts of the world (Prusty et al., 2018). Knowledge regarding hysterectomies in India is limited, partly due to lack of information from large-scale national representative surveys (Shekhar et al., 2019). In the LASI, information about hysterectomy and the reason for undergoing hysterectomy was collected.

Table 8.17 presents the percentage of older adult women who had undergone hysterectomy by background characteristics. Overall, 11% of older adult women age 45 and above in India reported having undergone hysterectomy. The proportion is higher among older adult women age 45-59 (13%) compared to elderly women age 60 and above (10%). The proportion of older adult women age 45 and above who had undergone hysterectomy is higher in urban areas (15%) than rural areas (10%), and is found to increase with educational attainment as well as with MPCE quintile. Across MPCE quintiles, the percentage of older adult woman age 45 and above who had undergone hysterectomy is more than twice as high in the richest quintile (18%) than the poorest MPCE quintile (8%).

Table 8.18 presents the percentage of older adult women who had undergone hysterectomy by states/UTs. In Daman & Diu (24%), Andhra Pradesh (23%), and Punjab (21%), at least one in five older adult women age 45 and above reported having undergone hysterectomy. The proportion of older women who had undergone hysterectomy is lower in the north-eastern states of Assam (3%), Arunachal Pradesh (3%), Nagaland (2%), and Meghalaya (0.9%).

Table 8.17 Percentage of women who had undergone hysterectomy among older adult women by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Hysterectomy					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	10.9	15,874	7.9	10,609	9.6	26,483
Urban	15.6	9,324	14.4	5,687	15.1	15,011
Marital status						
Currently married	12.8	20,985	10.7	7,503	12.2	28,488
Widowed	11.9	3,375	9.3	8,380	9.9	11,755
Divorced/Separated/Deserted/Others	8.2	838	6.7	413	7.8	1,251
Living arrangement						
Living alone	11.9	463	8.0	1,250	8.8	1,713
Living with spouse and/or others	13.1	2,859	11.3	2,459	12.2	5,318
Living with spouse and children	12.8	17,705	10.4	4,935	12.3	22,640
Living with children and others	12.3	3,464	10.2	6,476	10.9	9,940
Living with others only	5.9	707	4.9	1,176	5.3	1,883
Religion						
Hindu	12.9	18,448	10.2	11,909	11.8	30,357
Muslim	10.6	3,167	5.4	1,916	8.6	5,083
Christian	8.7	2,482	8.3	1,676	8.5	4,158
Others	13.7	1,101	15.7	795	14.6	1,896
Caste/tribe						
Scheduled tribe	6.1	4,451	4.9	2,725	5.6	7,176
Scheduled caste	11.8	4,278	7.5	2,685	10.0	6,963
Other backward caste	15.0	9,498	11.6	6,074	13.6	15,572
None of the above	10.8	6,971	10.3	4,812	10.6	11,783
Education						
No schooling	12.4	12,256	8.0	11,369	10.2	23,625
Less than 5 years complete	11.1	2,372	11.6	1,594	11.3	3,966
5-9 years complete	11.1	6,106	19.5	2,146	13.5	8,252
10 or more years complete	15.6	4,464	10.0	1,187	14.4	5,651
Work status						
Currently working	14.2	10,118	7.7	2,966	12.6	13,084
Worked in past but currently not working	15.2	3,129	9.7	5,339	11.6	8,468
Never worked	10.1	11,951	10.9	7,991	10.5	19,942
MPCE quintile						
Poorest	8.4	4,711	7.2	3,432	7.8	8,143
Poorer	9.4	5,002	7.4	3,392	8.6	8,394
Middle	11.8	5,042	8.6	3,341	10.5	8,383
Richer	12.7	5,247	14.2	3,169	13.3	8,416
Richest	20.9	5,196	13.4	2,962	18.1	8,158
Total	**12.5**	**25,198**	**9.9**	**16,296**	**11.4**	**41,494**

Notes

*"[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

Table 8.18 Percentage of women who had undergone hysterectomy among older adult women, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Hysterectomy					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**12.5**	**25,198**	**9.9**	**16,296**	**11.4**	**41,494**
North						
Chandigarh	16.7	366	18.6	203	17.4	569
Delhi	11.2	475	18.8	243	13.8	718
Haryana	6.1	618	6.2	484	6.1	1,102
Himachal Pradesh	12.2	508	14.3	316	13.1	824
Jammu & Kashmir	9.0	552	7.5	349	8.4	901
Punjab	19.7	690	23.1	502	21.2	1,192
Rajasthan	7.3	700	5.9	572	6.7	1,272
Uttarakhand	6.8	464	3.9	338	5.5	802
Central						
Chhattisgarh	10.1	760	13.8	386	11.3	1,146
Madhya Pradesh	9.6	917	9.6	668	9.6	1,585
Uttar Pradesh	7.2	1,435	3.8	1,048	5.7	2,483
East						
Bihar	13.0	1,078	10.2	883	11.7	1,961
Jharkhand	7.0	834	5.1	581	6.2	1,415
Odisha	5.8	1,021	5.4	633	5.7	1,654
West Bengal	7.8	1,512	5.4	785	6.9	2,297
Northeast						
Arunachal Pradesh	3.9	521	-	142	3.1	663
Assam	3.4	962	3.1	425	3.3	1,387
Manipur	7.8	440	4.2	344	6.1	784
Meghalaya	[1.6]	348	-	247	[0.9]	595
Mizoram	4.3	415	4.2	266	4.3	681
Nagaland	2.4	420	[0.7]	306	1.7	726
Tripura	4.7	468	5.1	232	4.9	700
West						
Dadra & Nagar Haveli	13.9	358	9.2	251	12.0	609
Daman & Diu	22.8	330	24.3	245	23.5	575
Goa	12.7	508	17.4	348	14.7	856
Gujarat	16.1	807	16.0	527	16.1	1,334
Maharashtra	10.7	1,398	8.5	957	9.7	2,355
South						
Andaman & Nicobar Islands	20.1	429	15.2	246	18.4	675
Andhra Pradesh	24.7	996	20.3	552	23.1	1,548
Karnataka	20.8	920	14.4	525	18.5	1,445
Kerala	9.0	824	15.5	668	12.1	1,492
Lakshadweep	2.4	426	6.6	261	4.1	687
Puducherry	9.1	511	8.2	363	8.7	874
Tamil Nadu	12.5	1,285	9.9	846	11.4	2,131
Telangana	19.0	902	13.3	554	16.8	1,456

Notes

*"[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-"indicates less number of cases/no cases.

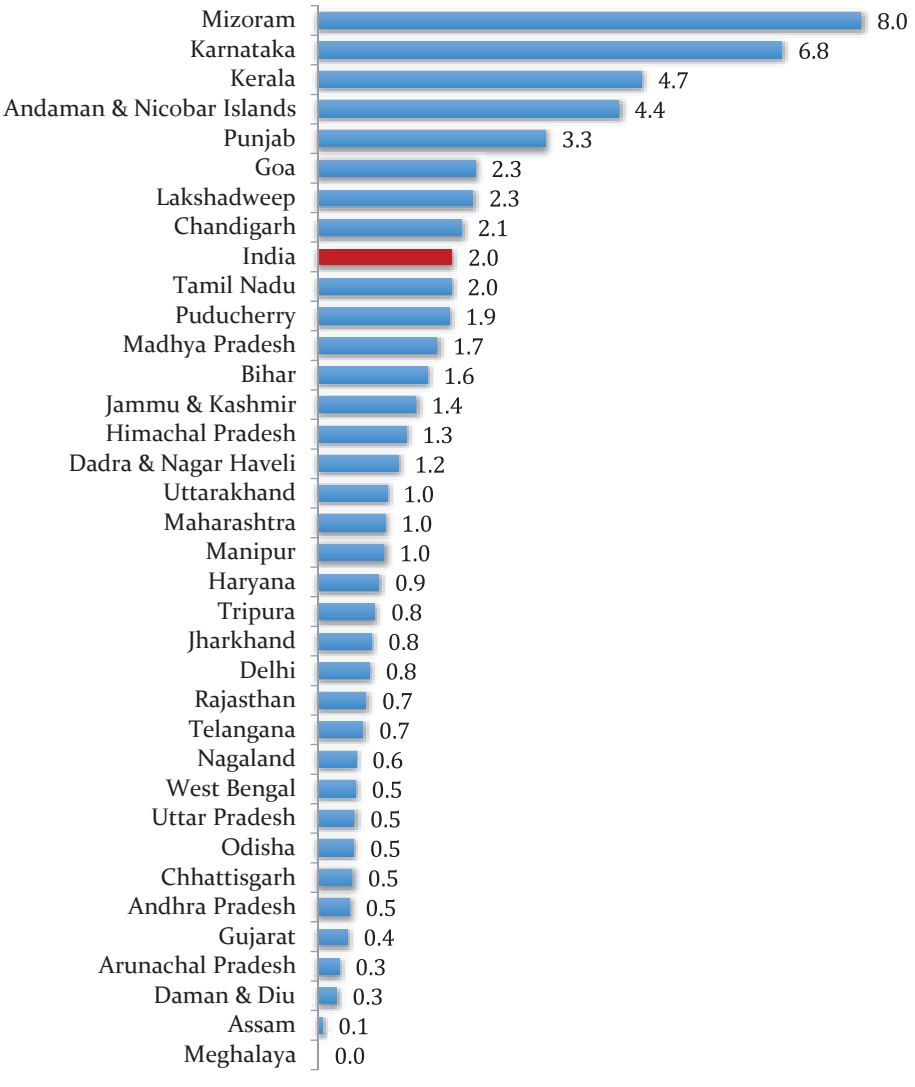
*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

8.4.3 Pap smear test and mammogram

A medical professional uses a swab or stick to wipe cells from the cervix, the opening of the womb (uterus) to perform a pap smear test. These cells are then sent to a laboratory and evaluated to determine if the cells are abnormal. The test is used to screen for cervical cancer at an early stage, but can detect other gynaecologic problems as well. A mammography is a special X-ray of the breasts. It involves standing in front of a machine and having each breast placed between two plastic plates. The plates come together, pressing on the breast to make it as flat as possible. This procedure allows for lumps to be detected by the X-ray, which can help detect breast cancer at an early stage.

Figure 8.3 presents the percentage of older adult women age 45 and above who underwent a pap smear test by states/UTs. Overall, 2% of older adult women age 45 and above in India reported having undergone pap smear test. The percentage of older adult women age 45 and above who had undergone a pap smear test is higher in the states of Mizoram (8%), followed by Karnataka (7%) and Kerala (5%).

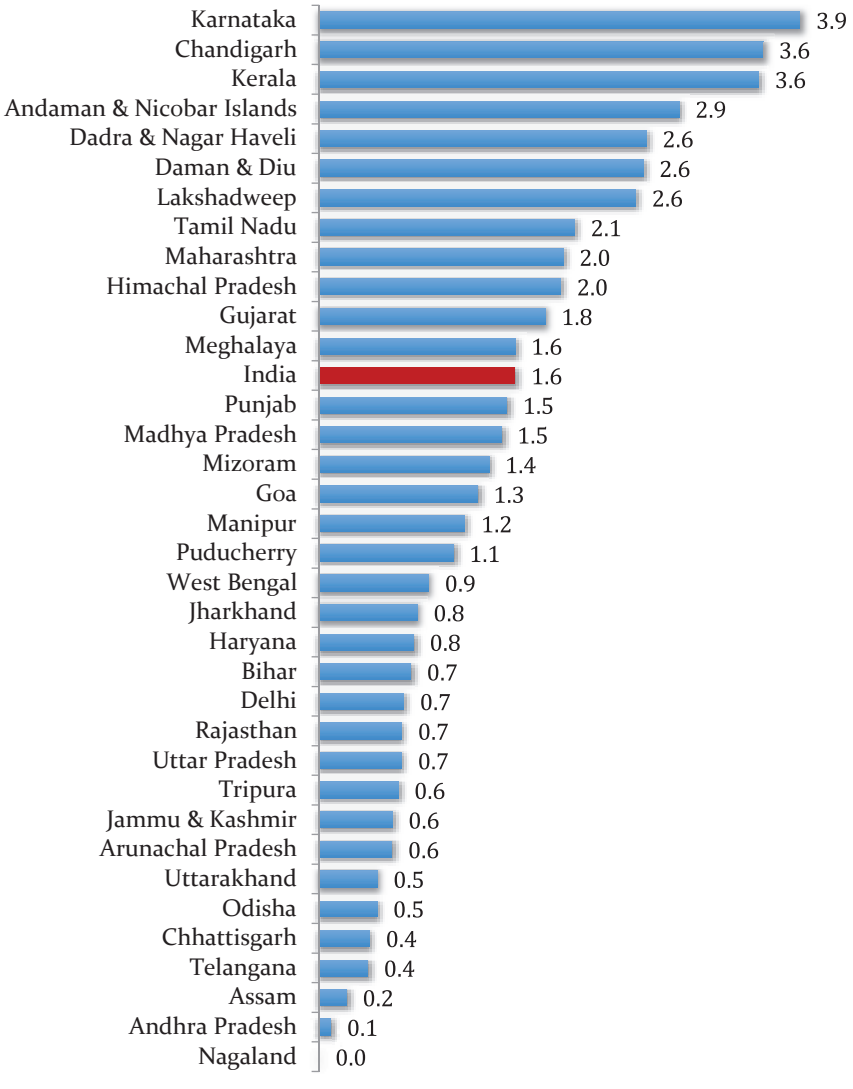
Figure 8.3 Percentage of older adult women age 45 and above* who have undergone a pap smear test, states/UTs, India, LASI Wave 1, 2017-18



*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

Figure 8.4 shows the percentage of older women age 45 and above who had undergone mammography by states/UTs. Overall, 1.6% of older adult women age 45 and above have undergone mammography in India. A higher percentage of older adult women age 45 and above in Karnataka (3.9%), Chandigarh (3.6%), and Kerala (3.6%) have undergone mammography.

Figure 8.4 Percentage of older adult women age 45 and above* who have undergone mammography, states/UTs, India, LASI Wave 1, 2017-18



Note
*Includes women age <45 years who are spouses of age eligible respondents (age 45 and above).

Key findings: women's health

- In India, about 16% of older women age 45-59 reported having reproductive health problems such as hot flashes, irregular vaginal discharge, uterine prolapse, fibroids, cysts, and vaginal dryness in the past 12 months prior to the survey.
- Older adult women age 45-59 who are currently married, those living with spouse and children, residing in rural area and belonging to Muslim religion are more likely to report with any reproductive health problem.
- A higher proportion of older adult women age 45 and above who have undergone pap smear for cervical cancer screening in Mizoram (8%), Karnataka (7%), and Kerala (5%); whereas, higher proportion of older adult women age 45 and above had undergone mammography for breast cancer screening in demographically advanced states/UTs such as Karnataka (3.9%), Chandigarh (3.6%), Kerala (3.6%).

9. Direct Health Examinations: Biomarkers

In the absence of objective measures of health, researchers in India relied on self-reported morbidity data from cross-sectional surveys. However, it is well recognised that several potential biases affect self-reported morbidity data. In recent times, the limitations of self-reported health data have encouraged researchers to use biological markers (biomarkers) in large-scale population health surveys. The inclusion of biomarkers in large-scale surveys represents an important innovation in the Longitudinal Ageing Study in India (LASI). This is particularly crucial for India in view of the lower prevalence rates of self-reported morbidity attributed to the low awareness of symptoms of many health conditions, limited access to health care services, and inadequate diagnoses (Sen, 2002; Arokiasamy et al., 2016a). Biomarkers serve as important diagnostic tools to identify diseases in early stages, track changes in disease patterns, and evaluate the effect of health intervention programmes over time. Compared to self-reported health data, biomarker data allow for a more accurate assessment of disease burden and better analysis of the risk factors underlying chronic diseases; they can also be used to study the effectiveness of various health interventions and to measure the long-term effects of policies and programmes. To better assess the physical health of the study population, the LASI included both self-reported health questions and biomarker module. Furthermore, the repeated collection of biomarkers from the same individuals can offer an improved understanding of how physiological processes change with age, the conditions associated with ageing, and the ageing process itself (Arokiasamy et al., 2016a).

The LASI included several internationally validated, relatively inexpensive, and logistically feasible biomarker tests. The full range of the LASI biomarkers included in the LASI are: measures of functional health (physiology), performance-based markers, anthropometric measures, and dried blood spot (DBS)-based markers for assessing non-communicable diseases/risk factors. The prevalence rates of chronic health conditions based on direct health examinations include hypertension, visual impairment, overweight/obesity or undernutrition, chronic respiratory diseases, anaemia, and diabetes. Furthermore, biomarkers, together with information on self-reported diagnosed conditions, provide crucial information for estimating undiagnosed, untreated, and undertreated rates of health conditions. The following chart provides descriptions of biomarkers included in the LASI and the health risks associated with it.

Chart 9.1: Description of biomarkers and their associated health risks, LASI Wave 1, 2017–18

Biomarker	Description	Health risks
Functional health (Physiology)[1]		
Blood pressure		
Systolic blood pressure	Measure of cardiovascular activity: maximum pressure in an artery when the heart contracts and pumps blood	Cardiovascular diseases (CVDs) (stroke, coronary heart disease [CHD]) and mortality
Diastolic blood pressure	Measure of cardiovascular activity: minimum pressure in an artery when the heart is resting	
Resting pulse rate	Measure of heart function and measures overall fitness	

Continued

Continued

Biomarker	Description	Health risks
Lung function test (Spirometry)[1]		
(a) Forced vital capacity (FVC)	The total volume of air that a person can forcibly exhale in one breath	Chronic obstructive pulmonary disease, restrictive lung disease
(b) Forced expired volume in 1 second (FEV1)	The volume of air that a person can exhale in the first second of forced expiration	
(c) FEV1/FVC	The ratio of FEV1 to FVC expressed as a percentage	
Visual acuity		
	Measure of impairment of visual functioning	Refractive errors, blindness due to different causes
Performance-based markers[1]		
Grip strength	Measure of upper body muscle strength measured in kilograms	Frailty, falls, and functional limitations.
Balance tests (semi-tandem, full tandem, side-by-side)	Indicator of static balance, measured progressively from semi-tandem to either side-by-side or full tandem	Disability, risk of falls, and neurological conditions.
Timed walk	Measure of functional capacity	Self-reported health, functional disability, and risk of recurrent falls
Anthropometry[1]		
Body mass index (BMI)	Indicator of obesity and the balance between energy intake and energy expenditure	CVDs, diabetes mellitus, mortality, certain cancers, and osteoarthritis.
High-risk waist circumference High-risk waist- hip ratio (WHR)	Indicator of abdominal obesity	Hypertension, CHD, non-insulin-dependent diabetes, and stroke
Dried blood spot (DBS) markers*		
Haemoglobin (Hb)	Hb is a marker of anaemia	Fatigue, weakness, dizziness, and drowsiness. Iron deficiency is the most common cause of anaemia.[1]
Glycosylated haemoglobin (HbA1c)	Integrated measure of glucose metabolism over the previous 30–90 days	Diabetes mellitus. Elevated HbA1c is regarded as an independent risk factor for CHD and stroke in individuals.[1]
High sensitivity-C-reactive protein (hs-CRP)	hs-CRP is a marker of inflammation. hs-CRP levels rise in response to inflammation hs-CRP is produced by liver cells	Inflammation, infection, trauma, necrosis, malignancy, and allergic reaction.[1] The hs-CRP level also increases with age and CVDs.[2]
Cytomegalovirus (CMV) antibody titre	CMV antibodies are markers of immune function. Antibodies for CMV indicate current, recent, or previous infection	Cancer, CVDs, cognitive impairment such as dementia, and functional impairment.[4]

Note:

* DBS-based tests are currently in progress and the results of DBS-based markers will be disseminated separately in due course.

(Sources: [1]Arokiasamy et al., 2016a, [2]Seo, 2012, [3]De Paschale and Clerici, 2012, [4]Roberts et al., 2010, [5]Gabay, 2006, [6]Tanaka et al., 2014,

BIOMARKER MEASUREMENT PROTOCOLS

For each survey participant, the study protocol was described and the steps of each biomarker test were demonstrated by the trained health investigators. Participant's consent (signed/oral) was obtained both for the interviews and the biomarker tests and signed consent was obtained additionally for the collection of Dried Blood Spot (DBS) samples. A detailed description of the biomarker protocol and instruments is provided in Appendix 3A.

9.1 MEASURED BLOOD PRESSURE

Blood pressure was measured to determine whether the survey participants had raised blood pressure. Blood pressure does not remain constant; rather, it tends to change. However, raised blood pressure is a potential risk factor for a number of chronic non-communicable diseases such as coronary heart disease, stokes, etc. In the LASI, blood pressure was measured using an Omron HEM 7121 BP monitor, adopting internationally comparable protocols. Additional information on smoking, exercise, and consumption of alcohol or food 30 minutes prior to the blood pressure measurement was also collected. In addition to blood pressure, the pulse rate (unit beats per minute, bpm) was also measured for all consenting respondents.

Table 9.1 presents the mean systolic and diastolic blood pressure and pulse rate by background characteristics and states/UTs. Among older adults age 45 and above in India, the mean systolic blood pressure is 127 mmHg, diastolic pressure is 81 mmHg, and pulse rate is 81 bpm. The mean systolic blood pressure is 9 mmHg points higher among elderly age 60 and above (132 mmHg) than among older adults age 45-59 (123 mmHg), whereas the mean diastolic blood pressure is lower among elderly age 60 and above (80 mmHg) than among older adults age 45-59 (82 mmHg). Among elderly age 60 and above, the mean systolic blood pressure is higher in those residing in urban areas (134 mmHg) than in those residing in rural areas (131 mmHg), higher among women (133 mmHg) than among men (130 mmHg), and higher among those who are widowed (134 mmHg) than among those who are currently married (130 mmHg). The mean systolic blood pressure is consistently higher across all states/UTs among elderly age 60 and above than among older adults age 45-59 (Table 9.2).

Figures 9.1 and 9.2 show the mean systolic and diastolic blood pressure by age and by sex and age and place of residence, respectively. Overall, the mean systolic blood pressure increases and the mean diastolic blood pressure decreases with advancing age. Among older adults age below 55, the mean systolic blood pressure is higher among men than among women, whereas among those age 55 and above, the mean systolic blood pressure is higher among women than among men. The mean systolic and diastolic blood pressures are higher across all age groups in those residing in urban areas than in those residing in rural areas.

Figure 9.1 Mean systolic and diastolic measured blood pressure (mmHg) among older adults by age and sex, LASI Wave 1, 2017-18

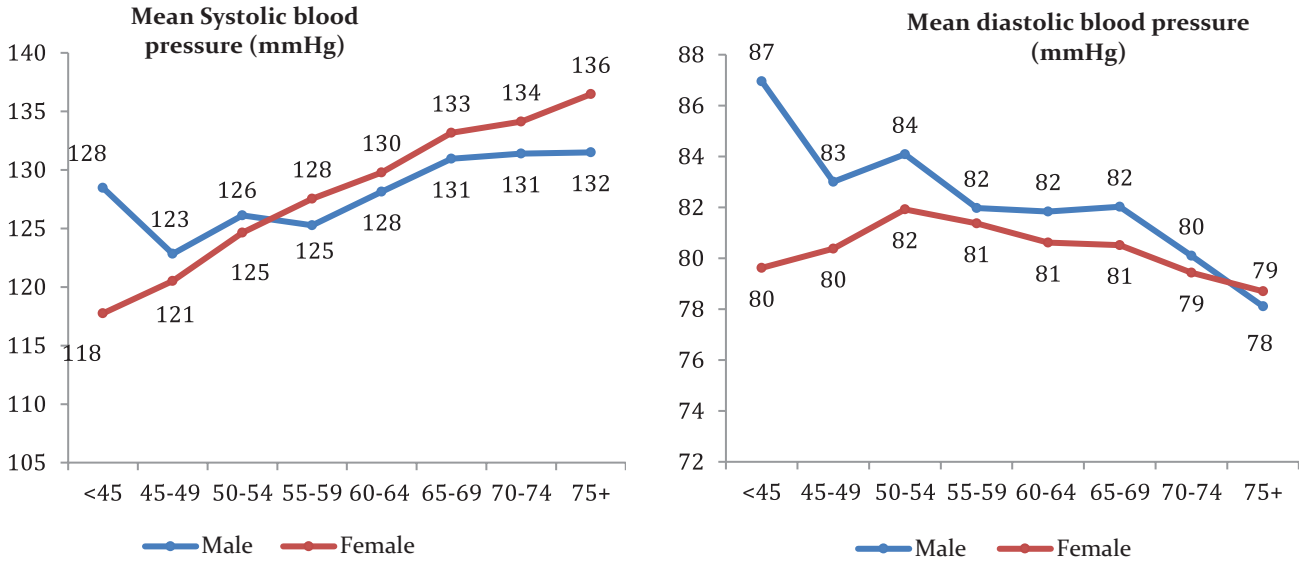


Figure 9.2 Mean systolic and diastolic measured blood pressure (mmHg) among older adults by age and place of residence, LASI Wave 1, 2017-18

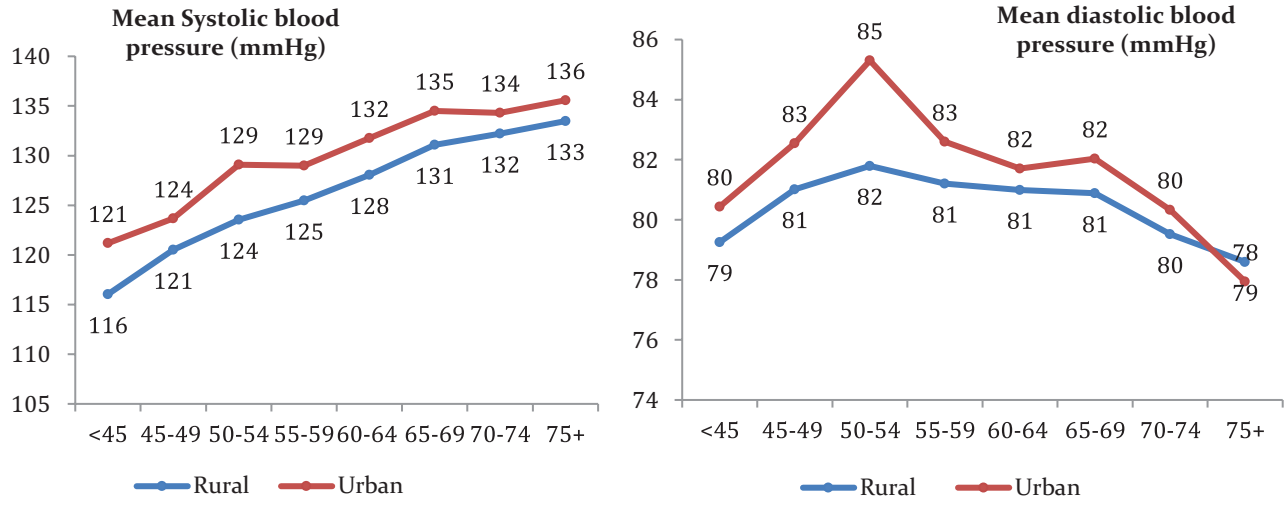


Table 9.1 Mean systolic and diastolic blood pressure (mmHg) and pulse rate among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Systolic blood pressure	Diastolic blood pressure	Pulse rate	Number	Systolic blood pressure	Diastolic blood pressure	Pulse rate	Number	Systolic blood pressure	Diastolic blood pressure	Pulse rate	Number
Place of residence												
Rural	122	81	82	23,860	131	80	80	18,966	126	81	81	42,826
Urban	126	83	82	13,396	134	81	80	9,529	129	82	81	22,925
Sex												
Male	125	83	80	13,973	130	81	78	13,709	128	82	79	27,682
Female	122	81	83	23,283	133	80	82	14,786	127	80	83	38,069
Marital status												
Currently married	123	82	82	32,438	130	81	79	18,172	126	81	81	50,610
Widowed	127	82	83	3,571	134	80	82	9,592	132	81	82	13,163
Divorced/Separated/ Deserted/ Others	124	81	81	1,247	133	81	80	731	127	81	81	1,978
Education												
No schooling	122	81	82	15,013	131	80	81	15,253	127	80	82	30,266
Less than 5 years complete	123	82	82	3,976	132	81	79	3,497	128	81	81	7,473
5-9 years complete	123	82	82	10,039	133	81	80	5,503	127	81	81	15,542
10 or more years complete	125	83	81	8,228	133	81	78	4,242	128	82	80	12,470
MPCE quintile												
Poorest	122	81	81	7,101	132	80	81	5,833	127	81	81	12,934
Poorer	123	81	82	7,384	131	80	81	5,879	127	81	81	13,263
Middle	123	82	82	7,441	132	81	81	5,860	127	81	81	13,301
Richer	123	82	82	7,733	133	80	80	5,614	128	81	81	13,347
Richest	125	82	81	7,597	131	81	80	5,309	128	82	81	12,906
Total	**123**	**82**	**82**	**37,256**	**132**	**80**	**80**	**28,495**	**127**	**81**	**81**	**65,751**

Note

** Including spouse irrespective of age*

Table 9.2 Mean systolic and diastolic blood pressure (mmHg) and pulse rate among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Systolic blood pressure	Diastolic blood pressure	Pulse rate	Number	Systolic blood pressure	Diastolic blood pressure	Pulse rate	Number	Systolic blood pressure	Diastolic blood pressure	Pulse rate	Number
India	**123**	**82**	**82**	**37,256**	**132**	**80**	**80**	**28,495**	**127**	**81**	**81**	**65,751**
North												
Chandigarh	126	83	82	536	134	81	79	332	129	82	81	868
Delhi	126	82	83	802	134	82	83	481	129	82	83	1,283
Haryana	123	81	82	945	129	79	79	766	126	80	80	1,711
Himachal Pradesh	126	85	79	733	137	83	78	579	131	84	79	1,312
Jammu & Kashmir	125	81	77	768	134	82	76	627	129	82	77	1,395
Punjab	129	85	83	1,046	138	83	80	925	134	84	81	1,971
Rajasthan	121	80	81	1,098	129	80	80	989	125	80	81	2,087
Uttarakhand	125	84	82	669	134	84	80	606	130	84	81	1,275
Central												
Chhattisgarh	126	84	80	1,217	134	83	79	730	129	84	80	1,947
Madhya Pradesh	121	81	81	1,458	128	79	80	1,172	125	80	80	2,630
Uttar Pradesh	119	79	83	2,217	128	77	81	1,965	123	78	82	4,182
East												
Bihar	121	79	83	1,667	130	79	81	1,743	126	79	82	3,410
Jharkhand	123	81	82	1,217	135	81	81	1,096	129	81	82	2,313
Odisha	121	81	81	1,561	130	80	80	1,099	125	80	81	2,660
West Bengal	124	81	82	2,152	135	80	82	1381	128	81	82	3533
Northeast												
Arunachal Pradesh	125	84	78	852	133	85	76	294	127	84	77	1,146
Assam	126	81	82	1,401	137	82	81	729	130	81	82	2,130
Manipur	125	85	78	662	131	83	76	527	127	84	77	1,189
Meghalaya	127	85	77	507	139	84	77	384	132	84	77	891
Mizoram	119	82	78	659	127	81	76	470	122	82	77	1,129
Nagaland	131	86	75	662	141	87	74	564	136	86	75	1,226
Tripura	122	82	81	676	131	80	79	424	125	81	80	1,100
West												
Dadra & Nagar Haveli	125	83	82	594	133	81	81	407	128	83	82	1,001
Daman & Diu	125	82	80	534	136	79	76	401	130	81	78	935
Goa	124	81	79	690	136	80	77	568	130	81	78	1,258
Gujarat	125	83	84	1,199	134	82	81	886	129	82	83	2,085
Maharashtra	124	84	82	1,854	132	82	80	1531	128	83	81	3385
South												
Andaman & Nicobar Islands	131	86	84	666	141	84	79	475	135	85	82	1,141
Andhra Pradesh	125	84	83	1,306	136	83	81	932	130	83	82	2,238
Karnataka	123	82	80	1,299	132	81	79	922	127	82	79	2,221
Kerala	128	83	77	1,191	139	82	76	1,097	134	82	76	2,288
Lakshadweep	134	84	79	611	144	83	77	475	139	84	78	1,086
Puducherry	122	81	81	726	131	79	80	572	126	80	81	1,298
Tamil Nadu	124	82	82	1,890	133	80	81	1,409	128	81	81	3,299
Telangana	122	83	82	1,191	132	81	80	937	127	82	81	2,128

Note

** Including spouse irrespective of age*

9.1.1 Prevalence of high blood pressure

High blood pressure, also termed hypertension, is defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg. In the LASI, the prevalence of hypertension is assessed using the standard classification protocol recommended by the World Health Organisation (WHO).

The WHO classification system for blood pressure is:

- Normal: systolic <120 mmHg and diastolic <8o mmHg.
- Pre-hypertension: systolic 120-139 mmHg and/or diastolic 80-89 mmHg.
- Hypertension/high blood pressure: systolic ≥140 mmHg and/or diastolic ≥90 mmHg.

A more detailed classification of hypertension provided by the European Society of Hypertension and the European Society of Cardiology is as follows (Williams et al., 2018):

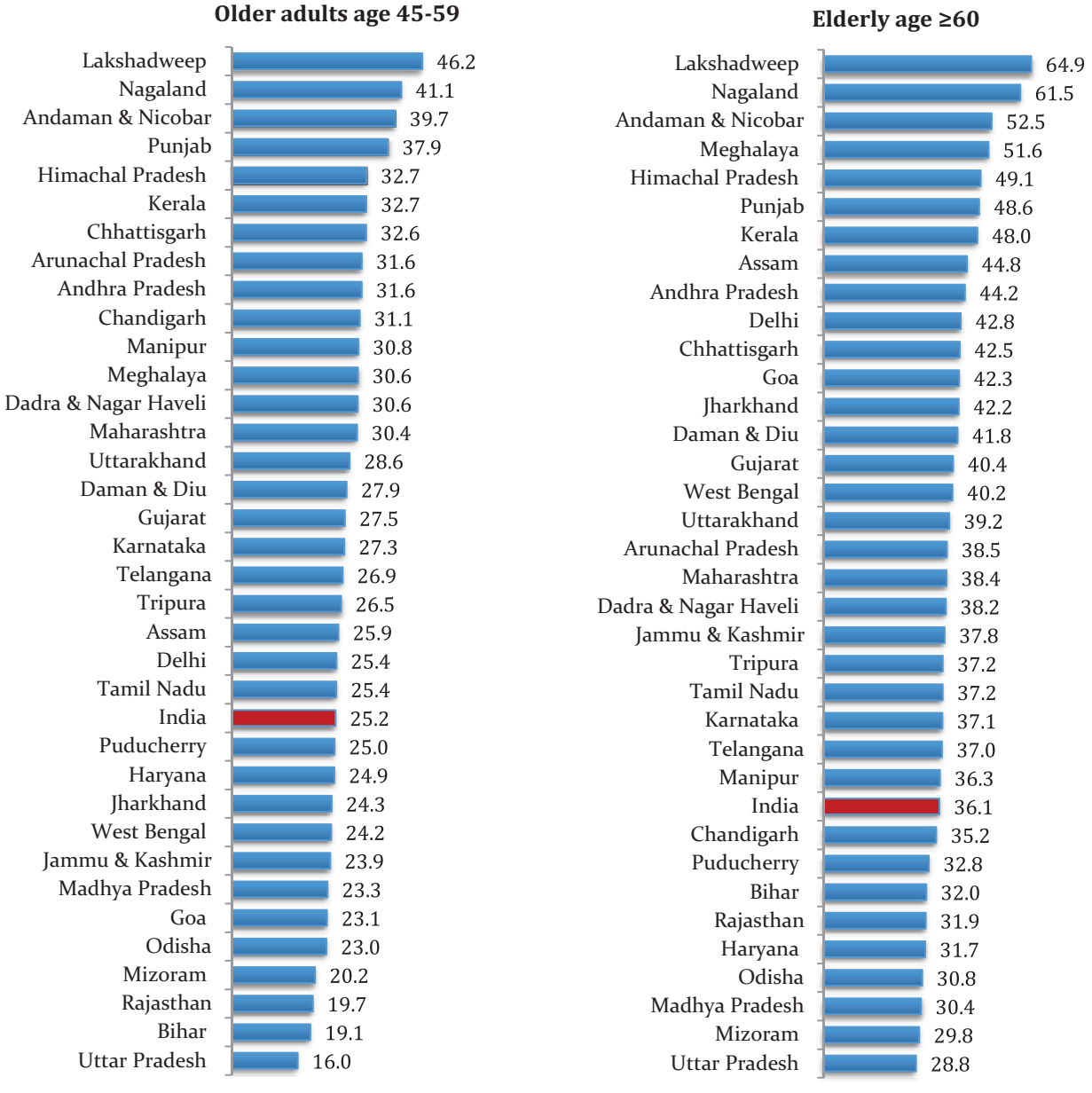
- Grade 1 (mild) hypertension: systolic 140-159 mmHg and/or diastolic 90-99 mmHg.
- Grade 2 (moderate) hypertension: systolic 160-179 mmHg and/or diastolic 100-109 mmHg.
- Grade 3 (severe/ critical) hypertension: systolic ≥180 mmHg and/or diastolic ≥110 mmHg.

The percent distribution of older adults by classification of blood pressure (normal, pre-hypertension, and high blood pressure) and background characteristics is presented in Table 9.3. Overall, 30% of older adults age 45 and above in India have normal blood pressure, 40% have pre-hypertension, and the remaining 30% have high blood pressure. Only a quarter of elderly age 60 and above (25%) have normal blood pressure compared to 35% among older adults age 45-59. An equal proportion (40%) of older adults age 45-59 and elderly age 60 and above have pre-hypertension. Among elderly age 60 and above, the prevalence of pre-hypertension is slightly higher among men (40%) than among women (38%) and among those residing in urban areas (42%) than among those residing in rural areas (38%).

High blood pressure is more prevalent among elderly age 60 and above (36%) than among older adults age 45-59 (25%), and the prevalence of high blood pressure among older adults age 45 and above is higher among those residing in urban areas (34%) than among those residing in rural areas (28%). The prevalence of high blood pressure is higher among elderly women (38%) than among elderly men age 60 and above (34%), whereas high blood pressure is more prevalent among older adult men age 45-59 (29%) than among older adult women (23%). Among elderly age 60 and above, high blood pressure is more prevalent among the widowed (40%) than among the currently married (34%). The prevalence of high blood pressure among elderly age 60 and above does not show a consistent pattern by either education or MPCE quintiles; however, among older adults age 45-59, the prevalence of high blood pressure increases with education and MPCE quintile.

Cross-state variations in the prevalence of pre-hypertension among older adults age 45 and above are less pronounced (Table 9.4), ranging from the highest 45% in Jammu & Kashmir to the lowest 32% in Lakshadweep. Among elderly age 60 and above, the prevalence of pre-hypertension is comparatively higher in Chandigarh (46%) than in other states/UTs, followed by Jammu & Kashmir (43%), Karnataka (43%), and Puducherry (43%) and Uttarakhand (43%). The prevalence of high blood pressure among older adults age 45 and above varies from the highest 55% in Lakshadweep to the lowest 22% in Uttar Pradesh. More than half of elderly age 60 and above have high blood pressure in the states/UTs of Lakshadweep (65%), Nagaland (62%), Andaman & Nicobar (53%), and Meghalaya (52%).

Figure 9.3 Prevalence (%) of high blood pressure (measured) among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



Notes: High blood pressure is defined as systolic blood pressure of ≥140 mmHg and/or diastolic blood pressure of ≥90 mmHg.

* Including spouse irrespective of age.

Table 9.3 Percent distribution of older adults according to normal blood pressure, pre-hypertension and high blood pressure based on measured blood pressure (mmHg) by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Normal[1]	Pre- hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number
Place of residence												
Rural	38.0	39.2	22.8	23,860	26.8	38.4	34.8	18,966	32.8	38.8	28.4	42,826
Urban	28.7	40.9	30.4	13,396	19.0	41.5	39.6	9,529	24.6	41.2	34.3	22,925
Sex												
Male	30.0	40.8	29.2	13,973	25.9	40.2	33.9	13,709	27.9	40.5	31.7	27,682
Female	38.0	39.1	22.8	23,283	23.4	38.4	38.1	14,786	32.0	38.8	29.2	38,069
Marital status												
Currently married	35.6	39.6	24.8	32,438	26.3	40.1	33.6	18,172	32.1	39.8	28.1	50,610
Widowed	27.5	43.0	29.5	3,571	21.6	38.1	40.3	9,592	23.0	39.2	37.8	13,163
Divorced/Separated/Deserted/ Others	42.4	34.4	23.2	1,247	26.0	34.5	39.5	731	36.2	34.4	29.3	1,978
Living arrangement												
Living alone	24.8	42.0	33.2	643	17.6	42.8	39.6	1,479	19.2	42.6	38.1	2,122
Living with spouse and/or others	35.7	37.7	26.6	3,945	25.2	40.8	33.9	5,557	29.5	39.5	30.9	9,502
Living with spouse and children	35.7	39.8	24.5	27,901	26.9	39.7	33.4	12,406	32.9	39.8	27.4	40,307
Living with children and others	28.8	43.7	27.5	3,766	22.1	37.7	40.2	7,583	24.0	39.4	36.6	11,349
Living with others only	42.2	32.2	25.7	1,001	24.6	34.7	40.7	1,470	31.3	33.7	35.0	2,471
Religion												
Hindu	35.3	40.0	24.8	27,343	25.2	39.5	35.3	20,853	30.6	39.7	29.6	48,196
Muslim	34.0	39.1	26.9	4,493	22.7	39.0	38.2	3,391	29.0	39.0	32.0	7,884
Christian	39.7	38.2	22.1	3,739	20.1	36.5	43.4	2,862	30.9	37.4	31.7	6,601
Others	29.0	38.2	32.7	1,681	20.2	36.5	43.3	1,389	24.8	37.4	37.8	3,070
Caste/tribe												
Scheduled tribe	32.0	42.7	25.3	6,821	25.2	37.6	37.2	4,697	29.0	40.5	30.4	11,518
Scheduled caste	37.9	39.2	22.9	6,388	27.5	37.2	35.4	4,654	33.3	38.3	28.5	11,042
Other backward class	35.6	38.6	25.9	13,977	24.9	39.8	35.3	10,849	30.7	39.1	30.2	24,826
None of the above	32.9	41.2	25.8	10,070	21.9	40.3	37.8	8,295	27.7	40.8	31.5	18,365
Education												
No schooling	37.2	39.7	23.1	15,013	27.3	37.5	35.2	15,253	32.0	38.6	29.4	30,266
Less than 5 years complete	35.0	40.3	24.7	3,976	21.8	41.7	36.5	3,497	28.6	41.0	30.4	7,473
5-9 years complete	34.8	39.7	25.5	10,039	21.7	40.1	38.3	5,503	29.8	39.8	30.4	15,542
10 or more years complete	31.0	39.6	29.4	8,228	19.7	43.3	37.0	4,242	27.0	40.9	32.1	12,470

continued

continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Normal[1]	Pre- hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number
Work status												
Currently working	34.5	39.8	25.7	21,602	28.2	39.4	32.4	8,540	32.6	39.7	27.8	30,142
Worked in past but currently not working	33.0	40.5	26.5	4,188	23.4	38.6	38.1	12,057	25.7	39.0	35.3	16,245
Never worked	36.9	39.4	23.7	11,466	22.3	40.2	37.5	7,898	30.5	39.7	29.7	19,364
MPCE quintile												
Poorest	35.3	42.0	22.7	7,101	25.6	37.6	36.8	5,833	30.7	39.9	29.4	12,934
Poorer	35.7	39.8	24.5	7,384	26.4	38.2	35.4	5,879	31.3	39.1	29.6	13,263
Middle	35.0	39.3	25.8	7,441	23.7	40.0	36.3	5,860	29.7	39.6	30.7	13,301
Richer	36.6	38.4	25.0	7,733	23.5	39.9	36.5	5,614	30.7	39.1	30.2	13,347
Richest	32.5	39.2	28.3	7,597	23.4	41.0	35.7	5,309	28.6	40.0	31.4	12,906
Total	**35.0**	**39.7**	**25.2**	**37,256**	**24.6**	**39.3**	**36.1**	**28,495**	**30.3**	**39.5**	**30.2**	**65,751**

Note

** Including spouse irrespective of age*

[1]Normal blood pressure refers to systolic blood pressure of < 120 mmHg and diastolic blood pressure of < 80 mmHg.

[2]Pre-hypertension refers to systolic blood pressure of 120-139 mmHg and/or diastolic blood pressure of 80-89 mmHg.

[3]High blood pressure (BP) refers to systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg.

Table 9.4 Percent distribution of older adults according to normal blood pressure, pre-hypertension and high blood pressure based on measured blood pressure (mmHg), states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number
India	**35.0**	**39.7**	**25.2**	**37,256**	**24.6**	**39.3**	**36.1**	**28,495**	**30.3**	**39.5**	**30.2**	**65,751**
North												
Chandigarh	29.2	39.7	31.1	536	19.1	45.7	35.2	332	25.2	42.1	32.7	868
Delhi	26.8	47.7	25.4	802	20.0	37.2	42.8	481	24.2	43.7	32.0	1,283
Haryana	35.1	40.0	24.9	945	27.6	40.7	31.7	766	31.5	40.3	28.2	1,711
Himachal Pradesh	25.2	42.1	32.7	733	14.9	36.0	49.1	579	20.4	39.2	40.4	1,312
Jammu & Kashmir	29.5	46.6	23.9	768	18.9	43.3	37.8	627	24.3	45.0	30.7	1,395
Punjab	27.2	34.9	37.9	1,046	17.1	34.2	48.6	925	22.4	34.6	43.0	1,971
Rajasthan	36.7	43.6	19.7	1,098	28.6	39.5	31.9	989	32.7	41.6	25.7	2,087
Uttarakhand	25.7	45.7	28.6	669	18.2	42.6	39.2	606	22.0	44.1	33.9	1,275
Central												
Chhattisgarh	28.0	39.4	32.6	1,217	24.4	33.1	42.5	730	26.6	37.0	36.4	1,947
Madhya Pradesh	40.4	36.4	23.3	1,458	32.2	37.4	30.4	1,172	36.6	36.8	26.6	2,630
Uttar Pradesh	47.0	37.0	16.0	2,217	34.1	37.1	28.8	1,965	40.6	37.1	22.3	4,182
East												
Bihar	39.6	41.3	19.1	1,667	25.8	42.2	32.0	1,743	32.2	41.8	26.0	3,410
Jharkhand	36.6	39.2	24.3	1,217	22.9	34.9	42.2	1,096	29.9	37.1	32.9	2,313
Odisha	39.7	37.3	23.0	1,561	27.6	41.6	30.8	1,099	34.5	39.2	26.3	2,660
West Bengal	33.5	42.3	24.2	2,152	20.7	39.1	40.2	1,381	28.4	41.0	30.6	3,533
Northeast												
Arunachal Pradesh	30.2	38.2	31.6	852	19.7	41.7	38.5	294	27.7	39.1	33.3	1,146
Assam	33.5	40.6	25.9	1,401	21.1	34.1	44.8	729	29.1	38.3	32.6	2,130
Manipur	28.6	40.6	30.8	662	25.3	38.4	36.3	527	27.0	39.6	33.4	1,189
Meghalaya	27.0	42.3	30.6	507	18.1	30.4	51.6	384	23.2	37.2	39.5	891
Mizoram	38.7	41.1	20.2	659	29.3	40.9	29.8	470	34.6	41.0	24.4	1,129
Nagaland	16.1	42.8	41.1	662	9.4	29.1	61.5	564	12.8	36.1	51.1	1,226
Tripura	38.7	34.7	26.5	676	25.4	37.4	37.2	424	33.4	35.8	30.8	1,100
West												
Dadra & Nagar Haveli	33.4	36.0	30.6	594	23.6	38.3	38.2	407	29.6	36.9	33.5	1,001
Daman & Diu	33.0	39.1	27.9	534	22.8	35.4	41.8	401	28.3	37.4	34.3	935
Goa	31.5	45.4	23.1	690	19.4	38.2	42.3	568	25.9	42.1	32.0	1,258
Gujarat	31.6	40.9	27.5	1,199	20.6	38.9	40.4	886	26.7	40.0	33.3	2,085
Maharashtra	27.1	42.5	30.4	1,854	23.2	38.5	38.4	1,531	25.1	40.5	34.4	3,385

continued

continued

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number	Normal[1]	Pre-hyper tension[2]	High BP[3]	Number
South												
Andaman & Nicobar Islands	24.0	36.3	39.7	666	10.0	37.5	52.5	475	18.2	36.8	45.0	1,141
Andhra Pradesh	29.0	39.5	31.6	1,306	17.4	38.4	44.2	932	24.1	39.0	36.9	2,238
Karnataka	36.8	35.8	27.3	1,299	19.6	43.3	37.1	922	29.8	38.9	31.3	2,221
Kerala	23.6	43.7	32.7	1,191	13.6	38.3	48.0	1,097	18.5	40.9	40.5	2,288
Lakshadweep	16.4	37.4	46.2	611	8.9	26.2	64.9	475	12.8	32.1	55.1	1,086
Puducherry	38.9	36.2	25.0	726	24.0	43.2	32.8	572	32.0	39.4	28.6	1,298
Tamil Nadu	34.9	39.7	25.4	1,890	21.8	41.0	37.2	1,409	29.0	40.3	30.7	3,299
Telangana	33.9	39.1	26.9	1,191	26.4	36.6	37.0	937	30.5	38.0	31.6	2,128

Note

** Including spouse irrespective of age.*

[1]Normal blood pressure refers to systolic blood pressure of< 120 mmHg and diastolic blood pressure of < 80 mmHg.

[2]Pre-hypertension refers to systolic blood pressure of 120-139 mmHg and/or diastolic blood pressure of 80-89 mmHg.

[3]High blood pressure (BP) refers to systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg.

The prevalence of high blood pressure according to the three categories of hypertension (mild, moderate, and severe) is presented by background characteristics in Table 9.5. Overall, 22%, 8%, and 1% of older adults age 45 and above in India have mild, moderate, and severe hypertension, respectively. Among elderly age 60 and above, 25%, 10%, and 1% have mild, moderate, and severe hypertension, respectively. Although the prevalence of mild and moderate hypertension among elderly age 60 and above is higher than that among older adults age 45-59, the prevalence of severe hypertension does not markedly vary by age. Among elderly age 60 and above, the prevalence of mild hypertension is higher among women (27%) than among men (23%), whereas the prevalence of severe hypertension is higher among men (1.2%) than among women (0.9%). The prevalence of severe hypertension among elderly age 60 and above is higher among those residing in urban areas (1.2%) than among those residing in rural areas (1.0%), those living with spouse and children (1.3%) than others, Christians (1.6%) than other religions, Scheduled tribe (1.5%) than other caste, and those with <5 years of schooling (1.6%) than those with 10 or more years of schooling.

Cross-state variations in the prevalence of high blood pressure (mild, moderate, and severe) are presented in Table 9.6. Lakshadweep has the highest percentage of older adults age 45 and above with mild (36%) and moderate hypertension (18%). More than 2% of older adults age 45 and above have severe hypertension in the states/UTs of Meghalaya (4.2%), Manipur (2.8%), Karnataka (2.5%), and Andaman & Nicobar (2.1%). Among elderly age 60 and above, the prevalence of severe hypertension is higher in the states of Meghalaya (6%), Kerala (3%) and Assam (3%).

Table 9.5 Prevalence of high blood pressure (measured) based on levels of hypertension among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number
Place of residence												
Rural	17.1	4.9	0.8	23,860	23.9	9.9	1.0	18,966	20.3	7.3	0.9	42,826
Urban	20.7	7.7	2.0	13,396	28.9	9.5	1.2	9,529	24.2	8.4	1.7	22,925
Sex												
Male	20.8	6.5	2.0	13,973	23.4	9.3	1.2	13,709	22.1	8.0	1.6	27,682
Female	16.7	5.4	0.7	23,283	27.0	10.2	0.9	14,786	21.0	7.4	0.8	38,069
Marital status												
Currently married	18.1	5.6	1.1	32,438	23.3	9.2	1.1	18,172	20.0	7.0	1.1	50,610
Widowed	20.9	7.4	1.2	3,571	28.7	10.7	0.9	9,592	26.8	9.9	1.0	13,163
Divorced/Separated/ Deserted/Others	15.3	6.0	1.9	1,247	27.8	10.8	0.9	731	20.0	7.8	1.5	1,978
Living arrangement												
Living alone	23.9	7.6	1.6	643	26.6	12.2	0.8	1,479	26.0	11.2	1.0	2,122
Living with spouse and/or others	20.2	5.6	0.8	3,945	23.5	9.7	0.7	5,557	22.1	8.0	0.8	9,502
Living with spouse and children	17.7	5.7	1.2	27,901	23.2	8.9	1.3	12,406	19.4	6.7	1.2	40,307
Living with children and others	19.5	6.8	1.2	3,766	28.9	10.4	1.0	7,583	26.2	9.4	1.0	11,349
Living with others only	18.0	6.4	1.2	1,001	29.1	10.8	0.8	1,470	24.8	9.1	1.0	2,471
Religion												
Hindu	17.9	5.7	1.2	27,343	24.7	9.6	1.0	20,853	21.0	7.5	1.1	48,196
Muslim	20.8	5.4	0.7	4,493	28.0	8.9	1.4	3,391	24.0	6.9	1.0	7,884
Christian	15.2	6.0	1.0	3,739	26.5	15.3	1.6	2,862	20.2	10.2	1.3	6,601
Others	21.4	10.4	0.9	1,681	29.5	12.8	1.0	1,389	25.3	11.6	1.0	3,070
Caste/tribe												
Scheduled tribe	18.3	6.1	0.9	6,821	25.0	10.7	1.5	4,697	21.2	8.1	1.2	11,518
Scheduled caste	17.4	4.5	1.0	6,388	24.9	9.7	0.8	4,654	20.7	6.8	0.9	11,042
Other backward class	18.1	6.2	1.5	13,977	24.7	9.4	1.2	10,849	21.1	7.7	1.3	24,826
None of the above	19.1	6.0	0.8	10,070	26.7	10.2	0.9	8,295	22.7	8.0	0.9	18,365
Education												
No schooling	17.0	5.4	0.7	15,013	24.2	9.9	1.1	15,253	20.7	7.7	0.9	30,266
Less than 5 years complete	18.8	5.1	0.8	3,976	25.7	9.2	1.6	3,497	22.2	7.1	1.2	7,473
5-9 years complete	19.1	5.5	0.9	10,039	27.6	9.9	0.7	5,503	22.4	7.2	0.8	15,542
10 or more years complete	19.4	7.4	2.6	8,228	26.7	9.5	0.9	4,242	22.0	8.1	2.0	12,470

continued

continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number
Work status												
Currently working	18.4	5.8	1.4	21,602	23.3	7.9	1.2	8,540	19.9	6.5	1.4	30,142
Worked in past but currently not working	17.4	7.9	1.2	4,188	25.8	11.1	1.1	12,057	23.8	10.3	1.1	16,245
Never worked	18.1	4.9	0.6	11,466	26.9	9.8	0.7	7,898	22.0	7.1	0.7	19,364
MPCE quintile												
Poorest	17.1	4.9	0.7	7,101	25.6	10.3	0.9	5,833	21.2	7.4	0.8	12,934
Poorer	18.4	5.2	0.9	7,384	24.5	9.6	1.4	5,879	21.2	7.3	1.1	13,263
Middle	19.6	5.5	0.7	7,441	25.5	9.3	1.5	5,860	22.3	7.3	1.1	13,301
Richer	18.3	5.9	0.8	7,733	25.7	10.2	0.7	5,614	21.6	7.8	0.8	13,347
Richest	17.8	7.6	2.9	7,597	25.3	9.6	0.7	5,309	21.0	8.5	2.0	12,906
Total	**18.2**	**5.8**	**1.2**	**37,256**	**25.3**	**9.8**	**1.1**	**28,495**	**21.5**	**7.6**	**1.1**	**65,751**

Note

** Including spouse irrespective of age.*

[1] Grade 1 (mild) hypertension- systolic blood pressure of 140-159 mmHg and/or diastolic blood pressure of 90-99 mmHg.

[2] Grade 2 (moderate) hypertension- systolic blood pressure of 160-179 mmHg and/or diastolic blood pressure of 100-109 mmHg.

[3] Grade 3 (critical) hypertension- systolic blood pressure of ≥180 mmHg and/or diastolic blood pressure of ≥110 mmHg.

Table 9.6 Prevalence of high blood pressure (measured) based on levels of hypertension among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number
India	**18.2**	**5.8**	**1.2**	**37,256**	**25.3**	**9.8**	**1.1**	**28,495**	**21.5**	**7.6**	**1.1**	**65,751**
North												
Chandigarh	24.3	6.8	-	536	22.9	11.9	[0.3]	332	23.8	8.8	[0.1]	868
Delhi	19.7	4.8	0.9	802	33.0	9.2	0.7	481	24.8	6.4	0.8	1,283
Haryana	21.1	3.6	[0.2]	945	25.4	6.2	[0.2]	766	23.2	4.8	[0.2]	1,711
Himachal Pradesh	23.8	7.2	1.6	733	33.9	14.0	[1.2]	579	28.5	10.4	1.4	1,312
Jammu & Kashmir	19.5	3.9	[0.5]	768	26.1	10.0	1.7	627	22.8	6.9	1.1	1,395
Punjab	23.8	13.1	1.0	1,046	28.4	18.5	1.7	925	26.0	15.7	1.4	1,971
Rajasthan	15.6	4.1	[0.1]	1,098	24.3	7.3	[0.3]	989	19.9	5.7	[0.2]	2,087
Uttarakhand	20.5	6.9	1.2	669	25.4	12.2	1.7	606	22.9	9.5	1.5	1,275
Central												
Chhattisgarh	23.6	7.4	1.6	1,217	26.9	13.2	2.4	730	24.9	9.6	1.9	1,947
Madhya Pradesh	17.4	4.4	1.5	1,458	22.5	7.4	0.5	1,172	19.8	5.8	1.1	2,630
Uttar Pradesh	12.2	3.2	0.6	2,217	20.5	7.7	0.6	1,965	16.3	5.4	0.6	4,182
East												
Bihar	15.4	3.3	0.4	1,667	21.4	9.2	1.4	1,743	18.6	6.4	1.0	3,410
Jharkhand	19.1	4.7	0.4	1,217	28.7	11.9	1.6	1,096	23.7	8.2	1.0	2,313
Odisha	17.2	5.4	0.4	1,561	22.6	8.1	[0.1]	1,099	19.5	6.5	0.3	2,660
West Bengal	17.8	5.7	0.6	2,152	29.0	9.6	1.6	1,381	22.3	7.3	1.0	3,533
Northeast												
Arunachal Pradesh	20.4	9.1	2.0	852	24.1	12.7	1.7	294	21.3	10.0	1.9	1,146
Assam	18.6	6.0	1.3	1,401	23.9	18.0	2.9	729	20.5	10.3	1.9	2,130
Manipur	19.8	7.5	3.5	662	23.3	11.1	1.9	527	21.4	9.2	2.8	1,189
Meghalaya	19.8	7.9	2.9	507	30.0	15.6	6.0	384	24.2	11.2	4.2	891
Mizoram	13.8	5.1	1.4	659	22.9	5.9	[1.0]	470	17.8	5.5	1.2	1,129
Nagaland	28.7	11.9	[0.5]	662	38.7	21.3	1.5	564	33.6	16.5	1.0	1,226
Tripura	19.1	6.4	1.0	676	25.1	10.1	2.1	424	21.5	7.9	1.4	1,100
West												
Dadra & Nagar Haveli	23.6	6.7	[0.3]	594	24.7	11.1	2.4	407	24.0	8.4	1.1	1,001
Daman & Diu	20.4	6.1	1.4	534	26.6	13.6	1.7	401	23.3	9.6	1.5	935
Goa	19.0	3.3	[0.8]	690	26.1	14.4	1.9	568	22.3	8.4	1.3	1,258
Gujarat	19.9	5.8	1.7	1,199	30.6	9.1	0.7	886	24.7	7.3	1.3	2,085
Maharashtra	23.6	6.5	0.3	1,854	27.7	10.4	0.3	1,531	25.6	8.4	0.3	3,385

continued

continued

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number	Mild Hypertension[1]	Moderate hypertension[2]	Severe hypertension[3]	Number
South												
Andaman & Nicobar Islands	22.5	14.8	2.4	666	30.5	20.3	1.7	475	25.8	17.1	2.1	1,141
Andhra Pradesh	23.2	7.4	1.0	1,306	28.0	15.5	0.7	932	25.2	10.8	0.9	2,238
Karnataka	16.7	7.8	2.8	1,299	26.9	8.2	2.0	922	20.8	8.0	2.5	2,221
Kerala	25.6	6.5	0.6	1,191	32.8	12.3	3.0	1,097	29.2	9.5	1.8	2,288
Lakshadweep	33.6	10.3	2.3	611	37.8	26.3	0.8	475	35.6	17.9	1.6	1,086
Puducherry	17.9	6.6	0.4	726	25.3	6.7	0.8	572	21.3	6.7	0.6	1,298
Tamil Nadu	18.2	5.8	1.4	1,890	24.1	12.2	0.9	1,409	20.8	8.7	1.2	3,299
Telangana	19.5	6.5	1.0	1,191	25.0	11.0	0.9	937	22.0	8.6	0.9	2,128

Note

**** Including spouse irrespective of age***. "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Grade 1 (mild) hypertension- systolic blood pressure of 140-159 mmHg and/or diastolic blood pressure of 90-99 mmHg.

[2] Grade 2 (moderate) hypertension- systolic blood pressure of 160-179 mmHg and/or diastolic blood pressure of 100-109 mmHg.

[3] Grade 3 (critical) hypertension- systolic blood pressure of ≥180 mmHg and/or diastolic blood pressure of ≥110 mmHg.

9.1.2 Comparison of self-reported with measured prevalence of hypertension

This section compares the prevalence of measured high blood pressure with the self-reported prevalence of diagnosed hypertension.

The following indicators are generated from self-reported and measured hypertension:

- **Normal (no hypertension) refers** to persons who reported that they have not been diagnosed with hypertension by a health professional and measured systolic blood pressure was <140 mmHg and diastolic blood pressure was <90 mmHg (Reported Negative and Measured Negative: R-M-).
- **Undiagnosed hypertension refers** to persons who reported that they have not been diagnosed with hypertension by a health professional but measured systolic blood pressure was ≥140 mmHg or diastolic blood pressure was ≥90 mmHg or both (Reported Negative and Measured Positive: R-M+).
- **Controlled hypertension refers to** to persons who reported that they have been diagnosed with hypertension by a health professional and measured systolic blood pressure was <140 mmHg and diastolic blood pressure was <90 mmHg (Reported Positive and Measured Negative: R+M-).
- **Uncontrolled hypertension refers to persons** who reported that they have been diagnosed with hypertension by a health professional and measured systolic blood pressure was ≥140 mmHg or diastolic blood pressure was ≥90 mmHg or both (Reported Positive and Measured Positive: R+M+).

Table 9.7 presents the prevalence of undiagnosed, controlled, and uncontrolled hypertension by background characteristics. One in five (20%) older adults age 45 and above have undiagnosed hypertension (R-M+). A higher proportion of elderly age 60 and above (22%) have undiagnosed hypertension than older adults age 45-59 (18%). The prevalence of undiagnosed hypertension is higher among elderly age 60 and above residing in rural areas (23%) than among those residing in urban areas (19%); however, among older adults age 45-59, this prevalence is higher among those residing in urban areas (20%) than among those residing in rural areas (17%). Among elderly age 60 and above, the prevalence of undiagnosed hypertension is higher among men (22%) than among women (21%), among those divorced/separated/deserted (29%), and among those living alone (25%). The prevalence of undiagnosed hypertension among elderly age 60 and above decreases with education and MPCE quintiles.

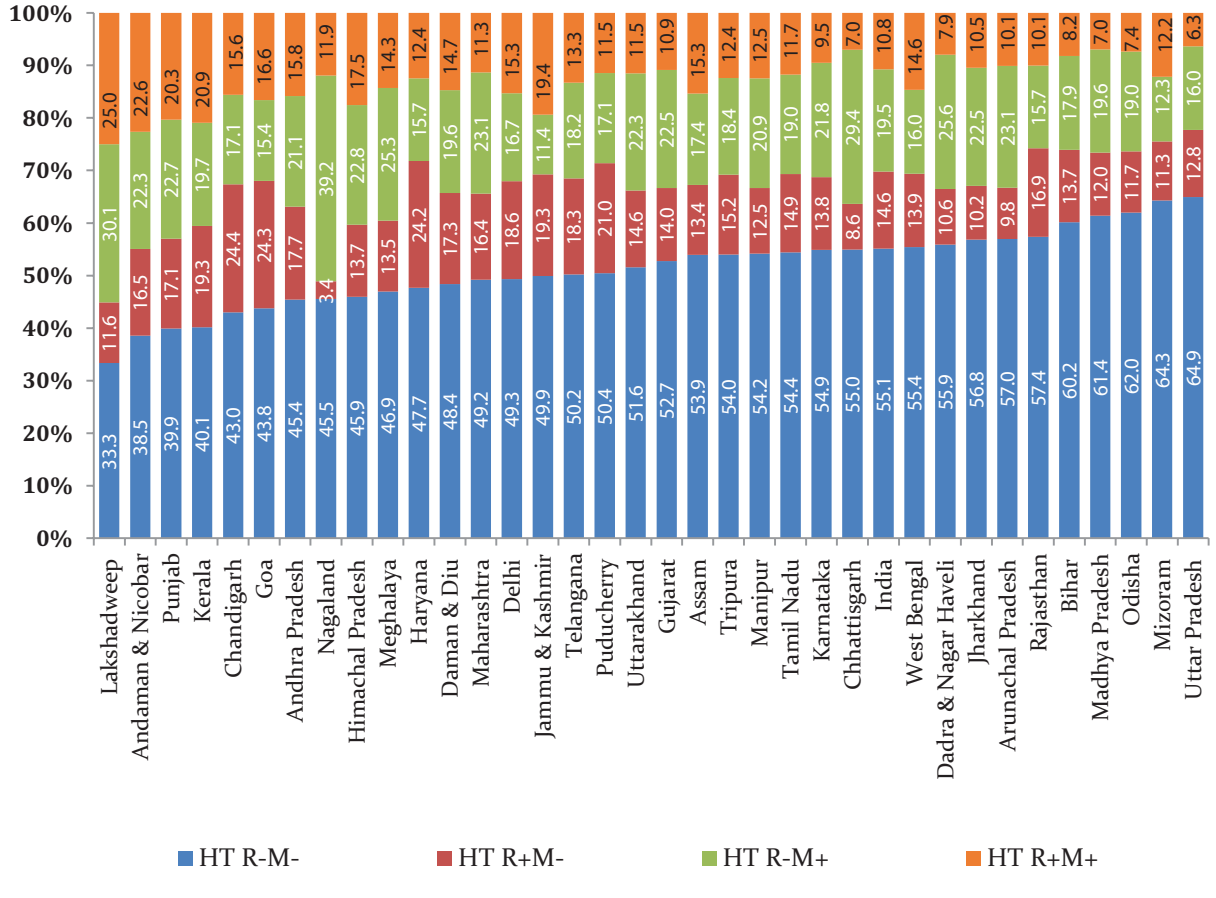
Overall, 15% of older adults age 45 and above in India have controlled hypertension, indicating that they have been previously diagnosed with hypertension and are currently maintaining normal blood pressure at the time of the survey. Eleven percent of older adults age 45 and above in India have uncontrolled hypertension, suggesting that they have been diagnosed with hypertension and have currently failed to maintain normal blood pressure. The prevalence rate of controlled hypertension is higher among elderly age 60 and above (17%) than among older adults age 45-59 (12%). Similarly, the prevalence of uncontrolled hypertension is significantly higher among elderly age 60 and above (15%) than among older adults age 45-59 (8%). Among elderly age 60 and above, the proportion of uncontrolled hypertension is higher among women (17%) than among men (12%) and among those residing in urban areas (21%) than among those residing in rural areas (12%); this proportion increases with education and MPCE quintiles. More than a quarter of elderly age 60 and above with 10 or more

years of schooling (27%) have been diagnosed with hypertension but are currently (at the time of the survey) maintaining normal blood pressure (controlled) compared to 14% of elderly with no schooling. Similarly, 24% of elderly age 60 and above in the richest MPCE quintile who have been diagnosed with hypertension are currently maintaining normal blood pressure (controlled hypertension) compared to 13% in the poorest MPCE quintile.

Across the states/UTs of India, the proportion of older adults age 45 and above with undiagnosed hypertension ranges from 11% in Jammu & Kashmir to 39% in Nagaland (Table 9.8). Fifty percent of the elderly age 60 and above have undiagnosed hypertension in the states of Nagaland (50%), and the prevalence is more than one-quarter in the state/UTs of Chhattisgarh (33%), Lakshadweep (33%), Meghalaya (31%), Jharkhand (28%), Arunachal Pradesh (28%), Dadra & Nagar Haveli (26%), Uttarakhand (26%), and Himachal Pradesh (26%).

The proportion of older adults age 45 and above who reported that they were diagnosed with hypertension but currently have uncontrolled hypertension (measured) is the highest in Lakshadweep (25%) and the lowest in Uttar Pradesh (6%). More than a quarter of elderly age 60 and above have uncontrolled hypertension in Lakshadweep (32%), Kerala (29%), Andaman & Nicobar (28%), Punjab (25%), and Delhi (25%). However, more than a quarter of elderly age 60 and above who reported to have been diagnosed with hypertension currently have normal blood pressure (controlled) in the states/ UTs of Chandigarh (34%), Goa (33%), Puducherry (28%), and Haryana (25%).

Figure 9.4 Comparison of self-reported with measured prevalence of hypertension among older adults age 45 and above*, states/UTs, LASI Wave 1, 2017-18



Note

** Including spouse irrespective of age.*

Table 9.7 Percent distribution of older adults based on self-reported diagnosed vs measured hypertension by background characteristics, India, LASI Wave 1, 2017-18

Background characteris1tics	Age 45-59*					Age ≥ 60					Total				
	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number
Place of residence															
Rural	66.5	16.5	10.7	6.3	23,845	51.3	22.8	13.9	12.0	18,950	59.3	19.5	12.2	9.0	42,795
Urban	53.9	20.1	15.8	10.2	13,391	34.6	18.5	25.8	21.1	9,521	45.6	19.4	20.1	14.9	22,912
Sex															
Male	61.4	21.4	9.4	7.8	13,965	51.2	21.9	14.9	12.1	13,698	56.1	21.6	12.2	10.0	27,663
Female	63.0	15.5	14.1	7.4	23,271	42.3	21.3	19.5	16.9	14,773	54.5	17.9	16.3	11.3	38,044
Marital status															
Currently married	63.1	17.6	12.1	7.2	32,420	49.8	20.6	16.6	13.0	18,155	58.1	18.8	13.7	9.4	50,575
Widowed	54.7	18.8	15.8	10.6	3,569	40.9	22.8	18.8	17.5	9,586	44.1	21.9	18.1	15.9	13,155
Divorced/Separated/Deserted/ Others	66.4	15.2	10.4	8.0	1,247	46.9	28.8	13.6	10.6	730	59.1	20.3	11.6	9.0	1,977
Living arrangement															
Living alone	54.6	20.7	12.2	12.4	643	43.1	24.7	17.4	14.9	1,477	45.7	23.8	16.2	14.3	2,120
Living with spouse and/or others	61.8	18.3	11.6	8.3	3,943	49.3	21.0	16.7	13.1	5,552	54.4	19.9	14.6	11.1	9,495
Living with spouse and children	63.3	17.5	12.1	7.0	27,885	50.1	20.5	16.4	12.9	12,394	59.1	18.5	13.5	8.9	40,279
Living with children and others	56.7	17.5	15.8	10.0	3,764	40.2	22.7	19.6	17.6	7,580	44.9	21.2	18.5	15.4	11,344
Living with others only	63.1	18.2	11.3	7.5	1,001	44.7	23.2	14.6	17.5	1,468	51.7	21.3	13.3	13.7	2,469
Religion															
Hindu	63.3	17.7	12.0	7.1	27,331	47.6	21.4	17.0	13.9	20,835	56.1	19.4	14.3	10.2	48,166
Muslim	57.2	16.9	15.9	10.0	4,485	42.8	21.5	18.9	16.8	3,386	50.8	19.0	17.2	13.0	7,871
Christian	68.5	16.1	9.3	6.0	3,739	38.9	24.6	17.7	18.8	2,861	55.2	19.9	13.1	11.8	6,600
Others	54.4	21.0	12.9	11.8	1,681	38.0	23.4	18.7	19.9	1,389	46.5	22.2	15.7	15.6	3,070
Caste/tribe															
Scheduled tribe	67.8	20.0	6.8	5.4	6,818	52.9	28.8	9.9	8.4	4,696	61.4	23.8	8.1	6.7	11,514
Scheduled caste	65.0	16.0	12.1	6.9	6,386	51.3	22.4	13.4	12.9	4,651	58.9	18.9	12.7	9.6	11,037
Other backward class	61.8	18.6	12.4	7.3	13,971	46.6	20.9	18.0	14.4	10,838	54.8	19.6	15.0	10.6	24,809
None of the above	59.7	16.6	14.4	9.2	10,061	41.2	20.0	21.0	17.8	8,286	50.9	18.2	17.5	13.3	18,347
Education															
No schooling	64.7	16.3	12.2	6.8	15,004	50.6	23.3	14.1	12.0	15,240	57.4	19.9	13.2	9.5	30,244
Less than 5 years complete	64.8	17.1	10.5	7.7	3,973	44.4	21.5	19.0	15.1	3,494	54.9	19.2	14.6	11.3	7,467
5-9 years complete	61.5	17.7	13.0	7.9	10,034	42.9	19.3	18.8	19.0	5,499	54.4	18.3	15.2	12.1	15,533
10 or more years complete	57.7	20.8	12.9	8.6	8,225	36.0	17.8	27.0	19.3	4,238	50.0	19.7	17.9	12.4	12,463
Work status															
Currently working	64.3	19.6	10.0	6.1	21,590	55.7	23.8	11.8	8.6	8,535	61.7	20.9	10.5	6.9	30,125
Worked in past but currently not working	56.6	14.5	16.9	12.0	4,184	44.2	21.9	17.7	16.2	12,044	47.2	20.1	17.5	15.1	16,228
Never worked	60.7	15.0	15.5	8.7	11,462	39.1	18.4	23.3	19.2	7,892	51.3	16.5	18.9	13.3	19,354

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Background characteris1tics	Age 45-59*					Age ≥ 60					Total				
	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number
MPCE quintile															
Poorest	68.1	17.4	9.2	5.3	7,096	50.5	24.6	12.7	12.2	5,826	59.8	20.8	10.9	8.6	12,922
Poorer	64.4	17.7	11.0	6.9	7,377	49.5	22.1	15.0	13.3	5,875	57.5	19.7	12.9	9.9	13,252
Middle	62.1	18.0	12.2	7.7	7,441	46.9	22.1	16.8	14.2	5,856	55.0	19.9	14.3	10.8	13,297
Richer	61.4	16.4	13.6	8.6	7,729	43.8	19.5	19.7	17.1	5,609	53.4	17.8	16.3	12.4	13,338
Richest	55.5	19.0	16.2	9.4	7,593	39.9	18.8	24.3	17.0	5,305	48.9	18.9	19.6	12.6	12,898
Total	**62.4**	**17.7**	**12.4**	**7.5**	**37,236**	**46.5**	**21.6**	**17.3**	**14.6**	**28,471**	**55.1**	**19.5**	**14.6**	**10.8**	**65,707**

Note

** Including spouse irrespective of age.*

[1] No hypertension refers to those undiagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R- M-).

[2] Undiagnosed hypertension refers to those undiagnosed by a health professional but whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R- M+).

[3] Controlled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R+ M-).

[4] Uncontrolled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R+ M+).

Table 9.8 Percent distribution of older adults based on self-reported diagnosed vs measured hypertension, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number
India	**62.4**	**17.7**	**12.4**	**7.5**	**37,236**	**46.5**	**21.6**	**17.3**	**14.6**	**28,471**	**55.1**	**19.5**	**14.6**	**10.8**	**65,707**
North															
Chandigarh	51.1	16.8	17.9	14.3	536	30.7	17.5	34.2	17.6	331	43.0	17.1	24.4	15.6	867
Delhi	57.1	16.0	17.7	9.2	799	36.6	17.9	20.3	25.3	478	49.3	16.7	18.6	15.3	1,277
Haryana	51.8	14.9	23.3	10.0	945	43.1	16.6	25.1	15.1	766	47.7	15.7	24.2	12.4	1,711
Himachal Pradesh	53.4	20.4	13.9	12.3	733	37.5	25.6	13.5	23.5	579	45.9	22.8	13.7	17.5	1,312
Jammu & Kashmir	59.4	9.6	16.7	14.3	768	40.2	13.2	22.1	24.6	627	49.9	11.4	19.3	19.4	1,395
Punjab	46.5	22.0	15.6	15.9	1,046	32.6	23.4	18.8	25.2	925	39.9	22.7	17.1	20.3	1,971
Rajasthan	64.8	12.5	15.5	7.3	1,096	49.8	19.0	18.3	12.9	988	57.4	15.7	16.9	10.1	2,084
Uttarakhand	56.5	19.2	14.9	9.4	668	46.5	25.5	14.2	13.8	606	51.6	22.3	14.6	11.5	1,274
Central															
Chhattisgarh	59.9	27.3	7.5	5.4	1,217	47.0	32.9	10.5	9.7	730	55.0	29.4	8.6	7.0	1,947
Madhya Pradesh	65.0	17.9	11.8	5.3	1,458	57.4	21.5	12.3	8.9	1,172	61.4	19.6	12.0	7.0	2,630
Uttar Pradesh	70.7	11.3	13.3	4.7	2,213	59.0	20.8	12.2	8.0	1,962	64.9	16.0	12.8	6.3	4,175
East															
Bihar	66.8	14.4	14.1	4.7	1,667	54.3	21.0	13.4	11.3	1,741	60.2	17.9	13.7	8.2	3,408
Jharkhand	66.5	17.3	9.2	7.0	1,217	46.5	28.0	11.3	14.2	1,096	56.8	22.5	10.2	10.5	2,313
Odisha	68.8	17.9	8.1	5.1	1,560	52.8	20.5	16.4	10.3	1,099	62.0	19.0	11.7	7.4	2,659
West Bengal	63.6	13.7	12.3	10.4	2,152	43.2	19.3	16.5	20.9	1,379	55.4	16.0	13.9	14.6	3,531
Northeast															
Arunachal Pradesh	60.4	21.8	8.0	9.8	852	46.1	27.5	15.4	11.1	294	57.0	23.1	9.8	10.1	1,146
Assam	61.7	14.6	12.3	11.4	1,397	39.7	22.5	15.3	22.6	725	53.9	17.4	13.4	15.3	2,122
Manipur	59.9	19.6	9.3	11.1	662	47.6	22.3	16.1	14.0	527	54.2	20.9	12.5	12.5	1,189
Meghalaya	57.9	21.3	11.5	9.4	507	32.2	30.6	16.2	20.9	384	46.9	25.3	13.5	14.3	891
Mizoram	72.0	11.2	7.7	9.0	659	54.4	13.6	15.8	16.2	470	64.3	12.3	11.3	12.2	1,129
Nagaland	56.2	28.8	2.7	12.3	662	34.5	50.0	4.1	11.5	563	45.5	39.2	3.4	11.9	1,225
Tripura	61.1	16.6	12.4	9.9	676	43.3	21.2	19.5	16.0	424	54.0	18.4	15.2	12.4	1,100
West															
Dadra & Nagar Haveli	60.5	25.1	8.9	5.5	594	48.7	26.3	13.2	11.9	407	55.9	25.6	10.6	7.9	1,001
Daman & Diu	57.0	16.4	15.1	11.5	534	38.3	23.4	19.9	18.4	401	48.4	19.6	17.3	14.7	935
Goa	59.9	13.8	17.0	9.3	690	24.8	17.2	32.9	25.1	568	43.8	15.4	24.3	16.6	1,258
Gujarat	60.3	20.5	12.2	7.0	1,198	43.5	24.8	16.1	15.6	886	52.7	22.5	14.0	10.9	2,084
Maharashtra	58.7	22.9	10.8	7.5	1,853	39.4	23.2	22.1	15.2	1,530	49.2	23.1	16.4	11.3	3,383

continued

continued

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number	No hypertension[1]	Un-diagnosed hypertension[2]	Controlled hypertension[3]	Un-controlled hypertension[4]	Number
South															
Andaman & Nicobar Islands	46.4	21.1	13.9	18.6	666	27.3	24.1	20.3	28.3	474	38.5	22.3	16.5	22.6	1,140
Andhra Pradesh	53.9	20.2	14.6	11.3	1,306	33.9	22.3	21.9	21.9	932	45.4	21.1	17.7	15.8	2,238
Karnataka	63.1	21.2	9.5	6.2	1,297	42.8	22.7	20.1	14.4	920	54.9	21.8	13.8	9.5	2,217
Kerala	53.6	20.2	13.7	12.5	1,190	27.3	19.1	24.6	28.9	1,097	40.1	19.7	19.3	20.9	2,287
Lakshadweep	42.9	27.9	10.9	18.4	611	22.8	32.6	12.3	32.3	475	33.3	30.1	11.6	25.0	1,086
Puducherry	60.2	16.6	14.8	8.3	726	38.9	17.7	28.3	15.1	572	50.4	17.1	21.0	11.5	1,298
Tamil Nadu	63.1	17.1	11.5	8.3	1,890	43.7	21.3	19.0	15.9	1,408	54.4	19.0	14.9	11.7	3,298
Telangana	58.9	18.6	14.2	8.4	1,191	40.0	17.8	23.1	19.1	935	50.2	18.2	18.3	13.3	2,126

Note

** Including spouse irrespective of age.*

[1] No hypertension refers to those undiagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R- M-).

[2] Undiagnosed hypertension refers to those undiagnosed by a health professional but whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R- M+).

[3] Controlled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was < 140 mmHg & diastolic blood pressure was < 90 mmHg (R+ M-).

[4] Uncontrolled hypertension refers to those diagnosed by a health professional and whose measured systolic blood pressure was ≥ 140 mmHg or diastolic blood pressure was ≥ 90 mmHg or both (R+ M+).

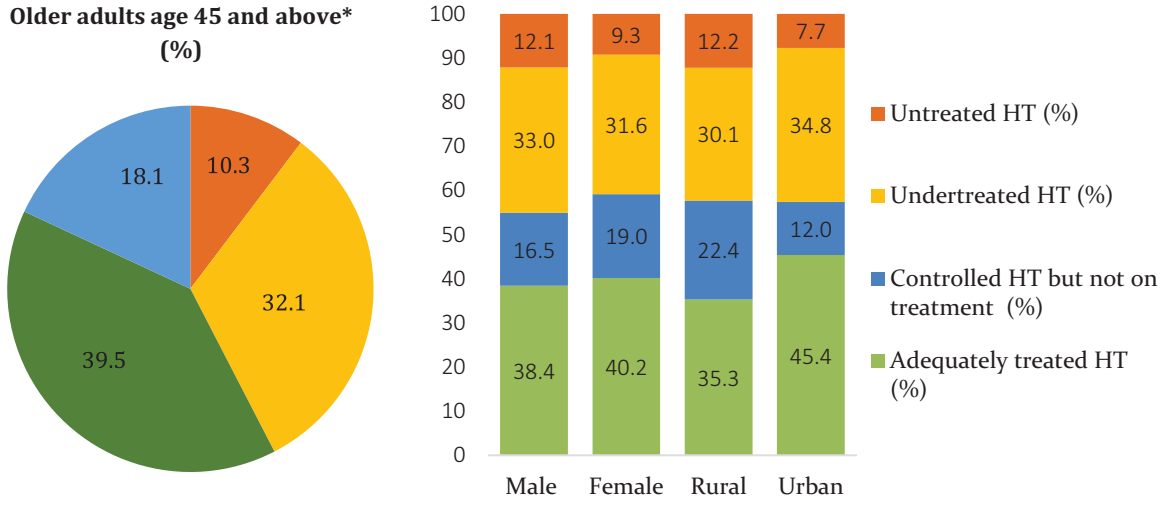
Along with the treatment information for diagnosed hypertension and measured blood pressure, in the LASI information on treatment for hypertension was also collected, based on which the following indicators have been generated:

- **Untreated hypertension** refers to those who reported that they have been diagnosed with hypertension by a health professional and currently have hypertension but are not receiving treatment.
- **Undertreated hypertension** refers to those who reported that they have been diagnosed with hypertension by a health professional and are receiving treatment, but currently have hypertension (measured).
- **Adequately treated hypertension** refers those who reported that they have been diagnosed with hypertension by a health professional, are receiving treatment, and currently have normal
- **Controlled hypertension but not on treatment** refers to those reported that they have been diagnosed with hypertension by a health professional and are not receiving any medication, but currently have normal blood pressure.

Note: Untreated, undertreated, adequately treated, and controlled hypertension, but not on medication, are calculated among those who reported that they have been diagnosed with hypertension.

Figure 9.5 shows that among older adults age 45 and above who reported that they have been diagnosed with hypertension, 10% have untreated hypertension, 32% have undertreated hypertension, 40% are adequately treated for hypertension, and 18% have controlled hypertension, but currently they are not on medication.

Figure 9.5 Percent distribution of older adults age 45 and above with untreated, undertreated, adequately treated, and controlled hypertension but not on treatment by sex and place of residence, LASI Wave 1, 2017-18



Note * *Including spouse irrespective of age*

Table 9.9 presents the percentage of older adults with untreated, undertreated, and adequately treated hypertension by background characteristics. One in 10 elderly age 60 and above who reported that they have been diagnosed with hypertension (10%) are currently untreated for hypertension, and more than a third of elderly age 60 and above who reported that they have been diagnosed with hypertension (36%) are undertreated for hypertension. A higher proportion of elderly age 60 and above who have been diagnosed with hypertension are adequately treated for hypertension (42%) than older adults age 45-59 (36%). The prevalence of untreated hypertension is higher among elderly age 60 and above who are residing in rural areas (13%) than among those residing in urban areas (7%), whereas the prevalence of undertreated and adequately treated hypertension is higher among elderly in urban areas (39% and 49%, respectively) than among those in rural areas (34% and 38%, respectively). Among elderly age 60 and above, the prevalence of untreated hypertension is higher among men (12%) than among women (9%) and decreases with an increase in education and MPCE quintiles. However, a higher proportion of elderly women age 60 and above (37%) than men (33%) are undertreated for hypertension. Furthermore, half of elderly age 60 and above with 10 or more years of education (51%) and of those who belong to the richest MPCE quintile (49%) reported that they have been diagnosed with hypertension and are currently adequately treated for hypertension.

Table 9.10 presents cross-state variations in the proportion of older adults who reported to have been diagnosed with hypertension and who are untreated, undertreated, or adequately treated for hypertension. The proportion of older adults age 45 and above untreated for hypertension is the highest in Arunachal Pradesh (34%) and the lowest in Goa (1.3%). More than 20% of elderly age 60 and above who reported that they have been diagnosed with hypertension remain untreated for hypertension in the states/UTs of Arunachal Pradesh (26%), Mizoram (25%), Nagaland (25%), and Himachal Pradesh (22%). The proportion of elderly age 60 and above who reported that they have been diagnosed with hypertension but remain undertreated for hypertension is markedly higher in the states/UTs of of Lakshadweep (59%), Meghalaya (52%), Nagaland (49%), Punjab (48%), and Delhi (48%). However, in Puducherry (61%), Chandigarh (60%), Goa (55%), Maharashtra (55%), Karnataka (52%), and Telangana (50%), more than half of elderly age 60 and above who reported that they have been diagnosed with hypertension are adequately treated.

Key findings: measured blood pressure

- Overall, 30% of older adults age 45 and above in India have high blood pressure (measured). The prevalence of high blood pressure is higher among elderly age 60 and above (36%) than among older adults age 45–59 (25%). More than half of elderly age 60 and above have high blood pressure in the states/UTs of Lakshadweep (65%), Nagaland (62%), Andaman & Nicobar (53%), and Meghalaya (52%).

- Overall, in India, 20% of older adults age 45 and above remain undiagnosed for hypertension. More than a fifth of elderly age 60 and above (22%) remain undiagnosed for hypertension. The prevalence rate of undiagnosed hypertension among elderly age 60 and above is higher in rural (23%) than in urban areas (19%), higher in those living alone (25%) than in those living with spouse and children (21%), higher among scheduled tribe (29%) than other caste (none of the above) (20%), higher among those with no schooling (23%) than those with more than 10 years of schooling (18%), and higher among those in the poorest MPCE quintile (25%) than those in the richest MPCE quintile (19%).

- More than a quarter of elderly age 60 and above have undiagnosed hypertension in the states/UTs of Nagaland (50%), Chhattisgarh (33%), Lakshadweep (33%), Meghalaya (31%), Jharkhand (28%), Arunachal Pradesh (28%), Dadra & Nagar Haveli (26%), Uttarakhand (26%), and Himachal Pradesh (26%).

- Overall, 17% and 15% of elderly age 60 and above in India who reported that they have been diagnosed with hypertension currently have normal and high blood pressure, respectively.

- More than a quarter of elderly age 60 and above who reported that they have been diagnosed with hypertension currently have normal blood pressure (controlled) in the states/UTs of Chandigarh (34%), Goa (33%), Puducherry (28%), and Haryana (25%).

- Among elderly age 60 and above who reported that they have been diagnosed with hypertension, 42% are adequately treated; however, more than a third of elderly are undertreated (36%) and one in 10 elderly remain untreated (10%).

- Elderly residing in rural areas, especially men, elderly who belong to Scheduled tribe, and elderly with no schooling or who are in the poorest MPCE quintile are more likely to remain untreated for hypertension.

- More than a fifth of elderly age 60 and above who reported that they have been diagnosed with hypertension remain untreated in the states/UTs of Arunachal Pradesh (26%), Mizoram (25%), Nagaland (25%), and Himachal Pradesh (22%). Conversely, more than a half of elderly age 60 and above are adequately treated for hypertension in the states/UTs of Puducherry (61%), Chandigarh (60%), Goa (55%), Maharashtra (55%), Karnataka (52%), and Telangana (50%).

Table 9.9 Percentage of older adults with untreated, undertreated and adequately treated hypertension by background characteristics India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number
Place of residence												
Rural	11.7	25.2	31.9	4,338	12.5	33.8	37.8	5,373	12.2	30.1	35.3	9,711
Urban	9.4	29.9	41.1	3,600	6.5	38.5	48.6	4,324	7.7	34.8	45.4	7,924
Sex												
Male	13.2	32.3	30.4	2,533	11.5	33.3	43.1	4,085	12.1	33.0	38.4	6,618
Female	9.5	24.7	38.3	5,405	9.0	37.4	41.7	5,612	9.3	31.6	40.2	11,017
Marital status												
Currently married	10.7	26.7	35.4	6,626	10.2	33.8	43.4	5,855	10.5	30.1	39.2	12,481
Widowed	11.4	28.8	40.5	1,036	9.8	38.5	40.9	3,617	10.1	36.7	40.8	4,653
Divorced/Separated/ Deserted/Others	9.3	34.2	25.9	276	8.1	35.7	38.4	225	8.8	34.8	31.4	501
Living arrangement												
Living alone	12.3	38.2	33.4	159	10.3	35.9	36.9	500	10.6	36.3	36.2	659
Living with spouse and/ or others	9.0	32.5	38.1	901	10.4	33.5	43.4	1,787	9.9	33.2	41.7	2,688
Living with spouse and children	10.9	25.8	35.0	5,587	10.1	34.0	43.5	3,992	10.6	29.3	38.6	9,579
Living with children and others	10.9	27.9	39.4	1,067	8.8	38.5	42.8	2,886	9.2	36.2	42.0	3,953
Living with others only	10.7	29.3	31.9	224	15.5	39.1	32.7	532	14.3	36.5	32.5	756
Religion												
Hindu	10.8	26.4	35.4	5,590	10.2	34.8	42.6	6,804	10.5	31.3	39.6	12,394
Muslim	9.7	28.9	38.1	1,212	9.0	38.0	40.9	1,391	9.3	33.7	39.6	2,603
Christian	13.0	26.3	41.1	680	8.5	43.0	41.8	944	10.0	37.3	41.6	1,624
Others	11.6	36.0	32.3	456	10.0	41.6	40.0	558	10.7	39.3	36.8	1,014
Caste/tribe												
Scheduled tribe	18.1	25.9	26.2	1,074	17.2	28.8	38.0	1,144	17.6	27.4	32.4	2,218
Scheduled caste	10.9	25.3	34.7	1,324	15.7	33.4	36.1	1,357	13.4	29.6	35.5	2,681
Other backward class	9.8	27.3	37.2	2,954	8.8	35.7	43.8	3,690	9.2	32.2	41.1	6,644
None of the above	10.6	28.4	36.0	2,586	8.0	37.9	43.6	3,506	9.1	34.1	40.6	6,092
Education												
No schooling	10.4	25.3	33.7	2,919	11.6	34.2	38.4	4,412	11.1	30.7	36.5	7,331
Less than 5 years complete	13.4	29.0	34.8	787	10.5	33.7	45.0	1,267	11.6	32.0	41.3	2,054
5-9 years complete	10.1	27.6	34.5	2,257	8.3	42.1	40.5	2,083	9.1	35.3	37.7	4,340
10 or more years complete	10.8	29.3	41.4	1,975	7.9	33.8	51.4	1,935	9.2	31.7	46.8	3,910

continued

continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number
Work status												
Currently working	11.1	27.0	33.6	3,748	13.9	28.3	39.4	1,880	12.1	27.5	35.7	5,628
Worked in past but currently not working	11.6	29.8	36.1	1,255	10.9	36.9	42.0	4,426	11.1	35.3	40.7	5,681
Never worked	9.8	26.2	38.7	2,935	6.6	38.6	44.4	3,391	8.0	33.3	42.0	6,326
MPCE quintile												
Poorest	13.8	22.6	29.6	1,113	15.0	34.0	36.0	1,489	14.5	29.5	33.5	2,602
Poorer	13.7	24.7	32.0	1,350	11.8	35.3	40.7	1,796	12.6	30.8	37.1	3,146
Middle	9.6	29.2	33.8	1,610	11.0	34.9	41.2	1,981	10.4	32.5	38.1	3,591
Richer	10.0	28.8	35.6	1,824	7.4	39.0	42.8	2,165	8.5	34.7	39.7	3,989
Richest	8.0	28.7	44.4	2,041	6.3	34.9	49.3	2,266	7.0	32.1	47.0	4,307
Total	**10.7**	**27.2**	**35.8**	**7,938**	**10.0**	**35.8**	**42.3**	**9,697**	**10.3**	**32.1**	**39.5**	**17,635**

Note

** Including spouse irrespective of age.*

[1] Untreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently not taking treatment.

[2] Undertreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently taking treatment.

[3] Adequately treated hypertension refers to those who reported that they have been diagnosed with hypertension by health professional and currently taking treatment and whose measured systolic blood pressure was < 140 mmHg and diastolic blood pressure was < 90 mmHg.

Untreated, undertreated and adequately treated hypertension is calculated among those who reported that they have been diagnosed with hypertension.

Table 9.10 Percentage of older adults with untreated, undertreated and adequately treated hypertension, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number
India	**10.7**	**27.2**	**35.8**	**7,938**	**10.0**	**35.8**	**42.3**	**9,697**	**10.3**	**32.1**	**39.5**	**17,635**
North												
Chandigarh	14.3	30.2	39.3	167	7.0	26.9	59.6	173	10.5	28.5	49.8	340
Delhi	12.3	22.0	29.8	206	7.4	48.1	32.4	202	9.8	35.3	31.1	408
Haryana	10.3	19.7	28.9	296	13.0	24.5	37.2	300	11.8	22.3	33.3	596
Himachal Pradesh	20.3	26.6	27.5	193	22.2	41.4	25.5	206	21.4	34.8	26.4	399
Jammu & Kashmir	7.0	39.1	42.2	234	10.5	42.2	43.6	291	9.1	41.0	43.0	525
Punjab	12.5	38.0	37.0	329	9.1	48.4	35.1	395	10.6	43.8	35.9	724
Rajasthan	11.5	20.3	32.0	240	14.0	27.4	38.8	308	12.9	24.4	35.9	548
Uttarakhand	20.6	18.0	34.2	170	19.0	30.2	30.6	167	19.8	24.4	32.3	337
Central												
Chhattisgarh	9.4	32.3	28.3	154	13.4	34.5	40.8	142	11.4	33.3	34.4	296
Madhya Pradesh	9.8	21.3	32.4	255	11.7	30.3	41.3	268	10.8	26.0	37.0	523
Uttar Pradesh	11.5	14.7	34.6	401	12.7	27.0	38.8	411	12.1	21.1	36.8	812
East												
Bihar	10.4	14.6	25.5	327	16.6	29.1	28.7	424	14.1	23.3	27.4	751
Jharkhand	13.5	29.6	27.2	191	19.7	36.0	31.8	269	17.2	33.4	30.0	460
Odisha	14.5	24.1	33.5	210	7.6	31.0	42.4	311	10.4	28.3	38.9	521
West Bengal	12.9	33.0	33.9	497	8.9	47.1	33.8	545	10.8	40.4	33.9	1,042
Northeast												
Arunachal Pradesh	37.2	17.9	11.4	135	26.0	15.8	9.9	71	33.6	17.2	10.9	206
Assam	19.2	28.9	23.3	311	16.3	43.3	29.9	271	17.8	35.6	26.4	582
Manipur	29.3	25.0	28.3	138	12.6	34.1	41.3	151	19.9	30.1	35.6	289
Meghalaya	11.5	33.3	39.7	97	4.8	51.5	31.5	132	7.7	43.7	35.0	229
Mizoram	29.6	24.2	15.2	111	25.4	25.2	29.0	143	27.1	24.8	23.4	254
Nagaland	27.2	54.7	4.5	68	24.9	49.0	13.7	78	26.1	51.9	9.1	146
Tripura	16.4	28.1	31.7	152	14.2	30.9	44.6	140	15.3	29.6	38.3	292
West												
Dadra & Nagar Haveli	8.0	29.9	40.3	70	13.3	34.1	35.6	75	10.8	32.1	37.8	145
Daman & Diu	11.7	31.6	36.0	126	7.2	41.0	45.0	163	9.2	36.8	41.0	289
Goa	[3.0]	32.6	59.3	180	[0.4]	42.9	54.7	323	1.3	39.3	56.3	503
Gujarat	15.1	21.2	31.2	229	17.3	32.1	42.8	275	16.3	27.4	37.9	504
Maharashtra	6.4	34.6	41.4	363	6.8	34.0	54.7	579	6.7	34.2	50.2	942

continued

continued

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number	Untreated hypertension[1]	Undertreated hypertension[2]	Adequately treated[3]	Number
South												
Andaman & Nicobar Islands	12.3	45.0	25.5	215	12.2	46.1	35.9	212	12.2	45.5	30.9	427
Andhra Pradesh	5.1	38.6	45.6	335	3.9	46.0	46.4	394	4.4	42.7	46.0	729
Karnataka	6.7	32.6	45.2	197	4.5	37.1	51.7	296	5.4	35.3	49.1	493
Kerala	17.7	30.1	39.6	316	7.0	47.0	44.1	579	10.4	41.6	42.7	895
Lakshadweep	17.5	45.2	31.0	177	13.9	58.6	22.0	226	15.4	53.0	25.8	403
Puducherry	5.2	30.9	50.7	188	3.1	31.8	61.2	263	3.9	31.4	57.2	451
Tamil Nadu	10.7	31.2	39.2	406	7.7	37.9	41.3	525	8.9	35.1	40.4	931
Telangana	4.0	33.2	51.6	254	6.5	38.8	50.3	389	5.5	36.6	50.8	643

Note

***** *Including spouse irrespective of age*. "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] Untreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently not taking treatment.

[2] Undertreated hypertension refers to those who reported that they have been diagnosed with hypertension by a health professional and currently measured with hypertension but currently taking treatment.

[3] Adequately treated hypertension refers to those who reported that they have been diagnosed with hypertension by health professional and currently taking treatment and whose measured systolic blood pressure was < 140 mmHg and diastolic blood pressure was < 90 mmHg.

Untreated, undertreated and adequately treated hypertension is calculated among those who reported that they have been diagnosed with hypertension.

9.2 LUNG FUNCTION

Ageing is closely associated with declining lung health. The respiratory system undergoes various anatomical, physiological, and immunological changes as we age. The variability in physiological measurements is much greater among healthy older adults and the elderly than among younger individuals, making it a challenge to establish a 'normal' range for older adults (Sharma and Goodwin, 2006). In the LASI, a lung function test (also called a pulmonary function test) was conducted using the 'Thor' spirometry handheld device, which measures the volume of air that can be inhaled and exhaled and the maximum speed with which it can be removed. This is the basic tool that measures lung health and is the gold standard diagnostic test for asthma and chronic obstructive pulmonary disease (COPD) (American Lung Association, 2017). Spirometry tests were conducted using the American Thoracic Society/European Respiratory Society 2005 guidelines (Miller et al., 2005). Details of the procedure are given in Appendix 3B.

Lung function test: outcome measures from spirometry

- **Forced Vital Capacity (FVC)** is the total volume of air exhaled in a forced expiratory manoeuvre after maximal inspiration. FVC is useful for detecting restrictive lung diseases because lower than expected results may be a sign that the lungs cannot inflate as fully as normal; for example, FVC is reduced in people with obstructive and restrictive disorders. FVC is presented as percentage predicted FVC (% predicted FVC), which is obtained as: % predicted FVC = (absolute value of FVC/predicted value of FVC) × 100
- **Forced Expiratory Volume at One Second (FEV1)** is the amount of air that a person breathes out during the first second of a forced expiratory manoeuvre. FEV1 is reduced in people with asthma and COPD. FEV1 is presented as percentage predicted FEV1 (% predicted FEV1), which is obtained as: % predicted FEV1 = (absolute value of FEV1/ predicted value of FEV1) × 100
- **Peak Expiratory Flow Rate (PEFR)** is a person's maximum speed of air expiration, expressed as litre per second (L/s).
- **Forced Expiratory Flow 25–75% (FEF25-75)** is the mean forced expiratory airflow between the 25% and 75% of the FVC. FEF25-75 is presented as percentage predicted FEF25-75, which is obtained as: % predicted FEF25-75 = (absolute value of FEF25-75/ predicted value of FEF25-75) × 100
- **Forced Expiratory Time (FET)** is the time taken for an individual to forcefully exhale air through an open mouth from total lung capacity until airflow becomes inaudible.
- **FEV1 to FVC ratio (FEV1/FVC)** is the most sensitive and specific index of airway obstruction measured using a spirometer. It is obtained by dividing the FEV1 by the FVC and is usually expressed as a percentage value (i.e. FEV1/FVC × 100).

9.2.1 Number of spirometry tests conducted in LASI

Table 9.11 provides the number of spirometry test conducted and the number of cases used to obtain outcome measures. The estimates of spirometry tests presented in this section are subject to the given limitations and therefore the results should be used with caution.

- The following criteria are used to determine acceptability of test to evaluate state of lung health:

  - Forced expiratory time of minimum theree seconds ot at least one second plateau is taken into consideration.

  - Repeatability norm of forced vital capacity and forced expiratory volume at one second are realxed.

  - Parameter value of at least one accepatble spirometry trial is considered.

- A notable proportion of LASI respondents particularly elderly in age 60 and above either did not participate in the test due to contraindications such as upper respiratory tract infection, eye surgery, abdominal surgery, myocardial infarction, unable to open mouth sufficiently to hold mouthpiece, etc. or could not successfully complete the test due to poor efforts, discontinued exhalation, multiple blows, cough during test, air leak due to partial or full edentulism, etc.

Table 9.11 Number of spirometry tests conducted among older adults age 45 and above, India, LASI Wave 1, 2017-18

Description	Number of cases
Number of spirometry tests performed	55,188
Number of usable spirometry tests[1] to assess mean values of % predicted FEV1 & absolute PEFR	41,218
Number of acceptable spirometry tests[2] to assess mean values of % predicted FVC, % predicted FEF25-75, absolute FEV1/FVC (%) and to determine normal PFT and prevalence of restrictive and obstructive lung diseases	34,173

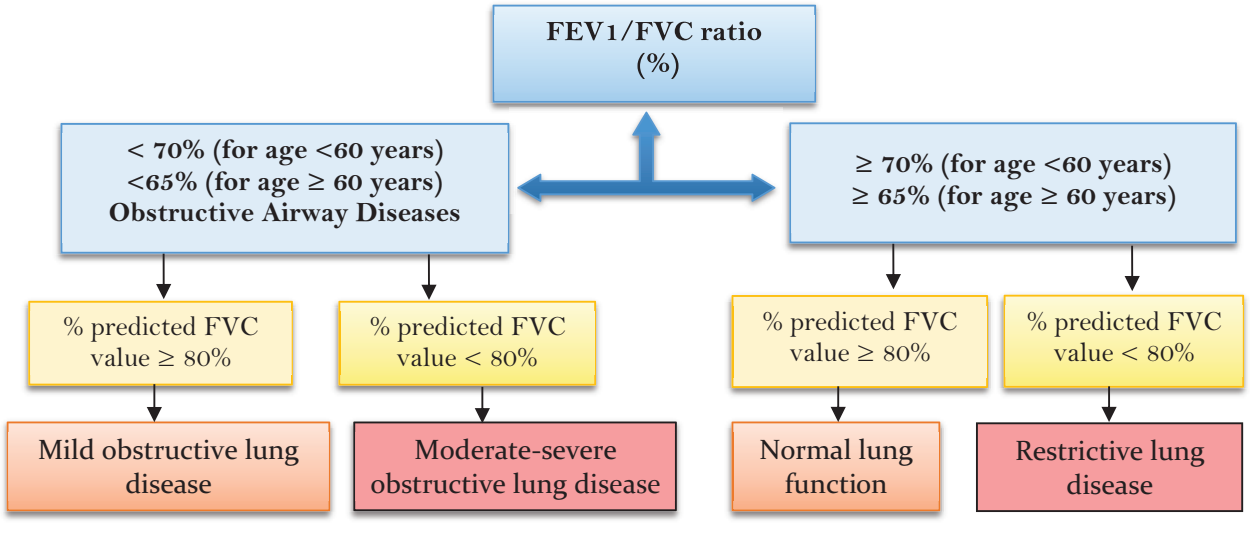
Notes

**Including spouse irrespective of age.*

[1]Usable spirmetry test refers to the acceptability and unacceptability of the test results due to the reasons such as exhalation time less than three seconds and no plateau achieved; abrupt stop after one second/glottis closure after one second/no smooth exhalation; forced inspiratory vital capacity more than 200ml of forced vital capacity; air leak; no second forced inspiratory loop.

[2]Acceptable spirometry test refers to the test in which the following criteria are met: both the graphs flow-volume (FV) and volume-time (VT) start from zero-starting point; blow is immediate, hard and fast without any delay; a sharp peak is obtained; exhalation is long without stopping in between; there is no cough or abrupt stop; exhalation for minimum three seconds or until one second plateau is achieved; the second deep inhalation is within the zero-starting point.

Chart 9.2: The outcome measures obtained based on spirometry test, LASI Wave 1, 2017-18



9.2.2 Measures of lung function

The mean of % predicted FEV1 and mean of absolute PEFR value according to background characteristics are presented in Table 9.12. The mean of % predicted FEV1 is higher among older adult women age 45 and above (81%) than older adult men age 45 and above (76%). On the contrary, the mean of absolute PEFR is higher in older adult men age 45 and above (5 L/s) than older adult women age 45 and above (4 L/s). The mean of % predicted FEV1 is slightly higher among older adult men age 45-59 (77%) than elderly men age 60 and above (76%). Conversely, the mean of % predicted FEV1 is higher among elderly women 60 and above (83%) than older adult women age 45-59 (81%). The mean of % predicted FEV1 is higher among older adult men and women age 45 and above residing in rural areas (77% and 82%, respectively) than among older adult men and women age 45 and above residing in urban areas (74% and 79%, respectively). The elderly men and women age 60 and above have lower mean of absolute PEFR (5 L/s and 4 L/s, respectively) than older adult men and women age 45-59 (6 L/s and 4 L/s, respectively). The mean of absolute PEFR value increases with educational attainment and does not vary much by place of residence among older adult men and women age 45 and above.

The mean of % predicted FEV1 and mean of absolute PEFR value vary widely across states/UTs (Table 9.13). For elderly men age 60 and above, the mean of % predicted FEV1 ranges from 90% in Jammu & Kashmir to 67% in Lakshadweep; for elderly women age 60 and above, it ranges from 106% in Nagaland to 70% in Puducherry. The mean of absolute PEFR value for elderly men and women age 60 and above is higher in Nagaland (6 L/s and 5 L/s respectively) and lower in Rajasthan (4 L/s and 3 L/s respectively).

Table 9.12 Mean values of lung function parameters (% predicted FEV1 & absolute PEFR) among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male									Female								
	Age 45-59*			Age ≥ 60			Total			Age 45-59*			Age ≥ 60			Total		
	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number
Place of residence																		
Rural	77.5	5.8	6,757	76.5	4.8	5,670	77.1	5.3	12,427	81.5	4.4	10,145	84.1	3.6	4,580	82.4	4.1	14,725
Urban	74.3	5.8	3,543	74.1	4.9	2,626	74.2	5.4	6,169	78.4	4.3	5,528	80.0	3.6	2,369	78.9	4.1	7,897
Marital status																		
Currently married	76.7	5.9	9,617	76.1	4.9	7,001	76.4	5.4	16,618	80.8	4.4	13,203	82.8	3.7	3,620	81.3	4.2	16,823
Widowed	75.2	5.5	323	74.6	4.5	1,120	74.7	4.7	1,443	78.8	4.2	1,987	83.2	3.5	3,141	81.7	3.7	5,128
Divorced/Separated/ Deserted/Others	75.2	5.7	360	77.5	4.4	175	76.2	5.2	535	80.1	4.3	483	79.9	3.4	188	80.0	4.0	671
Living arrangement																		
Living alone	77.6	5.8	154	75.4	4.5	183	76.1	4.9	337	77.0	4.1	298	83.2	3.6	505	81.4	3.7	803
Living with spouse and/or others	75.0	5.6	1,023	75.8	4.7	1,981	75.5	5.0	3,004	79.5	4.2	1,718	81.3	3.5	1,167	80.3	3.9	2,885
Living with spouse and children	76.9	5.9	8,443	76.2	4.9	4,945	76.6	5.5	13,388	81.0	4.4	11,234	83.6	3.7	2,404	81.5	4.3	13,638
Living with children and others	76.2	5.5	409	75.1	4.5	952	75.4	4.7	1,361	79.0	4.2	2,050	82.9	3.5	2,471	81.3	3.8	4,521
Living with others only	73.6	5.8	271	74.7	4.4	235	74.2	5.0	506	84.5	4.4	373	83.9	3.5	402	84.2	3.9	775
Religion																		
Hindu	76.5	5.8	7,439	76.0	4.8	5,881	76.3	5.3	13,320	80.2	4.3	11,221	82.8	3.6	4,996	81.1	4.1	16,217
Muslim	77.7	5.9	1,090	76.8	4.9	927	77.3	5.4	2,017	83.5	4.5	1,805	85.9	3.8	702	84.2	4.3	2,507
Christian	75.5	6.1	1,216	74.7	4.9	950	75.2	5.6	2,166	77.9	4.4	1,814	79.8	3.5	791	78.5	4.1	2,605
Others	76.0	5.8	555	71.9	4.6	538	73.9	5.2	1,093	80.4	4.3	833	78.8	3.5	460	79.8	4.0	1,293
Caste/tribe																		
Scheduled tribe	77.1	5.9	2,017	77.4	5.0	1,449	77.2	5.5	3,466	80.7	4.5	2,886	84.4	3.8	1,226	81.9	4.2	4,112
Scheduled caste	76.1	5.7	1,771	74.9	4.7	1,377	75.5	5.2	3,148	81.5	4.4	2,779	81.8	3.6	1,157	81.6	4.1	3,936
Other backward class	75.9	5.7	3,678	75.9	4.8	2,964	75.9	5.3	6,642	79.6	4.2	5,519	83.7	3.5	2,410	81.0	4.0	7,929
None of the above	77.9	6.1	2,834	76.2	4.9	2,506	77.1	5.5	5,340	81.5	4.5	4,489	81.8	3.6	2,156	81.6	4.2	6,645
Education																		
No schooling	76.3	5.5	2,607	75.8	4.6	2,778	76.0	5.0	5,385	81.5	4.3	7,337	84.4	3.6	4,657	82.7	4.0	11,994
Less than 5 years complete	76.8	5.9	1,287	73.6	4.7	1,176	75.1	5.2	2,463	78.4	4.3	1,532	80.5	3.5	724	79.1	4.0	2,256
5-9 years complete	75.9	5.8	3,238	76.3	4.9	2,259	76.1	5.4	5,497	79.9	4.4	4,026	78.3	3.7	1,019	79.5	4.2	5,045
10 or more years complete	77.5	6.2	3,168	77.0	5.1	2,083	77.3	5.7	5,251	79.8	4.6	2,778	79.2	3.7	549	79.7	4.4	3,327

continued

continued

Background characteristics	Male									Female								
	Age 45-59*			Age ≥ 60			Total			Age 45-59*			Age ≥ 60			Total		
	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number
Work status																		
Currently working	77.0	5.9	9,197	77.5	5.1	3,934	77.2	5.6	13,131	79.5	4.3	6,459	84.4	3.8	1,586	80.5	4.2	8,045
Worked in past but currently not working	71.6	5.4	786	74.1	5.0	3,959	73.7	4.7	4,745	80.0	4.2	1,766	79.1	3.4	2,012	79.5	3.8	3,778
Never worked	76.9	5.9	317	77.3	4.6	403	77.1	5.2	720	81.7	4.4	7,448	84.8	3.6	3,351	82.8	4.1	10,799
MPCE quintile																		
Poorest	76.0	5.7	1,932	76.1	4.7	1,608	76.0	5.2	3,540	79.6	4.2	2,886	83.8	3.6	1,391	81.2	4.0	4,277
Poorer	76.7	5.7	2,045	75.8	4.8	1,671	76.2	5.3	3,716	81.5	4.4	3,119	85.5	3.6	1,407	82.9	4.1	4,526
Middle	76.3	5.9	2,040	76.5	4.8	1,702	76.4	5.4	3,742	81.1	4.4	3,105	80.5	3.5	1,483	80.9	4.1	4,588
Richer	76.1	5.9	2,136	75.6	4.8	1,704	75.9	5.4	3,840	79.9	4.3	3,270	82.8	3.6	1,377	80.9	4.1	4,647
Richest	78.0	6.1	2,147	75.6	4.8	1,611	76.9	5.5	3,758	80.6	4.4	3,293	81.4	3.6	1,291	80.8	4.2	4,584
Total	**76.6**	**5.8**	**10,300**	**75.9**	**4.8**	**8,296**	**76.3**	**5.4**	**18,596**	**80.6**	**4.4**	**15,673**	**82.9**	**3.6**	**6,949**	**81.4**	**4.1**	**22,622**

Notes

* *Including spouse irrespective of age*.

[1] % predicted FEV1– Percent predicted forced expiratory volume at 1 second = (absolute value of FEV1 (in L)/ predicted value of FEV1 (in L))*100. The predicted value of FEV1 is based on Global lung function initiative (GLI) equation 2012.

[2] PEFR – Absolute value of peak expiratory flow rate (in L/s)

Table 9.13 Mean values of lung function parameters (% predicted FEV1 & absolute PEFR) among older adult male and female, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Male									Female								
	Age 45-59*			Age ≥ 60			Total			Age 45-59*			Age ≥ 60			Total		
	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number
India	**76.6**	**5.8**	**10,300**	**75.9**	**4.8**	**8,296**	**76.3**	**5.4**	**18,596**	**80.6**	**4.4**	**15,673**	**82.9**	**3.6**	**6,949**	**81.4**	**4.1**	**22,622**
North																		
Chandigarh	73.6	5.7	171	70.7	4.6	115	72.4	5.3	286	81.4	4.2	254	86.6	3.8	123	83.1	4.1	377
Delhi	75.6	5.3	169	73.0	[4.5]	92	74.7	5.0	261	80.4	4.2	214	90.0	[3.6]	70	82.8	4.0	284
Haryana	74.3	4.9	194	74.4	4.4	134	74.3	4.7	328	77.9	3.7	216	82.5	[3.2]	134	79.8	3.5	350
Himachal Pradesh	81.5	6.4	203	78.5	5.1	205	79.9	5.7	408	89.9	4.9	409	91.4	4.0	198	90.4	4.6	607
Jammu & Kashmir	90.0	7.0	223	89.6	5.4	217	89.8	6.2	440	89.1	4.7	341	89.6	3.8	123	89.3	4.4	464
Punjab	77.0	5.9	350	72.9	4.6	385	74.9	5.2	735	82.3	4.4	575	80.2	3.4	320	81.6	4.0	895
Rajasthan	71.9	4.8	186	71.2	3.8	167	71.5	4.3	353	78.9	3.4	234	77.0	[2.8]	147	78.1	3.2	381
Uttarakhand	79.3	6.0	200	74.9	4.7	233	76.9	5.3	433	81.6	4.3	406	87.4	3.6	248	83.9	4.0	654
Central																		
Chhattisgarh	78.6	5.9	242	77.8	4.8	171	78.3	5.4	413	77.3	4.1	267	81.0	[3.6]	110	78.5	3.9	377
Madhya Pradesh	76.9	6.1	358	78.6	5.3	255	77.6	5.8	613	79.9	4.5	364	87.0	3.9	190	82.5	4.3	554
Uttar Pradesh	78.4	5.8	650	73.3	4.6	604	75.8	5.2	1,254	84.8	4.4	854	85.7	3.6	450	85.1	4.1	1,304
East																		
Bihar	80.1	5.8	393	83.3	4.9	456	81.9	5.3	849	94.0	4.6	599	105.0	4.2	327	98.1	4.5	926
Jharkhand	74.5	5.9	402	75.3	5.0	507	75.0	5.4	909	80.9	4.7	735	86.4	4.1	442	83.0	4.4	1,177
Odisha	74.2	6.2	561	74.9	5.2	386	74.5	5.8	947	74.7	4.5	845	77.4	3.7	325	75.5	4.3	1,170
West Bengal	78.3	6.3	729	80.0	5.4	558	79.1	5.9	1,287	84.5	4.9	1,192	81.0	3.7	441	83.5	4.6	1,633
Northeast																		
Arunachal Pradesh	80.8	6.1	321	82.0	4.4	138	81.2	5.6	459	90.6	4.7	448	93.0	[3.5]	96	91.0	4.5	544
Assam	82.1	6.5	474	79.9	5.4	250	81.3	6.1	724	84.2	4.8	752	86.2	3.9	188	84.6	4.6	940
Manipur	87.2	7.0	258	86.1	5.7	188	86.7	6.4	446	88.0	5.3	294	86.8	4.1	154	87.6	4.9	448
Meghalaya	77.1	6.5	167	77.3	5.2	112	77.2	6.0	279	77.6	4.7	258	78.4	3.7	122	77.8	4.4	380
Mizoram	83.2	6.2	236	83.8	5.2	191	83.5	5.7	427	93.8	4.9	350	92.0	3.8	167	93.1	4.5	517
Nagaland	88.3	7.6	244	89.1	6.0	210	88.7	6.8	454	95.9	5.5	318	106.0	4.8	150	99.0	5.3	468
Tripura	79.4	6.0	234	73.9	4.6	195	76.9	5.3	429	85.6	4.6	429	81.1	3.5	182	84.2	4.3	611

continued

continued

State/Union Territory	Male									Female								
	Age 45-59*			Age ≥ 60			Total			Age 45-59*			Age ≥ 60			Total		
	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number	% predicted FEV1[1]	Absolute PEFR[2]	Number
West																		
Dadra & Nagar Haveli	75.8	6.1	153	72.6	4.8	100	74.6	5.6	253	77.3	4.3	196	83.1	[4.1]	86	79.1	4.3	282
Daman & Diu	77.1	6.1	111	71.7	[5.1]	71	75.0	5.7	182	76.8	4.6	178	78.1	[4.3]	95	77.3	4.5	273
Goa	75.0	5.9	121	73.2	4.7	111	74.1	5.3	232	78.1	4.2	193	81.4	[3.7]	86	79.2	4.0	279
Gujarat	78.0	6.0	264	71.5	4.4	161	75.2	5.3	425	77.8	4.3	352	77.1	3.7	143	77.6	4.1	495
Maharashtra	76.2	6.1	570	75.1	5.1	535	75.6	5.6	1,105	73.9	4.1	1,007	74.9	3.4	538	74.3	3.9	1,545
South																		
Andaman & Nicobar Islands	76.6	6.5	250	74.9	5.3	206	75.8	6.0	456	78.3	4.7	353	81.6	4.1	165	79.4	4.5	518
Andhra Pradesh	74.8	6.2	371	71.6	5.0	268	73.4	5.7	639	76.4	4.5	608	78.7	3.9	179	76.9	4.4	787
Karnataka	76.0	5.8	280	75.2	4.8	207	75.6	5.3	487	75.6	4.1	415	72.9	3.2	149	74.8	3.8	564
Kerala	73.1	5.6	217	69.9	4.3	172	71.7	5.0	389	76.2	3.9	339	77.0	[3.1]	146	76.5	3.6	485
Lakshadweep	68.7	[5.1]	87	66.5	[4.2]	69	67.8	4.7	156	71.2	3.7	136	70.7	[3.2]	49	71.1	3.5	185
Puducherry	65.8	4.8	197	70.6	4.3	126	67.8	4.6	323	72.3	3.7	317	70.1	[2.8]	124	71.6	3.4	441
Tamil Nadu	69.1	4.7	410	70.9	3.9	306	69.9	4.4	716	75.2	3.6	716	82.9	3.2	327	77.8	3.5	1,043
Telangana	76.0	6.2	304	75.4	5.3	195	75.7	5.8	499	76.7	4.6	509	79.4	4.1	155	77.4	4.5	664

Notes

* *Including spouse irrespective of age.* "[]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] % predicted FEV1– Percent predicted forced expiratory volume at 1 second = (absolute value of FEV1 (in L)/ predicted value of FEV1 (in L))*100. The predicted value of FEV1 is based on Global lung function initiative (GLI) equation 2012.

[2] PEFR – Absolute value of peak expiratory flow rate (in L/s)

Table 9.14 presents the mean of % predicted FVC, mean of % predicted FEF 25-75, and mean of absolute FEV1/FVC (%) according to background characteristics. For older adults age 45 and above, the mean of % predicted FVC, % predicted FEF 25-75, and absolute FEV1/FVC (%) are 81%, 77%, and 78% respectively, among men and 85%, 79%, and 80% respectively, among women. The mean of % predicted FVC is higher among elderly women age 60 and above (86%) than among older adult women age 45-59 (84%). Conversely, the mean of absolute FEV1/FVC (%) is higher among older adult men (79%) and women (81%) age 45-59 than among elderly men (76%) and women (79%) age 60 and above. Regardless of age group, men and women residing in rural areas have higher mean % predicted FVC than those residing in urban areas. The mean of absolute FEV1/FVC (%) among elderly men and women age 60 and above shows marginal variation by place of residence. The mean of % predicted FEF 25-75 is higher among elderly men & women age 60 and above in rural areas (79% and 85% respectively) than their urban counterparts (77% and 83% respectively).

Cross-state variations in the mean of % predicted FVC, % predicted FEF 25-75, and absolute FEV1/FVC (%) is presented in Table 9.15. Among elderly men age 60 and above, the mean of % predicted FVC ranges from 100% in Jammu & Kashmir to 73% in Kerala; the mean of % predicted FEF 25-75 ranges from 106% in Arunachal Pradesh to 63% in Gujarat and the mean of absolute FEV1/FVC (%) ranges from 84% in Arunachal Pradesh to 71% in Uttarakhand. Among elderly women age 60 and above, the mean of % predicted FVC is highest in Nagaland (107%) and is lowest in Karnataka (74%); the mean of % predicted FEF 25-75 ranges from 114% in Arunachal Pradesh to 62% in Puducherry and; the mean of absolute FEV1/FVC (%) ranges from 84% in Arunachal Pradesh and Meghalaya to 70% in Puducherry.

Table 9.14 Mean values of lung function parameters (% predicted FVC, % predicted FEF25-75 and absolute FEV1/FVC(%)) among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male												Female											
	Age 45-59*				Age ≥ 60				Total				Age 45-59*				Age ≥ 60				Total			
	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number
Place of residence																								
Rural	82.0	75.9	78.9	5,794	81.8	79.0	75.6	4,676	81.9	77.3	77.4	10,470	84.9	77.2	81.1	8,588	86.9	84.6	79.0	3,665	85.5	79.6	80.4	12,253
Urban	78.3	72.6	79.0	2,927	78.4	77.4	76.5	2,152	78.3	74.8	77.8	5,079	82.4	74.3	80.9	4,504	82.6	82.6	79.1	1,867	82.4	76.9	80.3	6,371
Marital status																								
Currently married	81.1	75.1	79.0	8,150	81.2	78.7	76.0	5,800	81.1	76.7	77.7	13,950	84.4	76.4	81.1	11,061	85.9	84.0	79.2	2,894	84.7	78.1	80.7	13,955
Widowed	81.8	73.0	77.5	252	78.7	76.9	74.7	889	79.3	76.1	75.3	1,141	82.5	76.0	80.5	1,628	85.6	84.0	78.7	2,497	84.5	81.1	79.3	4,125
Divorced/ Separated/ Deserted/ Others	79.1	73.7	79.1	319	82.3	83.1	76.3	139	80.4	77.4	78.0	458	84.5	77.1	81.0	403	82.0	87.4	80.2	141	83.8	80.0	80.8	544
Living arrangement																								
Living alone	83.0	73.3	77.6	133	77.8	75.5	74.9	152	79.6	74.7	75.8	285	82.0	70.3	79.6	252	87.3	90.1	79.4	408	85.6	83.7	79.4	660
Living with spouse and/or others	80.0	72.4	78.1	870	80.7	78.6	75.8	1,628	80.5	76.6	76.5	2,498	83.2	75.6	80.5	1,465	85.3	81.6	78.8	920	84.1	78.0	79.8	2,385
Living with spouse and children	81.2	75.4	79.1	7,147	81.5	78.8	76.0	4,110	81.3	76.7	77.9	11,257	84.5	76.5	81.2	9,388	86.2	85.1	79.5	1,934	84.8	78.0	80.9	11,322
Living with children and others	81.6	74.6	78.3	329	78.9	78.1	75.3	756	79.6	77.2	76.1	1,085	82.8	76.9	80.7	1,682	85.0	82.5	78.5	1,955	84.1	80.2	79.4	3,637
Living with others only	78.8	72.0	78.9	242	81.2	77.5	73.7	182	80.0	74.8	76.3	424	87.2	80.1	80.8	305	85.3	85.6	79.4	315	86.2	83.2	80.1	620
Religion																								
Hindu	81.0	74.7	78.9	6,234	81.0	78.3	75.8	4,790	81.0	76.4	77.4	11,024	83.9	75.6	80.9	9,287	85.7	83.7	78.9	3,937	84.5	78.2	80.3	13,224
Muslim	82.5	76.9	79.3	896	82.0	78.9	75.2	758	82.2	77.9	77.2	1,654	86.9	81.3	81.8	1,471	87.8	86.0	79.0	539	87.1	82.7	80.9	2,010
Christian	78.6	75.5	80.1	1,097	76.6	82.4	78.7	829	77.7	78.5	79.5	1,926	81.4	73.2	80.9	1,619	82.3	81.3	79.2	672	81.7	75.8	80.4	2,291
Others	80.4	75.7	78.7	494	78.3	80.2	76.7	451	79.3	77.9	77.5	945	84.1	79.5	81.6	715	82.7	86.8	79.8	384	83.6	82.1	81.0	1,099
Caste/tribe																								
Scheduled tribe	81.8	75.8	79.5	1,744	81.5	81.4	77.2	1,240	81.7	78.1	78.6	2,984	84.1	73.8	80.5	2,436	86.7	87.3	79.6	1,002	84.9	78.2	80.2	3,438
Scheduled caste	80.7	73.8	78.6	1,528	81.1	78.6	75.6	1,125	80.9	76.0	77.2	2,653	84.5	77.3	81.3	2,328	86.5	81.6	78.2	913	85.1	78.5	80.4	3,241
Other backward class	80.8	74.6	78.9	2,972	80.3	78.2	75.9	2,342	80.6	76.3	77.5	5,314	83.3	76.4	81.2	4,456	85.4	86.9	79.8	1,838	83.9	79.8	80.8	6,294
None of the above	81.3	76.1	79.1	2,477	81.4	78.3	75.5	2,121	81.3	77.2	77.3	4,598	85.2	76.6	80.8	3,872	85.3	80.7	78.2	1,779	85.2	77.9	79.9	5,651

continued

continued

Background characteristics	Male												Female											
	Age 45-59*				Age ≥ 60				Total				Age 45-59*				Age ≥ 60				Total			
	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number
Education																								
No schooling	81.0	72.9	78.4	2,165	80.9	79.0	75.7	2,218	81.0	76.1	77.0	4,383	84.7	78.1	81.2	6,007	86.8	85.5	79.1	3,645	85.5	81.0	80.4	9,652
Less than 5 years complete	81.2	75.4	78.9	1,079	80.1	75.7	74.6	964	80.7	75.6	76.7	2,043	82.5	73.2	80.5	1,320	84.7	80.0	78.4	594	83.2	75.3	79.8	1,914
5-9 years complete	80.8	75.1	79.0	2,763	81.4	76.3	75.5	1,881	81.1	75.6	77.5	4,644	84.0	75.6	81.1	3,414	82.2	82.4	79.3	856	83.7	77.0	80.7	4,270
10 or more years complete	81.1	76.6	79.4	2,714	80.8	82.1	76.9	1,765	81.0	78.9	78.4	4,479	84.0	74.6	80.8	2,351	83.1	79.0	78.1	437	83.9	75.3	80.4	2,788
Work status																								
Currently working	81.4	75.6	79.1	7,816	82.6	79.3	76.4	3,271	81.8	76.8	78.2	11,087	82.8	74.6	81.0	5,398	87.4	86.0	79.5	1,334	83.8	77.0	80.7	6,732
Worked in past but currently not working	76.4	68.3	77.3	647	78.8	77.5	75.2	3,228	78.5	76.2	75.5	3,875	83.3	77.4	81.0	1,446	82.8	80.4	78.5	1,579	83.0	79.0	79.7	3,025
Never worked	82.1	72.1	77.7	258	83.4	81.4	75.5	329	82.9	77.8	76.3	587	85.7	77.9	81.1	6,248	86.7	85.5	79.0	2,619	86.0	80.3	80.4	8,867
MPCE quintile																								
Poorest	80.0	74.1	79.2	1,589	81.2	78.3	75.5	1,295	80.6	76.1	77.4	2,884	83.7	75.3	80.9	2,318	87.6	84.1	78.7	1,062	85.0	78.3	80.2	3,380
Poorer	80.7	73.9	78.9	1,719	80.4	78.4	76.3	1,356	80.6	76.1	77.6	3,075	85.1	77.1	81.1	2,580	85.9	86.4	79.6	1,123	85.3	80.1	80.6	3,703
Middle	81.4	74.9	78.9	1,728	81.3	79.8	76.1	1,399	81.3	77.1	77.6	3,127	84.3	76.3	81.1	2,602	84.4	80.2	78.2	1,189	84.3	77.5	80.2	3,791
Richer	80.7	74.1	78.7	1,824	80.6	79.5	76.0	1,400	80.6	76.5	77.5	3,224	83.9	76.3	81.2	2,767	84.9	85.4	79.6	1,126	84.2	79.2	80.7	3,893
Richest	82.5	78.2	79.2	1,861	81.1	76.7	75.1	1,378	81.8	77.5	77.2	3,239	83.8	76.9	80.9	2,825	85.4	84.0	78.8	1,032	84.3	78.9	80.3	3,857
Total	**81.0**	**75.0**	**79.0**	**8,721**	**80.9**	**78.6**	**75.8**	**6,828**	**81.0**	**76.7**	**77.5**	**15,549**	**84.2**	**76.4**	**81.0**	**13,092**	**85.7**	**84.1**	**79.0**	**5,532**	**84.6**	**78.8**	**80.4**	**18,624**

Notes

[*] *Including spouse irrespective of age.*

[1] % predicted FVC- Percent predicted forced vital capacity = (absolute value of FVC (in L)/ predicted value of FVC(in L)) * 100. The predicted value of FVC is based on Global lung function initiative (GLI) equation 2012.

[2] % predicted FEF25-75-Percent predicted forced expiratory flow 25–75% = (absolute value of FEF25-75/ predicted value of FEF25-75) * 100. The predicted value of FEF25-75 is based on Global lung function initiative (GLI) equation 2012.

Table 9.15 Mean values of lung function parameters (% predicted FVC, % predicted FEF 25-75 and absolute FEV1/FVC(%)) among older adult male and female, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Male												Female											
	Age 45-59*				Age ≥ 60				Total				Age 45-59*				Age ≥ 60				Total			
	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number
India	**81.0**	**75.0**	**79.0**	**8,721**	**80.9**	**78.6**	**75.8**	**6,828**	**81.0**	**76.7**	**77.5**	**15,549**	**84.2**	**76.4**	**81.0**	**13,092**	**85.7**	**84.1**	**79.0**	**5,532**	**84.6**	**78.8**	**80.4**	**18,624**
North																								
Chandigarh	78.1	72.4	77.5	160	76.7	68.7	73.4	104	77.5	70.9	75.9	264	84.2	74.1	80.1	228	86.4	88.8	79.5	109	84.9	78.9	79.9	337
Delhi	82.2	76.1	78.5	97	77.9	76.7	75.5	60	80.6	76.4	77.3	157	83.1	73.4	81.3	115	96.0	104.1	82.2	38	86.4	81.2	81.5	153
Haryana	80.8	74.6	77.9	126	77.8	79.1	76.0	81	79.6	76.4	77.1	207	83.2	78.2	81.6	133	86.8	88.7	79.1	72	84.6	82.2	80.7	205
Himachal Pradesh	88.8	73.0	75.7	184	87.0	72.0	71.7	187	87.8	72.5	73.6	371	96.0	77.8	78.4	372	100.2	89.2	75.7	166	97.3	81.5	77.6	538
Jammu & Kashmir	98.4	80.7	76.2	213	99.9	78.5	71.5	199	99.1	79.6	73.8	412	96.2	75.2	77.3	318	98.9	82.3	75.2	111	96.9	77.2	76.7	429
Punjab	81.0	75.6	78.5	331	77.1	77.9	76.3	327	79.1	76.7	77.4	658	84.9	80.4	81.5	509	83.5	85.3	79.4	270	84.5	82.1	80.8	779
Rajasthan	77.6	78.8	81.2	95	77.1	87.8	78.6	73	77.3	82.9	80.0	168	82.4	86.8	84.6	116	80.9	93.4	82.8	67	81.8	89.3	84.0	183
Uttarakhand	86.3	68.7	75.7	194	84.1	66.3	70.8	217	85.1	67.4	73.1	411	86.4	74.9	79.9	383	93.0	83.9	77.9	227	88.9	78.3	79.1	610
Central																								
Chhattisgarh	82.8	86.5	81.9	138	81.1	84.9	77.4	89	82.2	85.9	80.1	227	81.7	79.4	82.5	125	82.0	89.1	82.0	48	81.8	82.2	82.4	173
Madhya Pradesh	83.4	73.2	77.4	196	83.4	83.0	76.3	149	83.4	77.5	76.9	345	83.3	84.1	82.7	177	88.7	105.9	82.4	117	85.5	92.8	82.6	294
Uttar Pradesh	82.9	76.1	78.6	490	79.5	77.5	75.7	415	81.3	76.8	77.2	905	89.3	83.6	81.9	570	91.2	93.2	79.7	248	89.9	86.7	81.2	818
East																								
Bihar	83.4	81.3	79.9	305	87.5	89.5	76.5	337	85.6	85.7	78.1	642	97.0	94.4	82.1	439	102.1	104.8	80.1	227	98.8	98.1	81.4	666
Jharkhand	76.0	75.9	81.6	374	75.9	87.2	80.3	467	75.9	82.3	80.9	841	82.4	80.3	83.0	689	86.4	96.7	82.8	412	84.0	86.6	82.9	1,101
Odisha	78.0	67.8	78.3	557	78.6	71.5	75.9	385	78.2	69.4	77.3	942	79.9	60.5	78.1	839	82.4	65.4	76.1	325	80.6	61.9	77.5	1,164
West Bengal	81.7	74.0	78.8	716	83.1	82.5	76.1	527	82.3	77.7	77.6	1,243	86.9	78.7	81.3	1,153	86.2	73.3	76.5	424	86.7	77.2	80.0	1,577
Northeast																								
Arunachal Pradesh	80.6	89.7	85.4	279	80.7	105.8	84.1	119	80.6	94.4	85.0	398	89.4	97.3	87.2	383	92.1	113.5	84.3	75	89.9	100.1	86.7	458
Assam	84.6	79.8	80.0	456	84.4	79.7	75.4	237	84.5	79.7	78.4	693	87.8	75.8	80.5	728	90.9	81.2	77.3	182	88.4	77.0	79.9	910
Manipur	91.0	81.6	78.9	257	92.0	82.0	74.6	186	91.5	81.8	77.0	443	91.7	79.3	80.8	290	89.8	83.2	78.1	151	91.0	80.7	79.8	441
Meghalaya	79.1	79.5	82.6	147	77.4	92.9	82.4	99	78.4	85.0	82.5	246	80.3	75.9	83.3	229	79.3	89.1	83.6	97	80.0	79.9	83.4	326
Mizoram	84.8	93.1	82.8	194	86.0	98.5	79.3	146	85.4	95.6	81.2	340	92.2	99.5	85.1	282	90.7	104.7	83.2	122	91.7	101.2	84.5	404
Nagaland	89.4	94.0	82.8	236	89.4	95.3	79.3	208	89.4	94.7	81.1	444	99.0	86.3	80.8	310	107.0	101.3	80.1	146	101.4	90.9	80.6	456
Tripura	84.8	72.5	77.7	231	81.4	71.0	72.8	186	83.2	71.9	75.5	417	88.7	80.1	81.4	422	85.5	80.1	78.6	173	87.8	80.1	80.6	595
West																								
Dadra & Nagar Haveli	77.2	82.9	83.0	126	76.6	77.9	78.2	73	77.0	81.1	81.3	199	81.5	77.7	81.6	148	86.9	90.0	79.9	63	83.1	81.3	81.1	211
Daman & Diu	83.2	77.8	79.4	85	78.6	67.0	73.2	61	81.2	73.1	76.7	146	81.7	74.5	80.4	142	81.3	87.0	79.4	81	81.6	79.2	80.0	223
Goa	76.3	80.1	80.7	81	74.1	89.2	80.6	68	75.3	84.2	80.6	149	81.4	82.3	82.8	132	85.7	99.9	82.0	50	82.8	87.7	82.6	182
Gujarat	84.2	75.5	77.7	197	81.3	62.7	72.0	121	83.0	70.2	75.3	318	85.5	72.5	79.0	245	87.2	78.9	76.5	89	86.0	74.4	78.2	334
Maharashtra	80.4	74.6	78.7	519	80.4	77.3	75.6	474	80.4	76.0	77.2	993	78.0	70.0	80.4	882	78.5	76.8	78.8	457	78.2	72.5	79.8	1,339

continue

continue

State/ Union Territory	Male												Female											
	Age 45-59*				Age ≥ 60				Total				Age 45-59*				Age ≥ 60				Total			
	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number	% predicted FVC[1]	% predicted FEF 25-75[2]	Absolute FEV1/FVC (%)	Number
South																								
Andaman & Nicobar Islands	80.9	70.8	78.1	249	81.1	71.1	74.1	202	81.0	70.9	76.3	451	84.0	69.0	78.6	348	86.5	77.9	77.3	160	84.8	71.8	78.2	508
Andhra Pradesh	78.4	73.7	79.2	347	75.8	74.7	76.2	246	77.3	74.1	77.9	593	78.7	72.6	81.4	568	81.4	81.7	79.1	171	79.4	74.8	80.8	739
Karnataka	81.5	76.5	78.8	172	81.6	75.7	74.4	119	81.6	76.1	76.7	291	79.0	78.3	82.9	245	74.0	81.6	81.1	74	77.7	79.2	82.4	319
Kerala	78.2	80.9	81.1	136	73.3	79.0	77.7	101	76.0	80.1	79.6	237	79.9	80.6	83.1	219	79.7	89.2	81.2	84	79.8	83.2	82.5	303
Lakshadweep	70.7	84.4	82.3	52	74.7	87.9	80.1	49	72.6	86.1	81.2	101	74.3	82.0	83.8	72	78.2	72.3	78.3	26	75.3	79.4	82.3	98
Puducherry	71.7	66.2	77.0	161	73.9	70.2	73.4	91	72.6	67.8	75.6	252	78.0	68.8	77.7	260	82.9	62.2	70.0	88	79.4	67.0	75.5	348
Tamil Nadu	72.6	70.7	79.7	325	74.7	73.7	75.8	239	73.5	72.1	78.0	564	81.0	69.3	79.7	540	86.4	87.9	79.5	237	82.8	75.5	79.6	777
Telangana	78.9	75.3	79.8	295	79.7	76.1	75.8	186	79.2	75.6	78.1	481	79.5	74.0	81.6	481	81.1	79.9	79.8	145	79.9	75.5	81.1	626

Notes

**Including spouse irrespective of age.*

[1] % predicted FVC- Percent predicted forced vital capacity = (absolute value of FVC (in L)/ predicted value of FVC(in L)) * 100. The predicted value of FVC is based on Global lung function initiative (GLI) equation 2012.

[2] % predicted FEF25-75-Percent predicted forced expiratory flow 25–75% = (absolute value of FEF25-75/ predicted value of FEF25-75) * 100. The predicted value of FEF25-75 is based on Global lung function initiative (GLI) equation 2012.

9.2.3 Normal lung function

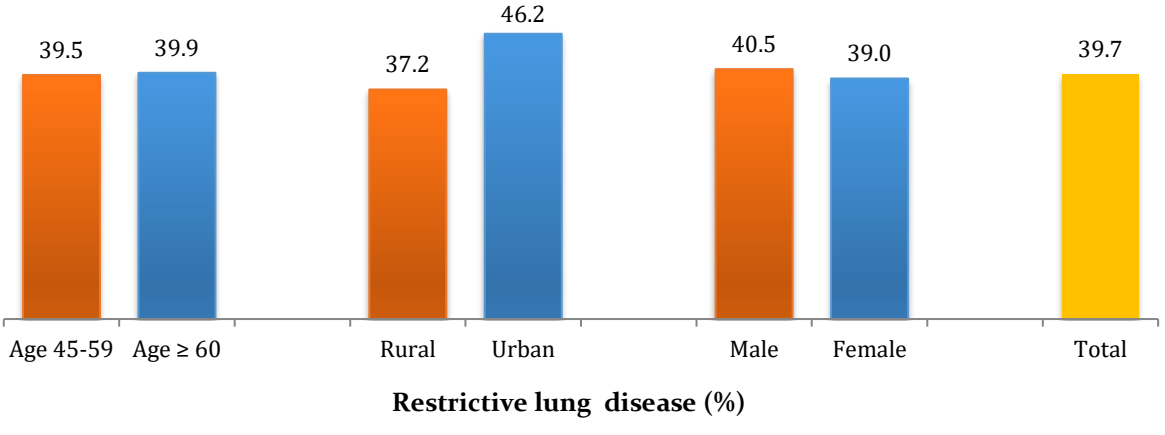
Slightly more than half of older adults age 45 and above (51%) in India have normal lung function (Table 9.16). A higher proportion of older adults age 45-59 (52%) have normal PFT results compared to elderly age 60 and above (51%). Women (55%) and rural residents (54%) have healthier lung function than their respective men (47%) and urban (45%) counterparts in age 45 and above.

9.2.4 Prevalence of restrictive lung disease

Restrictive lung disease refers to a heterogeneous group of conditions characterized by a restrictive pattern on lungs and confirmed by a reduction in total lung volume (Robinson, 2016). The restrictive pattern is an important consideration when the FEV1/FVC ratio is ≥70% in participants <60 years-old or ≥65% in participants ≥ 60 years-old, and the % predicted FVC value is <80%.

Table 9.16 presents the prevalence of restrictive lung disease according to background characteristics. Overall, in India, the prevalence of restrictive lung disease is 40% among older adults age 45-59 and elderly age 60 and above. The restrictive lung disease is more prevalent among older adult age 45 and above residing in urban (46%) than those residing in rural areas (37%), and among older adult men (41%) than women (39%) age 45 and above (Figure 9.6).

Figure 9.6 Prevalence (%) of restrictive lung disease among older adults age 45 and above* by age, place of residence, and sex, India, LASI Wave 1, 2017-18

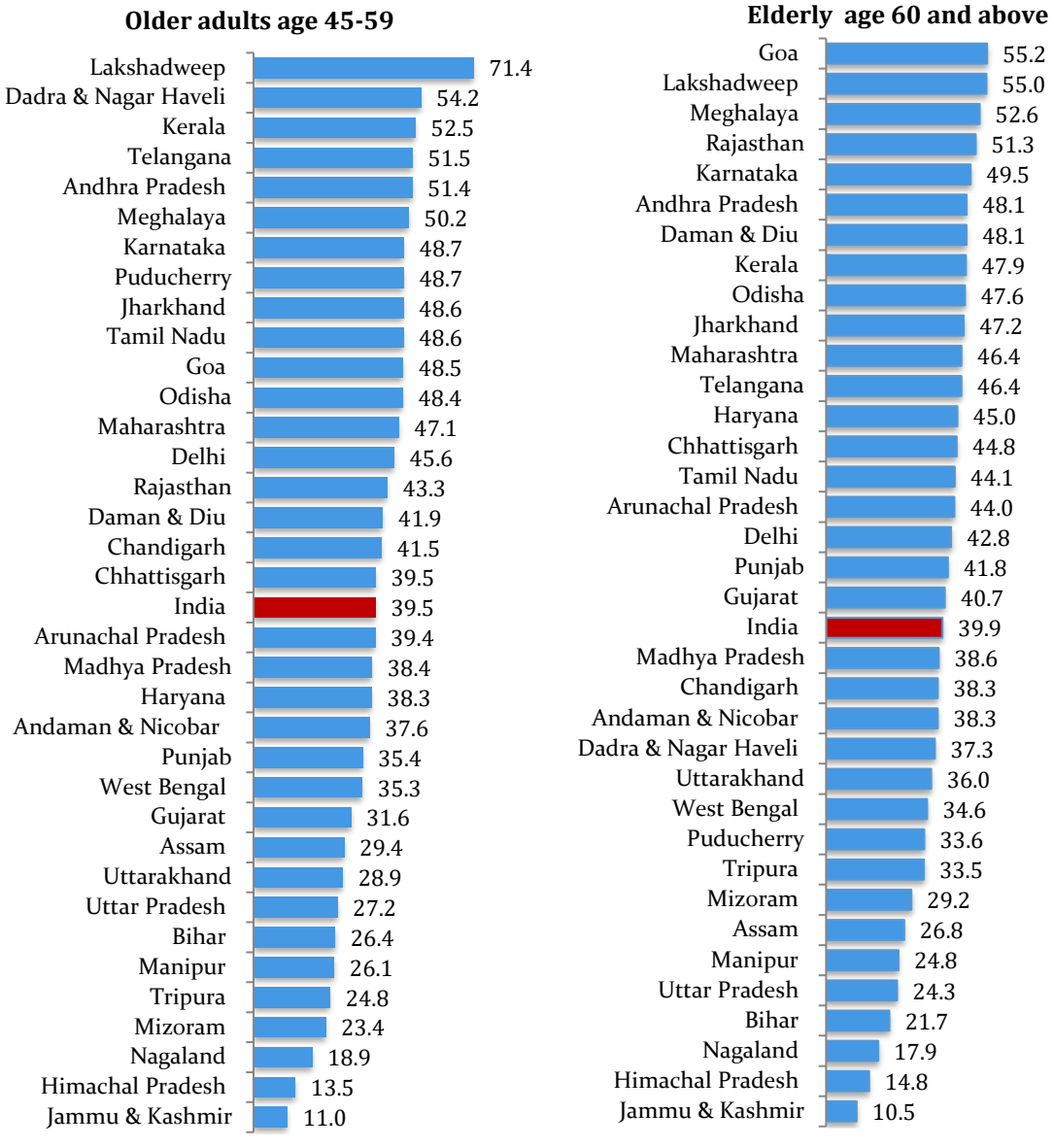


Note

** Including spouse irrespective of age.*

Across the states/UTs of India, the prevalence of restrictive lung disease among older adults age 45 and above ranges from 71% in Lakshadweep to 11% in Jammu & Kashmir (Table 9.17). More than half of the elderly age 60 and above in Goa (55%), Lakshadweep (55%), Meghalaya (53%) and Rajasthan (51%) have restrictive lung disease, compared with less than a quarter of the elderly 60 and above in Uttarakhand (24%), Bihar (22%), Nagaland (18%), Himachal Pradesh (15%), and Jammu & Kashmir (11%).

Figure 9.7 Prevalence (%) of restrictive lung disease among older adults age 45-59 and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



Note

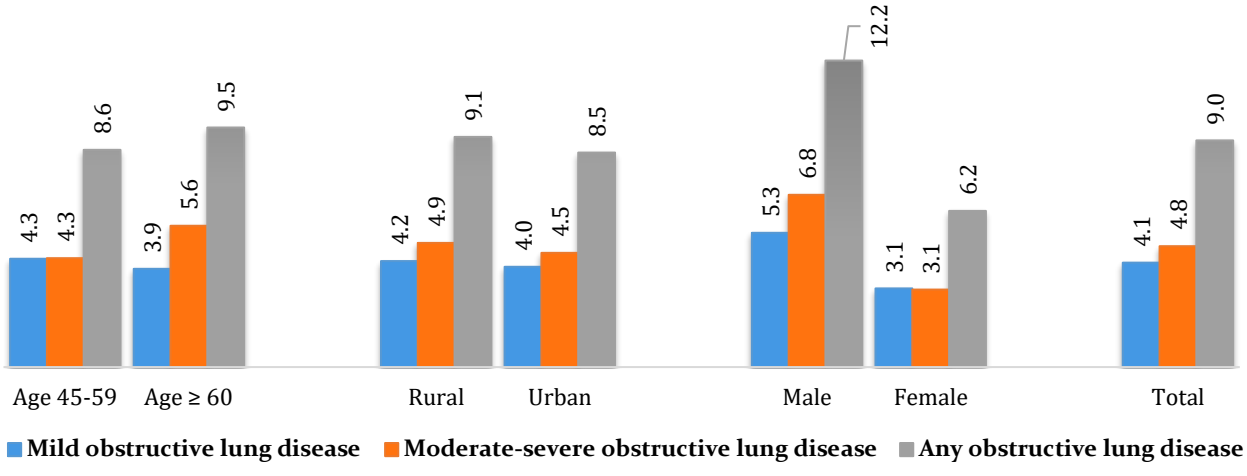
** Including spouse irrespective of age.*

9.2.5 Prevalence of obstructive lung disease

Globally, the burden of obstructive lung disease is projected to increase in the coming decades because of population ageing, genetic and lung abnormalities, and continued exposure to risk factors such as tobacco smoke, biomass fuels, and polluted air (Vogelmeier et al., 2019).

Overall, in India, 9% have obstructive lung disease, including 4% with mild obstructive lung disease and 5% moderate-severe obstructive lung disease (Figure 9.8). The prevalence of any obstructive lung disease is two times higher among older adult men (12%) than older adult women (6%) age 45 and above.

Figure 9.8 Prevalence (%) of obstructive lung disease among older adults age 45 and above* by age, place of residence, and sex, India, LASI Wave 1, 2017-1 8



Note

** Including spouse irrespective of age.*

Cross-state variations in the prevalence of any obstructive lung disease are presented in Figure 9.9. The prevalence of any obstructive lung disease among older adults age 45-59 ranges from 19% in Himachal Pradesh and Puducherry to 1% in Meghalaya and Nagaland; among the elderly age 60 and above, the prevalence of any obstructive lung disease is markedly higher in the states/UTs of Puducherry (32%), Himachal Pradesh (27%), Jammu & Kashmir (17%), and Tripura (16%) and; much lower or none in the states/UTs of Meghalaya (1%), Arunachal Pradesh (1%), and Nagaland (0%).

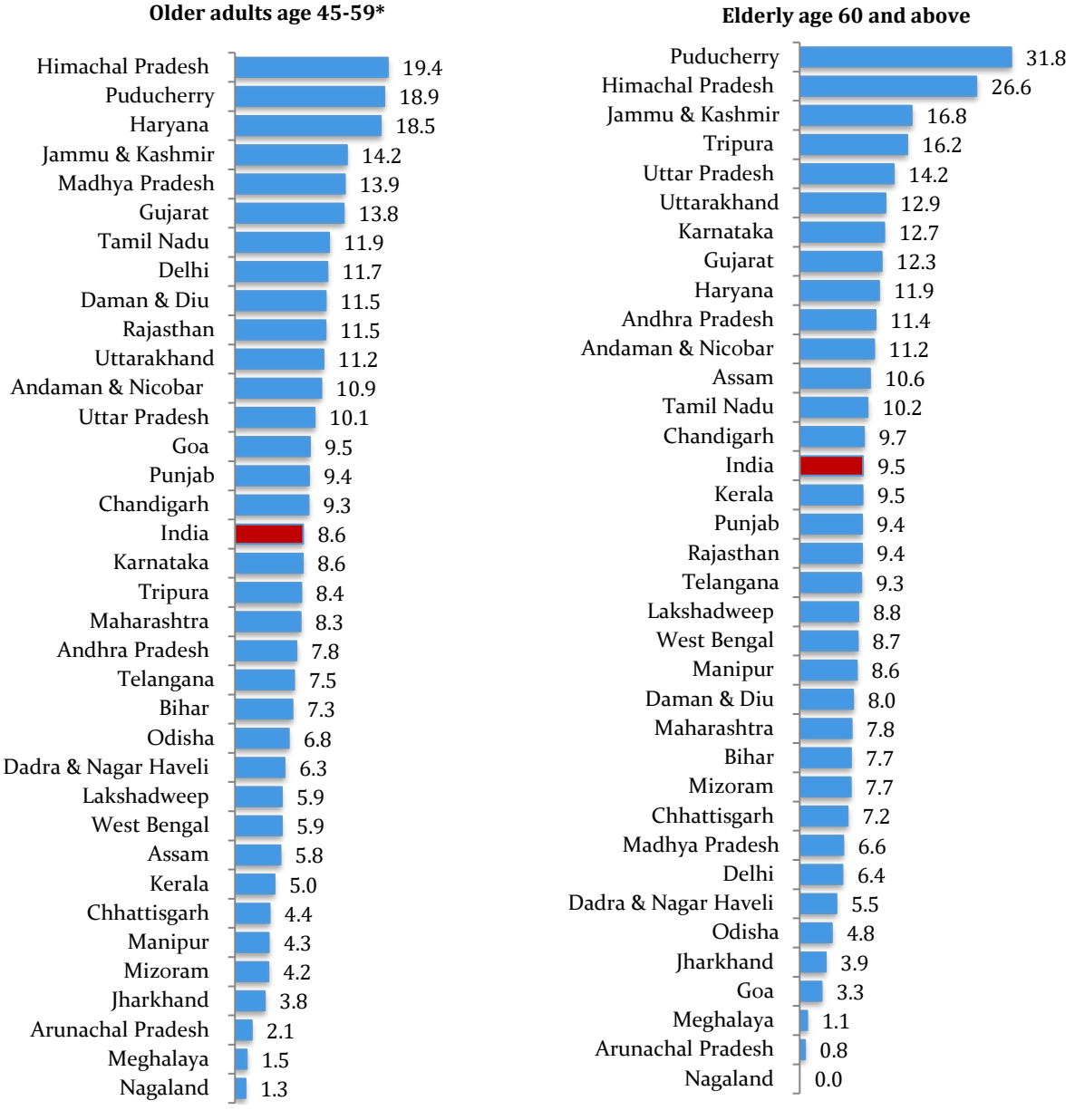
The prevalence of mild and moderate-severe obstructive lung disease according to background characteristics is presented in Table 9.16. The prevalence of the mild obstructive lung disease is 4% among older adults 45 and above. The prevalence of mild obstructive lung disease is higher among older adults age 45 and above belonging to Scheduled caste category (5%) than their counterparts. Higher proportion of the elderly men age 60 and above have moderate-severe obstructive lung disease (8%) than among elderly women age 60 and above (3%). The prevalence of moderate-severe lung disease is higher among elderly age 60 and above (6%) than the older adults age 45-59 (4%). Moderate-severe obstructive lung disease is most prevalent among elderly age 60 and above who have education less than five years (9%), those who have worked in past but currently not working (8%) and those with richest MPCE quintile (7%).

The prevalence of mild and moderate-severe obstructive lung disease by states/UTs is presented in Table 9.17. Across the states/UTs, the prevalence of mild obstructive lung disease among older adults age 45 and above ranges from 15% in Himachal Pradesh to less than 1% in Meghalaya (0.4%). The prevalence of mild obstructive lung disease is higher among elderly age

60 and above in Himachal Pradesh (17%) and Jammu & Kashmir (13%). The prevalence of moderate-severe obstructive lung disease among older adults age 45 and above ranges from 18% in Puducherry to less than 1% in Nagaland (0.2%). Further, the prevalence of moderate-severe obstructive lung disease among elderly age 60 and above is highest in Puducherry (27%) followed by Himachal Pradesh (10%) and Kerala (10%).

Among elderly age 60 and above, the states/UTs of Goa (55%), Lakshadweep (55%), Meghalaya (53%), Rajasthan (51%), Karnataka (50%), Andhra Pradesh (48%), Daman & Diu (48%), Kerala (48%), Odisha (48%), Jharkhand (47%), Maharashtra (46%), Telangana (46%), Haryana (45%) and Chhattisgarh (45%) with high prevalence of restrictive lung disease (Figure 9.7) are contrastingly observed to have low prevalence of any obstructive lung disease (Figure 9.9): Meghalaya (1%), Goa (3%), Jharkhand (4%), Odisha (5%), Chhattisgarh (7%), Maharashtra (8%), Daman & Diu (8%), Lakshadweep (9%), Telangana (9%), Rajasthan (9%), Kerala (9%), Andhra Pradesh (11%), Haryana (12%), and Karnataka (13%).

Figure 9.9 Prevalence (%) of any obstructive lung disease among older adults age 45-59* and elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



Note

* *Including spouse irrespective of age.*

Key findings: lung function

- In India, almost half (49%) of older adults age 45 and above have either restrictive or obstructive lung disease. Nearly two in five (40%) older adults age 45 and above have restrictive lung disease while 9% have obstructive lung disease, including 4% with mild obstructive lung disease and 5% moderate-severe obstructive lung disease.
- The prevalence of restrictive lung disease is higher among elderly age 60 and above than among the older adults age 45-59; whereas the prevalence of mild obstructive lung disease is higher among older adults age 45-59 than among elderly age 60 and above. The prevalence of any obstructive lung disease is two times higher among older adult men (12%) than older adult women (6%) age 45-59.
- Regardless of age, restrictive lung disease is higher in urban than in rural areas; whereas obstructive lung disease (mild and moderate-severe) is more prevalent in rural than in urban areas.
- The prevalence of moderate-severe obstructive lung disease among elderly age 60 and above is markedly higher in the states/UTs of Puducherry (27%), Himachal Pradesh (10%), and Kerala (10%).
- Among elderly age 60 and above, the states/UTs of Goa (55%), Lakshadweep (55%), Meghalaya (53%), Rajasthan (51%), Karnataka (50%), Andhra Pradesh (48%), Daman & Diu (48%), Kerala (48%), Odisha (48%), Jharkhand (47%), Maharashtra (46%), Telangana (46%), Haryana (45%) and Chhattisgarh (45%) with high prevalence of restrictive lung disease are contrastingly observed to have low prevalence of any obstructive lung disease: Meghalaya (1%), Goa (3%), Jharkhand (4%), Odisha (5%), Chhattisgarh (7%), Maharashtra (8%), Daman & Diu (8%), Lakshadweep (9%), Telangana (9%), Rajasthan (9%), Kerala (9%), Andhra Pradesh (11%), Haryana (12%), and Karnataka (13%).

Table 9.16 Percent distribution of older adults by types of lung diseases by background characteristics, India, LASI Wave 1, 2017-18

Background characteristic	Age 45-59*					Age ≥ 60					Total				
	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number
Place of residence															
Rural	54.3	37.1	4.3	4.3	14,382	52.8	37.2	4.1	5.9	8,341	53.7	37.2	4.2	4.9	22,723
Urban	45.6	45.7	4.4	4.3	7,431	44.8	47.0	3.3	4.9	4,019	45.3	46.2	4.0	4.5	11,450
Sex															
Male	48.6	39.8	5.4	6.2	8,721	46.0	41.2	5.2	7.6	6,828	47.4	40.5	5.3	6.8	15,549
Female	54.0	39.3	3.5	3.1	13,092	56.6	38.2	2.2	3.1	5,532	54.8	39.0	3.1	3.1	18,624
Marital status															
Currently married	52.2	39.4	4.1	4.3	19,211	49.9	40.1	4.2	5.9	8,694	51.4	39.6	4.1	4.8	27,905
Widowed	47.5	41.4	6.3	4.9	1,880	52.3	39.4	3.3	5.0	3,386	50.8	40.0	4.2	5.0	5,266
Divorced/Separated/ Deserted/Others	52.9	39.5	3.9	3.8	722	52.7	39.3	2.7	5.4	280	52.8	39.4	3.5	4.3	1,002
Living arrangement															
Living alone	48.9	37.8	8.6	4.7	385	54.1	38.8	2.7	4.4	560	52.4	38.4	4.7	4.5	945
Living with spouse and/ or others	50.0	41.4	4.4	4.2	2,335	49.3	39.6	4.9	6.2	2,548	49.6	40.4	4.6	5.3	4,883
Living with spouse and children	52.5	39.1	4.1	4.3	16,535	50.2	40.2	3.9	5.7	6,044	51.8	39.4	4.0	4.7	22,579
Living with children and others	48.8	41.0	5.2	4.9	2,011	51.6	40.2	3.1	5.1	2,711	50.6	40.5	3.9	5.0	4,722
Living with others only	52.4	39.3	5.1	3.2	547	53.0	36.6	4.6	5.8	497	52.7	37.8	4.9	4.6	1,044
Religion															
Hindu	51.5	39.8	4.3	4.4	15,521	51.0	39.5	3.9	5.7	8,727	51.3	39.7	4.2	4.9	24,248
Muslim	56.1	35.8	4.4	3.7	2,367	51.5	37.5	5.0	6.1	1,297	54.3	36.4	4.6	4.6	3,664
Christian	46.0	47.1	3.8	3.1	2,716	46.3	49.5	2.0	2.3	1,501	46.1	48.0	3.1	2.8	4,217
Others	52.1	38.3	3.7	5.9	1,209	45.4	45.4	3.4	5.9	835	49.3	41.3	3.5	5.9	2,044
Caste/tribe															
Scheduled tribe	53.5	39.2	4.2	3.1	4,180	53.3	40.7	2.6	3.4	2,242	53.5	39.7	3.6	3.2	6,422
Scheduled caste	49.7	40.3	4.9	5.1	3,856	51.2	38.2	4.9	5.7	2,038	50.2	39.5	4.9	5.3	5,894
Other backward class	50.2	41.0	4.2	4.6	7,428	48.9	41.6	4.0	5.5	4,180	49.7	41.2	4.1	4.9	11,608
None of the above	55.0	37.1	4.0	3.9	6,349	51.9	38.2	3.6	6.3	3,900	53.8	37.6	3.8	4.8	10,249
Educatio															
No schooling	52.2	38.5	4.8	4.5	8,172	53.1	38.2	4.0	4.7	5,863	52.6	38.4	4.4	4.6	14,035
Less than 5 years complete	51.5	39.8	4.5	4.2	2,399	46.8	40.7	3.6	9.0	1,558	49.5	40.2	4.1	6.2	3,957
5-9 years complete	51.8	40.0	4.0	4.2	6,177	48.7	41.3	3.9	6.1	2,737	50.8	40.4	4.0	4.8	8,914
10 or more years complete	51.5	40.6	3.7	4.2	5,065	48.7	42.4	4.0	4.9	2,202	50.6	41.2	3.8	4.5	7,267

continue

continue

Background characteristic	Age 45-59*					Age ≥ 60					Total				
	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number
Work status															
Currently working	50.5	40.3	4.4	4.8	13,214	53.8	37.4	4.2	4.6	4,605	51.4	39.5	4.3	4.7	17,819
Worked in past but currently not working	46.0	42.8	5.4	5.7	2,093	44.8	43.4	4.0	7.7	4,807	45.2	43.2	4.4	7.2	6,900
Never worked	57.0	36.6	3.7	2.8	6,506	55.6	37.8	3.1	3.5	2,948	56.5	37.0	3.5	3.1	9,454
MPCE quintil															
Poorest	50.1	41.1	4.0	4.8	3,907	53.5	37.1	3.9	5.4	2,357	51.5	39.5	4.0	5.1	6,264
Poorer	53.0	38.2	4.5	4.2	4,299	49.4	41.9	3.5	5.1	2,479	51.6	39.7	4.1	4.6	6,778
Middle	51.6	39.7	4.6	4.2	4,330	50.5	40.3	3.8	5.4	2,588	51.1	39.9	4.3	4.6	6,918
Richer	50.8	40.7	4.4	4.1	4,591	49.4	41.6	4.0	4.9	2,526	50.3	41.0	4.3	4.4	7,117
Richest	53.8	37.9	4.0	4.3	4,686	50.2	38.2	4.2	7.4	2,410	52.4	38.0	4.1	5.5	7,096
Total	**51.8**	**39.5**	**4.3**	**4.3**	**21,813**	**50.6**	**39.9**	**3.9**	**5.6**	**12,360**	**51.4**	**39.7**	**4.1**	**4.8**	**34,173**

Note

**Including spouse irrespective of age.*

Parameter	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]
% predicted FVC	80%	< 80%	≥ 80%	< 80%
Absolute FEV1/FVC (%)	≥70 (Age 45-59*) & ≥ 65% (Age ≥ 60)	≥ 70% (Age 45-59*) & ≥ 65% (Age ≥ 60)	< 70% (Age 45-59*) & < 65% (Age ≥ 60)	< 70% (Age 45-59*) & < 65% (Age ≥ 60)

Table 9.17 Percent distribution of older adults by types of lung diseases, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Age 45-59*					Age ≥ 60					Total				
	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number
India	**51.8**	**39.5**	**4.3**	**4.3**	**21,813**	**50.6**	**39.9**	**3.9**	**5.6**	**12,360**	**51.4**	**39.7**	**4.1**	**4.8**	**34,173**
North															
Chandigarh	49.2	41.5	2.3	7.0	388	52.0	38.3	[1.0]	8.7	213	50.2	40.3	1.8	7.6	601
Delhi	42.7	45.6	7.1	4.6	212	50.7	42.8	[3.7]	[2.7]	98	45.3	44.7	6.0	4.0	310
Haryana	43.2	38.3	11.2	7.3	259	43.1	45.0	3.4	8.6	153	43.1	40.9	8.1	7.8	412
Himachal Pradesh	66.9	13.5	13.9	5.5	556	58.7	14.8	16.9	9.7	353	63.6	14.0	15.1	7.2	909
Jammu & Kashmir	74.9	11.0	10.7	3.5	531	72.7	10.5	13.2	3.6	310	74.0	10.8	11.7	3.5	841
Punjab	55.3	35.4	4.2	5.2	840	48.9	41.8	3.5	5.9	597	52.6	38.0	3.9	5.5	1,437
Rajasthan	45.2	43.3	5.7	5.8	211	39.3	51.3	[3.8]	5.5	140	42.8	46.6	4.9	5.7	351
Uttarakhand	62.7	27.2	5.9	4.2	577	61.5	24.3	5.4	8.7	444	62.2	25.9	5.7	6.2	1,021
Central															
Chhattisgarh	56.1	39.5	2.4	2.0	263	48.0	44.8	[1.6]	5.6	137	53.2	41.4	2.1	3.3	400
Madhya Pradesh	47.7	38.4	8.7	5.2	373	54.8	38.6	2.8	3.8	266	50.7	38.5	6.2	4.6	639
Uttar Pradesh	59.9	28.9	4.9	6.3	1,060	51.1	36.0	3.9	9.0	663	56.3	31.8	4.5	7.4	1,723
East															
Bihar	66.3	26.4	4.4	2.8	744	70.6	21.7	3.9	3.9	564	68.2	24.3	4.2	3.3	1,308
Jharkhand	47.6	48.6	1.8	2.0	1,063	48.9	47.2	2.0	1.9	879	48.2	48.0	1.9	1.9	1,942
Odisha	44.8	48.4	2.6	4.2	1,396	47.5	47.6	1.5	3.3	710	45.8	48.1	2.2	3.9	2,106
West Bengal	58.8	35.3	3.2	2.7	1,869	56.6	34.6	3.7	5.0	951	58.0	35.1	3.4	3.5	2,820
Northeast															
Arunachal Pradesh	58.4	39.4	1.4	[0.7]	662	55.2	44.0	[0.8]	-	194	57.7	40.5	1.3	[0.5]	856
Assam	64.8	29.4	2.6	3.2	1,184	62.6	26.8	4.5	6.1	419	64.3	28.7	3.1	4.0	1,603
Manipur	69.6	26.1	2.5	1.8	547	66.6	24.8	3.6	5.0	337	68.4	25.6	3.0	3.1	884
Meghalaya	48.3	50.2	[0.6]	[0.9]	376	46.2	52.6	-	[1.1]	196	47.6	51.1	[0.4]	1.0	572
Mizoram	72.4	23.4	3.0	1.2	476	63.1	29.2	4.2	3.5	268	68.8	25.6	3.5	2.1	744
Nagaland	79.7	18.9	1.0	[0.4]	546	82.1	17.9	-	-	354	80.7	18.5	0.6	[0.2]	900
Tripura	66.8	24.8	4.5	3.9	653	50.3	33.5	7.9	8.3	359	60.7	28.0	5.7	5.5	1,012
West															
Dadra & Nagar Haveli	39.5	54.2	3.0	3.3	274	57.2	37.3	[1.4]	4.1	136	45.3	48.7	2.5	3.6	410
Daman & Diu	46.6	41.9	9.0	2.4	227	43.8	48.1	[2.6]	5.4	142	45.5	44.4	6.5	3.6	369
Goa	42.0	48.5	5.2	4.3	213	41.5	55.2	[2.6]	[0.7]	118	41.8	51.0	4.2	3.0	331
Gujarat	54.7	31.6	6.8	7.0	442	47.0	40.7	5.7	6.7	210	51.9	34.8	6.4	6.9	652
Maharashtra	44.6	47.1	3.7	4.6	1,401	45.8	46.4	2.9	4.9	931	45.1	46.8	3.3	4.8	2,332

continue

continue

State/ Union Territory	Age 45-59*					Age ≥ 60					Total				
	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]	Number
South															
Andaman & Nicobar Islands	51.4	37.6	5.8	5.2	597	50.5	38.3	5.0	6.2	362	51.1	37.9	5.5	5.6	959
Andhra Pradesh	40.8	51.4	4.6	3.2	915	40.4	48.1	3.9	7.6	417	40.7	50.4	4.4	4.6	1,332
Karnataka	42.7	48.7	2.7	5.9	417	37.7	49.5	5.7	7.0	193	40.8	49.0	3.8	6.3	610
Kerala	42.5	52.5	2.8	2.2	355	42.6	47.9	-	9.5	185	42.5	50.8	1.8	4.8	540
Lakshadweep	22.7	71.4	[1.5]	4.5	124	36.2	55.0	8.8	-	75	27.7	65.3	4.2	2.8	199
Puducherry	32.4	48.7	5.6	13.4	421	34.5	33.6	5.2	26.6	179	33.1	43.8	5.4	17.7	600
Tamil Nadu	39.5	48.6	5.9	6.0	865	45.7	44.1	4.5	5.7	476	41.8	46.9	5.4	5.9	1,341
Telangana	41.0	51.5	4.5	3.0	776	44.4	46.4	4.8	4.4	331	42.1	49.8	4.6	3.5	1,107

Note

* *Including spouse irrespective of age.* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

Parameter	Normal PFT[1]	Restrictive[2]	Mild obstructive[3]	Moderate-severe obstructive[4]
% predicted FVC	≥ 80%	< 80%	≥ 80%	< 80%
Absolute FEV1/FVC (%)	≥70 (Age 45-59*) & ≥ 65% (Age ≥ 60)	≥ 70% (Age 45-59*) & ≥ 65% (Age ≥ 60)	< 70% (Age 45-59*) & < 65% (Age ≥ 60)	< 70% (Age 45-59*) & < 65% (Age ≥ 60)

9.3 VISUAL ACUITY

Vision function is an important component of functional and general health, particularly in old age. Low vision or visual impairment is associated with a number of adverse outcomes on physical and mental health measures, such as lower cognitive functioning, depression (Choi et al., 2018), mortality (Wang et al., 2001), and poor general health (Wang et al., 2000). Visual impairment in the elderly significantly increases the risk of reduced functional ability over time independent of many demographics, lifestyle, and clinical factors (Peres et al., 2017).

According to the WHO, International Classification of Diseases (ICD) - 10th Revision, 'a person with low vision is one who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception, or a visual field of less than 10 degree from the point of fixation, but uses, or is potentially able to use, vision for planning and/or execution of a task' (Pizzarello et al., 2004). Further, 'blindness' is defined as visual acuity of less than 3/60 or a corresponding visual field loss of less than 10° in the better eye with the best possible correction. 'Visual impairment' includes both low vision (near or distance vision) and blindness.

In the LASI, for all consenting survey respondents, near vision and distance vision were measured for both eyes with the best correction available using the computer-assisted personal interviewing (CAPI)-based tumbling E log medicine administration record (MAR) chart. Near vision and distance vision were measured at 40 cm and 3 m, respectively. The scale orientations used in the E log MAR chart are 20/20, 20/25, 20/32, 20/40, 20/50, 20/63, 20/80, 20/125, 20/160, 20/250, 20/320, and 20/400 for near vision and 20/20, 20/25, 20/32, 20/40, 20/50, 20/63, 20/80, 20/125, 20/160, 20/250, and 20/320 for distance vision.

In the LASI, the vision function is categorised as:

- ***Low near vision*:** near vision equal to or poorer than 20/80 and equal to or better than 20/400 in the better eye with the best correction available with respondent.
- ***Low distance vision***: distance vision equal to or poorer than 20/80 and equal to or better than 20/200 in the better eye with the best correction available with respondent.
- ***Low vision*:** either low near or low distance vision in the better eye with the best correction available with the respondent.
- ***Blindness*:** distance vision lower than 20/200 or could not count fingers or perceive light.

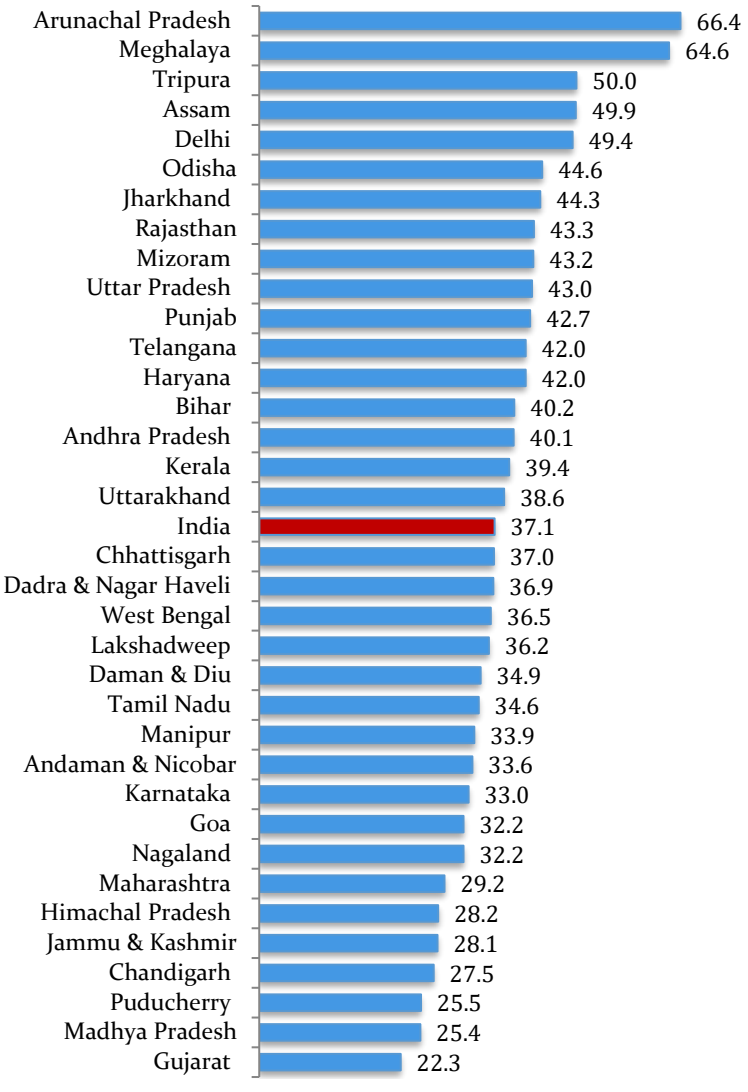
9.3.1 Prevalence of visual impairment

This section presents the prevalence of low vision (near, distance, and overall). The prevalence of each type of low vision (measured) is presented by background characteristics in Table 9.17. The prevalence of low vision (low near or low distance) with best correction among older adults age 45 and above is 31% in India. The prevalence of low vision is much higher among elderly age 60 and above (37%), particularly among elderly women (40%). The prevalence of low vision is higher among elderly living in rural areas (40%) than among those living in urban areas (31%) and higher among those living with others only (43%) than among those living with spouse and children (34%). The prevalence of low visual acuity among elderly age 60 and above decreases with increasing educational attainment and household MPCE quintile. A higher proportion of elderly age 60 and above with no schooling (43%) and those in the poorest MPCE quintile (40%) have low visual acuity compared to those with 10 or more years of schooling (21%) and those in the richest quintile (34%), suggesting better access to healthcare and better correction of vision among the latter groups.

Overall, the prevalence of low near vision (28%) among older adults age 45 and above in India is three-fold higher than the prevalence of low distance vision (9%). This difference is consistent in both older adults age 45-59 and the elderly age 60 and above. The prevalence of low near and low distance vision is higher among elderly age 60 and above (32% and 15%, respectively) than among older adults age 45-59 (24% and 4% respectively). The rural elderly (34% and 16%, respectively) and elderly women (36% and 16%, respectively) age 60 and above have higher prevalence of low near and low distance visual acuity than do the urban elderly (27% and 10%, respectively) and elderly men (29% and 14%, respectively). Among elderly age 60 and above, the prevalence of both low near and low distance vision is higher among divorced/deserted/separated, those living with others only, and those from a Scheduled caste/tribe (compared to those of other caste), and the prevalence rate decreases with increases in educational attainment.

The cross-state variations in the measured prevalence of low vision, low near, and low distance visual acuity are presented in Table 9.18. The prevalence of low vision (either low near or low distance) among older adults age 45 and above varies from 53% in Meghalaya to 17% in Gujarat. The prevalence of low near vision among elderly age 60 and above is much higher in the states of Meghalaya (60%), Arunachal Pradesh (58%), Delhi (47%), Tripura (45%), and Assam (44%). More than one-fifth of elderly age 60 and above have low distance vision in Arunachal Pradesh (38%), Dadra & Nagar Haveli (24%), Assam (22%), Daman & Diu (22%), Tripura (22%), and Telangana (21%).

Figure 9.10 Measured prevalence (%) of low vision* (near and/or distance) among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



Note

* Low vision refers to either low near vision or low distance vision in the better eye with best correction available for the respondent.

Table 9.18 Prevalence (%) of low vision, low near vision and low distance vision among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number
Place of residence												
Rural	26.2	4.2	28.1	23,859	34.3	16.4	39.5	18,955	30.0	10.0	33.4	42,814
Urban	18.9	3.4	20.7	13,393	27.1	10.3	31.0	9,523	22.4	6.3	25.1	22,916
Sex												
Male	19.9	3.7	22.0	13,974	28.6	13.8	33.8	13,712	24.4	8.9	28.1	27,686
Female	26.2	4.1	27.8	23,278	35.5	15.5	40.0	14,766	30.1	8.8	32.9	38,044
Marital status												
Currently married	23.1	3.7	24.8	32,432	29.7	12.8	34.5	18,173	25.6	7.1	28.4	50,605
Widowed	30.7	6.2	33.8	3,575	36.2	17.6	41.1	9,579	34.9	14.9	39.4	13,154
Divorced/Separated/Deserted/ Others	24.1	4.5	25.9	1,245	37.9	21.0	44.0	726	29.3	10.7	32.6	1,971
Living arrangement												
Living alone	27.1	8.0	32.2	643	35.0	17.4	39.8	1,480	33.2	15.2	38.1	2,123
Living with spouse and/or others	24.7	4.2	26.5	3,944	31.0	14.7	36.5	5,558	28.5	10.4	32.4	9,502
Living with spouse and children	22.8	3.6	24.5	27,896	29.0	11.9	33.5	12,407	24.8	6.2	27.3	40,303
Living with children and others	30.8	5.8	33.5	3,770	36.3	17.4	41.2	7,570	34.8	14.1	39.0	11,340
Living with others only	24.6	4.5	26.0	999	37.8	19.5	43.1	1,463	32.7	13.7	36.6	2,462
Religion												
Hindu	23.7	4.0	25.6	27,340	32.4	14.5	37.0	20,849	27.7	8.8	30.9	48,189
Muslim	25.0	3.5	26.0	4,496	29.0	15.5	35.1	3,389	26.8	8.9	30.1	7,885
Christian	20.7	4.6	23.2	3,735	35.9	14.7	41.8	2,851	27.5	9.1	31.5	6,586
Others	26.5	4.4	27.8	1,681	35.5	16.0	40.6	1,389	30.8	10.0	34.0	3,070
Caste/tribe												
Scheduled tribe	24.2	4.1	25.9	6,818	35.2	17.9	40.5	4,684	28.9	10.0	32.2	11,502
Scheduled caste	27.0	4.9	29.4	6,387	36.3	17.5	41.6	4,657	31.2	10.5	34.9	11,044
Other backward class	22.8	3.9	24.8	13,972	31.5	14.0	36.3	10,841	26.8	8.5	30.0	24,813
None of the above	23.3	3.3	24.4	10,075	29.8	13.0	34.2	8,296	26.4	7.9	29.0	18,371
Education												
No schooling	30.3	5.5	32.6	15,006	37.7	17.3	42.5	15,243	34.2	11.6	37.8	30,249
Less than 5 years complete	24.7	3.9	26.2	3,975	29.9	16.0	36.3	3,491	27.2	9.7	31.1	7,466
5-9 years complete	21.0	2.9	22.5	10,038	27.4	11.6	32.7	5,500	23.5	6.2	26.4	15,538
10 or more years complete	13.4	1.9	14.8	8,233	17.9	7.0	20.9	4,244	15.0	3.7	17.0	12,477
Work status												
Currently working	21.7	3.7	23.6	21,599	27.4	12.4	32.5	8,542	23.4	6.4	26.4	30,141
Worked in past but currently not working	26.1	6.0	28.7	4,186	32.5	16.6	37.6	12,048	30.9	14.0	35.5	16,234
Never worked	27.5	3.6	28.7	11,467	37.7	14.4	41.6	7,888	31.9	8.3	34.3	19,355

continued

continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number
MPCE quintile												
Poorest	26.3	4.7	28.5	7,102	34.9	16.0	40.2	5,827	30.4	10.0	34.0	12,929
Poorer	25.7	4.5	27.5	7,385	35.0	16.3	39.9	5,881	30.0	10.0	33.3	13,266
Middle	24.8	4.7	27.2	7,435	32.2	14.1	36.6	5,854	28.2	9.1	31.6	13,289
Richer	22.3	3.0	23.6	7,739	28.6	13.3	33.9	5,609	25.2	7.7	28.3	13,348
Richest	19.9	2.6	21.2	7,591	29.3	13.2	33.5	5,307	23.9	7.1	26.4	12,898
Total	**23.9**	**3.9**	**25.7**	**37,252**	**32.2**	**14.7**	**37.1**	**28,478**	**27.7**	**8.9**	**30.9**	**65,730**

Note

** Including spouse irrespective of age.*

[1] Low near vision refers to near vision equal to or poorer than 20/80 and equal to or better than 20/400 in the better eye with the best correction available for the respondent.

[2] Low distance vision refers to distance vision equal to or poorer than 20/80 and equal to or better than 20/200 in the better eye with the best correction available for the respondent.

[3] Low vision refers to either low near vision or low distant vision in the better eye with the best correction available for the respondent.

Table 9.19 Prevalence (%) of low vision, low near vision and low distance vision among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number
India	**23.9**	**3.9**	**25.7**	**37,252**	**32.2**	**14.7**	**37.1**	**28,478**	**27.7**	**8.9**	**30.9**	**65,730**
North												
Chandigarh	18.9	4.1	20.5	536	24.8	7.6	27.5	333	21.2	5.5	23.3	869
Delhi	28.4	2.4	29.8	805	46.8	13.8	49.4	482	35.3	6.7	37.2	1,287
Haryana	34.6	4.1	36.1	945	37.0	13.9	42.0	767	35.8	8.8	39.0	1,712
Himachal Pradesh	13.3	0.6	13.3	733	26.0	9.0	28.2	579	19.2	4.6	20.3	1,312
Jammu & Kashmir	19.6	2.9	21.3	770	25.4	9.6	28.1	628	22.5	6.2	24.6	1,398
Punjab	28.1	3.0	29.4	1,045	37.9	16.6	42.7	925	32.8	9.5	35.7	1,970
Rajasthan	30.2	4.2	31.3	1,098	39.8	14.0	43.3	988	35.0	9.0	37.2	2,086
Uttarakhand	28.3	4.6	31.1	669	33.8	12.1	38.6	607	31.1	8.3	34.8	1,276
Central												
Chhattisgarh	23.3	3.4	25.2	1,218	32.1	17.1	37.0	731	26.6	8.6	29.7	1,949
Madhya Pradesh	19.0	1.8	19.6	1,458	20.1	11.2	25.4	1,172	19.5	6.2	22.4	2,630
Uttar Pradesh	34.2	4.6	35.5	2,216	37.9	18.4	43.0	1,962	36.0	11.4	39.2	4,178
East												
Bihar	31.0	3.0	32.3	1,667	37.3	12.1	40.2	1,744	34.4	7.8	36.5	3,411
Jharkhand	29.3	5.7	31.7	1,217	38.2	17.7	44.3	1,096	33.6	11.5	37.8	2,313
Odisha	25.1	3.2	26.5	1,561	38.1	19.8	44.6	1,101	30.7	10.3	34.3	2,662
West Bengal	20.1	3.7	21.6	2,154	31.8	15.5	36.5	1,383	24.8	8.4	27.6	3,537
Northeast												
Arunachal Pradesh	13.9	7.2	18.4	852	58.4	38.3	66.4	295	24.7	14.8	30.1	1,147
Assam	24.6	3.4	25.8	1,401	43.5	21.8	49.9	728	31.3	9.9	34.3	2,129
Manipur	19.2	2.2	21.0	663	27.5	12.6	33.9	527	23.1	7.0	27.0	1,190
Meghalaya	42.6	3.0	43.8	506	59.8	15.4	64.6	376	49.9	8.2	52.6	882
Mizoram	27.7	2.5	28.8	659	36.8	17.3	43.2	470	31.7	9.0	35.1	1,129
Nagaland	15.5	2.6	17.5	660	30.0	10.4	32.2	564	22.6	6.4	24.7	1,224
Tripura	26.6	4.2	28.0	676	44.5	21.5	50.0	424	33.8	11.1	36.8	1,100
West												
Dadra & Nagar Haveli	18.3	5.0	20.8	592	27.4	23.7	36.9	408	21.8	12.2	27.0	1,000
Daman & Diu	17.0	4.8	18.7	533	28.1	21.6	34.9	398	22.1	12.5	26.2	931
Goa	20.9	1.4	21.2	689	30.1	13.4	32.2	563	25.1	6.9	26.2	1,252
Gujarat	11.5	3.2	13.0	1,191	15.4	12.8	22.3	882	13.2	7.5	17.2	2,073
Maharashtra	19.6	3.1	20.4	1,852	24.9	12.2	29.2	1,529	22.2	7.6	24.7	3,381

continued

continued

State/Union Territory	Age 45-59*				Age ≥ 60				Total			
	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number	Low near vision[1]	Low distance vision[2]	Low vision[3]	Number
South												
Andaman & Nicobar Islands	20.5	2.6	21.6	666	27.8	14.6	33.6	475	23.5	7.6	26.6	1,141
Andhra Pradesh	24.9	7.1	27.5	1,307	32.8	18.0	40.1	935	28.2	11.7	32.9	2,242
Karnataka	20.6	4.4	23.7	1,297	28.7	11.8	33.0	921	23.9	7.4	27.5	2,218
Kerala	29.3	3.6	30.9	1,197	34.9	15.6	39.4	1,094	32.2	9.8	35.2	2,291
Lakshadweep	24.8	2.9	26.1	611	33.5	8.4	36.2	475	28.9	5.5	30.9	1,086
Puducherry	13.9	2.9	15.7	726	22.1	9.7	25.5	571	17.7	6.0	20.2	1,297
Tamil Nadu	19.4	4.3	22.3	1,890	29.7	12.2	34.6	1,408	24.0	7.9	27.8	3,298
Telangana	23.2	6.0	27.0	1,192	34.3	21.3	42.0	937	28.3	13.0	33.9	2,129

Note

* *Including spouse irrespective of age.*

[1]Low near vision refers to near vision equal to or poorer than 20/80 and equal to or better than 20/400 in the better eye with the best correction available with respondent.

[2]Low distance vision refers to distance vision equal to or poorer than 20/80 and equal to or better than 20/200 in the better eye with the best correction available with respondent.

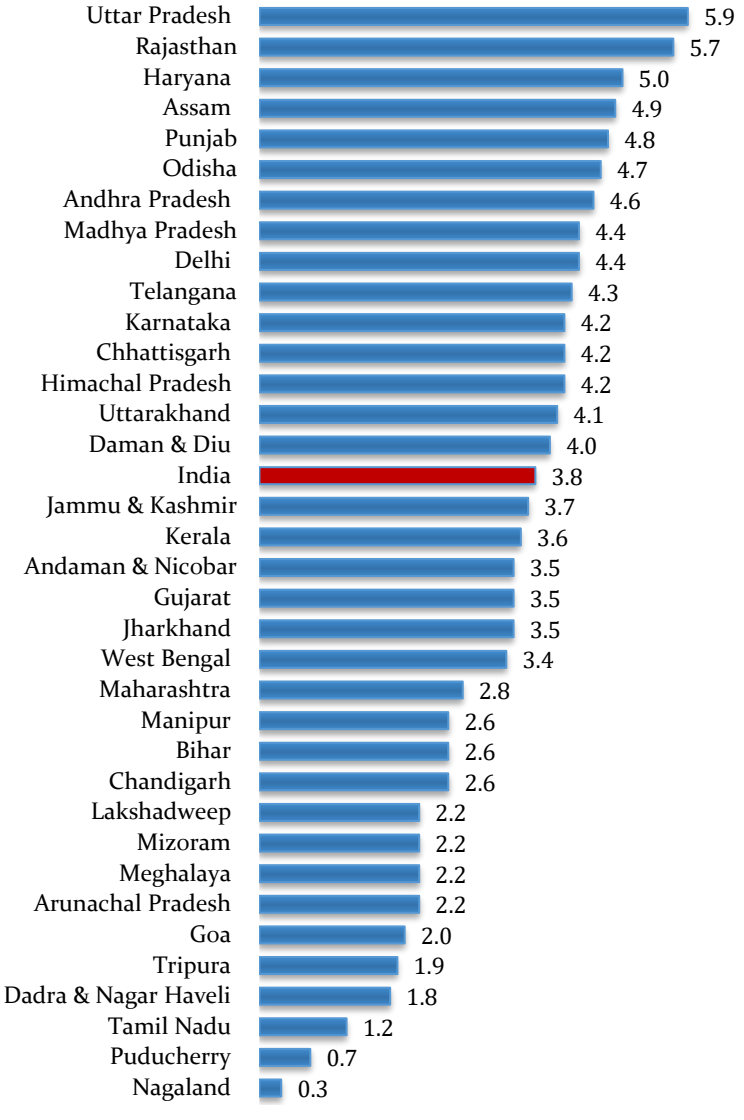
[3]Low vision refers to either low near vision or low distant vision in the better eye with the best correction available with the respondent.

9.3.2 Prevalence of blindness

The LASI also assessed the prevalence of blindness, in addition to vision measurement using the E Log MAR chart. To assess blindness, the survey participants were asked to count the fingers of a hand held at 2 feet in front of the respondent's eye. Respondents who failed to visualise the fingers or light were categorised as blind. When the respondent was able to count fingers, a vision test was conducted. Blindness was assessed based on distance vision measurement of less than 20/200.

Table 9.19 presents the results of the measured prevalence of blindness by background characteristics. The prevalence of blindness among older adults age 45 and above in India is 2%. The prevalence of blindness is more than six-fold higher among elderly age 60 and or above (3.8%) than among older adults age 45-59 (0.6%). Elderly age 60 and above from rural areas (4.3%) have a higher prevalence of blindness than those from urban areas (2.7%). The prevalence of blindness is higher among elderly living with others only (7.4%) than among those living with spouse and children (2.7%). Among elderly age 60 and above, the prevalence of blindness declines with education and household MPCE quintiles, ranging from 5% among elderly with no schooling and in the poorest MPCE quintile to 1% in those with 10 or more years of schooling and 3% in the richest MPCE quintile.

Figure 9.11 Prevalence (%) of blindness* among elderly age 60 and above, states/UTs, LASI Wave 1, 2017-18



Note

* Blindness refers to those with vision less than 20/200 in distance vision or could not count finger or perceive light.

The cross-state difference in the prevalence of blindness (measured) is presented in Table 9.20. The prevalence of blindness among older adults age 45 and above is the highest in Uttar Pradesh (3.5%), followed by Rajasthan (3.2%) and is the lowest in Nagaland (0.2%). Among elderly age 60 and above, the prevalence of blindness is more than 5% in Uttar Pradesh (5.9%), and Rajasthan (5.7%) whereas it is lower than 1% in Nagaland (0.3%) and Puducherry (0.7%). Among older adults age 45-59, the prevalence of blindness is lower than 1% in most states/UTs in India, with the exception of Uttar Pradesh (1.2%) and Chandigarh (1.2%).

Table 9.20 Prevalence (%) of blindness among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Blindness[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	0.7	23,859	4.3	18,955	2.4	42,814
Urban	0.3	13,393	2.7	9,523	1.3	22,916
Sex						
Male	0.7	13,974	3.2	13,712	2.0	27,686
Female	0.6	23,278	4.4	14,766	2.2	38,044
Marital status						
Currently married	0.5	32,432	2.6	18,173	1.3	50,605
Widowed	1.3	3,575	5.9	9,579	4.8	13,154
Divorced/Separated/Deserted/Others	0.6	1,245	4.9	726	2.2	1,971
Living arrangement						
Living alone	[1.2]	643	3.6	1,480	3.1	2,123
Living with spouse and/or others	0.7	3,944	2.4	5,558	1.7	9,502
Living with spouse and children	0.5	27,896	2.7	12,407	1.2	40,303
Living with children and others	1.1	3,770	5.9	7,570	4.6	11,340
Living with others only	0.9	999	7.4	1,463	4.9	2,462
Religion						
Hindu	0.6	27,340	4.0	20,849	2.1	48,189
Muslim	0.6	4,496	2.8	3,389	1.6	7,885
Christian	0.6	3,735	2.3	2,851	1.4	6,586
Others	0.6	1,681	4.9	1,389	2.7	3,070
Caste/tribe						
Scheduled tribe	0.5	6,818	4.2	4,684	2.1	11,502
Scheduled caste	1.0	6,387	5.0	4,657	2.8	11,044
Other backward class	0.5	13,972	3.5	10,841	1.9	24,813
None of the above	0.5	10,075	3.5	8,296	1.9	18,371
Education						
No schooling	0.8	15,006	5.0	15,243	3.0	30,249
Less than 5 years complete	0.4	3,975	3.4	3,491	1.9	7,466
5-9 years complete	0.5	10,038	2.5	5,500	1.3	15,538
10 or more years complete	0.4	8,233	1.3	4,244	0.7	12,477
Work status						
Currently working	0.4	21,599	1.3	8,542	0.7	30,141
Worked in past but currently not working	1.4	4,186	5.2	12,048	4.3	16,234
Never worked	0.6	11,467	4.7	7,888	2.4	19,355
MPCE quintile						
Poorest	0.8	7,102	5.1	5,827	2.9	12,929
Poorer	0.5	7,385	4.2	5,881	2.2	13,266
Middle	0.5	7,435	3.4	5,854	1.9	13,289
Richer	0.8	7,739	3.1	5,609	1.9	13,348
Richest	0.3	7,591	3.0	5,307	1.5	12,898
Total	**0.6**	**37,252**	**3.8**	**28,478**	**2.1**	**65,730**

Note

* *Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] Blindness refers to distance vision less than 20/200 or could not count finger or perceive light.

Table 9.21 Prevalence (%) of blindness among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Blindness[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**0.6**	**37,252**	**3.8**	**28,478**	**2.1**	**65,730**
North						
Chandigarh	1.2	536	2.6	333	1.7	869
Delhi	[0.5]	805	4.4	482	2.0	1,287
Haryana	[0.4]	945	5.0	767	2.6	1,712
Himachal Pradesh	0.7	733	4.2	579	2.3	1,312
Jammu & Kashmir	[0.3]	770	3.7	628	2.0	1,398
Punjab	0.4	1,045	4.8	925	2.5	1,970
Rajasthan	0.8	1,098	5.7	988	3.2	2,086
Uttarakhand	0.8	669	4.1	607	2.4	1,276
Central						
Chhattisgarh	0.7	1,218	4.2	731	2.0	1,949
Madhya Pradesh	0.7	1,458	4.4	1,172	2.4	2,630
Uttar Pradesh	1.2	2,216	5.9	1,962	3.5	4,178
East						
Bihar	[0.3]	1,667	2.6	1,744	1.5	3,411
Jharkhand	[0.3]	1,217	3.5	1,096	1.9	2,313
Odisha	0.8	1,561	4.7	1,101	2.5	2,662
West Bengal	0.3	2,154	3.4	1,383	1.6	3,537
Northeast						
Arunachal Pradesh	[0.3]	852	2.2	295	0.7	1,147
Assam	0.3	1,401	4.9	728	1.9	2,129
Manipur	[0.6]	663	2.6	527	1.5	1,190
Meghalaya	[0.7]	506	2.2	376	1.3	882
Mizoram	-	659	2.2	470	1.0	1,129
Nagaland	-	660	[0.3]	564	[0.2]	1,224
Tripura	[0.3]	676	1.9	424	0.9	1,100
West						
Dadra & Nagar Haveli	[0.2]	592	1.8	408	0.8	1,000
Daman & Diu	[0.3]	533	4.0	398	2.0	931
Goa	[0.1]	689	2.0	563	1.0	1,252
Gujarat	0.7	1,191	3.5	882	2.0	2,073
Maharashtra	0.5	1,852	2.8	1,529	1.7	3,381
South						
Andaman & Nicobar Islands	0.7	666	3.5	475	1.9	1,141
Andhra Pradesh	0.9	1,307	4.6	935	2.5	2,242
Karnataka	0.8	1,297	4.2	921	2.2	2,218
Kerala	0.9	1,197	3.6	1,094	2.3	2,291
Lakshadweep	[0.2]	611	2.2	475	1.1	1,086
Puducherry	[0.3]	726	0.7	571	0.5	1,297
Tamil Nadu	0.6	1,890	1.2	1,408	0.8	3,298
Telangana	0.5	1,192	4.3	937	2.2	2,129

Note

* *Including spouse irrespective of age*, "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-"indicates less number of cases/no cases.

[1] Blindness refers to distance vision less than 20/200 or could not count fingers or perceive light.

Key findings: visual acuity

- Overall, 31% of older adults age 45 and above in India have low near or low distance vision (measured). Among elderly age 60 and above in India, 37% have low vision, compared to 26% of older adults age 45-59. The prevalence of low vision (low near or low distance) among elderly age 60 and above is comparatively higher in the states of Arunachal Pradesh (66%), Meghalaya (65%), Tripura (50%), and Delhi (49%).
- More than a quarter of older adults age 45 and above in India have low near vision and 9% have low distance vision. The prevalence of low near and low distance vision among elderly age 60 and above is 32% and 15% respectively.
- The prevalence of blindness among older adults age 45 and above in India is 2%. The prevalence of blindness is more than six times higher among elderly age 60 or above (3.8%) than among older adults age 45-59 (0.6%).
- The prevalence of blindness is higher among elderly residing in rural areas (4.3%) than among those in urban areas (2.7%). It is also higher among those with no schooling (5%) and those in the poorest MPCE quintile (5.1%). The prevalence of blindness among elderly age 60 and above is greater than 5% in the states of Uttar Pradesh (5.9%) and Rajasthan (5.7%).

9.4 ANTHROPOMETRY

Anthropometric measures are important for the assessment of the nutritional status of the elderly population. Diet and lifestyle, coupled with the maintenance of a healthy body weight, are important for the maintenance of good health for all age groups, but are crucial for healthy ageing (Leslie and Hankey, 2015). Anthropometric measurements, such as height, weight, waist circumference, and hip circumference, were performed for all LASI survey participants. Height was measured in centimetres using a stadiometer, and weight was measured in kilograms using a Seca 803 digital weighing scale. Waist and hip circumferences were measured in centimetres using a Gulick tape according to standard protocols.

9.4.1 Height, weight, and body mass index

Body mass index (BMI) is an important indicator of an individual's nutritional status. BMI is calculated by dividing an individual's weight (in kilograms) by the square of their height (in metres). In this section, we present the mean height, weight, and BMI by age and sex of older adults for the states/UTs of India.

Table 9.22 presents the mean height, weight, and BMI of older adult men and women by background characteristics. The mean height and weight of older adult men age 45 and above in India is 162.3 cm and 57.7 kg, respectively. Older women age 45 and above are 12 cm shorter and weigh 5 kg on average lower than older adult men. The mean height, weight, and BMI are lower among elderly men and women age 60 and above than among older adult men and women age 45-59.

The mean BMI of older adult women (23.1) is higher than that of older adult men age 45 and above (21.8). The mean BMI of elderly men and women age 60 and above (21.2 and 22.3, respectively) is slightly lower than that of older adult men and women age 45-59 (22.5 and 23.7, respectively). Elderly

men and women age 60 and above residing in urban areas have higher BMI (23.1 and 25, respectively) than their counterparts in rural areas (20.5 and 21.1, respectively). The mean BMI for both men and women increases with education and household MPCE quintile.

Tables 9.23 and 9.24 present the cross-state differences in the mean height, weight, and BMI of older adult men and women. The mean height among older adult men and women age 45 and above varies from 166.7 cm and 153.9 cm, respectively, in Haryana to 158.4 cm and 147.4 cm, respectively, in Meghalaya. Among older adult men age 45 and above, the mean weight is the highest in Punjab (66.9 kg) and the lowest in Meghalaya (54.1 kg), while among older adult women, the mean weight ranges from 64.1 kg in Chandigarh to 46.8 kg in Jharkhand and Meghalaya.

The mean BMI among older adult men age 45 and above varies from 24.8 in Delhi to 20.6 in Chhattisgarh and Madhya Pradesh. Among elderly men age 60 and above, the mean BMI is higher than 23 in Delhi (24.3), Lakshadweep (24), Chandigarh (23.8), Puducherry (23.6), Punjab (23.3), and Kerala (23.2). Among older adult women age 45 and above, the mean BMI ranges from 27.5 in Chandigarh to 21 in Chhattisgarh. Among elderly women age 60 and above, the mean BMI is in the overweight category (BMI >25) in the states/UTs of Chandigarh (26.8), Delhi (26), Daman & Diu (25.4), Punjab (25.3), and Puducherry (25.2).

Table 9.22 Mean values of height, weight and Body Mass Index (BMI) among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male											
	Age 45-59*				Age ≥ 60				Total			
	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number
Place of residence												
Rural	163.1	57.8	21.7	8,996	161.1	53.4	20.5	9,133	162.0	55.4	21.1	18,129
Urban	163.9	65.2	24.2	4,915	162.1	60.9	23.1	4,376	163.1	63.1	23.7	9,291
Religion												
Hindu	163.3	59.8	22.3	10,270	161.2	55.1	21.1	9,879	162.2	57.3	21.7	20,149
Muslim	163.0	61.3	23.0	1,552	161.7	56.1	21.4	1,618	162.3	58.6	22.2	3,170
Christian	161.8	60.0	22.8	1,428	160.6	55.6	21.5	1,337	161.2	57.7	22.1	2,765
Others	165.7	65.6	23.8	661	163.6	59.0	21.9	675	164.6	62.0	22.8	1,336
Caste/tribe												
Scheduled tribe	161.2	54.2	20.8	2,640	159.8	50.0	19.5	2,203	160.5	52.2	20.2	4,843
Scheduled caste	162.0	56.7	21.6	2,365	160.3	52.0	20.2	2,203	161.1	54.3	20.9	4,568
Other backward class	163.6	61.1	22.8	5,178	161.3	55.5	21.3	5,193	162.4	58.2	22.0	10,371
None of the above	164.7	63.2	23.2	3,728	162.6	58.9	22.2	3,910	163.6	60.9	22.7	7,638
Education												
No schooling	161.9	55.5	21.1	3,622	160.2	51.3	19.9	4,860	160.9	53.0	20.4	8,482
Less than 5 years complete	162.5	56.8	21.5	1,740	160.5	53.5	20.7	2,000	161.4	54.9	21.0	3,740
5-9 years complete	163.5	60.3	22.5	4,319	162.1	56.6	21.5	3,492	162.8	58.6	22.0	7,811
10 or more years complete	164.8	65.5	24.1	4,230	163.2	62.4	23.4	3,157	164.1	64.1	23.8	7,387
MPCE quintile												
Poorest	162.0	57.3	21.8	2,677	159.9	51.9	20.3	2,696	160.9	54.6	21.0	5,373
Poorer	162.6	57.6	21.7	2,751	160.6	53.4	20.7	2,759	161.6	55.4	21.2	5,510
Middle	163.2	59.0	22.1	2,768	161.7	55.7	21.2	2,762	162.4	57.2	21.6	5,530
Richer	164.0	62.3	23.1	2,890	162.1	56.8	21.6	2,692	163.0	59.4	22.3	5,582
Richest	165.0	64.9	23.8	2,825	162.9	60.0	22.5	2,600	164.0	62.5	23.2	5,425
Total	**163.3**	**60.1**	**22.5**	**13,911**	**161.4**	**55.3**	**21.2**	**13,509**	**162.3**	**57.7**	**21.8**	**27,420**

continued

continued

Background characteristics	Female											
	Age 45-59*				Age ≥ 60				Total			
	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number
Place of residence												
Rural	151.0	51.6	22.6	14,791	148.0	46.4	21.1	9,556	149.7	49.4	21.9	24,347
Urban	152.0	60.7	26.2	8,431	149.2	55.8	25.0	4,985	150.9	58.8	25.7	13,416
Religion												
Hindu	151.2	54.2	23.6	16,984	148.3	49.0	22.2	10,644	150.0	52.1	23.0	27,628
Muslim	151.5	56.6	24.6	2,924	148.0	49.1	22.3	1,704	150.1	53.7	23.7	4,628
Christian	151.1	51.5	22.5	2,301	148.5	49.5	22.4	1,489	150.1	50.7	22.4	3,790
Others	153.1	58.5	24.9	1,013	150.8	54.2	23.7	704	152.1	56.7	24.4	1,717
Caste/tribe												
Scheduled tribe	150.5	48.5	21.4	4,158	147.8	43.6	19.9	2,431	149.4	46.5	20.8	6,589
Scheduled caste	150.2	51.8	22.9	4,005	147.3	45.7	21.0	2,376	149.0	49.4	22.1	6,381
Other backward class	151.7	55.5	24.1	8,753	148.6	50.2	22.6	5,470	150.4	53.3	23.5	14,223
None of the above	151.9	57.1	24.6	6,306	148.9	51.8	23.3	4,264	150.6	54.8	24.1	10,570
Education												
No schooling	150.5	51.0	22.5	11,341	147.9	46.5	21.2	10,124	149.2	48.8	21.9	21,465
Less than 5 years complete	150.9	53.7	23.5	2,224	148.0	51.4	23.3	1449	149.7	52.8	23.5	3673
5-9 years complete	151.6	57.4	24.9	5,685	150.1	56.2	24.8	1,932	151.2	57.1	24.9	7,617
10 or more years complete	153.9	63.0	26.5	3,972	151.1	63.4	27.7	1036	153.3	63.1	26.8	5008
MPCE quintile												
Poorest	150.8	51.5	22.6	4,392	147.4	45.3	20.8	3,026	149.3	48.8	21.8	7,418
Poorer	150.7	53.1	23.3	4,617	147.9	47.4	21.6	3,038	149.5	50.7	22.6	7,655
Middle	151.5	54.3	23.6	4,652	148.4	48.6	22.0	3,007	150.2	51.9	22.9	7,659
Richer	151.5	54.9	23.9	4,822	149.0	52.0	23.3	2,836	150.5	53.7	23.6	7,658
Richest	152.3	59.4	25.6	4,739	149.6	54.6	24.3	2,634	151.3	57.6	25.1	7,373
Total	**151.3**	**54.5**	**23.7**	**23,222**	**148.4**	**49.2**	**22.3**	**14,541**	**150.1**	**52.4**	**23.1**	**37,763**

Note

** Including spouse irrespective of age.*

[1] Body Mass Index (BMI) refers to weight in kilograms divided by height in meters squared (kg/m^2).

Table 9.23 Mean values of height, weight and Body Mass Index (BMI) among older adult male, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Male											
	Age 45-59*				Age ≥ 60				Total			
	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number
India	**163.3**	**60.1**	**22.5**	**13,911**	**161.4**	**55.3**	**21.2**	**13,509**	**162.3**	**57.7**	**21.8**	**27,420**
North												
Chandigarh	163.9	67.6	25.1	218	164.8	65.0	23.8	155	164.3	66.5	24.5	373
Delhi	162.8	66.9	25.2	335	161.8	63.6	24.3	239	162.4	65.5	24.8	574
Haryana	167.3	64.8	23.1	371	166.0	59.5	21.5	309	166.7	62.2	22.3	680
Himachal Pradesh	165.4	64.9	23.7	238	162.3	59.5	22.4	288	163.6	61.7	22.9	526
Jammu & Kashmir	165.8	64.1	23.3	282	162.7	59.3	22.3	327	164.0	61.3	22.7	609
Punjab	167.5	70.6	25.1	393	165.6	63.9	23.3	457	166.5	66.9	24.1	850
Rajasthan	165.7	60.3	21.9	421	164.6	56.7	20.9	456	165.1	58.4	21.4	877
Uttarakhand	164.0	62.3	23.1	230	161.6	55.9	21.4	283	162.6	58.6	22.1	513
Central												
Chhattisgarh	163.4	56.0	20.9	493	161.6	52.6	20.1	365	162.6	54.6	20.6	858
Madhya Pradesh	164.5	58.4	21.5	615	162.6	52.1	19.7	563	163.6	55.2	20.6	1,178
Uttar Pradesh	163.2	57.0	21.4	881	161.1	52.4	20.1	1,010	162.1	54.5	20.7	1,891
East												
Bihar	162.8	58.6	22.1	612	159.7	53.5	20.9	883	160.9	55.5	21.4	1,495
Jharkhand	161.5	57.6	22.0	427	159.4	53.1	20.8	543	160.3	55.1	21.3	970
Odisha	161.6	56.3	21.4	602	159.2	52.3	20.5	526	160.5	54.4	21.0	1,128
West Bengal	161.7	57.5	21.9	785	160.0	52.7	20.5	671	160.9	55.3	21.3	1,456
Northeast												
Arunachal Pradesh	159.9	59.4	23.2	346	156.2	53.2	21.7	162	158.8	57.5	22.7	508
Assam	162.0	56.5	21.5	517	161.1	53.2	20.5	350	161.7	55.1	21.0	867
Manipur	163.3	63.3	23.7	282	161.0	57.4	22.1	233	162.2	60.5	22.9	515
Meghalaya	158.7	54.8	21.7	186	157.9	53.1	21.2	147	158.4	54.1	21.5	333
Mizoram	161.8	61.7	23.5	266	159.7	56.4	22.1	233	160.7	59.0	22.8	499
Nagaland	161.2	59.8	23.0	275	159.8	57.8	22.6	283	160.4	58.7	22.8	558
Tripura	160.7	55.8	21.5	241	159.7	52.6	20.5	206	160.2	54.3	21.1	447
West												
Dadra & Nagar Haveli	162.9	60.5	22.7	254	159.9	54.2	21.1	177	161.8	58.1	22.1	431
Daman & Diu	163.9	66.5	24.7	209	162.0	60.7	23.0	160	163.0	63.8	23.9	369
Goa	164.0	64.8	24.0	239	161.9	60.5	23.0	256	162.8	62.5	23.5	495
Gujarat	163.9	60.0	22.2	470	161.1	57.1	21.9	401	162.5	58.6	22.1	871
Maharashtra												
South	163.5	61.4	23.0	647	161.6	58.2	22.2	703	162.5	59.6	22.5	1,350
Andaman & Nicobar Islands	162.0	64.3	24.5	265	160.4	59.1	22.9	249	161.2	61.8	23.7	514
Andhra Pradesh	163.2	65.0	24.3	455	161.1	58.1	22.3	455	162.1	61.5	23.3	910
Karnataka	163.5	62.3	23.3	447	161.4	56.1	21.5	429	162.5	59.4	22.5	876
Kerala	165.4	66.0	24.1	406	162.6	61.6	23.2	484	163.8	63.5	23.6	890
Lakshadweep	163.8	65.2	24.3	192	160.7	62.2	24.0	227	162.0	63.4	24.1	419
Puducherry	164.8	66.4	24.4	253	162.2	62.1	23.6	239	163.5	64.3	24.0	492
Tamil Nadu	162.6	62.5	23.6	655	161.4	58.3	22.3	611	162.0	60.4	23.0	1,266
Telangana	162.8	62.3	23.4	403	161.0	57.2	21.9	429	161.8	59.5	22.6	832

Note

** Including spouse irrespective of age.*

[1] Body Mass Index (BMI) refers to weight in kilograms divided by height in meters squared (kg/m^2).

Table 9.24 Mean values of height, weight and Body Mass Index (BMI) among older adult female, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Female											
	Age 45-59*				Age ≥ 60				Total			
	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number	Mean height	Mean weight	Mean BMI[1]	Number
India	**151.3**	**54.5**	**23.7**	**23,222**	**148.4**	**49.2**	**22.3**	**14,541**	**150.1**	**52.4**	**23.1**	**37,763**
North												
Chandigarh	152.7	65.4	27.9	316	151.4	61.8	26.8	168	152.2	64.1	27.5	484
Delhi	152.4	63.0	27.1	466	150.5	58.7	26.0	230	151.8	61.6	26.7	696
Haryana	154.6	58.7	24.5	565	153.1	53.2	22.7	435	153.9	56.1	23.6	1,000
Himachal Pradesh	152.6	59.5	25.5	494	149.1	53.8	24.1	289	151.3	57.3	25.0	783
Jammu & Kashmir	154.2	62.1	26.1	488	151.3	53.1	23.2	284	152.9	58.3	24.9	772
Punjab	154.1	64.1	27.0	651	152.3	59.0	25.3	460	153.3	62.0	26.3	1,111
Rajasthan	153.9	53.7	22.6	670	151.3	51.1	22.3	526	152.7	52.5	22.5	1,196
Uttarakhand	151.8	56.6	24.5	439	149.0	48.7	21.8	320	150.6	53.2	23.4	759
Central												
Chhattisgarh	152.0	49.3	21.3	718	149.5	46.0	20.5	352	151.2	48.2	21.0	1,070
Madhya Pradesh	151.9	53.2	23.0	839	147.8	46.7	21.3	590	150.2	50.4	22.3	1,429
Uttar Pradesh	150.0	51.5	22.8	1,324	147.2	45.2	20.8	916	148.8	48.8	21.9	2,240
East												
Bihar	150.2	50.9	22.5	1,055	147.3	45.3	20.8	843	148.9	48.3	21.7	1,898
Jharkhand	149.6	48.5	21.6	785	146.5	44.5	20.7	543	148.2	46.8	21.2	1,328
Odisha	150.2	49.9	22.0	953	146.0	43.7	20.4	551	148.6	47.5	21.4	1,504
West Bengal	150.1	52.2	23.1	1,362	146.1	45.2	21.1	694	148.7	49.7	22.4	2,056
Northeast												
Arunachal Pradesh	151.2	54.7	23.9	502	149.2	50.8	22.7	127	150.8	54.0	23.6	629
Assam	150.7	49.9	21.9	882	147.5	44.6	20.4	370	149.7	48.3	21.5	1,252
Manipur	152.3	57.6	24.8	380	149.0	51.0	22.9	284	150.8	54.6	23.9	664
Meghalaya	148.7	49.0	22.2	318	145.5	43.7	20.6	226	147.4	46.8	21.5	544
Mizoram	151.5	53.8	23.4	390	148.7	48.4	21.8	234	150.5	51.7	22.8	624
Nagaland	152.3	54.0	23.3	387	149.1	49.5	22.2	281	150.9	52.1	22.8	668
Tripura	149.5	50.1	22.4	435	144.5	42.3	20.2	217	147.7	47.4	21.6	652
West												
Dadra & Nagar Haveli	151.0	52.9	23.1	336	148.7	45.9	20.7	223	150.1	50.2	22.2	559
Daman & Diu	152.0	60.4	26.1	323	149.0	56.5	25.4	218	150.7	58.7	25.8	541
Goa	152.2	58.6	25.2	449	148.8	53.9	24.2	312	150.8	56.6	24.8	761
Gujarat	150.9	55.2	24.2	718	148.5	50.8	23.0	475	149.9	53.3	23.7	1,193
Maharashtra	151.2	55.9	24.4	1,204	148.3	50.2	22.7	805	149.9	53.3	23.6	2,009
South												
Andaman & Nicobar Islands	151.8	59.5	25.7	399	149.3	52.5	23.5	223	150.9	57.0	25.0	622
Andhra Pradesh	151.3	58.8	25.6	843	147.8	52.6	24.0	458	150.0	56.6	25.1	1,301
Karnataka	152.5	56.8	24.3	850	149.3	53.7	23.9	475	151.3	55.6	24.2	1,325
Kerala	153.5	60.5	25.7	782	149.1	53.8	24.1	588	151.4	57.4	24.9	1,370
Lakshadweep	151.0	59.0	25.9	413	148.0	54.6	24.9	235	149.8	57.3	25.5	648
Puducherry	151.8	60.3	26.2	471	148.0	55.3	25.2	324	150.2	58.2	25.7	795
Tamil Nadu	151.7	58.5	25.4	1,231	149.3	52.5	23.6	772	150.7	56.0	24.6	2,003
Telangana	150.2	54.9	24.3	784	147.5	51.5	23.6	493	149.2	53.5	24.0	1,277

Note

* *Including spouse irrespective of age.*

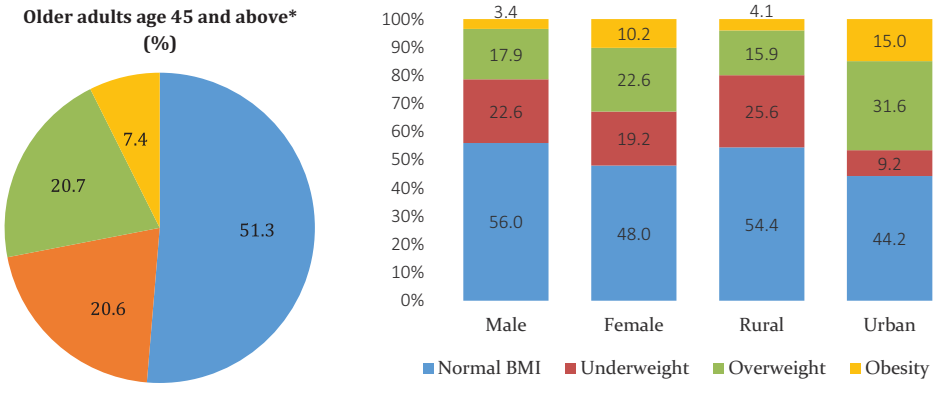
[1] Body Mass Index refers to weight in kilograms divided by height in meters squared (kg/m^2).

9.4.2 Nutritional status

Based on the WHO classification, BMI levels are classified as underweight (BMI ≤18.4), normal (BMI 18.5 to 24.9), overweight (BMI 25 to 29.9), and obese (BMI ≥30). This section presents the prevalence of underweight, overweight, and obesity in India.

Figure 9.12 shows that half of older adults age 45 and above in India have BMI within the normal range (51%), while 21% are underweight, 21% are overweight, and 7% are obese. The prevalence of underweight, overweight, and obesity among older adults by background characteristics is presented in Table 9.25. A higher proportion of elderly age 60 and above (27%) than older adults age 45-59 (16%) are underweight. In contrast, a higher proportion of older adults age 45-59 are overweight and obese (24% and 9%, respectively) compared to elderly age 60 and above (17% and 6%, respectively). The proportion of underweight elderly age 60 and above residing in rural areas (32%) is almost three-fold the rate among those residing in urban areas (12%). In contrast, overweight and obesity are much more prevalent among elderly in urban areas (27% and 12%, respectively) than among those in rural areas (12% and 3%, respectively). The proportion of underweight elderly age 60 and above is higher among Scheduled tribe (41%) than among other caste, higher among those with no schooling (33%) than among those with 10 or more years of schooling (9%), and higher among those in the poorest MPCE quintile (35%) than among those in the richest MPCE quintile (16%). Among elderly age 60 and above, overweight and obesity are more common among women (18% and 8%, respectively) than among men (15% and 3%, respectively) and more common among elderly who have never worked (22% and 10%, respectively) than among those currently working (14% and 2%, respectively). A higher proportion of elderly age 60 and above with 10 or more years of schooling are overweight and obese (29% and 12%, respectively) than those with no schooling (12% and 4%, respectively). Similarly, a higher proportion of elderly age 60 and above in the richest MPCE quintile are overweight and obese (22% and 10%, respectively) compared to those in the poorest MPCE quintile (11% and 3%, respectively).

Figure 9.12 Percent distribution of older adults age 45 and above* according to their nutritional status (BMI) by sex and place of residence, LASI Wave 1, 2017-18



Note

** Including spouse irrespective of age.*

The cross-state variations in the prevalence of underweight, overweight, and obesity are presented in Table 9.26. The prevalence of underweight among older adults age 45 and above is higher in the demographically less advanced eastern and central Indian states/UTs and much lower in the demographically advanced southern and northern Indian states/UTs, ranging from 32% in Chhattisgarh to 5% in Chandigarh, Delhi, and Lakshadweep. More than one-third of elderly age 60 and above are underweight in the states/UTs of Dadra & Nagar Haveli (40%), Odisha (37%), Tripura (37%), Uttar Pradesh (37%), Chhattisgarh (36%), Madhya Pradesh (35%), and Assam (34%).

Table 9.25 Prevalence (%) of underweight, overweight and obesity among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number
Place of residence												
Rural	19.7	18.9	5.0	23,787	32.4	12.4	3.0	18,689	25.6	15.9	4.1	42,476
Urban	7.0	34.6	17.4	13,346	12.2	27.4	11.6	9,361	9.2	31.6	15.0	22,707
Sex												
Male	16.6	21.3	4.2	13,911	28.3	14.8	2.8	13,509	22.6	17.9	3.4	27,420
Female	15.0	25.6	11.8	23,222	25.3	18.3	7.9	14,541	19.2	22.6	10.2	37,763
Marital status												
Currently married	14.7	24.4	8.9	32,341	24.6	17.3	5.4	17,952	18.4	21.8	7.6	50,293
Widowed	19.2	23.2	9.5	3,558	30.0	15.8	5.7	9,389	27.4	17.6	6.6	12,947
Divorced/Separated/Deserted/ Others	30.5	14.6	8.3	1,234	32.1	12.4	4.1	709	31.1	13.8	6.7	1,943
Living arrangement												
Living alone	18.8	18.2	8.2	641	30.9	15.5	3.9	1,459	28.1	16.2	4.9	2,100
Living with spouse and/or others	15.5	23.4	9.9	3,926	25.2	17.2	4.4	5,499	21.2	19.7	6.7	9,425
Living with spouse and children	14.6	24.5	8.8	27,824	24.4	17.4	5.9	12,251	17.7	22.3	7.9	40,075
Living with children and others	18.3	24.1	9.8	3,751	28.8	16.2	6.4	7,417	25.8	18.4	7.3	11,168
Living with others only	33.2	14.3	6.7	991	35.0	12.6	3.2	1,424	34.3	13.2	4.5	2,415
Religion												
Hindu	15.9	23.6	8.3	27,254	27.3	16.4	5.4	20,523	21.1	20.3	7.0	47,777
Muslim	13.1	25.7	13.2	4,476	24.8	16.5	5.3	3,322	18.2	21.7	9.7	7,798
Christian	24.0	20.7	6.6	3,729	23.2	16.3	4.9	2,826	23.7	18.8	5.9	6,555
Others	9.3	30.0	13.2	1,674	20.6	23.1	8.4	1,379	14.7	26.6	10.8	3,053
Caste/tribe												
Scheduled tribe	28.8	13.1	3.2	6,798	40.6	6.7	1.0	4,634	33.9	10.4	2.3	11,432
Scheduled caste	18.8	19.3	6.1	6,370	33.7	12.3	3.0	4,579	25.5	16.2	4.7	10,949
Other backward class	13.8	25.9	9.8	13,931	25.8	17.6	5.9	10,663	19.3	22.1	8.1	24,594
None of the above	11.6	28.0	11.7	10,034	19.1	21.0	7.7	8,174	15.2	24.7	9.8	18,208
Education												
No schooling	21.2	18.6	5.4	14,963	33.3	11.9	3.6	14,984	27.5	15.1	4.5	29,947
Less than 5 years complete	18.6	19.7	7.0	3,964	25.2	16.5	5.4	3,449	21.8	18.2	6.2	7,413
5-9 years complete	11.4	27.3	10.3	10,004	20.4	22.5	6.2	5,424	14.8	25.5	8.7	15,428
10 or more years complete	7.3	33.4	15.8	8,202	9.1	28.8	12.3	4,193	8.0	31.8	14.6	12,395
Work status												
Currently working	16.6	21.6	5.7	21,571	28.6	14.3	2.2	8,527	20.3	19.4	4.6	30,098
Worked in past but currently not working	17.7	24.1	11.8	4,135	27.9	15.4	5.0	11,764	25.5	17.6	6.7	15,899
Never worked	12.7	28.9	14.7	11,427	22.3	21.5	10.2	7,759	16.9	25.7	12.8	19,186

continued

continued

Background characteristics	Age 45-59*				Age ≥ 60				Total			
	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number
MPCE quintile												
Poorest	20.8	17.9	5.8	7,069	35.3	10.7	3.3	5,722	27.6	14.6	4.7	12,791
Poorer	18.1	20.5	7.5	7,368	31.5	13.4	4.7	5,797	24.3	17.2	6.2	13,165
Middle	16.3	23.5	7.4	7,420	26.7	17.7	4.2	5,769	21.1	20.8	5.9	13,189
Richer	14.3	25.6	10.0	7,712	20.8	21.0	6.1	5,528	17.2	23.6	8.3	13,240
Richest	7.9	33.2	14.6	7,564	15.9	22.3	10.2	5,234	11.2	28.6	12.7	12,798
Total	**15.6**	**24.0**	**9.0**	**37,133**	**26.7**	**16.7**	**5.5**	**28,050**	**20.6**	**20.7**	**7.4**	**65,183**

Note

* *Including spouse irrespective of age.*

BMI levels have been classified according to the WHO classifications: [1]underweight ≤ 18.4; normal=18.5 to 24.9; [2]overweight=25.0 to 29.9; [3]obese ≥30.0

Table 9.26 Prevalence (%) of underweight, overweight and obesity among older adults, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Age 45-59*				Age ≥ 60				Total			
	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number
India	**15.6**	**24.0**	**9.0**	**37,133**	**26.7**	**16.7**	**5.5**	**28,050**	**20.6**	**20.7**	**7.4**	**65,183**
North												
Chandigarh	3.7	35.2	25.9	534	6.1	26.1	21.5	323	4.7	31.6	24.2	857
Delhi	3.6	37.7	19.3	801	8.4	27.3	18.2	469	5.4	33.8	18.9	1,270
Haryana	13.0	24.4	12.3	936	22.1	20.4	4.9	744	17.3	22.5	8.8	1,680
Himachal Pradesh	5.6	34.2	14.2	732	16.8	27.0	8.2	577	10.8	30.8	11.4	1,309
Jammu & Kashmir	6.7	32.2	16.1	770	15.6	22.4	5.3	611	11.0	27.4	10.8	1,381
Punjab	5.0	35.8	21.3	1,044	11.3	28.0	12.8	917	8.0	32.1	17.2	1,961
Rajasthan	19.1	18.8	4.9	1,091	26.0	14.4	5.1	982	22.5	16.6	5.0	2,073
Uttarakhand	11.2	26.1	11.1	669	25.0	15.7	3.6	603	18.0	21.0	7.4	1,272
Central												
Chhattisgarh	29.7	14.0	2.6	1,211	36.2	11.1	1.6	717	32.2	12.9	2.2	1,928
Madhya Pradesh	19.2	18.8	4.9	1,454	35.3	12.1	2.8	1,153	26.7	15.7	3.9	2,607
Uttar Pradesh	21.5	18.9	6.0	2,205	36.6	11.5	3.0	1,926	28.9	15.3	4.5	4,131
East												
Bihar	17.9	18.0	5.7	1,667	31.3	10.8	3.7	1,726	25.1	14.1	4.6	3,393
Jharkhand	22.2	15.2	4.1	1,212	33.0	12.3	2.8	1,086	27.4	13.8	3.5	2,298
Odisha	24.4	16.1	4.8	1,555	37.1	11.6	3.4	1,077	29.8	14.2	4.2	2,632
West Bengal	16.6	22.8	5.5	2,147	31.5	11.9	2.4	1,365	22.6	18.4	4.3	3,512
Northeast												
Arunachal Pradesh	7.0	27.6	5.8	848	10.8	14.4	3.6	289	7.9	24.4	5.2	1,137
Assam	19.8	15.5	2.5	1,399	33.7	11.0	1.1	720	24.7	13.9	2.0	2,119
Manipur	5.8	32.8	8.4	662	19.4	21.7	4.8	517	12.1	27.7	6.7	1,179
Meghalaya	13.4	12.1	2.8	504	28.3	10.2	1.5	373	19.7	11.3	2.2	877
Mizoram	6.5	22.4	6.8	656	18.2	16.4	4.8	467	11.6	19.8	5.9	1,123
Nagaland	4.7	21.1	3.0	662	11.2	15.9	4.5	564	7.9	18.5	3.7	1,226
Tripura	20.2	19.8	3.7	676	37.3	12.8	[0.7]	423	27.0	17.0	2.5	1,099
West												
Dadra & Nagar Haveli	18.8	21.9	8.4	590	40.1	11.9	6.5	400	26.9	18.0	7.7	990
Daman & Diu	7.4	36.4	17.9	532	12.8	27.1	14.7	378	9.8	32.2	16.5	910
Goa	7.9	35.8	12.1	688	12.6	23.9	10.6	568	10.1	30.3	11.4	1,256
Gujarat	16.4	25.2	10.0	1,188	21.7	20.4	7.5	876	18.8	23.0	8.9	2,064
Maharashtra	12.6	27.0	10.3	1,851	20.2	21.1	6.7	1,508	16.3	24.1	8.6	3,359

continued

continued

State/ Union Territory	Age 45-59*				Age ≥ 60				Total			
	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number	Underweight[1]	Overweight[2]	Obesity[3]	Number
South												
Andaman & Nicobar Islands	7.6	35.6	14.1	664	14.8	21.9	7.2	472	10.6	30.0	11.3	1,136
Andhra Pradesh	8.1	35.8	15.3	1,298	15.3	23.0	9.3	913	11.1	30.4	12.8	2,211
Karnataka	11.9	27.0	12.7	1,297	22.3	21.4	9.0	904	16.1	24.7	11.2	2,201
Kerala	4.1	38.6	10.6	1,188	9.5	28.8	6.3	1,072	6.8	33.7	8.4	2,260
Lakshadweep	5.0	35.9	13.3	605	4.7	28.8	10.0	462	4.8	32.5	11.8	1,067
Puducherry	6.0	38.7	14.9	724	8.7	26.9	15.1	563	7.2	33.3	15.0	1,287
Tamil Nadu	8.0	30.0	14.1	1,886	18.5	21.7	7.4	1,383	12.7	26.3	11.1	3,269
Telangana	13.4	26.6	11.6	1,187	19.7	21.8	7.2	922	16.3	24.4	9.6	2,109

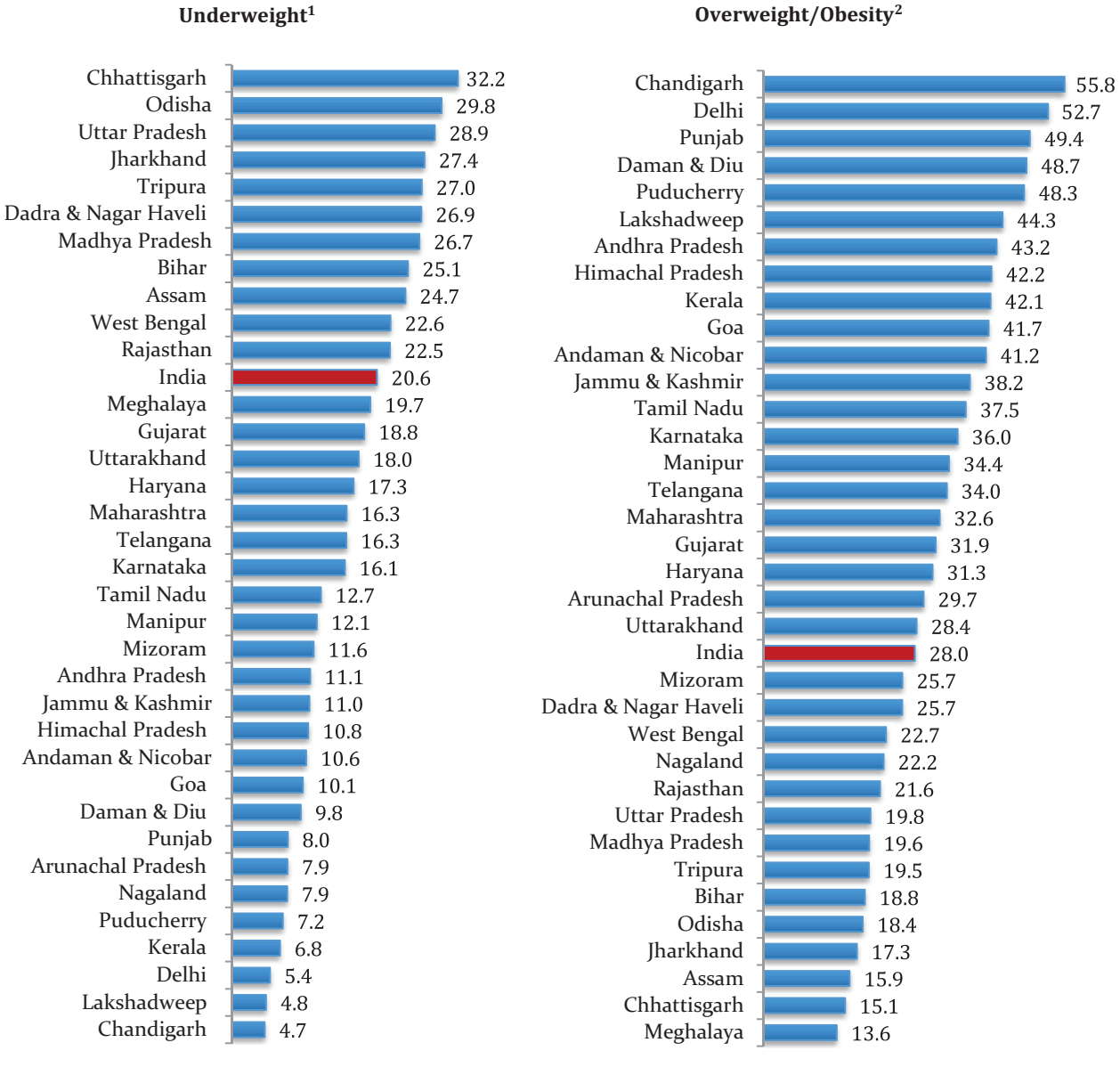
Note

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

BMI levels have been classified according to the WHO classifications: [1]underweight ≤ 18.4; normal=18.5 to 24.9; [2]overweight=25.0 to 29.9; [3]obese ≥30.0

Figure 9.13 shows the cross-state variations in the prevalence of undernutrition (underweight) and overnutrition (overweight/obesity). Overall, the prevalence of overweight/obesity among older adults age 45 and above in India is 28%. Around half of older adults age 45 and above in Chandigarh (56%), Delhi (53%), and Punjab (49%) are either overweight or obese (Figure 9.13). Across the states of India, the prevalence of obesity among older adults age 45 and above ranges from 24% in Chandigarh to 2% in (Table 9.26). The prevalence of obesity among elderly age 60 and above is higher in the states/UTs of Chandigarh (22%), Delhi (18%), Puducherry (15%) and Daman & Diu (15%).

Figure 9.13 Prevalence (%) of undernutrition (underweight) and overnutrition (overweight/obesity) among older adults age 45 and above*, states/UTs, LASI Wave 1, 2017-18



Note
* Including spouse irrespective of age.
[1] Underweight refers to BMI ≤ 18.4.
[2] Overweight/obesity refers to BMI ≥ 25

9.4.3 Waist and hip circumference

Body fat distribution is also an important risk factor for obesity-related diseases. Excess abdominal fat (also known as central or upper body fat) is associated with an increased risk of a cardio-metabolic disease. However, the precise measurement of abdominal fat content requires the use of expensive radiological imaging techniques. Therefore, waist circumference is often used as a surrogate marker of abdominal fat mass (Klein et al., 2007). Men and women who have waist circumferences of >102 cm and 88 cm, respectively, are considered to be at an increased risk of metabolic complications (WHO, 2011b).

Table 9.27 presents the mean waist and hip circumference for men and women by background characteristics. The mean waist and hip circumferences among older adult men age 45 and above in India are 85.3 cm and 89.4 cm, respectively, and those among older adult women are 84.5 cm and 93.0 cm, respectively. The mean waist and hip circumferences are lower among elderly men and women age 60 and above than among older adult men and women age 45-59. The mean waist and hip circumferences are higher among older adult men age 45 and above residing in urban than for those residing in rural areas. This urban-rural difference is even more pronounced among older adult women.

Cross-state variations in the mean waist and hip circumferences and waist-to-hip ratio of older adult men and women are presented in Table 9.28 and Table 9.29. Among older adult men and women age 45 and above, the mean waist and hip circumferences are comparatively higher in Delhi, Chandigarh, Punjab, and Puducherry.

Table 9.30 presents the prevalence of high-risk waist circumference among older adult men and women by background characteristics. The prevalence of a high-risk waist circumference among older women age 45 and above (39%) is four-fold the rate among older men (9%). The prevalence of high-risk waist circumference is lower among elderly women age 60 and above (37%) than among older women age 45-59 (41%). Among elderly men and women, the prevalence of a high-risk waist circumference is much higher among those residing in urban areas (17% and 58%, respectively) than among those residing in rural areas (6% and 28%, respectively). It is also higher among elderly men and women with 10 or more years of schooling (18% and 73%, respectively) than among those with no schooling (4% and 29%, respectively) and those in the richest MPCE quintile (14% and 52%, respectively) than among those in the poorest MPCE quintile (5% and 25%, respectively).

The state/UTs-level prevalence of high-risk waist circumference by sex is presented in Table 9.31. Among elderly men age 60 and above, the prevalence of high-risk waist circumference is the highest in Delhi (21%), followed by Punjab (19%), Chandigarh (18%), and Haryana (16%). Among older adult women age 45 and above, the prevalence of high-risk waist circumference ranges from 22% in Assam to 73% in Chandigarh. In 13 states/UTs, more than half of elderly women age 60 and above have high-risk waist circumference, with the highest prevalence observed in Chandigarh (76%), followed by Delhi (67%), Punjab (65%), and Kerala (64%).

Table 9.27 Mean values of waist circumference, hip circumference and waist-to-hip ratio among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male											
	Age 45-59*				Age ≥ 60				Total			
	Mean waist circumference	Mean hip circumference	Mean waist to hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist to hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist to hip ratio	Number
Place of residence												
Rural	84.1	88.8	0.95	8,995	82.3	87.0	0.94	9,131	83.1	87.8	0.94	18,126
Urban	90.9	94.5	0.96	4,913	90.4	92.2	0.98	4,371	90.7	93.4	0.97	9,284
Marital status												
Currently married	86.5	90.7	0.95	12,976	84.9	88.8	0.95	11,122	85.7	89.8	0.95	24,098
Widowed	82.9	87.8	0.94	446	82.4	86.9	0.95	2,032	82.5	87.0	0.95	2,478
Divorced/Separated/ Deserted/Others	82.7	88.3	0.93	486	81.6	86.0	0.95	348	82.1	87.2	0.94	834
Education												
No schooling	82.1	87.4	0.94	3,621	80.3	85.8	0.93	4,857	81.0	86.4	0.94	8,478
Less than 5 years complete	83.5	88.4	0.94	1,740	83.3	87.4	0.95	1,998	83.4	87.9	0.95	3,738
5-9 years complete	86.7	90.7	0.95	4,318	85.6	89.1	0.96	3,493	86.2	90.0	0.96	7,811
10 or more years complete	90.6	94.2	0.96	4,229	91.0	92.8	0.98	3,154	90.8	93.6	0.97	7,383
Work status												
Currently working	86.2	90.6	0.95	12,235	83.5	87.9	0.95	5,796	85.3	89.7	0.95	18,031
Worked in past but currently not working	86.6	90.2	0.96	1,250	85.3	88.9	0.96	7,059	85.5	89.0	0.96	8,309
Never worked	85.2	90.0	0.94	423	83.2	87.7	0.95	647	83.9	88.5	0.95	1,070
MPCE quintile												
Poorest	83.6	88.8	0.94	2,677	81.4	86.3	0.94	2,695	82.5	87.5	0.94	5,372
Poorer	84.5	89.1	0.95	2,751	82.5	87.0	0.95	2,760	83.5	88.0	0.95	5,511
Middle	85.3	89.7	0.95	2,768	84.6	88.5	0.95	2,759	84.9	89.1	0.95	5,527
Richer	88.1	91.7	0.96	2,889	85.9	89.4	0.96	2,691	87.0	90.5	0.96	5,580
Richest	90.1	94.0	0.96	2,823	88.4	91.4	0.97	2,597	89.3	92.7	0.96	5,420
Total	**86.2**	**90.6**	**0.95**	**13,908**	**84.4**	**88.4**	**0.95**	**13,502**	**85.3**	**89.4**	**0.95**	**27,410**

continued

continued

Background characteristics	Female											
	Age 45-59*				Age ≥ 60				Total			
	Mean waist circumference	Mean hip circumference	Mean waist to hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist to hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist to hip ratio	Number
Place of residence												
Rural	82.0	91.4	0.90	14,787	80.6	88.6	0.91	9,548	81.4	90.2	0.90	24,335
Urban	91.5	99.6	0.92	8,429	90.7	97.6	0.93	4,977	91.2	98.8	0.92	13,406
Marital status												
Currently married	85.3	94.3	0.90	19,357	84.4	92.2	0.91	6,822	85.1	93.7	0.91	26,179
Widowed	84.4	93.5	0.90	3,111	83.1	90.6	0.92	7,342	83.4	91.3	0.91	10,453
Divorced/Separated/ Deserted/Others	82.3	91.3	0.90	748	81.8	90.6	0.90	361	82.2	91.1	0.90	1,109
Education												
No schooling	81.9	91.1	0.90	11,339	81.0	88.9	0.91	10,115	81.5	90.1	0.90	21,454
Less than 5 years complete	84.4	94.0	0.90	2,224	87.0	94.0	0.92	1,447	85.4	94.0	0.91	3,671
5-9 years complete	87.7	96.7	0.91	5,682	91.2	97.3	0.93	1,928	88.7	96.8	0.91	7,610
10 or more years complete	92.7	100.7	0.92	3,971	94.5	103.4	0.92	1,035	93.1	101.3	0.92	5,006
Work status					0.0	0.0	0.00		0.0	0.0	0.00	
Currently working	82.4	92.3	0.89	9,331	79.8	88.9	0.90	2,730	81.8	91.4	0.89	12,061
Worked in past but currently not working	86.1	95.2	0.90	2,884	82.4	90.7	0.91	4,693	83.7	92.3	0.91	7,577
Never worked	87.4	95.5	0.91	11,001	86.2	92.8	0.93	7,102	86.9	94.4	0.92	18,103
MPCE quintile												
Poorest	82.1	91.4	0.90	4,392	79.6	87.9	0.90	3,023	81.0	89.9	0.90	7,415
Poorer	83.8	93.0	0.90	4,614	81.9	89.8	0.91	3,033	83.0	91.6	0.90	7,647
Middle	84.7	93.7	0.90	4,651	83.1	90.7	0.92	3,005	84.1	92.5	0.91	7,656
Richer	85.6	94.6	0.90	4,821	87.3	93.8	0.93	2,834	86.3	94.3	0.91	7,655
Richest	89.7	98.2	0.91	4,738	88.0	96.1	0.92	2,630	89.1	97.4	0.91	7,368
Total	**85.1**	**94.1**	**0.90**	**23,216**	**83.7**	**91.3**	**0.91**	**14,525**	**84.5**	**93.0**	**0.91**	**37,741**

Note

** Including spouse irrespective of age*

Table 9.28 Mean values of waist circumference, hip circumference and waist-to-hip ratio among older adult male, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Male											
	Age 45-59*				Age ≥ 60				Total			
	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number
India	**86.2**	**90.6**	**0.95**	**13,908**	**84.4**	**88.4**	**0.95**	**13,502**	**85.3**	**89.4**	**0.95**	**27,410**
North												
Chandigarh	90.5	91.4	0.99	217	91.9	91.6	1.00	155	91.1	91.5	0.99	372
Delhi	93.9	96.1	0.98	335	93.9	95.6	0.98	239	93.9	95.9	0.98	574
Haryana	91.1	94.7	0.96	371	89.1	91.9	0.97	308	90.2	93.4	0.96	679
Himachal Pradesh	89.5	93.1	0.96	238	88.7	91.0	0.97	288	89.0	91.9	0.97	526
Jammu & Kashmir	89.9	93.1	0.97	282	88.6	91.4	0.97	327	89.1	92.1	0.97	609
Punjab	93.4	93.7	0.99	393	90.8	91.4	0.99	456	92.0	92.5	0.99	849
Rajasthan	85.7	90.2	0.95	421	84.5	89.3	0.94	456	85.1	89.7	0.95	877
Uttarakhand	91.1	93.0	0.98	230	89.5	90.7	0.99	283	90.2	91.7	0.98	513
Central												
Chhattisgarh	82.0	87.7	0.93	493	81.7	86.9	0.94	365	81.9	87.3	0.93	858
Madhya Pradesh	85.2	90.6	0.94	614	81.4	88.0	0.92	563	83.3	89.3	0.93	1,177
Uttar Pradesh	84.1	87.7	0.96	881	81.9	85.9	0.95	1,010	82.9	86.7	0.95	1,891
East												
Bihar	84.4	88.1	0.96	612	81.9	86.0	0.95	883	82.9	86.8	0.95	1,495
Jharkhand	84.0	88.2	0.95	427	82.2	86.0	0.95	543	83.0	87.0	0.95	970
Odisha	82.2	87.2	0.94	602	80.8	85.7	0.94	526	81.5	86.5	0.94	1,128
West Bengal	84.4	88.2	0.95	785	82.2	86.3	0.95	671	83.3	87.3	0.95	1,456
Northeast												
Arunachal Pradesh	82.7	89.1	0.93	346	79.6	85.7	0.93	162	81.7	88.1	0.93	508
Assam	80.6	85.1	0.95	517	79.6	83.9	0.95	350	80.2	84.6	0.95	867
Manipur	86.9	91.2	0.95	282	84.8	89.3	0.95	233	85.9	90.3	0.95	515
Meghalaya	79.4	86.3	0.92	186	81.0	85.8	0.94	147	80.1	86.1	0.93	333
Mizoram	85.0	92.5	0.92	266	82.8	89.6	0.92	233	83.9	91.0	0.92	499
Nagaland	82.8	89.2	0.93	275	83.4	87.9	0.95	283	83.2	88.4	0.94	558
Tripura	82.6	87.8	0.94	241	81.8	86.6	0.94	206	82.2	87.2	0.94	447
West												
Dadra & Nagar Haveli	87.9	92.3	0.95	254	84.5	89.1	0.94	176	86.6	91.1	0.95	430
Daman & Diu	92.4	94.3	0.98	209	90.6	92.1	0.98	160	91.6	93.3	0.98	369
Goa	91.3	94.3	0.97	239	91.1	92.4	0.98	255	91.2	93.3	0.98	494
Gujarat	87.0	92.2	0.94	470	87.8	91.0	0.96	401	87.4	91.6	0.95	871
Maharashtra												

Continued

continued

State/ Union Territory	Male											
	Age 45-59*				Age ≥ 60				Total			
	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number
South	88.0	92.2	0.95	647	88.0	90.9	0.97	702	88.0	91.5	0.96	1,349
Andaman & Nicobar Islands	87.7	92.1	0.95	265	86.0	88.7	0.97	248	86.9	90.5	0.96	513
Andhra Pradesh	91.9	94.2	0.97	455	87.5	91.2	0.96	455	89.7	92.7	0.96	910
Karnataka	87.5	93.5	0.93	447	84.2	88.8	0.95	429	85.9	91.3	0.94	876
Kerala	91.2	93.3	0.98	405	91.4	92.0	0.99	483	91.3	92.5	0.99	888
Lakshadweep	90.5	92.2	0.98	192	89.6	89.2	1.01	227	90.0	90.4	1.00	419
Puducherry	90.4	94.7	0.95	253	90.0	93.8	0.96	239	90.2	94.3	0.96	492
Tamil Nadu	87.9	92.2	0.95	655	86.8	90.8	0.95	611	87.4	91.5	0.95	1,266
Telangana	89.0	93.0	0.95	403	86.5	90.4	0.95	429	87.6	91.6	0.95	832

Note

* Including spouse irrespective of age.

Table 9.29 Mean values of waist circumference, hip circumference and waist-to-hip ratio among older adult female, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Female											
	Age 45-59*				Age ≥ 60				Total			
	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number
India	**85.1**	**94.1**	**0.90**	**23,216**	**83.7**	**91.3**	**0.91**	**14,525**	**84.5**	**93.0**	**0.91**	**37,741**
North												
Chandigarh	95.1	98.4	0.97	316	96.7	98.0	0.99	168	95.7	98.3	0.97	484
Delhi	93.5	101.3	0.92	466	93.5	99.6	0.94	230	93.5	100.7	0.93	696
Haryana	89.6	97.0	0.92	564	88.5	93.9	0.94	433	89.1	95.5	0.93	997
Himachal Pradesh	90.0	95.4	0.94	494	90.1	93.7	0.96	289	90.0	94.8	0.95	783
Jammu & Kashmir	95.0	97.5	0.97	488	91.0	92.8	0.98	284	93.3	95.6	0.98	772
Punjab	94.3	97.2	0.97	651	93.7	94.9	0.99	460	94.0	96.2	0.98	1,111
Rajasthan	82.0	91.3	0.90	670	83.6	90.8	0.92	526	82.8	91.1	0.91	1,196
Uttarakhand	89.5	97.4	0.92	439	87.0	93.4	0.93	320	88.4	95.6	0.92	759
Central												
Chhattisgarh	80.1	90.2	0.89	718	81.0	88.3	0.92	352	80.4	89.5	0.90	1,070
Madhya Pradesh	82.7	94.8	0.87	839	82.2	91.4	0.90	590	82.4	93.3	0.88	1,429
Uttar Pradesh	82.6	91.3	0.90	1,323	79.7	87.7	0.91	913	81.4	89.7	0.90	2,236
East												
Bihar	81.6	88.8	0.92	1,055	77.7	84.9	0.91	843	79.8	87.0	0.92	1,898
Jharkhand	79.3	87.1	0.91	785	78.5	84.9	0.92	543	79.0	86.2	0.91	1,328
Odisha	82.1	90.4	0.91	953	79.6	86.2	0.92	551	81.1	88.8	0.91	1,504
West Bengal	85.9	92.2	0.93	1,362	83.8	87.8	0.95	694	85.2	90.6	0.94	2,056
Northeast												
Arunachal Pradesh	83.6	91.4	0.91	502	82.5	89.0	0.92	127	83.4	90.9	0.91	629
Assam	79.1	85.9	0.92	882	76.6	83.0	0.92	368	78.3	85.0	0.92	1,250
Manipur	88.9	94.4	0.94	380	88.0	91.3	0.96	284	88.5	93.0	0.95	664
Meghalaya	81.9	88.1	0.93	318	79.2	83.8	0.94	226	80.8	86.3	0.93	544
Mizoram	84.2	93.3	0.90	390	81.6	89.7	0.91	234	83.2	92.0	0.90	624
Nagaland	83.2	90.1	0.92	387	79.8	86.2	0.93	281	81.8	88.5	0.93	668
Tripura	82.6	91.5	0.90	435	79.2	86.0	0.92	217	81.4	89.6	0.91	652
West												
Dadra & Nagar Haveli	86.0	94.4	0.91	335	82.3	89.4	0.92	220	84.6	92.5	0.91	555
Daman & Diu	89.7	100.3	0.89	323	90.3	98.4	0.92	217	90.0	99.5	0.90	540
Goa	91.4	99.6	0.92	448	90.7	99.3	0.91	312	91.1	99.5	0.91	760
Gujarat	86.3	96.9	0.89	718	86.0	95.0	0.90	474	86.2	96.1	0.90	1,192
Maharashtra	85.7	96.7	0.88	1,202	84.1	94.0	0.89	804	85.0	95.5	0.89	2,006

continued

continued

State/ Union Territory	Female											
	Age 45-59*				Age ≥ 60				Total			
	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number	Mean waist circumference	Mean hip circumference	Mean waist-to-hip ratio	Number
South												
Andaman & Nicobar Islands	87.1	95.7	0.91	399	84.6	91.3	0.92	223	86.2	94.1	0.91	622
Andhra Pradesh	89.3	100.3	0.89	843	87.5	97.1	0.90	458	88.6	99.2	0.89	1,301
Karnataka	85.3	96.9	0.88	850	87.2	97.8	0.89	475	86.0	97.2	0.88	1,325
Kerala	94.6	97.6	0.97	782	91.3	94.8	0.96	585	93.0	96.3	0.97	1,367
Lakshadweep	91.9	95.9	0.96	413	90.7	93.7	0.97	235	91.4	95.0	0.96	648
Puducherry	88.9	98.4	0.90	471	88.2	97.9	0.90	324	88.6	98.2	0.90	795
Tamil Nadu	87.1	96.8	0.90	1,231	83.7	92.4	0.91	772	85.8	95.0	0.90	2,003
Telangana	84.5	96.4	0.88	784	85.6	95.2	0.90	493	84.9	95.9	0.88	1,277

Note

* Including spouse irrespective of age.

Table 9.30 Prevalence (%) of high-risk waist circumference among older adult male and female by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	High-risk waist circumference[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence												
Rural	6.5	8,995	6.0	9,131	6.2	18,126	31.4	14,787	27.8	9,548	29.9	24,335
Urban	15.7	4,913	16.9	4,371	16.3	9,284	61.3	8,429	58.1	4,977	60.0	13,406
Marital status												
Currently married	9.6	12,976	9.3	11,122	9.5	24,098	42.1	19,357	39.2	6,822	41.3	26,179
Widowed	6.1	446	7.4	2,032	7.2	2,478	38.4	3,111	35.3	7,342	36.1	10,453
Divorced/Separated/Deserted/ Others	7.2	486	3.7	348	5.6	834	28.4	748	31.6	361	29.4	1,109
Living arrangement												
Living alone	4.0	204	10.5	324	8.8	528	34.7	437	27.2	1,132	28.9	1,569
Living with spouse and/or others	9.2	1,388	8.5	3,264	8.7	4,652	42.9	2,538	36.8	2,233	40.0	4,771
Living with spouse and children	9.6	11,375	9.7	7,751	9.7	19,126	41.9	16,441	40.5	4,494	41.6	20,935
Living with children and others	7.1	557	7.5	1,714	7.4	2,271	40.1	3,193	37.7	5,693	38.4	8,886
Living with others only	7.8	384	2.7	449	4.7	833	24.3	607	29.9	973	27.7	1,580
Religion												
Hindu	8.9	10,269	8.7	9,875	8.8	20,144	39.1	16,978	35.5	10,632	37.6	27,610
Muslim	10.7	1,551	9.1	1,616	9.8	3,167	54.4	2,924	44.1	1,702	50.4	4,626
Christian	11.1	1,428	7.5	1,337	9.1	2,765	34.4	2,301	38.1	1,487	35.8	3,788
Others	16.5	660	13.9	674	15.1	1,334	51.9	1,013	49.9	704	51.0	1,717
Caste/tribe												
Scheduled tribe	3.9	2,639	3.0	2,202	3.5	4,841	21.6	4,157	19.6	2,430	20.8	6,587
Scheduled caste	5.8	2,365	6.0	2,201	5.9	4,566	34.7	4,004	28.3	2,375	32.1	6,379
Other backward class	10.0	5,177	8.3	5,191	9.1	10,368	42.5	8,752	37.0	5,465	40.3	14,217
None of the above	13.0	3,727	13.5	3,908	13.3	7,635	50.5	6,303	48.3	4,255	49.5	10,558
Education												
No schooling	4.3	3,621	4.0	4,857	4.1	8,478	31.6	11,339	29.1	10,115	30.4	21,454
Less than 5 years complete	5.1	1,740	8.0	1,998	6.7	3,738	39.3	2,224	46.2	1,447	42.0	3,671
5-9 years complete	9.8	4,318	9.2	3,493	9.5	7,811	49.2	5,682	58.1	1,928	51.7	7,610
10 or more years complete	15.3	4,229	17.8	3,154	16.4	7,383	63.8	3,971	72.8	1,035	65.8	5,006
Work status												
Currently working	9.2	12,235	7.5	5,796	8.6	18,031	32.3	9,331	24.7	2,730	30.5	12,061
Worked in past but currently not working	11.0	1,250	10.4	7,059	10.5	8,309	44.8	2,884	34.5	4,693	38.2	7,577
Never worked	10.3	423	5.5	647	7.2	1,070	48.6	11,001	43.9	7,102	46.6	18,103

continued

continued

Background characteristics	High-risk waist circumference[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
MPCE quintile												
Poorest	5.8	2,677	5.3	2,695	5.6	5,372	30.7	4,392	24.8	3,023	28.1	7,415
Poorer	5.9	2,751	7.1	2,760	6.5	5,511	37.2	4,614	31.5	3,033	34.8	7,647
Middle	7.6	2,768	9.1	2,759	8.4	5,527	41.4	4,651	34.9	3,005	38.7	7,656
Richer	13.1	2,889	9.9	2,691	11.4	5,580	43.2	4,821	46.6	2,834	44.5	7,655
Richest	15.1	2,823	14.2	2,597	14.7	5,420	54.5	4,738	52.3	2,630	53.7	7,368
Total	**9.4**	**13,908**	**8.9**	**13,502**	**9.1**	**27,410**	**41.2**	**23,216**	**37.0**	**14,525**	**39.4**	**37,741**

Note

* Including spouse irrespective of age.

[1] Metabolic complication: critical limit classification for high-risk waist circumference for men is ≥102 cm and for women is ≥88cm.

Table 9.31 Prevalence (%) of high-risk waist circumference among older adult male and female, states/ UTs, LASI Wave 1, 2017-18

State/ Union Territory	High-risk waist circumference[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**9.4**	**13,908**	**8.9**	**13,502**	**9.1**	**27,410**	**41.2**	**23,216**	**37.0**	**14,525**	**39.4**	**37,741**
North												
Chandigarh	18.3	217	18.0	155	18.2	372	71.4	316	75.5	168	72.9	484
Delhi	18.1	335	21.4	239	19.5	574	71.6	466	67.3	230	70.2	696
Haryana	17.2	371	15.9	308	16.6	679	55.4	564	50.0	433	52.9	997
Himachal Pradesh	12.1	238	13.6	288	13.0	526	58.2	494	58.9	289	58.4	783
Jammu & Kashmir	9.5	282	10.2	327	9.9	609	75.0	488	60.0	284	68.7	772
Punjab	21.8	393	19.2	456	20.4	849	67.2	651	65.0	460	66.3	1,111
Rajasthan	6.4	421	10.5	456	8.6	877	32.0	670	36.7	526	34.2	1,196
Uttarakhand	18.8	230	13.4	283	15.7	513	54.7	439	50.6	320	52.9	759
Central												
Chhattisgarh	4.5	493	7.2	365	5.6	858	26.2	718	25.9	352	26.1	1,070
Madhya Pradesh	7.9	614	5.9	563	6.9	1,177	32.1	839	31.5	590	31.8	1,429
Uttar Pradesh	9.5	881	6.5	1,010	7.9	1,891	33.9	1,323	27.5	913	31.1	2,236
East												
Bihar	5.9	612	6.7	883	6.4	1,495	28.2	1,055	18.4	843	23.7	1,898
Jharkhand	6.9	427	7.1	543	7.0	970	25.2	785	23.3	543	24.4	1,328
Odisha	6.1	602	7.2	526	6.6	1,128	31.5	953	23.1	551	28.3	1,504
West Bengal	6.2	785	3.7	671	5.0	1,456	43.2	1,362	39.8	694	42.0	2,056
Northeast												
Arunachal Pradesh	3.9	346	1.9	162	3.3	508	33.0	502	27.0	127	31.9	629
Assam	2.0	517	3.2	350	2.5	867	22.6	882	18.9	368	21.5	1,250
Manipur	10.0	282	7.7	233	8.9	515	55.3	380	45.8	284	51.0	664
Meghalaya	1.4	186	4.2	147	2.6	333	24.8	318	20.4	226	23.0	544
Mizoram	6.9	266	5.9	233	6.4	499	35.1	390	31.0	234	33.5	624
Nagaland	1.1	275	10.3	283	6.4	558	33.9	387	17.2	281	26.8	668
Tripura	5.1	241	4.5	206	4.8	447	32.4	435	23.9	217	29.4	652
West												
Dadra & Nagar Haveli	13.2	254	12.3	176	12.8	430	40.7	335	28.5	220	36.1	555
Daman & Diu	19.8	209	12.7	160	16.5	369	53.4	323	56.8	217	54.8	540
Goa	15.5	239	15.4	255	15.4	494	63.2	448	57.2	312	60.7	760
Gujarat	11.7	470	11.7	401	11.7	871	46.8	718	45.7	474	46.3	1,192
Maharashtra	11.2	647	14.0	702	12.8	1,349	43.2	1,202	39.1	804	41.4	2,006

continued

continued

State/ Union Territory	High-risk waist circumference[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**9.4**	**13,908**	**8.9**	**13,502**	**9.1**	**27,410**	**41.2**	**23,216**	**37.0**	**14,525**	**39.4**	**37,741**
North												
Chandigarh	18.3	217	18.0	155	18.2	372	71.4	316	75.5	168	72.9	484
South												
Andaman & Nicobar Islands	8.8	265	10.4	248	9.6	513	48.6	399	38.9	223	45.2	622
Andhra Pradesh	22.9	455	14.6	455	18.7	910	56.7	843	50.2	458	54.4	1,301
Karnataka	8.2	447	6.1	429	7.2	876	41.7	850	46.2	475	43.3	1,325
Kerala	11.6	405	14.0	483	13.0	888	74.5	782	63.6	585	69.3	1,367
Lakshadweep	8.3	192	9.4	227	9.0	419	68.0	413	60.0	235	64.8	648
Puducherry	11.9	253	13.1	239	12.5	492	57.5	471	52.0	324	55.1	795
Tamil Nadu	10.1	655	9.2	611	9.6	1,266	45.5	1,231	35.0	772	41.3	2,003
Telangana	15.4	403	12.0	429	13.5	832	38.2	784	40.0	493	38.9	1,277

Note

* Including spouse irrespective of age.

[1] Metabolic complication: critical limit classification for high-risk waist circumference for men is ≥102 cm and for women is ≥88cm.

9.4.4 Waist-to-hip ratio

The waist-to-hip ratio (WHR) is a quick measure of fat distribution that may indicate a person's overall health. People who carry more weight around their middle than around their hips may be at a higher risk of developing metabolic health conditions. The WHR is calculated by dividing the waist circumference in cm by the hip circumference in cm. According to the WHO, the WHR is classified as follows (WHO, 2011b):

WHR Classification

Men	Women	Risk level
<0.90	<0.85	Low
≥0.90	≥0.85	High

The mean WHR among older adult men and women by background characteristics and by states/UTs are presented in Tables 9.26-9.28. The mean WHRs of older men and women age 45 and above are 0.95 and 0.91, respectively. The WHR is higher among older adult men and women age 45 and above residing in urban areas than their rural counterparts. The WHR does not show much variation by age. The elderly men and women age 60 and above in Chandigarh, Kerala, Lakshadweep, and Jammu & Kashmir have a higher mean WHR than those residing in other states/UTs.

Table 9.32 presents the prevalence of low and high-risk WHR among older adults age 45 and above in India by background characteristics. Overall, three-quarters of older adults age 45 and above (79%) as well as elderly age 60 and above (79%) have high-risk WHR. Among elderly age 60 and above, the prevalence of high-risk WHR is higher in urban (86%) than in rural areas (76%) and higher among women (80%) than among men (78%). The prevalence of high-risk WHR increases with educational attainment and MPCE quintile.

Table 9.33 presents the cross-state variations in low and high-risk WHR. The prevalence of high-risk WHR among older adults age 45 and above ranges from 68% in Madhya Pradesh to 96.2% in Lakshadweep.

Key findings: anthropometry

- In India, more than a quarter of elderly age 60 and above are underweight (27%) and a fifth of elderly are overweight/obese (22%), indicating a dual burden of undernutrition and overnutrition among elderly in India. The prevalence of obesity among elderly is 6%.
- The prevalence of underweight among elderly age 60 and above in rural areas (32%) is almost threefold the rate in urban areas (12%). Underweight is more common among Scheduled tribe (41%), elderly with no schooling (33%), and those in the poorest quintile (35%). In contrast, the prevalence rates of overweight and obesity are more common among elderly in urban areas (27% and 12%, respectively), among women (18% and 8%, respectively), among those who have never worked (22% and 10% respectively), among those with 10 or more years of schooling (29% and 12%, respectively), and among those in the richest MPCE quintile (22% and 10%, respectively).
- The prevalence of obesity among elderly age 60 and above is the highest in the states/UTs of Chandigarh (22%), Delhi (18%), and Puducherry (15%) and Daman & Diu (15%). In contrast, more than a third of elderly age 60 and above are underweight in Dadra & Nagar Haveli (40%), Odisha (37%), Tripura (37%), Uttar Pradesh (37%), Chhattisgarh (36%), Madhya Pradesh (35%), and Assam (34%).
- The prevalence of high-risk waist circumference is much higher among older adult women age 45 and above (39%) than for men (9%). However, the prevalence of high-risk WHR does not vary much between older adult men and women age 45 and above.

Table 9.32 Prevalence (%) of low risk and high-risk waist-to-hip ratio (WHR) among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*			Age ≥ 60			Total			Male (Age ≥ 45)			Female (Age ≥ 45)		
	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number
Place of residence															
Rural	24.2	75.8	23,782	24.1	75.9	18,679	24.1	75.9	42,461	25.15	74.85	18,126	23.4	76.6	24,335
Urban	16.2	83.8	13,342	13.6	86.4	9,348	15.1	84.9	22,690	13.73	86.27	9,284	16.0	84.0	13,406
Sex															
Male	21.2	78.8	13,908	22.5	77.5	13,502	21.9	78.1	27,410	21.87	78.13	27,410	na	na	na
Female	21.9	78.1	23,216	19.8	80.2	14,525	21.0	79.0	37,741	na	na	na	21.0	79.0	37,741
Marital status															
Currently married	21.8	78.2	32,333	20.7	79.3	17,944	21.4	78.6	50,277	21.37	78.63	24,098	21.4	78.6	26,179
Widowed	20.9	79.1	3,557	21.6	78.4	9,374	21.5	78.5	12,931	25.77	74.23	2,478	20.4	79.6	10,453
Divorced/Separated/Deserted/Others	18.0	82.0	1,234	22.8	77.2	709	19.8	80.2	1,943	23.09	76.91	834	17.4	82.6	1,109
Living arrangement															
Living alone	22.8	77.2	641	22.6	77.4	1,456	22.6	77.4	2,097	29.27	70.73	20,144	20.8	79.2	1,569
Living with spouse and/or others	24.0	76.0	3,926	21.7	78.3	5,497	22.7	77.3	9,423	24.60	75.40	3,167	20.8	79.2	4,771
Living with spouse and children	21.5	78.5	27,816	20.3	79.7	12,245	21.1	78.9	40,061	20.56	79.44	2,765	21.7	78.3	20,935
Living with children and others	19.8	80.2	3,750	21.4	78.6	7,407	20.9	79.1	11,157	23.21	76.79	1,334	20.3	79.7	8,886
Living with others only	19.0	81.0	991	22.0	78.0	1,422	20.8	79.2	2,413	26.88	73.12	528	17.8	82.2	1,580
Religion															
Hindu	23.3	76.7	27,247	22.3	77.7	20,507	22.8	77.2	47,754	22.52	77.48	4,652	23.1	76.9	27,610
Muslim	13.1	86.9	4,475	14.5	85.5	3,318	13.7	86.3	7,793	17.40	82.60	19,126	11.2	88.8	4,626
Christian	18.1	81.9	3,729	15.2	84.8	2,824	16.8	83.2	6,553	24.14	75.86	2,271	12.5	87.5	3,788
Others	11.8	88.2	1,673	18.5	81.5	1,378	15.0	85.0	3,051	18.84	81.16	833	12.0	88.0	1,717
Caste/tribe															
Scheduled tribe	30.0	70.0	6,796	25.6	74.4	4,632	28.1	71.9	11,428	34.99	65.01	4,841	23.2	76.8	6,587
Scheduled caste	21.3	78.7	6,369	23.6	76.4	4,576	22.3	77.7	10,945	24.60	75.40	4,566	20.7	79.3	6,379
Other backward class	22.4	77.6	13,929	22.6	77.4	10,656	22.5	77.5	24,585	21.45	78.55	10,368	23.2	76.8	14,217
None of the above	17.6	82.4	10,030	15.5	84.5	8,163	16.6	83.4	18,193	16.39	83.61	7,635	16.7	83.3	10,558
Education															
No schooling	24.4	75.6	14,960	23.4	76.6	14,972	23.9	76.1	29,932	27.67	72.33	8,478	22.4	77.6	21,454
Less than 5 years complete	25.7	74.3	3,964	21.9	78.1	3,445	23.9	76.1	7,409	25.95	74.05	3,738	21.7	78.3	3,671
5-9 years complete	19.9	80.1	10,000	18.2	81.8	5,421	19.3	80.7	15,421	20.17	79.83	7,811	18.3	81.7	7,610
10 or more years complete	15.9	84.1	8,200	14.7	85.3	4,189	15.5	84.5	12,389	14.07	85.93	7,383	17.7	82.3	5,006
Work status															
Currently working	23.7	76.3	21,566	24.8	75.2	8,526	24.1	75.9	30,092	22.52	77.48	18,031	26.3	73.7	12,061
Worked in past but currently not working	22.6	77.4	4,134	20.8	79.2	11,752	21.2	78.8	15,886	19.92	80.08	8,309	22.5	77.5	7,577
Never worked	16.8	83.2	11,424	17.1	82.9	7,749	16.9	83.1	19,173	27.29	72.71	1,070	16.5	83.5	18,103

continued

continued

Background characteristics	Age 45-59*			Age ≥ 60			Total			Male (Age ≥ 45)			Female (Age ≥ 45)		
	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number
MPCE quintile															
Poorest	26.1	73.9	7,069	24.7	75.3	5,718	25.4	74.6	12,787	27.15	72.85	5,372	24.2	75.8	7,415
Poorer	22.3	77.7	7,365	22.9	77.1	5,793	22.6	77.4	13,158	23.67	76.33	5,511	21.8	78.2	7,647
Middle	21.5	78.5	7,419	20.9	79.1	5,764	21.2	78.8	13,183	21.81	78.19	5,527	20.7	79.3	7,656
Richer	19.9	80.1	7,710	17.8	82.2	5,525	18.9	81.1	13,235	18.87	81.13	5,580	19.0	81.0	7,655
Richest	18.0	82.0	7,561	18.2	81.8	5,227	18.1	81.9	12,788	16.92	83.08	5,420	18.9	81.1	7,368
Total	21.6	78.4	37,124	21.1	78.9	28,027	21.4	78.6	65,151	21.87	78.13	27,410	21.0	79.0	37,741

Note

** Including spouse irrespective of age*, na "not applicable".

WHO criteria of classification of waist- hip-ratio (WHR)

Men	Women	Risk level
< 0.90	< 0.85	Low[1]
≥ 0.90	≥ 0.85	High[2]

Table 9.33 Prevalence (%) of low risk and high-risk waist to hip ratio (WHR) among older adults, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Age 45-59*			Age ≥ 60			Total			Male (Age ≥ 45)			Female (Age ≥ 45)		
	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number
India	**21.6**	**78.4**	**37,124**	**21.1**	**78.9**	**28,027**	**21.4**	**78.6**	**65,151**	**21.9**	**78.1**	**27,410**	**21.0**	**79.0**	**37,741**
North															
Chandigarh	4.6	95.4	533	3.8	96.2	323	4.3	95.7	856	5.4	94.6	372	3.4	96.6	484
Delhi	13.2	86.8	801	7.2	92.8	469	10.9	89.1	1,270	10.3	89.7	574	11.5	88.5	696
Haryana	17.8	82.2	935	12.4	87.6	741	15.3	84.7	1,676	17.7	82.3	679	13.7	86.3	997
Himachal Pradesh	13.5	86.5	732	9.6	90.4	577	11.7	88.3	1,309	15.2	84.8	526	9.3	90.7	783
Jammu & Kashmir	8.9	91.1	770	5.6	94.4	611	7.3	92.7	1,381	12.2	87.8	609	3.6	96.4	772
Punjab	4.6	95.4	1,044	6.0	94.0	916	5.2	94.8	1,960	8.9	91.1	849	2.5	97.5	1,111
Rajasthan	21.7	78.3	1,091	18.2	81.8	982	20.0	80.0	2,073	22.2	77.8	877	18.3	81.7	1,196
Uttarakhand	14.5	85.5	669	12.6	87.4	603	13.5	86.5	1,272	11.3	88.7	513	15.1	84.9	759
Central															
Chhattisgarh	30.7	69.3	1,211	24.2	75.8	717	28.2	71.8	1,928	29.9	70.1	858	26.9	73.1	1,070
Madhya Pradesh	34.1	65.9	1,453	28.9	71.1	1,153	31.7	68.3	2,606	30.9	69.1	1,177	32.3	67.7	1,429
Uttar Pradesh	22.1	77.9	2,204	24.3	75.7	1,923	23.1	76.9	4,127	23.4	76.6	1,891	22.9	77.1	2,236
East															
Bihar	14.8	85.2	1,667	21.5	78.5	1,726	18.4	81.6	3,393	19.9	80.1	1,495	17.1	82.9	1,898
Jharkhand	20.3	79.7	1,212	17.9	82.1	1,086	19.1	80.9	2,298	20.3	79.7	970	18.2	81.8	1,328
Odisha	23.4	76.6	1,555	20.6	79.4	1,077	22.2	77.8	2,632	29.6	70.4	1,128	16.6	83.4	1,504
West Bengal	13.5	86.5	2,147	16.8	83.2	1,365	14.8	85.2	3,512	22.1	77.9	1,456	9.7	90.3	2,056
Northeast															
Arunachal Pradesh	22.2	77.8	848	22.3	77.7	289	22.2	77.8	1,137	32.8	67.2	508	13.9	86.1	629
Assam	13.3	86.7	1,399	15.4	84.6	718	14.1	85.9	2,117	17.8	82.2	867	11.5	88.5	1,250
Manipur	16.4	83.6	662	18.7	81.3	517	17.4	82.6	1,179	27.2	72.8	515	9.8	90.2	664
Meghalaya	20.9	79.1	504	16.7	83.3	373	19.1	80.9	877	32.6	67.4	333	10.8	89.2	544
Mizoram	30.3	69.7	656	31.3	68.7	467	30.7	69.3	1,123	40.9	59.1	499	22.3	77.7	624
Nagaland	18.1	81.9	662	19.5	80.5	564	18.8	81.2	1,226	28.7	71.3	558	11.1	88.9	668
Tripura	23.1	76.9	676	21.2	78.8	423	22.4	77.6	1,099	28.5	71.5	447	18.2	81.8	652
West															
Dadra & Nagar Haveli	18.2	81.8	589	18.5	81.5	396	18.3	81.7	985	22.2	77.8	430	15.2	84.8	555
Daman & Diu	20.3	79.7	532	12.5	87.5	377	16.8	83.2	909	10.7	89.3	369	20.6	79.4	540
Goa	14.6	85.4	687	14.2	85.8	567	14.4	85.6	1,254	9.7	90.3	494	17.5	82.5	760
Gujarat	27.4	72.6	1,188	20.4	79.6	875	24.2	75.8	2,063	21.0	79.0	871	26.4	73.6	1,192
Maharashtra	27.3	72.7	1,849	25.5	74.5	1,506	26.4	73.6	3,355	19.4	80.6	1,349	31.1	68.9	2,006

continued

continued

State/ Union Territory	Age 45-59*			Age ≥ 60			Total			Male (Age ≥ 45)			Female (Age ≥ 45)		
	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number	[1]Low-risk (normal) WHR	[2]High-risk WHR	Number
South															
Andaman & Nicobar Islands	18.5	81.5	664	14.7	85.3	471	16.9	83.1	1,135	16.5	83.5	513	17.3	82.7	622
Andhra Pradesh	21.1	78.9	1,298	22.3	77.7	913	21.6	78.4	2,211	17.6	82.4	910	24.4	75.6	1,301
Karnataka	32.7	67.3	1,297	30.1	69.9	904	31.6	68.4	2,201	27.1	72.9	876	34.4	65.6	1,325
Kerala	5.1	94.9	1,187	5.9	94.1	1,068	5.5	94.5	2,255	8.9	91.1	888	3.4	96.6	1,367
Lakshadweep	5.1	94.9	605	2.3	97.7	462	3.8	96.2	1,067	5.1	94.9	419	3.0	97.0	648
Puducherry	15.1	84.9	724	15.7	84.3	563	15.3	84.7	1,287	12.8	87.2	492	17.0	83.0	795
Tamil Nadu	16.2	83.8	1,886	16.7	83.3	1,383	16.4	83.6	3,269	16.4	83.6	1,266	16.5	83.5	2,003
Telangana	29.5	70.5	1,187	23.1	76.9	922	26.6	73.4	2,109	21.3	78.7	832	30.1	69.9	1,277

Note

* Including spouse irrespective of age.

WHO criteria of classification of waist- hip ratio (WHR)

Men	Women	Risk level
< 0.90	< 0.85	Low[1]
≥ 0.90	≥ 0.85	High[2]

9.5 GRIP STRENGTH

Grip strength, which measures muscle mass and upper body strength, is an important biomarker of health and ageing. Grip strength is strongly associated with health and mortality outcomes (Leong et al., 2015; Peterson et al., 2016c; Oksuzyan et al., 2017; Celis-Morales et al., 2018). Hand grip strength is a reliable, inexpensive, and easily usable surrogate measure of muscle strength (Whitney et al., 2018). The LASI measured grip strength in kilograms using a handheld dynamometer (Smedley's Hand Dynamometer). Health investigators collected two readings of grip strength for both hands (dominant and non-dominant).

Table 9.34 presents the mean grip strength of dominant and non-dominant hands by sex and background characteristics. The overall mean grip strength of the dominant hand is 27 kg among older men age 45 and above and 18.2 kg among older women age 45 and above in India. The mean grip strength is higher for the dominant hand across sex and age groups. For both dominant and non-dominant hands, the mean grip strength is lower among elderly men and women age 60 and above than among older adult men and women age 45-59. The mean grip strength increases with education and household MPCE quintiles.

The cross-state differences in the mean grip strength are presented in Table 9.34. Overall, the mean grip strength is lower among older adult men and women in southern, western, and eastern Indian states. The mean grip strength of the dominant hand among older adult men and women age 45 and above is the highest in the Andaman & Nicobar Islands (31.5 kg and 22.6 kg, respectively). Among elderly men and women age 60 and above, the mean grip strength of the dominant hand ranges from 28.2 kg in Uttarakhand for elderly men and 19.2 kg in Andaman & Nicobar for elderly women to 19 kg and 11.4 kg for elderly men and women, respectively, in Telangana.

Table 9.34 Mean grip strength in dominant and non-dominant hand among older adults by sex and background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male (Mean grip strength)[1]												Female (Mean grip strength)[1]											
	Dominant hand						Non-dominant hand						Dominant hand						Non-dominant hand					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence																								
Rural	30.4	8,939	23.7	9,064	26.8	18,003	27.9	8,775	21.5	8,847	24.5	17,622	20.1	14,630	15.6	9,412	18.2	24,042	18.0	14,401	13.8	9,181	16.3	23,582
Urban	30.4	4,891	24.3	4,348	27.5	9,239	28.0	4,726	21.8	4,194	25.1	8,920	20.0	8,328	15.6	4,915	18.3	13,243	17.9	8,138	13.7	4,716	16.3	12,854
Marital status																								
Currently married	30.5	12,903	24.3	11,053	27.5	23,956	28.0	12,597	22.0	10,751	25.1	23,348	20.3	19,137	16.6	6,734	19.3	25,871	18.2	18,819	14.8	6,570	17.3	25,389
Widowed	29.5	441	22.1	2,005	23.3	2,446	26.9	433	19.8	1,946	21.0	2,379	18.8	3,078	14.7	7,234	15.8	10,312	16.8	2,986	12.9	6,988	13.9	9,974
Divorced/ Separated/ Deserted/ Others	29.1	486	21.8	354	25.6	840	25.5	471	19.4	344	22.6	815	19.6	743	16.1	359	18.6	1,102	17.2	734	14.4	339	16.4	1,073
Living arrangement																								
Living alone	30.3	202	22.6	324	24.6	526	27.3	200	20.2	307	22.1	507	18.6	430	14.5	1,110	15.4	1,540	16.3	415	12.7	1,054	13.5	1,469
Living with spouse and/ or others	28.1	1,384	23.2	3,239	24.7	4,623	26.0	1,351	21.1	3,135	22.6	4,486	19.4	2,505	16.1	2,203	17.8	4,708	17.4	2,451	14.4	2,130	16.0	4,581
Living with spouse and children	30.8	11,308	24.7	7,704	28.3	19,012	28.3	11,041	22.4	7,510	25.8	18,551	20.4	16,262	16.9	4,436	19.6	20,698	18.3	16,003	15.0	4,349	17.6	20,352
Living with children and others	29.7	554	22.2	1,697	23.7	2,251	26.8	544	19.9	1,650	21.3	2,194	19.1	3,160	14.9	5,621	16.2	8,781	17.2	3,084	13.0	5,441	14.3	8,525
Living with others only	28.3	382	21.8	448	24.3	830	25.0	365	19.4	439	21.5	804	18.8	601	14.3	957	16.1	1,558	16.7	586	12.5	923	14.2	1,509
Religion																								
Hindu	30.3	10,207	23.8	9,810	26.9	20,017	27.8	9,928	21.5	9,499	24.5	19,427	20.0	16,781	15.5	10,487	18.2	27,268	18.0	16,440	13.7	10,143	16.2	26,583
Muslim	31.2	1,540	24.8	1,611	27.9	3,151	28.7	1,514	22.6	1,584	25.5	3,098	20.2	2,887	15.9	1,677	18.5	4,564	17.9	2,847	14.0	1,638	16.4	4,485
Christian	29.3	1,421	22.1	1,329	25.5	2,750	26.9	1,406	20.0	1,303	23.2	2,709	19.7	2,288	14.6	1,473	17.7	3,761	17.7	2,254	12.9	1,431	15.8	3,685
Others	32.1	662	24.3	662	27.9	1,324	28.9	653	21.6	655	25.0	1,308	20.8	1,002	16.6	690	19.0	1,692	18.6	998	14.8	685	17.0	1,683
Caste/tribe																								
Scheduled tribe	29.5	2,621	23.5	2,190	26.7	4,811	27.2	2,583	21.4	2,142	24.5	4,725	20.1	4,119	15.4	2,409	18.2	6,528	18.1	4,078	13.9	2,358	16.4	6,436
Scheduled caste	29.7	2,348	23.1	2,184	26.3	4,532	27.1	2,285	20.8	2,135	23.8	4,420	19.7	3,959	15.5	2,354	18.0	6,313	17.6	3,896	13.5	2,294	16.0	6,190
Other backward class	30.1	5,144	23.5	5,172	26.7	10,316	27.8	4,973	21.3	4,972	24.4	9,945	19.8	8,650	15.3	5,390	18.0	14,040	17.8	8,415	13.5	5,151	16.0	13,566
None of the above	31.8	3,717	25.2	3,866	28.2	7,583	29.0	3,660	22.6	3,792	25.6	7,452	20.9	6,230	16.2	4,174	18.9	10,404	18.7	6,150	14.3	4,094	16.9	10,244

continued

continued

Background characteristics	Male (Mean grip strength)[1]												Female (Mean grip strength)[1]											
	Dominant hand						Non-dominant hand						Dominant hand						Non-dominant hand					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Education																								
No schooling	28.8	3,593	22.5	4,818	25.0	8,411	26.6	3,496	20.3	4,690	22.8	8,186	19.5	11,201	15.3	9,984	17.4	21,185	17.5	11,015	13.5	9,689	15.6	20,704
Less than 5 years complete	29.7	1,727	23.5	1,985	26.2	3,712	27.5	1,688	21.2	1,927	24.0	3,615	20.3	2,210	15.6	1,421	18.5	3,631	18.3	2,162	13.9	1,392	16.6	3,554
5-9 years complete	30.9	4,302	24.7	3,468	28.0	7,770	28.3	4,189	22.3	3,372	25.5	7,561	20.9	5,618	16.8	1,901	19.7	7,519	18.6	5,510	15.0	1,847	17.6	7,357
10 or more years complete	31.8	4,208	25.6	3,141	29.1	7,349	28.9	4,128	23.2	3,052	26.4	7,180	20.9	3,929	16.2	1,021	19.8	4,950	18.9	3,852	13.7	969	17.8	4,821
Work status																								
Currently working	30.7	12,164	25.5	5,741	28.9	17,905	28.2	11,904	23.2	5,629	26.5	17,533	19.8	9,249	16.5	2,688	19.0	11,937	17.8	9,114	14.7	2,630	17.1	11,744
Worked in past but currently not working	27.8	1,248	22.4	7,032	23.1	8,280	25.3	1,183	20.2	6,784	20.8	7,967	19.0	2,845	14.6	4,631	16.2	7,476	17.1	2,778	12.8	4,474	14.4	7,252
Never worked	28.1	418	23.1	639	24.8	1,057	25.8	414	20.2	628	22.1	1,042	20.6	10,864	15.9	7,008	18.6	17,872	18.5	10,647	14.0	6,793	16.6	17,440
MPCE quintile																								
Poorest	29.5	2,655	23.2	2,684	26.3	5,339	27.4	2,572	20.8	2,610	24.0	5,182	19.8	4,353	15.3	2,982	17.9	7,335	17.8	4,253	13.5	2,896	15.9	7,149
Poorer	30.2	2,735	23.5	2,745	26.7	5,480	27.6	2,681	21.2	2,645	24.3	5,326	20.0	4,567	15.6	2,987	18.2	7,554	18.0	4,486	13.7	2,898	16.2	7,384
Middle	30.4	2,749	24.1	2,740	27.0	5,489	27.9	2,676	21.9	2,665	24.7	5,341	20.1	4,601	15.6	2,978	18.3	7,579	18.0	4,522	13.9	2,887	16.3	7,409
Richer	30.8	2,883	24.2	2,667	27.4	5,550	28.3	2,811	21.8	2,613	25.0	5,424	20.3	4,750	15.7	2,797	18.5	7,547	18.2	4,672	13.9	2,706	16.5	7,378
Richest	31.3	2,808	24.5	2,576	28.0	5,384	28.5	2,761	22.2	2,508	25.5	5,269	20.1	4,687	15.7	2,583	18.4	7,270	18.0	4,606	13.9	2,510	16.5	7,116
Total	**30.4**	**13,830**	**23.9**	**13,412**	**27.0**	**27,242**	**27.9**	**13,501**	**21.6**	**13,041**	**24.6**	**26,542**	**20.1**	**22,958**	**15.6**	**14,327**	**18.2**	**37,285**	**18.0**	**22,539**	**13.8**	**13,897**	**16.3**	**36,436**

Note

** Including spouse irrespective of age.*

[1]Grip strength measures bodily muscle strength and is an overall marker of health among elderly population. Mean grip strength is an average of two readings each for dominant and non-dominant hand

Table 9.36 Mean grip strength in dominant and non-dominant hand among older adults by sex, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Male (Mean grip strength)[1]												Female (Mean grip strength)[1]											
	Dominant hand						Non-dominant hand						Dominant hand						Non-dominant hand					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**30.4**	**13,830**	**23.9**	**13,412**	**27.0**	**27,242**	**27.9**	**13,501**	**21.6**	**13,041**	**24.6**	**26,542**	**20.1**	**22,958**	**15.6**	**14,327**	**18.2**	**37,285**	**18.0**	**22,539**	**13.8**	**13,897**	**16.3**	**36,436**
North																								
Chandigarh	32.0	216	26.0	157	29.4	373	29.0	212	23.4	154	26.5	366	21.9	314	18.2	166	20.6	480	19.4	312	15.4	166	18.0	478
Delhi	30.4	332	25.3	236	28.2	568	29.0	327	23.1	233	26.5	560	20.9	457	16.7	226	19.5	683	19.5	459	15.1	221	18.0	680
Haryana	33.9	376	27.4	308	30.8	684	31.4	366	25.0	300	28.4	666	22.0	553	17.6	423	19.9	976	19.9	554	15.5	418	17.9	972
Himachal Pradesh	34.9	239	27.7	284	30.7	523	32.0	236	25.1	286	27.9	522	22.3	494	16.9	284	20.2	778	20.5	488	15.2	283	18.4	771
Jammu & Kashmir	34.1	273	27.2	323	30.1	596	30.5	275	23.9	313	26.7	588	22.6	473	17.5	280	20.4	753	19.9	469	15.5	279	18.1	748
Punjab	34.0	391	26.3	453	29.8	844	30.4	381	23.4	440	26.5	821	22.1	648	17.0	454	20.0	1,102	19.3	640	14.9	448	17.5	1,088
Rajasthan	28.9	423	23.9	451	26.3	874	26.7	418	21.9	447	24.1	865	19.9	670	15.6	519	17.9	1,189	18.2	661	14.0	513	16.2	1,174
Uttarakhand	34.3	228	28.2	272	30.9	500	31.6	223	26.1	270	28.5	493	22.1	430	18.0	305	20.3	735	20.4	421	16.3	294	18.6	715
Central																								
Chhattisgarh	29.5	489	24.2	355	27.2	844	27.1	479	21.7	351	24.8	830	19.6	714	15.8	348	18.3	1,062	18.3	705	14.4	342	17.0	1,047
Madhya Pradesh	32.3	610	25.4	567	28.8	1,177	29.7	596	24.0	546	26.9	1,142	20.8	827	16.3	578	18.8	1,405	18.8	816	14.8	564	17.1	1,380
Uttar Pradesh	31.8	873	24.8	997	27.9	1,870	29.0	869	22.2	987	25.2	1,856	20.5	1,302	15.9	909	18.5	2,211	18.1	1,299	14.0	905	16.4	2,204
East																								
Bihar	28.0	611	23.2	883	25.0	1,494	25.1	607	20.5	875	22.2	1,482	19.3	1,052	15.5	851	17.6	1,903	17.0	1,048	13.5	844	15.4	1,892
Jharkhand	30.6	422	24.2	537	27.0	959	29.1	397	22.7	487	25.5	884	20.0	769	15.8	524	18.3	1,293	18.9	744	14.8	488	17.2	1,232
Odisha	31.2	602	23.3	534	27.3	1,136	28.4	595	21.1	524	24.9	1,119	20.5	953	15.4	549	18.5	1,502	17.8	944	13.3	540	16.1	1,484
West Bengal	31.9	782	25.5	670	28.9	1,452	28.9	772	22.8	655	26.1	1,427	21.8	1,355	16.7	690	20.0	2,045	19.3	1,332	14.9	654	17.8	1,986
Northeast																								
Arunachal Pradesh	32.6	345	24.7	158	30.2	503	29.6	347	21.5	159	27.2	506	22.6	501	17.9	125	21.7	626	20.1	497	15.9	120	19.3	617
Assam	33.4	513	27.5	345	31.0	858	30.8	510	24.9	340	28.4	850	22.4	867	17.1	365	20.7	1,232	20.2	857	15.4	354	18.7	1,211
Manipur	34.1	278	26.6	229	30.6	507	31.0	281	24.0	228	27.7	509	21.3	372	16.6	284	19.2	656	19.5	375	14.9	284	17.4	659
Meghalaya	30.5	183	25.0	146	28.1	329	26.5	181	21.5	145	24.4	326	20.6	317	16.4	222	18.9	539	17.5	319	13.6	218	15.9	537
Mizoram	33.5	266	26.8	232	30.1	498	30.4	263	24.0	230	27.2	493	20.1	390	16.3	231	18.6	621	18.0	386	14.5	226	16.7	612
Nagaland	33.0	275	26.6	282	29.4	557	30.4	274	23.5	280	26.4	554	20.7	385	16.1	279	18.8	664	18.2	384	13.9	278	16.4	662
Tripura	30.3	241	24.3	206	27.5	447	26.8	239	21.6	203	24.3	442	21.8	434	17.5	217	20.3	651	18.9	435	15.2	217	17.6	652
West																								
Dadra & Nagar Haveli	30.2	252	23.4	174	27.7	426	28.2	247	22.3	168	26.0	415	20.0	334	15.1	225	18.1	559	18.3	329	13.9	224	16.6	553
Daman & Diu	28.0	209	22.9	167	25.5	376	26.8	191	20.9	151	23.9	342	19.5	320	14.8	226	17.4	546	18.1	309	13.4	211	16.1	520
Goa	31.4	235	24.1	251	27.6	486	28.7	236	22.3	245	25.4	481	19.6	446	15.0	307	17.7	753	17.7	441	13.1	303	15.8	744
Gujarat	29.1	471	22.8	397	26.1	868	27.1	457	20.9	382	24.1	839	18.9	704	14.8	459	17.2	1,163	17.5	691	13.3	441	15.7	1,132
Maharashtra	30.4	645	23.7	705	26.7	1,350	27.6	638	21.1	699	24.0	1,337	20.0	1,193	15.4	794	17.9	1,987	18.1	1,187	13.7	786	16.1	1,973
South																								
Andaman & Nicobar Islands	35.2	267	27.6	249	31.5	516	32.9	259	25.4	242	29.3	501	24.5	393	19.2	220	22.6	613	21.8	388	17.2	216	20.2	604
Andhra Pradesh	28.4	451	20.8	451	24.6	902	26.0	444	18.6	443	22.2	887	17.9	833	13.3	445	16.2	1,278	15.9	824	11.6	436	14.4	1,260
Karnataka	28.8	440	22.5	423	25.9	863	27.4	435	20.8	415	24.3	850	19.3	833	14.9	461	17.7	1,294	17.7	835	12.8	463	15.9	1,298
Kerala	28.4	400	22.6	478	25.2	878	26.9	393	21.2	461	23.7	854	18.9	756	14.1	567	16.6	1,323	17.5	735	13.0	544	15.4	1,279
Lakshadweep	30.7	193	25.7	226	27.8	419	28.1	186	24.0	221	25.7	407	19.7	406	15.6	235	18.1	641	17.9	400	14.2	227	16.4	627
Puducherry	31.0	252	25.0	239	28.0	491	28.5	242	23.1	233	25.8	475	21.5	467	16.7	320	19.4	787	19.4	464	14.7	311	17.4	775
Tamil Nadu	28.1	652	21.2	623	24.6	1,275	25.2	533	18.7	521	21.9	1,054	19.5	1,225	15.3	780	17.8	2,005	17.0	1,023	12.8	633	15.3	1,656
Telangana	26.3	395	19.0	404	22.4	799	24.1	392	16.9	407	20.2	799	15.8	771	11.4	459	14.1	1,230	13.9	768	10.0	446	12.4	1,214

Note

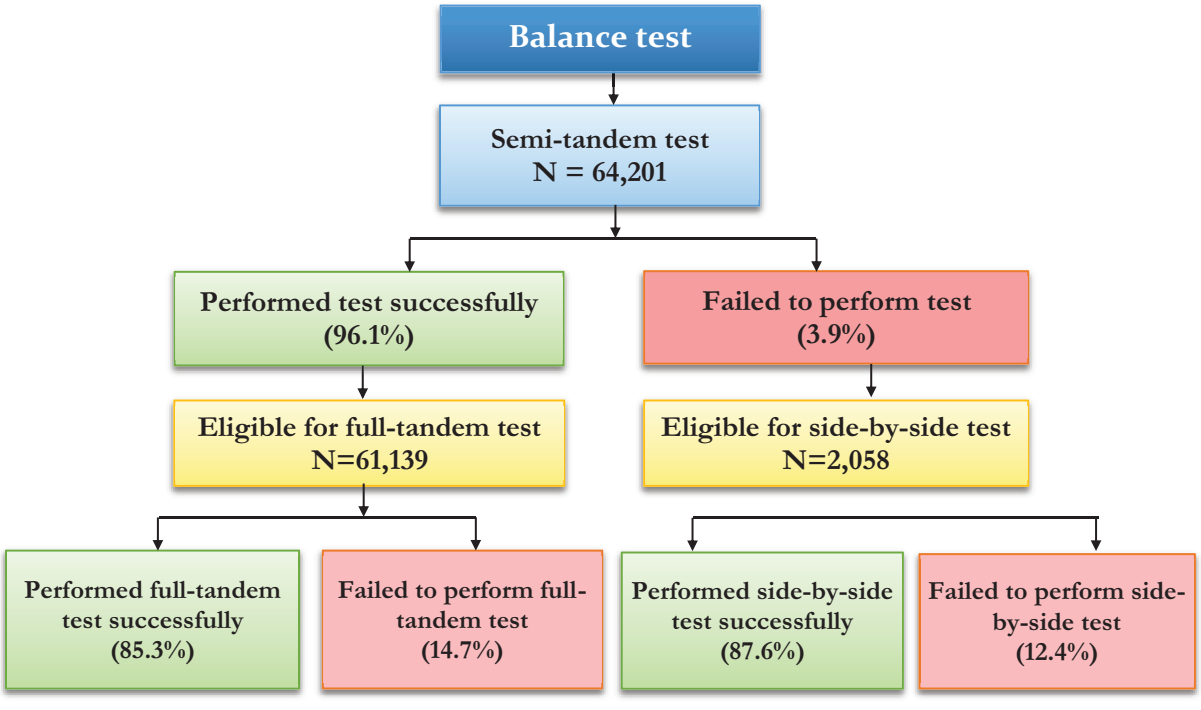
** Including spouse irrespective of age.*

[1]Grip strength measures bodily muscle strength and is an overall marker of health among elderly population. Mean grip strength is an average of two readings each for dominant and non-dominant hand.

9.6 BALANCE TEST

Balance tests are useful predictors of health outcomes, such as mortality, disability, institutionalisation, inflammation, risk of falls, decline in cognitive ability, and low physiological reserve (Crimmins et al., 2008). In the LASI, the mid-level balance test (semi-tandem) was conducted first; depending on the participant's performance in the semi-tandem test, either the full-tandem or the side-by-side stance was then performed (as described in flow chart 9.10). The semi-tandem test was successfully performed for 10 seconds by 96% of older adults age 45 and above. In the subsequent full-tandem test, 85% of older adults 45 and above successfully maintained their balance (for 60 and 30 seconds in individuals age <70 and ≥70, respectively). The 4% of older adults age 45 and above who failed to maintain the semi-tandem position for 10 seconds, subsequently performed the side-by-side balance test. Among older adults who performed the side-by-side balance test, 12% failed to maintain the side-by-side position for 10 seconds.

Chart 9.3: Flow chart of the balance test performed among older adults age 45 and above*, LASI Wave 1, 2017-18



Note

** Including spouse irrespective of age.*

9.7 TIMED WALK

Walking speed (also known as gait speed) is an indicator of overall health, level of disability, future use of health care, and mortality among older people. Walking speed and steadiness decline with age, a decline which increases the chances of falls and injuries. The timed walk test is a quick, inexpensive, and highly reliable measure of the functional capacity of older persons and can be easily performed in a home interview. It has been shown that gait speed predicts major health outcomes among older people, such as self-reported health (Jylhä et al., 2001) and mortality (Studenski et al., 2011). In the LASI, respondents were asked to walk 4 metres twice. The time taken to walk was recorded in seconds each time, and the mean time was calculated.

Table 9.36 and 9.37 present the mean time taken for a 4-metre walk by older adults age 45 and above according to background characteristics and states/UTs, respectively. Older adults age 45 and above in India take an average of 5.4 seconds to walk 4 metres. Elderly age 60 and above took longer (6 seconds) than older adults age 45-59 (4.9 seconds). The mean time taken to walk 4 metres by older adults does not show pronounced cross-state variation in India, ranging from 4.7 seconds in Puducherry to 6.5 seconds in Delhi. The mean time taken to walk 4 metres among elderly age 60 and above is higher in Delhi (7.2 seconds) and Kerala (7.0 seconds), whereas the time taken to walk 4 metres in all other states/UTs is between 5 to 6 seconds.

Table 9.36 Mean time taken for 4-metre walk among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Mean time for 4-metre walk					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	4.9	23,662	6.0	18,359	5.4	42,021
Urban	5.0	13,247	6.1	9,136	5.4	22,383
Sex						
Male	4.7	13,828	5.6	13,284	5.2	27,112
Female	5.0	23,081	6.4	14,211	5.6	37,292
Marital status						
Currently married	4.9	32,164	5.7	17,677	5.2	49,841
Widowed	5.2	3,528	6.7	9,124	6.3	12,652
Divorced/Separated/Deserted/Others	5.0	1,217	5.9	694	5.3	1,911
Living arrangement						
Living alone	5.0	635	6.4	1,431	6.1	2,066
Living with spouse and/or others	5.0	3,896	5.7	5,420	5.4	9,316
Living with spouse and children	4.9	27,682	5.6	12,057	5.1	39,739
Living with children and others	5.1	3,717	6.6	7,213	6.2	10,930
Living with others only	5.1	979	6.8	1,374	6.1	2,353
Religion						
Hindu	4.9	27,099	6.0	20,152	5.4	47,251
Muslim	5.1	4,450	6.2	3,224	5.6	7,674
Christian	5.1	3,703	6.2	2,772	5.6	6,475
Others	4.7	1,657	6.1	1,347	5.3	3,004
Caste/tribe						
Scheduled tribe	4.9	6,759	6.0	4,567	5.4	11,326
Scheduled caste	4.9	6,332	6.0	4,492	5.4	10,824
Other backward class	4.9	13,855	6.0	10,475	5.4	24,330
None of the above	4.9	9,963	6.0	7,961	5.4	17,924
Education						
No schooling	5.0	14,871	6.3	14,664	5.7	29,535
Less than 5 years complete	4.9	3,955	6.0	3,382	5.4	7,337
5-9 years complete	4.8	9,936	5.8	5,337	5.2	15,273
10 or more years complete	4.8	8,147	5.4	4,112	5.0	12,259
Work status						
Currently working	4.8	21,484	5.3	8,484	4.9	29,968
Worked in past but currently not working	5.2	4,083	6.4	11,455	6.1	15,538
Never worked	5.0	11,342	6.4	7,556	5.6	18,898
MPCE quintile						
Poorest	4.9	7,029	6.1	5,624	5.4	12,653
Poorer	4.9	7,342	6.0	5,686	5.4	13,028
Middle	4.9	7,383	6.0	5,671	5.4	13,054
Richer	4.9	7,655	6.0	5,419	5.4	13,074
Richest	5.0	7,500	6.1	5,095	5.4	12,595
Total	**4.9**	**36,909**	**6.0**	**27,495**	**5.4**	**64,404**

Note

** Including spouse irrespective of age.*

Table 9.37 Mean time taken for 4-metre walk among older adults, states/UTs, LASI Wave 1, 2017-18

State/ Union Territory	Mean time for 4-metre walk					
India	**4.9**	**36,909**	**6.0**	**27,495**	**5.4**	**64,404**
North						
Chandigarh	4.9	535	6.4	321	5.5	856
Delhi	6.2	781	7.2	439	6.5	1,220
Haryana	5.0	930	5.9	718	5.4	1,648
Himachal Pradesh	4.8	728	5.9	574	5.3	1,302
Jammu & Kashmir	5.0	758	6.0	575	5.5	1,333
Punjab	4.6	1,031	6.1	896	5.3	1,927
Rajasthan	4.8	1,085	5.9	969	5.4	2,054
Uttarakhand	4.6	666	5.4	596	5.0	1,262
Central						
Chhattisgarh	4.8	1,206	5.6	710	5.1	1,916
Madhya Pradesh	5.0	1,452	6.3	1,137	5.6	2,589
Uttar Pradesh	4.6	2,196	5.8	1,897	5.2	4,093
East						
Bihar	5.1	1,664	6.0	1,710	5.6	3,374
Jharkhand	5.0	1,204	5.9	1,068	5.4	2,272
Odisha	4.9	1,555	6.2	1,074	5.4	2,629
West Bengal	5.0	2,134	6.1	1,324	5.5	3,458
Northeast						
Arunachal Pradesh	4.5	841	6.4	286	4.9	1,127
Assam	4.7	1,393	5.9	698	5.1	2,091
Manipur	5.3	658	6.3	510	5.7	1,168
Meghalaya	5.5	500	6.9	368	6.1	868
Mizoram	5.0	654	6.5	460	5.6	1,114
Nagaland	4.7	660	5.2	558	4.9	1,218
Tripura	5.0	676	6.1	422	5.4	1,098
West						
Dadra & Nagar Haveli	4.7	589	5.8	401	5.1	990
Daman & Diu	5.3	531	6.5	374	5.9	905
Goa	4.8	687	6.0	554	5.3	1,241
Gujarat	4.9	1,187	6.1	869	5.5	2,056
Maharashtra	4.5	1,836	5.9	1,479	5.2	3,315
South						
Andaman & Nicobar Islands	4.6	660	5.6	471	5.0	1,131
Andhra Pradesh	5.3	1,274	6.6	873	5.8	2,147
Karnataka	5.2	1,293	6.1	896	5.6	2,189
Kerala	5.4	1,175	7.0	1,000	6.2	2,175
Lakshadweep	5.2	595	6.4	449	5.7	1,044
Puducherry	4.1	722	5.3	563	4.7	1,285
Tamil Nadu	4.5	1,874	5.6	1,357	5.0	3,231
Telangana	5.1	1,179	6.8	899	5.9	2,078

Note

** Including spouse irrespective of age.*

Key findings: grip strength, balance test, timed walk

- The mean grip strength of the dominant hand among elderly men and women age 60 and above in India is 23.9 kg and 15.6 kg, respectively. The mean grip strength among elderly men age 45 and above is the higher in Uttarakhand (28.2), Himachal Pradesh (27.7), Andaman & Nicobar (27.6), Assam (27.5), Haryana (27.4), and Jammu & Kashmir (27.2). The mean grip strength among elderly women is the highest in Andaman & Nicobar (19.2), Chandigarh (18.2), Uttarakhand (18), Arunachal Pradesh (17.9), and Haryana (17.6).

- Approximately 4% of older adults age 45 and above years failed to maintain the semi-tandem stance. Among older adults age 45 and above who performed the side-by-side balance test, 12% failed to maintain the side-by-side position for 10 seconds. Fifteen percent of them who performed semi-tandem failed to perform full-tandem.

- Elderly age 60 and above in India take an average of 6 seconds to complete a 4-metre walk. The mean time taken by elderly age 60 and above to walk 4 metres is the highest in Delhi (7.2 seconds) and Kerala (7.0 seconds).

9.8 AGE PATTERN IN BIOLOGICAL MARKERS

Advancing age is considered a levelling process: those in the upper socioeconomic strata postpone functional limitations into the later years of life, whereas among those in the lower socioeconomic groups, adverse health conditions develop throughout the middle and early old age before levelling out in older age, a stage in which some combinations of social and biological factors reduce the socioeconomic differences in health (Arokiasamy et al., 2016b). Therefore, the age-gradient of various measured biological markers is an important indicator for assessing the effect of age on the outcome of chronic conditions.

Age-associated changes in the biological markers of health in India are shown in Figure 9.14. The prevalence rates of high blood pressure, low vision, and underweight are based on direct health examinations; all three rates consistently increase with advancing age, indicating age-associated decline in the health of the elderly.

Figure 9.14 Biological markers of health: prevalence (%) rates of high blood pressure, low vision, underweight, and obesity among older adults by age, India, LASI Wave 1, 2017-18

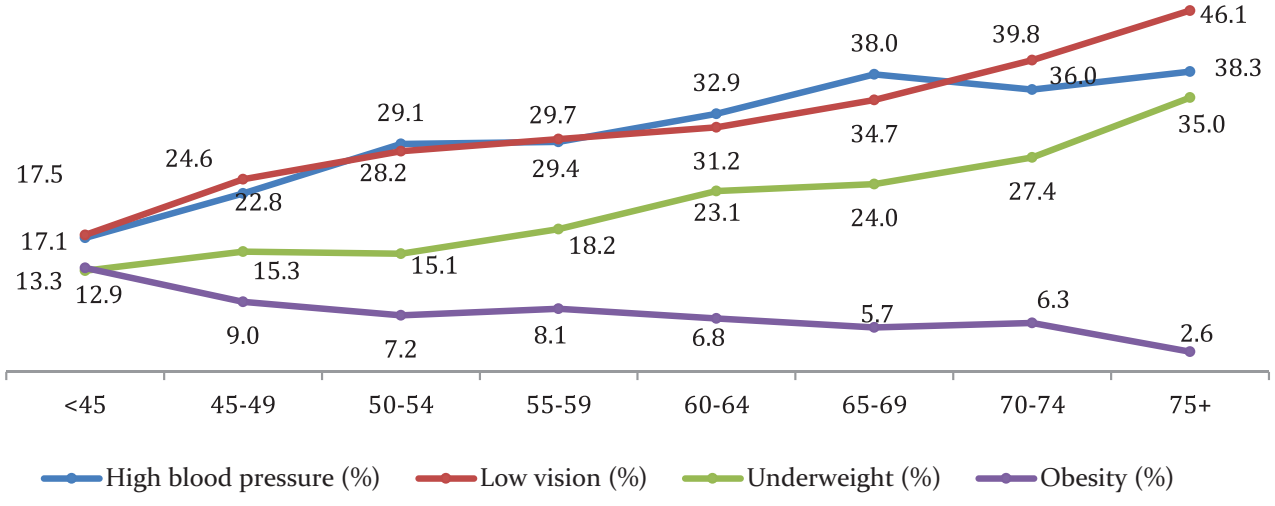


Figure 9.15 shows the mean grip strength of dominant and non-dominant hands by age. Mean grip strength declines steadily with advancing age. The mean grip strength of the dominant hand decreases from 32 kg and 20.5 kg in older adult men and women age 45-49, respectively, to 20 kg and 12.9 kg in elderly men and women age 75 and above, respectively.

Figure 9.15 Mean grip strength (kg) among older adults by age and sex, India, LASI Wave 1, 2017-18

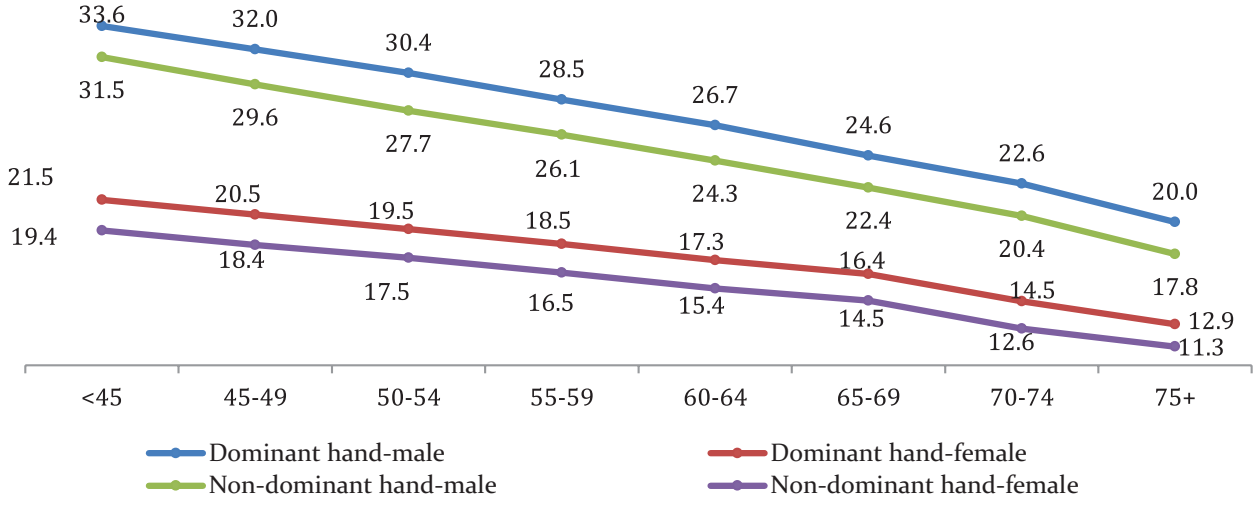
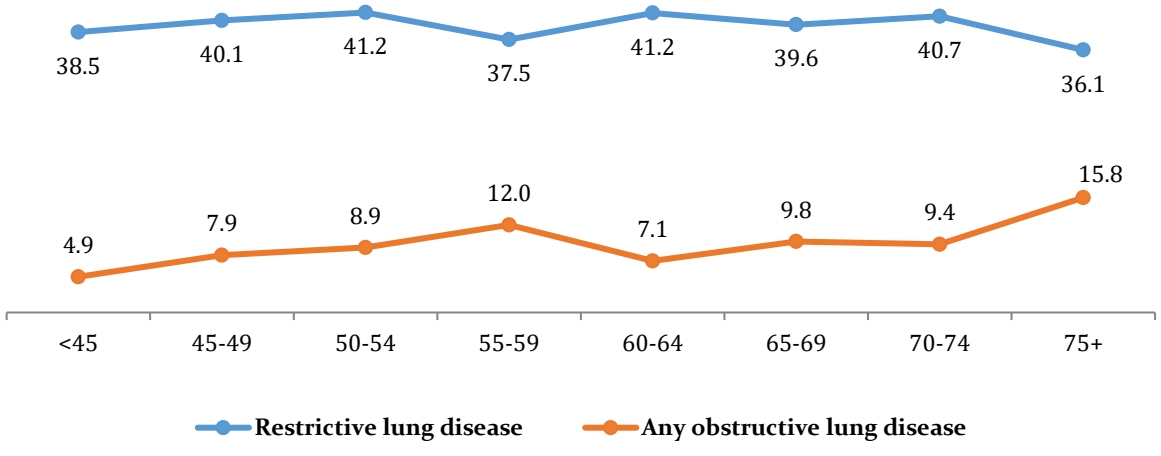


Figure 9.16 shows age-wise consistent high prevalence of the restrictive lung diseases (around 40%) along with minor variations across age groups, whereas the prevalence of any obstructive lung disease increases with advancing age particularly and elderly age 75 and above (16%).

Figure 9.16 Prevalence (%) of restrictive lung disease and any obstructive lung disease among older adults by age, India, LASI Wave 1, 2017-18



Key findings: age pattern in biological markers

- The prevalence of chronic health conditions (high blood pressure, low vision, and being underweight) steadily increases with advancing age, whereas the prevalence of obesity and the mean grip strength of the dominant hand decline with age.
- The prevalence of obstructive lung conditions increases with age, whereas the prevalence of restrictive lung conditions declines with age.
- Overall, biological markers provide strong evidence of the age-associated health of older adults in India.

9.9 HEALTH MARKERS BASED ON DRIED BLOOD SPOTS (DBS)

In the LASI, DBS was also collected to test the range of molecular markers. Signed/oral consent was obtained before proceeding with DBS collection. The consent form was clearly read and additional consent was sought for the long-term storage (20 years) of DBS cards. Indian Council of Medical Research- National AIDS Research Institute (ICMR-NARI) is a national collaborator involved in the testing and storage of DBS samples for the LASI. The testing of haemoglobin, glycosylated haemoglobin, high sensitivity C-reactive protein, and antibodies for cytomegalovirus is proposed in the LASI.

[DBS BASED RESULTS ARE NOT INCLUDED IN THIS REPORT AS TESTS ARE IN PROGRESS].

10. MENTAL HEALTH: COGNITION AND DEPRESSION

Mental health is an integral part of health and well-being of older adults (WHO, 2013). The process of ageing not only affects physical health and functional abilities but also leads to deterioration in mental health functioning abilities. Along with physical decline, decline in cognitive functioning is a hallmark of ageing and predictor of mortality. Faster decline in cognitive functioning, in turn, is a contributing factor to functional impairment and disability. Decline in cognitive function is likely to impact one's ability to work, decision making, and social interactions (Ofstedal et al., 2005).

Higher cognitive ability protects individuals from future risks of cognitive impairment and dementia. Currently, dementia is one of the greatest global public health challenges and the future burden is expected to steadily rise as the share of older population is growing rapidly (Prince et al., 2013). In India, by 2050, the number of elderly with dementia is projected to be 14.3 million, compared to 5.29 million in 2020 (Shaji et al., 2010). Factors such as lower cognitive ability and depression early in life increase the risk of cognitive impairment and dementia in older age (Byers and Yaffe, 2011; Katon et al., 2015; Rantalainen et al., 2018). Educational attainment is a predictor of cognitive ability; however, the level of educational attainment is quite low in India. Additionally, the sex differences in educational attainment are higher in India (Onur and Velamuri, 2016). Understanding the cognitive ability of older adults will be especially beneficial in the context of population ageing in India.

Studies suggest that over 20% of elderly age 60 and above suffer from a mental or neurological disorder (excluding headaches) and 7% of all disabilities among elderly persons over 60 are attributed to mental and neurological disorders, the most common being dementia and depression, which affect approximately 5% and 7% of the world's older population, respectively (WHO, 2017b). Depression is one of the leading causes of disability, dementia, and mortality. Globally, over the 28-year period of 1990-2017, depressive disorders have emerged as one of the top four leading causes of Years Lived with Disability (YLDs) (James et al., 2018). The National Mental Health Survey estimated that 5.3% of India's population age 18 and older have depressive disorders (Gururaj et al., 2016). The prevalence of depression increases with age, and is positively linked with the rising prevalence of chronic morbidity conditions (Gururaj et al., 2016; Arokiasamy et al., 2015). However, previous studies conducted in India reported inconsistent findings, leaving several challenges in understanding the prevalence and risk factors of depression (Pilania et al., 2019).

The prevalence of self-reported diagnosed neurological and psychiatric problems in India are presented in chapter 7; whereas this chapter focuses on the measured components of mental health, such as cognition and depression in older adults. In the LASI, cognitive ability is measured on six dimensions: memory, orientation, retrieval fluency (verbal fluency), arithmetic functions, executive function, and object naming. Depression is assessed using internationally validated scales. Results on cognitive ability and measured prevalence of depression are presented in this chapter.

10.1 MEASURED COGNITION

In the LASI, in addition to self-reported diagnosed psychiatric problems, information was also collected on measured cognition in various domains - including memory, orientation retrieval fluency (verbal fluency), arithmetic, executive functioning and object naming. The cognitive measures in the LASI were derived from the cognition module of the Health and Retirement Study (HRS). A detailed description of the different cognitive domains measured in the LASI is presented in the following table:

Table A Description of domain-wise cognitive measures

Domain	Measure	Measurement	Range
Memory	Immediate word recall	Interviewer read out a list of 10 words and respondents were asked to repeat the words.	0-10
	Delayed word recall	Respondents were asked to recall the same words read out for immediate recall after some time.	0-10
	Total word recall	Sum of immediate and delayed word recall	0-20
Orientation	Time	Respondents were asked to state today's date, month and year and day of the week. For each question, the score was 0 or 1. Correct responses received 1 point, incorrect responses received 0. The total score for time was 0-4.	0-4
	Place	Orientation towards place was captured based on place of interview, name of the village, street number/colony name/ landmark/neighbourhood and name of the district. Each correct response scored 1 point. The total score ranged from 0-4.	0-4
Retrieval fluency	Verbal fluency*	Participants were asked to mention as many names of animals/birds as possible in one minute.	0-61
Arithmetic function	Backward counting	Respondents were asked to count backward as quickly as possible from the number 20. The respondents were asked to stop after correctly counting backward from 20 to 11 or from 19 to 10. Correct counting received 2 points; counts with a mistake received 1 point. Those who could not count received 0 points.	0-2
	Serial 7	Respondents were asked to subtract seven from 100 in the first step and asked to continue subtracting seven from the previous number in each subsequent step for five times. Each correct response received 1 point.	0-5
	Computation	This test involved the mathematical operation of division. Respondents were asked to compute the net sale price of a product after considering a discount sale of half of the original price.	0-2
Executive function: 0-4	Executive (paper folding)	This is a three-stage command task. The respondents were instructed to take a piece of paper from the interviewer, turn it over, fold it in half, and give it back to the interviewer. Three points were given if each task was completed successfully.	0-3
	Pentagon drawing	Visio-construction is the ability to coordinate fine motor skills with visio-spatial abilities, usually by reproducing geometric figures. Respondents were asked to copy two overlapping pentagons and scored 1 point for a correct drawing.	0-1
Object naming: 0-2		The interviewer points to a specific object and asks the respondent to name it. Two objects were pointed out and 1 point was given for each correct response.	0-2
Cognition	Composite cognitive index	Combined score of memory (total word recall), orientation, arithmetic function, executive function, and object naming.	0-43

**The verbal fluency score is not included in the composite cognitive index.*

In the LASI, at the end of each section, information was collected regarding whether a participant received assistance. Respondents who received assistance while answering questions in the cognition section were excluded from the analyses. For the cognition component, we present the mean score and the percentage of study participants in the lowest 10th percentile by background characteristics and states/UTs. The lowest 10th percentile is used as a proxy measure of poor cognitive functioning (Pandav et al., 2002).

10.1.1 Memory: word recall

Memory loss is a common problem and is often a presenting symptom in the elderly. Short-term memory is one of the most clinically relevant, and important measure of cognitive function. Short-term retention requires individuals to store and process information so that they can move on to a second task and then remember the previous information after completing the second task. Short-term memory may be tested by having the respondent learn ten unrelated objects or concepts and then asking the respondent to recall the information 15 to 20 minutes after performing a second, unrelated mental task. In the LASI, short-term memory was tested by immediate word recall and retention is tested by delayed word recall. The memory score (total word recall) was the sum of the immediate and delayed word recall scores.

Table 10.1 presents the mean score for total word recall and the percentage of older adults in the lowest 10th percentile of the mean score background characteristics. The mean total word recall score among older adults age 45 and above is 9.0. The mean score is lower for the elderly age 60 and above (8.1) than for older adults age 45-59 (9.8). Overall, 11% of older adults age 45 and above in India are in the lowest 10th percentile for the memory score. Sixteen percent of the elderly age 60 and above are in the lowest 10th percentile compared to 7% of older adults age 45-59. Among the elderly age 60 and above, 18% of women and 18% of those residing in rural areas are in the lowest 10th percentile of memory score compared with 13% of men and 10% of those residing in urban areas. The proportion of older adults in both age groups in the lowest 10th percentile of memory score is higher among those living alone or living with others only, those with no schooling, and those in the poorest MPCE quintile. The percentage of older adults age 45 and above in the lowest 10th percentile ot the memory score decreases with education and MPCE quintile; this variation is more pronounced among the elderly age 60 and above.

The mean score for total word recall decreases with advancing age (Figure 10.1). The mean score for total word recall is slightly higher for older adult men than older adult women across all age groups. The sex gap widens after age 70.

Figure 10.1 Mean total word recall score of older adults by sex and age, India, LASI Wave 1, 2017-18

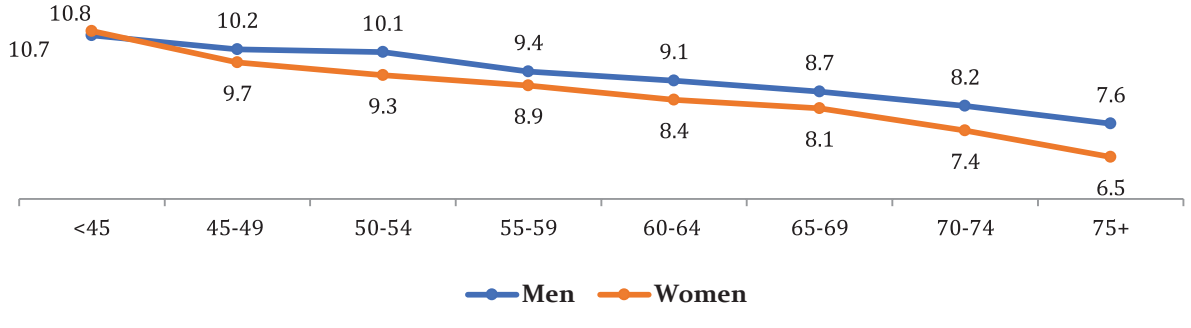


Table 10.2 shows the differences in total word recall and the share of older adults in the lowest 10th percentile of memory score by states/UTs. The mean total word recall among older adults age 45 and above ranges from 12.2 in Puducherry to 7.6 in Dadra & Nagar Haveli; whereas, among the elderly age 60 and above, the highest mean score is recorded in Chandigarh (11.3) followed by Puducherry (11.0). More than a quarter of the elderly age 60 and above are in the lowest 10th percentile for memory score in the states/UTs of Dadra & Nagar Haveli (38%), Gujarat (28%), and Odisha (28%), and around a quarter in Jharkhand (25%), and Daman & Diu (24%).

Table 10.1 Mean score for total word recall and percentage of older adults in lowest 10th percentile of score by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*			Age ≥ 60			Total		
	Total word recall[1]	% of older adults in lowest 10th percentile of score	Number	Total word recall[1]	% of older adults in lowest 10th percentile of score	Number	Total word recall[1]	% of older adults in lowest 10th percentile of score	Number
Place of residence									
Rural	9.4	7.5	23,028	7.8	18.1	17,662	8.6	12.4	40,690
Urban	10.6	4.7	13,493	8.9	10.4	9,285	9.9	7.0	22,778
Sex									
Male	9.9	6.2	13,840	8.5	13.2	12,963	9.2	9.7	26,803
Female	9.7	6.7	22,681	7.7	18.3	13,984	8.9	11.4	36,665
Marital status									
Currently married	9.9	5.8	31,883	8.5	12.6	17,382	9.4	8.3	49,265
Widowed	9.0	10.0	3,432	7.4	21.7	8,901	7.8	18.8	12,333
Divorced/Separated/Deserted/ Others	8.7	18.0	1,206	7.8	18.6	664	8.4	18.2	1,870
Living arrangement									
Living alone	9.3	10.0	621	7.6	22.6	1,359	8.0	19.6	1,980
Living with spouse and/or others	9.7	6.3	3,970	8.3	13.6	5,307	8.9	10.6	9,277
Living with spouse and children	9.9	5.7	27,316	8.6	11.9	11,872	9.5	7.7	39,188
Living with children and others	9.2	8.8	3,623	7.4	20.9	7,057	7.9	17.3	10,680
Living with others only	8.2	20.7	991	7.3	23.8	1,352	7.6	22.5	2,343
Religion									
Hindu	9.9	6.1	26,569	8.1	15.8	19,566	9.1	10.5	46,135
Muslim	9.7	5.4	4,447	8.0	15.2	3,268	9.0	9.5	7,715
Christian	7.9	21.9	3,807	7.8	18.3	2,743	7.8	20.4	6,550
Others	9.7	5.8	1,698	7.8	17.3	1,370	8.8	11.2	3,068
Caste/tribe									
Scheduled tribe	8.7	13.1	6,697	7.0	27.3	4,501	8.0	19.1	11,198
Scheduled caste	9.2	6.9	6,158	7.7	18.4	4,381	8.6	11.9	10,539
Other backward class	10.1	6.0	13,478	8.2	14.8	9,980	9.3	9.9	23,458
None of the above	10.1	5.0	10,188	8.4	12.6	8,085	9.3	8.5	18,273
Education									
No schooling	8.6	10.3	14,363	7.3	21.1	14,142	7.9	15.8	28,505
Less than 5 years complete	9.3	6.5	3,867	7.8	16.4	3,326	8.6	11.3	7,193
5-9 years complete	10.2	3.4	9,877	8.9	8.6	5,276	9.7	5.4	15,153
10 or more years complete	11.8	2.6	8,414	10.4	4.0	4,203	11.3	3.1	12,617
Work status									
Currently working	9.9	6.4	21,395	8.4	13.1	8,242	9.4	8.4	29,637
Worked in past but currently not working	9.3	8.6	4,021	8.0	17.4	11,309	8.3	15.1	15,330
Never worked	9.8	5.9	11,105	8.0	16.8	7,396	9.0	10.5	18,501
MPCE quintile									
Poorest	9.3	8.0	6,794	7.7	19.0	5,448	8.6	13.2	12,242
Poorer	9.5	6.6	7,148	7.8	17.3	5,526	8.7	11.5	12,674
Middle	9.6	6.9	7,264	8.2	14.9	5,511	9.0	10.5	12,775
Richer	9.9	6.9	7,717	8.3	13.9	5,305	9.2	10.0	13,022
Richest	10.7	4.0	7,598	8.7	13.5	5,157	9.9	7.9	12,755
Total	**9.8**	**6.5**	**36,521**	**8.1**	**15.9**	**26,947**	**9.0**	**10.7**	**63,468**

Notes

**Including spouse irrespective of age.*

[1] Total word recall (0-20) refers to combined scoring for immediate word recall (0-10) and delayed word recall (0-10).

Table 10.2 Mean score for total word recall and percentage of older adults in lowest 10th percentile of score, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*			Age ≥ 60			Total		
	Total word recall[1]	% of older adults in lowest 10th percentile of score	Number	Total word recall[1]	% of older adults in lowest 10th percentile of score	Number	Total word recall[1]	% of older adults in lowest 10th percentile of score	Number
India	**9.8**	**6.5**	**36,521**	**8.1**	**15.9**	**26,947**	**9.0**	**10.7**	**63,468**
North									
Chandigarh	12.3	1.2	587	11.3	1.7	351	11.9	1.4	938
Delhi	9.7	3.5	644	8.3	14.0	355	9.2	7.2	999
Haryana	9.5	4.1	935	8.0	13.1	742	8.7	8.4	1,677
Himachal Pradesh	9.4	8.2	675	7.5	20.3	521	8.5	13.9	1,196
Jammu & Kashmir	10.0	2.4	814	8.1	12.3	660	9.1	7.2	1,474
Punjab	10.0	2.0	1,048	8.4	9.2	912	9.2	5.4	1,960
Rajasthan	9.0	5.8	964	7.3	19.4	858	8.2	12.5	1,822
Uttarakhand	9.4	6.9	633	7.6	17.3	562	8.5	12.0	1,195
Central									
Chhattisgarh	9.2	8.4	1,174	8.1	16.0	680	8.8	11.2	1,854
Madhya Pradesh	10.8	3.3	1,328	9.7	8.5	1,064	10.3	5.8	2,392
Uttar Pradesh	8.9	7.5	1,886	7.8	16.1	1,703	8.4	11.7	3,589
East									
Bihar	10.0	4.5	1,596	8.6	12.8	1,637	9.3	8.9	3,233
Jharkhand	8.4	12.7	1,027	6.8	24.8	915	7.7	18.5	1,942
Odisha	8.9	11.0	1,555	6.9	27.7	1,111	8.1	18.2	2,666
West Bengal	9.7	6.0	2,264	7.7	17.2	1,414	8.9	10.4	3,678
Northeast									
Arunachal Pradesh	10.4	5.7	856	8.1	15.1	275	9.9	7.7	1,131
Assam	10.2	6.4	1,510	8.4	16.7	762	9.6	9.9	2,272
Manipur	10.3	3.1	669	9.0	10.7	502	9.7	6.5	1,171
Meghalaya	10.5	3.6	524	9.6	5.9	356	10.1	4.5	880
Mizoram	9.6	3.2	690	7.6	13.7	462	8.8	7.7	1,152
Nagaland	8.4	15.7	686	7.3	22.7	571	7.9	19.0	1,257
Tripura	8.7	8.8	708	6.9	19.6	449	8.0	13.1	1,157
West									
Dadra & Nagar Haveli	8.5	19.8	573	6.1	37.8	392	7.6	26.7	965
Daman & Diu	10.1	10.5	511	7.7	24.4	352	9.0	16.7	863
Goa	9.6	4.4	735	7.6	21.5	556	8.7	11.9	1,291
Gujarat	9.1	12.1	1,214	7.2	27.5	826	8.3	18.7	2,040
Maharashtra	9.6	6.1	2,015	7.8	16.5	1,571	8.8	11.0	3,586
South									
Andaman & Nicobar Islands	9.6	6.9	669	8.2	17.8	452	9.0	11.2	1,121
Andhra Pradesh	10.0	4.3	1,455	8.7	9.5	999	9.5	6.4	2,454
Karnataka	10.4	8.4	1,175	8.3	15.0	806	9.6	10.9	1,981
Kerala	10.4	4.6	1,188	7.8	16.7	1,079	9.1	10.8	2,267
Lakshadweep	9.8	6.6	588	8.1	19.0	458	9.0	12.5	1,046
Puducherry	13.2	1.2	741	11.0	4.9	584	12.2	2.9	1,325
Tamil Nadu	11.8	2.0	1,624	9.9	7.5	1,079	11.0	4.3	2,703
Telangana	10.1	4.6	1,260	8.3	14.2	931	9.3	8.9	2,191

Notes

**Including spouse irrespective of age.*

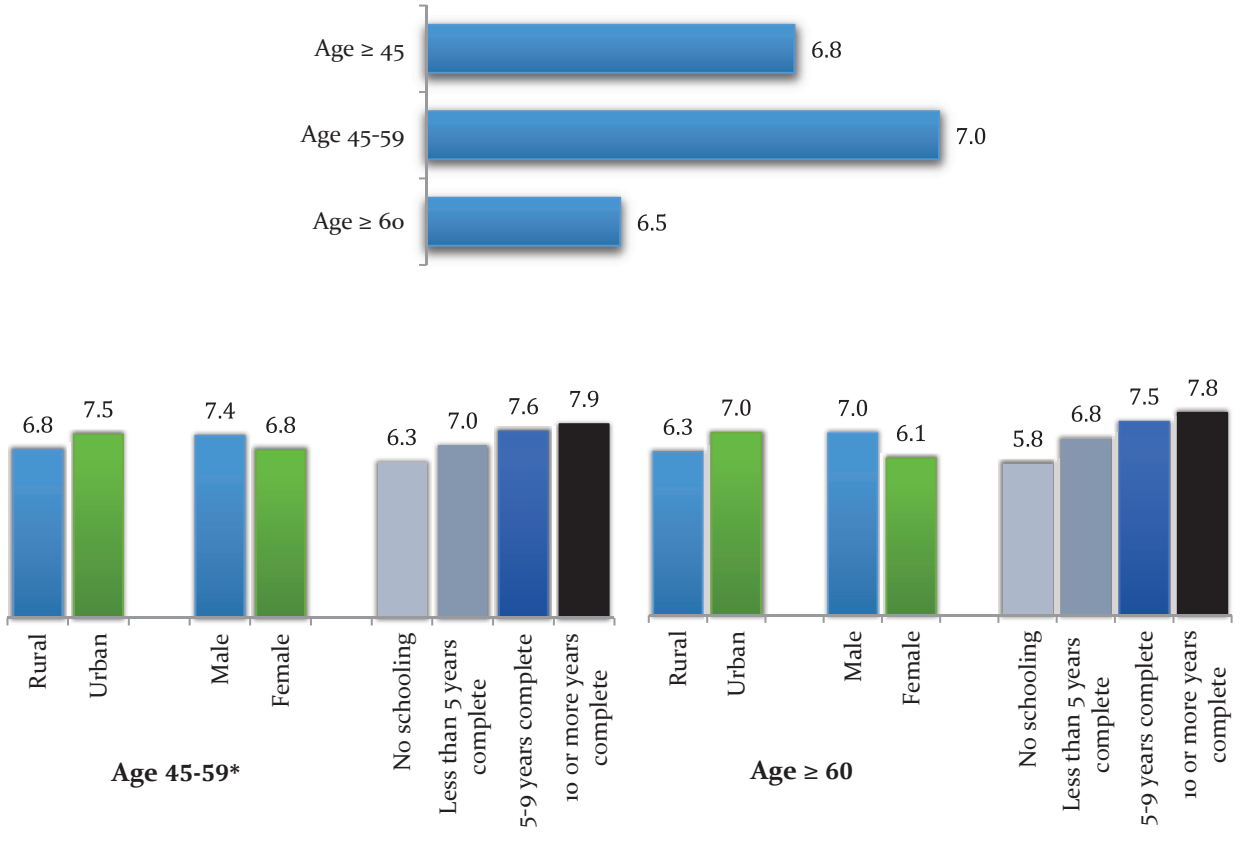
[1] Total word recall (0-20) refers to combined scoring for immediate word recall (0-10) and delayed word recall (0-10).

10.1.2 Orientation: time and place

Orientation refers to a person's understanding of self and the relationship between self and environment in the past and present. Place, time, and person are the common categories of orientation. LASI assessed respondents' orientation to time and place. A detailed description of the concepts and measurements are provided earlier in this chapter.

Figure 10.2 shows the mean orientation score by age, sex, place of residence, and education. Overall, among older adults age 45 and above, the mean orientation score is 6.8 out of a maximum score of 8; the mean score is higher among older adults age 45-59 (7.0) than among the elderly age 60 and above (6.5). Urban elderly scored higher than rural elderly, and elderly men scored higher than elderly women. By education, the mean orientation score increases from 5.8 among the elderly with no education to 7.8 among the elderly with 10 or more years of schooling.

Figure 10.2 Mean orientation score among older adults in India by age, sex, place of residence and education, India, LASI Wave 1, 2017-18



Note
**Including spouse irrespective of age.*

10.1.3 Verbal fluency

Verbal fluency is a cognitive function that facilitates information retrieval from memory. Successful retrieval requires executive control over cognitive processes, such as selective attention, selective inhibition, mental set shifting, internal response generation, and self-monitoring (Patterson, 2011). Verbal fluency is also known as retrieval fluency and is based on speed and ease of word production.

Table 10.3 presents the mean score and percentage of older adults in the lowest 10th percentile of verbal fluency score by background characteristics. The mean verbal fluency score for older adults age 45 and above in India is 11.6. The mean verbal fluency score among older adults age 45-59 is 12.1 which is slightly lower among the elderly age 60 and above (11.0). The proportion of older adults age 45-59 in the lowest 10th percentile of verbal fluency score is 7%, compared to 12% among the elderly age 60 and above. Among the elderly age 60 and above, the mean verbal fluency score is higher for men, those residing in urban areas, the currently married, those living with a spouse and children, and those currently working, with higher score for higher levels of education and MPCE quintile. The proportion of elderly age 60 and above in the lowest 10th percentile of verbal fluency score is higher among women (16%), those in rural areas (13%), the widowed (17%), those living alone or living with others or living with children and others (17% each) and those who never worked (15%). The decrease in the percentage of elderly age 60 and above in the lowest 10th percentile is more pronounced by education, ranging from 17% among older adults with no schooling to 5% among the elderly with 10 or more years of schooling.

The cross-state variations in mean score for verbal fluency are presented in Table 10.4. The highest verbal fluency mean score (15.3) is observed for older adults age 45 and above in Kerala and the lowest for Nagaland (7.9). More than a quarter of the elderly age 60 and above are found in the lowest 10th percentile for verbal fluency score in most of the northeast Indian states, such as Nagaland (29%), Meghalaya (28%), and Arunachal Pradesh (27%).

Table 10.3 Mean score of verbal fluency and percentage of older adults in lowest 10th percentile of score by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*			Age ≥ 60			Total		
	Mean verbal fluency	% of older adults in lowest 10th percentile of score	Number	Mean verbal fluency	% of older adults in lowest 10th percentile of score	Number	Mean verbal fluency	% of older adults in lowest 10th percentile of score	Number
Place of residence									
Rural	11.8	7.5	24,158	10.7	13.3	19,114	11.3	10.2	43,272
Urban	12.7	6.5	14,069	11.7	10.1	9,955	12.3	8.0	24,024
Sex									
Male	12.8	5.8	14,486	11.8	8.7	13,959	12.3	7.3	28,445
Female	11.7	8.0	23,741	10.3	15.6	15,110	11.1	11.1	38,851
Marital status									
Currently married	12.2	7.0	33,287	11.5	9.7	18,548	12.0	8.0	51,835
Widowed	11.2	8.9	3,635	10.1	17.0	9,765	10.4	15.1	13,400
Divorced/Separated/Deserted/ Others	12.0	5.7	1,305	10.7	13.0	756	11.5	8.3	2,061
Living arrangement									
Living alone	11.3	9.7	654	10.1	16.9	1,495	10.4	15.2	2,149
Living with spouse and/or others	11.9	7.6	4,160	11.2	11.7	5,722	11.5	10.0	9,882
Living with spouse and children	12.3	6.9	28,508	11.7	8.6	12,606	12.1	7.5	41,114
Living with children and others	11.2	8.5	3,848	10.2	16.7	7,724	10.5	14.3	11,572
Living with others only	12.0	6.2	1,057	10.0	17.1	1,522	10.8	12.9	2,579
Religion									
Hindu	12.2	7.0	27,972	11.1	11.9	21,217	11.7	9.3	49,189
Muslim	11.7	7.6	4,587	10.6	14.5	3,448	11.2	10.6	8,035
Christian	11.1	11.1	3,913	10.4	18.8	2,949	10.8	14.5	6,862
Others	12.2	4.9	1,755	11.0	10.8	1,455	11.6	7.7	3,210
Caste/tribe									
Scheduled tribe	10.9	12.0	6,930	9.8	19.9	4,802	10.4	15.4	11,732
Scheduled caste	11.5	8.9	6,481	10.6	12.8	4,746	11.1	10.7	11,227
Other backward class	12.2	6.6	14,267	10.9	12.6	10,929	11.6	9.3	25,196
None of the above	12.8	5.1	10,549	11.7	9.5	8,592	12.3	7.2	19,141
Education									
No schooling	10.6	11.2	15,180	9.9	16.8	15,476	10.2	14.1	30,656
Less than 5 years complete	12.1	5.6	4,006	11.6	7.5	3,526	11.9	6.6	7,532
5-9 years complete	12.7	5.2	10,295	12.2	7.0	5,611	12.5	5.9	15,906
10 or more years complete	14.5	2.1	8,746	13.5	5.0	4,456	14.1	3.1	13,202
Work status									
Currently working	12.3	6.7	22,332	11.5	9.2	8,732	12.1	7.5	31,064
Worked in past but currently not working	11.7	9.3	4,238	11.0	13.1	12,303	11.2	12.1	16,541
Never worked	11.8	7.2	11,657	10.3	15.0	8,034	11.2	10.6	19,691
MPCE quintile									
Poorest	11.3	9.0	7,131	10.3	15.8	5,935	10.8	12.2	13,066
Poorer	11.9	7.8	7,527	10.8	12.9	5,978	11.4	10.2	13,505
Middle	12.1	7.7	7,606	11.0	11.0	5,940	11.6	9.2	13,546
Richer	12.4	6.0	8,040	11.4	10.1	5,740	12.0	7.8	13,780
Richest	12.9	5.3	7,923	11.6	11.4	5,476	12.4	7.8	13,399
Total	**12.1**	**7.2**	**38,227**	**11.0**	**12.3**	**29,069**	**11.6**	**9.5**	**67,296**

Note

**Including spouse irrespective of age.*

Table 10.4 Mean score of verbal fluency and percentage of older adults in lowest 10th percentile of score, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*			Age ≥ 60			Total		
	Mean verbal fluency	% of older adults in lowest 10th percentile of score	Number	Mean verbal fluency	% of older adults in lowest 10th percentile of score	Number	Mean verbal fluency	% of older adults in lowest 10th percentile of score	Number
India	**12.1**	**7.2**	**38,227**	**11.0**	**12.3**	**29,069**	**11.6**	**9.5**	**67,296**
North									
Chandigarh	12.8	1.2	600	11.9	5.5	369	12.4	2.9	969
Delhi	10.3	15.3	707	9.5	21.1	421	10.0	17.5	1,128
Haryana	11.6	6.5	951	10.4	12.4	774	11.0	9.3	1,725
Himachal Pradesh	12.3	5.7	746	11.4	11.0	595	11.9	8.2	1,341
Jammu & Kashmir	11.0	7.9	825	9.8	17.4	680	10.4	12.6	1,505
Punjab	12.1	3.3	1,071	11.3	4.9	950	11.7	4.1	2,021
Rajasthan	13.8	3.9	1,033	12.6	6.0	961	13.2	4.9	1,994
Uttarakhand	13.1	2.1	705	12.5	7.0	631	12.8	4.5	1,336
Central									
Chhattisgarh	11.3	8.7	1,223	10.6	13.6	733	11.0	10.6	1,956
Madhya Pradesh	12.5	7.7	1,424	11.9	9.9	1,166	12.2	8.8	2,590
Uttar Pradesh	10.9	12.5	1,992	10.3	15.3	1,794	10.6	13.9	3,786
East									
Bihar	11.4	6.7	1,674	10.6	11.4	1,733	11.0	9.2	3,407
Jharkhand	10.8	9.4	1,234	10.3	12.2	1,102	10.5	10.8	2,336
Odisha	12.1	6.9	1,569	10.6	15.1	1,145	11.5	10.5	2,714
West Bengal	13.0	2.1	2,290	11.4	9.1	1,461	12.4	4.9	3,751
Northeast									
Arunachal Pradesh	10.5	17.7	872	9.0	26.8	305	10.2	19.8	1,177
Assam	13.3	4.3	1,519	12.0	8.1	783	12.8	5.6	2,302
Manipur	11.6	10.2	732	10.6	12.5	562	11.1	11.3	1,294
Meghalaya	10.1	17.1	532	9.2	28.3	393	9.7	21.8	925
Mizoram	12.6	2.7	693	12.7	2.4	475	12.6	2.6	1,168
Nagaland	8.2	26.8	695	7.7	29.3	584	7.9	28.0	1,279
Tripura	10.4	11.2	715	9.1	19.4	455	9.9	14.4	1,170
West									
Dadra & Nagar Haveli	13.8	10.6	588	11.3	21.0	416	12.9	14.7	1,004
Daman & Diu	15.8	4.3	524	14.1	7.2	381	15.0	5.6	905
Goa	12.4	6.1	763	10.7	15.9	598	11.6	10.5	1,361
Gujarat	14.9	6.5	1,255	13.7	8.1	887	14.4	7.2	2,142
Maharashtra	11.7	8.0	2,066	10.6	15.5	1,667	11.1	11.6	3,733
South									
Andaman & Nicobar Islands	10.7	12.5	686	9.5	18.3	475	10.2	14.8	1,161
Andhra Pradesh	11.0	6.8	1,481	9.9	14.1	1,037	10.5	9.9	2,518
Karnataka	12.2	6.8	1,239	10.7	11.3	881	11.6	8.5	2,120
Kerala	16.5	3.0	1,220	14.2	9.1	1,141	15.3	6.1	2,361
Lakshadweep	12.7	15.5	594	11.7	20.6	473	12.2	18.0	1,067
Puducherry	14.9	1.3	765	13.7	6.0	609	14.3	3.5	1,374
Tamil Nadu	12.5	5.6	1,893	11.0	12.9	1,427	11.8	8.9	3,320
Telangana	10.5	12.1	1,351	9.3	20.4	1,005	9.9	15.8	2,356

Note

**Including spouse irrespective of age.*

10.1.4 Arithmetic function

In the LASI, arithmetic function skills are assessed by number series, numeric ability (backward counting), serial sevens, and computation skills (multiplication and division). The combined score includes only three components of arithmetic function: numeric ability (backward counting), serial seven, and computation. The number series was excluded from the arithmetic function skills score owing to low response.

The mean score for arithmetic function and the percentage of older adults in the lowest percentile of arithmetic function by background characteristics are presented in Table 10.5. The overall mean score for India is 4.7, with a slight difference between older adults age 45-59 (5.1) and the elderly age 60 and above (4.2). Overall, 18% of older adults are found in the lowest 10th percentile of arithmetic functioning; the proportion increases to 24% for the elderly age 60 and above compared to 13% among older adults age 45-59. More than a quarter (28%) of the elderly age 60 and above in rural areas are found in the lowest 10th percentile of arithmetic function score, compared with 13% of the elderly in urban areas. Across age groups, women scored lower in arithmetic function. More than a third of elderly women age 60 and above (35%) are found in the lowest 10th percentile of arithmetic function score compared to men (11%), suggesting pronounced differences in arithmetic function score between men and women. Across age groups, older adults with 10 or more years of education scored much higher arithmetic score than older adults with no schooling. The percentage of the elderly age 60 and above in the lowest 10th percentile of arithmetic function score decreases with increasing education and MPCE quintile.

Variation in arithmetic function score across states is presented in Table 10.6. Older adults age 45 and above in Puducherry (6.9), Chandigarh (6.7), and Kerala (6.2) scored higher in arithmetic function. Among the elderly age 60 and above, the mean arithmetic function score ranges from 6.5 in Chandigarh and Puducherry to 1.6 in Arunachal Pradesh. More than a third of the elderly age 60 and above are observed in the lowest 10th percentile in the states/UTs of Arunachal Pradesh (62%), Dadra & Nagar Haveli (38%), Odisha (37%), Nagaland (37%), and Tripura (33%).

Table 10.5 Mean score of arithmetic function and percentage of older adults in lowest 10th percentile of score by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*			Age ≥ 60			Total		
	Mean arithmetic function[1]	% of older adults in lowest 10th percentile of score	Number	Mean arithmetic function[1]	% of older adults in lowest 10th percentile of score	Number	Mean arithmetic function[1]	% of older adults in lowest 10th percentile of score	Number
Place of residence									
Rural	4.6	16.0	24,156	3.7	27.8	19,110	4.2	21.6	43,266
Urban	6.1	7.8	14,067	5.3	13.4	9,955	5.8	10.1	24,022
Sex									
Male	6.3	6.2	14,485	5.5	10.8	13,956	5.9	8.6	28,441
Female	4.4	17.4	23,738	3.0	35.2	15,109	3.8	24.7	38,847
Marital status									
Currently married	5.2	12.6	33,283	4.8	17.6	18,546	5.0	14.5	51,829
Widowed	4.0	20.6	3,635	3.2	34.1	9,763	3.4	30.9	13,398
Divorced/Separated/ Deserted/Others	5.7	9.2	1,305	4.3	24.1	756	5.2	14.6	2,061
Living arrangement									
Living alone	4.5	14.0	654	3.4	31.3	1,494	3.7	27.3	2,148
Living with spouse and/or others	4.9	13.9	4,159	4.4	20.7	5,722	4.6	18.0	9,881
Living with spouse and children	5.3	12.3	28,506	4.9	16.2	12,604	5.1	13.5	41,110
Living with children and others	4.1	19.5	3,848	3.3	33.1	7,723	3.5	29.1	11,571
Living with others only	5.6	13.7	1,056	3.2	36.3	1,522	4.1	27.6	2,578
Religion									
Hindu	5.1	12.7	27,971	4.2	23.3	21,216	4.7	17.6	49,187
Muslim	4.8	15.7	4,586	4.0	25.1	3,447	4.5	19.7	8,033
Christian	5.3	17.8	3,913	4.5	27.6	2,949	4.9	22.1	6,862
Others	5.1	12.5	1,753	4.1	23.7	1,453	4.6	17.9	3,206
Caste/tribe									
Scheduled tribe	3.7	24.9	6,930	2.7	44.2	4,802	3.3	33.2	11,732
Scheduled caste	4.4	16.7	6,480	3.5	28.5	4,745	4.0	22.0	11,225
Other backward class	5.2	12.5	14,266	4.3	21.6	10,928	4.8	16.6	25,194
None of the above	5.8	8.1	10,547	4.9	17.7	8,590	5.4	12.6	19,137
Education									
No schooling	3.1	27.2	15,178	2.5	38.5	15,473	2.8	33.1	30,651
Less than 5 years complete	4.9	9.1	4,006	4.9	10.8	3,526	4.9	9.9	7,532
5-9 years complete	6.4	1.8	10,294	6.4	2.6	5,610	6.4	2.1	15,904
10 or more years complete	7.7	0.2	8,745	7.6	1.0	4,456	7.6	0.5	13,201
Work status									
Currently working	5.4	11.3	22,331	4.7	17.2	8,730	5.2	13.1	31,061
Worked in past but currently not working	4.5	19.1	4,237	4.3	23.7	12,301	4.4	22.5	16,538
Never worked	4.8	14.9	11,655	3.4	31.4	8,034	4.2	22.0	19,689
MPCE quintile									
Poorest	4.4	18.5	7,131	3.4	32.1	5,935	3.9	25.0	13,066
Poorer	4.8	15.5	7,527	3.9	26.3	5,976	4.4	20.5	13,503
Middle	5.1	13.0	7,605	4.4	20.9	5,940	4.7	16.7	13,545
Richer	5.5	10.5	8,038	4.5	19.7	5,739	5.1	14.6	13,777
Richest	5.8	8.5	7,922	5.0	16.9	5,475	5.5	11.9	13,397
Total	**5.1**	**13.2**	**38,223**	**4.2**	**23.6**	**29,065**	**4.7**	**18.0**	**67,288**

Notes

**Including spouse irrespective of age.*

[1] Arithmetic function ranges from 0-9 and it includes score for backward counting (0-2), serial 7 (0-5) and computation (0-2).

Table 10.6 Mean score of arithmetic function and percentage of older adults in lowest 10th percentile of score, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*			Age ≥ 60			Total		
	Mean arithmetic function[1]	% of older adults in lowest 10th percentile of score	Number	Mean arithmetic function[1]	% of older adults in lowest 10th percentile of score	Number	Mean arithmetic function[1]	% of older adults in lowest 10th percentile of score	Number
India	**5.1**	**13.2**	**38,223**	**4.2**	**23.6**	**29,065**	**4.7**	**18.0**	**67,288**
North									
Chandigarh	6.9	4.3	600	6.5	7.3	369	6.7	5.5	969
Delhi	6.3	9.9	707	5.3	18.0	421	6.0	12.9	1,128
Haryana	5.7	13.8	951	4.2	26.2	774	5.0	19.8	1,725
Himachal Pradesh	5.8	10.7	746	4.6	27.4	595	5.2	18.6	1,341
Jammu & Kashmir	5.0	9.4	825	3.8	24.7	680	4.4	16.9	1,505
Punjab	5.6	7.8	1,069	4.5	20.1	949	5.1	13.6	2,018
Rajasthan	4.3	19.9	1,033	3.5	31.2	961	3.9	25.5	1,994
Uttarakhand	5.0	15.9	705	4.2	25.3	631	4.6	20.5	1,336
Central									
Chhattisgarh	4.2	19.7	1,223	3.6	29.6	733	4.0	23.5	1,956
Madhya Pradesh	4.6	15.7	1,424	3.6	27.3	1,166	4.1	21.2	2,590
Uttar Pradesh	4.7	18.8	1,992	4.2	25.3	1,794	4.4	22.0	3,786
East									
Bihar	5.1	11.4	1,674	4.4	18.3	1,733	4.7	15.1	3,407
Jharkhand	5.2	12.8	1,233	4.5	21.7	1,102	4.9	17.1	2,335
Odisha	4.5	21.6	1,569	3.5	37.0	1,145	4.0	28.4	2,714
West Bengal	5.3	12.3	2,290	4.1	29.1	1,461	4.8	19.0	3,751
Northeast									
Arunachal Pradesh	3.5	24.6	872	1.6	62.2	305	3.1	33.7	1,177
Assam	5.2	14.4	1,519	4.3	28.2	783	4.9	19.2	2,302
Manipur	6.4	4.0	732	5.2	10.9	562	5.9	7.1	1,294
Meghalaya	6.0	9.8	532	5.0	19.3	393	5.6	13.8	925
Mizoram	5.6	9.4	693	4.2	20.7	475	5.0	14.3	1,168
Nagaland	4.7	22.5	695	3.8	37.0	584	4.2	29.5	1,279
Tripura	4.7	15.6	715	3.4	32.5	455	4.2	22.3	1,170
West									
Dadra & Nagar Haveli	5.0	17.3	588	3.3	37.9	416	4.3	25.3	1,004
Daman & Diu	5.3	6.5	524	4.3	19.7	381	4.8	12.5	905
Goa	5.8	8.5	763	4.7	24.7	598	5.3	15.8	1,361
Gujarat	4.9	13.6	1,255	4.6	16.9	887	4.8	15.0	2,142
Maharashtra	5.1	9.4	2,066	4.2	21.8	1,665	4.7	15.4	3,731
South									
Andaman & Nicobar Islands	5.0	17.4	686	3.6	30.9	475	4.4	22.8	1,161
Andhra Pradesh	5.5	10.3	1,480	4.1	24.1	1,037	4.9	16.1	2,517
Karnataka	5.1	13.3	1,239	4.0	20.2	881	4.7	16.0	2,120
Kerala	6.8	2.8	1,220	5.7	12.3	1,141	6.2	7.7	2,361
Lakshadweep	5.7	10.1	594	4.2	28.3	473	5.0	18.8	1,067
Puducherry	7.2	1.2	765	6.5	4.6	609	6.9	2.8	1,374
Tamil Nadu	6.3	4.5	1,893	5.4	13.4	1,427	5.9	8.6	3,320
Telangana	5.0	10.8	1,351	3.9	21.3	1,004	4.5	15.5	2,355

Notes

**Including spouse irrespective of age*

[1] Arithmetic function ranges from 0-9 and it includes score for backward counting (0-2), serial 7 (0-5) and computation (0-2).

10.1.5 Object naming and executive function

Vocabulary knowledge measures the degree to which a respondent comprehends and can verbally express vocabulary. In the LASI, the object naming test assessed respondents' vocabulary knowledge as well as crystallized intelligence, which is the ability to use skills, knowledge, and experience. Crystallized intelligence does not equate to memory, but it does rely on accessing information from long-term memory. Executive function represents mental processes that enable us to successfully plan, focus attention, remember instructions, and juggle multiple tasks. Executive function facilitates mentally engaging with ideas; taking the time to think before acting; meeting novel, unanticipated challenges; resisting temptations; and staying focused (Diamond, 2013).

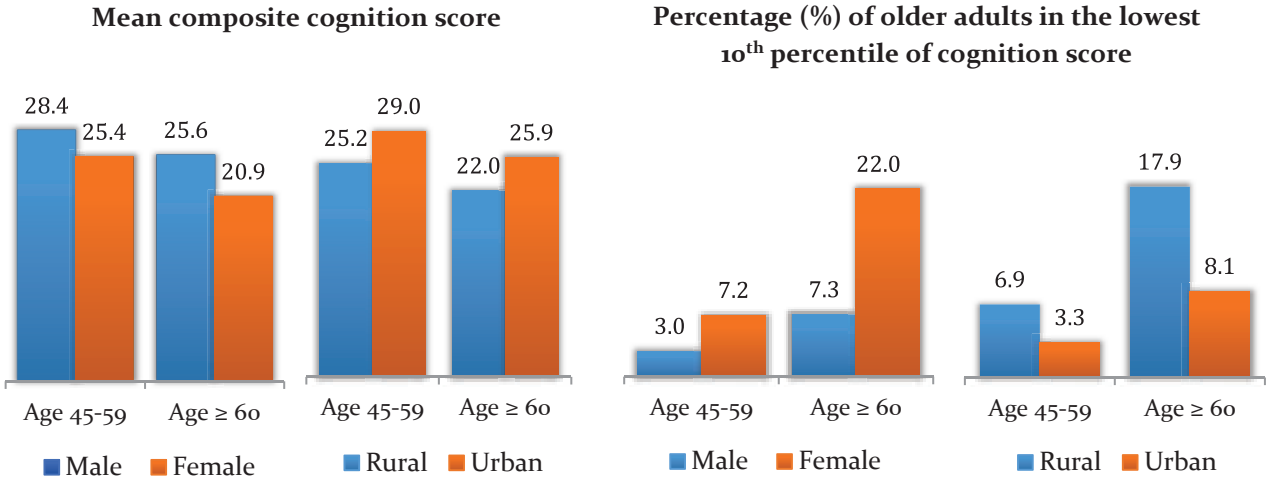
In the LASI, information was collected on object naming and executive function skills as described in Table A. The scoring developed for both tests is used in the composite cognition score.

10.1.6 Composite cognition

In the LASI, respondents' cognitive abilities are assessed on six cognitive domains: memory, orientation, retrieval fluency, arithmetic, executive functioning skills, and object naming. A summary composite cognitive score was generated by combining scores from all cognitive domains except retrieval fluency. The composite cognition score ranges from 0 to 43, with higher score indicating better cognitive ability.

Table 10.7 presents the mean score and percentage of older adults in the lowest 10th percentile for composite cognition by background characteristics. In India, the mean composite cognition score among older adults age 45 and above is 25, with 10% in the lowest 10th percentile of the composite cognition score. A higher percentage of elderly age 60 and above (15%) than older adults age 45-59 (6%) are in the lowest 10th percentile of composite cognition score. Among elderly age 60 and above, men (25.6) and those living in urban areas (25.9) have higher mean composite cognition score than women (20.9) and those residing in rural areas (22.0). Twelve percent of older adults age 45 and above and 18% of the elderly age 60 and above in rural areas are in the lowest 10th percentile of composite cognition score. Sex differences in the cognitive score are more pronounced among the elderly age 60 and above; 7% of elderly men are found in the lowest 10th percentile of composite cognition score compared with 22% of elderly women. The percentage of elderly age 60 and above in the lowest 10th percentile of cognition score is higher among the widowed (24%), those living with others only (26%), and Scheduled tribe (31%), and decreases with educational attainment and MPCE quintiles.

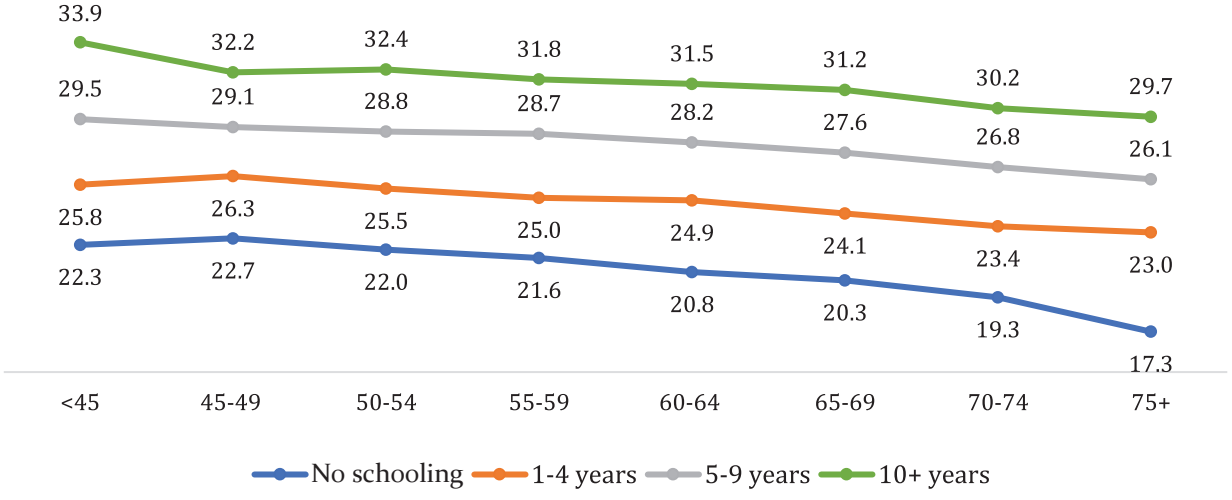
Figure 10.3 Composite cognition score (0-43) among older adults by sex and place of residence, India, LASI Wave 1, 2017-18



Note
**Including spouse irrespective of age.*

Figure 10.4 presents the mean composite cognition score by age and education. The mean composite cognition score decreases for lower levels of education and with advancing age, and this decrease is more pronounced for elderly age 75 and above.

Figure 10.4 Composite cognition score among older adults by age and education, India, LASI Wave 1, 2017-18



The mean composite cognition score differs considerably across India's states/UTs (Table 10.8). The mean cognition score is much higher among older adults age 45 and above in Puducherry (31.6) followed by Chandigarh (31.4) and a lower mean score is observed in Odisha (22.9). Among the elderly age 60 and above, the mean cognition score is lowest in Arunachal Pradesh (19.3). The percentage of older adults age 45 and above in the lowest 10th percentile for the cognition score varies from less than 1% in Chandigarh to 20% in Nagaland; more than a quarter of the elderly age 60 and above are in the lowest percentile of composite cognition score in Arunachal Pradesh (31%), Dadra & Nagar Haveli (30%), and Odisha (28%); by contrast, the proportion is very low among the elderly in Puducherry (4%) and Chandigarh (1%).

Table 10.7 Mean composite cognition score with percentage of older adults in lowest 10th percentile of score by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Cognition[1]								
	Age 45-59*			Age ≥ 60			Total		
	Mean score	% in lowest 10th percentile of score	Number	Mean score	% in lowest 10th percentile of score	Number	Mean score	% in lowest 10th percentile of score	Number
Place of residence									
Rural	25.2	6.9	23,015	22.0	17.9	17,651	23.7	12.0	40,666
Urban	29.0	3.3	13,489	25.9	8.1	9,284	27.7	5.3	22,773
Sex									
Male	28.4	3.0	13,835	25.6	7.3	12,959	27.0	5.2	26,794
Female	25.4	7.2	22,669	20.9	22.0	13,976	23.6	13.2	36,645
Marital status									
Currently married	26.8	5.2	31,869	24.5	9.9	17,375	25.9	6.9	49,244
Widowed	23.8	10.1	3,430	20.7	24.0	8,896	21.4	20.6	12,326
Divorced/Separated/ Deserted/Others	26.4	4.4	1,205	22.6	17.9	664	25.1	9.1	1,869
Living arrangement									
Living alone	25.0	8.4	621	21.2	22.7	1,356	22.1	19.3	1,977
Living with spouse and/or others	26.0	5.5	3,967	23.9	11.4	5,304	24.8	8.9	9,271
Living with spouse and children	26.9	5.2	27,306	24.7	9.2	11,868	26.2	6.4	39,174
Living with children and others	24.1	9.2	3,622	20.9	23.3	7,055	21.8	19.2	10,677
Living with others only	25.7	5.9	988	20.2	25.8	1,352	22.4	17.7	2,340
Religion									
Hindu	26.6	5.6	26,561	23.2	14.6	19,558	25.1	9.6	46,119
Muslim	26.0	4.5	4,446	22.7	16.1	3,268	24.6	9.3	7,714
Christian	24.6	12.0	3,806	23.0	20.8	2,742	23.9	15.6	6,548
Others	26.3	6.0	1,691	22.6	15.8	1,367	24.6	10.7	3,058
Caste/tribe									
Scheduled tribe	23.3	13.1	6,697	19.6	30.9	4,501	21.8	20.6	11,198
Scheduled caste	24.8	7.5	6,153	21.6	18.9	4,378	23.4	12.6	10,531
Other backward class	27.0	4.6	13,470	23.5	12.9	9,975	25.4	8.2	23,445
None of the above	27.8	3.6	10,184	24.5	11.3	8,081	26.3	7.1	18,265
Education									
No schooling	22.1	11.9	14,355	19.5	24.6	14,134	20.8	18.4	28,489
Less than 5 years complete	25.7	3.6	3,865	23.9	7.7	3,324	24.8	5.6	7,189
5-9 years complete	29.0	0.6	9,872	27.4	1.5	5,275	28.4	1.0	15,147
10 or more years complete	32.5	0.1	8,412	30.9	0.5	4,202	32.0	0.2	12,614
Work status									
Currently working	26.9	5.1	21,386	24.2	9.9	8,236	26.1	6.6	29,622
Worked in past but currently not working	25.1	9.2	4,018	23.1	16.7	11,303	23.6	14.7	15,321
Never worked	26.2	5.2	11,100	21.9	18.7	7,396	24.4	10.9	18,496
MPCE quintile									
Poorest	25.0	7.5	6,792	21.4	20.2	5,446	23.3	13.5	12,238
Poorer	25.6	6.5	7,147	22.3	17.0	5,522	24.1	11.3	12,669
Middle	26.2	6.9	7,258	23.4	13.2	5,510	25.0	9.8	12,768
Richer	27.2	4.3	7,715	24.0	12.1	5,303	25.8	7.7	13,018
Richest	28.5	2.9	7,592	24.9	11.2	5,154	27.1	6.2	12,746
Total	**26.5**	**5.6**	**36,504**	**23.1**	**15.0**	**26,935**	**25.0**	**9.8**	**63,439**

Notes

**Including spouse irrespective of age.*

Combined Cognition score ranges from 0-43. It includes score for orientation (0-8), object naming (0-2), arithmetic function (0-9) and executive function (paper folding & pentagon drawing) (0-4) and total word recall (0-20).

Table 10.8 Mean composite cognition score with percentage of older adults in lowest 10th percentile of score, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Cognition[1]								
	Age 45-59*			Age ≥ 60			Total		
	Mean score	% in lowest 10th percentile of score	Number	Mean score	% in lowest 10th percentile of score	Number	Mean score	% in lowest 10th percentile of score	Number
India	**26.5**	**5.6**	**36,504**	**23.1**	**15.0**	**26,935**	**25.0**	**9.8**	**63,439**
North									
Chandigarh	32.0	0.8	586	30.5	1.3	351	31.4	0.9	937
Delhi	28.2	2.4	644	24.8	12.2	355	27.0	5.8	999
Haryana	26.8	5.0	935	23.0	15.0	742	25.0	9.7	1,677
Himachal Pradesh	27.1	4.6	675	23.3	18.6	521	25.3	11.1	1,196
Jammu & Kashmir	26.5	5.5	814	22.4	17.2	660	24.5	11.2	1,474
Punjab	27.4	1.7	1,042	23.9	9.5	910	25.8	5.4	1,952
Rajasthan	24.9	5.8	964	21.6	19.3	858	23.3	12.5	1,822
Uttarakhand	26.1	5.2	633	22.9	14.0	562	24.5	9.5	1,195
Central									
Chhattisgarh	25.3	6.3	1,174	23.0	13.1	680	24.4	8.8	1,854
Madhya Pradesh	27.2	2.9	1,328	24.4	9.0	1,064	25.9	5.8	2,392
Uttar Pradesh	25.0	6.9	1,886	22.9	14.1	1,703	24.0	10.4	3,589
East									
Bihar	26.4	4.0	1,596	24.0	10.5	1,637	25.1	7.4	3,233
Jharkhand	24.8	10.4	1,026	21.9	20.8	911	23.5	15.4	1,937
Odisha	24.6	10.1	1,555	20.7	28.2	1,111	22.9	17.9	2,666
West Bengal	26.5	5.0	2,264	22.6	18.4	1,414	25.0	10.3	3,678
Northeast									
Arunachal Pradesh	25.0	9.2	856	19.3	31.3	275	23.8	14.0	1,131
Assam	27.3	6.5	1,510	23.6	19.6	762	26.0	11.1	2,272
Manipur	29.0	2.0	669	25.8	7.6	502	27.6	4.6	1,171
Meghalaya	28.3	5.3	524	25.9	12.0	356	27.3	8.0	880
Mizoram	27.5	1.5	690	23.3	11.0	462	25.7	5.5	1,152
Nagaland	25.0	14.9	686	21.8	26.1	571	23.4	20.2	1,257
Tripura	24.8	8.1	708	20.5	23.3	449	23.1	14.1	1,157
West									
Dadra & Nagar Haveli	25.6	13.0	573	20.4	30.3	392	23.6	19.7	965
Daman & Diu	27.9	4.2	511	23.7	9.4	352	26.0	6.5	863
Goa	27.8	2.9	735	23.5	19.4	555	25.9	10.2	1,290
Gujarat	25.7	8.5	1,214	23.1	15.5	826	24.6	11.4	2,040
Maharashtra	26.3	5.3	2,008	22.7	15.9	1,567	24.6	10.4	3,575
South									
Andaman & Nicobar Islands	26.4	5.9	669	22.0	18.9	452	24.7	11.1	1,121
Andhra Pradesh	26.8	3.0	1,454	23.1	15.1	999	25.2	8.0	2,453
Karnataka	26.7	8.2	1,175	22.4	16.6	806	25.1	11.4	1,981
Kerala	29.7	1.9	1,188	25.0	10.7	1,079	27.3	6.4	2,267
Lakshadweep	27.6	3.6	588	23.1	17.2	458	25.5	10.0	1,046
Puducherry	33.3	0.4	741	29.7	4.0	584	31.6	2.1	1,325
Tamil Nadu	30.7	0.9	1,624	27.3	4.5	1,079	29.3	2.4	2,703
Telangana	26.2	5.7	1,259	22.0	18.7	930	24.3	11.4	2,189

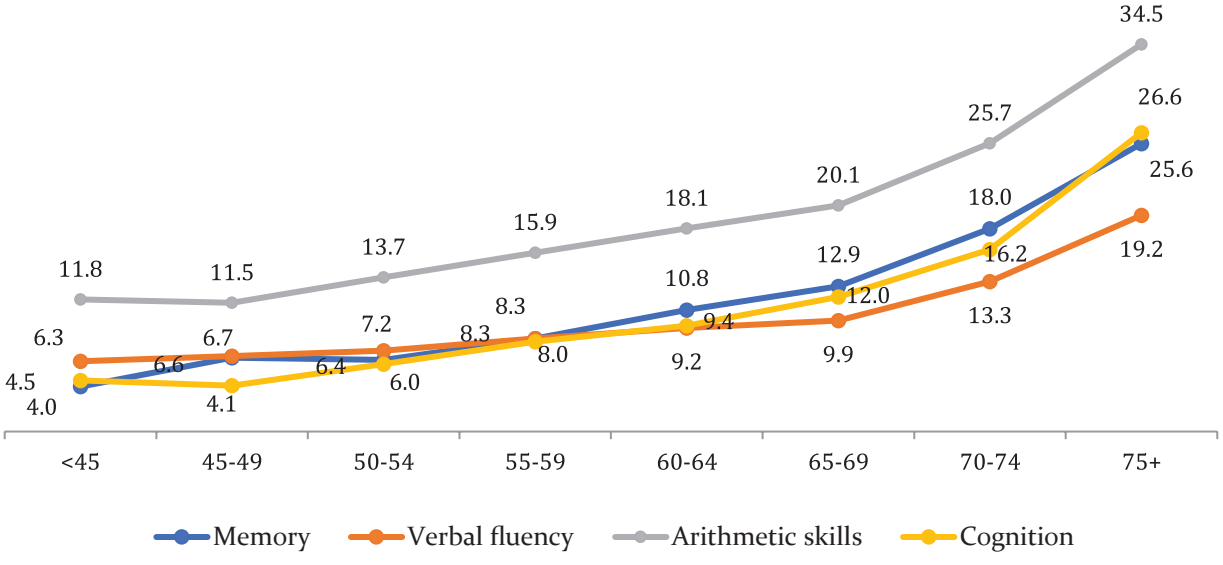
Notes

**Including spouse irrespective of age.*

Combined Cognition score ranges from 0-43. It includes score for orientation (0-8), object naming (0-2), arithmetic function (0-9) and executive function (paper folding & pentagon drawing) (0-4) and total word recall (0-20).

Figure 10.5 presents the percentage of older adults in the lowest 10th percentile across different cognitive domains. The percentage of older adults in the lowest 10th percentile increases with advancing age across all domains. For composite cognition, there is a sharp increase in the percentage found in the lowest 10th percentile among elderly age 75 or above. More than a quarter of the elderly age 75 or above are in the lowest 10th percentile across all composite cognition score domains except verbal fluency.

Figure 10.5 Percentage of older adults in the lowest 10th percentile for different cognitive domains by age, India, LASI Wave 1, 2017-18



Key findings: cognition

- Overall, in India, the mean score in each of six cognitive domains is lower among elderly age 60 and above than older adults age 45-59, among rural compared to urban elderly, and among elderly women compared to men.
- Older adults and elderly with more than 10 years of schooling performed much better in each of the cognitive domains. Around a quarter of elderly with no schooling (25%) had cognitive score in lowest 10th percentile compared with less than 1% of elderly age 60 and above (0.5%) in the lowest 10th percentile of the composite cognition score.
- In all cognitive domains as well as in the composite cognitive score, older adults age 45-59 and elderly age 60 and above in the states/UTs with better education such as Chandigarh, Puducherry, Kerala, Tamil Nadu, Mizoram and Delhi have higher score on cognitive abilities.

10.2 DEPRESSION

Depression is defined as an extended period of time (at least two weeks) in which a person experiences a depressed mood or loss of interest or pleasure in activities that were once enjoyed (Gururaj et al., 2016). Depression can cause great suffering and can lead to impaired functioning in daily life. Older people with depressive symptoms have poorer functioning compared to those with chronic medical conditions (WHO, 2017b). Given the associated problems, such as decreased optimism/motivation, low self-esteem, trouble concentrating (paying attention), self-harm, and/or suicidal thoughts and behaviour, identifying and treating depression is critical, especially when comorbidities are more prevalent. Depressive symptoms include feeling sad or down most of the time, loss of interest in usual activities, significant weight loss or weight gain, a decrease or increase in appetite, difficulty sleeping or sleeping too much, feeling agitated or irritable, feeling tired or loss of energy (fatigue), feelings of worthlessness or excessive/inappropriate guilt, difficulty in thinking, concentrating, or making decisions, crying spells, feeling hopeless, and suicidal thoughts and/or attempts. Although most individuals experience some form of these symptoms, for a diagnosis of depression, these symptoms must either result in significant feelings of distress or interfere with day-to-day functioning.

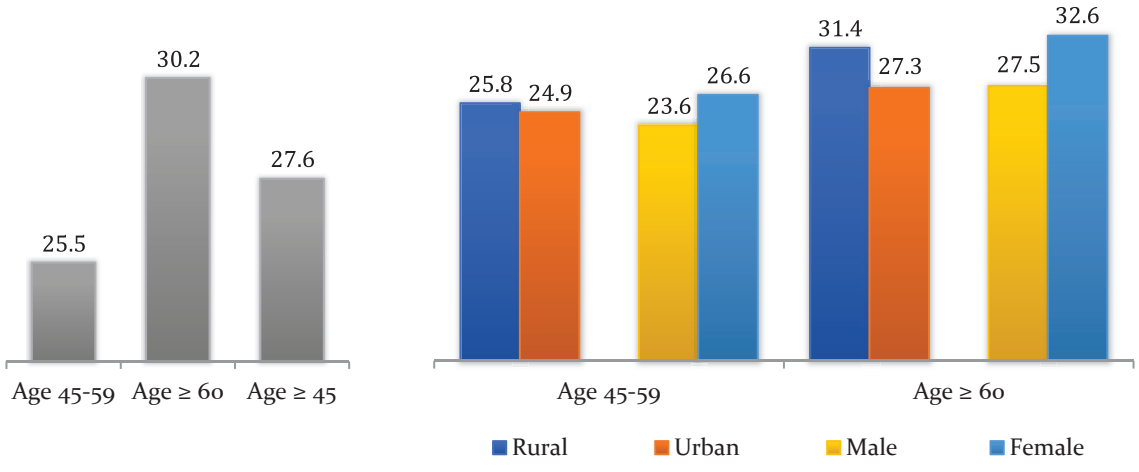
In the LASI, two internationally validated and comparable tools are used to assess depressive symptoms and episodes: the Centre for Epidemiologic Studies Depression (CES-D) scale was used to identify the presence of depressive symptoms (Radloff, 1977) and the Composite International Diagnostic Interview Short Form (CIDI-SF) scale, a structured interview scale, was used for diagnosing probable major depression (Kessler and Ustun, 2004).

10.2.1 Centre for Epidemiologic Studies Depression Scale (CES-D)

The full form CES-D is a short self-report scale designed as a screening tool for depressive symptoms in the general population (Radloff, 1977). The original CES-D scale is a 20-item scale, while a shortened 10-item scale with four scale option categories was used in the LASI. The 10 items included seven negative symptoms (trouble concentrating, feeling depressed, low energy, fear of something, feeling alone, bothered by things, and everything is an effort), and three positive symptoms (feeling happy, hopeful, and satisfied). Response options included rarely or never (< 1 day), sometimes (1 or 2 days), often (3 or 4 days), and most or all of the time (5-7 days) in a week prior to the interview. For negative symptoms, rarely or never (< 1 day), and sometimes (1 or 2 days) were scored zero, and often (3 or 4 days) and most or all of the time (5-7 days) categories were scored one. Scoring was reversed for positive symptoms. The overall score ranges from zero to 10 and score of four or more are used to calculate the prevalence of depressive symptoms (Kumar et al., 2016).

Figure 10.6 shows that the overall proportion of older adults in India age 45 and above who screened positive for depressive symptoms based on the CES-D scale is 28%; 30% of the elderly age 60 and above have depressive symptoms, compared to 26% of older adults age 45-59. A higher proportion of the elderly age 60 and above residing in rural areas (31%) screened positive for depression symptoms than in urban areas (27%). This proportion is also higher among older adult women age 45-59 (27%) than older adult men (24%); this sex-based difference is also seen among the elderly age 60 and above.

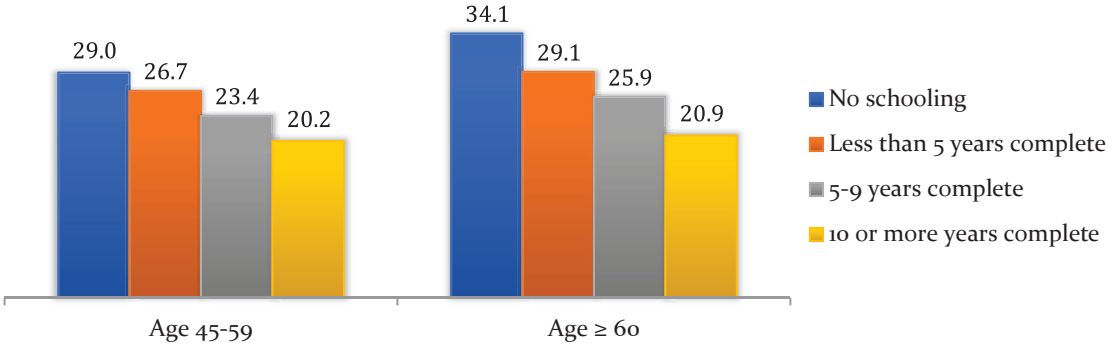
Figure 10.6 Percentage of older adults screened positive for depressive symptoms based on CES-D by selected demographic characteristics, India, LASI Wave 1, 2017-18



Note
Including spouse irrespective of age.

The percentage of older adults screened positive for depressive symptoms decreases with increased years of schooling (Figure 10.7). A higher proportion of the elderly age 60 and above with no education (34%) have depressive symptoms compared to those with some education. The same pattern is observed with older adults age 45-59.

Figure 10.7 Percentage of older adults screened positive for depressive symptoms based on CES-D by education, India, LASI Wave 1, 2017-18

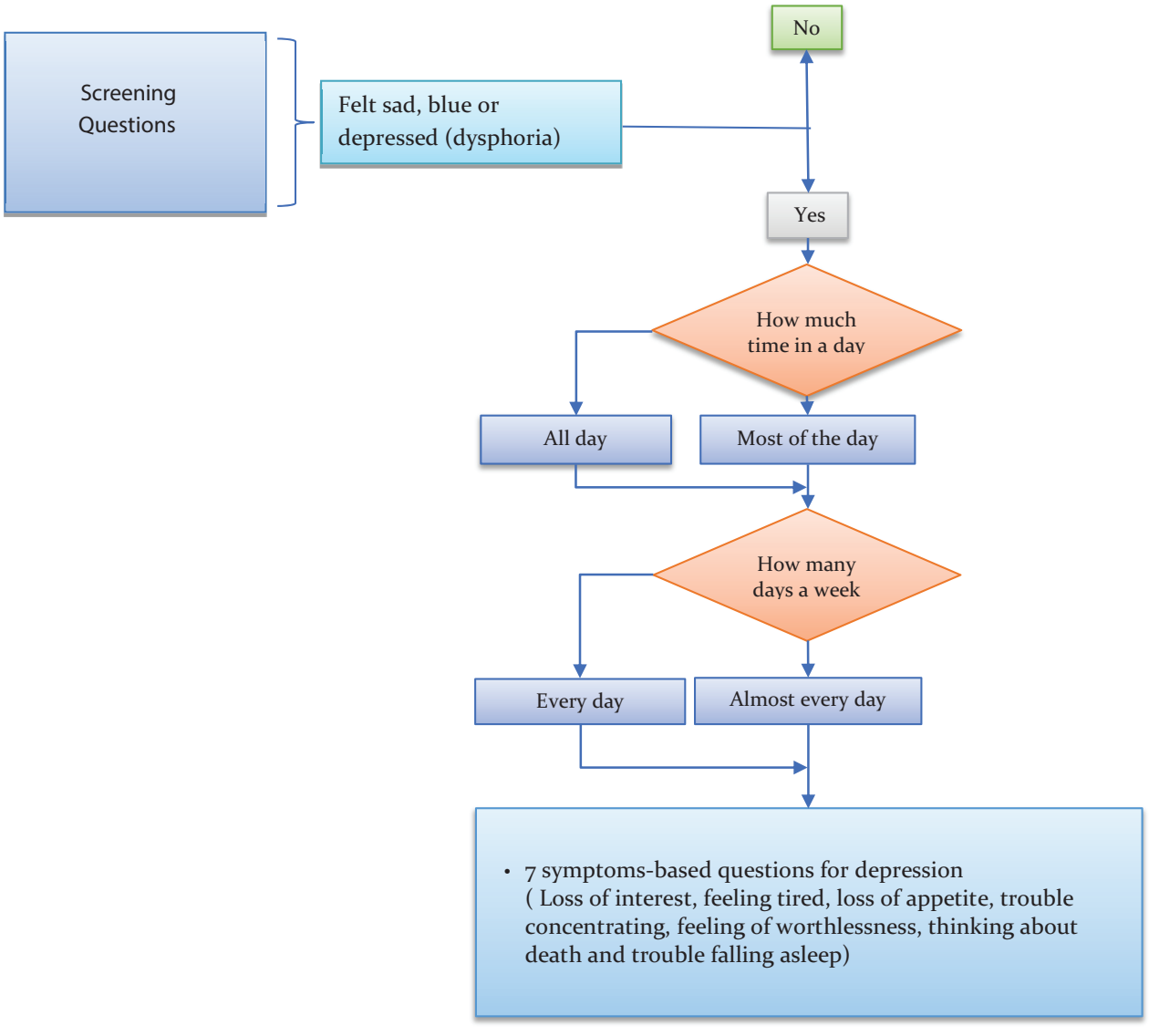


Note
Including spouse irrespective of age.

10.2.2 Composite International Diagnostic Interview- Short Form (CIDI-SF)

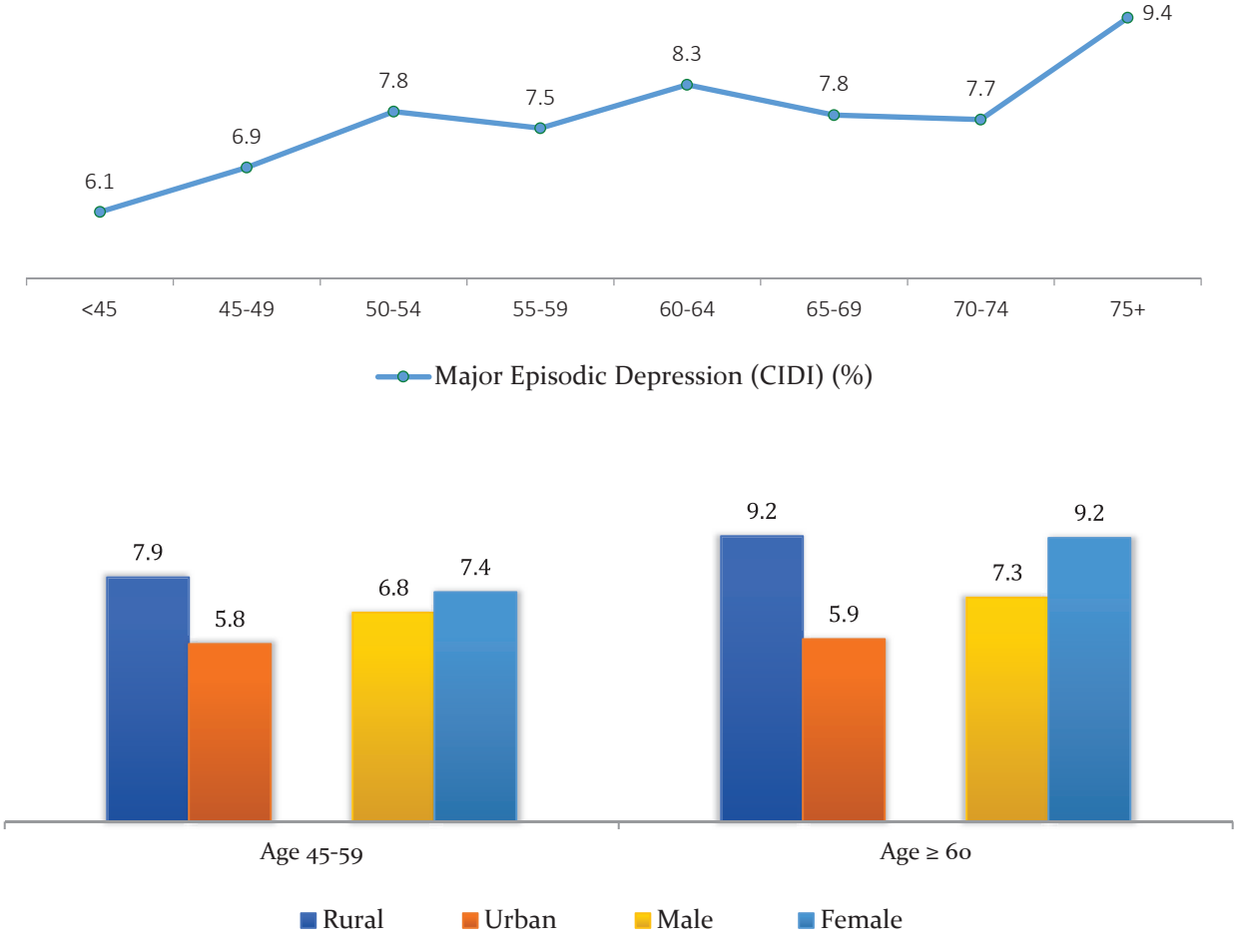
The Short Form Composite International Diagnostic Interview (CIDI-SF) is used in the LASI to estimate the diagnostic symptoms-based prevalence of major depression (Kessler and Ustun, 2004). This scale determines a probable psychiatric diagnosis of major depression and has been validated in field settings and widely used in population-based health surveys. The CIDI-SF scale score ranges from 0 to 10 and a score of three or more is used to calculate the prevalence of probable major depression. The complete flowchart of the CIDI-SF scale is shown in the following chart.

Chart 10.1: Flow of questions in the CIDI-SF scale



The overall prevalence of probable major depression among respondents with symptoms of dysphoria is 7.7 % and with symptoms of either dysphoria or anhedonia is 8%. The prevalence of major depression with symptoms of dysphoria by CIDI-SF score of 4 or more is 7.2%. This chapter presents the information about prevalence of probable major depression among the older adults in India with symptoms of dysphoria, calculated using the CIDI-SF score of 3 or more. Figure 10.8 shows the prevalence of depression by age, place of residence, and sex. The prevalence of probable major depression increases steadily with age with the highest prevalence of 9.4% among elderly age 75 and above.

Figure 10.8 Prevalence (%) of probable major depression based on CIDI-SF among older adults by age, place of residence and sex, India, LASI Wave 1, 2017-18



Note

Including spouse irrespective of age.

Table 10.9 shows the prevalence of probable major depression based on the standard CIDI-SF diagnostic scale by background characteristics. The overall prevalence of probable major depression among older adults age 45 and above in India is 8%. Among the elderly age 60 and above, the prevalence of probable major depression is higher among women (9%) than men (7%), and those in rural (9%) than urban (6%) areas, among the widowed (10%), those living alone (13%), Scheduled caste (10%), and those who worked in the past but are not currently working (10%). By education, the prevalence of probable major depression among the elderly age 60 and above declines sharply with educational attainment ranging from 9% of those with less than primary education to 5% of those with 10 or more years of schooling; but the prevalence rate does not vary much by MPCE quintiles.

Table 10.9 Prevalence (%) of measured probable major depression based on CIDI-SF scale among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Measured probable major depression based on CIDI-SF[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	7.9	25,527	9.2	20,206	8.5	45,733
Urban	5.8	14,737	5.9	10,431	5.8	25,168
Sex						
Male	6.8	15,239	7.3	14,682	7.0	29,921
Female	7.4	25,025	9.2	15,955	8.2	40,980
Marital status						
Currently married	6.7	35,068	7.5	19,516	7.0	54,584
Widowed	12.7	3,827	9.7	10,330	10.4	14,157
Divorced/Separated/Deserted/Others	5.4	1,369	6.7	791	5.9	2,160
Living arrangement						
Living alone	12.3	680	12.8	1,591	12.7	2,271
Living with spouse and/or others	6.2	4,324	8.1	5,980	7.3	10,304
Living with spouse and children	6.8	30,099	7.2	13,306	6.9	43,405
Living with children and others	11.0	4,054	8.5	8,165	9.2	12,219
Living with others only	6.7	1,107	11.1	1,595	9.4	2,702
Religion						
Hindu	7.1	29,549	8.2	22,459	7.6	52,008
Muslim	8.7	4,866	9.3	3,622	9.0	8,488
Christian	2.6	4,028	6.2	3,042	4.2	7,070
Others	8.8	1,821	8.1	1,514	8.5	3,335
Caste/tribe						
Scheduled tribe	4.2	7,267	4.7	5,025	4.4	12,292
Scheduled caste	7.6	6,820	9.7	5,005	8.6	11,825
Other backward class	7.5	15,113	8.7	11,594	8.1	26,707
None of the above	7.2	11,064	7.6	9,013	7.4	20,077
Education						
No schooling	8.7	16,116	9.2	16,388	9.0	32,504
Less than 5 years complete	8.6	4,214	9.4	3,697	9.0	7,911
5-9 years complete	6.3	10,779	7.0	5,882	6.6	16,661
10 or more years complete	4.4	9,155	5.2	4,670	4.7	13,825
Work status						
Currently working	6.2	23,438	7.5	9,191	6.6	32,629
Worked in past but currently not working	13.4	4,487	9.5	12,907	10.5	17,394
Never worked	6.7	12,339	7.2	8,539	6.9	20,878
MPCE quintile						
Poorest	6.2	7,573	8.7	6,279	7.4	13,852
Poorer	6.5	7,949	7.5	6,304	7.0	14,253
Middle	7.2	8,017	7.8	6,255	7.4	14,272
Richer	6.4	8,416	8.3	6,030	7.2	14,446
Richest	9.7	8,309	9.4	5,769	9.6	14,078
Total	**7.2**	**40,264**	**8.3**	**30,637**	**7.7**	**70,901**

Notes

**Including spouse irrespective of age.*

[1] Based on Composite International Diagnostic Interview (CIDI-SF); respondent who reported that they felt sad, blue or depressed for two-weeks' period during last 12 months for all the day long or most of the day or either reported loss of interest for two weeks' period during the last 12 months for all day long or most of the day in hobbies, work and other activities that usually give pleasure. The probable major depression = CIDI-SF score > 3.

Table 10.10 presents cross-state differences in the prevalence of probable major depression based on CIDI-SF in India. The prevalence of probable major depression among older adults age 45 and above varies from less than 1% in Mizoram (0.8%) to 15% in Madhya Pradesh. More than one in ten of the elderly age 60 and above have probable major depression in Madhya Pradesh (17%), Uttar Pradesh (14%), Delhi (11%), Bihar (10%), and Goa (10%), suggesting markedly higher burden of undiagnosed depression in these states.

Table 10.10 Prevalence (%) of measured probable major depression based on CIDI-SF scale among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Measured probable major depression based on CIDI-SF[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**7.2**	**40,264**	**8.3**	**30,637**	**7.7**	**70,901**
North						
Chandigarh	9.2	609	7.1	371	8.4	980
Delhi	6.4	821	10.5	492	7.9	1,313
Haryana	6.6	1,041	5.5	831	6.1	1,872
Himachal Pradesh	4.3	758	6.1	607	5.2	1,365
Jammu & Kashmir	3.5	876	4.6	711	4.1	1,587
Punjab	8.1	1,089	9.2	988	8.6	2,077
Rajasthan	6.6	1,157	5.6	1,065	6.1	2,222
Uttarakhand	5.4	714	7.4	636	6.4	1,350
Central						
Chhattisgarh	4.8	1,269	3.6	759	4.3	2,028
Madhya Pradesh	12.9	1,581	17.0	1,287	14.9	2,868
Uttar Pradesh	12.8	2,372	14.0	2,087	13.4	4,459
East						
Bihar	10.1	1,697	10.3	1,767	10.2	3,464
Jharkhand	5.8	1,287	6.5	1,149	6.2	2,436
Odisha	4.4	1,662	4.5	1,207	4.5	2,869
West Bengal	5.7	2,361	7.8	1,496	6.6	3,857
Northeast						
Arunachal Pradesh	2.2	895	[1.9]	316	2.1	1,211
Assam	5.2	1,536	6.8	794	5.8	2,330
Manipur	1.7	753	1.0	585	1.4	1,338
Meghalaya	[0.9]	549	1.7	409	1.2	958
Mizoram	1.0	708	[0.6]	490	0.8	1,198
Nagaland	3.3	704	3.0	592	3.2	1,296
Tripura	3.7	728	3.6	454	3.7	1,182
West						
Dadra & Nagar Haveli	2.6	618	3.3	438	2.8	1,056
Daman & Diu	3.3	544	3.1	417	3.2	961
Goa	9.0	777	10.0	616	9.5	1,393
Gujarat	3.4	1,305	3.1	950	3.3	2,255
Maharashtra	7.4	2,156	8.8	1,757	8.1	3,913
South						
Andaman & Nicobar Islands	0.8	714	2.3	494	1.4	1,208
Andhra Pradesh	4.1	1,547	3.7	1,082	3.9	2,629
Karnataka	7.7	1,397	6.6	972	7.2	2,369
Kerala	7.0	1,256	5.7	1,162	6.3	2,418
Lakshadweep	1.5	629	3.8	495	2.6	1,124
Puducherry	1.8	778	3.9	619	2.8	1,397
Tamil Nadu	3.0	1,984	5.2	1,504	4.0	3,488
Telangana	4.3	1,392	4.9	1,038	4.5	2,430

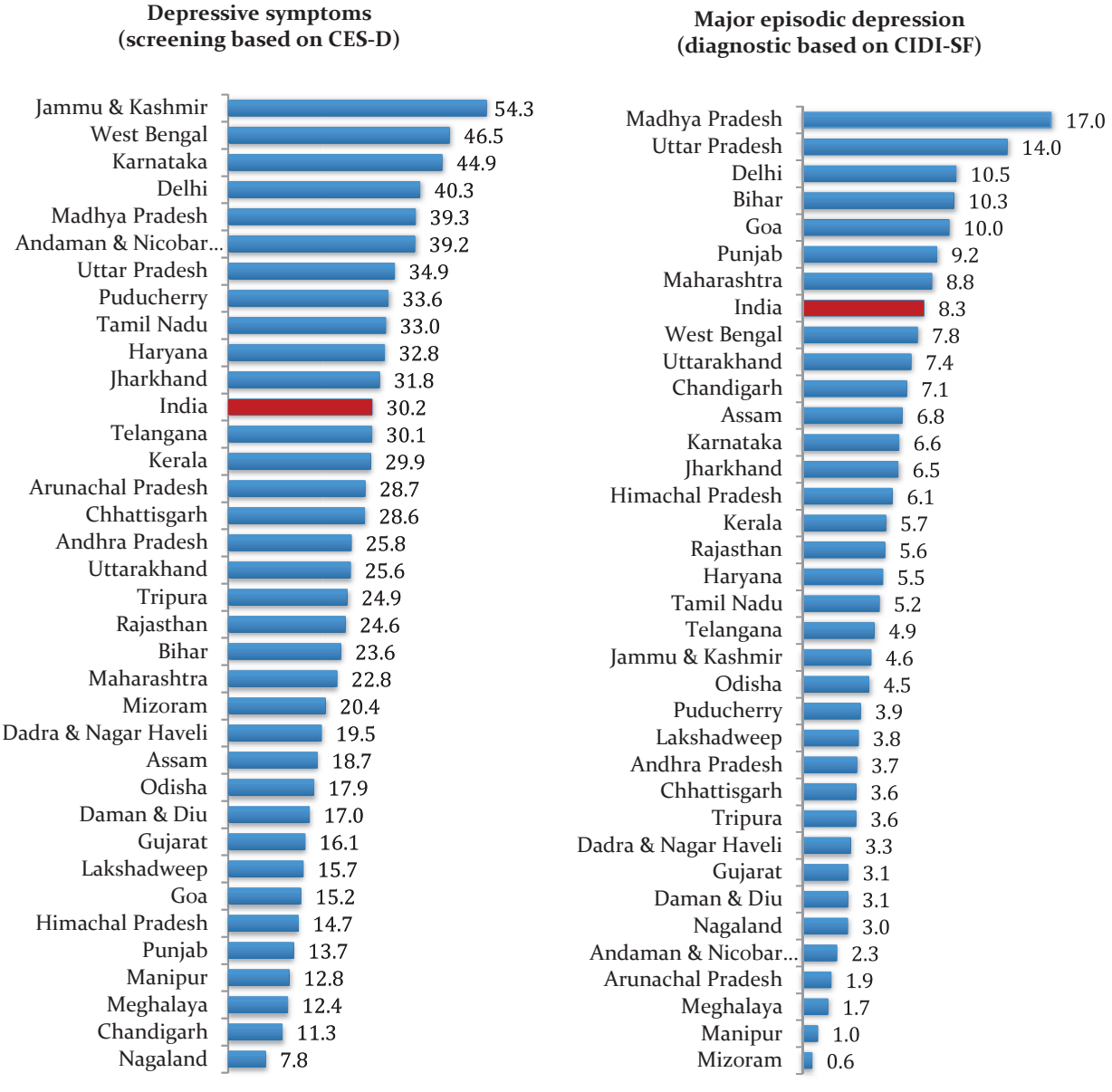
Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] Based on Composite International Diagnostic Interview (CIDI-SF); respondent who reported that they felt sad, blue or depressed for two-weeks' period during last 12 months for all the day long or most of the day or either reported loss of interest for two weeks' period during the last 12 months for all day long or most of the day in hobbies, work and other activities that usually give pleasure. The probable major depression = CIDI-SF score > 3.

Figure 10.9 compares the prevalence rates of depressive symptoms and probable major depression among elderly age 60 and above across states/UTs. Overall in India, 30% of the elderly age 60 and above screened positive for depressive symptoms (based on CES-D), compared to 8% of elderly who are screen positive for probable major depression (based on CIDI-SF). This pattern of difference between the prevalence of depressive symptoms and probable major depression is consistent across the states/UTs of India.

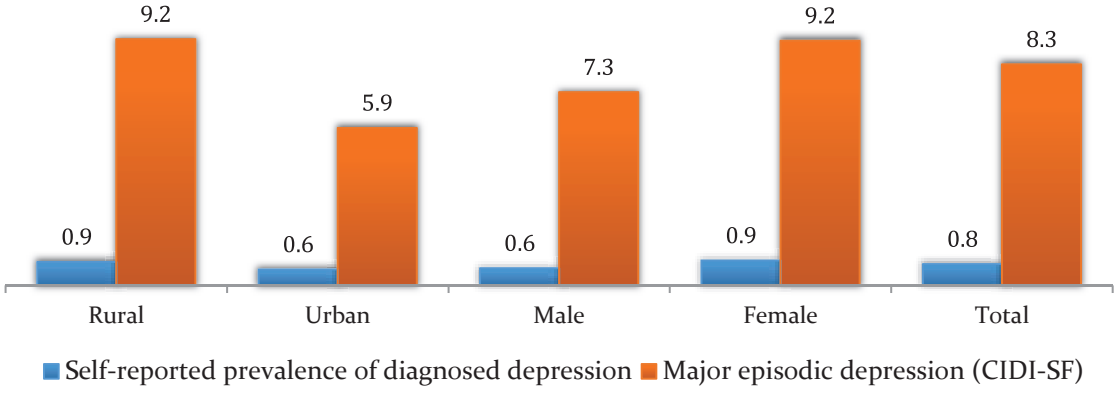
Figure 10.9 Percentage of elderly age 60 and above with depressive symptoms and probable major depression, states/UTs, LASI Wave 1, 2017-18



10.2.3 Self-reported diagnosed depression vs probable major depression

Figure 10.10 compares self-reported prevalence of diagnosed depression and the prevalence of probable major depression (measured) based on the CIDI-SF scale. The prevalence of probable major depression among the elderly age 60 and above (8.3%) is ten times higher than self-reported prevalence of diagnosed depression (0.8%). This pattern is consistent across place of residence and sex, suggesting a higher burden of undiagnosed depression.

Figure 10.10 Self-reported prevalence (%) of diagnosed depression and probable major depression (measured based on CIDI-SF) among the elderly age 60 and above, India, LASI Wave 1, 2017-18



Key findings: depression

- Overall, the prevalence of probable major depression among older adults age 45 and above in India is 8%. The prevalence of probable major depression among the elderly age 60 and above (8.3%) is ten times higher than self-reported prevalence of diagnosed depression (0.8%) suggesting a higher burden of undiagnosed depression.

- The prevalence of probable major depression increases with age. Elderly women, those residing in rural areas, the widowed, those living alone, and those with lower education are more likely to have diagnosable probable major depression.

- More than one in ten elderly age 60 and above have probable major depression in the states/UTs of Madhya Pradesh (17%), Uttar Pradesh (14%), Delhi (11%), Bihar (10%), and Goa (10%).

11. FUNCTIONAL HEALTH: FUNCTIONAL LIMITATION AND HELPERS

Healthy ageing is the process of developing and maintaining bodily functional ability that enables well-being in older age (WHO, 2015). Functional capacity is defined as the individual's ability to perform survival-related activities in an autonomous and independent manner (Freitas et al., 2012). The human ageing process is dynamic and progressive and triggers declines in the functional capacity with age. Functional health measurement provides valid, reliable, and comparable data on level of functioning and disability. Functioning and disability are multi-dimensional concepts related to human body functions and structures and the impairments thereof; the activities of people and the activity limitations they experience; the participation or involvement of people in all areas of life, as well as the participation restrictions they experience functioning as a member of society; and the environmental factors which affect those experiences and whether these factors are facilitators or barriers (WHO, 2001). A person's level of functioning is a dynamic interaction between health conditions, environmental factors, and personal factors.

Body functions are physiological functioning of the body systems, including psychological functions. Body structures are anatomical parts of the body, including organs, limbs, and their components. Activity is the execution of a task or action by an individual. Participation is involvement in a life situation. Environmental factors are comprised of the physical, social, and attitudinal environments in which people live and conduct their lives.

Disability is an umbrella term for impairments, activity limitations, and participation restrictions. It denotes the negative aspects of the interaction between a person's health conditions and individual's contextual factors (environmental and personal factors). As per the 2011 census, 2.2% of the total population in India is disabled. Disability in movement (locomotor) is the most common form of impairment, followed by disability in seeing/in hearing. In 2016, the elderly (age 60 and above) with disabilities constituted 21% of the total disabled population in India (GoI, 2016).

Assessing functional health is a key objective of LASI, and this chapter presents the prevalence of physical or mental impairment, mobility restrictions, work limiting health conditions, Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) and the use of aids/ supportive devices and helpers.

11.1 PHYSICAL AND MENTAL IMPAIRMENTS

Impairment is a loss or abnormality of psychological, physiological, or anatomical structure or function. The LASI respondents were asked if they had any form of impairments, including physical (such as locomotor); hearing; visual; speech (such as speech production, language comprehension); and mental (such as intellectual, cognition, or learning) impairments.

Table 11.1 presents the percentage of older adults with self-reported physical or mental impairments by background characteristics. Overall, 8% of older adults age 45 and above in India reported having at least one form of impairment. Among older adults age 45 and above in India, the prevalence of locomotor, visual, hearing, mental, and speech impairment is 5%, 3%, 2%, 2%, and 1%, respectively.

The prevalence of any form of impairment is almost twice as high among elderly age 60 and above is 11% as that among older adults age 45-59 (6%). Also, among elderly age 60 and above, the major disability reported is locomotor impairment (6%), followed by visual impairment (4%), mental and hearing impairment (3% each), and speech impairment (0.9%). The prevalence of any form of impairment among elderly age 60 and above is slightly higher in rural compared to urban areas. Among elderly age 60 and above, the prevalence of locomotor, mental, and visual impairments are slightly higher among women than men and higher among those who are divorced/separated/deserted compared to those currently married; this proportion decreases with increase in educational attainment. A lower proportion of currently working elderly age 60 and above reported having any form of impairments compared to past workers and those who had never worked. The impairment does not differ much by MPCE quintile.

Table 11.2 presents the percentage of older adults age 45 and above with physical or mental impairments by states/UTs. The percentage of older adults age 45 and above with any form of impairment is much higher in the states/UTs of Dadra & Nagar Haveli (18%) and Karnataka (19%). More than 15% of the elderly age 60 and above reported having at least one impairment in Karnataka (27%), Dadra & Nagar Haveli (23%), Odisha (19%), and Tamil Nadu (18%).

More than one in ten elderly age 60 and above in the states/UTs of Jharkhand (10%), Odisha (12%), Dadra & Nagar Haveli (13%), and Karnataka (24%) reported having locomotor impairment. Among elderly age 60 and above, the prevalence of self-reported mental impairment is highest in the states/UTs of Tamil Nadu (10%), Madhya Pradesh (6%), Karnataka (5%), Rajasthan (5%), and Puducherry (5%); the reported prevalence of hearing impairment is highest in Dadra & Nagar Haveli (9%), Odisha (6%), and Karnataka (5%). Around 2% of the elderly age 60 and above in the states/UTs of Madhya Pradesh (2.5%), Dadra & Nagar Haveli (1.9%), Karnataka (1.8%), Manipur (1.6%), and West Bengal (1.5%) reported having speech impairment. One in ten elderly age 60 and above in Dadra & Nagar Haveli (12%), Jharkhand (10%) and Karnataka (10%) reported visual impairment.

Table 11.1 Percentage of older adults with physical or mental impairment by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Physical or mental impairment																			
	Age 45-59*							Age ≥ 60							Total					
	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number
Place of residence																					
Rural	3.7	1.7	2.0	0.7	0.3	5.9	25,718	5.9	3.3	4.6	2.9	1.0	10.9	20,656	4.7	2.4	3.2	1.7	0.6	8.3	46,374
Urban	3.4	1.5	1.4	0.4	0.2	5.4	14,886	5.9	2.2	2.7	1.9	0.7	9.3	10,667	4.4	1.8	1.9	1.0	0.4	7.0	25,553
Sex																					
Male	4.6	1.7	1.8	0.6	0.4	7.0	15,398	5.8	2.6	3.9	2.7	0.9	10.5	15,015	5.2	2.2	2.9	1.6	0.6	8.8	30,413
Female	3.0	1.5	1.7	0.6	0.2	5.0	25,206	6.0	3.3	4.2	2.5	0.9	10.4	16,308	4.2	2.3	2.8	1.4	0.5	7.2	41,514
Marital status																					
Currently married	3.5	1.4	1.8	0.5	0.2	5.5	35,320	5.2	2.5	3.6	2.3	0.8	9.4	19,831	4.1	1.8	2.5	1.2	0.4	7.0	55,151
Widowed	3.5	2.3	1.7	0.8	0.4	6.2	3,855	6.9	3.7	4.7	3.1	1.1	12.0	10,672	6.1	3.3	4.0	2.5	1.0	10.6	14,527
Divorced/ Separated/ Deserted/ Others	5.0	6.0	1.7	0.6	1.4	10.2	1,429	7.1	5.7	6.6	1.7	0.5	15.2	820	5.8	5.8	3.5	1.0	1.1	12.0	2,249
Living arrangement																					
Living alone	5.1	2.3	1.9	0.5	[0.4]	7.5	687	6.1	4.8	5.1	2.5	0.5	13.0	1,616	5.9	4.2	4.4	2.0	0.5	11.8	2,303
Living with spouse and/or others	3.3	1.9	2.1	0.7	0.4	6.0	4,484	5.6	3.0	4.0	2.6	0.6	10.3	6,132	4.6	2.5	3.2	1.8	0.5	8.5	10,616
Living with spouse and children	3.6	1.3	1.7	0.5	0.1	5.5	30,183	5.0	2.1	3.3	2.1	0.7	8.8	13,460	4.0	1.6	2.2	1.0	0.3	6.5	43,643
Living with children and others	3.3	2.3	1.4	0.8	0.5	5.9	4,076	6.8	3.1	4.4	2.9	1.0	10.9	8,412	5.8	2.9	3.5	2.3	0.9	9.5	12,488
Living with others only	4.3	5.3	2.1	1.1	1.8	9.8	1,174	8.0	7.2	7.5	5.3	3.0	18.2	1,703	6.6	6.5	5.4	3.7	2.6	15.1	2,877
Religion																					
Hindu	3.3	1.7	1.8	0.6	0.3	5.6	29,804	5.8	3.1	4.1	2.7	0.9	10.5	22,938	4.5	2.3	2.9	1.6	0.6	7.9	52,742
Muslim	5.2	1.0	1.4	0.4	0.1	6.5	4,912	6.2	2.4	3.3	2.4	1.0	9.9	3,714	5.6	1.6	2.2	1.3	0.5	8.0	8,626
Christian	4.2	3.8	2.1	0.3	0.5	8.6	4,055	10.7	3.7	8.8	2.9	0.7	16.9	3,136	7.0	3.7	5.0	1.4	0.6	12.3	7,191
Others	[2.6]	0.8	0.5	0.3	0.6	4.0	1,833	2.3	1.2	1.6	1.3	0.8	5.1	1,535	2.5	1.0	1.1	0.8	0.7	4.5	3,368
Caste/tribe																					
Scheduled tribe	3.0	1.2	1.4	0.4	0.4	4.5	7,320	6.0	3.0	5.1	3.3	1.5	10.6	5,151	4.3	2.0	3.0	1.7	0.9	7.2	12,471
Scheduled caste	2.9	1.6	1.7	0.8	0.4	5.1	6,877	5.8	3.2	4.4	3.0	1.0	11.2	5,123	4.2	2.3	2.9	1.8	0.7	7.9	12,000
Other backward class	4.5	2.0	1.8	0.6	0.2	7.0	15,228	6.8	3.4	4.2	2.5	0.7	11.9	11,828	5.5	2.7	2.9	1.4	0.4	9.2	27,056
None of the above	2.6	1.0	1.9	0.5	0.2	4.4	11,1 79	4.4	2.1	3.3	2.2	1.0	7.6	9,221	3.4	1.5	2.5	1.3	0.6	6.0	20,400

continued

continued

Background characteristics	Physical or mental impairment																			
	Age 45-59*							Age ≥ 60							Total					
	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number
Education																					
No schooling	4.4	1.9	1.9	0.7	0.3	6.9	16,259	6.6	3.4	4.4	2.8	0.9	11.5	16,831	5.6	2.7	3.2	1.8	0.7	9.3	33,090
Less than 5 years complete	4.3	1.3	1.8	0.8	0.3	6.1	4,255	6.2	3.0	4.9	2.9	1.3	11.0	3,767	5.2	2.1	3.3	1.8	0.8	8.5	8,022
5-9 years complete	3.1	1.7	2.1	0.6	0.3	5.6	10,855	5.2	2.7	3.7	2.3	0.7	9.5	5,982	3.9	2.1	2.7	1.3	0.4	7.1	16,837
10 or more years complete	2.1	1.1	1.1	0.3	0.1	3.4	9,235	3.5	1.8	2.6	1.7	0.7	6.8	4,743	2.6	1.3	1.6	0.8	0.3	4.6	13,978
Work status																					
Currently working	2.9	1.2	1.7	0.5	0.1	4.7	23,579	4.6	1.8	3.2	1.5	0.3	7.6	9,266	3.4	1.4	2.1	0.8	0.2	5.6	32,845
Worked in past but currently not working	9.7	3.3	3.0	1.1	0.7	13.8	4,559	6.7	3.8	5.0	3.5	1.3	12.7	13,310	7.5	3.6	4.5	2.9	1.1	13.0	17,869
Never worked	2.3	1.7	1.4	0.4	0.3	4.5	12,466	6.1	3.1	3.6	2.4	1.0	10.2	8,747	3.9	2.3	2.4	1.3	0.6	7.0	21,213
MPCE quintile																					
Poorest	2.4	1.2	1.5	0.7	0.2	4.2	7,640	6.1	3.0	3.8	2.2	0.9	10.8	6,459	4.2	2.1	2.6	1.4	0.5	7.4	14,099
Poorer	3.1	2.0	1.7	0.6	0.3	5.8	8,021	6.2	2.9	4.5	2.6	1.5	11.1	6,447	4.5	2.4	3.0	1.5	0.9	8.3	14,468
Middle	3.6	1.8	1.9	0.7	0.2	6.1	8,088	5.6	3.2	3.7	2.9	0.7	9.9	6,383	4.5	2.4	2.7	1.7	0.4	7.9	14,471
Richer	3.5	1.6	1.8	0.4	0.2	5.4	8,479	5.7	3.0	4.1	2.7	0.7	10.3	6,147	4.5	2.2	2.8	1.5	0.4	7.6	14,626
Richest	5.3	1.5	1.9	0.4	0.2	7.2	8,376	5.9	2.7	4.4	2.5	0.8	10.0	5,887	5.6	2.0	2.9	1.3	0.5	8.4	14,263
Total	**3.6**	**1.6**	**1.8**	**0.6**	**0.3**	**5.7**	**40,604**	**5.9**	**3.0**	**4.1**	**2.6**	**0.9**	**10.5**	**31,323**	**4.6**	**2.2**	**2.8**	**1.5**	**0.6**	**7.9**	**71,927**

Note

** Including spouse irrespective of age*

Table 11.2 Percentage of older adults with physical or mental impairment, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Physical or mental impairment																			
	Age 45-59*							Age ≥ 60							Total					
	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number
India	**3.6**	**1.6**	**1.8**	**0.6**	**0.3**	**5.7**	**40,604**	**5.9**	**3.0**	**4.1**	**2.6**	**0.9**	**10.5**	**31,323**	**4.6**	**2.2**	**1.5**	**2.8**	**0.6**	**7.9**	**71,927**
North																					
Chandigarh	1.1	[0.2]	[0.1]	[0.2]	-	1.6	618	1.3	2.0	[0.6]	[1.1]	[0.4]	4.0	383	1.1	0.9	[0.5]	0.3	[0.2]	2.5	1,001
Delhi	0.8	[0.4]	[0.3]	[0.1]	[0.6]	1.8	822	1.6	1.5	[0.8]	[0.2]	[0.5]	3.4	494	1.1	0.8	0.1	[0.5]	0.5	2.4	1,316
Haryana	1.2	1.0	[0.2]	0.1	-	2.4	1,048	1.2	0.8	0.5	[0.3]	[0.3]	2.5	847	1.2	0.9	0.2	[0.3]	[0.2]	2.4	1,895
Himachal Pradesh	1.1	0.2	[0.2]	[0.5]	0.7	1.6	764	1.5	1.3	[0.4]	[0.5]	[0.2]	2.6	617	1.3	0.7	[0.5]	0.3	0.5	2.1	1,381
Jammu & Kashmir	2.3	0.8	[0.2]	0.5	[0.2]	3.3	881	5.2	1.8	2.4	2.8	[0.8]	8.7	730	3.7	1.3	1.7	1.3	0.5	5.9	1,611
Punjab	2.2	0.3	[0.3]	0.2	0.3	2.8	1,102	2.5	1.6	0.7	0.6	0.8	4.4	997	2.3	0.9	0.4	0.5	0.5	3.6	2,099
Rajasthan	1.0	1.7	3.2	1.1	[0.1]	4.3	1,161	1.7	5.3	8.0	3.5	[0.3]	10.2	1,077	1.3	3.5	2.3	5.6	[0.2]	7.3	2,238
Uttarakhand	[0.4]	[0.5]	1.5	1.6	[0.2]	3.7		1.9	0.7	2.8	2.5	[0.3]	6.0		1.2	0.6	2.0	2.2	[0.2]	4.8	
Central							716							641							1,357
Chhattisgarh	0.9	[0.4]	0.4	0.4	[0.2]	2.0	1,274	3.3	1.2	2.6	2.2	0.8	6.8	779	1.9	0.7	1.1	1.3	0.4	3.8	2,053
Madhya Pradesh	4.3	1.1	2.8	0.4	[0.1]	6.3	1,596	6.0	5.7	6.1	4.1	2.5	12.7	1,312	5.1	3.3	2.1	4.4	1.3	9.3	2,908
Uttar Pradesh	4.3	1.5	4.5	0.8	-	7.2	2,393	5.7	2.7	5.2	2.5	0.7	9.8	2,165	5.0	2.1	1.7	4.9	0.4	8.5	4,558
East																					
Bihar	2.2	1.3	1.2	0.6	[0.1]	4.1	1,707	4.0	1.4	2.9	2.0	0.8	7.8	1,805	3.1	1.3	1.3	2.1	0.5	6.1	3,512
Jharkhand	7.7	0.9	6.7	[0.2]	-	9.0	1,292	10.3	0.3	9.9	1.7	0.3	12.6	1,166	9.0	0.6	0.9	8.3	0.2	10.7	2,458
Odisha	3.6	1.5	1.3	1.2	[0.2]	6.3	1,674	12.1	4.1	6.0	5.5	1.3	18.8	1,230	7.3	2.6	3.1	3.4	0.7	11.8	2,904
West Bengal	0.9	0.6	0.3	0.4	0.4	2.0	2,382	3.3	2.4	2.0	1.7	1.5	6.1	1,538	1.9	1.3	0.9	1.0	0.8	3.6	3,920
Northeast																					
Arunachal Pradesh	0.4	[0.3]	[0.2]	-	0.4	0.8	895	2.1	-	[0.3]	2.0	[0.3]	4.2	318	0.8	[0.2]	[0.5]	0.2	[0.3]	1.6	1,213
Assam	1.4	1.5	1.2	0.4	-	2.8	1,545	3.5	3.2	2.0	1.4	[0.7]	6.1	814	2.1	2.1	0.7	1.5	0.3	4.0	2,359
Manipur	1.1	0.2	[0.4]	-	[0.3]	1.2	759	3.4	0.9	1.1	1.1	1.6	5.1	605	2.2	0.5	0.5	0.7	0.9	3.0	1,364
Meghalaya	[0.2]	[1.0]	[0.2]	[0.7]	[0.1]	2.0	556	[0.7]	-	[1.0]	1.6	[0.1]	2.3	411	[0.4]	0.6	1.1	0.6	[0.1]	2.1	967
Mizoram	2.7	0.8	4.0	0.3	[0.4]	6.3	713	3.3	2.2	2.6	3.9	[0.4]	7.7	531	3.0	1.4	1.9	3.4	[0.4]	6.9	1,244
Nagaland	[0.4]	[0.4]	-	[0.3]	[0.4]	0.7	708	2.6	0.8	0.8	1.6	[0.9]	4.5	607	1.4	0.6	1.0	0.4	0.7	2.6	1,315
Tripura	1.9	[0.5]	1.8	0.8	[0.6]	4.6	732	2.2	2.0	3.3	3.9	[0.5]	8.7	459	2.0	1.1	2.0	2.4	0.6	6.2	1,191
West																					
Dadra & Nagar Haveli	7.0	[0.6]	8.4	3.0	0.9	14.0	631	12.9	2.2	11.6	9.3	1.9	23.0	445	9.3	1.2	5.4	9.7	1.3	17.5	1,076
Daman & Diu	7.5	1.8	1.5	0.6	[1.0]	9.0	555	6.8	1.7	2.7	2.8	[0.2]	9.0	427	7.1	1.7	1.6	2.1	0.6	9.0	982
Goa	3.3	0.7	9.0	1.2	[0.3]	11.7	786	4.1	1.7	8.0	2.2	[0.3]	12.7	634	3.7	1.2	1.7	8.5	[0.3]	12.2	1,420

continued

continued

State/Union Territory	Physical or mental impairment																			
	Age 45-59*							Age ≥ 60							Total							
	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number	Locomotor	Mental	Visual	Hearing	Speech	Any impairment	Number
Gujarat	6.0	1.9	2.4	1.0	0.4	8.4	1,333	7.2	1.0	3.9	3.1	0.6	11.2	978	6.5	1.5	1.9	3.1	0.5	9.6	2,311
Maharashtra	1.0	0.6	0.3	0.2	0.5	2.1	2,173	1.0	1.1	0.7	1.7	0.9	4.1	1,780	1.0	0.9	1.0	0.5	0.7	3.1	3,953
South																					
Andaman & Nicobar Islands	[0.3]	1.4	[0.2]	0.4	-	2.3	720	3.3	2.5	1.0	1.5	0.7	6.4	521	1.5	1.8	[0.9]	0.5	[0.3]	4.0	1,241
Andhra Pradesh	4.2	1.3	0.9	0.7	0.5	6.4	1,566	8.1	1.1	3.8	3.3	0.7	12.6	1,098	5.8	1.2	1.8	2.1	0.6	9.0	2,664
Karnataka	12.5	2.4	3.1	0.7	[0.2]	14.0	1,409	24.1	5.2	10.0	4.9	1.8	27.1	999	17.0	3.5	2.4	5.8	0.8	19.2	2,408
Kerala	0.7	0.5	0.9	[0.2]	0.5	2.0	1,274	2.8	1.0	1.3	1.4	0.4	5.2	1,201	1.8	0.8	[0.8]	1.1	0.5	3.6	2,475
Lakshadweep	[0.4]	[0.3]	-	-	[0.4]	1.2	637	1.5	-	0.7	[0.6]	0.6	2.4	500	1.0	[0.2]	[0.3]	[0.3]	0.5	1.7	1,137
Puducherry	1.0	0.7	0.3	[0.3]	[0.1]	2.1	785	2.2	4.9	0.5	0.8	0.1	7.0	637	1.5	2.7	[0.5]	0.4	[0.1]	4.4	1,422
Tamil Nadu	3.0	6.9	0.8	0.4	0.4	9.4	1,993	6.2	9.8	4.7	2.5	0.5	17.9	1,529	4.5	8.2	1.4	2.6	0.4	13.3	3,522
Telangana	4.9	1.3	1.6	1.3	[0.3]	7.7	1,404	6.4	1.9	5.9	3.6	0.5	10.9	1,048	5.6	1.5	2.3	3.5	0.4	9.1	2,452

Note

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

11.2 MOBILITY RESTRICTIONS

Mobility is one of the most crucial factors determining functional capacity. Mobility refers to the physical ability to move, which is often necessary for participating in meaningful social, cultural, and physical activities; mobility is also important for accessing the public facilities and can be significant of self-care. As the musculoskeletal system deteriorates with age, mobility problems increase. This is one of the most significant of the changes that adversely affect the ability of older people to operate independently in their communities and to have contact with other people.

Respondents were asked if they had any difficulty doing any of the following activities: walking 100 yards, sitting for 2 hours or more, getting up from a chair after sitting for long periods, climbing one flight of stairs without resting, stooping, kneeling or crouching, reaching or extending arms above shoulder level (either arm), pulling or pushing large objects, lifting or carrying weights over 10 pounds (such as a heavy bag of groceries), and picking up a coin from a table. Only those problems that had lasted for more than three months were included in the assessment of mobility restriction.

Table 11.3 presents the self-reported prevalence of various mobility limitations among elderly age 60 and above by background characteristics. A higher proportion of elderly age 60 and above experienced difficulty in stooping, kneeling, or crouching (58%), followed by difficulty in climbing upstairs without resting (57%) and pulling/pushing large objects (53%). Picking up a coin is the least experienced mobility restriction (10%) among the elderly. Elderly women and rural elderly are more likely to have mobility restrictions compared with elderly men and urban elderly.

Table 11.4 presents cross-state variation in the self-reported prevalence of different mobility restrictions among elderly age 60 and above. In the states of Kerala, West Bengal, Tamil Nadu, Maharashtra and Jammu & Kashmir, a higher proportion of elderly age 60 and above reported having one or more mobility restrictions. Around one fifth of elderly have difficulty in picking up a coin in the states/UTs of Jammu & Kashmir (21%), Telangana (20%), Andhra Pradesh (19%), and Goa (18%).

Table 11.3 Percentage of elderly age 60 and above with different mobility restrictions by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Different mobility restrictions among elderly age ≥ 60									
	Walking 100 yards	Sitting for long hours	Getting up from long time sitting position	Climbing without resting	Stooping, kneeling or crouching	Extending arms above shoulder level	Pulling/ pushing large objects	Lifting/ carrying heavy weights	Picking up a coin	Number
Place of residence										
Rural	34.7	41.9	44.6	57.6	59.0	21.4	53.9	40.5	11.4	20,666
Urban	34.8	39.3	42.1	55.4	54.9	20.2	51.2	39.5	8.0	10,670
Sex										
Male	28.8	34.3	37.4	50.3	52.8	16.6	45.2	31.9	8.6	15,015
Female	39.9	47.2	49.7	62.9	62.2	25.1	60.1	47.7	12.0	16,321
Marital status										
Currently married	29.7	36.7	39.0	52.1	54.3	18.1	46.9	34.1	8.5	19,835
Widowed	43.4	49.1	52.7	65.4	63.5	26.5	63.9	50.6	13.7	10,681
Divorced/Separated/Deserted/ Others	31.0	33.6	35.5	53.2	60.7	15.4	46.9	39.0	11.5	820
Living arrangement										
Living alone	40.7	48.6	50.7	63.4	64.6	27.1	62.2	48.2	13.3	1,618
Living with spouse and/or others	30.8	37.3	40.1	53.2	55.8	18.5	48.3	36.1	9.5	6,134
Living with spouse and children	28.9	36.2	38.3	51.3	53.4	17.6	46.1	33.0	7.7	13,461
Living with children and others	43.4	48.9	52.8	65.6	62.2	25.5	64.2	50.5	13.5	8,416
Living with others only	41.2	44.4	46.6	61.6	67.6	27.1	56.9	48.1	15.3	1,707
Religion										
Hindu	34.1	40.7	43.5	56.7	57.7	20.7	52.7	40.2	10.5	22,945
Muslim	39.8	46.3	49.1	60.6	58.2	23.9	56.0	41.9	11.1	3,715
Christian	30.6	35.0	41.3	55.5	62.8	19.7	50.9	40.0	9.0	3,137
Others	35.6	39.5	39.0	53.7	54.9	22.1	55.0	36.2	8.2	1,539
Caste/tribe										
Scheduled tribe	29.2	34.4	37.4	50.9	50.5	19.2	49.2	36.7	9.7	5,154
Scheduled caste	34.5	41.3	43.4	58.7	59.5	21.7	54.6	41.1	12.8	5,124
Other backward class	35.0	41.3	43.8	56.7	57.8	20.3	52.3	39.8	10.0	11,828
None of the above	36.0	42.6	46.3	58.0	58.6	22.5	54.4	41.4	9.7	9,230
Education										
No schooling	37.7	44.8	47.1	60.1	60.1	23.4	56.0	43.6	12.9	16,836
Less than 5 years complete	37.3	44.3	46.0	62.9	62.7	24.5	58.8	45.4	8.9	3,771
5-9 years complete	30.5	34.6	39.9	50.9	54.5	17.3	49.0	35.6	7.3	5,985
10 or more years complete	25.8	32.0	34.3	47.0	48.1	13.4	41.8	28.1	5.8	4,744
Work status										
Currently working	19.0	28.0	30.0	42.4	47.0	12.2	38.4	22.4	4.1	9,265
Worked in past but currently not working	41.5	46.7	50.1	64.4	63.8	25.1	59.4	47.9	13.9	13,316
Never worked	42.1	47.5	50.0	61.9	60.5	24.9	60.1	48.6	12.1	8,755
MPCE quintile										
Poorest	35.4	43.4	45.2	59.0	59.7	20.1	53.0	40.4	12.0	6,459
Poorer	34.6	40.4	42.4	57.7	57.3	20.2	53.4	41.6	10.7	6,447
Middle	33.9	39.6	43.1	56.1	58.4	21.4	53.1	40.3	9.1	6,387
Richer	33.0	40.3	44.4	55.3	56.9	21.9	53.5	39.7	9.8	6,152
Richest	36.9	42.0	44.6	56.3	56.0	22.1	52.4	38.8	10.4	5,891
Total	**34.7**	**41.1**	**43.9**	**57.0**	**57.8**	**21.1**	**53.1**	**40.2**	**10.4**	**31,336**

Table 11.4 Percentage of elderly age 60 and above with different mobility restrictions, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Different mobility restrictions among elderly age ≥ 60									
	Walking 100 yards	Sitting for long hours	Getting up from long time sitting position	Climbing without resting	Stooping, kneeling or crouching	Extending arms above shoulder level	Pulling/ pushing large objects	Lifting/ carrying heavy weights	Picking up a coin	Number
India	**34.7**	**41.1**	**43.9**	**57.0**	**57.8**	**21.1**	**53.1**	**40.2**	**10.4**	**31,336**
North										
Chandigarh	31.3	35.2	43.5	50.5	61.2	16.3	46.1	32.6	3.9	385
Delhi	33.4	42.4	43.4	59.8	50.9	17.0	41.3	35.5	8.5	494
Haryana	18.1	31.9	37.3	55.4	52.1	18.1	50.2	31.9	11.6	847
Himachal Pradesh	26.0	33.5	35.2	54.0	54.4	28.1	53.7	37.8	8.4	617
Jammu & Kashmir	34.3	55.2	54.5	55.6	58.1	31.4	59.3	42.2	21.1	730
Punjab	35.5	35.7	37.1	48.8	55.1	17.2	48.4	28.0	5.5	1,001
Rajasthan	21.9	32.9	33.6	39.4	39.1	18.9	34.7	29.1	12.6	1,077
Uttarakhand	25.0	40.6	43.4	59.9	64.9	23.0	52.8	32.2	9.3	641
Central										
Chhattisgarh	27.2	30.3	35.0	48.7	39.4	9.9	42.4	36.6	9.0	779
Madhya Pradesh	31.6	38.9	44.5	58.2	52.3	24.7	49.8	37.3	12.9	1312
Uttar Pradesh	41.5	41.8	42.6	56.2	53.4	19.1	51.5	37.4	17.3	2165
East										
Bihar	29.3	42.4	43.7	58.9	59.8	18.5	55.5	35.7	9.1	1,806
Jharkhand	31.9	47.1	51.3	63.2	62.1	24.9	61.8	34.1	10.3	1,166
Odisha	29.5	36.9	33.4	53.0	58.5	16.3	55.2	36.0	5.6	1,230
West Bengal	46.3	50.4	59.1	67.1	65.7	20.4	64.2	56.4	8.6	1,541
Northeast										
Arunachal Pradesh	20.8	38.8	36.0	35.4	44.5	18.7	32.0	22.8	11.0	318
Assam	37.1	45.0	49.8	66.7	50.6	17.2	57.6	43.9	5.5	814
Manipur	24.9	25.7	37.8	42.2	37.4	12.1	55.4	25.9	6.0	605
Meghalaya	39.7	29.9	34.8	41.5	31.0	11.7	47.3	32.1	6.5	411
Mizoram	24.4	21.1	39.2	46.3	43.6	9.6	42.2	42.7	7.5	531
Nagaland	10.0	25.7	30.6	42.5	43.4	10.3	51.3	24.8	6.5	607
Tripura	36.4	31.9	38.7	47.3	48.1	14.9	36.7	41.8	6.1	459
West										
Dadra & Nagar Haveli	27.3	29.3	33.2	42.6	45.6	8.8	45.0	39.2	1.6	446
Daman & Diu	37.4	36.7	46.7	60.1	49.9	14.3	49.1	34.3	2.6	427
Goa	45.6	47.0	45.1	60.3	63.6	28.4	57.2	40.8	18.3	634
Gujarat	32.0	31.9	33.1	43.4	43.0	13.8	45.1	40.9	5.1	979
Maharashtra	36.4	48.8	47.6	67.2	67.8	31.5	60.8	46.5	7.1	1,780
South										
Andaman & Nicobar Islands	46.7	41.5	49.9	57.9	58.1	26.6	63.7	37.1	10.1	521
Andhra Pradesh	31.7	30.1	38.1	46.9	65.4	22.2	46.1	41.3	18.5	1,098
Karnataka	36.5	42.2	44.8	53.1	54.7	21.0	54.8	40.1	5.8	999
Kerala	43.4	46.2	56.2	70.6	66.6	37.3	59.6	51.0	11.0	1,202
Lakshadweep	33.1	32.1	41.2	53.6	54.8	17.4	35.7	34.4	8.0	500
Puducherry	27.8	31.1	35.4	37.9	65.2	15.7	41.3	28.7	15.6	637
Tamil Nadu	36.5	39.9	43.4	59.7	70.4	15.5	47.0	38.5	9.1	1,529
Telangana	32.6	31.7	39.4	51.4	64.6	23.3	48.8	40.7	19.5	1,048

11.3 WORK LIMITING HEALTH CONDITIONS

Work limiting health conditions refer to any impairment or health problem that limits participation in paid work activities. Individuals who had a job were asked if they had any impairment or health problem that limited the kind or amount of paid work they could do. The prevalence of work limiting health conditions is calculated among older adults who are either currently working or had worked in the past but were currently not working.

Tables 11.5 and Table 11.6 present the self-reported prevalence of work limiting health conditions by background characteristics and by states/UTs. Overall, around a quarter (23%) of older adults age 45 and above who are working or had worked in the past reported having at least one work-limiting health condition; the percentage is comparatively higher among elderly age 60 and above (29%) than older adults age 45-59 (20%). Among elderly age 60 and above, the prevalence of work limiting health conditions is higher in urban (31%) than rural areas (29%), higher among women (31%) than men (28%), higher among elderly living alone (34%), and higher among those who worked in the past but are currently not working (53%).

More than two-fifths of elderly age 60 and above reported having work limiting health conditions in the states/UTs of Gujarat (59%), Dadra & Nagar Haveli (45%), Maharashtra (43%), and Karnataka (42%). About one-third and more of older adults age 45-59 in Gujarat (43%), Dadra and Nagar Haveli (35%), and Punjab (32%) reported a work limiting health condition.

Key findings: impairment, mobility restrictions and work limiting health conditions

- Overall, in India, the prevalence of any form of impairment among elderly age 60 and above is 11%; locomotor impairment (6%) is the leading impairment followed by visual impairment (4%), mental and hearing impairment (3% each) and speech impairment (0.9%).
- Among elderly age 60 and above, the prevalence of locomotor impairment is higher in Karnataka, mental impairment is higher in Tamil Nadu, visual and hearing impairment is higher in Dadra & Nagar Haveli while speech impairment is higher in Madhya Pradesh.
- Stooping, kneeling and crouching are most experienced mobility restrictions among elderly while picking up a coin is the least experienced mobility restriction.
- Among elderly age 60 and above, the reported prevalence of work limiting health conditions is much higher in the states of Gujarat (59%), Dadra & Nagar Haveli (45%), Maharashtra (43%) and Karnataka (42%).

Table 11.5 Self-reported prevalence (%) of work-limiting conditions among older adults by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Work-limiting health conditions[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	18.5	16,702	29.0	7,984	22.2	24,686
Urban	21.9	7,576	30.6	2,692	24.1	10,268
Sex						
Male	17.6	13,835	28.4	7,258	21.6	21,093
Female	21.8	10,443	31.4	3,418	24.3	13,861
Marital status						
Currently married	19.4	21,317	29.1	8,115	22.2	29,432
Widowed	20.8	2,071	30.3	2,272	26.2	4,343
Divorced/Separated/Deserted/ Others	18.7	890	29.1	289	21.6	1,179
Living arrangement						
Living alone	18.4	487	34.0	563	28.4	1,050
Living with spouse and/or others	18.0	2,696	29.9	2,556	24.1	5,252
Living with spouse and children	19.7	18,253	28.6	5,467	21.8	23,720
Living with children and others	20.4	2,131	29.4	1,656	24.7	3,787
Living with others only	18.4	711	28.0	434	22.7	1,145
Religion						
Hindu	18.8	18,362	29.3	8,028	22.2	26,390
Muslim	25.2	2,190	29.3	1,028	26.6	3,218
Christian	13.0	2,697	24.1	1,203	16.7	3,900
Others	25.5	1,029	37.7	417	29.4	1,446
Caste/tribe						
Scheduled tribe	18.7	5,075	27.9	2,173	21.7	7,248
Scheduled caste	19.6	4,366	29.4	1,909	22.9	6,275
Other backward class	20.0	9,243	30.7	4,267	23.4	13,510
None of the above	18.7	5,594	27.3	2,327	21.4	7,921
Education						
No schooling	21.1	9,631	30.2	5,571	24.5	15,202
Less than 5 years complete	20.5	2,750	32.7	1,417	24.8	4,167
5-9 years complete	18.8	6,253	29.4	2,270	21.9	8,523
10 or more years complete	16.6	5,644	22.5	1,418	17.9	7,062
Work status						
Currently working	18.0	23,571	25.8	9,262	20.4	32,833
Worked in past but currently not working	55.1	707	53.3	1,413	54.0	2,120
MPCE quintile						
Poorest	14.8	4,801	27.7	2,302	19.2	7,103
Poorer	17.1	4,858	29.1	2,298	21.2	7,156
Middle	19.5	4,830	28.8	2,212	22.7	7,042
Richer	20.4	5,020	29.0	2,092	23.2	7,112
Richest	26.2	4,769	33.5	1,772	28.2	6,541
Total	**19.5**	**24,278**	**29.3**	**10,676**	**22.7**	**34,954**

Notes

** Including spouse irrespective of age*

[1] Work-limiting health conditions refer to any impairment or health problem that limits paid work activities among those who either currently working or had worked in the past but was currently not working.

Table 11.6 Self-reported prevalence (%) of work limiting conditions among older adults, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Work limiting health conditions[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**19.5**	**24,278**	**29.3**	**10,676**	**22.7**	**34,954**
North						
Chandigarh	18.0	309	39.1	72	22.5	381
Delhi	10.0	405	34.8	110	15.4	515
Haryana	7.5	541	17.3	174	10.0	715
Himachal Pradesh	11.0	558	15.1	258	12.4	816
Jammu & Kashmir	15.8	277	32.7	125	21.2	402
Punjab	31.9	459	35.0	215	32.9	674
Rajasthan	20.6	752	29.6	364	23.6	1,116
Uttarakhand	11.5	387	16.7	191	13.3	578
Central						
Chhattisgarh	11.5	946	18.9	307	13.3	1,253
Madhya Pradesh	17.2	1,040	20.3	472	18.3	1,512
Uttar Pradesh	18.3	1,312	24.9	727	20.7	2,039
East						
Bihar	16.7	974	25.1	678	20.3	1,652
Jharkhand	17.2	793	27.9	445	21.1	1,238
Odisha	12.5	1,012	24.2	447	16.3	1,459
West Bengal	13.4	1,319	19.3	453	15.1	1,772
Northeast						
Arunachal Pradesh	3.8	577	11.9	129	5.1	706
Assam	2.6	886	4.1	252	2.9	1,138
Manipur	2.9	592	5.8	259	3.8	851
Meghalaya	3.2	390	5.7	152	3.9	542
Mizoram	7.6	483	9.5	184	8.2	667
Nagaland	1.4	533	2.3	316	1.8	849
Tripura	7.9	446	9.0	168	8.2	614
West						
Dadra & Nagar Haveli	35.4	506	44.7	255	38.3	761
Daman & Diu	25.2	309	26.6	114	25.6	423
Goa	11.1	295	10.7	99	11.0	394
Gujarat	43.3	894	58.5	376	48.1	1,270
Maharashtra	30.4	1,465	43.2	698	34.9	2,163
South						
Andaman & Nicobar Islands	12.0	295	21.5	80	14.0	375
Andhra Pradesh	11.8	1,066	22.5	505	15.3	1,571
Karnataka	28.0	1,003	42.1	459	31.9	1,462
Kerala	12.1	561	29.5	323	18.8	884
Lakshadweep	4.9	208	33.7	57	11.7	265
Puducherry	2.4	422	9.6	188	4.7	610
Tamil Nadu	7.2	1,235	27.6	572	14.1	1,807
Telangana	11.4	1,028	18.3	452	13.7	1,480

Notes

** Including spouse irrespective of age*

[1] Work-limiting health conditions refer to any impairment or health problem that limits paid work activities among those who are either currently working or had worked in the past but was currently not working.

11.4 ACTIVITIES OF DAILY LIVING (ADL)

Activities of Daily Living (ADL) is a term used to refer to the normal daily self-care activities, such as movement in bed, changing position from sitting to standing, feeding, bathing, dressing, grooming, and personal hygiene. These activities are fundamental for an independent life. The ability or inability to perform ADLs is used to measure a person's functional status, especially among individuals with disabilities and the elderly. Elderly who retain their ability to perform ADL have a higher level of independence and overall well-being.

To assess ADL limitations, LASI respondents were asked if they were having any of the following limitations and expected the limitation to last for more than three months: difficulty with dressing, walking across the room, bathing, eating, getting in or out of bed, or using the toilet (including getting up and down). In this section, the percentage of older adults with any one and any two ADL limitations are presented.

Table 11.7 shows the prevalence of ADL limitations by background characteristics. The overall prevalence of at least one ADL limitation and two or more ADL limitations in India is 16% and 9%, respectively. A quarter (24%) of elderly age 60 and above reported having at least one ADL limitation, as compared to about a tenth (9%) of older adults age 45-59. The prevalence of two or more ADL limitations is almost three times (14%) higher among elderly age 60 and above compared with older adults age 45-59 (5%). The percentage of older adults age 45 and above residing in rural areas who reported at least one ADL limitation is slightly higher, as was the percentage reporting two or more ADL limitations (17% and 9%, respectively), than in urban areas (14% and 8%, respectively). Among the elderly age 60 and above, both the prevalence of at least one ADL limitation and two or more ADL limitations are higher among women (26% and 16%, respectively) compared to men (21% and 12%, respectively). These proportions are also higher among widowed (29% and 19%, respectively) and those who had worked in the past but are currently not working (30% and 19%, respectively) than their counterparts. The prevalence of ADL limitation decreases with educational attainment.

Cross-state variations in the prevalence of ADL limitations among older adult are presented in Table 11.8. More than a quarter of older adults age 45 and above reported having at least one ADL limitation in West Bengal (26%), Maharashtra (26%), Daman & Diu (26%), and Goa (25%); the proportion of older adults age 45 and above reporting two or more ADL limitations is highest in West Bengal (17%), followed by Maharashtra (16%) and Goa (14%). Between a quarter to a third of the elderly age 60 and above reported having at least one ADL limitation in the states/UTs of West Bengal (39%), Goa (37%), Maharashtra (36%), Daman & Diu (34%), Andaman & Nicobar (29%), Madhya Pradesh (27%), Tamil Nadu (26%), Himachal Pradesh (26%), and Bihar (26%). The proportion of the elderly age 60 and above reporting two or more ADL limitations are comparatively lower in all north-eastern states besides Dadra & Nagar Haveli (10%), Puducherry (9%), Punjab (9%), Haryana (8%), and Rajasthan (5%).

Tables 11.9 and Table 11.10 present the percentages of the elderly age 60 and above with different ADL limitations by background characteristics and by states/UTs. Among self-care activities, the proportion of the elderly age 60 and above who reported having difficulty using the toilet is highest (18%), followed by the proportion reporting difficulties in getting in or out of bed (12%). Around 7-8% of the elderly age 60 and above reported difficulties with dressing (such as putting on chappals, shoes, etc.), difficulties in walking across a room, difficulty in bathing, and eating difficulties (for example, chewing, breaking chapatti, mixing rice, etc.).

The highest proportions of the elderly age 60 and above reporting difficulties in dressing are found in the states/UTs of Daman & Diu (15%) and West Bengal (14%). The proportion of the elderly age 60 and above with difficulties in walking across a room is highest in Goa (14%) and with bathing is highest in West Bengal (14%). A higher percentage of the elderly age 60 and above reported eating difficulties in Madhya Pradesh (17%), followed by Tamil Nadu (14%). More than a fifth of the elderly age 60 and above reported having difficulties in getting in or out of bed in the states of West Bengal (25%), Maharashtra (22%), and Goa (22%). A quarter (or more) of the elderly age 60 and above reported having difficulties in using the toilet in the states/UTs of West Bengal (31%), Maharashtra (31%), and Andaman & Nicobar (24%).

11.5 INSTRUMENTAL ACTIVITIES OF DAILY LIVING (IADL)

Instrumental Activities of Daily Living (IADL) are those that are not necessarily related to the fundamental functioning of a person, but which allow an individual to live independently in a community. These tasks are necessary for independent functioning of the elderly in the community. Questions related to IADL are aimed to determine the level of independence and the need for supervision or assistance on a day-to-day basis. In the LASI, respondents were asked if they were having any difficulties that were expected to last more than three months, such as preparing a hot meal, shopping for groceries, making a telephone call, taking medications, doing work around the house or garden, managing money (such as paying bills and keeping track of expenses), and getting around or finding an address in unfamiliar places.

Table 11.7 presents the percentage of older adults with at least one IADL limitation or two or more IADL limitations. Overall, a third of older adults age 45 and above reported having at least one IADL limitation (36%), and a quarter of older adults age 45 and above reported having two or more IADL limitations (26%). Close to half of the elderly age 60 and above reported having at least one IADL limitation (48%), and more than a third reported having two or more IADL limitations (37%). These proportions are higher than the 26% of older adults age 45-59 who reported having at least one IADL limitation and the 16% who reported having two or more IADL limitations. The prevalence of at least one IADL and two or more IADL limitations are higher in rural than in urban areas, and are also higher among women than men. These differences are more pronounced among the elderly age 60 and above. More than half of widowed (54%) and older adults age 45 and above who are living alone (53%) reported having at least one IADL limitation. The percentage of the elderly age 60 and above reporting two or more IADL limitations decreases with education, ranging from 46% among those with no schooling to 17% among those with 10 or more years of schooling; similarly, the percentage of the elderly age 60 and above with two or more IADL limitations also decreases as MPCE quintile increases.

Table 11.8 presents the cross-state variation in the prevalence of at least one IADL limitation and two or more IADL limitations among older adults age 45 and above. Among the elderly age 60 and above, the prevalence of at least one IADL is markedly higher in Jammu & Kashmir (66%), followed by Karnataka (60%), West Bengal (60%), Tamil Nadu (56%), and Telangana (55%). More than 40% of the elderly age 60 and above reported having two or more IADL limitations in the states/UTs of Jammu & Kashmir (55%), Karnataka (51%), West Bengal (45%), Tamil Nadu (45%), Bihar (44%), and Telangana (43%).

Table 11.9 presents the percentages of elderly age 60 and above with different IADL limitations by background characteristics. Among all IADL limitations, the highest percentage of the elderly age 60 and above reported having difficulties in getting around or finding an address in unfamiliar places (30%), followed by making phone calls (29%) and managing money (28%). The prevalence of different IADL limitations are higher among elderly living in rural areas compared to those in urban areas, as well as higher among elderly women than elderly men. The prevalence of different IADL limitations decreases with educational attainment and MPCE quintiles.

Figure 11.1 Percentage of elderly age 60 and above with at least one Activities of Daily Living (ADL) limitation and those with at least one Instrumental Activities of Daily Living (IADL) limitation, states/UTs, LASI Wave 1, 2017-18

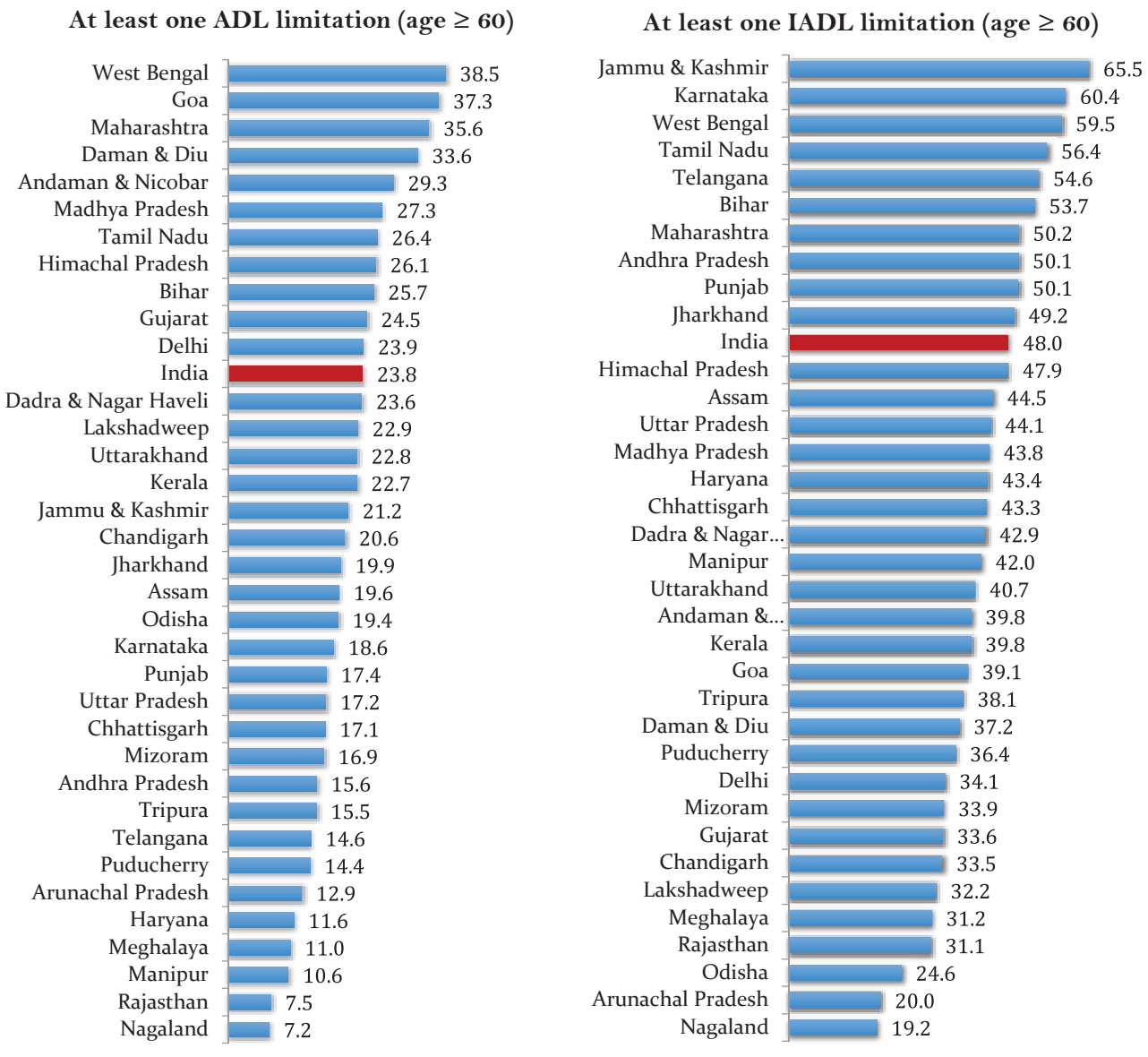
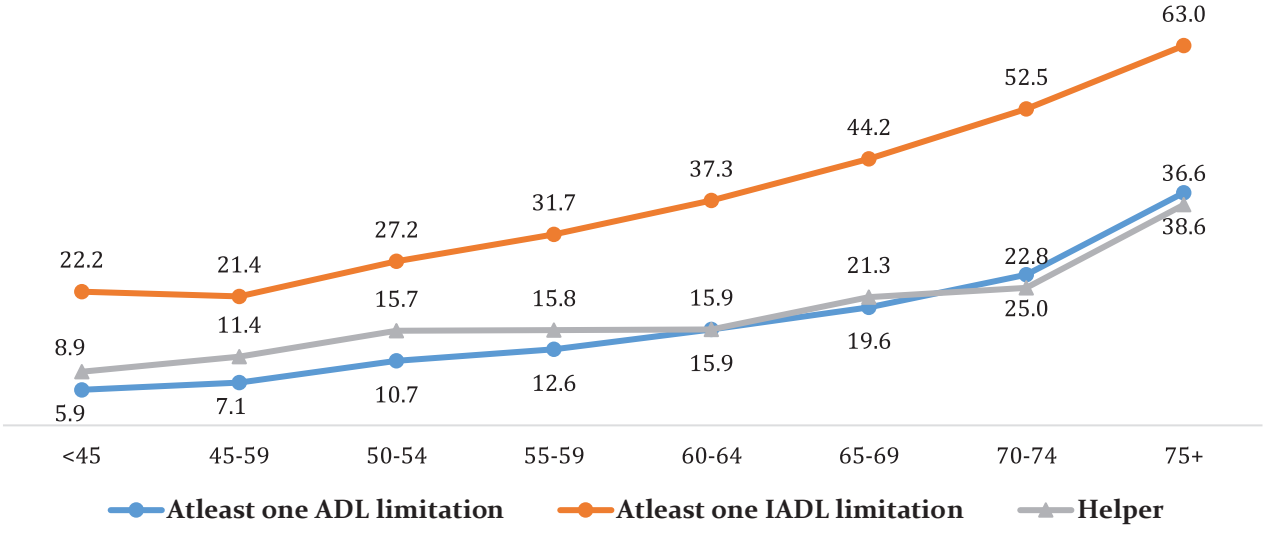


Figure 11.2 shows the percentage of older adults with at least one ADL limitation and at least one IADL limitation by age. Limitations in at least one ADL and at least one IADL increased sharply with age, with a more noticeable increase from age 65-69.

Figure 11.2 Percentage of older adults with at least one Activities of Daily Living (ADL) limitation[1], Instrumental Activities of Daily Living (IADL) limitation[1] and needed helper[2] by age, India, LASI Wave 1, 2017-18



Notes
[1] Prevalence of ADL and IADL limitations were calculated based on all sample (n=71,943)
[2] Denominator for calculating the helper is those who reported ADL and/or IADL limitations (n=25,136)

Table 11.7 Percentage of older adults with Activities of Daily Living (ADL)[1] and Instrumental Activities of Daily Living (IADL)[2] limitations by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number
Place of residence															
Rural	9.7	29.0	4.7	17.9	25,721	24.4	51.4	14.7	40.0	20,666	16.7	39.6	9.4	28.4	46,387
Urban	8.4	19.1	4.0	12.2	14,886	22.2	39.7	12.9	30.1	10,670	14.2	27.9	7.7	19.8	25,556
Sex															
Male	8.2	17.1	3.6	9.1	15,395	20.9	38.3	11.7	26.9	15,014	14.7	28.1	7.8	18.3	30,409
Female	9.9	30.8	5.0	20.1	25,212	26.4	56.7	16.4	46.3	16,322	16.8	41.6	9.7	31.0	41,534
Marital status															
Currently married	8.9	24.7	4.2	15.2	35,322	20.7	41.0	11.5	29.7	19,836	13.3	30.8	6.9	20.7	55,158
Widowed	12.3	35.4	6.9	22.7	3,855	28.9	59.6	18.8	49.4	10,680	25.0	53.9	16.0	43.2	14,535
Divorced/Separated/Deserted/ Others	10.6	24.7	4.3	16.8	1,430	24.0	52.3	13.0	42.0	820	15.4	34.7	7.5	26.0	2,250
Living arrangement															
Living alone	14.8	32.7	5.3	20.5	688	27.3	59.3	16.5	48.7	1,618	24.5	53.3	14.0	42.3	2,306
Living with spouse and/or others	10.4	28.1	5.0	16.5	4,478	21.5	42.2	12.7	30.3	6,134	16.9	36.3	9.5	24.6	10,612
Living with spouse and children	8.6	24.1	4.0	15.0	30,191	20.3	40.3	10.8	29.2	13,462	12.3	29.2	6.2	19.5	43,653
Living with children and others	11.8	34.2	6.6	22.0	4,076	28.7	58.9	19.0	49.3	8,416	23.9	51.9	15.5	41.5	12,492
Living with others only	11.3	25.1	6.4	16.9	1,174	29.0	59.1	17.1	47.0	1,706	22.3	46.3	13.1	35.6	2,880
Religion															
Hindu	8.8	24.8	4.3	15.3	29,807	23.5	48.1	13.8	37.5	22,945	15.6	35.6	8.7	25.5	52,752
Muslim	13.2	31.7	5.5	21.7	4,909	26.2	47.1	15.9	36.9	3,715	18.9	38.5	10.1	28.5	8,624
Christian	4.0	22.8	2.6	13.2	4,054	23.9	42.5	15.5	34.0	3,138	12.8	31.5	8.3	22.4	7,192
Others	11.1	28.0	5.1	15.1	1,837	22.8	51.2	15.3	30.7	1,538	16.7	39.2	10.0	22.7	3,375
Caste/tribe															
Scheduled tribe	8.2	25.6	4.1	15.3	7,318	19.8	44.7	11.2	35.0	5,154	13.2	33.9	7.2	23.9	12,472
Scheduled caste	9.7	29.5	4.7	18.6	6,879	25.6	50.6	15.5	38.5	5,124	16.9	39.0	9.6	27.6	12,003
Other backward class	8.3	25.9	3.7	16.5	15,227	23.0	49.9	13.2	39.9	11,828	15.0	36.8	8.0	27.2	27,055
None of the above	11.1	22.6	5.8	13.4	11,183	24.9	44.1	15.6	32.2	9,230	17.7	32.8	10.5	22.3	20,413
Education															
No schooling	10.4	36.0	5.2	24.2	16,260	26.2	56.5	16.0	45.7	16,836	18.7	46.7	10.9	35.5	33,096
Less than 5 years complete	11.3	28.2	5.3	15.9	4,257	29.3	48.9	16.9	36.3	3,772	20.0	38.2	10.9	25.8	8,029
5-9 years complete	10.1	20.4	4.7	11.4	10,853	18.6	37.6	11.2	26.8	5,985	13.4	27.0	7.2	17.3	16,838
10 or more years complete	5.3	10.0	2.4	4.8	9,237	15.9	26.3	8.0	16.5	4,743	8.9	15.7	4.3	8.9	13,980
Work status															
Currently working	7.0	22.1	3.0	12.2	23,576	13.6	35.0	5.5	21.8	9,265	9.0	26.0	3.8	15.2	32,841
Worked in past but currently not working	19.4	41.2	10.8	29.8	4,561	29.9	53.5	18.8	43.5	13,315	27.3	50.4	16.8	40.1	17,876
Never worked	9.7	26.7	4.8	17.9	12,470	25.7	54.1	16.7	44.6	8,756	16.8	38.7	10.1	29.6	21,226

continued

continued

Background characteristics	Age 45-59*					Age ≥ 60					Total				
	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number
MPCE quintile															
Poorest	8.3	28.6	3.9	18.5	7,640	25.6	50.2	15.5	40.6	6,459	16.6	38.9	9.5	29.2	14,099
Poorer	8.5	29.0	4.3	18.2	8,023	23.8	49.4	13.8	37.7	6,447	15.7	38.6	8.8	27.3	14,470
Middle	9.7	24.4	5.2	14.6	8,086	23.8	44.9	14.1	34.6	6,387	16.3	34.0	9.4	24.0	14,473
Richer	10.0	24.9	4.5	14.9	8,478	22.4	48.6	12.6	37.5	6,153	15.6	35.5	8.2	25.0	14,631
Richest	10.0	21.3	4.3	13.5	8,380	22.9	46.4	14.7	34.5	5,890	15.4	31.8	8.7	22.3	14,270
Total	**9.3**	**25.7**	**4.5**	**16.0**	**40,607**	**23.8**	**48.0**	**14.2**	**37.1**	**31,336**	**15.9**	**35.9**	**8.9**	**25.7**	**71,943**

Notes

** Including spouse irrespective of age*

[1] Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use (any one or more).

[2] Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place (any one or more).

Table 11.8 Percentage of older adults with Activities of Daily Living (ADL)[1] and Instrumental Activities of Daily Living (IADL)[2] limitations, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number
India	**9.3**	**25.7**	**4.5**	**16.0**	**40,607**	**23.8**	**48.0**	**14.2**	**37.1**	**31,336**	**15.9**	**35.9**	**8.9**	**25.7**	**71,943**
North															
Chandigarh	7.8	11.6	2.2	4.3	619	20.6	33.5	10.9	26.5	384	12.9	20.3	5.6	13.1	1,003
Delhi	8.9	12.7	4.6	7.3	822	23.9	34.1	16.2	28.2	494	14.6	20.9	9.0	15.2	1,316
Haryana	4.0	19.4	2.1	11.1	1,048	11.6	43.4	7.5	31.2	847	7.6	30.9	4.7	20.7	1,895
Himachal Pradesh	9.8	21.6	5.0	10.7	765	26.1	47.9	17.3	35.5	617	17.5	34.1	10.8	22.5	1,382
Jammu & Kashmir	5.9	34.0	3.3	23.0	880	21.2	65.5	15.1	55.3	730	13.4	49.5	9.1	38.9	1,610
Punjab	8.0	26.3	3.1	9.9	1,106	17.4	50.1	8.6	26.6	1,001	12.5	37.7	5.7	17.9	2,107
Rajasthan	2.0	11.4	1.3	7.4	1,161	7.5	31.1	5.0	24.4	1,077	4.7	21.2	3.1	15.9	2,238
Uttarakhand	8.1	22.2	4.5	17.1	716	22.8	40.7	13.4	29.4	641	15.3	31.3	8.9	23.2	1,357
Central															
Chhattisgarh	3.0	24.6	1.5	9.5	1,274	17.1	43.3	9.7	30.6	779	8.5	31.7	4.7	17.6	2,053
Madhya Pradesh	9.2	19.1	4.6	12.3	1,596	27.3	43.8	16.5	35.7	1,312	17.8	30.8	10.3	23.4	2,908
Uttar Pradesh	5.6	23.5	2.5	14.6	2,393	17.2	44.1	9.3	34.6	2,165	11.3	33.7	5.8	24.5	4,558
East															
Bihar	9.2	33.1	4.5	23.7	1,707	25.7	53.7	13.2	44.2	1,806	18.1	44.2	9.2	34.7	3,513
Jharkhand	4.7	23.3	1.7	15.0	1,292	19.9	49.2	9.3	37.8	1,166	12.0	35.8	5.3	26.0	2,458
Odisha	7.3	12.2	3.4	6.2	1,675	19.4	24.6	10.9	17.6	1,230	12.6	17.7	6.7	11.2	2,905
West Bengal	18.2	36.0	9.2	22.0	2,382	38.5	59.5	27.4	45.4	1,541	26.4	45.5	16.6	31.5	3,923
Northeast															
Arunachal Pradesh	2.6	9.3	1.2	4.4	897	12.9	20.0	7.2	14.0	318	5.1	11.9	2.7	6.8	1,215
Assam	4.6	20.1	1.4	12.9	1,544	19.6	44.5	9.7	37.6	814	10.0	28.9	4.4	21.7	2,358
Manipur	3.6	18.8	1.6	10.7	758	10.6	42.0	5.1	32.5	605	6.9	29.6	3.2	20.9	1,363
Meghalaya	1.2	13.3	[0.6]	5.8	556	11.0	31.2	8.3	25.7	411	5.3	20.8	3.8	14.1	967
Mizoram	3.3	6.6	1.8	2.2	713	16.9	33.9	11.1	23.3	531	9.4	18.9	6.0	11.7	1,244
Nagaland	1.6	4.2	[0.1]	2.5	708	7.2	19.2	3.2	14.0	607	4.3	11.5	1.6	8.2	1,315
Tripura	5.4	22.0	2.9	13.0	732	15.5	38.1	10.0	24.8	459	9.4	28.3	5.7	17.7	1,191
West															
Dadra & Nagar Haveli	9.2	23.8	4.4	13.4	630	23.6	42.9	9.7	32.0	446	14.8	31.2	6.5	20.6	1,076
Daman & Diu	19.2	20.5	5.9	8.9	555	33.6	37.2	17.4	27.0	427	26.0	28.5	11.3	17.5	982
Goa	15.1	15.0	7.2	6.0	786	37.3	39.1	21.7	23.4	634	25.2	26.0	13.8	14.0	1,420
Gujarat	13.0	21.9	5.2	12.3	1,333	24.5	33.6	11.7	24.0	979	18.2	27.2	8.1	17.5	2,312
Maharashtra	17.1	25.3	9.2	14.6	2,173	35.6	50.2	22.6	33.8	1,780	26.1	37.5	15.8	24.0	3,953

continued

continued

State/Union Territory	Age 45-59*					Age ≥ 60					Total				
	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number	1+ ADL limitations	1+ IADL limitations	2+ ADL limitations	2+ IADL limitations	Number
South															
Andaman & Nicobar Islands	9.4	14.5	3.0	9.3	720	29.3	39.8	18.3	27.4	521	17.5	24.8	9.3	16.7	1,241
Andhra Pradesh	4.2	25.5	2.7	16.1	1,565	15.6	50.1	11.5	40.8	1,098	9.0	35.9	6.4	26.5	2,663
Karnataka	7.2	34.0	2.7	23.2	1,409	18.6	60.4	9.5	51.0	999	11.7	44.6	5.4	34.4	2,408
Kerala	8.2	12.9	3.3	7.4	1,273	22.7	39.8	14.3	30.5	1,203	15.7	26.8	9.0	19.4	2,476
Lakshadweep	9.7	16.1	4.9	9.3	637	22.9	32.2	14.2	23.8	500	16.0	23.8	9.3	16.2	1,137
Puducherry	3.3	19.5	1.0	6.7	785	14.4	36.4	8.8	25.2	637	8.5	27.4	4.7	15.4	1,422
Tamil Nadu	8.4	32.8	3.4	19.9	1,993	26.4	56.4	16.1	44.9	1,529	16.6	43.6	9.2	31.4	3,522
Telangana	3.3	27.4	1.7	15.4	1,404	14.6	54.6	10.0	43.0	1,048	8.3	39.6	5.4	27.7	2,452

Notes

**** Including spouse irrespective of age,*** "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use (any one or more).

[2] Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place (any one or more).

Table 11.9 Percentage of elderly age 60 and above with Activities of Daily Living (ADL) limitations and Instrumental Activities of Daily Living (IADL) limitations by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Activities of Daily Living (ADL) limitations[1] (Age ≥ 60)						Instrumental Activities of Daily Living (IADL) limitations[2] (Age ≥ 60)							Number
	Dressing	Walking across room	Bathing	Eating difficulties	Getting in/out of bed	Toilet use	Preparing hot meal	Shopping	Making telephone calls	Taking medication	Gardening work	Managing money	Getting around in unfamiliar places	
Place of residence														
Rural	7.4	7.8	7.6	8.7	12.3	18.0	19.5	24.8	32.8	17.6	27.0	29.8	32.3	20,666
Urban	6.5	6.6	6.9	7.5	11.5	16.3	15.8	20.8	18.2	10.9	25.2	22.4	23.6	10,670
Sex														
Male	6.2	6.4	6.5	7.1	10.2	15.4	16.4	17.8	21.5	11.5	20.5	17.5	19.3	15,014
Female	8.0	8.5	8.2	9.5	13.8	19.4	20.3	28.9	34.8	19.4	31.9	36.7	39.1	16,322
Marital status														
Currently married	5.5	5.6	5.6	6.5	10.4	15.3	15.0	18.1	22.9	11.9	20.6	20.5	23.0	19,836
Widowed	9.8	10.5	10.4	11.4	15.1	21.3	24.2	32.9	38.0	22.2	36.2	39.5	41.0	10,680
Divorced/Separated/Deserted/ Others	9.0	9.3	7.9	9.2	10.2	17.7	19.2	25.8	31.1	14.6	31.1	31.0	34.2	820
Living arrangement														
Living alone	7.0	8.1	7.8	10.6	12.8	19.8	17.3	24.3	35.4	18.6	34.9	34.7	44.5	1,618
Living with spouse and/or others	6.5	6.7	6.3	7.9	11.2	15.7	15.4	17.2	24.3	11.9	22.1	20.4	24.7	6,134
Living with spouse and children	5.0	5.1	5.2	5.8	9.9	15.1	14.5	18.4	22.1	11.8	19.7	20.4	22.0	13,462
Living with children and others	10.0	10.6	10.3	11.1	15.6	21.3	24.9	33.8	37.6	21.9	36.1	40.0	39.6	8,416
Living with others only	11.2	11.3	11.8	12.7	13.0	21.0	26.3	33.8	39.1	23.5	35.6	37.7	40.7	1,706
Religion														
Hindu	6.9	7.3	7.1	8.1	11.9	17.2	18.2	23.9	28.4	15.8	26.6	28.2	30.2	22,945
Muslim	9.0	8.7	9.1	9.6	13.5	19.5	20.7	23.9	30.0	15.8	26.3	27.3	30.0	3,715
Christian	7.5	8.3	7.8	11.7	11.7	16.6	16.2	19.2	23.2	14.3	28.3	20.8	27.4	3,138
Others	6.7	6.8	7.7	6.9	11.9	20.2	17.8	21.8	33.1	14.6	24.0	21.3	22.1	1,538
Caste/tribe														
Scheduled tribe	6.2	6.6	6.4	7.2	9.3	13.6	15.8	22.4	28.7	16.5	22.3	25.9	27.2	5,154
Scheduled caste	9.0	8.5	8.4	9.4	12.7	18.5	19.8	24.5	31.6	17.7	26.5	30.0	32.2	5,124
Other backward class	6.3	6.7	6.7	8.4	11.2	17.0	18.9	24.6	29.4	15.8	29.1	30.0	32.2	11,828
None of the above	7.6	8.2	8.1	7.8	13.9	18.9	17.5	21.9	25.0	13.9	23.5	22.7	25.0	9,230
Education														
No schooling	8.5	9.0	8.5	9.7	13.4	19.1	21.5	28.3	37.7	20.2	30.2	35.7	38.4	16,836
Less than 5 years complete	7.2	7.6	8.5	9.6	15.1	22.5	18.2	23.7	26.4	13.1	26.9	23.4	26.5	3,772
5-9 years complete	5.0	5.6	5.6	6.2	9.2	14.4	14.2	18.4	17.8	11.2	22.0	17.7	18.3	5,985
10 or more years complete	4.1	3.9	4.3	4.6	8.0	11.1	11.4	11.5	6.7	4.9	17.0	10.9	12.2	4,743

continued

continued

Background characteristics	Activities of Daily Living (ADL) limitations[1] (Age ≥ 60)						Instrumental Activities of Daily Living (IADL) limitations[2] (Age ≥ 60)							Number
	Dressing	Walking across room	Bathing	Eating difficulties	Getting in/out of bed	Toilet use	Preparing hot meal	Shopping	Making telephone calls	Taking medication	Gardening work	Managing money	Getting around in unfamiliar places	
Work status														
Currently working	2.2	1.6	1.6	3.7	5.4	9.1	7.8	10.2	20.9	8.5	9.8	13.8	17.2	9,265
Worked in past but currently not working	9.9	10.5	10.4	10.9	15.9	22.6	25.3	30.6	32.4	18.5	34.1	32.4	34.4	13,315
Never worked	8.5	9.5	9.2	9.7	13.8	19.2	19.7	28.2	31.2	19.5	33.7	36.0	36.9	8,756
MPCE quintile														
Poorest	8.2	8.8	8.6	9.8	12.6	19.3	21.1	26.8	32.3	18.0	28.7	31.4	33.5	6,459
Poorer	7.0	7.3	7.2	8.2	11.8	17.0	18.8	23.5	30.1	16.6	25.5	27.4	30.8	6,447
Middle	6.7	6.8	6.9	8.4	12.4	17.9	18.1	22.2	27.5	13.7	25.1	25.8	28.5	6,387
Richer	6.2	6.8	6.3	7.0	11.5	16.0	16.6	24.0	28.1	15.8	26.4	27.7	27.9	6,153
Richest	7.6	7.6	7.9	8.0	12.1	17.2	17.0	21.2	23.4	13.7	26.7	25.2	27.4	5,890
Total	**7.1**	**7.5**	**7.4**	**8.4**	**12.1**	**17.5**	**18.4**	**23.7**	**28.6**	**15.7**	**26.5**	**27.7**	**29.8**	**31,336**

Notes

[1] Activities of Daily Living (ADL) includes dressing**,** putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use.

[2] Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place.

Table 11.10 Percentage of elderly age 60 and above with Activities of Daily Living (ADL) limitations and Instrumental Activities of Daily Living (IADL) limitations, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Activities of Daily Living (ADL) limitations[1] (Age ≥ 60)						Instrumental Activities of Daily Living (IADL) limitations[2] (Age ≥ 60)							Number
	Dressing	Walking across room	Bathing	Eating difficulties	Getting in/ out of bed	Toilet use	Preparing hot meal	Shopping	Making telephone calls	Taking medication	Gardening work	Managing money	Getting around in unfamiliar places	
India	**7.1**	**7.5**	**7.4**	**8.4**	**12.1**	**17.5**	**18.4**	**23.7**	**28.6**	**15.7**	**26.5**	**27.7**	**29.8**	**31,336**
North														
Chandigarh	8.3	6.4	8.1	2.8	6.2	14.5	12.4	20.9	12.8	7.1	19.4	13.7	19.3	384
Delhi	8.8	11.7	7.1	10.7	8.9	14.5	14.6	15.9	18.5	15.4	18.0	14.2	20.1	494
Haryana	3.8	4.9	4.8	6.7	4.5	8.2	16.2	18.1	28.4	9.4	23.2	26.6	18.5	847
Himachal Pradesh	10.7	11.0	13.1	10.7	18.7	16.9	20.9	25.0	25.2	17.7	30.5	28.9	24.6	617
Jammu & Kashmir	9.7	11.0	12.6	10.2	13.0	15.7	36.0	42.2	49.3	30.4	38.0	45.4	35.5	730
Punjab	5.2	5.0	5.8	3.8	5.8	14.8	13.9	15.3	33.3	10.0	21.2	16.9	17.0	1,001
Rajasthan	3.8	4.2	3.8	3.1	2.9	3.7	6.8	15.3	19.8	14.7	14.7	22.9	19.7	1,077
Uttarakhand	9.0	8.4	6.7	6.9	13.2	14.2	12.5	20.6	24.5	14.8	23.9	23.5	25.8	641
Central														
Chhattisgarh	6.5	8.5	5.8	6.8	6.0	10.1	17.0	17.6	31.1	12.3	18.3	20.6	21.4	779
Madhya Pradesh	10.3	8.9	9.4	16.5	13.4	18.5	17.9	24.2	23.2	16.9	26.0	32.0	31.5	1,312
Uttar Pradesh	7.6	6.6	6.6	6.1	6.4	10.5	13.7	20.7	28.2	16.8	22.2	28.4	28.0	2,165
East														
Bihar	5.0	4.6	5.1	7.6	11.3	20.7	22.0	27.1	37.6	21.6	28.3	29.2	34.9	1,806
Jharkhand	4.6	6.4	6.6	4.2	7.4	17.7	26.9	27.5	32.1	16.7	22.5	25.0	26.3	1,166
Odisha	6.8	6.7	5.6	3.5	8.2	14.3	11.3	12.6	11.3	10.0	12.8	12.7	10.9	1,230
West Bengal	14.4	13.2	14.2	11.4	25.3	30.5	25.5	27.7	30.2	15.9	35.2	32.8	43.9	1,541
Northeast														
Arunachal Pradesh	7.1	3.6	3.8	8.1	6.7	5.9	9.8	9.8	10.5	7.0	8.7	11.3	9.8	318
Assam	5.2	5.1	6.7	4.2	9.0	15.5	21.9	29.8	28.2	22.6	24.7	24.7	21.2	814
Manipur	6.0	3.7	5.1	1.7	2.2	5.1	10.0	18.0	26.0	7.3	17.2	24.1	25.7	605
Meghalaya	5.9	6.3	6.2	4.5	6.4	8.4	12.1	14.0	19.6	7.5	12.2	17.6	23.5	411
Mizoram	8.0	4.2	10.0	5.6	8.9	11.1	11.4	14.0	9.3	5.7	23.1	17.6	23.8	531
Nagaland	2.4	2.1	2.2	1.3	3.3	5.9	5.9	10.2	10.3	3.1	10.5	11.5	11.8	607
Tripura	3.4	2.7	4.1	4.0	9.7	11.4	8.5	13.5	28.4	7.5	14.7	15.9	19.9	459
West														
Dadra & Nagar Haveli	5.8	6.4	5.0	10.9	7.2	13.8	10.6	17.0	24.2	11.8	16.2	25.5	30.4	446
Daman & Diu	14.5	9.0	7.0	8.8	15.1	18.9	11.5	20.9	19.8	12.9	18.4	16.8	19.2	427
Goa	11.3	13.7	11.2	12.9	21.6	22.2	11.0	18.0	6.2	7.5	24.9	15.6	18.0	634
Gujarat	7.2	4.8	6.0	12.2	8.3	14.7	8.6	17.6	17.5	9.5	15.0	15.3	22.6	979
Maharashtra	6.9	10.1	9.9	8.0	22.4	31.4	21.1	27.1	29.3	16.3	23.5	23.8	23.9	1,780

continued

continued

States/Union Territory	Activities of Daily Living (ADL) limitations[1] (Age ≥ 60)						Instrumental Activities of Daily Living (IADL) limitations[2] (Age ≥ 60)							Number
	Dressing	Walking across room	Bathing	Eating difficulties	Getting in/ out of bed	Toilet use	Preparing hot meal	Shopping	Making telephone calls	Taking medication	Gardening work	Managing money	Getting around in unfamiliar places	
South														
Andaman & Nicobar Islands	11.1	9.9	11.7	8.9	16.3	23.8	17.7	18.9	15.0	13.3	24.1	21.0	18.2	521
Andhra Pradesh	8.1	9.1	8.5	6.5	10.3	11.4	19.4	22.7	32.2	12.8	29.5	27.1	37.1	1,098
Karnataka	4.5	4.1	3.5	5.4	9.9	11.0	23.3	30.7	38.0	16.8	42.0	42.4	36.9	999
Kerala	8.6	7.9	9.9	9.7	11.7	17.0	13.8	23.4	18.8	10.7	27.8	19.9	21.4	1,203
Lakshadweep	6.4	6.4	9.9	9.4	11.6	20.2	8.5	14.4	12.4	11.3	25.9	18.7	18.8	500
Puducherry	5.8	5.8	7.1	6.4	6.1	8.9	11.1	16.4	13.1	9.3	19.0	12.5	27.8	637
Tamil Nadu	4.6	8.3	5.7	14.2	10.7	19.2	21.1	22.1	26.7	15.0	35.0	30.8	39.5	1,529
Telangana	7.8	7.5	6.6	4.5	8.4	10.0	21.5	22.8	44.4	10.7	27.8	25.1	35.9	1,048

Notes

[1] Activities of Daily Living (ADL) includes dressing, putting on chappals or shoes, walking across a room, bathing, eating difficulties, getting in or out of bed and toilet use.

[2] Instrumental Activities of Daily Living (IADL) includes preparing a hot meal, shopping for groceries, making telephone calls, taking medications, doing work around the house or garden, managing money (paying bills and keeping track of expenses) and getting around or finding address in unfamiliar place.

Table 11.11 Percentage of older adults with ADL/IADL limitations who needed helper by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Helper[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	12.5	7,198	23.8	10,433	19.4	17,631
Urban	17.0	2,992	27.9	4,513	23.6	7,505
Sex						
Male	17.8	2,611	23.4	5,829	21.7	8,440
Female	12.2	7,579	25.7	9,117	19.8	16,696
Marital status						
Currently married	13.4	8,425	20.9	8,179	17.1	16,604
Widowed	14.6	1,362	30.0	6,361	27.6	7,723
Divorced/Separated/Deserted/ Others	17.9	403	17.3	406	17.6	809
Living arrangement						
Living alone	5.2	205	12.3	908	11.2	1,113
Living with spouse and/or others	10.7	1,257	19.8	2,583	16.9	3,840
Living with spouse and children	13.9	7,008	21.3	5,490	17.1	12,498
Living with children and others	15.5	1,377	32.5	4,972	29.2	6,349
Living with others only	18.5	343	31.4	993	28.7	1,336
Religion						
Hindu	12.5	7,701	24.3	11,142	19.8	18,843
Muslim	20.8	1,427	29.1	1,896	25.3	3,323
Christian	11.1	596	27.9	1,195	21.4	1,791
Others	11.5	466	21.0	713	17.4	1,179
Caste/tribe						
Scheduled tribe	12.0	1,521	24.7	2,162	19.3	3,683
Scheduled caste	11.3	1,981	24.1	2,595	18.8	4,576
Other backward class	15.6	3,976	23.9	5,886	20.7	9,862
None of the above	12.7	2,712	27.0	4,303	21.7	7,015
Education						
No schooling	14.7	5,716	23.7	9,511	20.3	15,227
Less than 5 years complete	13.6	1,091	26.8	1,798	21.8	2,889
5-9 years complete	12.2	2,201	27.8	2,273	20.4	4,474
10 or more years complete	10.4	1,182	26.0	1,364	19.4	2,546
Work status						
Currently working	9.1	5,153	10.8	3,238	9.8	8,391
Worked in past but currently not working	26.9	1,674	30.2	7,086	29.5	8,760
Never worked	13.4	3,363	27.2	4,622	21.8	7,985
MPCE quintile						
Poorest	10.6	2,055	21.7	3,195	17.4	5,250
Poorer	11.7	2,154	24.7	3,108	19.5	5,262
Middle	16.2	1,950	25.9	3,026	22.2	4,976
Richer	11.9	2,079	27.3	2,933	21.2	5,012
Richest	19.7	1,952	25.1	2,684	23.0	4,636
Total	**13.7**	**10,190**	**24.8**	**14,946**	**20.4**	**25,136**

Notes

** Including spouse irrespective of age*

[1] Helper refers to any person/s assisting respondent in any ADL/IADL limitations.

Table 11.12 Percentage of older adults with ADL/IADL limitations who needed helper, states/UTs, LASI Wave 1, 2017-18

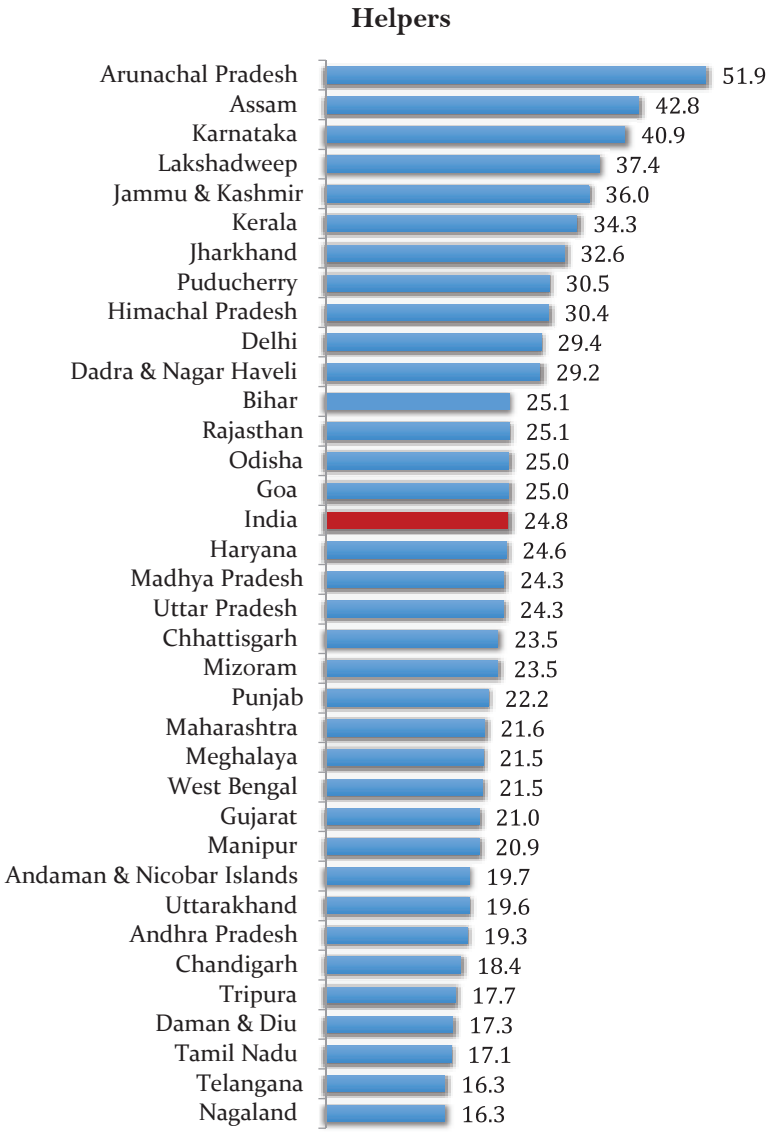
State/Union Territory	Helper[1]					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**13.7**	**10,190**	**24.8**	**14,946**	**20.4**	**25,136**
North						
Chandigarh	4.1	112	18.4	143	13.0	255
Delhi	21.8	145	29.4	184	26.3	329
Haryana	10.2	224	24.6	375	19.7	599
Himachal Pradesh	16.4	191	30.4	312	25.6	503
Jammu & Kashmir	17.4	321	36.0	443	29.4	764
Punjab	19.5	313	22.2	497	21.2	810
Rajasthan	12.7	139	25.1	341	21.7	480
Uttarakhand	2.0	171	19.6	293	13.3	464
Central						
Chhattisgarh	9.5	330	23.5	344	16.9	674
Madhya Pradesh	7.4	411	24.3	610	18.8	1,021
Uttar Pradesh	13.1	575	24.3	990	20.3	1,565
East						
Bihar	17.0	627	25.1	1,000	22.3	1,627
Jharkhand	26.8	315	32.6	595	30.6	910
Odisha	13.2	269	25.0	398	20.5	667
West Bengal	4.7	940	21.5	953	13.3	1,893
Northeast						
Arunachal Pradesh	25.9	90	51.9	77	36.9	167
Assam	23.7	377	42.8	399	34.1	776
Manipur	5.2	167	20.9	280	15.5	447
Meghalaya	8.3	73	21.5	132	16.8	205
Mizoram	23.0	45	23.5	180	23.4	225
Nagaland	3.6	33	16.3	137	13.6	170
Tripura	7.1	177	17.7	186	12.6	363
West						
Dadra & Nagar Haveli	16.3	196	29.2	220	23.2	416
Daman & Diu	6.5	160	17.3	204	12.7	364
Goa	7.8	171	25.0	296	19.0	467
Gujarat	17.8	348	21.0	428	19.6	776
Maharashtra	9.6	637	21.6	1,004	17.3	1,641
South						
Andaman & Nicobar Islands	2.0	147	19.7	237	12.8	384
Andhra Pradesh	8.0	422	19.3	558	14.7	980
Karnataka	32.7	502	40.9	622	37.2	1,124
Kerala	33.7	206	34.3	541	34.2	747
Lakshadweep	31.6	116	37.4	202	35.2	318
Puducherry	6.5	193	30.5	287	21.2	480
Tamil Nadu	7.9	631	17.1	873	13.3	1,504
Telangana	5.6	416	16.3	605	12.2	1,021

Notes

** Including spouse irrespective of age*

[1] Helper refers to any person/s assisting respondent in any ADL/IADL limitations.

Figure 11.3 Percentage of elderly age 60 and above who needed helper for ADL/IADL Limitations, states/ UTs, LASI Wave 1, 2017-18



11.6 HELPERS

Respondents were also asked whether they received any help from someone to carry out ADL or IADL. The helper could have been any household member, relative, paid professional or non-professional, or any other person; additionally, there could be more than one helper.

Table 11.11 presents the percentage of older adults who needed a helper to carry out their ADL and IADL activities by background characteristics. Overall in India, 20% of older adults age 45 and above with any ADL and/or IADL limitations needed a helper to perform ADL and IADL. A quarter (25%) of elderly age 60 and above with any ADL and/or IADL limitations needed a helper, compared to 14% among older adults age 45-59. The percentage of older adults age 45 and above who needed a helper is higher in urban areas (24%) than rural areas (19%). Among the elderly age 60 and above, the need for helper is higher among women (26%) than the men (23%), and higher among the widowed (30%) than currently married (21%) as well as divorced/separated/deserted/others (17%). In contrast, among the older adults age 45-59, the need for helper is higher among men (18%) than women (12%). The percentage of older adults and elderly needing helper increases with MPCE quintile.

Among older adults age 45 and above, the need for helper ranges from 12% in Telangana to 37% in Karnataka. A higher percentage of elderly in the state of Arunachal Pradesh (52%) and more than one third of elderly needed a helper to assist in their daily activities in the states/UTs of Assam (43%), Karnataka (41%) Lakshadweep (37%) and Jammu & Kashmir (36%).

Key findings: ADL and IADL limitations and helpers

- A quarter of elderly age 60 and above (24%) reported having at least one ADL limitation; 14% reported having two or more ADL limitations; close to half of elderly age 60 and above reported having at least one IADL limitation (48%) and; more than a third reported having two or more IADL limitations (37%).
- Older adults as well as elderly women, those residing in rural areas, widowed, those living alone or with others and those worked in past but currently not working are more likely to have ADL and IADL limitations. The proportion of elderly age 60 and above with ADL limitations do not vary much by education or MPCE quintile; however, elderly with no schooling and in poorest MPCE quintile are more likely to have IADL limitations.
- Difficulty in using toilet facility is most common ADL limitation faced by elderly age 60 and above; whereas, among IADL limitations, getting around in unfamiliar places is most common difficulty reported by elderly.
- A higher proportion of elderly age 60 and above reported having ADL limitations in West Bengal and; a higher proportion of elderly in Jammu & Kashmir reported having IADL limitations.
- Overall, 20% of older adults age 45 and above needed a helper to perform daily activities of living and a quarter (25%) of elderly age 60 and above with any ADL and/or IADL limitations needed a helper. Elderly who are widowed, women, living with children and others and in richest MPCE quintile are more likely to seek helper to assist in daily activities.
- Need of helper is higher among elderly age 60 and above in the states/UTs of Arunachal Pradesh (52%), Assam (43%), Karnataka (41%) Lakshadweep (37%) and Jammu & Kashmir (36%).

11.7 USE OF AIDS OR SUPPORTIVE DEVICES

Use of assistive technology (AT) or supportive devices is defined as "the application of organized knowledge and skills, procedures and systems related to provision of assistive products, whose primary purpose is to maintain or improve an individual's functioning and independence, facilitate participation, and enhance overall well-being and quality of life"(WHO, 2014b). Use of AT or supportive devices provides significant support and benefits for older adults in various ways: safety and prevention (i.e., prevention of falls), mobility and independence, social connectivity and ease of living, preservation of cognitive abilities, delays in depression and functional loss and improved well-being and quality of life.

All LASI survey participants were asked about the use of any aid or supportive device to assist them in their ADL. Any aid or supportive devices includes hearing aid, spectacles/contact lenses, dentures, and any aid for physical disabilities, such as walker/walking sticks, wheelchairs, adjustable shower tools/ commodes, back/neck collar, any orthosis or prosthesis, and any other aid.

Table 11.13 presents the percentage of older adults using aids/supportive devices by background characteristics. Overall, more than a third of older adults age 45 and above (36%) reported having used any aid or supportive devices; this proportions is much higher among the elderly age 60 and above (43%) compared with older adults age 45-59 (30%). A higher percentage of older adult men (40%) reported using any aid or supportive devices than did older adult women (33%); this sex difference is less pronounced among the elderly age 60 and above compared to older adults age 45-59. Around three fifth of the elderly age 60 and above residing in urban areas (59%) have used any aid or supportive device, compared with 37% in rural areas; this proportion increases with educational attainment and MPCE quintile, ranging from 33% in those with no schooling and 32% in the poorest quintile to 70% in those with 10 or more years of schooling and 54% in the richest MPCE quintile.

Overall in India, 33% of older adults age 45 and above reported using spectacles/contact lenses; 6% are using aids for physical disability; 2% are using dentures, and less than 1% are using hearing aids (0.5%). The proportion of elderly age 60 and above (10%) using aids for physical disability is six times compared with older adults age 45-59 (1.6%). Among the elderly age 60 and above, the use of aids for physical disability is higher in rural (11%) than in urban areas (8%), whereas the use of spectacles/contact lenses (56%), hearing aids (1.1%), and dentures (5%) are higher in urban areas compared with their rural counterparts. Compared to elderly women, a higher proportion of elderly men age 60 and above reported using hearing aids, dentures, spectacles/contact lenses, or an aid for physical disability. The proportion of elderly age 60 and above using spectacles/contact lenses, dentures, or hearing aids is higher among those with 10 or more years of schooling, whereas the use of aids for physical disability is higher among those with lower education. Use of all types of aids or supportive devices is higher in the richest MPCE quintile.

Table 11.14 presents state variations in the use of aids or supportive devices. Use of any aid or supportive device among older adults age 45 and above is higher in the western states, and is comparatively lower in central and eastern Indian states, ranging from 67% in Goa to 12% in Meghalaya. A fifth of elderly age 60 and above are using dentures in Chandigarh (20%) and Mizoram (20%). The percentage of elderly age 60 and above using an aid for physical disability is highest in Telangana (18%), followed by Manipur (18%), Himachal Pradesh, and Jammu & Kashmir (16% each). Among the elderly age 60 and above, the use of spectacles/contact lenses is comparatively lower in the states of Meghalaya (15%), Nagaland (14%), Odisha (11%), and Arunachal Pradesh (6%).

Key findings: use of aids or supportive devices

- In India, 43% of the elderly age 60 and above have been using any aid or supportive devices. More than half of elderly in urban areas of India reported using any aid or supportive devices. Apart from spectacles/contact lenses, a higher proportion of the elderly age 60 and above reported using aids for physical disabilities.
- Elderly age 60 and above with higher education and those in richest MPCE quintile are more likely to use aid/ supportive device.
- Use of any aid or supportive device among older adults age 45 and above is higher in the western states, and is comparatively lower in central and eastern Indian states, ranging from 67% in Goa to 12% in Meghalaya.

Table 11.13 Percentage of older adults using aids or supportive devices[1] by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*						Age ≥ 60						Total					
	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number
Place of residence																		
Rural	0.2	22.8	1.1	1.2	24.0	25,718	0.6	30.0	2.1	10.9	36.8	20,663	0.4	26.2	1.6	5.8	30.1	46,381
Urban	0.5	41.7	2.3	2.3	42.7	14,884	1.1	55.7	5.4	8.1	59.0	10,670	0.7	47.6	3.6	4.7	49.6	25,554
Sex																		
Male	0.5	34.2	1.9	2.5	35.6	15,394	0.9	38.2	3.3	10.9	44.6	15,012	0.7	36.3	2.6	6.8	40.3	30,406
Female	0.2	26.2	1.3	1.1	27.2	25,208	0.6	36.8	2.9	9.4	42.0	16,321	0.3	30.6	2.0	4.5	33.3	41,529
Marital status																		
Currently married	0.3	29.7	1.5	1.6	30.8	35,318	0.7	38.0	3.1	8.4	43.1	19,834	0.4	32.8	2.1	4.1	35.4	55,152
Widowed	0.2	27.2	1.4	1.3	28.9	3,855	0.8	37.1	2.9	13.2	44.2	10,679	0.7	34.8	2.6	10.4	40.7	14,534
Divorced/Separated/ Deserted/ Others	[0.2]	18.9	1.2	2.0	21.5	1,429	0.2	26.2	3.6	7.2	31.9	820	0.2	21.5	2.1	3.9	25.3	2,249
Living arrangement																		
Living alone	-	32.2	1.5	0.8	33.5	688	1.6	32.8	3.2	10.9	38.9	1,617	1.3	32.6	2.8	8.6	37.7	2,305
Living with spouse and/or others	0.2	31.4	1.5	1.3	32.5	4,476	0.8	37.0	2.9	9.2	42.4	6,134	0.6	34.7	2.3	5.9	38.3	10,610
Living with spouse and children	0.3	29.3	1.5	1.7	30.4	30,189	0.7	38.6	3.3	8.0	43.4	13,460	0.4	32.3	2.1	3.7	34.5	43,649
Living with children and others	0.1	26.6	1.6	1.2	28.1	4,076	0.6	38.7	3.0	13.2	45.6	8,416	0.5	35.2	2.6	9.7	40.6	12,492
Living with others only	0.6	22.6	0.9	2.5	25.6	1,173	0.5	29.5	2.7	12.6	37.6	1,706	0.6	26.9	2.1	8.8	33.1	2,879
Religion																		
Hindu	0.3	28.7	1.1	1.3	29.9	29,803	0.7	37.5	3.1	10.3	43.3	22,942	0.5	32.8	2.0	5.4	36.1	52,745
Muslim	0.2	32.4	3.6	3.9	33.6	4,909	0.8	37.9	1.8	8.0	42.4	3,715	0.5	34.8	2.8	5.7	37.4	8,624
Christian	[0.1]	22.0	1.5	0.9	23.0	4,054	0.9	28.0	4.1	9.8	34.6	3,138	0.5	24.7	2.7	4.8	28.2	7,192
Others	0.1	34.2	3.2	1.9	36.1	1,836	0.6	43.1	6.0	12.8	50.3	1,538	0.4	38.5	4.6	7.2	43.0	3,374
Caste/tribe																		
Scheduled tribe	0.1	14.4	0.5	1.1	15.7	7,317	0.1	18.5	1.0	10.2	26.3	5,154	0.1	16.2	0.7	5.1	20.3	12,471
Scheduled caste	0.2	22.8	0.9	1.0	24.0	6,879	0.4	31.2	1.6	10.5	36.5	5,124	0.3	26.6	1.2	5.3	29.6	12,003
Other backward class	0.4	28.1	1.8	1.9	29.1	15,225	0.7	36.4	2.9	9.5	42.3	11,826	0.5	31.8	2.3	5.4	35.1	27,051
None of the above	0.3	40.9	1.9	1.6	42.3	11,181	1.1	49.0	4.9	10.7	54.4	9,229	0.7	44.7	3.3	5.9	48.1	20,410
Education																		
No schooling	0.2	15.1	1.5	2.0	16.6	16,256	0.5	26.1	1.7	10.7	33.1	16,834	0.3	20.9	1.6	6.6	25.3	33,090
Less than 5 years complete	0.2	27.0	1.3	1.4	28.1	4,256	0.7	42.0	3.8	13.8	48.4	3,771	0.4	34.3	2.5	7.4	38.0	8,027
5-9 years complete	0.1	36.8	1.6	1.2	37.8	10,853	0.7	47.5	3.7	7.5	51.4	5,985	0.3	40.9	2.4	3.6	43.1	16,838
10 or more years complete	0.7	49.6	1.6	1.3	50.2	9,237	1.8	67.2	7.4	7.7	70.0	4,743	1.1	55.7	3.6	3.5	57.0	13,980

continued

continued

Background characteristics	Age 45-59*						Age ≥ 60						Total					
	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number
Work status																		
Currently working	0.4	28.4	0.8	0.7	29.1	23,576	0.6	29.1	1.7	3.5	32.0	9,265	0.4	28.6	1.1	1.5	30.0	32,841
Worked in past but currently not working	0.2	34.6	4.0	6.9	37.6	4,559	0.8	40.7	3.6	15.9	49.4	13,312	0.7	39.1	3.7	13.7	46.4	17,871
Never worked	0.2	28.5	1.8	1.2	29.8	12,467	0.7	42.0	3.9	8.5	46.5	8,756	0.4	34.4	2.8	4.4	37.1	21,223
MPCE quintile																		
Poorest	0.2	18.5	0.5	0.7	19.3	7,638	0.5	25.7	1.8	9.5	32.4	6,459	0.3	22.0	1.1	4.9	25.6	14,097
Poorer	0.1	25.9	1.0	0.9	27.0	8,023	0.5	34.6	2.1	9.0	40.5	6,446	0.3	30.0	1.5	4.7	33.3	14,469
Middle	0.1	28.6	1.1	1.9	30.1	8,086	0.9	38.8	3.8	10.4	44.6	6,386	0.5	33.4	2.3	5.8	36.8	14,472
Richer	0.2	33.5	1.5	1.0	34.6	8,476	0.6	42.9	3.2	9.7	47.8	6,152	0.4	37.7	2.3	4.9	40.6	14,628
Richest	0.8	39.7	3.6	3.6	40.9	8,379	1.2	48.6	5.1	12.4	54.3	5,890	1.0	43.4	4.2	7.3	46.5	14,269
Total	**0.3**	**29.2**	**1.5**	**1.6**	**30.3**	**40,602**	**0.7**	**37.5**	**3.1**	**10.1**	**43.3**	**31,333**	**0.5**	**33.0**	**2.2**	**5.5**	**36.2**	**71,935**

Notes

* *Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Supportive devices include spectacles, dentures and devices to help in moving or sitting (such as, walker, walking sticks, wheelchairs, adjustable showers stools/ commodes, back/neck collar, orthosis/prosthesis).

Table 11.14 Percentage of older adults using aids or supportive devices[1], states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*						Age ≥ 60						Total					
	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number
India	**0.3**	**29.2**	**1.5**	**1.6**	**30.3**	**40,602**	**0.7**	**37.5**	**3.1**	**10.1**	**43.3**	**31,333**	**0.5**	**33.0**	**2.2**	**5.5**	**36.2**	**71,935**
North																		
Chandigarh	[0.9]	52.2	6.6	1.3	53.9	619	2.0	71.0	20.2	10.7	75.8	384	1.3	59.7	12.0	5.0	62.6	1,003
Delhi	[0.4]	35.6	[0.1]	0.3	36.2	822	1.9	53.4	6.1	8.0	56.1	494	1.0	42.4	2.4	3.3	43.7	1,316
Haryana	[0.1]	32.5	2.6	1.2	34.7	1,048	0.7	41.5	5.5	8.4	46.5	846	0.4	36.8	4.0	4.6	40.3	1,894
Himachal Pradesh	[0.2]	36.3	5.5	2.4	40.8	765	0.6	50.2	14.4	15.8	58.9	617	0.4	42.9	9.7	8.7	49.3	1,382
Jammu & Kashmir	[0.3]	15.6	1.9	4.9	19.4	880	1.5	25.6	4.7	15.9	36.5	730	0.9	20.5	3.3	10.3	27.8	1,610
Punjab	[0.3]	40.5	6.9	1.9	43.1	1,106	0.8	47.5	12.9	12.5	54.1	1,001	0.5	43.9	9.8	7.0	48.4	2,107
Rajasthan	0.9	23.2	0.7	0.9	25.1	1,161	1.3	32.0	2.6	13.9	40.7	1,077	1.1	27.6	1.6	7.4	32.9	2,238
Uttarakhand	[0.6]	37.4	2.6	1.3	38.9	716	1.2	47.1	5.3	9.7	53.1	641	0.9	42.2	3.9	5.4	45.9	1,357
Central																		
Chhattisgarh	-	12.8	[0.3]	0.8	13.7	1,274	0.7	21.0	0.8	10.1	28.4	779	0.3	15.9	0.5	4.4	19.3	2,053
Madhya Pradesh	[0.3]	20.6	0.9	0.8	21.8	1,596	0.6	26.7	1.8	12.5	34.4	1,312	0.4	23.5	1.3	6.4	27.8	2,908
Uttar Pradesh	[0.1]	28.6	1.0	0.5	29.3	2,393	1.3	37.1	3.1	8.6	43.2	2,165	0.7	32.8	2.0	4.5	36.2	4,558
East																		
Bihar	-	19.5	[0.1]	0.7	20.2	1,707	0.5	29.2	0.7	8.1	35.3	1,806	0.3	24.7	0.4	4.7	28.3	3,513
Jharkhand	[0.1]	18.3	0.6	0.5	19.0	1,292	[0.4]	27.6	1.3	11.1	36.0	1,165	0.2	22.8	1.0	5.6	27.2	2,457
Odisha	[0.1]	8.4	0.3	1.0	9.6	1,675	0.4	10.8	0.6	13.1	22.9	1,230	0.2	9.5	0.4	6.3	15.4	2,905
West Bengal	0.2	44.1	1.5	1.3	44.9	2,381	0.8	51.9	3.2	9.0	54.9	1,541	0.4	47.3	2.2	4.4	49.0	3,922
Northeast																		
Arunachal Pradesh	-	10.2	-	1.6	11.3	896	[1.1]	6.3	-	13.4	18.6	318	[0.3]	9.2	-	4.5	13.1	1,214
Assam	[0.1]	26.3	0.5	0.8	27.0	1,544	[0.3]	34.8	1.6	4.8	37.9	814	[0.2]	29.4	0.9	2.3	30.9	2,358
Manipur	[0.3]	35.3	3.3	2.6	38.3	758	[0.8]	42.2	8.9	17.8	54.6	605	0.5	38.5	5.9	9.7	45.9	1,363
Meghalaya	-	9.1	[0.4]	[0.5]	9.5	556	0.6	14.8	[0.5]	2.4	15.3	411	[0.3]	11.5	[0.4]	1.3	12.0	967
Mizoram	-	27.4	4.8	[0.4]	30.4	713	3.2	33.2	20.4	3.7	42.0	531	1.4	30.0	11.8	1.9	35.6	1,244
Nagaland	-	14.5	0.5	[0.6]	14.9	708	[0.4]	14.1	0.9	7.4	21.4	607	[0.2]	14.3	0.7	3.9	18.0	1,315
Tripura	[0.1]	29.1	1.6	0.7	29.9	732	[0.5]	28.9	1.5	6.5	34.2	459	[0.2]	29.0	1.5	3.0	31.6	1,191
West																		
Dadra & Nagar Haveli	-	47.3	1.4	1.5	48.3	630	[0.9]	42.4	4.3	13.7	52.3	446	[0.3]	45.3	2.6	6.3	49.9	1,076
Daman & Diu	[0.1]	55.8	1.1	1.4	56.9	555	2.1	56.2	11.5	11.3	61.2	427	1.1	56.0	6.0	6.1	58.9	982

continued

continued

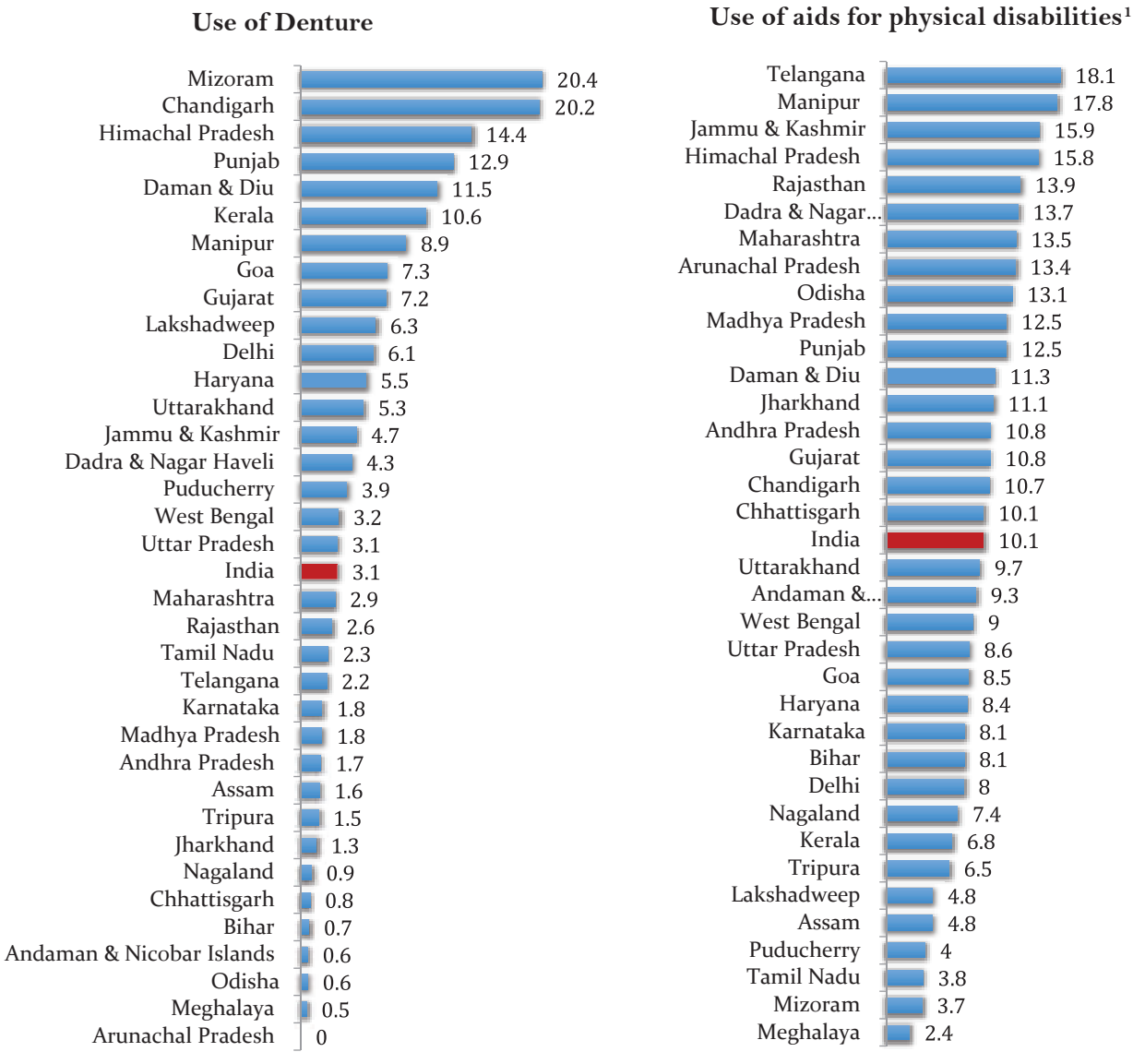
State/Union Territory	Age 45-59*						Age ≥ 60						Total					
	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number	Hearing aid	Spectacles/ Contact lenses	Denture	Aids used for physical disabilities	Any aid or supportive devices	Number
Goa	-	63.9	1.0	2.7	64.2	786	[0.5]	68.5	7.3	8.5	70.9	634	[0.2]	66.0	3.9	5.4	67.3	1,420
Gujarat	-	41.3	3.2	1.5	43.4	1,333	[0.3]	43.1	7.2	10.8	49.6	979	[0.1]	42.1	5.0	5.7	46.2	2,312
Maharashtra	[0.1]	43.9	0.7	3.1	44.6	2,172	0.6	54.0	2.9	13.5	58.6	1,779	0.4	48.9	1.8	8.2	51.5	3,951
South																		
Andaman & Nicobar Islands	[0.1]	36.3	[0.3]	[0.5]	36.8	720	1.6	39.8	0.6	9.3	44.8	521	0.7	37.7	0.4	4.1	40.1	1,241
Andhra Pradesh	[0.1]	33.4	1.1	1.6	34.4	1,564	0.4	42.8	1.7	10.8	48.2	1,098	0.2	37.4	1.4	5.4	40.2	2,662
Karnataka	[0.8]	22.4	2.4	2.9	23.4	1,409	0.5	35.3	1.8	8.1	38.6	999	0.7	27.4	2.2	4.9	29.4	2,408
Kerala	[0.2]	45.7	6.4	1.4	48.1	1,273	1.0	53.5	10.6	6.8	57.6	1,203	0.6	49.7	8.6	4.2	53.0	2,476
Lakshadweep	-	45.6	3.8	[0.3]	46.1	637	[0.4]	44.4	6.3	4.8	49.7	500	[0.2]	45.1	5.0	2.5	47.8	1,137
Puducherry	[0.2]	35.7	1.1	[0.5]	36.3	785	[0.4]	47.9	3.9	4.0	49.6	637	0.3	41.4	2.4	2.2	42.5	1,422
Tamil Nadu	0.3	19.1	1.1	0.1	20.1	1,993	0.8	26.2	2.3	3.8	29.6	1,529	0.5	22.3	1.6	1.8	24.5	3,522
Telangana	[0.1]	35.2	1.3	2.9	37.0	1,403	[0.1]	42.3	2.2	18.1	49.6	1,048	[0.1]	38.4	1.7	9.7	42.6	2,451

Notes

** Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Supportive devices include spectacles, dentures and devices to help in moving or sitting (such as, walker, walking sticks, wheelchairs, adjustable showers stools/ commodes, back/neck collar, orthosis/ prosthesis).

Figure 11.4 Percentage of elderly age 60 and above using dentures and aids for physical disabilities, states/ UTs, LASI Wave 1, 2017-18



Note

[1]Aids used for physical disabilities include wheelchairs, adjustable shower stools/commodes, back/neck collars and orthesis and prosthesis

12. HEALTH BEHAVIOUR AND RISK FACTORS

Health behaviours shape the health and well-being of individuals and populations. Health behaviours are recognized as multidimensional and are embedded in healthy lifestyles, varying over time and space. WHO defines risk factors in the report of 'Global Health Risks' (WHO, 2009) as 'a factor that raises the probability of adverse health outcomes'. Modifiable health risk factors contribute significantly to the global burden of disease. Tobacco use, alcohol consumption, physical inactivity, and inadequate fruit and vegetable intake are recognized as important risk factors for chronic disease and mortality. Reducing the disease burden in a population through preventing health risks is essential. Promoting physical activity, endorsing a healthy diet and reduced tobacco and alcohol use is important for improving a population's health status.

In the LASI, information was collected on four domains of health risk factors: tobacco use, alcohol consumption, physical activity, and spiritual activity. In addition, information on household food availability is also collected. This chapter describes the prevalence of health risk factors and food availability across states/UTs of India.

12.1 TOBACCO CONSUMPTION (SMOKING/SMOKELESS)

Tobacco use is a primary risk factor for a number of chronic diseases, including cancer, lung disease, cardiovascular disease, and oral health conditions. Each year an estimated seven million deaths worldwide are attributed to tobacco use, with the most common tobacco-related cause of death being cardiovascular disease, followed by stroke. Despite the high association between tobacco use and non-communicable disease, tobacco consumption is common throughout the world (WHO, 2018b). In India, about 42% of men, 14% of women, and 29% (266.8 million) of all adults aged 15 years and older currently use tobacco in some form (GATS, 2016-17a; WHO, 2017d).

Tobacco consumption occurs in various forms, broadly comprising two categories: smoked and smokeless. Smoked tobacco involves burning tobacco products and inhaling the smoke (comprising particle and gaseous products), whereas smokeless tobacco involves consuming tobacco in forms other than smoking and is widely used across India. A ban on tobacco use in public places is enforced under 'The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003' (COTPA, 2003).

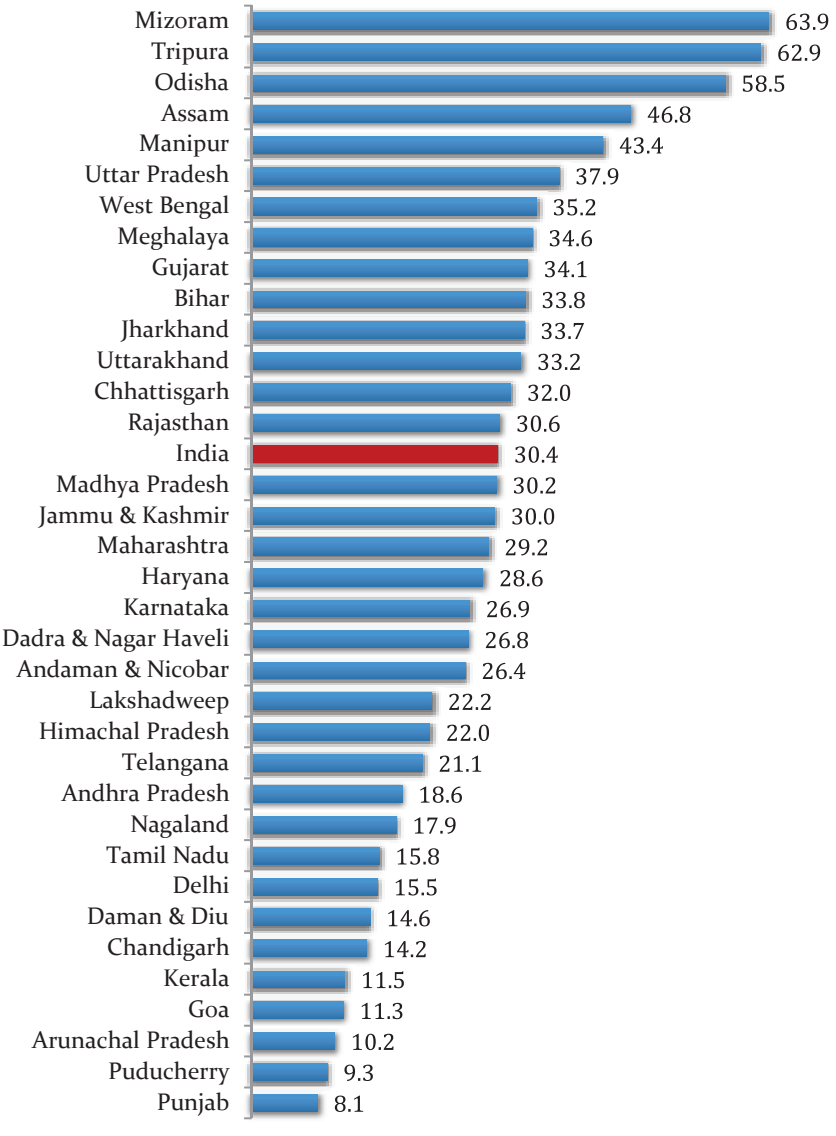
In the LASI, information was collected on ever and current use of tobacco; smoking and smokeless tobacco use; age at which the respondent first started using tobacco; daily frequency of tobacco use; and age at the time of quitting tobacco use.

Types of tobacco use:

- Smoked tobacco or tobacco smoking is the practice of burning tobacco products and inhaling the smoke, which includes particle and gaseous products.
- Smokeless tobacco use includes chewing, sniffing, placing the product between the teeth and gum, or consumption of the smokeless tobacco such as pan, gutkha, khaini, etc.

Figure 12.1 shows the percentage of older adults age 45 and above who reported current tobacco use (smoked or smokeless) by states/UTs. Overall, 30% of older adults age 45 and above in India reported that they are currently using tobacco in either smoked or smokeless form. The prevalence of current use of tobacco among older adults age 45 and above is comparatively much higher in the states of the northeast such as Mizoram (64%), Tripura (63%), Assam (47%), and Manipur (43%) besides Odisha (59%); whereas the prevalence of current tobacco use (smoked or smokeless) is less than 10% in Puducherry (9%) and Punjab (8%).

Figure 12.1 Percentage of older adults age 45 and above* who reported current tobacco use (smoked or smokeless), states/UTs, LASI Wave 1, 2017-18



Note

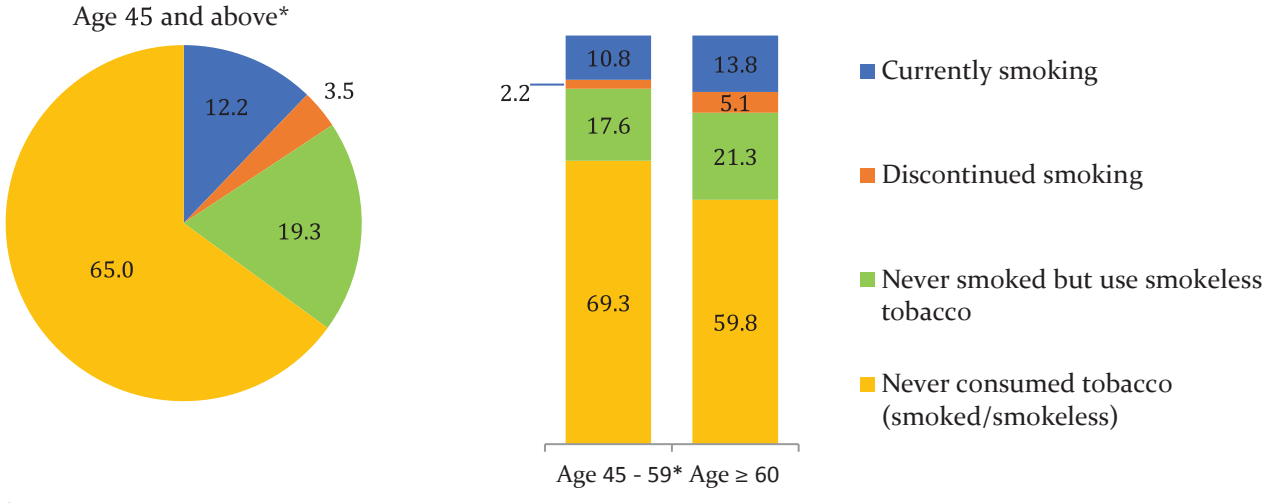
** Including spouse irrespective of age*

12.1.1 Smoking tobacco

A broader definition of smoked tobacco may include simply inhaling tobacco smoke through the mouth, and then releasing it, as is done with some cigarettes, bidi, tobacco pipes, cigars, hookahs, and cheroots. The prevalence of smoking is calculated as the proportion of all respondents who reported that they are current smokers at the time of the survey. Discontinuation of smoking is calculated as the proportion of ever smokers who are not currently smoking.

Figure 12.2 shows the distribution of older adults by smoking status and age. Overall, 12% of older adults age 45 and above are current smokers; 4% are former smokers who discontinued smoking and 65% never consumed tobacco; however, 19% of older adults age 45 and above who have never smoked tobacco (cigarettes, bidi, tobacco pipes, cigars, hookahs, and cheroots) have used smokeless tobacco. The prevalence of current smoking is slightly higher among the elderly age 60 and above (14%) than in older adults age 45-59 (11%). The proportion who discontinued smoking is also higher among elderly age 60 and above (5%) compared to older adults age 45-59 (2%).

Figure 12.2 Percent distribution of older adults age 45 and above* by smoking status and age, India, LASI Wave 1, 2017-18



Note

** Including spouse irrespective of age*

Table 12.1 shows the prevalence of current smokers by sex according to background characteristics. Twenty-six percent of older adult men age 45 and above are current smokers, as are 2.4% of older adult women. Among women, the current smoking prevalence is higher among the elderly age 60 and above (3.4%) compared to their counterparts age 45-59 (1.7%), whereas among men, the current smoking prevalence does not vary by age groups. The prevalence of current smoking is higher among older adult men as well as older adult women age 45 and above in rural areas (29% and 3.3%, respectively) compared to those living in urban areas (18% and 0.5%, respectively). In both older adult men and women, across all age groups, the proportion of current smokers is highest in those with no education and decreases as education level increases.

The prevalence of current smokers across the states/UTs is presented in Table 12.2. The prevalence of current smoking among elderly men age 60 and above ranges from about half in Haryana (53%) and Tripura (52%) to less than 10% in Lakshadweep (9%), Arunachal Pradesh (7%), Goa (7%) and Jharkhand (7%). The prevalence of current smoking among elderly women age 60 and above is higher in the states of Mizoram (24%), Tripura (19%), Uttarakhand (18%), Haryana (14%), Manipur (12%), and Jammu & Kashmir (11%).

Table 12.1 Percentage of older adults by smoking status and sex by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Currently smoking[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence												
Rural	29.9	9,786	28.3	10,002	29.1	19,788	2.4	15,833	4.5	10,595	3.3	26,428
Urban	18.2	5,516	17.9	4,939	18.1	10,455	0.3	9,275	0.8	5,668	0.5	14,943
Marital status												
Currently married	25.7	14,247	25.7	12,266	25.7	26,513	1.7	20,899	3.3	7,482	2.1	28,381
Widowed	37.5	476	23.5	2,271	25.7	2,747	2.2	3,369	3.5	8,366	3.2	11,735
Divorced/Separated/Deserted/ Others	26.1	579	31.4	404	28.5	983	0.7	840	2.2	415	1.2	1,255
Living arrangement												
Living alone	37.9	223	22.1	363	26.0	586	3.4	460	3.4	1,251	3.4	1,711
Living with spouse and/or others	26.7	1,555	25.5	3,614	25.9	5,169	1.7	2,772	3.2	2,438	2.4	5,210
Living with spouse and children	25.6	12,465	25.8	8,524	25.7	20,989	1.6	17,708	3.2	4,936	2.0	22,644
Living with children and others	34.1	606	24.4	1,926	26.3	2,532	2.1	3,467	3.2	6,484	2.9	9,951
Living with others only	24.3	453	26.9	514	25.8	967	0.9	701	5.5	1,154	3.8	1,855
Religion												
Hindu	26.7	11,277	25.7	10,959	26.2	22,236	1.7	18,372	3.4	11,881	2.4	30,253
Muslim	26.8	1,727	30.6	1,784	28.7	3,511	2.0	3,164	4.2	1,920	2.9	5,084
Christian	21.9	1,565	14.2	1,459	18.1	3,024	1.4	2,480	3.3	1,673	2.1	4,153
Others	12.8	733	14.0	739	13.5	1,472	0.4	1,092	0.7	789	0.5	1,881
Caste/tribe												
Scheduled tribe	27.1	2,844	29.1	2,417	28.1	5,261	3.8	4,444	5.3	2,720	4.4	7,164
Scheduled caste	34.7	2,578	33.6	2,429	34.1	5,007	2.6	4,266	4.9	2,677	3.5	6,943
Other backward class	23.3	5,695	22.6	5,718	22.9	11,413	1.3	9,462	2.6	6,063	1.8	15,525
None of the above	24.3	4,185	23.7	4,377	24.0	8,562	1.2	6,936	3.0	4,803	2.0	11,739
Education												
No schooling	35.6	3,980	31.6	5,425	33.3	9,405	3.1	12,224	4.5	11,349	3.8	23,573
Less than 5 years complete	34.0	1,866	29.1	2,168	31.2	4,034	0.6	2,365	0.7	1,590	0.6	3,955
5-9 years complete	27.9	4,709	24.9	3,814	26.5	8,523	0.2	6,084	0.6	2,141	0.3	8,225
10 or more years complete	12.5	4,747	13.0	3,534	12.7	8,281	-	4,435	-	1,183	-	5,618
Work status												
Currently working	26.2	13,384	28.7	6,260	27.1	19,644	2.0	10,080	4.1	2,953	2.5	13,033
Worked in past but currently not working	25.8	1,414	23.1	7,933	23.5	9,347	1.9	3,125	4.1	5,333	3.3	8,458
Never worked	22.1	504	20.3	748	21.0	1,252	1.4	11,903	2.6	7,977	1.9	19,880
MPCE quintile												
Poorest	24.9	2,901	25.1	3,000	25.0	5,901	1.6	4,700	3.2	3,425	2.3	8,125
Poorer	27.1	3,005	24.4	3,039	25.7	6,044	1.8	4,985	3.2	3,385	2.4	8,370
Middle	29.4	3,019	25.9	3,031	27.5	6,050	2.0	5,030	3.9	3,337	2.8	8,367
Richer	27.0	3,208	27.5	2,965	27.3	6,173	1.7	5,228	3.9	3,163	2.6	8,391
Richest	22.0	3,169	24.7	2,906	23.3	6,075	1.4	5,165	2.9	2,953	1.9	8,118
Total	**26.1**	**15,302**	**25.5**	**14,941**	**25.8**	**30,243**	**1.7**	**25,108**	**3.4**	**16,263**	**2.4**	**41,371**

Notes

**Including spouse irrespective of age,* "-" indicates less number of cases/no cases.

[1] Smoking refers to smoking any tobacco product such as cigarette, bidi, cigar, hookah and cheroot etc.

Table 12.2 Percentage of older adults by smoking status and sex, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Currently smoking[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**26.1**	**15,302**	**25.5**	**14,941**	**25.8**	**30,243**	**1.7**	**25,108**	**3.4**	**16,263**	**2.4**	**41,371**
North												
Chandigarh	26.9	249	13.6	179	21.0	428	2.8	361	6.7	197	4.2	558
Delhi	27.0	346	17.2	247	22.8	593	1.6	475	3.2	244	2.1	719
Haryana	50.7	428	53.1	358	51.8	786	5.5	618	13.7	484	9.4	1,102
Himachal Pradesh	45.2	256	43.5	298	44.2	554	2.6	505	8.9	316	5.1	821
Jammu & Kashmir	49.6	328	35.3	381	41.6	709	6.9	552	11.0	348	8.6	900
Punjab	12.3	413	10.1	497	11.1	910	[0.1]	679	[0.3]	496	[0.2]	1,175
Rajasthan	43.7	460	42.8	501	43.2	961	7.5	700	8.6	572	8.0	1,272
Uttarakhand	43.7	251	46.7	302	45.4	553	8.3	463	17.5	338	12.3	801
Central												
Chhattisgarh	22.0	514	21.3	391	21.7	905	[0.3]	760	1.6	387	0.7	1,147
Madhya Pradesh	31.2	668	31.8	642	31.5	1,310	1.1	914	1.5	667	1.3	1,581
Uttar Pradesh	34.3	955	27.5	1,113	30.5	2,068	3.4	1,432	4.8	1,045	4.0	2,477
East												
Bihar	10.5	625	11.4	921	11.0	1,546	4.5	1,076	9.6	883	6.9	1,959
Jharkhand	7.2	454	7.2	582	7.2	1,036	[0.3]	832	1.2	582	0.7	1,414
Odisha	18.3	652	17.9	596	18.1	1,248	1.2	1,018	1.2	632	1.2	1,650
West Bengal	42.2	861	40.4	747	41.3	1,608	0.4	1,513	1.1	790	0.7	2,303
Northeast												
Arunachal Pradesh	11.5	375	6.8	176	10.2	551	[0.2]	519	[4.8]	142	1.2	661
Assam	15.5	581	14.9	383	15.3	964	[0.2]	961	2.0	427	0.8	1,388
Manipur	30.0	317	28.7	260	29.4	577	3.4	438	11.7	340	7.2	778
Meghalaya	53.4	204	33.8	164	44.9	368	[0.4]	351	4.8	245	2.2	596
Mizoram	56.2	298	44.0	265	49.9	563	17.7	415	24.4	266	20.4	681
Nagaland	24.4	287	14.4	301	18.7	588	-	419	-	306	-	725
Tripura	52.7	262	51.6	223	52.2	485	8.1	466	18.6	232	11.6	698
West												
Dadra & Nagar Haveli	13.7	265	30.3	192	20.2	457	[0.1]	354	-	248	[0.1]	602
Daman & Diu	11.2	220	12.3	177	11.7	397	-	327	-	244	-	571
Goa	8.5	277	7.4	284	8.0	561	-	505	1.1	346	0.5	851
Gujarat	31.8	518	32.8	441	32.2	959	[0.7]	793	1.1	521	0.9	1,314
Maharashtra	10.0	771	11.7	821	10.9	1,592	0.2	1,393	0.3	954	0.2	2,347
South												
Andaman & Nicobar Islands	7.2	288	12.9	275	9.9	563	0.9	429	1.4	246	1.1	675
Andhra Pradesh	24.8	566	26.2	544	25.5	1,110	3.2	991	4.5	552	3.7	1,543
Karnataka	21.6	485	27.6	472	24.4	957	-	914	-	524	-	1,438
Kerala	26.6	442	18.5	528	22.0	970	-	819	-	666	-	1,485
Lakshadweep	25.0	204	8.8	238	15.5	442	[0.4]	429	-	262	[0.3]	691
Puducherry	11.0	275	10.0	268	10.5	543	[0.1]	507	-	364	-	871
Tamil Nadu	24.9	708	21.4	681	23.1	1,389	-	1,283	[0.3]	845	[0.1]	2,128
Telangana	28.8	499	34.9	493	31.9	992	1.0	897	4.5	552	2.4	1,449

Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

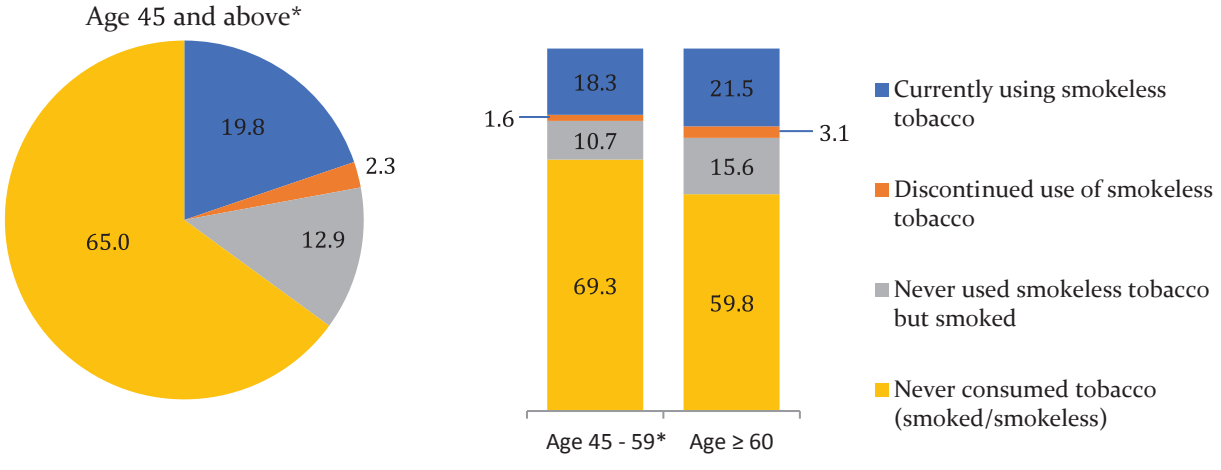
[1] Smoking refers to smoking any tobacco product such as cigarette, bidi, cigar, hookah and cheroot etc.

12.1.2 Smokeless tobacco

Smokeless tobacco is the use of tobacco or tobacco products in ways other than smoking. These include chewing, sniffing, placing the product between the teeth and gum, or use of the smokeless tobacco in forms such as *pan, gutkha, khaini* etc., which are widely consumed across India. Information on the quantity of smokeless tobacco (in grams) consumed daily and number of times smokeless tobacco was used in a day or week was collected in addition to the other information mentioned in the introduction. The prevalence of current use of smokeless tobacco is calculated as the proportion of all respondents who reported that they are currently using smokeless tobacco at the time of the survey.

Figure 12.3 presents the distribution of older adults by smokeless tobacco consumption status and age. Overall, the prevalence of current use of smokeless tobacco among older adults age 45 and above is 20%; around 2% have discontinued the use of smokeless tobacco, while 65% never used tobacco; thirteen percent of older adults age 45 and above never used smokeless tobacco but have smoked tobacco. A quarter of the elderly age 60 and above (22%) are currently using smokeless tobacco compared to 18% of older adults age 45-59.

Figure 12.3 Percent distribution of older adults age 45 and above* by smokeless tobacco consumption status and age, India, LASI Wave 1, 2017-18



Note
** Including spouse irrespective of age*

Table 12.3 shows the percentage of older adults currently using smokeless tobacco by background characteristics. The prevalence of current use of smokeless tobacco among older adult men age 45 and above is 28% compared to 14% among older adult women. Among men, the current use of smokeless tobacco shows not much variation by age; whereas among women, current users of smokeless tobacco are 16% among elderly women age 60 and above compared to 12% among older adult women age 45-59. The proportion of older adults age 45-59 and elderly age 60 and above who are current users of smokeless tobacco is twice in rural areas for both men and women compared to urban areas. Among older adults age 45 and above, 36% of men compared to 22% of women from Scheduled tribe are currently using smokeless tobacco. The proportion of older adults age 45 and above who reported that they are currently using smokeless tobacco decreases with increase in education and MPCE quintiles.

Table 12.4 presents the cross-state variation in the percentage of older adults who are current users of smokeless tobacco in India. Among older adult men age 45 and above, besides West Bengal (20%), most of the eastern states show higher prevalence for current use of smokeless tobacco. More than half of the elderly men age 60 and above are currently using smokeless tobacco in Odisha (65%), Jharkhand (57%), and Bihar (53%), in contrast, less than 5% are current users of smokeless tobacco in Goa (4%), Puducherry (2%), Himachal Pradesh (2%), Kerala (2%) and Haryana (2%). Among older adult women age 45 and above, the proportion who are current users of smokeless tobacco is lower in north Indian states/UTs, along with a few west and south Indian states, ranging from 54% in Tripura to less than 1% in Punjab and Himachal Pradesh. More than half of elderly women age 60 and above are currently using smokeless tobacco in Odisha (57%) and Tripura (56%).

Table 12.3 Percentage of older adults by use of smokeless tobacco status and sex by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Currently using smokeless tobacco[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence												
Rural	33.0	9,786	31.1	10,002	32.0	19,788	14.6	15,833	18.7	10,595	16.3	26,428
Urban	18.6	5,516	17.7	4,939	18.2	10,455	8.2	9,275	10.4	5,668	9.0	14,943
Marital status												
Currently married	28.2	14,247	27.7	12,266	28.0	26,513	11.8	20,899	13.7	7,482	12.3	28,381
Widowed	33.6	476	28.2	2,271	29.0	2,747	16.1	3,369	18.1	8,366	17.6	11,735
Divorced/Separated/Deserted/ Others	25.4	579	16.5	404	21.4	983	10.9	840	17.6	415	12.9	1,255
Living arrangement												
Living alone	31.8	223	23.4	363	25.5	586	19.6	460	21.8	1,251	21.3	1,711
Living with spouse and/or others	24.4	1,555	26.7	3,614	26.0	5,169	13.1	2,772	12.5	2,438	12.8	5,210
Living with spouse and children	28.6	12,465	28.1	8,524	28.4	20,989	11.6	17,708	14.4	4,936	12.2	22,644
Living with children and others	29.9	606	27.5	1,926	28.0	2,532	15.4	3,467	17.4	6,484	16.8	9,951
Living with others only	31.8	453	27.1	514	29.0	967	10.2	701	16.9	1,154	14.4	1,855
Religion												
Hindu	29.5	11,277	28.0	10,959	28.8	22,236	12.2	18,372	16.1	11,881	13.8	30,253
Muslim	24.8	1,727	28.5	1,784	26.7	3,511	15.8	3,164	19.1	1,920	17.1	5,084
Christian	15.4	1,565	15.4	1,459	15.4	3,024	9.5	2,480	12.1	1,673	10.5	4,153
Others	20.7	733	21.0	739	20.8	1,472	7.7	1,092	11.3	789	9.3	1,881
Caste/tribe												
Scheduled tribe	35.9	2,844	36.6	2,417	36.2	5,261	22.4	4,444	21.6	2,720	22.0	7,164
Scheduled caste	29.9	2,578	28.9	2,429	29.4	5,007	16.3	4,266	21.5	2,677	18.5	6,943
Other backward class	26.9	5,695	27.2	5,718	27.0	11,413	9.5	9,462	13.3	6,063	11.1	15,525
None of the above	26.9	4,185	24.4	4,377	25.6	8,562	11.1	6,936	15.4	4,803	13.0	11,739
Education												
No schooling	30.6	3,980	31.1	5,425	30.9	9,405	16.1	12,224	18.0	11,349	17.0	23,573
Less than 5 years complete	33.9	1,866	31.0	2,168	32.3	4,034	16.2	2,365	17.8	1,590	16.8	3,955
5-9 years complete	31.2	4,709	28.9	3,814	30.1	8,523	9.2	6,084	11.0	2,141	9.7	8,225
10 or more years complete	21.4	4,747	17.2	3,534	19.6	8,281	2.8	4,435	2.4	1,183	2.7	5,618
Work status												
Currently working	29.5	13,384	33.5	6,260	30.9	19,644	15.9	10,080	22.0	2,953	17.4	13,033
Worked in past but currently not working	20.5	1,414	23.5	7,933	23.1	9,347	12.6	3,125	19.2	5,333	16.8	8,458
Never worked	13.8	504	12.6	748	13.1	1,252	8.9	11,903	11.6	7,977	10.0	19,880
MPCE quintile												
Poorest	32.1	2,901	33.3	3,000	32.7	5,901	14.7	4,700	18.0	3,425	16.2	8,125
Poorer	31.3	3,005	31.2	3,039	31.3	6,044	15.6	4,985	17.9	3,385	16.6	8,370
Middle	30.7	3,019	26.1	3,031	28.2	6,050	12.1	5,030	16.7	3,337	14.0	8,367
Richer	29.1	3,208	25.2	2,965	27.1	6,173	10.8	5,228	15.6	3,163	12.7	8,391
Richest	18.2	3,169	19.9	2,906	19.0	6,075	8.5	5,165	11.2	2,953	9.5	8,118
Total	**28.3**	**15,302**	**27.5**	**14,941**	**27.9**	**30,243**	**12.4**	**25,108**	**16.2**	**16,263**	**13.9**	**41,371**

Notes

**Including spouse irrespective of age*

[1] Smokeless tobacco refers to tobacco products such as chewing tobacco, gutka or pan masala.

Table 12.4 Percentage of older adults by use of smokeless tobacco status and sex, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Currently using smokeless tobacco[1]											
	Male						Female					
	Age 45-59*	Number	Age ≥ 60	Number	Total	Number	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**28.3**	**15,302**	**27.5**	**14,941**	**27.9**	**30,243**	**12.4**	**25,108**	**16.2**	**16,263**	**13.9**	**41,371**
North												
Chandigarh	8.8	249	4.8	179	7.0	428	[1.1]	361	[1.1]	197	1.1	558
Delhi	11.5	346	7.1	247	9.6	593	1.5	475	[1.1]	244	1.3	719
Haryana	5.2	428	1.7	358	3.5	786	[0.4]	618	2.2	484	1.3	1,102
Himachal Pradesh	5.0	256	2.1	298	3.3	554	0.7	505	-	316	[0.4]	821
Jammu & Kashmir	6.0	328	12.6	381	9.7	709	2.9	552	12.6	348	7.1	900
Punjab	10.0	413	7.0	497	8.3	910	0.2	679	-	496	[0.1]	1,175
Rajasthan	14.6	460	13.0	501	13.8	961	5.0	700	5.2	572	5.1	1,272
Uttarakhand	12.5	251	10.9	302	11.6	553	4.8	463	7.4	338	5.9	801
Central												
Chhattisgarh	33.0	514	33.2	391	33.1	905	14.6	760	16.0	387	15.1	1,147
Madhya Pradesh	27.7	668	24.0	642	25.8	1,310	9.6	914	11.0	667	10.2	1,581
Uttar Pradesh	36.1	955	34.5	1,113	35.2	2,068	14.1	1,432	17.2	1,045	15.5	2,477
East												
Bihar	60.6	625	52.8	921	55.7	1,546	5.2	1,076	5.3	883	5.2	1,959
Jharkhand	55.9	454	56.6	582	56.3	1,036	11.6	832	17.8	582	14.2	1,414
Odisha	62.9	652	65.1	596	64.0	1,248	43.8	1,018	56.5	632	48.9	1,650
West Bengal	19.6	861	20.5	747	20.0	1,608	15.9	1,513	25.2	790	19.2	2,303
Northeast												
Arunachal Pradesh	8.4	375	6.0	176	7.7	551	3.1	519	6.3	142	3.8	661
Assam	55.9	581	43.6	383	50.9	964	35.4	961	38.8	427	36.5	1,388
Manipur	44.2	317	16.9	260	31.2	577	41.1	438	21.8	340	32.2	778
Meghalaya	11.5	204	6.1	164	9.2	368	21.9	351	22.2	245	22.0	596
Mizoram	25.5	298	29.0	265	27.3	563	52.7	415	32.9	266	44.8	681
Nagaland	25.5	287	12.6	301	18.0	588	12.1	419	[7.4]	306	10.1	725
Tripura	21.8	262	12.9	223	17.6	485	52.9	466	55.5	232	53.8	698
West												
Dadra & Nagar Haveli	33.2	265	34.2	192	33.6	457	9.1	354	10.3	248	9.6	602
Daman & Diu	32.3	220	14.6	177	23.8	397	3.3	327	2.5	244	2.9	571
Goa	11.3	277	3.9	284	7.4	561	6.5	505	12.0	346	8.8	851
Gujarat	39.1	518	22.2	441	30.9	959	17.2	793	16.7	521	17.0	1,314
Maharashtra	38.8	771	35.9	821	37.2	1,592	11.8	1,393	23.4	954	17.0	2,347
South												
Andaman & Nicobar Islands	28.4	288	27.4	275	27.9	563	15.6	429	25.0	246	18.9	675
Andhra Pradesh	6.5	566	9.5	544	8.0	1,110	3.6	991	6.3	552	4.6	1,543
Karnataka	19.4	485	22.6	472	20.8	957	15.9	914	21.1	524	17.8	1,438
Kerala	1.4	442	2.2	528	1.8	970	1.6	819	6.9	666	4.2	1,485
Lakshadweep	11.3	204	13.4	238	12.5	442	17.7	429	24.8	262	20.6	691
Puducherry	2.2	275	1.6	268	1.9	543	4.0	507	11.7	364	7.4	871
Tamil Nadu	5.6	708	6.2	681	5.9	1,389	5.6	1,283	9.0	845	7.0	2,128
Telangana	6.1	499	5.6	493	5.9	992	5.6	897	10.3	552	7.5	1,449

Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Smokeless tobacco refers to tobacco products such as chewing tobacco, gutka or pan masala.

12.2 ALCOHOL CONSUMPTION

Alcohol is a toxic psychoactive substance with dependence-producing properties. Globally, alcohol consumption contributes to 3 million deaths annually, as well as to disability and poor health in millions of people (WHO, 2018d). Along with a higher prevalence of tobacco use, alcohol use is more common in India and is substantially higher among men (Gururaj et al., 2016). Alcohol affects every organ of the body. Harmful use of alcohol is primarily associated with caustic effects on the digestive, brain, and cardiovascular systems. Alcoholic beverages are classified as carcinogenic by the International Agency for Research on Cancer and increase the risk of several cancer types (Roswall and Weiderpass, 2015). Alcohol also increases the risk of communicable diseases, including tuberculosis and HIV. Further, excessive alcohol consumption affects the central nervous system and increases the risk for intentional and unintentional injuries and adverse social consequences. Therefore, protecting the health of the population by preventing and reducing harmful alcohol use is a public health priority. Nationally, about 14.6% of the population (between 10 and 75 years of age) consumes alcohol and excessive alcohol consumption in India is around 2.7% (MoSJ&E, GoI, 2019).

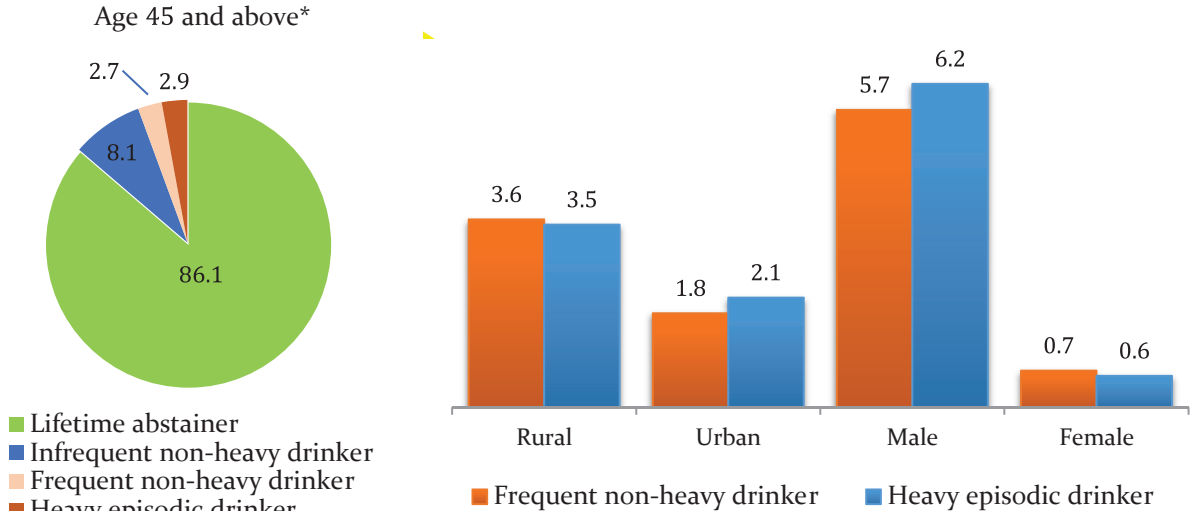
Information on alcohol consumption collected in the LASI includes ever and current use of alcohol; age at which alcohol consumption started; type of alcohol usually consumed; frequency of consumption; frequency of drinking more than five standards drinks; and the respondent's own opinion on drinking. Based on WHO guidelines for drinking frequency and cut off of five standard drinks (approx. 60 grams), drinkers are categorized as heavy and non-heavy drinkers as follows.

Categorization based on alcohol consumption:

- Lifetime abstainer- those who never consumed alcoholic beverages.
- Infrequent non-heavy drinker (social drinkers)- those who consume alcohol less than once a month.
- Frequent non-heavy drinker- those who consume alcohol 1-3 days per month, 1-4 days per week, or 5 or more days per week but did not consume more than 5 standard drinks on any occasion in the past 30 days.
- Heavy episodic drinker- those who consume at least 60 grams or more (approximately 5 drinks) of pure alcohol on at least one occasion in the past 30 days.

Figure 12.4 shows the distribution of older adults by alcohol consumption status and percentage of adult men and women in urban and rural areas by alcohol consumption. In India, 86% of older adults age 45 and above have never consumed any form of alcohol in their lifetime; 8% are social drinkers; 3% consume alcohol frequently but in lower quantities; and another 3% are heavy episodic drinkers. The distribution shows that the prevalence of frequent non-heavy drinking and heavy episodic drinking is higher among older adult age 45 and above residing in rural (3.6% and 3.5%, respectively) than urban (1.8% and 2.1%, respectively) areas.

Figure 12.4 Percent distribution of older adults age 45 and above* by alcohol consumption status, India, LASI Wave 1, 2017-18



Note

** Including spouse irrespective of age*

Table 12.5 presents the percentage of older adults who are frequent non-heavy drinkers and heavy episodic drinkers by background characteristics. Among older adult men age 45 and above, 6% are frequent non-heavy drinkers and another 6% are heavy episodic drinkers in India; whereas among older adult women age 45 and above, the prevalence of frequent non-heavy drinkers and heavy episodic drinkers is less than 1% in India. Among men, the prevalence of heavy episodic drinking is higher among older adults age 45-59 (8%) than among the elderly age 60 and above (5%), and among older adults age 45 and above in rural (7%) compared to urban areas (5%). The prevalence of heavy episodic drinking among older adult men and women age 45 and above declines as the level of education increases. Among older adult men and women age 45 and above, the proportion of heavy episodic drinkers is relatively higher among Christians (13% and 1.5%, respectively) and those belonging to Scheduled tribe (15% and 3.3%, respectively).

A cross-state variation in the prevalence of frequent non-heavy drinking and heavy episodic drinking is presented in Table 12.6. More than 15% of older adult men age 45 and above are heavy episodic drinkers in Manipur (22%), Daman & Diu (19%), and Assam (16%); whereas, the prevalence of frequent non-heavy drinkers among older adult men age 45 and above is more than 20% in Telangana (24%) and Daman & Diu (23%). Among older adult women age 45 and above, the prevalence of heavy episodic drinking is higher in Arunachal Pradesh (5%) followed by Dadra & Nagar Haveli (3.4%), Assam (3%), and Telangana (2.6%); whereas the prevalence of frequent non-heavy drinkers among older adult women is 4-6% in Odisha, Telangana and Dadra & Nagar Haveli.

Table 12.5 Percentage of older adults age 45 and above* who are frequent non-heavy drinker and heavy episodic drinker by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male			Female		
	Frequent non-heavy drinker[3]	Heavy episodic drinker[4]	Number	Frequent non-heavy drinker[3]	Heavy episodic drinker[4]	Number
Place of residence						
Rural	6.2	6.7	19,790	0.8	0.7	26,436
Urban	4.3	5.1	10,461	0.1	0.2	14,944
Age						
45-59*	6.5	7.6	15,309	0.5	0.5	25,112
≥ 60	4.9	4.9	14,942	0.7	0.6	16,268
Marital status						
Currently married	5.6	6.3	26,519	0.5	0.4	28,386
Widowed	5.4	5.3	2,749	0.8	0.8	11,739
Divorced/Separated/Deserted/ Others	7.2	6.2	983	0.7	0.4	1,255
Living arrangement						
Living alone	3.1	8.0	586	1.0	0.4	1,710
Living with spouse and/or others	5.8	5.6	5,166	0.6	0.5	5,211
Living with spouse and children	5.6	6.5	20,997	0.4	0.3	22,648
Living with children and others	6.3	5.6	2,533	0.7	0.9	9,956
Living with others only	6.3	4.9	969	0.8	0.6	1,855
Religion						
Hindu	6.1	6.5	22,243	0.6	0.5	30,256
Muslim	1.1	0.7	3,511	-	-	5,084
Christian	13.1	12.8	3,023	2.3	1.5	4,153
Others	4.4	11.0	1,474	0.1	1.1	1,887
Caste/tribe						
Scheduled tribe	12.3	14.9	5,262	4.0	3.3	7,164
Scheduled caste	6.9	8.1	5,008	0.5	0.6	6,949
Other backward class	5.3	5.5	11,415	0.3	0.2	15,527
None of the above	3.3	3.2	8,566	-	-	11,740
Education						
No schooling	7.6	8.2	9,406	0.8	0.8	23,579
Less than 5 years complete	5.9	6.6	4,031	0.6	0.2	3,955
5-9 years complete	5.0	6.1	8,528	0.1	0.1	8,228
10 or more years complete	3.7	3.5	8,286	0.1	0.1	5,618
Work status						
Currently working	6.6	7.0	19,651	1.1	1.0	13,035
Worked in past but currently not working	4.1	4.9	9,350	0.6	0.5	8,458
Never worked	2.6	3.7	1,250	0.2	0.2	19,887
MPCE quintile						
Poorest	6.2	5.8	5,901	1.2	0.7	8,126
Poorer	5.1	6.6	6,047	0.7	0.8	8,372
Middle	5.7	6.5	6,047	0.5	0.5	8,369
Richer	6.4	6.5	6,178	0.3	0.2	8,394
Richest	5.0	5.6	6,078	0.3	0.3	8,119
Total	**5.7**	**6.2**	**30,251**	**0.6**	**0.5**	**41,380**

Notes

**Including spouse irrespective of age,* "-" indicates less number of cases/no cases

[1] Frequent non-heavy drinker refers to those who consume alcohol 1-3 days per month, 1-4 days per week or 5 or more days per week but not consume more than 5 standard drinks on any occasion in past 30 days

[2] Heavy episodic drinker refers to those who consume at least 60 grams or more (approximately 5 drinks) of pure alcohol on at least one occasion in the past 30 days.

Table 12.6 Percentage of older adults age 45 and above* who are frequent non-heavy drinker and heavy episodic drinker, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Male			Female		
	Frequent non-heavy drinker[1]	Heavy episodic drinker[2]	Number	Frequent non-heavy drinker[1]	Heavy episodic drinker[2]	Number
India	**5.7**	**6.2**	**30,251**	**0.6**	**0.5**	**41,380**
North						
Chandigarh	6.8	9.4	432	-	[0.2]	560
Delhi	2.9	8.3	594	-	-	719
Haryana	5.8	9.2	788	-	[0.1]	1,102
Himachal Pradesh	12.6	5.9	555	-	-	821
Jammu & Kashmir	[0.3]	4.3	708	[0.2]	-	900
Punjab	4.9	12.3	912	-	-	1,181
Rajasthan	4.2	4.7	961	-	-	1,272
Uttarakhand	9.4	7.1	553	[0.1]	-	801
Central						
Chhattisgarh	10.3	7.6	905	2.9	1.3	1,147
Madhya Pradesh	3.9	4.5	1,310	[0.2]	[0.1]	1,581
Uttar Pradesh	1.9	4.5	2,068	-	[0.1]	2,477
East						
Bihar	1.5	0.8	1,546	-	-	1,959
Jharkhand	8.1	10.2	1,036	1.2	2.0	1,414
Odisha	15.1	8.3	1,248	4.3	2.2	1,650
West Bengal	2.7	5.0	1,606	0.1	0.3	2,303
Northeast						
Arunachal Pradesh	3.4	13.9	550	[1.4]	5.2	661
Assam	6.7	15.9	965	3.4	3.0	1,388
Manipur	7.1	21.7	579	1.1	2.2	778
Meghalaya	2.6	8.8	368	-	[0.4]	597
Mizoram	3.7	2.0	562	-	-	681
Nagaland	9.8	6.3	588	[0.1]	-	725
Tripura	2.3	11.0	485	[0.3]	1.9	698
West						
Dadra & Nagar Haveli	18.0	8.3	457	6.0	3.4	602
Daman & Diu	22.7	18.7	397	2.6	1.3	570
Goa	4.5	5.4	561	-	[0.1]	851
Gujarat	4.5	6.4	959	0.5	1.0	1,314
Maharashtra	4.8	4.9	1,593	-	-	2,348
South						
Andaman & Nicobar Islands	5.1	12.8	562	[0.5]	2.1	675
Andhra Pradesh	14.7	4.8	1,110	[0.2]	-	1,543
Karnataka	7.6	8.7	957	[0.1]	0.7	1,437
Kerala	8.8	5.6	970	-	-	1,485
Lakshadweep	-	[0.2]	442	-	-	691
Puducherry	11.2	11.3	543	-	-	871
Tamil Nadu	5.5	8.6	1,389	[0.1]	[0.1]	2,129
Telangana	24.1	8.6	992	5.1	2.6	1,449

Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator, "-" indicates less number of cases/no cases.

[1] Frequent non-heavy drinker refers to those who consume alcohol 1-3 days per month, 1-4 days per week or 5 or more days per week but not consume more than 5 standard drinks on any occasion in past 30 days

[2] Heavy episodic drinker refers to those who consume at least 60 grams or more (approximately 5 drinks) of pure alcohol on at least one occasion in the past 30 days.

Key findings: tobacco and alcohol consumption

- Overall, in India, 12% of older adults age 45 and above are current smokers and 20% are current users of smokeless tobacco. The prevalence of current tobacco consumption (smoking or smokeless) among older adults age 45 and above is 30% in India.
- Among elderly women age 60 and above, 16% are current users of smokeless tobacco and 3% are current smokers; whereas, among elderly men age 60 and above, 28% are current users of smokeless tobacco and 26% are current smokers, indicating very small difference between use of smokeless tobacco and smoking.
- More than half of elderly men age 60 and above are current smokers in the states/UTs of Haryana (53%) and Tripura (52%); whereas, current users of smokeless tobacco among elderly men age 60 and above are higher in the states of Odisha (65%), Jharkhand (57%), and Bihar (53%).
- Among elderly women age 60 and above, current users of smokeless tobacco are higher in the states of Odisha (57%), Tripura (56%), Assam (39%), and Mizoram (33%) whereas, the prevalence of current smoking is higher in the states of Mizoram (24%), Tripura (19%), and Uttarakhand (18%).
- In India, 3% of older adults age 45 and above are heavy episodic drinkers and at risk of harmful effects of alcohol. Heavy episodic drinking is more common in older adult men (6%) than in older adult women (0.5%) age 45 and above.

12.3 PHYSICAL ACTIVITY

Physical activity means movement of the body that consumes energy, and it is essential to optimum health and wellbeing. Regular physical activity is beneficial in many ways because it reduces the risk of non-communicable diseases such as ischaemic heart disease, hypertension, stroke, diabetes, cancer, dementia, and depression. Additionally, it also prevents overweight and obesity and can improve mental health and musculoskeletal problems (osteoarthritis, osteoporosis), and help to achieve healthy aging. In individuals who are not sufficiently physically active, the risk of cardiovascular disease, diabetes, and cancer is 20-30% higher than in those who are sufficiently active. Physical inactivity also shortens the life span by 3-4 years (GoI, 2018).

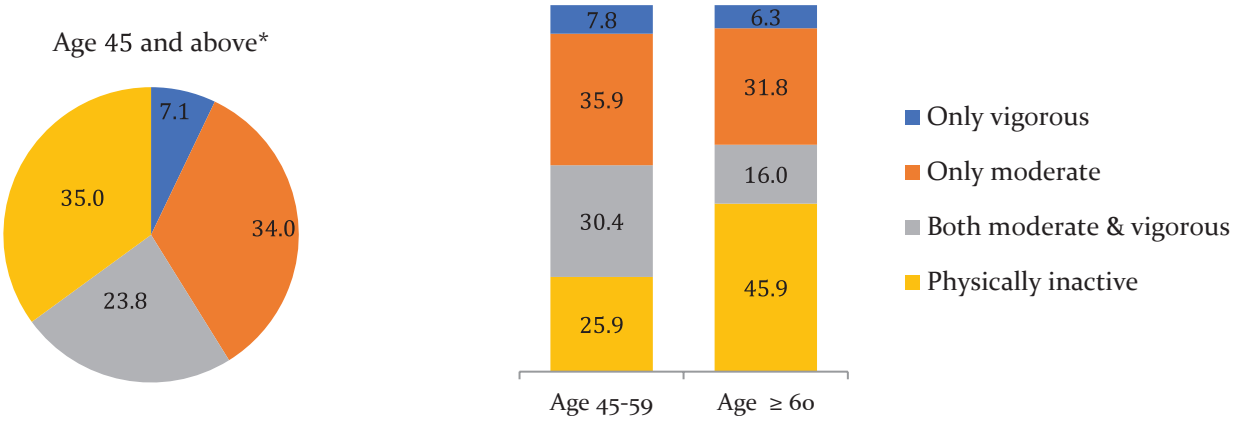
In the LASI, information was collected on moderate and vigorous physical activities, frequency of physical activity, and the average time spent daily in the activity. For moderate physical activity, respondents were asked about their engagement in moderately energetic activities such as cleaning house, washing clothes, fetching water, drawing water from a well, gardening, walking at a moderate pace, bicycling at a regular pace, and floor or stretching exercises. For vigorous activity, respondents were asked about their involvement in running or jogging, swimming, going to a health centre/gym, cycling, digging with a spade or shovel, heavy lifting, chopping, farm work, fast bicycling, and cycling with loads. WHO Global recommendations on moderate and vigorous physical activity were used for developing physical activity indicators for the LASI (GoI, 2018).

WHO global physical activity recommendations for older adults and elderly:

- Moderate physical activity: Those who perform at least 150 minutes of moderate-intensity physical activity throughout the week.
- Vigorous physical activity: Those who perform at least 75 minutes of vigorous-intensity physical activity throughout the week.
- Physically active: Those who are either engaged in moderate physical activity or vigorous physical activity or an equivalent combination of moderate- and vigorous-intensity activity.
- Physically inactive: Those who are not engaged in any type of moderate or vigorous physical activity for a given time throughout the week.

Figure 12.5 shows physically active and inactive status among older adults age 45 and above by age. In India, 34% of older adults age 45 and above are engaged in only moderate physical activity, 7% in vigorous activity, 24% are engaged in both moderate and vigorous activities; and 35% are physically inactive.

Figure 12.5 Percent distribution of physically active and inactive older adults by age, India, LASI Wave 1, 2017-18



Note
** Including spouse irrespective of age*

Table 12.7 shows the percentage of older adults age 45 and above who are physically active and physically inactive by sex and background characteristics. A higher proportion of older adult women age 45 and above (69%) are physically active compared to men (60%). In contrast, physical inactivity is higher among older adult men age 45 and above (40%) compared with women (31%). A higher proportion of older adult men age 45 and above residing in rural areas (62%) are more physically active than those residing in urban areas (55%).

A cross-state variation in the percentage of older adults age 45 and above who are physically active and inactive is presented in Table 12.8. More than three-fourths of older adult men and women age 45 and above are physically active in Himachal Pradesh, Assam, Karnataka, Jharkhand, Puducherry, and Nagaland. In older men age 45 and above, the prevalence of physical inactivity is higher in Mizoram (80%), Delhi (63%), Telangana (62%) and Haryana (60%); whereas more than half of the older women age 45 and above are physically inactive in Mizoram (75%), Arunachal Pradesh (56%), Delhi (55%), and Haryana (50%).

Table 12.7 Percentage of physically active and inactive older adults age 45 and above* by sex and background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Male			Female		
	Physically active[1]	Physically inactive[2]	Number	Physically active[1]	Physically inactive[2]	Number
Place of residence						
Rural	61.7	38.3	19,794	67.6	32.4	26,438
Urban	55.4	44.6	10,466	70.9	29.1	14,945
Age						
45-59*	69.2	51.0	15,311	77.0	23.0	25,115
≥ 60	30.8	49.0	14,949	56.9	43.1	16,269
Marital status						
Currently married	61.5	38.5	26,523	74.0	26.0	28,388
Widowed	46.5	53.5	2,751	56.2	43.8	11,740
Divorced/Separated/Deserted/ Others	56.3	43.7	986	74.4	25.6	1,255
Living arrangement						
Living alone	58.9	41.1	586	70.0	30.0	1,710
Living with spouse and/or others	58.3	41.7	5,167	73.8	26.2	5,211
Living with spouse and children	62.3	37.7	21,000	74.2	25.8	22,649
Living with children and others	47.2	52.8	2,536	56.4	43.6	9,958
Living with others only	49.2	50.8	971	54.8	45.2	1,855
Religion						
Hindu	60.3	39.7	22,248	68.9	31.1	30,260
Muslim	58.4	41.6	3,512	66.9	33.1	5,084
Christian	57.2	42.8	3,026	71.2	28.8	4,154
Others	53.7	46.3	1,474	66.1	33.9	1,885
Caste/tribe						
Scheduled tribe	64.4	35.6	5,264	70.2	29.8	7,165
Scheduled caste	60.2	39.8	5,010	65.9	34.1	6,949
Other backward class	59.8	40.2	11,417	70.8	29.2	15,530
None of the above	58.0	42.0	8,569	66.6	33.4	11,739
Education						
No schooling	58.2	41.8	9,411	65.0	35.0	23,582
Less than 5 years complete	61.1	38.9	4,032	72.2	27.8	3,955
5-9 years complete	60.3	39.7	8,529	73.9	26.1	8,228
10 or more years complete	60.6	39.4	8,288	76.8	23.2	5,618
Work status						
Currently working	71.8	28.2	19,650	82.4	17.6	13,036
Worked in past but currently not working	37.3	62.7	9,356	59.7	40.3	8,460
Never worked	36.1	63.9	1,254	63.2	36.8	19,887
MPCE quintile						
Poorest	60.4	39.6	5,904	66.1	33.9	8,128
Poorer	60.7	39.3	6,047	68.1	31.9	8,373
Middle	59.1	40.9	6,050	68.9	31.1	8,367
Richer	58.0	42.0	6,177	70.8	29.2	8,396
Richest	60.8	39.2	6,082	69.7	30.3	8,119
Total	**59.8**	**40.2**	**30,260**	**68.7**	**31.3**	**41,383**

Notes

**Including spouse irrespective of age*

[1] Physically active: Those who are either engaged in moderate physical activity (at least 150 minutes throughout the week) or vigorous physical activity (at least 75 minutes throughout the week) or an equivalent combination of moderate- and vigorous-intensity activity.

[2] Physically inactive: Those who are not engaged in any type of moderate or vigorous physical activity for a given time throughout the week.

Table 12.8 Percentage of physically active and inactive older adults adults age 45 and above* by sex, states/ UTs, LASI Wave 1, 2017-18

State/Union Territory	Male			Female		
	Physically active[1]	Physically inactive[2]	Number	Physically active[1]	Physically inactive[2]	Number
India	**59.8**	**40.2**	**30,260**	**68.7**	**31.3**	**41,384**
North						
Chandigarh	51.3	48.7	432	62.4	37.6	560
Delhi	36.6	63.4	595	44.9	55.1	719
Haryana	40.5	59.5	788	49.9	50.1	1,102
Himachal Pradesh	76.6	23.4	555	86.7	13.3	821
Jammu & Kashmir	41.5	58.5	709	54.6	45.4	900
Punjab	48.2	51.8	910	58.5	41.6	1,180
Rajasthan	54.9	45.1	961	56.5	43.5	1,272
Uttarakhand	68.8	31.2	553	72.9	27.1	801
Central						
Chhattisgarh	65.1	34.9	905	69.2	30.8	1,147
Madhya Pradesh	55.3	44.7	1,310	61.5	38.5	1,581
Uttar Pradesh	56.9	43.1	2,068	53.2	46.8	2,478
East						
Bihar	63.7	36.3	1,546	66.8	33.2	1,960
Jharkhand	74.7	25.3	1,036	78.4	21.6	1,414
Odisha	74.1	25.9	1,248	78.0	22.0	1,650
West Bengal	71.6	28.4	1,608	75.2	24.8	2,303
Northeast						
Arunachal Pradesh	40.6	59.4	552	44.3	55.7	662
Assam	79.1	20.9	965	78.9	21.1	1,388
Manipur	54.3	45.7	579	62.6	37.4	778
Meghalaya	44.4	55.6	368	52.5	47.5	597
Mizoram	19.7	80.3	563	24.7	75.3	681
Nagaland	75.7	24.3	589	82.4	17.6	725
Tripura	65.2	34.8	485	67.5	32.5	698
West						
Dadra & Nagar Haveli	67.1	32.9	457	85.7	14.3	602
Daman & Diu	47.8	52.2	397	72.8	27.2	570
Goa	40.7	59.3	560	74.5	25.5	851
Gujarat	63.1	36.9	959	78.8	21.2	1,314
Maharashtra	55.4	44.6	1,594	75.9	24.1	2,348
South						
Andaman & Nicobar Islands	51.4	48.6	563	61.1	38.9	675
Andhra Pradesh	47.8	52.2	1,111	63.4	36.6	1,544
Karnataka	73.1	26.9	955	84.2	15.8	1,437
Kerala	42.0	58.0	973	58.2	41.8	1,486
Lakshadweep	47.2	52.8	442	74.7	25.3	691
Puducherry	70.2	29.8	543	81.3	18.7	871
Tamil Nadu	53.5	46.5	1,389	68.4	31.6	2,129
Telangana	38.5	61.5	992	55.4	44.6	1,449

Notes

**Including spouse irrespective of age*

[1] Physically active: Those who are either engaged in moderate physical activity (at least 150 minutes throughout the week) or vigorous physical activity (at least 75 minutes throughout the week) or an equivalent combination of moderate- and vigorous-intensity activity.

[2] Physically inactive: Those who are not engaged in any type of moderate or vigorous physical activity for a given time throughout the week.

12.4 YOGA, MEDITATION, ASANA, AND PRANAYAMA

Yoga, meditation, *asana*, and *pranayama* are all components of *yoga*, developed for all-round human well-being and growth. Experts from various branches of medicine, including modern medical sciences, are realizing the role of these techniques in preventing and mitigating disease and promoting health. Regular practice of *yoga* prevents mental health disorders and improves an individual's resistance and ability to endure stressful situations (MoA, 2019).

The LASI is the first nationally representative study to collect data on *yoga* practice, meditation*, asana, pranayama,* etc. among older adults age 45 and above in all India's states/UTs. Questions asked to participants include 'have you engaged in activities like yoga, meditation, *asana, pranayama,* and similar activities', frequency of activities; and average time spent engaging in these activities.

The prevalence of *yoga*, meditation, *asana and pranayama* practice by background characteristics is presented in Table 12.9. About 11% of older adults age 45 and above in India are practicing some form of *yoga* more than once a week. Among elderly age 60 and above, a higher proportion of men (14%) than women (9%) and those residing in urban (16%) than rural areas (9%) are engaged in *yoga* activities more than once a week. The prevalence of *yoga*, meditation, *asana,* and *pranayama* increases with increase in education and MPCE quintiles.

Wide cross-state variation is seen in *yoga*, meditation, *asana,* and *pranayama* practice among older adults age 45 and above; ranging from 64% in Punjab to less than 1% in Meghalaya (0.8) and Mizoram (0.3%) (Table 12.10). More than a fifth of elderly age 60 and above are practicing *yoga* in the states/UTs of Punjab (67%), Nagaland (36%), Chandigarh (29%), and Jharkhand (27%); whereas the proportion of older adults age 45 and above engaged in *yoga* related activities are quite low in the south and central Indian states/UTs.

Table 12.9 Percentage of older adults practicing yoga/meditation/asanas/pranayama etc. more than once a week by background characteristics, India, LASI Wave 1, 2017-2018

Background characteristics	Age 45-59*		Age ≥ 60		Total	
	More than once a week[1]	Number	More than once a week[1]	Number	More than once a week[1]	Number
Place of residence						
Rural	9.0	25,608	9.4	20,576	9.2	46,184
Urban	13.4	14,795	15.7	10,607	14.4	25,402
Sex						
Male	10.8	15,305	13.7	14,933	12.3	30,238
Female	10.3	25,098	9.0	16,250	9.8	41,348
Marital status						
Currently married	10.9	35,140	13.0	19,737	11.7	54,877
Widowed	8.1	3,845	8.3	10,627	8.3	1,4472
Divorced/Separated/Deserted/ Others	7.2	1,418	8.6	819	7.7	2,237
Living arrangement						
Living alone	8.4	683	5.9	1,611	6.4	2,294
Living with spouse and/or others	10.0	4,322	10.4	6,044	10.2	10,366
Living with spouse and children	11.0	30,171	14.4	13,456	12.1	43,627
Living with children and others	8.1	4,073	8.9	8,405	8.7	12,478
Living with others only	8.5	1,154	7.9	1,667	8.1	2,821
Religion						
Hindu	10.0	29,645	10.3	22,825	10.2	52,470
Muslim	9.8	4,885	11.5	3,696	10.5	8,581
Christian	5.8	4,046	5.2	3,130	5.5	7,176
Others	30.2	1,827	35.4	1,532	32.8	3,359
Caste/tribe						
Scheduled tribe	5.7	7,287	6.1	5,134	5.8	12,421
Scheduled caste	9.0	6,847	9.8	5,100	9.3	11,947
Other backward class	9.9	15,155	9.6	11,776	9.7	26,931
None of the above	14.5	11,114	16.2	9,173	15.4	20,287
Education						
No schooling	6.3	16,193	6.7	16,758	6.5	32,951
Less than 5 years complete	8.7	4,231	11.1	3,753	9.9	7,984
5-9 years complete	11.5	10,798	14.2	5,953	12.6	16,751
10 or more years complete	18.5	9,181	25.9	4,719	21.1	13,900
Work status						
Currently working	9.1	23,467	9.8	9,213	9.3	32,680
Worked in past but currently not working	9.6	4,542	12.2	13,255	11.5	17,797
Never worked	13.9	12,394	11.3	8,715	12.8	21,109
MPCE quintile						
Poorest	6.0	7,602	7.1	6,421	6.5	14,023
Poorer	8.9	7,987	9.6	6,423	9.2	14,410
Middle	11.8	8,044	11.8	6,362	11.8	14,406
Richer	12.6	8,436	12.8	6,128	12.7	14,564
Richest	13.4	8,334	16.2	5,849	14.6	14,183
Total	**10.5**	**40,403**	**11.2**	**31,183**	**10.8**	**71,586**

Notes

** Including spouse irrespective of age*

[1] Refers to yoga/meditation/asanas/pranayama etc. practicing daily or more than once a week

Table 12.10 Percentage of older adults practicing yoga/meditation/asanas/pranayama etc. more than once a week, States/UTs, LASI Wave 1, 2017-2018

State/ Union Territory	Age 45-59*		Age ≥ 60		Total	
	More than once a week[1]	Number	More than once a week[1]	Number	More than once a week[1]	Number
India	10.5	40,403	11.2	31,183	10.8	71,586
North						
Chandigarh	28.2	614	28.8	376	28.4	990
Delhi	16.9	822	19.9	492	18.0	1,314
Haryana	10.1	1,047	8.5	843	9.3	1,890
Himachal Pradesh	15.3	761	17.5	615	16.4	1,376
Jammu & Kashmir	5.1	870	6.2	712	5.6	1,582
Punjab	60.1	1,094	67.3	998	63.6	2,092
Rajasthan	12.9	1,160	11.9	1,073	12.4	2,233
Uttarakhand	13.0	714	11.0	640	12.0	1,354
Central						
Chhattisgarh	4.0	1,274	4.4	778	4.1	2,052
Madhya Pradesh	11.1	1,582	12.1	1,309	11.6	2,891
Uttar Pradesh	10.3	2,387	10.5	2,159	10.4	4,546
East						
Bihar	9.4	1,702	9.0	1,804	9.2	3,506
Jharkhand	27.6	1,287	26.9	1,163	27.3	2,450
Odisha	10.3	1,670	11.9	1,228	11.0	2,898
West Bengal	11.9	2,374	13.5	1,537	12.6	3,911
Northeast						
Arunachal Pradesh	3.1	895	2.3	318	2.9	1,213
Assam	14.5	1,542	15.3	811	14.8	2,353
Manipur	5.9	756	6.0	601	5.9	1,357
Meghalaya	[0.6]	554	[1.0]	410	[0.8]	964
Mizoram	[0.5]	713	-	531	[0.3]	1,244
Nagaland	48.7	705	35.7	607	42.3	1,312
Tripura	12.4	728	12.1	455	12.3	1,183
West						
Dadra & Nagar Haveli	22.6	619	12.9	439	18.8	1,058
Daman & Diu	11.4	547	19.9	419	15.4	966
Goa	16.2	781	17.3	629	16.7	1,410
Gujarat	7.7	1,311	12.9	962	10.1	2,273
Maharashtra	11.3	2,167	12.5	1,774	11.9	3,941
South						
Andaman & Nicobar Islands	9.6	717	7.6	521	8.8	1,238
Andhra Pradesh	4.1	1,554	2.9	1,091	3.6	2,645
Karnataka	8.4	1,396	6.8	996	7.7	2,392
Kerala	4.8	1,261	3.6	1,193	4.2	2,454
Lakshadweep	1.0	633	2.7	500	1.8	1,133
Puducherry	5.3	782	6.1	632	5.7	1,414
Tamil Nadu	3.0	1,991	2.6	1,527	2.8	3,518
Telangana	1.2	1,393	1.5	1,040	1.3	2,433

Notes

** Including spouse irrespective of age*

[1] Refers to yoga/meditation/asanas/pranayama etc. practicing daily or more than once a week

12.5 FOOD AVAILABILITY

Nutrition is another domain of health behaviour included in the LASI, which explored food availability at the household level. Food security in a population means that all people, at all times, have access to sufficient food to meet their dietary needs for a productive and healthy life (FANTA, 2018). A broader look at the extent of food insecurity beyond hunger shows that 17.2% of the global population, or 1.3 billion people, have experienced food insecurity at moderate levels. This means that they do not have regular access to sufficient food even if they are not necessarily suffering from hunger; they are at greater risk of malnutrition and poor health (FAO, 2019). Despite being one of the fastest growing economies in the world, India is ranked 103 of 119 countries on food security, with hunger levels categorized as 'serious' (Grebmer et al., 2018).

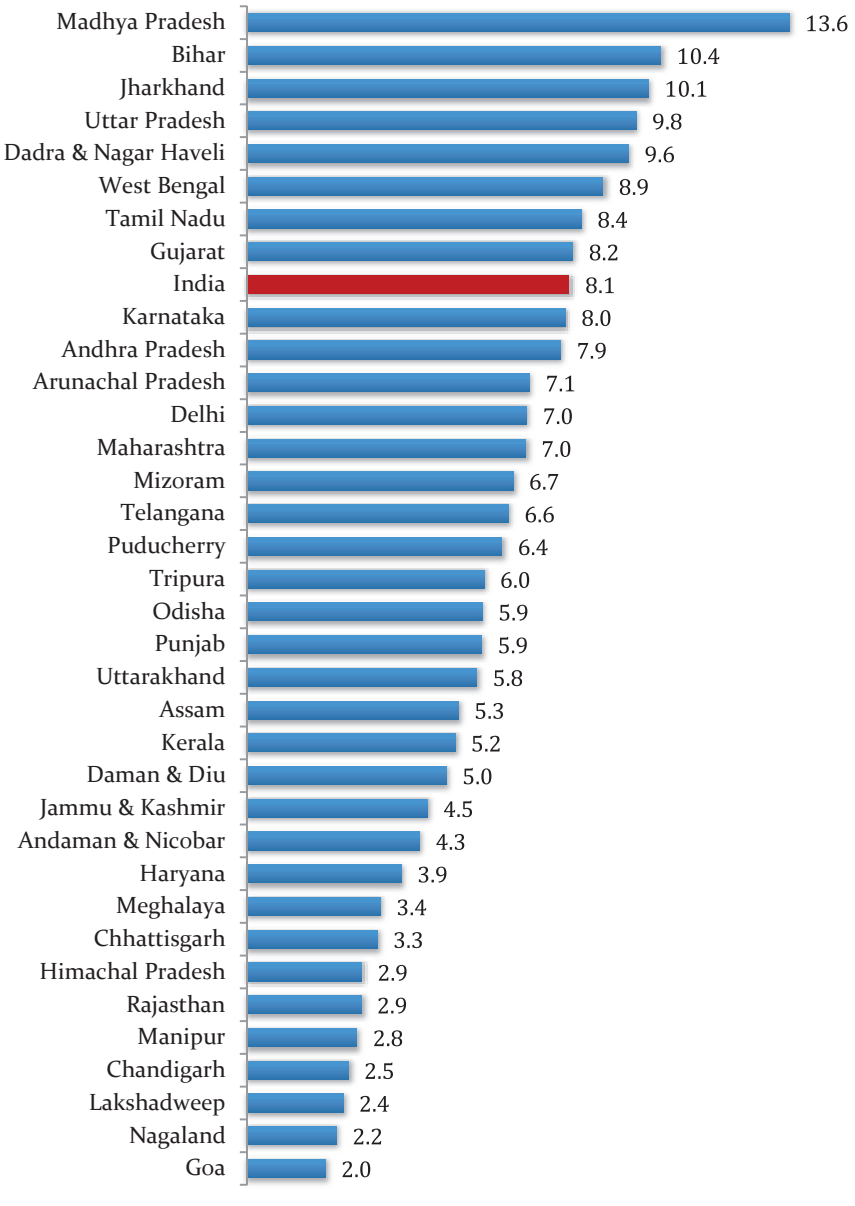
In the LASI, severe food security-related information as defined by FANTA was collected on household food non- availability over a period of twelve months prior to the survey. Respondents were asked whether, in the past 12 months, household members had to reduce the size of meals, were hungry but did not have enough food, did not eat food of their choice, or did not have food for a full day because food was unavailable (e.g. not because of health-related restrictions). LASI interviewers ensured that respondents were alone while answering these questions.

Table 12.11 shows the percentage of older adults who experienced food insufficiency by background characteristics. Overall, 6% of older adults age 45 and above in India had to reduce the size of meals, 5% were hungry but did not eat because there was not enough food, and 4% did not eat for a full day because food was unavailable in the past 12 months. None of the three indicators show much difference by age or sex; however a high percentage of older adults age 45 and above residing in rural areas reduced their meal size (7%), were hungry but did not eat (6%), or did not eat for a full day (5%) compared to their urban counterparts. Food inadequacy is evident in older adults age 45 and above living alone: 14% reduced their meal size; 14% were hungry but did not eat, and 10% did not eat for a full day. Food insufficiency is negatively related with education and MPCE quintile.

Figure 12.6 shows that, in India, 8% of older adults age 45 and above reported severe constraint in household food availability in the past 12 months, where they either reduced their meal size, did not eat even though they were hungry, or did not eat for a whole day because not enough food was available at the household level. More than one in ten older adults in Madhya Pradesh (14%), Bihar (10%), and Jharkhand (10%) reported constraint in food availability.

Cross-state variation (Table 12.12) of food insufficiency shows that the percentage of older adults who reduced their meal size is higher than the national average (6%) in states/UTs of Dadra & Nagar Haveli (7%), West Bengal (8%), Bihar (8%), Jharkhand (8%), Uttar Pradesh (8%), and Madhya Pradesh (10%). More than 6% of older adults were hungry but did not eat in most of the east Indian and central states and Tamil Nadu. The proportion of older adults who did not eat for a full day is less than 5% in most of the states/UTs, except for Bihar (6%), Uttar Pradesh (6%), and Madhya Pradesh (7%).

Figure 12.6 Percentage of older adults age 45 and above* who reported severe constraint in household food availability, states/UTs, LASI Wave 1, 2017-18**



Notes

* Including spouse irrespective of age

**Severe constraint in availability of food means in the past 12 months, household members had to reduce the size of meals, were hungry but did not have enough food, did not eat food of their choice, or did not have food for a full day because food was unavailable.

Table 12.11 Percentage of older adults who experienced food insufficiency at household by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Reduced the size of meal[1]		Hungry but didn't eat[2]		Didn't eat for whole day[3]	
	Age ≥ 45	Number	Age ≥ 45	Number	Age ≥ 45	Number
Age						
45-59*	5.6	40,399	5.0	40,408	3.4	40,408
≥ 60	6.4	31,196	5.6	31,200	4.2	31,199
Place of residence						
Rural	7.2	46,208	6.2	46,209	4.6	46,209
Urban	3.3	25,387	3.3	25,399	2.0	25,398
Sex						
Male	5.9	30,239	5.2	30,243	4.0	30,241
Female	6.0	41,356	5.4	41,365	3.6	41,366
Marital status						
Currently married	5.3	54,878	4.9	54,892	3.3	54,890
Widowed	7.7	14,477	6.5	14,477	5.0	14,479
Divorced/Separated/Deserted/Others	9.6	2,240	7.2	2,239	5.2	2,238
Living arrangement						
Living alone	13.6	2,295	13.7	2,294	10.0	2,294
Living with spouse and/or others	7.2	10,355	5.9	10,357	4.5	10,357
Living with spouse and children	4.9	43,639	4.6	43,651	3.0	43,649
Living with children and others	6.4	12,488	4.9	12,489	3.8	12,490
Living with others only	9.2	2,818	7.4	2,817	6.0	2,817
Religion						
Hindu	5.7	52,470	5.0	52,476	3.7	52,477
Muslim	7.3	8,593	7.1	8,594	4.6	8,593
Christian	8.1	7,173	7.8	7,176	3.9	7,176
Others	5.4	3,359	5.1	3,362	3.1	3,361
Caste/tribe						
Scheduled tribe	7.3	12,422	6.0	12,422	4.3	12,423
Scheduled caste	9.2	11,952	7.9	11,955	6.4	11,953
Other backward class	5.2	26,933	5.0	26,935	3.3	26,935
None of the above	4.5	20,288	3.7	20,296	2.5	20,296
Education						
No schooling	7.8	32,979	6.8	32,980	5.1	32,980
Less than 5 years complete	7.2	7,981	5.8	7,983	4.0	7,983
5-9 years complete	4.6	16,749	4.0	16,750	2.9	16,749
10 or more years complete	1.9	13,886	2.5	13,895	1.1	13,895
Work status						
Currently working	6.3	32,664	5.9	32,672	4.2	32,673
Worked in past but currently not working	7.2	17,800	6.2	17,800	4.4	17,798
Never worked	4.2	21,131	3.5	21,136	2.4	21,136
MPCE quintile						
Poorest	7.5	14,023	7.0	14,023	5.5	14,023
Poorer	6.7	14,412	5.8	14,417	3.9	14,417
Middle	5.8	14,411	4.9	14,412	3.5	14,413
Richer	5.3	14,565	4.1	14,567	3.2	14,565
Richest	4.3	14,184	4.6	14,189	2.4	14,189
Total	**6.0**	**71,595**	**5.3**	**71,608**	**3.8**	**71,607**

Notes

**Including spouse irrespective of age*

[1] Respondents were asked as 'Did you ever reduce the size of your meals or skip meals because there was not enough food at household in past 12 months?'

[2] Respondents were asked as 'Were you hungry but didn't eat because there was not enough food at household in past 12 months?'

[3] Respondents were asked as 'Did you ever not eat for a whole day because there was not enough food at household in past 12 months?'

Table 12.12 Percentage of older adults who experienced food insufficiency at household, states/UTs, LASI Wave 1, 2017-18

State/Union territory	Reduced the size of meal[1]		Hungry but didn't eat[2]		Didn't eat for whole day[3]	
	Age ≥ 45*	Number	Age ≥ 45*	Number	Age ≥ 45*	Number
India	6.0	71,595	5.3	71,608	3.8	71,607
North						
Chandigarh	1.3	990	0.9	995	1.2	994
Delhi	3.9	1,313	3.5	1,313	3.1	1,313
Haryana	2.8	1,887	2.6	1,888	1.3	1,888
Himachal Pradesh	1.3	1,376	2.1	1,376	1.3	1,376
Jammu & Kashmir	3.5	1,608	1.5	1,608	0.8	1,608
Punjab	4.0	2,092	3.1	2,096	1.7	2,095
Rajasthan	2.2	2,232	1.7	2,232	1.1	2,232
Uttarakhand	3.6	1,354	2.9	1,354	2.7	1,354
Central						
Chhattisgarh	1.5	2,050	1.8	2,051	1.0	2,051
Madhya Pradesh	10.0	2,889	8.2	2,888	6.8	2,888
Uttar Pradesh	7.7	4,544	6.2	4,543	5.7	4,544
East						
Bihar	8.2	3,505	6.9	3,505	6.2	3,505
Jharkhand	8.4	2,451	7.8	2,451	4.7	2,451
Odisha	5.1	2,897	4.1	2,898	2.1	2,898
West Bengal	8.0	3,909	6.4	3,908	3.8	3,907
Northeast						
Arunachal Pradesh	6.1	1,210	1.9	1,210	[0.3]	1,210
Assam	4.4	2,353	2.3	2,353	1.5	2,353
Manipur	1.5	1,357	1.9	1,357	1.3	1,357
Meghalaya	1.6	965	2.3	965	0.8	965
Mizoram	5.1	1,244	4.0	1,244	3.7	1,244
Nagaland	2.1	1,314	0.7	1,314	[0.4]	1,314
Tripura	5.4	1,183	4.9	1,183	2.9	1,183
West						
Dadra & Nagar Haveli	7.3	1,056	3.7	1,057	4.0	1,057
Daman & Diu	4.3	963	2.8	963	2.7	964
Goa	0.9	1,410	1.4	1,410	0.7	1,410
Gujarat	5.6	2,269	4.6	2,270	4.1	2,269
Maharashtra	4.6	3,941	4.4	3,941	3.6	3,941
South						
Andaman & Nicobar Islands	3.3	1,237	3.3	1,237	1.1	1,237
Andhra Pradesh	4.7	2,654	5.3	2,653	3.9	2,653
Karnataka	5.0	2,388	5.6	2,389	2.3	2,389
Kerala	3.6	2,455	2.9	2,457	1.7	2,457
Lakshadweep	1.2	1,133	0.7	1,133	0.7	1,133
Puducherry	5.1	1,412	5.0	1,414	3.2	1,414
Tamil Nadu	5.8	3,516	6.3	3,516	4.1	3,516
Telangana	5.1	2,438	3.5	2,436	2.7	2,437

Notes

**Including spouse irrespective of age,* "[ ]" based on fewer than 5 unweighted cases in the numerator or 25 unweighted cases in the denominator.

[1] Respondents were asked as 'Did you ever reduce the size of your meals or skip meals because there was not enough food at household in past 12 months?'

[2] Respondents were asked as 'Were you hungry but didn't eat because there was not enough food at household in past 12 months?'

[3] Respondents were asked as 'Did you ever not eat for a whole day because there was not enough food at household in past 12 months?'

Key findings: physical activity and food availability

- As per WHO standard recommendations for physical activity in older adults, 35% of Indian older adults age 45 and above are physically inactive; a higher prevalence of physical inactivity is observed among older adult men, those who never worked, and among elderly age 60 and above than their respective counterparts.
- Higher proportions of both older adult men and women age 45 and above are physically inactive in Mizoram (80% and 75%, respectively), Delhi (63% and 55%, respectively), Haryana (60% and 50%, respectively), and Arunachal Pradesh (59% and 56%, respectively).
- In India, 11% of older adults age 45 and above as well as elderly age 60 and above are practicing some form of yoga more than once a week. The elderly age 60 and above with 10 or more years of schooling and those in the richest MPCE quintile are likely to practice yoga, meditation, asana, or pranayama more than once a week.
- Older adults age 45 and above in Madhya Pradesh (14%), Bihar (10%), and Jharkhand (10%) are seen to be more prone to food unavailability.

13. HEALTH CARE UTILISATION AND HEALTH FINANCING

Morbidity, hospitalization, disability, and health spending have a strong age gradient. Evidence suggests that the morbidity rate (number of ailments per 1000 population) among the elderly (60 and above) in rural areas of India was 276, compared to 89 for all age groups (NSS, 2015). Moreover, barring children below five years of age, the inpatient rate in India has an increasing function of age: the inpatient rate in 2014 among elderly age 70-79 years was 13%, compared to four percent for all ages (Kastor and Mohanty, 2018). Furthermore, the prevalence of any disability also increases with age: the elderly age 60 and above account for one-fifth of the disabled population in India (MoSPI, 2016). Higher morbidity, hospitalization, and disability rates are directly associated with higher per capita health spending, out of pocket health spending, and catastrophic health expenditure (CHE).

In India, the public spending on health is low. Although insurance coverage has been increasing over time, insurance reimbursements remain low. Household income therefore the major source of financing for health care in India, accounting for more than two-thirds of health spending nationwide (MoHFW, 2016).

The elderly population is particularly vulnerable to health shocks that come in form of high disease burden, high rates of hospitalization, out of pocket expenditure, and catastrophic health spending (Pandey et al. 2018; Mohanty et al. 2013). The National Health Policy 2017 initiative aims to increase public health spending to 3% by 2025 and reduce CHE by 25% (MoHFW, 2017). Further, the *Ayushman Bharat Yojana*, launched in September 2018, is a laudable effort that aims to provide preventive, curative, and promotive healthcare; it aims to cover 10.74 crore families (about 50 crore population) accounting for the bottom 40% of the country's population, and it has identified the elderly as a vulnerable group (www.ayushmanbharat.co.in). In this context, evidence suggests the significant association between socio-economic status, inpatient rates, and out of pocket health spending among older adults. This chapter presents the utilisation rate of out-patient and inpatient care, out of pocket expenditure, perceived quality of care and health insurance coverage among older adults and the elderly in Indian states.

Table 13.1 Percentage of older adults who utilised out-patient care in one month and inpatient care in one year prior to survey by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Out-patient care				Inpatient care				Mean number of days hospitalized**		
	Age 45-59*	Age ≥60	Total	Number	Age 45-59*	Age ≥60	Total	Number	Age 45-59*	Age ≥60	Total
Place of residence											
Rural	25.0	29.3	27.0	46,534	6.0	7.7	6.8	46,534	5.6	5.8	5.7
Urban	21.8	26.8	23.9	25,716	6.9	8.6	7.6	25,716	20.1	7.0	13.8
Sex											
Male	21.3	27.8	24.7	30,569	6.6	8.3	7.5	30,569	16.1	6.5	10.6
Female	25.5	29.3	27.1	41,681	6.1	7.6	6.7	41,681	7.6	5.9	6.8
Marital status											
Currently married	23.9	28.3	25.5	55,396	6.3	8.3	7.0	55,396	11.5	6.5	9.3
Widowed	26.1	29.1	28.4	14,593	6.8	7.7	7.5	14,593	6.9	5.6	5.9
Divorced/Separated/Deserted/ Others	19.3	27.3	22.2	2,261	5.4	3.2	4.6	2,261	6.9	4.3	6.3
Living arrangement											
Living alone	33.8	30.4	31.1	2,313	6.1	8.9	8.3	2,313	6.0	4.8	5.0
Living with spouse and/or others	23.4	28.8	26.6	10,838	5.3	8.8	7.4	10,838	6.1	6.8	6.6
Living with spouse and children	23.9	28.1	25.2	43,663	6.5	8.1	7.0	43,663	12.3	6.4	10.1
Living with children and others	25.9	29.3	28.3	12,494	6.7	7.4	7.2	12,494	7.0	5.8	6.1
Living with others only	15.8	26.0	22.2	2,942	4.6	5.7	5.2	2,942	6.7	5.0	5.5
Religion											
Hindu	23.1	27.7	25.2	52,973	6.1	7.6	6.8	52,973	7.6	5.9	6.7
Muslim	28.8	32.4	30.4	8,667	7.4	10.0	8.5	8,667	24.9	7.2	15.8
Christian	16.4	19.0	17.6	7,215	8.2	7.8	8.0	7,215	33.1	7.1	21.9
Others	33.6	42.8	38.1	3,395	6.4	9.3	7.8	3,395	4.4	7.1	6.0
Caste/tribe											
Scheduled tribe	15.9	18.4	17.0	12,509	5.1	6.5	5.7	12,509	5.8	4.8	5.3
Scheduled caste	27.0	31.8	29.2	12,046	7.3	7.8	7.5	12,046	6.3	5.8	6.0
Other backward class	22.8	27.8	25.1	27,184	6.4	8.1	7.2	27,184	16.8	6.4	11.4
None of the above	26.2	30.6	28.3	20,511	5.9	8.2	7.0	20,511	5.5	6.5	6.0
Education											
No schooling	24.7	28.6	26.8	33,211	6.5	7.5	7.0	33,211	14.2	5.7	9.5
Less than 5 years complete	26.9	32.7	29.7	8,054	7.0	9.8	8.4	8,054	5.6	5.6	5.6
5-9 years complete	25.3	28.7	26.6	16,909	6.6	8.7	7.4	16,909	5.9	7.4	6.6
10 or more years complete	19.5	24.9	21.4	14,076	5.4	7.4	6.1	14,076	13.1	6.8	10.4
Work status											
Currently working	22.8	26.7	24.0	32,990	5.3	5.9	5.5	32,990	7.8	5.1	6.9
Worked in the past but currently not working	31.3	31.0	31.1	17,964	14.5	10.1	11.2	17,964	21.4	6.3	11.2
Never worked	23.1	26.8	24.7	21,296	5.0	6.9	5.8	21,296	4.9	6.9	5.9
MPCE quintile											
Poorest	18.9	23.2	20.9	14,158	3.4	5.4	4.4	14,158	5.8	5.7	5.7
Poorer	23.5	29.0	26.1	14,530	4.3	6.8	5.5	14,530	11.9	5.3	8.0
Middle	24.8	28.2	26.4	14,537	5.8	7.1	6.4	14,537	5.3	6.3	5.8
Richer	25.6	31.2	28.1	14,686	6.7	8.4	7.5	14,686	6.2	5.9	6.1
Richest	27.0	32.5	29.3	14,339	11.6	13.4	12.4	14,339	17.8	7.2	13.0
Total	**23.9**	**28.6**	**26.0**	**72,250**	**6.3**	**8.0**	**7.1**	**72,250**	**10.9**	**6.2**	**8.5**

** Including spouse irrespective of age*

** Mean number of days hospitalised is computed among those revceived inpatient care.

13.1 INPATIENT AND OUT-PATIENT CARE AMONG OLDER ADULTS

In LASI, information was collected on both out-patient care and inpatient care (hospitalisation) utilisation from age-eligible respondents. Table 13.1 presents the percentages of older adults age 45 and above who received out-patient care during one month prior to the survey, those who were hospitalized during the year prior to the survey, and the mean number of days spent in their most recent hospitalisation.

Utilisation of health care services (i.e. out-patient care and hospitalisation) depends on the morbidity condition, health seeking behaviour, accessibility to health services, and the ability of either the individual or their household to pay for services and quality of the care. The overall hospitalization (or inpatients) rate (one year prior to the survey) is 7% in India, while it is 6% for older adults age 45-59 years and 8% for the elderly age 60 and above. On an average, a hospitalized older adult spent 8.5 days in the hospital. The inpatient rate is higher both in urban areas and among men, including older adults age 45-59 and the elderly age 60 and above. Further, the inpatient rate increases with MPCE quintile, suggesting a higher utilization by richer older adults owing to higher ability to pay. The inpatient rate among those in the richest MPCE quintile is almost three times that of those in the poorest MPCE quintile. Among older adults age 45 and above, the inpatient rate is higher among widowed compared to currently married and divorced/separated/deserted. The inpatient rate is 8% among those living alone and five percent among those who live with others. The inpatient rate did not show any consistent pattern with education level. Among the elderly age 60 and above in India, the mean number of days hospitalized is higher among male, urban residents, those who are currently married, and those in the richest MPCE quintile.

The overall out-patient rate in the country is 26%; 29% for the elderly age 60 and above and 24% for older adults age 45-59. The out-patient rate is higher in rural areas, among women, among the widowed, and those living alone. Further, it is much lower among Scheduled tribes than other caste categories. Like the inpatient rate, education level did not show any consistent pattern with out-patient care. The out-patient rate increases steadily with the increase in the MPCE quintile, especially among the elderly age 60 and above. Similarly, the out-patient rate increases with the increase in the duration of the reference period. The out-patient rate increases from 26% in the month prior to the survey to 55% during the year prior to the survey (Figure 13.1).

Figure 13.1 Percentage of older adults age 45 and above who had out-patient visits by duration of reference period, India, LASI Wave 1, 2017-18

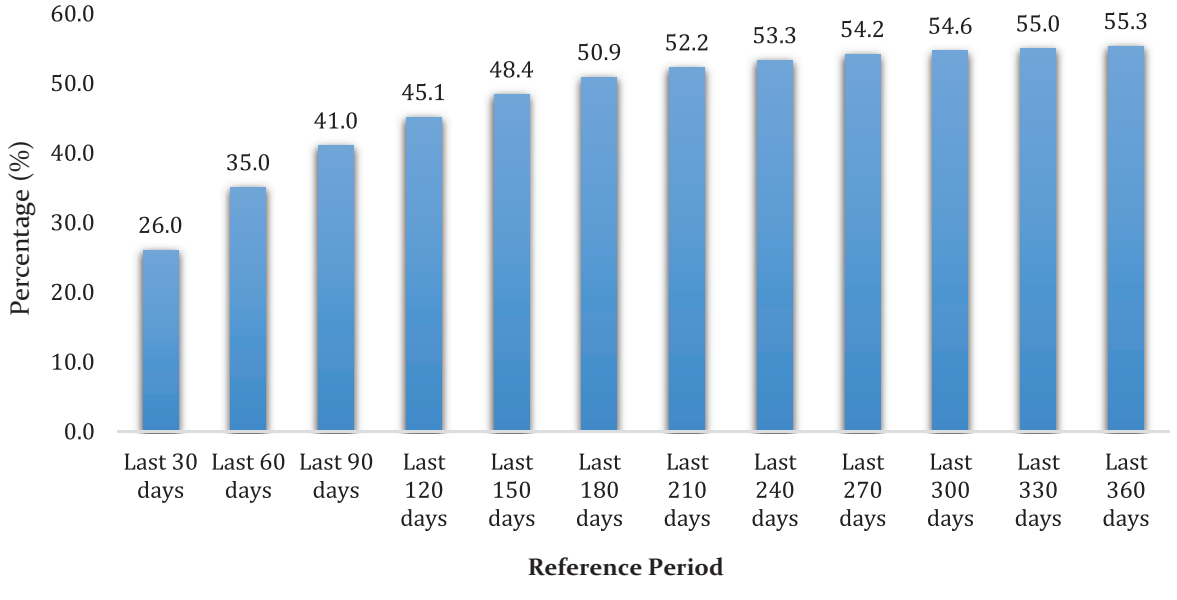


Table 13.2 Percentage of older adults who utilised out-patient care in one month and inpatient care in one year prior to survey, states/ UTs, LASI Wave 1, 2017-18

States/ Union Territory	Out-patient care				Inpatient care				Mean number of days hospitalized**		
	Age 45-59*	Age≥ 60	Total	Number	Age 45-59*	Age≥60	Total	Number	Age 45-59*	Age≥ 60	Total
India	**23.9**	**28.6**	**26.0**	**72,250**	**6.3**	**8.0**	**7.1**	**72,250**	**10.9**	**6.2**	**8.5**
North											
Chandigarh	33.1	32.6	32.9	1,026	5.9	7.7	6.6	1,026	4.0	8.6	6.1
Delhi	12.3	19.2	14.9	1,319	4.6	6.2	5.2	1,319	8.6	5.5	7.2
Haryana	22.9	24.3	23.5	1,898	6.9	10.1	8.4	1,898	4.2	5.2	4.8
Himachal Pradesh	31.4	33.5	32.4	1,388	8.5	14.1	11.1	1,388	6.8	8.7	8.0
Jammu & Kashmir	28.5	29.3	28.9	1,613	4.8	5.2	5.0	1,613	4.8	8.0	6.4
Punjab	50.6	56.9	53.6	2,124	7.0	10.4	8.6	2,124	4.7	8.3	6.8
Rajasthan	24.2	28.9	26.5	2,244	7.2	9.7	8.4	2,244	5.2	5.9	5.6
Uttarakhand	19.7	22.3	21.0	1,358	5.6	5.8	5.7	1,358	6.2	5.6	5.9
Central											
Chhattisgarh	13.1	14.6	13.7	2,055	2.3	4.2	3.0	2,055	5.1	3.7	4.4
Madhya Pradesh	16.1	17.4	16.7	2,914	6.3	9.0	7.6	2,914	5.5	5.6	5.5
Uttar Pradesh	32.2	37.0	34.6	4,567	4.5	5.6	5.0	4,567	6.0	5.8	5.9
East											
Bihar	27.3	33.9	30.9	3,520	3.8	4.4	4.1	3,520	6.0	4.5	5.1
Jharkhand	15.7	20.6	18.1	2,464	5.0	5.3	5.1	2,464	4.6	7.8	6.2
Odisha	19.2	24.5	21.5	2,917	4.3	5.5	4.8	2,917	4.7	5.8	5.3
West Bengal	29.3	33.0	30.8	3,933	6.5	9.8	7.9	3,933	4.9	6.3	5.6
Northeast											
Arunachal Pradesh	4.1	7.1	4.8	1,215	8.2	7.5	8.1	1,215	4.6	4.3	4.6
Assam	14.2	17.1	15.3	2,366	4.1	5.1	4.5	2,366	3.9	5.1	4.4
Manipur	14.6	14.6	14.6	1,369	6.4	9.0	7.6	1,369	8.1	7.0	7.5
Meghalaya	7.0	10.8	8.6	969	3.9	6.7	5.1	969	21.3	9.1	14.5
Mizoram	2.7	4.2	3.4	1,246	6.4	5.5	6.0	1,246	10.6	6.0	8.7
Nagaland	3.1	6.1	4.6	1,316	6.3	7.5	6.9	1,316	4.1	8.6	6.5
Tripura	11.6	14.5	12.7	1,195	10.2	10.9	10.5	1,195	5.7	5.3	5.6
West											
Dadra & Nagar Haveli	13.4	17.3	14.9	1,090	7.8	9.6	8.5	1,090	4.9	4.3	4.6
Daman & Diu	29.3	32.9	31.0	991	6.4	13.6	9.8	991	3.2	13.6	10.0
Goa	23.3	28.9	25.9	1,427	7.1	11.2	9.0	1,427	7.7	7.5	7.6
Gujarat	20.7	25.5	22.9	2,341	5.6	9.6	7.4	2,341	3.6	5.8	4.9
Maharashtra	26.2	33.0	29.5	3,973	6.7	10.9	8.8	3,973	5.0	6.0	5.6
South											
Andaman & Nicobar Islands	8.5	12.8	10.3	1,244	5.6	9.0	7.0	1,244	11.0	7.6	9.2
Andhra Pradesh	23.1	26.5	24.5	2,679	7.3	8.4	7.8	2,679	6.6	5.7	6.2
Karnataka	23.9	28.2	25.6	2,420	9.3	7.4	8.6	2,420	29.0	5.7	20.9
Kerala	34.6	40.3	37.6	2,497	6.2	11.8	9.1	2,497	8.6	8.5	8.5
Lakshadweep	18.2	25.3	21.6	1,139	4.7	10.9	7.7	1,139	5.8	6.9	6.6
Puducherry	22.4	31.0	26.5	1,428	3.2	5.5	4.3	1,428	12.1	9.2	10.4
Tamil Nadu	19.4	22.2	20.7	3,530	5.5	8.8	7.0	3,530	6.8	6.5	6.6
Telangana	22.3	24.6	23.3	2,475	7.5	8.9	8.1	2,475	7.0	7.3	7.2

** Mean number of days hospitalised is computed among those revceived inpatient care.
*Including spouse irrespective of age

Table 13.2 presents the pattern of out-patient and inpatient care utilization among the elderly age 60 and above and older adults age 45-59 across states of India. The inpatient rate is the highest in Himachal Pradesh (11%), followed by Tripura (11%), and is the lowest in Chhattisgarh (3%). Similarly, many poorer states have lower inpatient rates compared to the national average. The inpatient rate is higher among the elderly age 60 and above compared to older adults in many states of India. Among those hospitalized, the mean number of days hospitalized is higher among older adults age 45-59 compared to the elderly age 60 and above. Similarly, the inter-state variation in out-patient rate is higher: many of the north-eastern states of India have lower rates, with the lowest in Mizoram (3%). The out-patient rate is the highest in Punjab (54%), followed by Kerala (38%), and Uttar Pradesh (35%).

Table 13.3 Percent distribution of older adults who received inpatient care in one year prior to survey by type of health facilities according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age≥60				Total			
	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number
Place of residence												
Rural	35.8	61.9	2.3	1463	39.4	58.1	2.4	1603	37.7	59.9	2.4	3,066
Urban	26.4	72.3	1.3	803	33.8	61.3	4.9	914	29.9	67.1	3.0	1,717
Sex												
Male	28.5	69.5	2.0	882	38.1	58.8	3.1	1296	34.0	63.4	2.6	2,178
Female	34.8	63.4	1.9	1384	37.2	59.5	3.3	1221	35.9	61.6	2.6	2,605
Marital status												
Currently married	30.2	67.8	2.0	1953	37.0	60.2	2.8	1652	33.2	64.5	2.3	3,605
Widowed	47.5	50.5	2.0	247	39.3	56.9	3.9	829	41.0	55.5	3.5	1,076
Divorced/Separated/Deserted/ Others	42.5	56.7	0.7	66	22.0	72.2	5.8	36	37.3	60.7	2.0	102
Living arrangement												
Living alone	55.0	43.5	1.5	41	28.9	69.6	1.5	134	33.2	65.3	1.5	175
Living with spouse and / or others	43.0	54.8	2.3	250	34.3	63.3	2.4	535	36.9	60.8	2.4	785
Living with spouse and children	28.7	69.4	1.9	1669	38.4	58.5	3.1	1104	32.3	65.4	2.4	2773
Living with children and others	43.5	54.5	2.0	257	40.6	54.8	4.6	631	41.4	54.7	3.9	888
Living with others only	44.3	55.8	0.0	49	43.3	54.1	2.6	113	43.6	54.7	1.8	162
Religion												
Hindu	33.6	64.4	2.0	1701	36.8	59.9	3.3	1851	35.2	62.1	2.7	3,552
Muslim	29.1	70.7	0.1	260	43.0	54.2	2.8	332	36.3	62.1	1.5	592
Christian	26.1	73.3	0.6	204	43.1	56.7	0.2	219	33.4	66.2	0.4	423
Others	23.6	67.7	8.7	101	32.8	62.6	4.6	115	28.9	64.7	6.4	216
Caste/tribe												
Scheduled tribe	43.6	55.2	1.3	358	65.6	33.1	1.4	334	54.5	44.2	1.3	692
Scheduled caste	44.4	53.9	1.8	455	51.8	45.1	3.1	383	47.9	49.7	2.4	838
Other backward class	22.5	76.0	1.5	820	30.3	66.5	3.2	1003	26.5	71.1	2.4	1,823
None of the above	36.6	60.3	3.1	633	34.0	62.3	3.7	797	35.1	61.4	3.5	1,430
Education												
No schooling	33.0	64.2	2.8	887	42.4	55.7	1.9	1245	38.2	59.5	2.3	2,132
Less than 5 years complete	43.2	56.1	0.7	284	39.1	57.3	3.6	345	40.9	56.8	2.3	629
5-9 years complete	37.3	61.3	1.4	651	36.7	57.7	5.6	522	37.0	59.7	3.3	1,173
10 or more years complete	17.7	81.1	1.2	444	18.3	77.0	4.7	405	18.0	79.4	2.7	849
Work status												
Currently working	31.2	66.8	2.0	1147	39.9	56.7	3.4	556	34.1	63.5	2.5	1,703
Worked in the past but currently not working	30.8	67.5	1.6	500	37.7	59.8	2.5	1349	35.5	62.3	2.2	1,849
Never worked	36.5	61.3	2.1	619	35.2	60.1	4.7	612	35.8	60.7	3.5	1,231
MPCE quintile												
Poorest	48.7	49.8	1.5	266	52.4	43.7	3.9	330	50.9	46.2	2.9	596
Poorer	41.0	56.6	2.5	320	48.6	50.0	1.5	435	45.4	52.7	1.9	755
Middle	33.8	62.3	3.9	427	42.0	54.7	3.4	453	38.1	58.3	3.6	880
Richer	37.8	60.7	1.5	538	31.2	66.7	2.2	520	34.4	63.7	1.9	1,058
Richest	19.9	79.1	1.0	715	24.2	71.1	4.7	779	21.9	75.4	2.7	1,494
Total	**32.3**	**65.8**	**1.9**	**2266**	**37.6**	**59.1**	**3.2**	**2517**	**35.1**	**62.4**	**2.6**	**4,783**

* Including spouse irrespective of age.

Figure 13.2 Percent distribution of elderly age 60 and above who received inpatient care in one year prior to survey by type of health facilities and MPCE quintile, India, LASI Wave 1, 2017-18

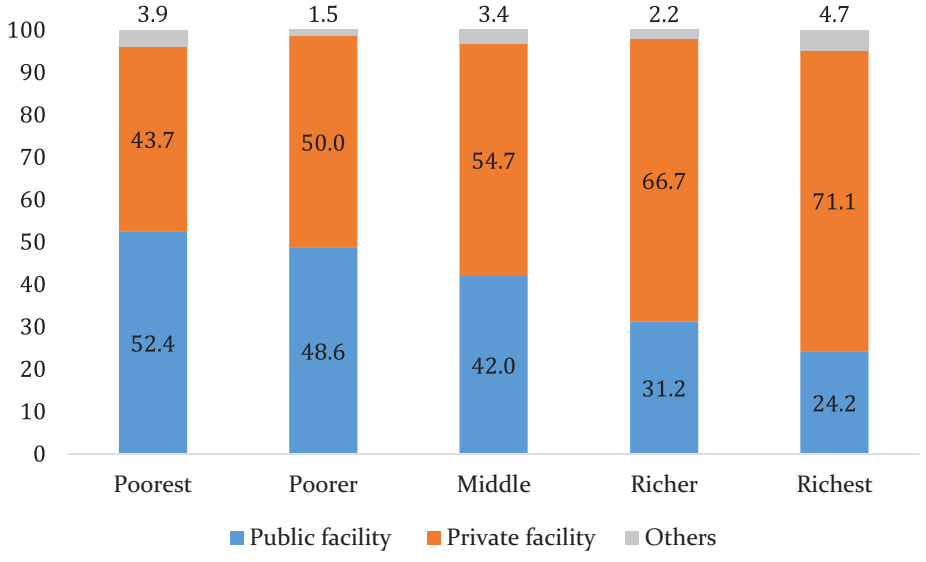


Table 13.3 presents the percent distribution of older adults who received inpatient care by type of health facilities. In India, the utilization of inpatient care from public and private health facilities varies by place of residence, religion, caste, and MPCE quintile. About two-fifths (35%) of the older adults received inpatient care from public health facility compared to about three-fifths (62%) from private health facility. The use of health services from other sources is low among both the elderly age 60 and above and older adults age 45-59. About 38% of the elderly age 60 and above sought inpatient care from a public health facility, compared to 32% among older adults age 45-59. Use of public health services for inpatient care is higher in rural than urban areas. In both rural and urban areas of India, most older adults age 45-59 use health services from private health facility; the pattern is similar among the elderly age 60 and above. A higher proportion of Muslims used public health facility compared to other religion groups. Similarly, the proportions of older adults using public health services is the highest among the Scheduled tribes followed by the Scheduled castes. The use of inpatient care at public health facility vary inversely with the MPCE quintile: a majority of older adults in the poorest MPCE quintile utilise inpatient care from public health facility. The use of inpatient care from private health services increases by MPCE quintile, suggesting that richer people prefer to use private health services. This pattern is true for both the elderly age 60 and above and older adults age 45-59.

Table 13.4 presents the pattern of inpatient care by type of health facility among older adults in the Indian states. The proportion using a public health facility for inpatient care is the highest in Tripura (86%), followed by Andaman & Nicobar Islands (83%), and Jammu & Kashmir (83%). It is the lowest in Jharkhand (16%), followed by Maharashtra (18%), and Karnataka (18%). Further, in 16 states and union territories in India, more than half of the older adults use inpatient care from public health facility and in three states (Punjab, Jharkhand and Maharashtra) less than 20% of the older adults used a public health facility. The use of inpatient care from private health facility is high in Karnataka and Jharkhand (80%), and low in Tripura (13%), Arunachal Pradesh (14%), and Andaman & Nicobar Islands (17%).

Table 13.4 Percent distribution of older adults who received inpatient care in one year prior to survey by type of health facilities, states/UTs, LASI Wave 1, 2017-18

States/ Union Territory	Age 45-59*				Age≥60				Total			
	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number
India	**32.3**	**65.8**	**1.9**	**2266**	**37.6**	**59.1**	**3.2**	**2517**	**35.1**	**62.4**	**2.6**	**4783**
North												
Chandigarh	86.3	10.5	3.2	42	44.2	46.1	9.7	26	66.9	27.0	6.2	68
Delhi	72.0	28.0	0.0	39	46.4	44.3	9.4	34	60.4	35.4	4.2	73
Haryana	22.2	72.4	5.4	77	20.5	77.1	2.4	87	21.2	75.1	3.7	164
Himachal Pradesh	61.9	36.9	1.2	59	69.3	28.4	2.3	86	66.4	31.8	1.9	145
Jammu & Kashmir	79.4	20.6	0.0	42	86.3	13.7	0.0	42	82.9	17.1	0.0	84
Punjab	16.9	64.6	18.5	68	22.9	60.9	16.2	83	20.3	62.5	17.2	151
Rajasthan	41.9	57.0	1.0	76	48.9	51.1	0.0	104	45.9	53.6	0.4	180
Uttarakhand	26.1	72.8	1.1	39	32.1	67.9	0.0	38	29.1	70.3	0.6	77
Central												
Chhattisgarh	63.7	33.3	3.0	28	42.7	53.7	3.6	32	52.5	44.2	3.3	60
Madhya Pradesh	37.8	59.2	3.0	101	39.9	57.0	3.1	104	39.0	58.0	3.1	205
Uttar Pradesh	30.9	66.4	2.8	104	35.1	60.5	4.4	126	33.2	63.1	3.7	230
East												
Bihar	25.9	72.2	1.9	68	30.0	68.2	1.9	88	28.2	69.9	1.9	156
Jharkhand	8.7	87.6	3.8	61	24.0	72.6	3.4	62	16.3	80.1	3.6	123
Odisha	58.5	41.5	0.0	73	79.2	20.8	0.0	78	68.9	31.1	0.0	151
West Bengal	64.6	35.4	0.0	132	74.5	25.5	0.0	138	69.6	30.4	0.0	270
Northeast												
Arunachal Pradesh	81.6	14.8	3.6	49	83.9	11.4	4.7	19	82.1	14.0	3.9	68
Assam	56.3	43.7	0.0	58	41.4	51.1	7.4	38	50.2	46.7	3.0	96
Manipur	68.2	31.8	0.0	49	70.3	29.7	0.0	50	69.4	30.6	0.0	99
Meghalaya	61.6	34.6	3.9	20	59.5	40.5	0.0	30	60.4	37.8	1.7	50
Mizoram	43.8	54.5	1.6	39	61.9	38.1	0.0	34	51.3	47.8	1.0	73
Nagaland	16.7	81.2	2.1	20	72.5	26.3	1.2	23	46.5	51.9	1.6	43
Tripura	87.7	10.8	1.5	72	82.9	17.1	0.0	50	85.7	13.4	0.9	122
West												
Dadra & Nagar Haveli	52.6	46.2	1.3	49	56.8	40.0	3.2	45	54.4	43.5	2.1	94
Daman & Diu	32.8	67.2	0.0	39	36.6	62.0	1.4	57	35.3	63.8	0.9	96
Goa	69.8	30.2	0.0	60	52.9	44.1	3.1	68	60.2	38.1	1.8	128
Gujarat	23.4	73.6	3.0	74	30.3	66.6	3.0	91	27.4	69.6	3.0	165
Maharashtra	14.8	84.0	1.2	150	19.9	74.0	6.1	194	17.9	77.9	4.2	344
South												
Andaman & Nicobar Islands	67.7	32.3	0.0	39	97.3	2.7	0.0	45	83.2	16.8	0.0	84
Andhra Pradesh	20.9	79.1	0.0	115	29.3	69.7	1.0	92	24.7	74.8	0.4	207
Karnataka	20.8	78.3	1.0	89	13.1	83.5	3.4	97	18.1	80.1	1.8	186
Kerala	36.6	63.4	0.0	81	42.7	52.1	5.2	152	40.7	55.8	3.5	233
Lakshadweep	42.9	57.1	0.0	32	59.4	40.6	0.0	54	54.1	45.9	0.0	86
Puducherry	59.6	34.5	5.9	31	43.0	49.5	7.5	44	49.6	43.5	6.9	75
Tamil Nadu	29.9	64.8	5.3	91	32.4	67.6	0.0	114	31.3	66.5	2.2	205
Telangana	23.1	75.0	2.0	100	26.6	72.2	1.2	92	24.8	73.6	1.6	192

*Including spouse irrespective of age.

Figure 13.3 Percent distribution of elderly age 60 and above who received inpatient care in one year prior to survey by type of health facilities, states/UTs, LASI Wave 1, 2017-18

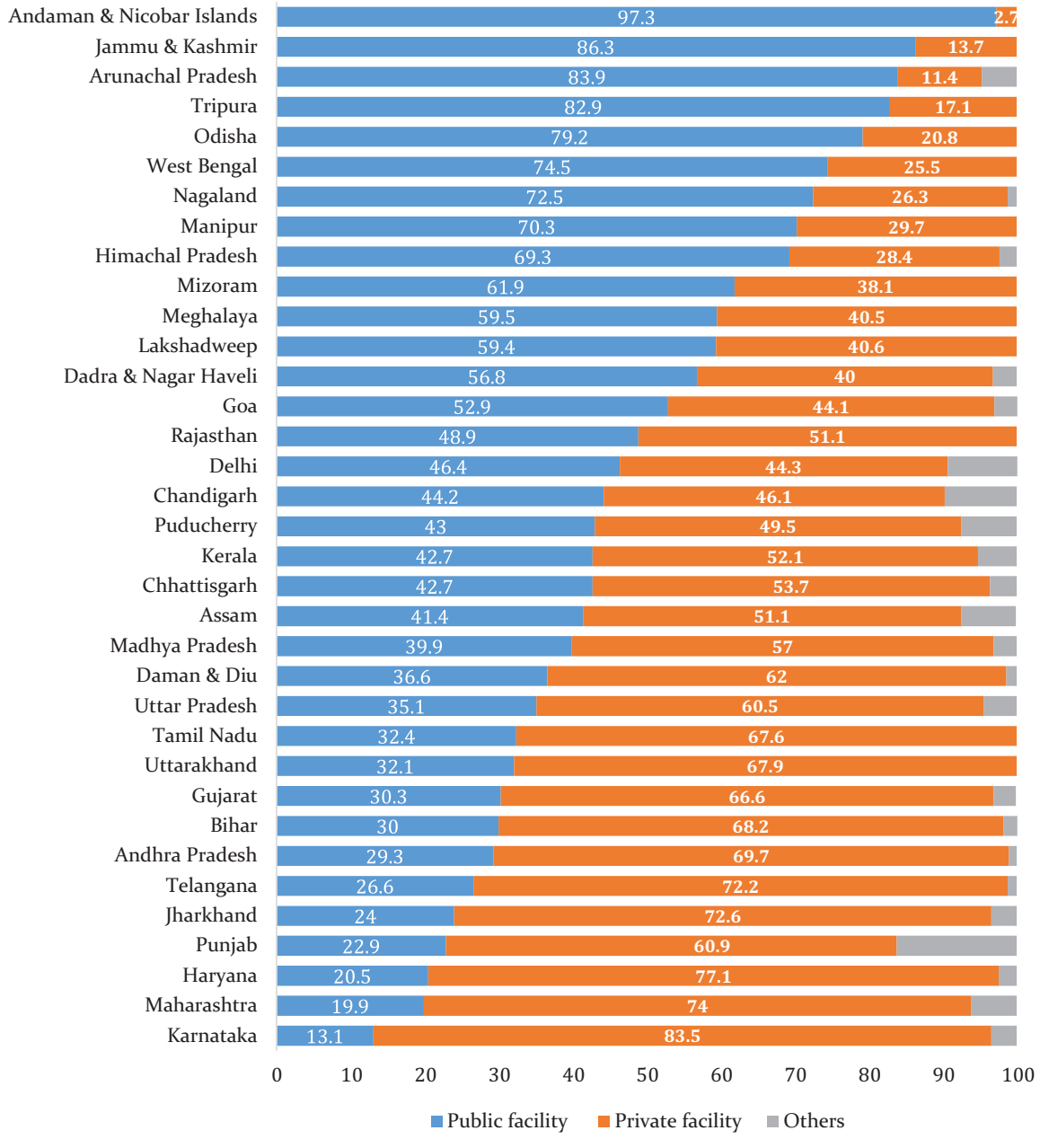


Table 13.5 presents percent distribution of older adults who received out-patient care by type of health facilities. In India, little more than one-fifth (23%) of older adults receive out-patient care from public health facility; about three-fifths (64%) receive it from private health facility; and about 13% use other sources such as mobile health vans, health camps, etc. The pattern of out-patient care by type of health facility is similar between the elderly age 60 and above and older adults age 45-59. The proportion of older adults who utilise public health facilities for out-patient care varies substantially by place of residence, marital status, living arrangement, religion, caste, education level, and MPCE quintile. The utilisation of public health services for out-patient care is relatively higher in rural areas (24%) than in urban (20%) areas. The majority of older adults seek out-patient care from private health facility in both rural and urban areas. The pattern is similar for both the elderly age 60 and above and older adults age 45-59. By caste/tribe, the proportion of those who use public health facility is the highest among older adults from Scheduled tribes, followed by those from the Scheduled caste and those from the Other backward class.

The utilization of out-patient care from public health facilities is higher among those who have less than 10 years of education than those who have more than 10 years of education. More than one fourth (28%) of the older adults in the poorest MPCE quintile utilise out-patient care from public health facility, whereas 18% do the same in the richest MPCE quintile.

Table 13.5 Percent distribution of older adults who received out-patient care in one year prior to survey by type of health facilities according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age≥60				Total			
	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number
Place of residence												
Rural	24.2	60.2	15.6	12,891	24.0	59.7	16.3	11,375	24.1	60.0	16.0	24,266
Urban	19.1	73.8	7.1	7,502	20.2	72.0	7.8	6,141	19.6	73.0	7.4	13,643
Sex												
Male	23.0	63.5	13.5	7,062	24	62.0	14.1	8,109	23.5	62.7	13.8	15,171
Female	22.3	65.1	12.6	13,331	21.9	64.5	13.6	9,407	22.2	64.8	13.0	22,738
Marital status												
Currently married	22.0	65.4	12.6	17,646	21.7	64.8	13.5	11,000	21.8	65.2	13.0	28,646
Widowed	27.1	57.9	15.0	2,080	24.4	61.1	14.5	6,091	25.0	60.4	14.6	8,171
Divorced/Separated/ Deserted/ Others	26.2	60.2	13.6	667	31.3	58.5	10.2	425	28.3	59.5	12.2	1,092
Living arrangement												
Living alone	32.1	54.3	13.6	342	33.3	56.3	10.3	928	33.1	55.9	11.0	1,270
Living with spouse and / or others	25.2	61.6	13.3	2,219	23.2	63.5	13.2	3,362	24.0	62.8	13.2	5,581
Living with spouse and children	21.5	66.0	12.5	15,090	20.9	65.5	13.6	7,506	21.3	65.9	12.9	22,596
Living with children and others	25.3	60.2	14.5	2,221	23.0	62.2	14.8	4,803	23.7	61.6	14.7	7,024
Living with others only	25.8	56.8	17.4	521	24.1	59.4	16.5	917	24.6	58.6	16.8	1,438
Religion												
Hindu	22.2	64.8	13.1	15,310	22.7	63.4	13.9	13,092	22.4	64.1	13.5	28,402
Muslim	22.1	66.2	11.7	2,900	24.5	62.8	12.7	2,405	23.2	64.7	12.1	5,305
Christian	42.6	50.4	7.0	1,154	38.1	56.1	5.7	1034	40.6	53.0	6.4	2,188
Others	18.8	63.2	18.0	1,029	13.8	67.0	19.2	985	16.2	65.2	18.6	2,014
Caste/tribe												
Scheduled tribe	35.3	49.9	14.8	2,358	35.4	48.0	16.6	1,875	35.3	49.0	15.6	4,233
Scheduled caste	24.6	56.3	19.1	3,799	25.8	54.3	19.90	3,048	25.2	55.4	19.5	6,847
Other backward class	21.1	69.0	10.0	8,055	21.7	67.5	10.8	7,015	21.4	68.3	10.4	15,070
None of the above	20.3	67.2	12.5	6,181	20.1	66.1	13.8	5,578	20.2	66.7	13.2	11,759
Education												
No schooling	23.3	60.6	16.2	8,259	24.3	59.2	16.6	9,210	23.8	59.8	16.4	17,469
Less than 5 years complete	25.1	63.3	11.6	2,152	26.3	62.7	11.1	2,143	25.7	63.0	11.3	4,295
5-9 years complete	25.1	64.0	10.9	5,457	23.4	66.0	10.6	3,424	24.4	64.8	10.8	8,881
10 or more years complete	16.5	75.1	8.5	4,525	13.6	77.0	9.4	2,739	15.3	75.8	8.9	7,264
Work status												
Currently working	22.2	64.2	13.7	11,417	23.5	60.7	15.8	4,814	22.6	63.1	14.3	16,231
Worked in the past but currently not working	25.3	66.2	8.5	2,668	24.1	62.9	13.0	7,796	24.4	63.7	11.8	10,464
Never worked	22.0	64.6	13.4	6,308	19.9	67.1	13.0	4,906	21.0	65.7	13.2	11,214
MPCE quintile												
Poorest	27.2	54.8	18.0	3,240	27.8	51.9	20.3	3,184	27.5	53.3	19.2	6,424
Poorer	23.5	61.0	15.5	3,941	23.7	61.0	15.4	3,587	23.6	61.0	15.4	7,528
Middle	23.0	64.3	12.8	4,139	23.1	63.7	13.2	3,543	23.1	64.0	13.0	7,682
Richer	20.7	68.1	11.2	4,515	21.7	67.7	10.7	3,646	21.1	67.9	10.9	8,161
Richest	19.2	73.1	7.8	4,558	17.5	73.4	9.1	3,556	18.4	73.2	8.4	8,114
Total	**22.6**	**64.6**	**12.9**	**20393**	**22.9**	**63.3**	**13.8**	**17516**	**22.7**	**64.0**	**13.3**	**37909**

*Including spouse irrespective of age

Table 13.6 presents the use of out-patient care by type of health facility among the elderly and older adults in Indian states. The proportion of older adults age 45 and above who use public health facility for out-patient care is the highest in Andaman & Nicobar Islands (87%), followed by Lakshadweep (85%), and Arunachal Pradesh (78%), and is the lowest in Bihar (11%), Telangana (11%), Maharashtra (12%), and Uttar Pradesh (14%). More than half of the older adults in eight states and union territories use out-patient care from public health facility. The use of private health facility for out-patient care is the highest in the states of Telangana, Maharashtra, Andhra Pradesh, and Gujarat, and the lowest in Andaman & Nicobar, Lakshadweep, and Arunachal Pradesh. A substantial proportion of older adults (more than one-fifth) from Bihar, Punjab, Uttar Pradesh, Meghalaya and Tripura use out-patient care from other health facilities (such as mobile health vans and health camps). The pattern of out-patient care use from public, private, and other facilities is similar for both the elderly age 60 and above and older adults age 45-59.

Table 13.6 Percent distribution of older adults who received out-patient care in one year prior to survey by type of health facilities, states/UTs, LASI Wave 1, 2017-18

States/ Union Territory	Age 45-59*				Age ≥ 60				Total			
	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number	Public facility	Private facility	Others	Number
India	**22.6**	**64.6**	**12.9**	**20,393**	**22.9**	**63.3**	**13.8**	**17,516**	**22.7**	**64.0**	**13.3**	**37,909**
North												
Chandigarh	50.2	37.9	11.9	388	45.9	42.2	11.9	238	48.6	39.6	11.9	626
Delhi	56.6	34.0	9.5	286	56.2	40.7	3.1	186	56.4	36.7	6.9	472
Haryana	15.3	70.2	14.6	593	17.2	71.2	11.6	490	16.2	70.7	13.1	1,083
Himachal Pradesh	50.4	39.6	10.0	472	50.3	36.7	13.0	400	50.4	38.2	11.4	872
Jammu & Kashmir	60.4	34.0	5.6	549	60.8	35.3	3.9	483	60.6	34.7	4.7	1,032
Punjab	15.6	58.2	26.3	800	15.6	58.2	26.2	763	15.6	58.2	26.2	1,563
Rajasthan	42.8	50.1	7.1	659	44.3	48.9	6.8	682	43.6	49.5	6.9	1,341
Uttarakhand	27.5	58.2	14.4	341	23.9	58.2	17.9	325	25.7	58.2	16.2	666
Central												
Chhattisgarh	34.3	48.3	17.5	450	37.4	46.8	15.9	288	35.5	47.7	16.8	738
Madhya Pradesh	19.5	75.2	5.3	589	26.4	66.2	7.4	540	22.8	70.9	6.3	1,129
Uttar Pradesh	12.8	61.4	25.8	1,363	14.5	62.4	23.1	1,314	13.7	61.9	24.4	2,677
East												
Bihar	11.7	59.2	29.1	1,313	9.7	58.4	32.0	1,429	10.6	58.7	30.7	2,742
Jharkhand	18.1	64.5	17.4	527	11.1	67.6	21.3	527	14.5	66.1	19.4	1,054
Odisha	43.4	39.0	17.7	821	41.2	39.8	19.0	654	42.3	39.4	18.3	1,475
West Bengal	20.4	60.0	19.6	1,711	21.3	59.7	19.0	1,091	20.8	59.9	19.4	2,802
Northeast												
Arunachal Pradesh	78.1	11.7	10.1	205	78.1	15.9	6.0	88	78.1	13.0	8.9	293
Assam	47.2	38.2	14.6	686	42.8	44.9	12.3	393	45.6	40.7	13.8	1,079
Manipur	43.1	39.0	17.9	301	43.4	36.1	20.5	276	43.3	37.5	19.2	577
Meghalaya	46.9	19.7	33.5	108	31.2	47.9	21.0	101	39.1	33.7	27.2	209
Mizoram	49.4	47.4	3.3	112	63.9	29.2	7.0	101	57.0	37.8	5.2	213
Nagaland	35.3	58.1	6.7	55	44.6	54.8	0.6	49	40.1	56.4	3.5	104
Tripura	35.2	38.2	26.7	263	47.4	30.3	22.3	172	40.1	35.0	24.9	435
West												
Dadra & Nagar Haveli	51.5	48.0	0.5	174	51.3	47.3	1.4	144	51.4	47.7	0.9	318
Daman & Diu	32.2	66.1	1.7	283	33.2	65.1	1.7	267	32.7	65.6	1.7	550
Goa	37.2	62.8	0.0	416	32.3	67.7	0.0	381	34.9	65.2	0.0	797
Gujarat	19.9	77.3	2.9	603	21.6	73.2	5.3	503	20.7	75.3	4.0	1,106
Maharashtra	11.8	84.3	3.9	1,236	12.5	82.1	5.4	1,157	12.1	83.2	4.7	2,393
South												
Andaman & Nicobar Islands	88.2	11.8	0.0	178	86.5	12.2	1.3	141	87.4	12.0	0.6	319
Andhra Pradesh	17.4	77.0	5.6	891	18.7	73.9	7.4	686	18.0	75.6	6.4	1,577
Karnataka	26.2	71.8	2.0	890	28.0	67.4	4.6	709	27.0	69.9	3.1	1,599
Kerala	44.7	53.7	1.7	737	45.2	53.3	1.5	762	44.9	53.5	1.6	1,499
Lakshadweep	84.1	15.9	0.0	351	85.8	13.6	0.7	340	84.9	14.7	0.4	691
Puducherry	51.3	46.4	2.4	429	57.5	40.0	2.5	421	54.5	43.0	2.4	850
Tamil Nadu	36.1	63.5	0.4	893	40.1	59.4	0.5	826	38.1	61.5	0.5	1,719
Telangana	10.1	83.7	6.2	720	12.3	80.3	7.4	589	11.1	82.2	6.7	1,309

*Including spouse irrespective of age.

13.2 HOSPITALIZATION BY CAUSE

Table 13.7 presents the percent distribution of hospitalization by type of disease, according to sex and place of residence. Among those hospitalized, 63% are hospitalized for non-communicable diseases (NCDs), 21% are hospitalized for communicable diseases, and about 6% are hospitalized for maternal health problems and other diseases. The highest proportion of hospitalization cases are for fever/pyrexia of unknown origin (13%), followed by gastroenteritis/other diarrheal illness (8%), and diabetes and related complications (7%). Cardiovascular diseases (high blood pressure, heart disease and stoke) account for 16% of all hospitalization cases. Hospitalization cause also varies by sex: 16% women were hospitalized for fever/pyrexia of unknown origin compared to 10% for men. Hospitalisation for diabetes is higher in urban areas (13%) compared to rural areas (5%).

Table 13.7 Percent distribution of older adults who received inpatient care in one year prior to survey by various diseases according to age group, sex and place of residence, India, LASI Wave 1, 2017-18

Type of disease	Age		Sex		Place of residence		Total
	45-59*	≥60	Male	Female	Rural	Urban	
Non-Communicable Diseases	**58.6**	**66.1**	**67.1**	**58.9**	**59.0**	**70.6**	**62.6**
Chronic Disease							
Cancer	1.6	1.5	1.4	1.7	1.4	1.9	1.5
Diabetes or related complications	8.9	5.6	10.6	4.2	4.6	12.5	7.1
High blood pressure(hypertension)	4.6	5.6	3.9	6.1	4.8	5.7	5.1
Problems with heart, including unexplained pain in chest	5.7	7.2	7.5	5.6	6.0	7.4	6.5
Stroke/sudden paralysis of one side of body	3.0	5.2	5.3	3.3	3.7	5.2	4.2
Respiratory Disease							
Problems with breathing	4.6	7.0	6.2	5.5	5.1	7.5	5.9
Upper Respiratory Tract Infection	0.6	0.9	0.8	0.7	1.1	0.1	0.8
Bone Disease							
Chronic pain in joints/arthritis/rheumatism/osteoporosis	6.1	7.0	6.1	7.0	6.9	5.9	6.6
Gastrointestinal Disease							
Gastroenteritis or other diarrheal illness	7.6	7.4	5.7	9.1	7.7	7.2	7.5
Liver diseases (hepatitis, alcoholic liver disease, cirrhosis)	2.3	2.8	3.6	1.7	2.5	2.8	2.6
Upper and Lower Abdominal Causes							
Surgery for abdominal causes	5.8	5.9	5.5	6.2	6.2	5.2	5.9
Surgery for genitourinary	1.7	2.1	3.4	0.7	1.8	2.3	1.9
Neuro and Psychiatric condition							
Depression or anxiety/ tension/ sleep problem	2.2	0.9	2.3	0.9	1.1	2.5	1.5
Surgery for ophthalmic	3.9	7.0	4.8	6.2	6.1	4.4	5.5
Communicable Diseases	**22.7**	**19.7**	**17.4**	**24.4**	**23.4**	**16.5**	**21.3**
Vector Born Disease							
Dengue or other vector-born disease	3.1	1.2	1.8	2.4	1.7	3.0	2.1
Malaria	2.6	2.4	1.9	3.1	3.4	0.7	2.5
Acute Disease							
Fever/Pyrexia of unknown reason	13.5	12.7	9.9	15.7	14.5	10.0	13.1
Other acute/chronic communicable diseases	1.2	1.0	1.0	1.2	1.2	0.9	1.1
Tuberculosis	0.8	0.5	0.7	0.6	0.8	0.3	0.7
Urinary Tract Infection/ Reproductive Tract Infection	1.4	1.9	1.9	1.4	1.7	1.6	1.7
HIV/AIDS	0.1	0.0	0.2	0.0	0.1	0.0	0.1
Injury/Accident	**9.3**	**10.4**	**11.8**	**8.2**	**10.5**	**8.5**	**9.8**
Fracture/Muscle rupture	3.6	5.0	4.7	4.0	4.5	4.0	4.3
Injury/accident (non-occupational)	4.7	4.3	5.9	3.3	4.7	4.0	4.5
Occupation/work-related accident/ injury	1.0	1.1	1.2	0.9	1.3	0.5	1.0
Maternal Health & Other Diseases	**9.4**	**3.8**	**3.7**	**8.5**	**7.1**	**4.4**	**6.3**
Maternal or prenatal conditions	4.5	0.7	0.0	4.6	3.0	1.5	2.5
Surgery for other causes	2.9	1.7	2.2	2.4	2.5	1.8	2.3
Other Disease	2.0	1.4	1.5	1.5	1.6	1.1	1.5
Number	**2,202**	**2,429**	**2,119**	**2,512**	**2,977**	**1,654**	**4,631**

*Including spouse irrespective of age.

Among older adults age 45 and above who sought out-patient care, nearly half of them were treated for non-communicable diseases, 34% were treated for communicable diseases and 14% for maternal and child health problems and other diseases (Table 13.8).

Twenty-nine percent sought out-patient care for fever/pyrexia of unknown origin, followed by 14% for chronic pain in joint/arthritis/rheumatism/osteoporosis, and 10% for generalized pain. Of all out-patient care, cardiovascular diseases account for 12%, and diabetes or related complications account for 6%. The reason for seeking out-patient care varies by age group: nearly three-fifths (54%) of the elderly age 60 and above sought out-patient care for non-communicable diseases compared to 43% of the older adults in age 45-59.

All those who received inpatient or out-patient care were asked about the quality of health care received during their last hospitalization or out-patient visit. The questions included waiting time, privacy, cleanliness, interpersonal communication and getting a health care of choice. Responses of both 'good' and 'very good' were categorised as 'good' while responses of both 'poor' and 'very poor' were categorised as 'poor'.

Table 13.8 Percent distribution of older adults who received out-patient care in one year prior to survey by various diseases according to age group, sex and place of residence, India, LASI Wave 1, 2017-18

Type of disease	Age		Sex		Place of residence		Total
	45-59*	≥60	Male	Female	Rural	Urban	
Non-Communicable Diseases	**43.3**	**53.9**	**48.0**	**48.8**	**45.8**	**54.8**	**48.5**
Chronic Disease							
Cancer	0.3	0.3	0.2	0.3	0.2	0.5	0.3
Diabetes or related complications	5.0	6.4	6.5	5.2	4.0	9.7	5.7
High blood pressure (Hypertension)	6.4	10.7	7.5	9.2	7.3	11.4	8.5
Problems with heart, including unexplained pain in chest	1.9	2.8	3.2	1.8	2.0	3.2	2.4
Stroke/sudden paralysis of one side of body	0.5	1.2	1.4	0.5	0.9	0.8	0.8
Respiratory Disease							
Problems with breathing	2.4	4.4	4.4	2.7	3.5	2.9	3.4
Upper Respiratory tract	0.6	1.1	1.2	0.6	0.9	0.6	0.8
Bone Disease							
Chronic pain in joints/arthritis/rheumatism/osteoporosis	13.5	15.1	10.9	16.6	14.6	13.6	14.3
Gastrointestinal Disease							
Gastroenteritis or other diarrheal illness	2.8	2.7	3.0	2.6	2.8	2.9	2.8
Liver diseases	1.1	1.3	1.5	1.0	1.3	1.0	1.2
Gastritis/acidity	1.8	1.2	1.5	1.5	1.7	1.1	1.5
ENT							
Problems with mouth/teeth/gum/lips/swallowing/throat	3.5	2.4	2.7	3.1	2.7	3.4	2.9
Problems with ears	0.5	0.5	0.5	0.5	0.5	0.4	0.5
Neuro and Psychiatric condition							
Depression or anxiety/ tension/ sleep problem	1.1	0.7	0.8	0.9	0.9	0.8	0.9
Eye Disease							
Problems with eyes	1.9	3.1	2.7	2.3	2.5	2.5	2.5
Communicable Diseases	**37.7**	**30.9**	**35.2**	**33.9**	**36.1**	**30.4**	**34.3**
Vector Born Disease							
Dengue or other vector-born disease	0.5	0.5	0.5	0.5	0.4	0.7	0.5
Malaria	1.3	1.0	1.3	1.1	1.5	0.5	1.2
Acute disease							
Other acute/chronic communicable disease	0.7	0.4	0.5	0.6	0.5	0.6	0.5
Skin diseases	2.4	1.5	2.3	1.7	2.0	1.9	2.0
Tuberculosis	0.3	0.4	0.6	0.2	0.4	0.1	0.3
Fever/ pyrexia of unknown cause	31.5	26.1	28.8	29.0	30.3	25.6	28.9
Urinary tract infection	0.9	1.0	1.1	0.8	0.9	1.0	0.9
HIV/AIDS	0.1	0.0	0.1	0.0	0.1	0.0	0.0
Injury/Accident	**3.0**	**3.2**	**4.0**	**2.5**	**3.3**	**2.6**	**3.1**
Injury/accident	2.4	2.7	3.2	2.1	2.7	2.2	2.5
Occupation/work related accident/injury	0.6	0.5	0.8	0.4	0.6	0.4	0.6
Maternal & Child Health Problems and other diseases	**16.0**	**12.0**	**12.8**	**14.8**	**14.8**	**12.2**	**14.1**
Maternal or prenatal conditions	1.1	0.1	0.0	1.0	0.6	0.6	0.6
Follow-up from any surgery	0.4	0.4	0.5	0.4	0.5	0.3	0.4
Nutritional malfunctions	0.4	0.3	0.3	0.4	0.4	0.2	0.4
Generalized pain	11.5	9.3	9.3	11.2	10.9	9.3	10.4
Other disease	2.6	1.9	2.7	1.8	2.4	1.8	2.3
Number	**18,908**	**16,252**	**14,024**	**21,136**	**22,557**	**12,603**	**35,160**

*Including spouse irrespective of age.

Table 13.9 presents the percent distribution of older adults age 45 and above by perceived quality of care in India. Overall, 58% of the older adults age 45 and above rated the quality of the care they received during their last hospitalization as good, 23% as average and 19% as poor. As education level increases, the proportion of respondents reporting good quality of inpatient care also increases. The perception of quality of care did not show any consistent pattern with the MPCE quintiles. Similarly, 61% of those who received out-patient care rated it as good. The pattern of quality of care for out-patient care by background characteristics is similar to inpatient care. The proportion of those reporting good quality of care increases with both education level and MPCE quintile; with inpatient care, the pattern with MPCE quintile was not consistent. Fifty-five percent of the older adults age 45 and above in the poorest quintile and 63% in the richest quintile report the quality of out-patient care as good.

Table 13.9 Percent distribution of older adults age 45 and above by perceived quality of care for healthcare facilities during inpatient and out-patient care in the most recent visit prior to survey according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Quality of inpatient care			Quality of out-patient care		
	Poor	Average	Good	Poor	Average	Good
Place of residence						
Rural	21.6	20.4	58.0	20.2	21.2	58.6
Urban	14.3	26.6	59.2	17.3	17.7	65.0
Sex						
Male	20.6	21.8	57.6	18.5	20.1	61.5
Female	17.9	23.1	59.0	19.8	20.2	60.0
Marital status						
Currently married	18.5	24.2	57.3	18.6	19.6	61.8
Widowed	21.1	17.4	61.5	20.6	22.1	57.3
Divorced/Separated/Deserted/Others	18.5	14.8	66.7	28.7	18.8	52.5
Living arrangement						
Living alone	20.4	15.8	63.8	22.9	21.6	55.5
Living with spouse and / or others	20.7	16.4	62.9	19.2	20.4	60.3
Living with spouse and children	17.9	26.5	55.6	18.4	19.4	62.2
Living with children and others	21.2	17.7	61.1	20.9	21.6	57.4
Living with others only	18.3	16.2	65.5	21.7	22.1	56.3
Religion						
Hindu	19.4	21.5	59.1	19.4	20.0	60.6
Muslim	13.5	30.5	56.1	19.4	21.9	58.7
Christian	33.2	16.0	50.7	26.2	13.9	59.9
Others	21.4	19.2	59.4	12.5	20.2	67.4
Caste/tribe						
Scheduled tribe	18.7	22.8	58.6	21.2	23.1	55.7
Scheduled caste	24.6	17.9	57.5	22.3	21.9	55.8
Other backward class	17.5	26.6	56.0	19.5	19.7	60.8
None of the above	17.8	19.0	63.2	16.5	19.0	64.6
Education						
No schooling	22.5	23.2	54.3	22.6	21.0	56.4
Less than 5 years complete	21.1	18.6	60.4	19.9	19.8	60.4
5-9 years complete	17.5	18.7	63.8	17.7	20.1	62.2
10 or more years complete	9.1	29.1	61.8	11.2	17.8	71.0
Work status						
Currently working	16.8	25.9	57.3	18.7	20.8	60.5
Worked in the past but currently not working	20.5	22.3	57.2	20.0	20.2	59.9
Never worked	20.4	17.3	62.3	19.6	19.0	61.5
MPCE quintile						
Poorest	23.1	19.2	57.7	23.9	20.8	55.3
Poorer	28.8	20.1	51.1	20.7	20.3	59.1
Middle	19.4	18.8	61.9	19.1	19.6	61.3
Richer	17.8	16.8	65.4	17.5	19.0	63.5
Richest	13.1	31.0	55.9	15.5	21.1	63.4
Total	**19.1**	**22.5**	**58.4**	**19.3**	**20.1**	**60.6**

Table 13.10 presents the inter-state variations in the percent distribution of older adults age 45 and above by perceived quality of care. The proportion of older adults age 45 and above who rated quality of care as good for hospitalisation is the highest in Nagaland (95%), Gujarat (91%), and Daman & Diu (90%), and is the lowest in Tripura (35%), Karnataka (39%), and Manipur (41%). More than 80% of the older adults age 45 and above rated out-patient quality of care as good in the states of Gujarat (88%), Nagaland (88%), Daman & Diu (86%), and Chandigarh (82%), and this proportion is the lowest in Puducherry (38%) and Chhattisgarh (39%).

Table 13.10 Percent distribution of older adults age 45 and above by perceived quality of care for healthcare facilities during inpatient and out-patient care in the most recent visit prior to survey, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Quality of inpatient care				Quality of out-patient care			
	Poor	Average	Good	Number	Poor	Average	Good	Number
India	**19.1**	**22.5**	**58.4**	**4,674**	**19.3**	**20.1**	**60.6**	**37,519**
North								
Chandigarh	9.0	12.0	79.0	68	5.7	12.6	81.8	626
Delhi	26.1	10.6	63.3	73	15.9	12.6	71.5	472
Haryana	18.7	32.1	49.3	159	22.1	23.9	54.0	1,069
Himachal Pradesh	8.6	12.6	78.8	143	6.5	18.8	74.8	864
Jammu & Kashmir	21.3	31.4	47.4	83	27.1	20.0	52.9	1,016
Punjab	8.9	13.6	77.6	146	7.8	16.5	75.7	1,553
Rajasthan	23.3	20.2	56.5	180	20.6	24.2	55.2	1,335
Uttarakhand	23.6	25.2	51.3	77	23.2	27.4	49.4	666
Central								
Chhattisgarh	23.6	18.7	57.8	59	39.2	22.1	38.7	732
Madhya Pradesh	29.3	17.3	53.5	204	31.3	19.6	49.1	1,120
Uttar Pradesh	28.0	26.7	45.3	220	27.5	25.5	47.0	2,620
East								
Bihar	17.1	20.1	62.8	151	12.8	20.5	66.7	2,701
Jharkhand	19.2	15.8	65.0	120	17.9	20.7	61.4	1,046
Odisha	13.8	20.0	66.2	147	15.0	15.6	69.4	1,459
West Bengal	24.6	15.3	60.1	260	18.9	15.4	65.7	2,768
Northeast								
Arunachal Pradesh	29.9	7.9	62.2	67	36.5	19.4	44.1	292
Assam	14.4	17.8	67.8	93	14.8	15.7	69.5	1,071
Manipur	27.7	31.5	40.8	94	30.6	26.2	43.2	568
Meghalaya	19.6	6.5	73.9	50	8.9	12.5	78.6	209
Mizoram	12.3	10.6	77.1	71	15.7	6.4	77.9	204
Nagaland	4.0	1.0	95.0	43	5.2	7.1	87.7	103
Tripura	51.2	14.3	34.5	122	27.7	23.0	49.3	435
West								
Dadra & Nagar Haveli	5.9	11.4	82.7	94	6.8	16.2	76.9	317
Daman & Diu	6.8	3.0	90.2	95	3.5	10.2	86.4	549
Goa	16.9	14.7	68.4	125	7.8	19.6	72.6	786
Gujarat	1.7	7.0	91.3	161	3.4	8.5	88.1	1,095
Maharashtra	18.4	22.4	59.2	333	13.8	21.0	65.3	2,370
South								
Andaman & Nicobar Islands	18.5	22.2	59.3	77	28.7	19.7	51.6	311
Andhra Pradesh	10.7	12.9	76.4	203	10.3	15.6	74.2	1,562
Karnataka	17.7	43.2	39.2	181	25.5	27.3	47.2	1,578
Kerala	11.3	5.6	83.1	228	17.5	9.5	73.0	1,480
Lakshadweep	6.8	3.2	89.9	83	15.1	6.6	78.4	686
Puducherry	31.8	15.8	52.4	73	35.3	26.8	37.9	843
Tamil Nadu	20.3	13.6	66.1	200	28.8	16.8	54.4	1,709
Telangana	14.6	28.4	57.0	191	14.1	19.3	66.6	1,304

Key findings: inpatient and outpatient care

- Among older adults age 45 and above, 7% received inpatient care (hospitalization) in past the year prior to the survey, and 26% received outpatient care in the past month prior to the survey.
- Both inpatient and outpatient care is higher among elderly age 60 and above compared to older adults age 45-59.
- The inpatient rate is the highest in Himachal Pradesh (11.1%) and the lowest in Chhattisgarh (3%), whereas the outpatient rate is the highest in Punjab (54%) and the lowest in Mizoram (3.4%).
- In India, about two-fifths of older adults received inpatient care from public health facility compared to about three-fifths from private health facility.
- Elderly are more likely to receive inpatient and outpatient care from public health facilities.
- For outpatient care, little more than one-fifth of older adults utilised public health facility compared to about three-fifths using private health facilities.
- Among those hospitalized, 63% are hospitalized for non-communicable diseases (NCDs), 21% for communicable diseases, and about 6% are hospitalized for maternal health problems and other diseases.
- Among older adults who seek outpatient care, 28.9% seek it for fever/pyrexia of unknown origin, followed by 14.3% for chronic pain in joint/arthritis/ rheumatism/osteoporosis, and 10.4% for generalized pain.
- Among older adults in age group 45 and above, 58% and 61% deem the quality of their care as good during their inpatient and outpatient visit, respectively.

13.3 HEALTHCARE EXPENDITURE

Health expenditure in India is largely financed by households. The per capita health expenditure has been increasing over time, which is associated with rising medical costs, medical technology, increase in non-communicable diseases, medical inflation, rising income and a change in the country's population age structure. In LASI, information was collected on expenditures such as medicines from the hospital and other sources, health care providers' fees, hospital and nursing home charges, operation theatre charges, charges for surgery and related expenses, transportation and expenses related to the accompanying person.

Table 13.11 presents mean out-of-pocket expenditure on hospitalization among older adults age 45 and above by type of health facilities. The mean out of pocket expenditure for the last inpatient visit to a public health facility is ₹ 8,877 compared to ₹ 52,022 in a private health facility. The mean out of pocket expenditure for the last inpatient visit is higher in urban areas than in rural areas for both public and private health facilities. The mean expenditure on inpatient care for both public and private facilities is higher for older adult men than women in age 45 and above. Mean out-of-pocket expenditure in private facilities increases with MPCE quintile; it is ₹ 19,516 among those in the poorest MPCE quintile compared to ₹ 97,546 among those in the richest MPCE quintile.

Table 13.11 Mean out-of-pocket expenditure (in ₹) of older adults on inpatient care (last hospitalization) in one year prior to survey by background characteristics according to type of health facilities visited, facility visited, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*		Age≥60		Total	
	Public	Private	Public	Private	Public	Private
Place of residence						
Rural	8,079	25,737	7,870	26,196	7,962	25,976
Urban	14,179	137,171	8,424	43,559	11,081	96,331
Sex						
Male	16,279	110,614	8,372	35,618	11,178	70,752
Female	6,586	43,149	7,676	28,337	7,112	36,435
Marital status						
Currently married	10,860	76,442	7,855	37,291	9,388	60,433
Widowed	6,167	21,409	8,284	22,004	7,756	21,890
Divorced/Separated/Deserted/Others	4,096	34,143	11,247	20,010	5,232	29,859
Living arrangement						
Living alone	2,380	21,542	1,691	19,651	1,867	19,829
Living with spouse and / or others	4,161	29,812	6,514	36,181	5,695	34,448
Living with spouse and children	12,202	81,894	8,568	37,974	10,619	67,550
Living with children and others	6,453	23,289	10,069	22,801	9,050	22,931
Living with others only	5,435	31,005	4,271	22,306	4,668	25,207
Education						
No schooling	7,467	101,761	5,859	23,091	6,471	60,753
Less than 5 years complete	6,969	22,740	12,694	22,192	10,091	22,422
5-9 years complete	13,786	28,951	8,460	44,502	11,379	35,816
10 or more years complete	14,332	75,922	16,022	51,216	15,067	65,733
Work status						
Currently working	8,054	41,936	4,399	24,167	6,659	36,721
Worked in the past but currently not working	17,211	153,175	9,201	34,319	11,443	76,177
Never worked	5,942	30,519	9,096	33,648	7,549	32,130
MPCE quintile						
Poorest	6,578	13,897	4,500	23,834	5,313	19,516
Poorer	4,853	23,777	3,042	16,412	3,727	19,703
Middle	4,400	19,354	10,059	22,440	7,650	20,872
Richer	7,451	31,077	8,172	32,063	7,781	31,597
Richest	24,402	134,627	16,202	47,027	20,250	97,546
Total	**9,929**	**71,232**	**8,028**	**31,933**	**8,877**	**52,022**

* Including spouse irrespective of age.

Table 13.12 Mean out-of-pocket expenditure (in ₹) of older adults on inpatient care (last hospitalization) in one year prior to survey, according to type of health facilities visited, states/UTs, LASI Wave 1, 2017-18

States/ Union Territory	Age 45-59*		Age≥60		Total	
	Public	Private	Public	Private	Public	Private
India	**9,929**	**71,232**	**8,028**	**31,933**	**8,877**	**52,022**
North						
Chandigarh	19,026	10,066	29,683	14,344	22,285	13,448
Delhi	104,556	15,533	3,039	37,193	69,347	27,795
Haryana	20,759	14,745	5,501	22,467	12,279	19,302
Himachal Pradesh	14,928	29,642	35,766	148,823	27,971	93,405
Jammu & Kashmir	14,822	96,591	32,666	29,057	24,270	69,110
Punjab	11,333	34,363	14,501	30,617	13,389	32,270
Rajasthan	8,414	24,686	9,053	22,034	8,804	23,239
Uttarakhand	33,316	53,469	4,845	29,718	17,633	42,015
Central						
Chhattisgarh	5,910	29,918	2,528	14,422	4,438	19,848
Madhya Pradesh	6,215	26,211	2,165	26,261	3,878	26,239
Uttar Pradesh	6,129	18,195	6,824	27,183	6,535	22,949
East						
Bihar	15,928	32,763	2,290	32,486	7,618	32,608
Jharkhand	15,889	23,775	15,026	23,908	15,255	23,835
Odisha	6,189	34,834	11,083	46,163	9,015	38,521
West Bengal	6,286	30,863	6,618	47,199	6,466	38,019
Northeast						
Arunachal Pradesh	17,774	67,691	15,003	28,319	17,131	60,415
Assam	8,170	38,300	9,497	35,574	8,606	37,131
Manipur	12,629	44,552	16,721	52,280	14,927	48,706
Meghalaya	42,761	34,686	7,931	31,973	22,975	33,079
Mizoram	27,422	28,868	13,502	18,237	20,484	25,362
Nagaland	37,580	23,232	35,550	43,834	35,850	28,825
Tripura	6,665	82,465	3,015	107,530	5,245	95,578
West						
Dadra & Nagar Haveli	506	46,357	187	52,077	360	48,664
Daman & Diu	671	21,096	19,332	26,452	13,397	24,522
Goa	20,234	31,547	4,117	35,582	12,180	34,201
Gujarat	3,327	15,947	1,480	52,269	2,138	36,180
Maharashtra	7,962	24,146	15,540	25,424	13,042	24,883
South						
Andaman & Nicobar Islands	1,158	134,151	2,673	50,057	2,105	127,099
Andhra Pradesh	3,624	38,262	4,158	27,704	3,914	34,054
Karnataka	10,427	181,371	8,961	28,121	10,058	125,825
Kerala	11,757	28,680	15,332	35,381	14,266	32,862
Lakshadweep	4,609	54,747	18,429	56,585	14,885	55,847
Puducherry	3,170	50,749	1,698	59,404	2,403	56,668
Tamil Nadu	2,894	39,888	1,822	38,788	2,255	39,242
Telangana	5,240	19,980	3,123	51,870	4,132	35,108

*Including spouse irrespective of age.

The mean out-of-pocket expenditure shows considerable variations across the states/UTs of India (Table 13.12). The mean out-of-pocket expenditure in public health facilities is the highest in Delhi (₹ 69,347), followed by Nagaland (₹ 35,850), and Himachal Pradesh (₹ 27,971), with the lowest in Dadra & Nagar Haveli (₹ 360), followed by Andaman & Nicobar Islands (₹ 2,105), Gujarat (₹ 2,138), and Tamil Nadu (₹ 2,255). The mean out of pocket expenditure in private health facilities is much higher in Andaman & Nicobar Islands (₹ 1,27,099), Karnataka (₹ 1,25,825), Tripura (₹ 95,578), and Himachal Pradesh (₹ 93,405), and the lowest mean expenditure in private health facility is reported in Chandigarh (₹ 13,448), followed by Haryana (₹ 19,302), and Chhattisgarh (₹ 19,848).

Table 13.13 presents the mean out-of-pocket expenditure during the one month prior to the survey on out-patient care by socio-economic characteristics and states/UTs. The mean out-of-pocket expenditure for out-patient care during the last 30 days prior to the survey is ₹ 1,061; it is higher for the elderly age 60 and above (₹ 1,149) compared with the older adults age 45-59 (₹ 977). Older adults in age 45 and above from urban areas spend more than those from rural areas; similarly, older adult men (₹ 1,224) spend more on out-patient care than women (₹ 957). The mean out-of-pocket expenditure on out-patient care is higher among those who are currently married compared to those who are divorced/separated/deserted and widowed. The mean expenditure is higher for those living with their spouse and children than those having other types of living arrangements. Moreover, with the increase in education and MPCE quintile, the mean out-of-pocket expenditure increases. The mean expenditure on out-patient care for older adults age 45 and above in the richest quintile is three times higher than those in the poorest quintile. The mean out-of-pocket expenditure is twice higher among older adults age 45 and above with 10 or more years of schooling compared to those who never attended school. More importantly, the socio-economic differences in mean health expenditure are much more pronounced for elderly age 60 and above than older adults age 45-49.

Table 13.13 Mean out-of-pocket expenditure (in ₹) of older adults on out-patient care in one month prior to survey by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*	Age≥60	Total
	Mean expenditure	Mean expenditure	Mean expenditure
Place of residence			
Rural	957	1,089	1,023
Urban	1,021	1,299	1,152
Sex			
Male	1,046	1,352	1,224
Female	944	975	957
Marital status			
Currently married	980	1,298	1,109
Widowed	978	915	929
Divorced/Separated/Deserted/Others	847	974	898
Living arrangement			
Living alone	802	756	769
Living with spouse and / or others	916	983	957
Living with spouse and children	986	1,448	1,146
Living with children and others	1,037	983	997
Living with others only	880	793	817
Education			
No schooling	847	870	860
Less than 5 years complete	894	924	909
5-9 years complete	1,096	1,301	1,179
10 or more years complete	1,181	2,376	1,675
Work status			
Currently working	863	946	890
Worked in the past but currently not working	1,228	1,309	1,288
Never worked	1,064	1,067	1,065
MPCE quintile			
Poorest	582	627	606
Poorer	696	828	764
Middle	789	916	852
Richer	1,023	1,164	1,094
Richest	1,553	2,180	1,827
Total	**977**	**1,149**	**1,061**

*Including spouse irrespective of age.

The mean expenditure on out-patient care is higher than the national average in nineteen states/UTs of India (Table 13.14). Twenty-two states, including seven north-eastern states, reported an average expenditure of more than ₹ 1,000 on out-patient care. The highest mean expenditure is reported in Arunachal Pradesh (₹ 10,368), followed by Himachal Pradesh (₹ 3,477), Nagaland (₹ 3,288), and Meghalaya (₹ 3,152), and the lowest mean expenditure is reported in Tamil Nadu (₹ 641), followed by Gujarat (₹ 644) and Puducherry (₹ 645).

Table 13.14 Mean out-of-pocket expenditure (in ₹) of older adults on out-patient care in one month prior to survey, states/UTs, LASI Wave 1, 2017-18

States/ Union Territory	Age 45-59*	Age≥60	Total
	Mean expenditure	Mean expenditure	Mean expenditure
India	**977**	**1,149**	**1,061**
North			
Chandigarh	1,016	1,170	1,078
Delhi	1,943	1,066	1,536
Haryana	716	862	788
Himachal Pradesh	949	6,116	3,477
Jammu & Kashmir	1,305	1,565	1,435
Punjab	804	651	726
Rajasthan	1,132	821	963
Uttarakhand	926	975	952
Central			
Chhattisgarh	844	962	887
Madhya Pradesh	1,220	1,896	1,532
Uttar Pradesh	756	830	797
East			
Bihar	962	1,172	1,081
Jharkhand	1,108	1,009	1,054
Odisha	906	1,310	1,109
West Bengal	742	1,257	965
Northeast			
Arunachal Pradesh	14,917	2,184	10,368
Assam	1,466	1,366	1,426
Manipur	2,084	3,073	2,541
Meghalaya	2,994	3,293	3,152
Mizoram	3,206	2,055	2,574
Nagaland	5,665	1,932	3,288
Tripura	1,075	1,581	1,304
West			
Dadra & Nagar Haveli	838	890	863
Daman & Diu	1,054	1,412	1,240
Goa	1,847	1,164	1,455
Gujarat	636	652	644
Maharashtra	824	1,119	985
South			
Andaman & Nicobar Islands	715	1,382	1,061
Andhra Pradesh	1,790	1,527	1,671
Karnataka	1,018	1,044	1,028
Kerala	774	847	815
Lakshadweep	2,603	1,730	2,131
Puducherry	695	597	645
Tamil Nadu	635	648	641
Telangana	1,973	1,350	1,680

*Including spouse irrespective of age.

13.4 HEALTH INSURANCE COVERAGE

Like insurance coverage at the household level, the LASI survey also asked questions on insurance coverage at the individual level. Table 13.15 presents the health insurance coverage (public or private) among older adults age 45 and above by background characteristics in India. Overall, a fifth (21%) of the older adults age 45 and above are covered by health insurance, and; insurance coverage is higher among older adults age 45-59 (23%) than among the elderly age 60 and above (18%). A higher proportion of older adult men in age 45 and above have health insurance than women in the same age group; those from rural areas are more likely to have health insurance than urban areas. Further, a higher proportion of older adults age 45 and above living with their spouses and children (22%) have insurance compared to those living with others (14%). Older adults age 45 and above belonging to Scheduled tribes have higher insurance coverage than other caste categories. About a quarter (24%) of older adults age 45 and above who were working at the time of the survey are enrolled in insurance compared to 20% of those who worked in the past and 15% who never worked. Health insurance coverage does not show much variation by education and household MPCE quintile.

Table 13.15 Percentage of older adults who were covered by health insurance according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Health Insurance coverage			Number
	Age 45-59*	Age ≥60	Total	
Place of residence				
Rural	23.7	18.6	21.3	46,164
Urban	21.0	17.3	19.4	25,357
Sex				
Male	23.7	19.7	21.6	30,224
Female	22.3	16.9	20.1	41,297
Marital status				
Currently married	23.1	19.8	21.9	54,826
Widowed	20.9	15.6	16.9	14,455
Divorced/Separated/Deserted/Others	19.8	18.8	19.4	2,240
Living arrangement				
Living alone	22.5	18.3	19.3	2,292
Living with spouse and / or others	24.7	21.7	22.9	10,331
Living with spouse and children	23.1	19.0	21.8	43,617
Living with children and others	20.7	15.8	17.2	12,469
Living with others only	15.5	13.0	13.9	2,812
Religion				
Hindu	23.5	18.6	21.2	52,415
Muslim	18.4	12.8	15.9	8,582
Christian	35.8	40.6	37.9	7,164
Others	11.0	8.3	9.7	3,360
Caste/tribe				
Scheduled tribe	34.3	29.2	32.1	12,396
Scheduled caste	20.7	17.8	19.4	11,949
Other backward class	24.4	19.4	22.1	26,900
None of the above	17.8	13.4	15.7	20,276
Education				
No schooling	20.0	17.0	18.4	32,937
Less than 5 years complete	29.4	21.5	25.5	7,972
5-9 years complete	24.1	20.3	22.6	16,735
10 or more years complete	23.9	18.1	21.9	13,877
Work status				
Currently working	25.8	21.2	24.4	32,638
Worked in the past but currently not working	21.9	19.5	20.1	17,776
Never worked	17.0	12.8	15.2	21,107
MPCE quintile				
Poorest	20.2	18.5	19.4	14,011
Poorer	21.3	17.7	19.6	14,399
Middle	22.9	19.4	21.3	14,394
Richer	25.4	18.2	22.2	14,544
Richest	24.4	17.2	21.4	14,173
Total	**22.8**	**18.2**	**20.7**	**71,521**

* Including spouse irrespective of age.

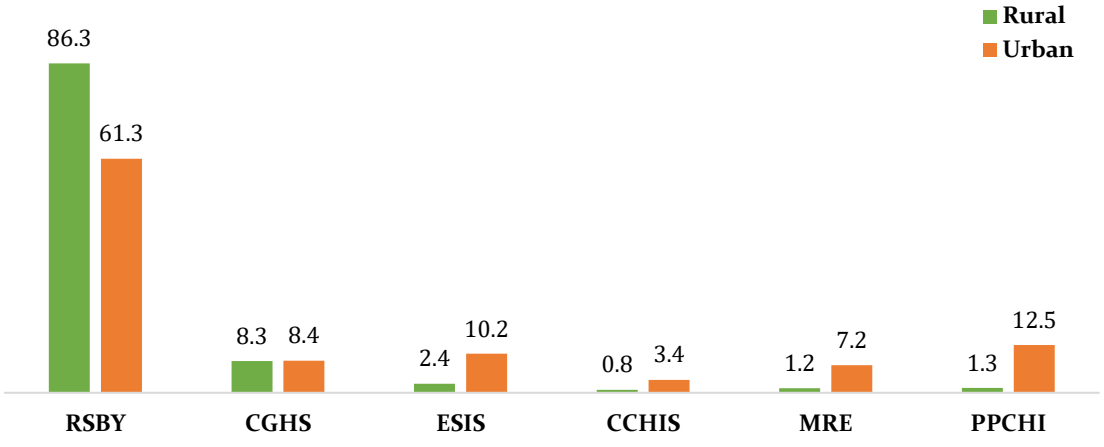
Table 13.16 Percentage of older adults who were covered by health insurance, states/UTs, LASI Wave 1, 2017-18

States/ Union Territory	Health insurance coverage			Number
	Age 45-59*	Age≥60	Total	
India	**22.8**	**18.2**	**20.7**	**71,521**
North				
Chandigarh	11.5	15.6	13.1	989
Delhi	10.6	11.3	10.8	1,310
Haryana	7.6	5.5	6.6	1,888
Himachal Pradesh	18.0	13.5	15.8	1,376
Jammu & Kashmir	1.0	0.2	0.6	1,607
Punjab	5.3	5.2	5.3	2,094
Rajasthan	40.5	39.6	40.1	2,225
Uttarakhand	19.3	20.9	20.1	1,352
Central				
Chhattisgarh	47.0	46.6	46.8	2,048
Madhya Pradesh	3.5	2.9	3.2	2,885
Uttar Pradesh	1.6	2.2	1.9	4,542
East				
Bihar	1.0	1.3	1.2	3,506
Jharkhand	23.9	21.7	22.8	2,451
Odisha	62.6	58.8	61.0	2,884
West Bengal	22.6	16.5	20.1	3,910
Northeast				
Arunachal Pradesh	6.7	6.0	6.5	1,213
Assam	56.5	45.7	52.6	2,352
Manipur	1.5	0.7	1.1	1,356
Meghalaya	44.7	46.3	45.4	965
Mizoram	64.0	66.5	65.1	1,243
Nagaland	0.9	0.5	0.7	1,313
Tripura	28.2	26.6	27.6	1,181
West				
Dadra & Nagar Haveli	62.4	57.7	60.6	1,053
Daman & Diu	16.5	16.7	16.6	966
Goa	46.4	41.8	44.3	1,403
Gujarat	39.4	31.5	35.8	2,262
Maharashtra	6.6	6.4	6.5	3,939
South				
Andaman & Nicobar Islands	0.0	0.3	0.1	1,238
Andhra Pradesh	39.0	36.0	37.8	2,650
Karnataka	24.1	19.5	22.3	2,378
Kerala	42.9	38.1	40.4	2,456
Lakshadweep	10.8	11.2	11.0	1,127
Puducherry	8.4	6.5	7.5	1,414
Tamil Nadu	44.3	33.7	39.5	3,514
Telangana	35.5	31.6	33.8	2,431

* Including spouse irrespective of age.

Across states/UTs of India more than half of the older adults age 45 and above have health insurance in Mizoram (65%), Odisha (61%), Dadra & Nagar Haveli (61%), and Assam (53%). The presence of strong state-sponsored schemes may explain the high rates in some states regarding health insurance. Contrastingly, less than 5% of the older adults age 45 and above have health insurance in Andaman & Nicobar Islands (0.1%), Jammu & Kashmir (0.6%), Nagaland (0.7%), Bihar (1.2%), Manipur (1.1%), Uttar Pradesh (1.9%), and Madhya Pradesh (3.2%) (Table 13.16).

Figure 13.4 Percent coverage of types of health insurance among older adults age 45 and above by place of residence, India, LASI Wave 1, 2017-18



Note

Respondents are covered with more than one insurance scheme, so the sum may exceed 100 percent
RSBY: Rashtriya Swasthya Bima Yojana, CGHS: Central Government Health Scheme, ESIS: Employees State Insurance Scheme, CCHIS: Community/cooperative Health Insurance Schemes, MRE: Medical Reimbursement from an Employer, PPCHI: Privately Purchased Commercial Health Insurance

There are rural/urban differences in health insurance coverage among older adults age 45 and above across India (Figure 13.4). Among those who have any type of health insurance, 86% in rural and 61% in urban areas are covered under the Rashtriya Swathya Bima Yojana. Moreover, the proportion of older adults age 45 and above covered under private schemes (such as privately purchased commercial health insurance) is higher in urban areas (13%) than in rural areas (1%). The coverage of Community Cooperative Health Insurance Schemes in both rural and urban areas is negligible.

Key findings: health financing and health insurance coverage

- The mean out-of-pocket expenditure among older adults for the last inpatient care in public facility is ₹ 8,877, whereas it is ₹ 52,022 in private facility.
- The mean expenditure for outpatient care during the last 30 days is ₹ 1,061; it is higher for the elderly age 60 and above (₹ 1,149) than older adults age 45-59 (₹ 977).
- Twenty-one percent of older adults in age group 45 and above are covered under health insurance at the national level. More than half of the older adults age 45 and above have health insurance in Mizoram (65%), Odisha (61%), Dadra & Nagar Haveli (61%), and Assam (53%).

14. FAMILY AND SOCIAL NETWORKS

Social support, social networks, and social ties are connected to a variety of positive health outcomes and measures of wellbeing. A detailed profile of social networks and social interactions is essential to understand the wellbeing of older people, as social bonds help older people to remain healthy and happy. Despite the profound benefits for ageing adults, social networks and social ties have often been neglected in large surveys, especially in developing countries. Social care and support begins with the family, and which is the primary social group that individuals relate to on a personal level. LASI focuses a great deal on social networks and social support because less social interaction and the lack of social network support can have adverse effects on the health and overall wellbeing of the elderly (Berkman et al., 2012; Ray and Sekher, 2016). Therefore, detailed information on the family and social connectedness, living arrangements, intimacy and relationships, and social support provided to and received by older adults has been gathered as part of LASI.

This chapter discusses the important aspects of the living arrangements and life satisfaction, social and family connectedness, social support, instrumental care provided by older adults, and ill-treatment experienced by the elderly both inside and outside of their households.

14.1 LIVING ARRANGEMENTS

Living arrangements are a reflection of an individual's social support and is an important determinant of overall life satisfaction and quality of life. Living with a family is considered as the most preferred living arrangements, especially for older people. In countries like India, children and families have the prime responsibility of taking care of older adults. However, with the changing family structure and shifting socio-economic milieu, the living arrangements of the elderly are changing, and caregiving is becoming a challenge. Older people living alone or only with their spouse has increased in recent years. Furthermore, the shift in the age composition of the population compels us to reassess the living arrangements, family structure, and social support for older adults. In brief, the traditional living arrangements of the elderly in India has undergone a substantial change with declining fertility, increased life expectancy, and changing family structures and lifestyles. In the Indian context, a large number of elderly men live with their spouses, whereas the majority of elderly women are widows either living alone or with their children.

LASI attempted to understand the family and supporting social networks, including the multigenerational family structure, intimacy, and relationships. The survey gathered information on living arrangements and whether older people are satisfied with their current living arrangements, and if not, whether they intended to change their living arrangements in the future.

14.1.1 Types of living arrangements

Tables 14.1 and 14.2 present the living arrangements of older adults by background characteristics such as sex, marital status, religion, caste, education, work status, place of residence, and economic status for two age groups: older adults age 45–59 and the elderly age 60 years and above. The most common type of living arrangements amongst the respondents across all of the categories is living with a spouse and children. Around 41% of the elderly age 60 and above and 74% of older adults age 45–59 live with their spouses and children, and around 6% of the elderly live alone. More than one-fourth of the elderly live with their children without a spouse, 74% of the widowed elderly live with their children, and 9% of the elderly women live alone, compared to 3% of the elderly men. More than half of the divorced, separated, or never married respondents live with other family members in both age groups. Amongst the elderly, 19% of the divorced, separated, or deserted live alone.

Religious differences in living arrangements are small, however, a relatively higher proportion of Christian respondents live alone compared to respondents from other religions.

Tables 14.3 and 14.4 present the type of current living arrangement by states/UTs in India for the elderly age 60 and above and older adults age 45–59. Amongst the elderly age 60 and above, living alone is the highest in the state of Tamil Nadu (15%) followed by Nagaland (13%) and Telangana (11%). More than half of the elderly respondents in Delhi, Jammu & Kashmir, and Punjab are living with spouse and children.

Table 14.1 Percent distribution of older adults age 45-59* by type of current living arrangement by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Living alone	Living with spouse	Living with spouse and children	Living with children (without spouse)	Living with others	Number
Place of residence						
Rural	1.6	12.5	74.4	9.1	2.4	25,809
Urban	1.0	11.4	73.7	9.9	4.0	14,977
Sex						
Male	0.9	12.0	80.8	3.5	2.8	15,471
Female	1.7	12.3	70.2	12.8	3.0	25,315
Marital status						
Currently married	0.2	13.9	84.8	0.8	0.3	35,476
Widowed	9.5	-	-	81.7	8.7	3,874
Divorced/Separated/Deserted/Others	10.3	-	-	31.7	58.0	1,436
Religion						
Hindu	1.4	12.7	73.7	9.5	2.7	29,936
Muslim	1.1	9.7	79.3	8.2	1.7	4,936
Christian	2.1	11.5	61.9	10.1	14.4	4,065
Others	1.1	7.7	77.9	10.0	3.3	1,849
Caste						
Scheduled tribe	1.5	11.5	72.8	11.4	2.9	7,336
Scheduled caste	1.8	10.5	73.3	11.7	2.7	6,906
Other backward class	1.4	12.5	74.4	8.8	2.9	15,298
None of the above	1.2	13.0	74.8	7.9	3.2	11,246
Education						
No schooling	1.8	12.9	69.8	12.9	2.7	16,322
Less than 5 years complete	1.4	11.9	74.5	9.7	2.5	4,273
5-9 years complete	1.1	10.7	78.4	7.6	2.3	10,892
10 or more years complete	0.9	12.5	78.0	4.3	4.3	9,299
Work status						
Currently working	1.5	12.2	75.6	8.0	2.7	23,683
Worked in past but currently not working	1.5	12.7	66.8	15.7	3.3	4,587
Never worked	1.1	11.9	74.1	9.5	3.3	12,516
MPCE quintile						
Poorest	0.4	6.3	79.3	11.2	2.7	7,674
Poorer	0.8	8.7	76.8	10.4	3.3	8,053
Middle	1.1	11.0	75.9	9.4	2.5	8,121
Richer	1.5	13.4	72.8	8.2	4.2	8,516
Richest	3.3	21.8	65.5	7.5	1.9	8,422
Total	**1.4**	**12.2**	**74.2**	**9.4**	**2.9**	**40,786**

** Including spouse irrespective of age.* "-"indicates less number of cases/no cases.

Table 14.2 Percent distribution of elderly age 60 and above by type of current living arrangement by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Living alone	Living with spouse	Living with spouse and children	Living with children (without spouse)	Living with others	Number
Place of residence						
Rural	6.3	21.5	40.6	25.6	6.0	20,725
Urban	4.1	17.5	40.7	32.6	5.0	10,739
Sex						
Male	2.5	26.0	54.4	13.2	3.9	15,098
Female	8.5	15.2	28.2	40.7	7.4	16,366
Marital status						
Currently married	0.2	33.0	65.9	0.6	0.3	19,920
Widowed	14.3	-	-	73.5	12.2	10,719
Divorced/Separated/Deserted/Others	19.1	-	-	29.5	51.4	825
Religion						
Hindu	5.8	20.8	40.1	27.6	5.7	23,037
Muslim	4.0	17.8	44.7	28.1	5.4	3,731
Christian	10.3	23.3	31.5	26.8	8.0	3,150
Others	3.5	15.9	46.6	27.4	6.6	1,546
Caste						
Scheduled tribe	5.1	22.1	38.0	27.3	7.4	5,173
Scheduled caste	6.0	19.5	39.4	28.7	6.5	5,140
Other backward class	6.3	21.5	39.8	27.1	5.4	11,886
None of the above	4.7	18.5	43.6	28.0	5.3	9,265
Education						
No schooling	7.2	18.8	34.0	32.8	7.1	16,889
Less than 5 years complete	5.4	20.9	43.4	25.7	4.7	3,781
5-9 years complete	3.5	21.6	49.6	21.1	4.2	6,017
10 or more years complete	2.5	24.4	53.3	16.8	3.0	4,777
Work status						
Currently working	5.3	25.9	49.5	14.9	4.4	9,307
Worked in past but currently not working	6.3	19.9	38.9	29.1	5.8	13,377
Never worked	5.2	14.5	33.0	40.1	7.2	8,780
MPCE quintile						
Poorest	5.5	13.4	44.4	30.0	6.8	6,484
Poorer	3.7	14.5	44.1	30.8	6.9	6,477
Middle	5.6	21.4	41.8	25.8	5.5	6,416
Richer	6.7	23.3	37.8	27.7	4.5	6,170
Richest	7.5	32.4	32.7	22.8	4.6	5,917
Total	**5.7**	**20.3**	**40.6**	**27.6**	**5.7**	**31,464**

"-"indicates less number of cases/no cases.

Table 14.3 Percent distribution of older adults age 45-59* by types of current living arrangement, states/ UTs, LASI Wave 1, 2017-18

State/Union Territory	Living alone	Living with spouse	Living with spouse and children	Living with children (without spouse)	Living with others	Number
India	**1.4**	**12.2**	**74.2**	**9.4**	**2.9**	**40,786**
North						
Chandigarh	1.2	7.2	77.7	10.9	2.9	632
Delhi	0.6	4.1	84.1	9.8	1.5	824
Haryana	0.8	4.0	83.8	10.3	1.2	1,050
Himachal Pradesh	0.8	11.7	75.4	10.0	2.1	767
Jammu & Kashmir	0.2	2.8	88.4	7.5	1.1	882
Punjab	1.0	7.9	78.5	10.7	1.9	1,120
Rajasthan	0.3	12.4	78.5	7.2	1.6	1,166
Uttarakhand	2.4	18.3	65.1	11.4	2.9	717
Central						
Chhattisgarh	2.4	12.4	72.3	10.4	2.5	1,275
Madhya Pradesh	1.1	12.9	75.9	7.3	2.9	1,601
Uttar Pradesh	0.9	7.7	79.3	10.3	1.8	2,398
East						
Bihar	1.8	11.4	75.4	9.3	2.2	1,712
Jharkhand	1.0	9.5	79.9	7.7	1.9	1,296
Odisha	1.7	12.2	74.9	7.8	3.4	1,680
West Bengal	1.6	13.4	76.0	6.2	2.8	2,389
Northeast						
Arunachal Pradesh	2.5	12.6	73.5	8.9	2.5	897
Assam	1.8	5.6	79.5	10.3	2.9	1,550
Manipur	2.5	10.6	74.5	8.2	4.2	763
Meghalaya	1.1	6.5	72.0	15.7	4.6	557
Mizoram	2.3	6.2	76.9	9.2	5.4	715
Nagaland	3.9	14.2	66.2	12.3	3.5	708
Tripura	0.8	12.8	74.2	9.8	2.4	734
West						
Dadra & Nagar Haveli	1.2	13.1	74.2	8.2	3.3	639
Daman & Diu	1.6	7.4	75.1	10.1	5.8	557
Goa	1.0	9.1	78.7	8.3	2.9	790
Gujarat	1.0	13.3	73.3	9.4	3.1	1,350
Maharashtra	1.4	10.0	75.9	9.3	3.4	2,183
South						
Andaman & Nicobar Islands	2.2	11.9	73.2	10.4	2.4	721
Andhra Pradesh	2.5	23.5	61.7	10.0	2.3	1,574
Karnataka	0.7	11.2	75.1	9.9	3.2	1,416
Kerala	1.3	15.8	70.3	7.8	4.8	1,288
Lakshadweep	1.2	7.1	71.2	13.7	6.8	637
Puducherry	2.0	9.3	63.5	19.1	6.2	788
Tamil Nadu	2.8	18.9	59.2	13.8	5.4	1,996
Telangana	2.5	17.7	64.8	11.2	3.8	1,414

** Including spouse irrespective of age*

Table 14.4 Percent distribution of elderly age 60 and above by type of current living arrangement, states/ UTs, LASI Wave 1, 2017-18

State/Union Territory	Living alone	Living with spouse	Living with spouse and children	Living with children (without spouse)	Living with others	Number
India	**5.7**	**20.3**	**40.6**	**27.6**	**5.7**	**31,464**
North						
Chandigarh	2.7	19.1	43.8	30.1	4.3	394
Delhi	1.7	10.3	55.6	28.2	4.3	495
Haryana	2.5	11.2	48.0	32.9	5.4	848
Himachal Pradesh	1.8	14.5	46.2	30.6	6.8	621
Jammu & Kashmir	1.2	6.0	58.8	29.8	4.3	731
Punjab	2.2	12.6	50.0	28.1	7.1	1,004
Rajasthan	4.6	22.7	43.4	24.5	4.9	1,078
Uttarakhand	5.9	22.7	38.1	23.5	9.8	641
Central						
Chhattisgarh	6.8	24.8	36.3	26.3	5.9	780
Madhya Pradesh	6.1	24.0	42.3	21.1	6.5	1,313
Uttar Pradesh	4.3	16.4	44.1	28.8	6.3	2,169
East						
Bihar	2.9	22.5	48.5	20.0	6.0	1,808
Jharkhand	3.7	19.3	46.7	26.8	3.6	1,168
Odisha	5.7	20.5	41.4	26.8	5.6	1,237
West Bengal	4.7	19.5	38.1	33.4	4.3	1,544
Northeast						
Arunachal Pradesh	5.4	18.7	41.1	30.9	4.0	318
Assam	3.7	9.0	46.7	37.5	3.1	816
Manipur	2.7	12.6	49.2	29.4	6.1	606
Meghalaya	3.5	7.2	43.6	39.6	6.2	412
Mizoram	3.6	13.2	48.7	27.1	7.4	531
Nagaland	13.0	20.3	44.3	18.6	3.7	608
Tripura	5.0	20.0	43.6	27.1	4.4	461
West						
Dadra & Nagar Haveli	3.8	20.0	43.4	28.8	4.1	451
Daman & Diu	9.0	14.6	43.2	23.9	9.4	434
Goa	4.2	13.2	44.1	32.0	6.6	637
Gujarat	4.6	20.2	41.8	28.9	4.5	991
Maharashtra	5.0	17.4	44.3	28.2	5.2	1,790
South						
Andaman & Nicobar Islands	3.3	22.3	42.3	27.4	4.7	523
Andhra Pradesh	9.0	33.5	28.9	25.0	3.8	1,105
Karnataka	5.1	19.2	36.4	35.1	4.3	1,004
Kerala	5.1	24.0	35.7	27.7	7.5	1,209
Lakshadweep	4.7	8.2	49.6	31.9	5.6	502
Puducherry	8.8	24.2	30.0	29.4	7.6	640
Tamil Nadu	15.2	25.4	23.9	25.2	10.4	1,534
Telangana	10.5	31.2	27.5	26.1	4.8	1,061

14.1.2 Satisfaction with current living arrangement

Satisfaction with current living arrangements reflects how well older adults have been taken care of and how comfortable they are with whomever and wherever they live. The satisfaction of older adults with their current living arrangements and their intention to change them in the future is presented in Table 14.5. The majority of the respondents, irrespective of gender, are satisfied with their current living arrangements and just about 5% expressed their intention to change them in the future. Marital status is an important factor in determining the satisfaction of individuals regarding their current living arrangements. Currently married older adults living with a spouse, children, and other family members are more satisfied with their living arrangements. A relatively higher proportion of older adults who live alone are likely to change their living arrangements in the future. Satisfaction with current living arrangements is relatively lower amongst the elderly respondents compared to their younger counterparts, yet they are less likely to change their living arrangements in the future. Older adults with no formal education are least satisfied with their present living arrangements, but a slightly higher proportion of older adults with higher levels of education intended to make changes in their future living arrangements. Older adults who are currently working, and those living in urban areas, are more satisfied with their present living arrangements compared to their counterparts. In almost all states, dissatisfaction is higher amongst the elderly when compared to the younger respondents.

More than 10% of the elderly in Arunachal Pradesh (10%), Jharkhand (16%), Puducherry (15%), and Delhi (16%) intended to change their current living arrangements in the future (Table 14.6), while more than 90% of the elderly are satisfied with their current living arrangements in Himachal Pradesh (97%), Mizoram (95%), and Lakshadweep (95%).

Table 14.5 Percentage of older adults by perceived satisfaction with current living arrangement and intention to change it in future by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*		Number	Age ≥ 60		Number	Total		Number
	Satisfied with current living arrangement	Intention to change in future		Satisfied with current living arrangement	Intention to change in future		Satisfied with current living arrangement	Intention to change in future	
Place of residence									
Rural	78.1	5.0	25,809	73.6	4.4	20,725	76.0	4.7	46,534
Urban	82.8	7.7	14,977	77.8	5.1	10,739	80.7	6.6	25,716
Sex									
Male	79.1	5.9	15,471	77.6	4.7	15,098	78.3	5.2	30,569
Female	80.0	5.9	25,315	72.4	4.6	16,366	76.9	5.4	41,681
Marital status									
Currently married	80.9	5.8	35,476	78.7	4.7	19,920	80.1	5.4	55,396
Widowed	71.1	6.8	3,874	68.8	4.5	10,719	69.4	5.0	14,593
Divorced/Separated/ Deserted/Others	70.8	5.8	1,436	65.2	6.1	825	68.8	5.9	2,261
Living arrangement									
Living alone	58.2	9.0	691	53.3	7.7	1,622	54.4	8.0	2,313
Living with spouse	77.6	6.3	4,623	75.3	4.9	6,215	76.2	5.4	10,838
Living with spouse and children	81.5	5.7	30,198	80.3	4.6	13,465	81.1	5.3	43,663
Living with children (without spouse)	72.8	7.0	4,076	72.8	4.0	8,418	72.8	4.9	12,494
Living with others only	73.5	4.5	1,198	63.9	4.3	1,744	67.6	4.4	2,942
Religion									
Hindu	80.3	6.0	29,936	74.9	4.7	23,037	77.8	5.4	52,973
Muslim	75.3	5.3	4,936	74.3	4.3	3,731	74.8	4.9	8,667
Christian	79.4	5.9	4,065	69.0	4.4	3,150	74.8	5.2	7,215
Others	80.8	4.5	1,849	78.9	4.0	1,546	79.9	4.3	3,395
Caste									
Scheduled tribe	78.9	3.7	7,336	74.6	3.4	5,173	77.0	3.6	12,509
Scheduled caste	73.5	6.2	6,906	68.3	5.4	5,140	71.1	5.9	12,046
Other backward class	80.5	6.0	15,298	73.6	4.9	11,886	77.4	5.5	27,184
None of the above	83.2	6.1	11,246	81.4	4.1	9,265	82.4	5.1	20,511
Education									
No schooling	73.6	5.5	16,322	70.4	4.7	16,889	72.0	5.1	33,211
Less than 5 years completed	78.2	5.1	4,273	73.4	4.7	3,781	75.9	4.9	8,054
5-9 years complete	82.9	6.8	10,892	81.0	4.6	6,017	82.2	5.9	16,909
10 or more years completed	89.0	6.1	9,299	86.1	4.4	4,777	88.0	5.5	14,076
Work status									
Currently working	79.8	5.8	23,683	75.9	4.9	9,307	78.6	5.5	32,990
Worked in past but currently not working	75.6	7.5	4,587	75.2	5.1	13,377	75.3	5.7	17,964
Never worked	81.2	5.5	12,516	73.1	3.7	8,780	77.7	4.7	21,296
MPCE quintile									
Poorest	74.5	4.9	7,674	67.4	4.6	6,484	71.1	4.7	14,158
Poorer	77.2	5.2	8,053	75.2	4.8	6,477	76.3	5.0	14,530
Middle	80.3	6.9	8,121	77.5	4.7	6,416	79.0	5.9	14,537
Richer	83.5	6.5	8,516	77.3	4.6	6,170	80.7	5.6	14,686
Richest	83.3	6.1	8,422	78.0	4.5	5,917	81.1	5.4	14,339
Total	**79.7**	**5.9**	**40,786**	**74.8**	**4.6**	**31,464**	**77.5**	**5.3**	**72,250**

** Including spouse irrespective of age.*

Table 14.6 Percentage of older adults by perceived satisfaction with current living arrangement and intention to change it in future, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Age 45-59*		Number	Age ≥ 60		Number	Total		Number
	Satisfied with current living arrangement	Intention to change in future		Satisfied with current living arrangement	Intention to change in future		Satisfied with current living arrangement	Intention to change in future	
India	**79.7**	**5.9**	**40,786**	**74.9**	**4.7**	**31,464**	**77.5**	**5.3**	**72,250**
North									
Chandigarh	88.4	10.7	632	87.8	8.5	394	88.2	9.8	1,026
Delhi	81.8	16.6	824	78.0	15.9	495	80.3	16.3	1,319
Haryana	88.9	12.0	1,050	87.5	9.4	848	88.2	10.7	1,898
Himachal Pradesh	97.6	1.4	767	96.9	0.7	621	97.3	1.0	1,388
Jammu & Kashmir	65.7	1.2	882	67.1	2.5	731	66.4	1.8	1,613
Punjab	84.2	2.7	1,120	81.7	3.1	1,004	83.0	2.9	2,124
Rajasthan	87.5	1.7	1,166	83.7	1.3	1,078	85.6	1.5	2,244
Uttarakhand	91.1	2.4	717	85.6	2.5	641	88.4	2.4	1,358
Central									
Chhattisgarh	84.4	7.8	1,275	80.9	6.0	780	83.1	7.1	2,055
Madhya Pradesh	82.1	7.1	1,601	79.8	5.4	1,313	81.0	6.3	2,914
Uttar Pradesh	73.0	5.6	2,398	67.7	4.2	2,169	70.4	4.9	4,567
East									
Bihar	81.6	2.9	1,712	80.1	2.6	1,808	80.8	2.8	3,520
Jharkhand	83.2	19.1	1,296	82.0	13.4	1,168	82.6	16.4	2,464
Odisha	89.4	2.8	1,680	83.3	2.0	1,237	86.7	2.4	2,917
West Bengal	73.1	7.2	2,389	65.7	4.6	1,544	70.1	6.2	3,933
Northeast									
Arunachal Pradesh	77.4	9.2	897	72.3	10.7	318	76.1	9.6	1,215
Assam	74.6	4.0	1,550	72.9	2.0	816	74.0	3.3	2,366
Manipur	60.0	5.5	763	62.2	5.0	606	61.0	5.3	1,369
Meghalaya	84.1	0.8	557	80.9	0.8	412	82.8	0.8	969
Mizoram	97.3	1.7	715	94.8	0.7	531	96.2	1.3	1,246
Nagaland	86.6	2.4	708	85.2	0.2	608	86.0	1.3	1,316
Tripura	75.9	2.3	734	66.3	0.4	461	72.1	1.6	1,195
West									
Dadra & Nagar Haveli	87.3	4.9	639	85.4	2.4	451	86.6	3.9	1,090
Daman & Diu	88.4	7.2	557	88.1	3.5	434	88.3	5.5	991
Goa	90.0	3.6	790	85.8	1.7	637	88.1	2.7	1,427
Gujarat	88.9	4.7	1,350	87.7	2.7	991	88.4	3.8	2,341
Maharashtra	89.7	5.8	2,183	85.9	6.4	1,790	87.8	6.1	3,973
South									
Andaman & Nicobar Islands	88.2	1.4	721	82.9	0.7	523	86.1	1.1	1,244
Andhra Pradesh	75.8	10.3	1,574	69.4	7.8	1,105	73.1	9.3	2,679
Karnataka	73.8	4.1	1,416	59.6	5.4	1,004	68.2	4.6	2,420
Kerala	83.1	5.2	1,288	79.8	2.9	1,209	81.4	4.0	2,497
Lakshadweep	95.2	1.9	637	95.1	1.4	502	95.2	1.6	1,139
Puducherry	89.8	15.3	788	87.5	14.2	640	88.7	14.8	1,428
Tamil Nadu	73.5	4.4	1,996	65.2	3.4	1,534	69.7	3.9	3,530
Telangana	72.3	13.1	1,414	65.1	10.1	1,061	69.1	11.8	2,475

** Including spouse irrespective of age.*

Key findings: living arrangements and satisfaction with current living arrangements

- The preferred living arrangements amongst the elderly is living with a spouse and children. However, in India, 6% of the elderly and around 9% of elderly women live alone. The proportion of the elderly living alone is as high as 15% in the state of Tamil Nadu, 13% in Nagaland, and 11% in Telangana.

- Around 75% of the elderly (aged 60 and above), irrespective of gender, are satisfied with their current living arrangements and only 5% express their intention to change their living arrangements in the future.

- A higher proportion of the elderly from urban areas, those who are currently divorced, separated, or deserted, those living alone, and those from the states/UTs of Delhi, Jharkhand, Arunachal Pradesh and Puducherry expressed their intention to change current living arrangements.

14.2 SOCIAL AND FAMILY CONNECTEDNESS

Social connectedness is a key component of successful ageing, as old age is often depicted as a time of loneliness and 'rolelessness'. (Gupta and Sekher, 2017; Kumari and Sekher, 2012). However, information on the social networks of the elderly in India is scarce. LASI aims to provide a comprehensive profile of the social integration of older adults from the perspective of social networks and connectedness.

In LASI, the respondents were asked with whom they share most of their personal matters with from a list that included their spouse, children or grandchildren, son-in-law or daughter-in-law, siblings, friends, and others. Among the elderly with a spouse, 82% share most of their personal matters with their spouse, followed by their children or grandchildren (32%; Table 14.7). Elderly women also share their personal matters with their son-in-law or daughter-in-law (8%), which is less common among men. Among the elderly without a spouse, 70% share their personal matters with their children or grandchildren, followed by their son-in-law or daughter-in-law (19%; Table 14.8). Almost 3% of the elderly without a spouse also share with others compared to 1% of the elderly with a spouse, and regardless of if they had a spouse or not, more elderly men share their personal matters with friends compared to their female counterparts.

Table 14.7 Percentage of elderly age 60 and above having spouse with whom they share most of their personal matters by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Persons having spouse						
	Spouse	Children/ Grand children	Son-in-law/ Daughter-in-law	Siblings	Friends	Others	Number
Place of residence							
Rural	82.9	32.1	4.9	3.5	3.1	0.7	13,333
Urban	80.6	31.0	5.7	3.1	3.4	0.5	6,757
Sex							
Male	84.1	30.2	3.3	3.0	4.1	0.6	12,506
Female	79.1	34.5	8.0	4.0	1.7	0.7	7,584
Religion							
Hindu	82.1	31.9	5.3	3.4	3.3	0.7	14,760
Muslim	81.6	30.8	3.7	2.7	2.6	0.4	2,356
Christian	87.6	25.7	3.2	1.5	3.3	0.1	1,969
Others	82.7	37.7	5.9	5.6	2.2	0.6	1,005
Caste							
Scheduled tribe	80.1	28.3	2.4	4.5	3.5	0.5	3,213
Scheduled caste	84.3	30.4	4.6	3.4	1.9	0.5	3,149
Other backward class	81.5	32.5	5.5	3.1	3.3	0.7	7,705
None of the above	82.6	32.5	5.6	3.4	3.8	0.6	6,023
Education							
No schooling	80.8	33.7	5.6	3.2	2.2	0.5	9,218
Less than 5 years complete	81.1	30.5	5.1	3.3	3.7	0.9	2,515
5-9 years complete	83.8	32.0	6.2	3.9	3.3	0.8	4,427
10 or more years complete	85.1	27.1	2.3	3.3	5.7	0.6	3,930
Work status							
Currently working	85.4	29.3	4.0	3.7	3.9	0.8	7,266
Worked in past but currently not working	79.6	34.7	4.7	3.2	3.5	0.5	8,339
Never worked	81.5	30.8	7.8	3.0	1.3	0.5	4,485
MPCE quintile							
Poorest	81.2	30.0	4.7	2.3	1.9	0.4	3,948
Poorer	82.1	33.5	4.5	3.1	2.9	0.5	4,046
Middle	83.1	30.0	6.5	2.9	3.5	0.6	4,113
Richer	82.9	32.3	4.3	4.3	2.9	0.7	3,989
Richest	81.9	33.5	5.5	4.5	5.2	0.9	3,994
Total	**82.2**	**31.8**	**5.1**	**3.4**	**3.2**	**0.6**	**20,090**

Table 14.8 Percentage of elderly age 60 and above not having spouse with whom they share most of their personal matters by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Persons not having spouse					
	Children/Grand children	Son-in-law/ Daughter-in-law	Siblings	Friends	Others	Number
Place of residence						
Rural	70.2	18.6	7.3	3.5	3.2	7,392
Urban	70.1	21.2	7.1	2.6	2.1	3,982
Sex						
Male	65.6	12.4	10.2	4.8	3.2	2,592
Female	71.6	21.4	6.4	2.7	2.8	8,782
Religion						
Hindu	70.8	19.5	7.2	3.2	2.8	8,277
Muslim	65.1	20.6	7.4	2.7	2.3	1,375
Christian	67.5	12.6	8.1	6.3	3.0	1,181
Others	75.2	20.4	8.3	2.5	5.4	541
Caste						
Scheduled tribe	72.2	20.2	7.1	2.6	4.4	1,960
Scheduled caste	70.0	18.4	6.2	3.0	2.7	1,991
Other backward class	70.7	18.7	7.3	3.4	2.4	4,181
None of the above	69.0	21.0	8.0	3.3	3.2	3,242
Education						
No schooling	69.2	18.8	6.8	2.8	2.9	7,671
Less than 5 years complete	68.2	17.7	9.7	3.4	3.3	1,266
5-9 years complete	73.4	19.8	7.2	3.2	2.3	1,590
10 or more years complete	76.2	26.5	8.0	6.3	2.9	847
Work status						
Currently working	65.6	14.2	10.4	5.6	3.9	2,041
Worked in past but currently not working	71.0	18.3	7.5	3.7	3.1	5,038
Never worked	71.6	23.6	5.3	1.3	2.1	4,295
MPCE quintile						
Poorest	68.7	17.7	5.0	2.2	2.8	2,536
Poorer	69.2	19.8	7.8	2.7	2.3	2,431
Middle	69.6	20.4	7.7	3.5	2.1	2,303
Richer	71.2	17.5	8.6	4.0	3.4	2,181
Richest	73.8	22.5	7.8	4.1	4.1	1,923
Total	**70.2**	**19.4**	**7.3**	**3.2**	**2.9**	**11,374**

14.2.1 Taking care of grandchildren

Informal care received by the elderly is often a matter of discussion, but informal care provided by the elderly does not receive very much attention. Taking care of grandchildren and other dependents in the family is an important type of informal care provided by older adults. LASI attempted to understand the informal care provided by older adults to their grandchildren and the associated reasons for the care arrangement. Tables 14.9 and 14.10 present the number of grandchildren that the older adults care for according to their background characteristics and state. Table 14.11 provides the reasons associated with taking care of grandchildren according to their background characteristics. A little more than 90% of the elderly respondents have grandchildren and amongst them, almost one-fifth look after their grandchildren. Of the elderly respondents, 30% take care of at least one grandchild followed by 47% who take care of two or three grandchildren, and 24% take care of four or more grandchildren. Taking care of four or more grandchildren is more common in rural areas than in urban areas.

	Rural elderly		Urban elderly	
	Male	Female	Male	Female
Average number of grandchildren	8	10	6	7
Average hours spend per week for taking care of grandchildren	17	20	17	18

Rural elderly women have an average of ten grandchildren and spend, on average, 20 hours per week taking care of them. The average number of grandchildren being taken care by their grandparents is slightly lower for elderly men and urban respondents.

More than half of the elderly in West Bengal (56%), Tripura (58%), Andaman & Nicobar Island (54%), Andhra Pradesh (66%), and Telangana (76%) look after one grandchild and about three-fifths in Chandigarh (60%), Manipur(56%), Daman & Diu (60%), Karnataka (51%), and Lakshadweep (64%) look after two or three grandchildren. Close to one-third of the elderly in Haryana (36%), Rajasthan (37%), and Madhya Pradesh (39%) look after four or more grandchildren. Looking after grandchildren is a significant contribution of the elderly to the household and it indirectly facilitates the ability of other family members to engage in the paid economy. The findings of the survey reveal the substantial engagement of elderly in providing care to their grandchildren. However, this engagement in informal caregiving might be driven by various factors.

Irrespective of gender and age group variations, as stated by the respondents, the most common reason for looking after grandchildren is that the grandparents are the preferred caregivers (73%), the child's parents are working (22%), the child is orphaned (9%), and the child's parents are away (5%). About a quarter of the widowed elderly state that they look after their grandchildren because the child's parents are working.

Table 14.9 Percent distribution of elderly age 60 and above having grandchildren and looking after them by background characteristics, LASI Wave 1, 2017-18

Background characteristics	Having grand-children	Looking after grand-children	Number of grandchildren looking after			Number looking after at least one grandchild
			1	2-3	4 or more	
Place of residence						
Rural	93.4	19.2	28.4	45.3	26.2	3,565
Urban	89.7	18.0	32.5	50.8	16.7	1,684
Sex						
Male	90.0	17.7	30.6	45.1	24.3	2,322
Female	94.4	19.8	28.7	48.1	23.2	2,927
Marital status						
Currently married	92.5	20.0	30.3	46.8	23.0	3,519
Widowed	94.4	17.1	27.7	47.0	25.4	1,677
Divorced/Separated/Deserted/ Others	51.9	13.5	44.6	43.1	12.3	53
Living arrangement						
Living alone	83.8	5.0	19.6	41.5	38.9	62
Living with spouse	92.7	14.6	37.4	37.5	25.2	737
Living with spouse and children	92.4	22.6	27.7	49.9	22.4	2,749
Living with children (without spouse)	97.0	18.5	24.4	49.5	26.1	1,461
Living with others only	74.7	21.6	55.9	30.5	13.6	240
Religion						
Hindu	92.2	18.6	29.1	47.1	23.8	3,879
Muslim	94.2	22.1	28.8	43.9	27.3	641
Christian	87.7	13.2	41.4	48.7	9.9	432
Others	91.7	18.4	36.5	49.1	14.4	297
Caste						
Scheduled tribe	91.9	22.5	26.5	50.1	23.4	855
Scheduled caste	94.5	18.0	31.9	43.5	24.6	852
Other backward class	92.1	19.5	27.9	47.1	25.0	2,050
None of the above	91.3	17.3	31.9	47.3	20.8	1,492
Education						
No schooling	94.0	18.9	27.1	44.2	28.7	2,839
Less than 5 years complete	93.1	18.7	33.4	49.8	16.8	631
5-9 years complete	92.4	20.1	29.4	53.4	17.2	1,086
10 or more years complete	84.6	17.0	37.9	46.0	16.1	693
Work status						
Currently working	90.6	20.9	29.8	48.02	22.23	1,631
Worked in past but currently not working	93.2	18.0	31.4	45.06	23.53	2,150
Never worked	92.9	17.9	26.1	48.01	25.88	1,468
MPCE quintile						
Poorest	93.8	22.6	28.2	47.5	24.3	1,237
Poorer	93.0	19.4	29.3	49.1	21.6	1,180
Middle	91.5	16.9	29.8	48.1	22.2	1,042
Richer	91.9	17.6	29.8	43.8	26.4	989
Richest	90.8	17.0	31.7	44.0	24.4	801
Total	**92.3**	**18.8**	**29.5**	**46.8**	**23.7**	**5,249**

Table 14.10 Percent distribution of elderly age 60 and above having grandchildren and looking after them, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Having grandchildren	Looking after grandchildren	No. of grandchildren looking after			Number looking after at least one grandchild
			1	2-3	4 or more	
India	**92.3**	**18.8**	**29.5**	**46.8**	**23.7**	**5,249**
North						
Chandigarh	87.5	17.2	30.7	60.3	9.0	67
Delhi	86.1	37.7	24.2	53.6	22.2	164
Haryana	96.4	25.9	15.8	48.7	35.5	229
Himachal Pradesh	93.1	20.3	20.2	55.9	23.9	117
Jammu & Kashmir	89.2	15.7	31.1	61.7	7.1	116
Punjab	92.0	16.3	27.6	50.9	21.6	163
Rajasthan	94.4	15.8	20.3	42.7	37.0	151
Uttarakhand	95.2	26.0	31.0	42.9	26.1	178
Central						
Chhattisgarh	95.2	9.5	44.5	46.5	9.0	72
Madhya Pradesh	91.8	32.4	26.6	34.8	38.7	368
Uttar Pradesh	93.4	18.6	20.0	37.7	42.3	371
East						
Bihar	94.3	17.8	33.9	46.9	19.2	311
Jharkhand	93.6	33.2	29.8	40.9	29.3	356
Odisha	91.6	15.0	34.7	50.3	15.0	167
West Bengal	90.7	8.4	56.2	37.8	6.0	119
Northeast						
Arunachal Pradesh	64.3	31.7	33.4	44.7	21.9	61
Assam	88.1	31.1	40.2	52.2	7.6	235
Manipur	89.9	43.1	31.4	55.9	12.7	224
Meghalaya	83.5	16.3	39.9	48.0	12.1	46
Mizoram	89.5	34.0	39.3	39.8	20.9	135
Nagaland	87.7	6.7	48.8	45.8	5.5	38
Tripura	92.4	5.8	58.2	30.5	11.3	28
West						
Dadra & Nagar Haveli	91.7	23.4	36.5	43.1	20.5	96
Daman & Diu	88.2	27.5	23.7	59.6	16.6	104
Goa	77.4	14.0	51.2	38.9	9.8	74
Gujarat	90.4	30.9	25.0	52.8	22.2	265
Maharashtra	93.9	24.8	29.4	55.8	14.9	398
South						
Andaman & Nicobar Islands	81.8	10.7	53.5	44.5	2.1	47
Andhra Pradesh	92.5	4.7	65.5	32.8	1.8	47
Karnataka	91.6	15.5	27.8	56.6	15.6	130
Kerala	89.1	3.9	43.4	51.1	5.5	53
Lakshadweep	90.4	5.5	19.4	63.7	17.0	31
Puducherry	88.9	9.5	35.6	56.0	8.4	72
Tamil Nadu	88.5	13.5	38.6	52.0	9.4	185
Telangana	93.1	3.6	76.4	23.6	0.0	31

Table 14.11 Percentage of elderly age 60 and above (those look after at least one grandchildren) by the reasons for looking after their grandchildren by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Child's parents are away	Child is orphaned/ parents are separated	Grandparents preferred as caregivers	Child's mother/father is working	Other	Number
Place of residence						
Rural	5.7	9.0	74.3	19.7	5.5	3,565
Urban	4.4	7.0	67.7	28.1	2.2	1,684
Sex						
Male	5.7	7.7	74.1	19.7	4.2	2,322
Female	5.1	9.1	71.3	23.6	5.0	2,927
Marital status						
Currently married	6.1	8.0	73.1	20.6	5.0	3,519
Widowed	4.2	9.1	71.4	24.4	4.0	1,677
Divorced/Separated/Deserted/Others	1.0	20.2	70.3	29.7	0.0	53
Living arrangement						
Living alone	6.4	2.1	72.6	23.4	2.3	62
Living with spouse	12.2	19.4	62.3	15.6	8.8	737
Living with spouse and children	4.2	4.5	76.3	22.3	3.8	2,749
Living with children (without spouse)	3.1	6.1	73.6	26.5	4.2	1,461
Living with others only	9.6	29.1	59.6	11.4	3.3	240
Religion						
Hindu	5.4	7.1	73.3	22.3	3.9	3,879
Muslim	5.0	15.3	71.5	16.6	9.9	641
Christian	4.7	21.6	47.0	35.0	2.1	432
Others	7.2	7.9	71.8	26.7	2.7	297
Caste						
Scheduled tribe	4.8	10.8	70.8	22.0	10.6	855
Scheduled caste	6.0	8.9	74.5	19.8	3.6	852
Other backward class	4.1	8.7	70.0	24.2	4.2	2,050
None of the above	7.5	6.9	76.4	19.2	4.0	1,492
Education						
No schooling	5.4	10.2	71.2	22.6	5.5	2,839
Less than 5 years complete	6.5	8.4	76.1	18.9	1.8	631
5-9 years complete	5.5	6.0	72.0	22.6	3.6	1,086
10 or more years complete	4.0	3.8	76.6	20.5	4.7	693
Work status						
Currently working	5.3	10.5	73.8	19.6	5.6	1,631
Worked in past but currently not working	5.9	7.3	69.6	25.3	3.9	2,150
Never worked	4.6	7.7	75.6	19.6	4.7	1,468
MPCE quintile						
Poorest	5.1	10.6	72.2	22.2	3.0	1,237
Poorer	3.6	7.6	73.3	21.5	3.7	1,180
Middle	5.2	6.1	75.8	22.1	4.2	1,042
Richer	5.3	9.5	74.6	20.1	6.5	989
Richest	8.9	7.7	65.2	24.2	7.2	801
Total	**5.4**	**8.5**	**72.5**	**21.9**	**4.6**	**5,249**

14.3 SOCIAL SUPPORT

Social support is closely linked to positive health and psychological wellbeing, especially in old age, and encompasses more than physical presence and social care. In this section, social support is examined in terms of financial support. Financial support is essential for a positive sense of wellbeing for the elderly as it directly affects their everyday life and social prestige (Sekher, et al., 2015). Along with the financial support received by elderly, it is equally important to understand the contribution made by the elderly by providing financial support to family and friends. Financial help includes providing money, helping to pay bills, and covering the cost of medical care, schooling, and marriages.

Table 14.12 presents the financial support received and provided by the elderly both from and to their family members and friends during the past 12 months according to their background characteristics. Fifteen percent of the elderly received financial help from family members or friends, and 6% provided financial help to others. Receiving financial help was more common amongst the elderly living alone (28%) compared to only 13% amongst the elderly living with a spouse and children. The elderly without any formal education, and those staying in rural areas, received more financial help in the past 12 months. The richest, those with a higher education, and elderly men provided more help than their counterparts.

The state-wise differentials on financial support received from or provided to family and friends by older adults are presented in Table 14.13. A substantial proportion of elderly age 60 years and above in Bihar, Arunachal Pradesh, and Nagaland receive financial support from family and friends, and a relatively higher proportion from Jammu & Kashmir, Chhattisgarh, Bihar, Arunachal Pradesh, Meghalaya, and Nagaland provide financial support to family and friends.

Table 14.12 Percentage of elderly age 60 and above by receiving or providing financial support to family and friends during past 12 months by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Financial Support		
	Received	Provided	Number
Place of residence			
Rural	16.6	5.8	20,725
Urban	11.7	6.2	10,739
Sex			
Male	14.0	8.0	15,098
Female	16.3	4.1	16,366
Marital status			
Currently married	14.6	6.9	19,920
Widowed	16.5	4.2	10,719
Divorced/Separated/Deserted/Others	11.7	8.2	825
Living arrangement			
Living alone	28.3	4.1	1,622
Living with spouse	18.2	6.9	6,215
Living with spouse and children	12.8	6.9	13,465
Living with children (without spouse)	13.6	4.4	8,418
Living with others only	17.5	4.8	1,744
Religion			
Hindu	14.7	5.9	23,037
Muslim	18.7	6.5	3,731
Christian	18.9	5.8	3,150
Others	12.7	3.8	1,546
Caste			
Scheduled tribe	12.9	4.4	5,173
Scheduled caste	14.8	5.2	5,140
Other backward class	15.4	6.5	11,886
None of the above	15.9	6.0	9,265
Education			
No schooling	16.1	4.4	16,889
Less than 5 years complete	15.0	6.5	3,781
5-9 years complete	14.8	7.1	6,017
10 or more years complete	12.3	10.2	4,777
Work status			
Currently working	13.8	8.2	9,307
Worked in past but currently not working	17.0	6.0	13,377
Never worked	14.0	3.0	8,780
MPCE quintile			
Poorest	13.0	4.1	6,484
Poorer	14.9	4.9	6,477
Middle	14.8	5.6	6,416
Richer	15.8	6.8	6,170
Richest	18.4	9.2	5,917
Total	**15.2**	**5.9**	**31,464**

Table 14.13 Percentage of elderly age 60 and above by receiving or providing financial support to family and friends during past 12 months, states/UTs, LASI Wave 1, 2017-18

State/Union Territory	Financial Support		
	Received	Provided	Number
India	**15.2**	**5.9**	**31,464**
North			
Chandigarh	3.6	5.6	394
Delhi	4.2	1.7	495
Haryana	5.8	6.3	848
Himachal Pradesh	14.4	8.7	621
Jammu & Kashmir	24.0	12.9	731
Punjab	6.1	3.2	1,004
Rajasthan	12.8	6.2	1,078
Uttarakhand	4.5	7.1	641
Central			
Chhattisgarh	14.8	11.3	780
Madhya Pradesh	8.5	4.4	1,313
Uttar Pradesh	13.7	4.6	2,169
East			
Bihar	30.0	10.1	1,808
Jharkhand	14.7	4.7	1,168
Odisha	11.9	3.8	1,237
West Bengal	10.9	3.6	1,544
Northeast			
Arunachal Pradesh	35.8	15.3	318
Assam	12.2	6.1	816
Manipur	23.5	8.5	606
Meghalaya	21.9	14.9	412
Mizoram	4.1	3.8	531
Nagaland	33.7	16.6	608
Tripura	6.1	1.4	461
West			
Dadra & Nagar Haveli	9.1	8.8	451
Daman & Diu	15.2	4.7	434
Goa	6.1	3.3	637
Gujarat	9.8	6.1	991
Maharashtra	23.6	6.4	1,790
South			
Andaman & Nicobar Islands	3.9	2.8	523
Andhra Pradesh	12.9	7.3	1,105
Karnataka	16.9	8.7	1,004
Kerala	19.9	6.3	1,209
Lakshadweep	14.2	6.1	502
Puducherry	14.0	3.7	640
Tamil Nadu	13.0	5.0	1,534
Telangana	7.8	2.4	1,061

14.4 INSTRUMENTAL CARE PROVIDED BY OLDER ADULTS

Tables 14.14, 14.15, and 14.16 present the data on instrumental care provided by older adults. Basic daily activities refer to everyday routines such as eating, dressing, taking a bath, and using the toilet. Around 3% of the respondents interviewed have family members who are unable to carry out basic daily activities. More than three-fourths of the older adults aged less than 45–59 and 64% of the elderly age 60 and above reported taking care of dependent members in their family, and more elderly women than men take care of their family members who are unable to carry out basic daily activities.

The average number of hours spent providing care in the previous week of the survey is 18 hours amongst the older adults aged 45–59 and 19 hours amongst the elderly age 60 and above.

Table 14.14 Percentage of older adults having family members who are unable to carry out basic daily activities by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Having family members who are unable to carry out basic daily activities			Number
	Age 45-59*	Age ≥ 60	Total	
Place of residence				
Rural	3.1	2.5	2.8	46,534
Urban	2.6	2.1	2.4	25,716
Sex				
Male	2.7	2.2	2.4	30,569
Female	3.0	2.6	2.8	41,681
Marital status				
Currently married	3.0	2.8	2.9	55,396
Widowed	2.0	1.6	1.7	14,593
Divorced/Separated/Deserted/Others	3.6	3.1	3.4	2,261
Living arrangement				
Living alone	1.2	1.2	1.2	2,313
Living with spouse	3.0	2.9	3.0	10,838
Living with spouse and children	3.0	2.7	2.9	43,663
Living with children (without spouse)	1.7	1.7	1.7	12,494
Living with others only	5.6	2.3	3.6	2,942
Religion				
Hindu	2.8	2.4	2.6	52,973
Muslim	3.7	2.6	3.2	8,667
Christian	2.4	3.3	2.8	7,215
Others	3.6	1.4	2.5	3,395
Caste				
Scheduled tribe	1.8	1.4	1.6	12,509
Scheduled caste	3.3	1.8	2.6	12,046
Other backward class	2.9	2.7	2.8	27,184
None of the above	3.0	2.6	2.8	20,511
Education				
No schooling	2.7	2.2	2.4	33,211
Less than 5 years complete	4.1	3.6	3.8	8,054
5-9 years complete	2.6	2.1	2.4	16,909
10 or more years complete	3.3	2.4	3.0	14,076
Work status				
Currently working	3.2	2.6	3.0	32,990
Worked in past but currently not working	2.5	2.4	2.4	17,964
Never worked	2.6	2.1	2.4	21,296

continue

continue

Background characteristics	Having family members who are unable to carry out basic daily activities			Number
	Age 45-59*	Age ≥ 60	Total	
MPCE quintile				
Poorest	2.8	2.4	2.6	14,158
Poorer	2.4	2.3	2.4	14,530
Middle	3.2	2.3	2.8	14,537
Richer	3.2	2.0	2.7	14,686
Richest	3.0	2.8	2.9	14,339
Total	**2.9**	**2.4**	**2.7**	**72,250**

** Including spouse irrespective of age.*

Table 14.15 Percentage of older adults having family members who are unable to carry out basic daily activities, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Having family members who are unable to carry out basic daily activities			Number
	Age 45-59*	Age ≥ 60	Total	
India	**2.9**	**2.4**	**2.7**	**72,250**
North				
Chandigarh	3.2	5.1	3.9	1,026
Delhi	3.8	2.2	3.2	1,319
Haryana	3.1	2.3	2.7	1,898
Himachal Pradesh	5.2	1.8	3.6	1,388
Jammu & Kashmir	2.8	3.0	2.9	1,613
Punjab	2.0	1.9	1.9	2,124
Rajasthan	1.8	1.0	1.4	2,244
Uttarakhand	1.1	0.7	0.9	1,358
Central				
Chhattisgarh	1.4	2.0	1.6	2,055
Madhya Pradesh	3.7	2.9	3.3	2,914
Uttar Pradesh	1.1	1.4	1.3	4,567
East				
Bihar	4.0	2.7	3.3	3,520
Jharkhand	3.6	3.2	3.4	2,464
Odisha	1.9	2.9	2.4	2,917
West Bengal	4.1	2.4	3.4	3,933
Northeast				
Arunachal Pradesh	2.5	1.7	2.3	1,215
Assam	3.0	2.6	2.9	2,366
Manipur	4.1	3.5	3.8	1,369
Meghalaya	1.3	2.3	1.7	969
Mizoram	4.1	2.0	3.2	1,246
Nagaland	2.0	1.1	1.6	1,316
Tripura	2.0	0.8	1.6	1,195
West				
Dadra & Nagar Haveli	3.6	4.4	3.9	1,090
Daman & Diu	4.8	9.3	6.9	991
Goa	1.9	1.2	1.6	1,427
Gujarat	5.3	2.8	4.2	2,341
Maharashtra	3.9	2.7	3.3	3,973
South				
Andaman & Nicobar Islands	0.4	2.0	1.1	1,244
Andhra Pradesh	2.3	2.7	2.5	2,679
Karnataka	2.3	2.6	2.4	2,420
Kerala	8.5	4.4	6.3	2,497
Lakshadweep	5.2	3.0	4.1	1,139
Puducherry	0.5	1.1	0.8	1,428
Tamil Nadu	1.2	2.3	1.7	3,530
Telangana	3.8	2.1	3.0	2,475

** Including spouse irrespective of age*

Table 14.16 Percentage of older adults by frequency of taking care of family members who are unable to carry out basic daily activities by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*		Age ≥ 60		Total		
	Taking care	Mean hours per week	Taking care	Mean hours per week	Taking care	Mean hours per week	Number who have family member unable to carry out basic daily activities
Place of residence							
Rural	77.4	17.7	64.0	19.2	71.7	18.3	1,240
Urban	81.7	17.7	62.7	19.8	74.7	18.3	655
Sex							
Male	73.1	14.0	55.2	18.6	64.8	15.8	724
Female	81.6	19.4	70.1	19.8	77.3	19.6	1,171
Marital status							
Currently married	78.5	18.3	69.4	18.7	75.2	18.4	1,559
Widowed	77.1	13.7	44.1	23.0	53.1	19.3	263
Divorced/Separated/Deserted/Others	85.9	12.5	89.7	15.9	87.1	13.6	73
Living arrangement							
Living alone	55.6	9.4	41.7	13.6	44.7	12.5	23
Living with spouse	84.8	25.5	81.7	18.9	83.0	21.5	293
Living with spouse and children	77.4	17.1	63.2	18.8	73.2	17.5	1,239
Living with children (without spouse)	70.9	16.9	46.9	17.8	53.7	17.5	245
Living with others only	93.6	11.9	60.4	33.4	80.1	18.5	95
MPCE quintile							
Poorest	86.9	13.3	71.1	15.3	79.8	14.1	328
Poorer	77.8	19.7	55.2	23.0	67.5	20.9	336
Middle	80.7	17.5	66.2	17.7	75.1	17.5	377
Richer	76.9	19.6	58.7	22.4	70.7	20.4	391
Richest	71.2	19.1	66.2	20.4	69.2	19.6	463
Total	**78.7**	**17.7**	**63.7**	**19.3**	**72.6**	**18.3**	**1,895**

** Including spouse irrespective of age.*

Key findings: social and family connectedness & social support

- In terms of inter-personal relationships, 82% of the elderly living with a spouse share most of their personal matters with their spouse, followed by their children or grandchildren.
- About 92% of the elderly interviewed have grandchildren, and a fifth look after them. The average hours of care provided to their grandchildren is 18 hours per week, and elderly women spend more time than men in providing this care.
- The main reasons cited for the elderly caring for their grandchildren are that they are the preferred caregivers (73%) and the parents of the children are working outside the home (22%).
- During the last one year, 15% of the elderly received financial support from family members or friends, whereas 6% of the elderly provided financial support to others.
- More than 2% of the elderly have family members who are unable to carry out their basic daily activities such as eating, dressing, taking a bath, and using the toilet. Amongst them, two-thirds of the elderly report that they are taking care of these dependent family members. The mean hours of care provided by the elderly in the last one week is 18 hours.

14.5 ILL-TREATMENT EXPERIENCED BY THE ELDERLY

Elder abuse and neglect are increasingly acknowledged as social problems across the world, and India is no exception. The responsibility of caring for the elderly in India is traditionally borne by the immediate family, and most often by sons and daughters (Sekher, 2012). However, with changes in family structure and the emergence of more nuclear families, the vulnerability of the elderly is increasing considerably.

Elder abuse is a multifactorial complex issue that is growing in society, but there are a large number of unreported, unrecognised, and undetected cases. Such incidents should receive significant attention as they can have serious consequences for the health and wellbeing of elderly. The mistreatment of elderly can take place anywhere, and therefore, LASI aimed to understand the prevalence of abuse both inside and outside of the household. Understanding the types, causes, and consequences of the mistreatment of elderly are necessary for its prevention. The following section discusses the prevalence, type, and people responsible for the mistreatment of elderly. Although there is a general perception about the mistreatment perpetrated on the elderly, the exact magnitude and nature of abuse are lesser known in India. The mistreatment of the elderly is multi-dimensional and multi-layered, emerging from differences in gender, economic position, and physical condition (Sebastian and Sekher, 2010 and 2011).

According to LASI, 5% of the elderly have reportedly experienced ill-treatment in the past one year (Table 14.17). Of which, half have experienced it occasionally (i.e., once in two months), a third have experienced it only a few times (i.e., at least once in a year), and about 14% have experienced it frequently (at least once in a fortnight). Elderly women experienced more ill-treatment than elderly men, as have a higher proportion of the elderly who live alone and those who were divorced/separated/deserted. A higher proportion of elderly age 60 and above who live alone and from urban areas experienced ill-treatment frequently, and ill-treatment was more reported among the elderly from scheduled castes. Older adults who had no formal education and those living in rural areas were more often the victims of ill-treatment than their counterparts with some level of education and living in urban areas.

Table 14.18 presents the state variations of ill-treatment experienced by the elderly. The prevalence of the experience of ill-treatment among the elderly is relatively higher in Bihar (12%), Karnataka (10%), West Bengal (8%), Uttar Pradesh (6%), Chhattisgarh (6%), Madhya Pradesh (5%), and Chandigarh (6%). Compared with other states, the elderly in the states of Jammu & Kashmir (36%), Madhya Pradesh (30%), Delhi (29%), Goa (52%), Maharashtra (26%), and Gujarat (25%) experienced ill-treatment more frequently.

The type of ill-treatment experienced by the elderly in the past one year according to their background characteristics is presented in Table 14.19. Among the elderly who experienced ill-treatment in the previous year, more than three-fourths experienced verbal/emotional ill-treatment, a fifth experienced physical ill-treatment, close to a fourth experienced economic exploitation, and more than half experienced neglect. Physical ill-treatment was high (27%) among the rural elderly, compared to 10% among the urban elderly. Similar trends can be found when economic exploitation was considered. The experience of physical ill-treatment was higher among the currently married elderly, whereas verbal/disrespect was more experienced among the divorced/separated/deserted.

Among those who reported as experiencing ill-treatment, the victims of physical ill-treatment was highest in Arunachal Pradesh (45%), Uttar Pradesh (43%), Tamil Nadu (40%), and Puducherry (41%; Table 14.20). Whereas, elderly respondents experiencing verbal/emotional ill-treatment was highest in the states of Uttarakhand (100%), Chhattisgarh (97%), Tripura (94%), Tamil Nadu (89%), and Andhra Pradesh (85%). More elderly in the states of Chhattisgarh (53%), Delhi (52%), and Uttar Pradesh (48%) experienced economic exploitation. The experience of neglect among the elderly was reported more in the southern states of Andhra Pradesh (87%), Telangana (68%), and Tamil Nadu (69%).

Table 14.17 Percentage of elderly age 60 and above who have experienced ill-treatment during the past one year and frequency of experiencing ill-treatment by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Experienced ill treatment in the past year	Number	Percent distribution of elderly experiencing ill-treatment			Number experienced ill treatment
			Frequently	Occasionally	Only few times	
Place of residence						
Rural	5.8	20,078	13.9	52.5	33.5	973
Urban	3.8	10,349	16.0	54.0	30.1	297
Sex						
Male	4.8	14,576	13.2	47.5	39.3	537
Female	5.6	15,851	15.2	57.0	27.8	733
Marital status						
Currently married	4.9	19,394	13.2	49.6	37.2	748
Widowed	5.7	10,247	16.0	58.1	25.9	476
Divorced/Separated/Deserted/ Others	6.7	786	14.9	46.2	38.9	46
Living arrangement						
Living alone	8.2	1,576	17.4	58.0	24.6	116
Living with spouse	5.9	5,931	9.0	50.3	40.8	279
Living with spouse and children	4.4	13,233	15.7	49.1	35.3	459
Living with children (without spouse)	5.4	8,124	16.9	57.8	25.3	340
Living with others only	5.0	1,563	9.8	52.9	37.3	76
Religion						
Hindu	5.5	22,305	14.4	52.8	32.8	1,051
Muslim	5.1	3,592	14.3	52.9	32.8	130
Christian	1.7	3,033	4.9	58.9	36.2	47
Others	2.6	1,497	17.9	50.2	32.0	42
Caste						
Scheduled tribe	4.5	5,003	15.7	41.4	42.9	131
Scheduled caste	6.7	4,967	17.2	51.0	31.9	297
Other backward class	5.2	11,505	14.6	52.1	33.3	532
None of the above	4.5	8,952	10.5	59.4	30.0	310
Education						
No schooling	5.9	16,275	13.9	54.9	31.2	804
Less than 5 years complete	4.6	3,673	13.7	56.5	29.8	150
5-9 years complete	4.9	5,839	14.3	49.0	36.6	204
10 or more years complete	3.4	4,640	18.2	41.4	40.4	112
Work status						
Currently working	5.9	9,130	13.0	50.7	36.3	430
Worked in past but currently not working	5.7	12,805	15.0	53.4	31.6	554
Never worked	3.7	8,492	15.2	55.4	29.4	286
MPCE quintile						
Poorest	6.0	6,234	15.9	49.5	34.6	315
Poorer	5.4	6,260	12.8	54.3	32.9	284
Middle	5.7	6,216	14.5	51.8	33.8	260
Richer	4.2	5,986	13.2	52.4	34.4	221
Richest	4.6	5,731	15.2	58.3	26.5	190
Total	**5.2**	**30,427**	**14.4**	**52.8**	**32.8**	**1,270**

Note:
"Frequently" is considered as at least once in a fortnight, "occasionally" is once in two months, and "only few times" is at least once in a year

Table 14.18 Percentage of elderly age 60 and above who have experienced ill- treatment during the past one year and frequency of experiencing ill-treatment, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Experienced ill treatment in the past year	Number	Percent distribution of elderly experiencing ill-treatment			Number experienced ill treatment
			Frequently	Occasionally	Only few times	
India	**5.2**	**30,427**	**14.4**	**52.8**	**32.8**	**1,270**
North						
Chandigarh	5.7	368	7.3	59.8	33.0	17
Delhi	3.4	489	28.5	53.1	18.4	18
Haryana	3.4	825	7.3	43.2	49.5	29
Himachal Pradesh	1.1	606	-	59.9	40.1	8
Jammu & Kashmir	2.1	706	36.0	27.2	36.9	12
Punjab	2.1	971	12.9	29.5	57.6	21
Rajasthan	3.2	1,061	7.3	51.8	40.9	33
Uttarakhand	2.6	634	8.1	66.9	25.0	19
Central						
Chhattisgarh	5.5	757	16.9	57.5	25.6	41
Madhya Pradesh	5.1	1,260	30.1	43.4	26.5	82
Uttar Pradesh	6.4	2,069	16.2	58.8	25.0	132
East						
Bihar	11.7	1,762	8.9	41.6	49.4	205
Jharkhand	5.5	1,144	5.6	74.0	20.5	62
Odisha	2.9	1,207	4.2	54.3	41.5	32
West Bengal	7.6	1,491	9	47.1	43.9	116
Northeast						
Arunachal Pradesh	4.1	315	-	2.9	97.1	10
Assam	2.9	792	-	69.7	30.3	20
Manipur	2.2	577	12.6	68.6	18.8	15
Meghalaya	0.8	409	-	61.1	38.9	3
Mizoram	0.1	490	-	100	-	1
Nagaland	0.3	592	-	-	100	2
Tripura	1.7	448	17.9	58.6	23.4	8
West						
Dadra & Nagar Haveli	2.8	433	0.0	45.8	54.2	16
Daman & Diu	3.2	415	15.9	17.6	66.6	13
Goa	1.3	612	51.5	42.7	5.8	9
Gujarat	3.0	944	25.2	28.1	46.7	33
Maharashtra	3.9	1,740	25.7	56.5	17.9	64
South						
Andaman & Nicobar Islands	1.3	491	-	28.0	72.0	7
Andhra Pradesh	2.1	1,076	5.9	71.3	22.9	22
Karnataka	10.1	951	13.3	67.2	19.5	109
Kerala	3.8	1,160	2.2	43.6	54.1	38
Lakshadweep	-	493	-	-	-	-
Puducherry	1.7	616	9.7	75.3	15.0	11
Tamil Nadu	2.4	1,496	22.5	63.4	14.1	41
Telangana	2.1	1,027	19.0	49.8	31.2	21

Note:
"Frequently" is considered as at least once in a fortnight, "occasionally" as once in two months, and "only few times" as at least once in a year

Table 14.19 Percentage of elderly age 60 and above by type of ill-treatment experienced during the last one year by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Type of ill-treatment experienced				Number experienced ill treatment
	Physical	Verbal/ Emotional	Economic exploitation	Neglect	
Place of residence					
Rural	27.3	77.2	28.5	52.5	973
Urban	10.0	77.5	18.9	52.6	297
Sex					
Male	27.7	76.9	28.9	51.8	537
Female	20.5	77.6	24.6	53.2	733
Marital status					
Currently married	26.3	76.5	26.9	49.6	748
Widowed	20.1	78.2	25.1	57.2	476
Divorced/Separated/Deserted/Others	18.8	80.9	36.4	47.1	46
Living arrangement					
Living alone	28.0	81.9	25.7	67.6	116
Living with spouse	34.7	79.0	25.9	52.7	279
Living with spouse and children	21.0	74.7	26.9	47.2	459
Living with children (without spouse)	16.6	76.8	25.2	55.0	340
Living with others only	25.6	81.1	34.5	47.8	76
Religion					
Hindu	23.7	77.7	26.6	52.6	1,051
Muslim	24.4	74.1	27.9	57.7	130
Christian	2.6	87.4	1.4	59.0	47
Others	28.4	71.0	22.6	15.1	42
Caste					
Scheduled tribe	17.0	82.2	30.3	46.9	131
Scheduled caste	27.5	77.8	32.3	53.8	297
Other backward class	21.9	79.2	23.7	54.4	532
None of the above	25.1	71.7	24.7	49.5	310
Education					
No schooling	20.5	78.5	27.0	53.0	804
Less than 5 years complete	25.6	74.3	30.8	49.8	150
5-9 years complete	33.4	75.8	18.2	54.0	204
10 or more years complete	26.4	74.6	33.1	49.7	112
Work status					
Currently working	25.9	77.0	32.0	50.9	430
Worked in past but currently not working	23.7	80.0	24.6	56.7	554
Never worked	19.4	71.1	20.7	45.6	286
MPCE quintile					
Poorest	19.5	77.4	26.5	51.0	315
Poorer	22.9	81.2	32.6	52.8	284
Middle	29.0	72.9	23.0	54.9	260
Richer	20.3	79.9	27.1	51.3	221
Richest	27.4	75.0	21.7	52.5	190
Total	**23.7**	**77.3**	**26.5**	**52.6**	**1,270**

Table 14.20 Percentage of elderly age 60 and above by type of ill-treatment experienced during the last one year, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Type of ill-treatment experienced				Number experienced ill treatment
	Physical	Verbal/ Emotional	Economic exploitation	Neglect	
India	**23.7**	**77.3**	**26.5**	**52.6**	**1,270**
North					
Chandigarh	0.0	57.8	14.9	25.4	17
Delhi	36.8	60.6	52.4	61.2	18
Haryana	23.9	87.3	30.0	36.9	29
Himachal Pradesh	20.9	92.3	32.0	43.5	8
Jammu & Kashmir	25.3	78.9	32.3	62.8	12
Punjab	26.6	71.2	3.7	13.2	21
Rajasthan	18.1	85.3	15.9	22.0	33
Uttarakhand	18.1	100.0	17.3	60.0	19
Central					
Chhattisgarh	19.3	96.6	52.9	63.7	41
Madhya Pradesh	28.2	53.8	14.6	34.0	82
Uttar Pradesh	43.0	87.1	47.6	51.8	132
East					
Bihar	23.9	81.9	20.5	65.9	205
Jharkhand	29.2	82.2	18.0	42.2	62
Odisha	28.0	88.9	24.6	47.9	32
West Bengal	10.7	75.2	27.1	59.7	116
Northeast					
Arunachal Pradesh	44.5	61.6	47.5	55.5	10
Assam	8.8	84.0	0.0	32.4	20
Manipur	8.5	71.5	25.8	17.6	15
Meghalaya	0.0	0.0	0.0	0.0	3
Mizoram	0.0	0.0	0.0	0.0	1
Nagaland	0.0	0.0	0.0	0.0	2
Tripura	11.6	94.3	35.1	33.0	8
West					
Dadra & Nagar Haveli	7.0	54.5	11.9	31.9	16
Daman & Diu	4.7	65.6	24.2	44.6	13
Goa	17.4	76.6	11.3	11.3	9
Gujarat	16.7	76.1	21.7	50.1	33
Maharashtra	17.4	68.2	34.8	41.0	64
South					
Andaman & Nicobar Islands	0.0	78.2	0.0	27.5	7
Andhra Pradesh	11.3	85.3	9.9	87.0	22
Karnataka	17.9	62.7	20.0	43.3	109
Kerala	11.3	69.6	16.8	50.1	38
Lakshadweep	–	–	–	–	–
Puducherry	40.6	23.9	31.9	11.8	11
Tamil Nadu	40.0	88.8	19.6	69.3	41
Telangana	14.0	90.5	16.8	67.9	21

Note: "-" indicates no cases reported

14.6 PERPETRATORS OF ILL-TREATMENT

Elder abuse or ill-treatment is often perpetuated by those who are supposed to take care of the elderly, LASI confirmed that the main caregivers are often the primary abusers, which worsens the victim's helplessness and makes them reluctant to report such incidents. Elderly were asked who ill-treated them during the last one year, and as shown in Table 14.21, about two-fifths of the elderly who experienced abuse were ill-treated by their own sons or daughters (38%), sons-in-law or daughters-in-law (36%), and spouses (7%). More female elderly were ill-treated by their sons-in-law, daughters-in-law, children, and grandchildren compared to their male counterparts. However, more men were ill-treated by their spouse and siblings compared to women elderly respondents. Elderly who have never worked were ill-treated more by their spouses than those who were currently working or had worked in the past.

Table 14.22 presents that ill-treatment by a spouse among the elderly was high in the states of Arunachal Pradesh (39%), Tamil Nadu (19%), Gujarat (17%), and Madhya Pradesh (17%). About half of the elderly experiencing abuse in Delhi, Chhattisgarh, Dadra & Nagar Haveli, and Andhra Pradesh reported it to be perpetrated by their sons or daughters. Ill-treatment by a son-in-law or daughter-in-law was more prevalent in Haryana, Jammu & Kashmir, Chhattisgarh, and West Bengal.

Elder abuse is a fundamental violation of human rights and results in many health and emotional problems. The true magnitude of elder abuse is still a matter of speculation as it is difficult to quantify and often people are afraid of reporting ill treatment to others. A combination of personal, familial, economic, and psychological factors is responsible for the increasing incidence of the ill-treatment of the elderly (Sebastian and Sekher, 2018).

Table 14.21 Percentage of elderly age 60 and above by perpetrators of ill-treatment during the last one year by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Spouse	Children/ Grandchildren	Son in law/ Daughter-in- law	Siblings	Others
Place of residence					
Rural	7.1	35.0	35.6	3.6	35.7
Urban	5.4	47.4	37.2	3.0	26.7
Sex					
Male	7.6	33.8	21.8	7.2	41.2
Female	6.1	40.4	46.8	0.6	28.0
Marital status					
Currently married	11.5	32.5	28.9	4.1	38.0
Widowed	0.0	47.3	47.8	1.9	25.3
Divorced/Separated/Deserted/Others	4.3	4.7	10.4	12.8	65.4
Living arrangement					
Living alone	0.0	34.1	37.4	2.1	39.4
Living with spouse	9.7	33.2	29.5	3.8	36.7
Living with spouse and children	13.0	32.7	28.9	4.4	38.1
Living with children (without spouse)	0.4	51.9	48.2	1.3	22.9
Living with others only	0.2	16.8	39.2	10.4	42.7
Religion					
Hindu	6.5	38.3	35.7	3.5	34.0
Muslim	9.4	33.1	41.1	0.0	31.7
Christian	0.0	23.6	30.6	0.0	50.2
Others	5.6	33.1	19.0	23.7	25.8
Caste					
Scheduled tribe	11.8	37.5	50.2	0.0	25.9
Scheduled caste	5.7	37.7	31.6	1.1	41.0
Other backward class	7.0	38.3	36.6	4.1	30.7
None of the above	5.7	35.8	34.6	5.9	34.5
Education					
No schooling	7.3	39.4	41.0	1.2	31.9
Less than 5 years complete	6.7	38.4	29.0	4.6	38.9
5-9 years complete	5.9	36.7	23.7	8.0	35.4
10 or more years complete	3.7	24.3	28.6	10.3	38.2
Work status					
Currently working	6.1	29.3	30.4	4.7	41.4
Worked in past but currently not working	6.4	45.8	37.6	3.5	27.4
Never worked	8.8	31.9	42.1	1.0	35.0
MPCE quintile					
Poorest	7.5	33.8	36.5	1.3	37.7
Poorer	5.6	34.1	38.5	2.9	37.4
Middle	8.2	41.3	33.8	3.9	26.8
Richer	5.6	37.8	43.3	4.4	35.1
Richest	6.2	43.8	25.1	6.6	30.9
Total	**6.7**	**37.5**	**35.9**	**3.5**	**33.8**

Table 14.22 Percentage of elderly age 60 and above by perpetrators of ill-treatment during the last one year, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Spouse	Children/ Grandchildren	Son-in-law/ Daughter-in-law	Siblings	Others
India	**6.7**	**37.5**	**35.9**	**3.5**	**33.8**
North					
Chandigarh	11.8	38.6	32.9	0.0	24.2
Delhi	5.6	82.6	43.7	0.0	8.2
Haryana	0.0	43.5	59.5	3.2	19.4
Himachal Pradesh	0.0	12.0	16.9	0.0	65.7
Jammu & Kashmir	0.0	42.4	57.2	0.0	29.3
Punjab	8.0	41.3	28.0	5.0	28.8
Rajasthan	4.4	29.3	45.4	2.2	27.4
Uttarakhand	4.1	29.6	34.2	4.1	41.8
Central					
Chhattisgarh	15.9	60.2	68.0	1.9	27.1
Madhya Pradesh	16.7	41.3	30.2	1.8	23.9
Uttar Pradesh	3.0	23.7	23.3	1.0	56.7
East					
Bihar	7.4	34.8	37.2	1.3	35.6
Jharkhand	11.5	38.6	31.8	6.0	37.2
Odisha	2.4	37.5	40.7	2.0	39.7
West Bengal	6.9	55.4	53.6	6.6	28.0
Northeast					
Arunachal Pradesh	38.5	36.4	0.0	0.0	42.3
Assam	0.0	33.5	46.0	3.5	32.7
Manipur	12.2	19.6	0.0	0.0	52.7
Meghalaya	-	-	-	-	0.0
Mizoram	-	-	-	-	0.0
Nagaland	-	-	-	-	0.0
Tripura	0.0	10.0	10.0	0.0	84.9
West					
Dadra & Nagar Haveli	0.0	57.1	12.8	32.0	14.3
Daman & Diu	2.2	39.9	44.3	0.0	39.2
Goa	0.0	0.0	32.4	0.0	42.4
Gujarat	17.0	24.5	52.3	3.6	22.2
Maharashtra	2.2	39.0	25.1	13.4	25.6
South					
Andaman & Nicobar Islands	0.0	19.0	8.4	0.0	56.8
Andhra Pradesh	0.0	49.6	22.8	0.0	48.5
Karnataka	8.8	30.3	39.0	6.9	24.5
Kerala	1.1	31.0	4.9	6.7	51.3
Lakshadweep	-	-	-	-	-
Puducherry	0.0	20.1	8.8	0.0	48.2
Tamil Nadu	18.9	34.0	30.7	2.3	27.4
Telangana	0.0	47.3	51.0	3.8	44.5

Note: "-" indicates no cases reported

Key findings: ill-treatment and perpetrators of ill-treatment

- About, 5% of the elderly in India, state that they experienced ill-treatment in the past one year.
- The ill-treatment is relatively more frequent amongst elderly women and those who live in rural areas. The elderly with no schooling, who are divorced, separated, or deserted, and belong to scheduled castes are more likely to be ill-treated.
- Amongst those who experience ill-treatment, more than three-fourths experience verbal or emotional ill-treatment, a fifth face physical ill-treatment, and close to a third have been victims of economic exploitation during the last one year.
- Care-givers are the primary abusers of the elderly. Among those experience ii-treatment, two-fifths of the elderly are ill-treated by their own sons or daughters (41%) followed by their son-in-law or daughter-in-law (36%). This worsens the victim's sense of helplessness and makes them reluctant to report such incidents.

15. DECISION-MAKING, SOCIAL PARTICIPATION, AND LIFE SATISFACTION

With a decline in financial status and functional abilities, the elderly are often left out of the process of familial decision-making. The decreasing capacities in decision-making amongst older adults age 45 and above may also reduce their confidence and therefore affect their wellbeing. The dynamics related to decision-making and the experiences related to ageing are important psycho-social issues that affect the overall wellbeing and life satisfaction of the elderly. Life satisfaction is highly governed by the ability to make choices in life, especially for older adults. Individuals are faced with various socio-economic and emotional changes in old age, which affects their ability to continue making decisions for themselves and their families. One of the biggest challenges is to optimise the opportunities for increasing the mental and social wellbeing of the elderly so that they can have healthy and productive lives. Social participation is also an important aspect of old age and should be integrated into the care of the elderly. However, there is insufficient scientific evidence related to the social participation of elderly people in India. This chapter deals with various psycho-social components that are integral to the years in later life such as intra-household decision-making, participation in social activities, participation and involvement in social organisations, life satisfaction, and the everyday discrimination experienced in the life of older adults.

15.1 INTRA-HOUSEHOLD DECISION-MAKING

Economic and human development is critically influenced by decision-making and resource allocation at the household level. Many decisions made at the household level influence the welfare of the individuals living in that household as well as their communities. The intra-household dynamics of decision-making may have significant impact on the welfare outcomes of family members (Angel-Urdinola and Wodon, 2010). Within households, many factors such as age, marital status, culture, income level, and education influence the dynamics of intra-household decision-making.

Old age is defined as a period of disengagement from major life activities pertaining to work, earning, and household management related responsibilities, and decision-making shifts to the younger and earning generation. Financial status also affects a proper decision-making capacity. However, the nature of the aged cohort is changing rapidly, affecting the overall household dynamics. People are living longer and have an increased post-retirement life span, which will be full of loneliness and emptiness if they are not involved in family and social activities in their later years. To understand the role and involvement of the elderly in decision-making, the respondents were asked about who usually makes the decisions in important household matters such as children's marriages, the buying and selling properties, and the education of family members.

Table 15.1 shows the extent of decision-making amongst older adults in selected household matters by place of residence and sex. Around 3% of older adult men age 45 and above do not have any role in decision-making for the marriage of their son or daughter compared to 6% of older adult women. More than a tenth (13%) of older adult women do not have any role in decision-making for the education of family members, 5% make decisions alone, and 82% contribute towards their family's decision-making. However, 7% of older adult men do not have any role, and 15% decide alone when the education of family members is concerned. The decision-making power is low amongst the elderly age 60 and above compared to older adults age 45–59. The number of older adult men making decisions alone is higher in rural areas compared to urban areas, and 16% from rural areas make decisions alone on the education of family members compared to 13% in urban areas, whereas 19% make decisions alone when buying and selling property is considered compared to 16% of the rural elderly men. More women than men are engaged as joint decision-makers, irrespective of age.

Table 15.1 Percent distribution of older adults by role in decision-making in selected household matters according to place of residence and sex, India, LASI Wave 1, 2017-18

	Age 45-59*					
	Rural		Urban		Total	
Household matters	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Marriage of son/daughter						
No role	1.1	3.5	3.2	2.9	1.7	3.3
Decides alone	19.5	5.6	12.6	5.5	17.3	5.6
Joint decision	79.4	90.8	84.3	91.6	80.9	91.1
Number	**8,844**	**14,265**	**4,937**	**8,274**	**13,781**	**22,539**
Buying and selling of property						
No role	1.6	6.7	1.3	4.3	1.5	5.9
Decides alone	20.1	5.3	17.2	5.2	19.2	5.3
Joint decision	78.2	88.0	81.4	90.5	79.3	88.9
Number	**9,248**	**14,703**	**5,273**	**8,716**	**14,521**	**23,419**
Education of family member						
No role	3.3	8.2	1.9	4.2	2.8	6.8
Decides alone	17.1	4.9	15.1	5.2	16.5	5.0
Joint decision	79.6	87.0	83.0	90.7	80.7	88.2
Number	**9,024**	**14,192**	**5,087**	**8,366**	**14,111**	**22,558**
	Age ≥ 60					
	Rural		Urban		Total	
Household matters	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Marriage of son/daughter						
No role	5.1	12.4	3.6	8.8	4.7	11.3
Decides alone	17.6	6.6	12.9	6.6	16.4	6.6
Joint decision	77.3	81.0	83.6	84.7	79.0	82.1
Number	**8,790**	**8,718**	**4,283**	**4,639**	**13,073**	**13,357**
Buying and selling of property						
No role	5.0	16.7	3.2	12.1	4.5	15.3
Decides alone	18.3	6.7	14.2	6.1	17.2	6.5
Joint decision	76.7	76.6	82.7	81.8	78.3	78.1
Number	**9,379**	**9,283**	**4,639**	**4,991**	**14,018**	**14,274**
Education of family member						
No role	11.7	24.0	7.1	17.3	10.5	22.0
Decides alone	14.3	5.0	10.7	5.0	13.4	5.0
Joint decision	73.9	71.0	82.2	77.7	76.2	73.0
Number	**8,640**	**8,518**	**4,232**	**4,491**	**12,872**	**13,009**
	Total					
	Rural		Urban		Total	
Household matters	**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Marriage of son/daughter						
No role	3.2	7.1	3.4	5.0	3.2	6.4
Decides alone	18.5	6.0	12.7	5.9	16.8	6.0
Joint decision	78.3	86.9	84.0	89.1	79.9	87.6
Number	**17,634**	**22,983**	**9,220**	**12,913**	**26,854**	**35,896**
Buying and selling of property						
No role	3.4	10.8	2.2	7.2	3.1	9.7
Decides alone	19.2	5.9	15.8	5.5	18.2	5.8
Joint decision	77.4	83.3	82.0	87.2	78.8	84.6
Number	**18,627**	**23,986**	**9,912**	**13,707**	**28,539**	**37,693**
Education of family member						
No role	7.7	14.5	4.3	8.9	6.7	12.7
Decides alone	15.7	4.9	13.1	5.1	14.9	5.0
Joint decision	76.7	80.6	82.7	86.0	78.4	82.3
Number	**17,664**	**22,710**	**9,319**	**12,857**	**26,983**	**35,567**

** Including spouse irrespective of age.*

15.2 PARTICIPATION IN SOCIAL ACTIVITIES

Social isolation is a major risk factor for morbidities and mortality amongst the elderly. One way to reduce social isolation amongst the elderly is to increase their social participation. Having experienced many of the major responsibilities in life such as raising children and completing an employment period, the elderly have relatively more free time than the younger generations, and social participation and involvement in social activities or events becomes a more important part of their life. Social participation varies according to the social and economic context of individuals among many other factors. Participation in social activities include a broad range of activities such as volunteering, informal caregiving, participation in educational activities, participation in social leisure activities, and religious participation. Social participation is particularly important because of its various positive effects on the well-being and satisfaction of individuals. For ageing to be successful, active, and healthy, social participation necessarily becomes a key concept of social policy (Raymond et al., 2013). To understand the social life and participation of the elderly, respondents of LASI were asked about their involvements with different social organisations, religious groups, and in other social and civic activities.

15.2.1 Participation and Involvement in Social Organisations

Involvement in social organisations has been considered as a measure of social participation in various studies as they encompass a vast network of social relationships and provides opportunities for social interaction. LASI respondents were asked if they are a member of any social organisation or group where they can interact with other individuals, groups, or institutions. Table 15.3 presents the social participation of older adults by states/UTs.

Around 9% of older adults aged 45–59 are members of a social organisation compared to 5% amongst the elderly age 60 and above (Table 15.2). The number of older adults who are members of a social organisation is particularly high in states such as Mizoram (63%), Nagaland (22%), Kerala (20%), Odisha (17%), Manipur (16%), Telangana (15%), and Assam (15%).

Table 15.4 shows the percentage of older adults who are members of a social organisation. Almost one-third of the elderly are engaged in self-help groups (SHGs), or non-government organization (NGOs), cooperatives, or mahila mandals (women self-help groups), and another 33% are members of religious groups. The elderly are also members of community or caste organisations (15%) and farmers' associations, environmental groups, or political parties (13%). Eleven percent of the elderly are members of senior citizen's associations or social clubs. In addition, 21% of the elderly men are members of farmers' associations, environmental groups, or political parties compared to only 3% of the elderly women. In contrast, 69% of the elderly women are members of SHGs or NGOs, and this percentage is as low as 9% amongst the elderly men. Participation in religious or spiritual organisations, educational or sports organisations, or senior citizen's clubs is more common amongst elderly men than women. More widowed and divorced, separated, or deserted elderly are members of SHGs or NGOs than the currently married elderly, and almost three-fifths of the elderly with no schooling are members of SHGs or NGOs.

Table 15.2 Percentage of older adults having membership in any organization by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
Place of residence						
Rural	10.2	25,809	4.4	20,725	7.4	46,534
Urban	6.8	14,977	5.5	10,739	6.2	25,716
Sex						
Male	7.6	15,471	5.9	15,098	6.7	30,569
Female	9.9	25,315	3.6	16,366	7.3	41,681
Marital status						
Currently married	9.3	35,476	5.8	19,920	7.9	55,396
Widowed	7.4	3,874	2.9	10,719	4.0	14,593
Divorced/Separated/Deserted/Others	7.7	1,436	4.3	825	6.4	2,261
Living arrangement						
Living alone	9.5	691	3.8	1622	5.1	2313
Living with spouse	8.8	4,623	5.6	6,215	6.9	10,838
Living with spouse and children	9.4	30,198	5.8	13,465	8.2	43,663
Living with children (without spouse)	7.1	4,076	2.8	8,418	4.0	12,494
Living with others only	7.1	1,198	3.4	1,744	4.8	2,942
Religion						
Hindu	9.1	29,936	4.6	23,037	7.0	52,973
Muslim	7.2	4,936	3.6	3,731	5.6	8,667
Christian	17.5	4,065	12.4	3,150	15.2	7,215
Others	5.0	1,849	5.2	1,546	5.1	3,395
Caste						
Scheduled tribe	10.9	7,336	5.0	5,173	8.3	12,509
Scheduled caste	8.2	6,906	3.3	5,140	6.0	12,046
Other backward class	9.6	15,298	4.4	11,886	7.2	27,184
None of the above	8.1	11,246	6.0	9,265	7.1	20,511
Education						
No schooling	7.1	16,322	2.7	16,889	4.8	33,211
Less than 5 years complete	11.5	4,273	5.7	3,781	8.7	8,054
5-9 years complete	10.6	10,892	5.5	6,017	8.6	16,909
10 or more years complete	10.0	9,299	11.2	4,777	10.4	14,076
Work status						
Currently working	9.9	23,683	6.8	9,307	9.0	32,990
Worked in past but currently not working	8.9	4,587	4.5	13,377	5.6	17,964
Never worked	7.2	12,516	2.7	8,780	5.2	21,296
MPCE quintile						
Poorest	6.2	7,674	2.8	6,484	4.5	14,158
Poorer	8.1	8,053	4.1	6,477	6.2	14,530
Middle	10.1	8,121	4.5	6,416	7.4	14,537
Richer	10.7	8,516	5.7	6,170	8.5	14,686
Richest	10.2	8,422	7.1	5,917	8.9	14,339
Total	**9.0**	**40,786**	**4.7**	**31,464**	**7.0**	**72,250**

** Including spouse irrespective of age.*

Table 15.3 Percentage of older adults having membership in any organization, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Age 45-59*	Number	Age ≥ 60	Number	Total	Number
India	**9.0**	**40,786**	**4.7**	**31,464**	**7.0**	**72,250**
North						
Chandigarh	3.2	632	5.8	394	4.2	1,026
Delhi	1.0	824	3.3	495	1.9	1,319
Haryana	2.0	1,050	1.5	848	1.8	1,898
Himachal Pradesh	12.2	767	8.4	621	10.4	1,388
Jammu & Kashmir	0.7	882	2.8	731	1.7	1,613
Punjab	4.6	1,120	4.0	1,004	4.3	2,124
Rajasthan	3.7	1,166	2.2	1,078	2.9	2,244
Uttarakhand	2.7	717	3.1	641	2.9	1358
Central						
Chhattisgarh	16.5	1,275	9.8	780	13.9	2,055
Madhya Pradesh	5.2	1,601	2.1	1,313	3.7	2,914
Uttar Pradesh	1.2	2,398	0.9	2,169	1.1	4,567
East						
Bihar	7.5	1,712	3.8	1,808	5.5	3,520
Jharkhand	5.7	1,296	2.7	1,168	4.2	2,464
Odisha	24.6	1,680	7.8	1,237	17.2	2,917
West Bengal	11.0	2,389	5.2	1,544	8.6	3,933
Northeast						
Arunachal Pradesh	13.6	897	12.1	318	13.2	1,215
Assam	17.1	1,550	11.8	816	15.2	2,366
Manipur	19.8	763	12.5	606	16.4	1,369
Meghalaya	9.0	557	10.5	412	9.6	969
Mizoram	65.1	715	61.4	531	63.4	1,246
Nagaland	22.8	708	21.1	608	22.0	1,316
Tripura	8.3	734	5.6	461	7.2	1,195
West						
Dadra & Nagar Haveli	9.9	639	4.7	451	7.9	1,090
Daman & Diu	5.2	557	9.7	434	7.3	991
Goa	13.4	790	6.2	637	10.1	1,427
Gujarat	8.3	1,350	8.5	991	8.4	2,341
Maharashtra	3.2	2,183	3.7	1,790	3.4	3,973
South						
Andaman & Nicobar Islands	5.0	721	4.3	523	4.7	1244
Andhra Pradesh	15.7	1,574	10.1	1,105	13.3	2,679
Karnataka	17.0	1,416	6.7	1,004	12.9	2,420
Kerala	23.8	1,288	16.7	1,209	20.1	2,497
Lakshadweep	3.8	637	5.5	502	4.6	1,139
Puducherry	7.9	788	2.6	640	5.4	1,428
Tamil Nadu	6.1	1,996	2.9	1,534	4.7	3,530
Telangana	21.3	1,414	8.0	1,061	15.4	2,475

** Including spouse irrespectiv e of age.*

Table 15.4 Percentage of elderly age 60 and above having membership by type of organization by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Farmers' association /Political party	RWA/ clubs	Community/ Caste	SHG/NGO	Religious/ Spiritual	Education/ Sports	Senior citizen Clubs	Number
Place of residence								
Rural	16.3	0.5	13.1	40.5	29.2	2.7	6.3	1,365
Urban	7.6	3.4	19.7	18.2	39.8	4.8	19.3	761
Sex								
Male	20.5	1.6	21.7	8.5	40.7	5.0	15.9	1,289
Female	2.8	1.3	5.9	69.1	21.0	1.0	3.0	837
Marital status								
Currently married	15.9	1.5	16.9	27.0	33.6	4.1	12.5	1,622
Widowed	5.2	0.9	11.3	52.5	28.9	1.2	5.1	440
Divorced/Separated/Deserted/ Others	9.9	7.0	1.9	39.3	44.0	1.1	2.3	64
Religion								
Hindu	14.0	1.4	15.9	33.8	30.2	3.5	11.0	1,238
Muslim	10.7	0.0	13.7	32.0	37.4	4.2	10.0	145
Christian	4.1	1.0	16.5	33.3	49.2	1.6	6.3	661
Others	24.6	5.8	4.5	17.2	43.0	2.0	12.9	82
Caste								
Scheduled tribe	9.9	0.0	18.0	38.4	39.7	0.6	6.3	684
Scheduled caste	14.5	3.3	11.7	41.4	29.1	1.0	6.6	210
Other backward class	13.0	0.8	19.6	38.5	28.3	2.1	7.7	656
None of the above	14.3	2.0	10.9	21.8	37.9	6.5	16.7	576
Education								
No schooling	8.3	0.0	15.8	58.3	19.4	0.0	2.7	623
Less than 5 years complete	14.2	1.9	18.2	36.6	32.0	0.3	6.2	362
5-9 years complete	21.9	0.8	12.3	27.1	38.3	3.4	8.7	508
10 or more years complete	12.6	3.1	15.6	10.6	42.5	8.0	21.5	633
Work status								
Currently working	19.6	1.0	16.8	28.8	33.7	2.2	8.2	884
Worked in past but currently not working	9.3	1.8	17.8	28.3	34.9	5.2	15.0	903
Never worked	5.8	1.8	4.3	57.8	24.1	2.0	6.2	339
MPCE quintile								
Poorest	14.4	0.7	16.0	41.7	23.2	0.2	9.5	263
Poorer	10.7	1.3	18.8	42.1	25.0	4.4	8.3	390
Middle	12.1	1.5	13.7	31.6	36.8	2.5	7.7	441
Richer	11.9	2.2	12.7	28.4	41.6	2.4	8.7	464
Richest	17.3	1.2	16.1	26.9	32.1	5.9	17.2	568
Total	**13.4**	**1.5**	**15.3**	**33.0**	**32.8**	**3.4**	**10.6**	**2,126**

Key findings: decision making and participation

- With regard to household decision-making, 11% percent of elderly women report no role in decision-making on marriages in the family, 15% on buying or selling property, and 22% on decisions related to the education of family members. With declining financial power and functional abilities, many of the elderly are left out of family decision-making processes.
- Nine percent of older adults (age 45–59) are members of a social or community organisation compared to only 5% amongst the elderly age 60 and above, indicating lower social or community participation amongst the elderly.

15.3 LIFE SATISFACTION

Life satisfaction is an important psycho-social measure of the well-being of individuals, especially in old age. Old age brings about various changes in the roles and functions within the family and society, paving the way for dependency in life. Dependency on others can manifest into a decreased quality of life and diminished life satisfaction. Life satisfaction is also considered as an important dimension of successful ageing as it is reflective of perceived social support and quality of life. Life satisfaction is the perception by individuals of their social-economic and cultural position, and a reflection of their goals and expectations in life. Therefore, life satisfaction in old age is broadly determined by the socio-economic status of individuals, their financial capabilities, health status, social support, and amount of their social interaction.

Life satisfaction is often considered a common measure of overall wellbeing, and more specifically, it reflects a psychological dimension, focusing more on the component of 'feeling' or subjective well-being (Diener, 2009). Greater life satisfaction has been associated with positive health behaviours while lesser satisfaction is considered as one of the general indicators of health risks (Koivumaa-Honkanen et al., 2000). Greater life satisfaction is also associated with better physical and mental health outcomes and longevity (Beutell, 2006). Thus, it can serve as a universal indicator of successful ageing (Tate et al., 2003). The concept of life satisfaction is a subjective image of human welfare, and ageing perceptions and life satisfaction differ amongst various cultures (Kiarsipour et al., 2017). The LASI attempted to capture life satisfaction amongst the elderly.

In this section, life satisfaction of the older adults is examined based on five statements: *a) In most ways, my life is close to ideal; b) the conditions of my life are excellent; c) I am satisfied with my life*; d) *so far*, *I have got the important things I want in life*; *and e) if I could live my life again*, *I would change almost nothing*. The respondents were asked to give their responses using seven categories of 'strongly disagree', 'somewhat disagree', 'slightly disagree', 'neither agree nor disagree', 'slightly agree', 'somewhat agree', and 'strongly agree'. Using the responses to the five statements regarding life satisfaction, a scale was constructed. The categories of the scale are 'low satisfaction' (score of 5–20), 'medium satisfaction' (score of 21–25), and 'high satisfaction' (score of 26–35).

Table 15.5 shows that around 32% of the elderly have low life satisfaction, 22% have medium life satisfaction, and 46% have high life satisfaction. The reported level of satisfaction in life is higher amongst the elderly age 60 and above compared to older adults age 45-59. When their place of residence is considered, a high level of life satisfaction is reported more often amongst urban residents than their rural counterparts.

Confirming the multiple vulnerabilities, higher incidences of low satisfaction in the elderly is recorded amongst those who are living alone (48%) and are divorced, separated, or deserted (44%). Highlighting the relevance of education and financial adequacy, the elderly who belong to richer MPCE quintile and have a higher level of education are more highly satisfied with their life situations compared to older adults less than 60 years of age. Three-fifths (64%) of the elderly who have ten or more years of education are highly satisfied in their life compared to 39% who do not have any education. Across the MPCE quintiles, high life satisfaction increases from the poorest to the richest households. These findings highlight the variations in the levels of life satisfaction amongst older adults due to their socio-economic background.

A higher proportion of the elderly in the states/UTs of Gujarat (80%), Daman & Diu (78%), Chandigarh (74%), Himachal Pradesh (74%), and Dadra & Nagar Haveli (65%) reported a 'high level of life satisfaction', while this proportion is lowest in the states/UTs of Jammu & Kashmir (29%), West Bengal (30%), Rajasthan (33%), and Odisha (35%) (Table 15.6).

Table 15.5 Percent distribution of older adults by perceived level of satisfaction with their life according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Age 45-59*				Age ≥ 60			
	Low	Medium	High	Number	Low	Medium	High	Number
Place of residence								
Rural	32.8	25.4	41.8	25,809	34.4	23.5	42.2	20,725
Urban	31.6	21.7	46.8	14,977	26.7	19.6	53.7	10,739
Sex								
Male	29.8	25.1	45.2	15,471	30.4	22.5	47.2	15,098
Female	33.9	23.6	42.5	25,315	33.8	22.3	44.0	16,366
Marital status								
Currently married	30.5	24.5	45.0	35,476	29.7	22.9	47.4	19,920
Widowed	42.5	22.7	34.7	3,874	35.6	21.4	43.0	10,719
Divorced/Separated/Deserted/Others	54.8	18.9	26.3	1,436	44.1	23.2	32.7	825
Living arrangement								
Living alone	47.3	17.1	35.6	691	47.7	19.3	32.9	1622
Living with spouse	33.7	21.1	45.2	4,623	31.6	23.1	45.3	6,215
Living with spouse and children	30.1	24.9	45.0	30,198	28.6	22.8	48.5	13,465
Living with children (without spouse)	41.9	23.6	34.5	4,076	32.6	22.0	45.4	8,418
Living with others only	51.3	19.6	29.1	1,198	42.1	21.2	36.7	1,744
Religion								
Hindu	32.1	23.7	44.2	29,936	32.2	22.2	45.6	23,037
Muslim	34.1	27.1	38.8	4,936	32.6	23.9	43.5	3,731
Christian	43.9	17.9	38.3	4,065	36	19.5	44.5	3,150
Others	22.8	29.2	48.1	1,849	26.4	23.9	49.7	1,546
Caste								
Scheduled tribe	34.6	26.9	38.5	7,336	37.1	23.1	39.8	5,173
Scheduled caste	36.7	25.0	38.3	6,906	39.4	23.1	37.5	5,140
Other backward class	32.9	23.1	44.1	15,298	31.6	21.9	46.6	11,886
None of the above	27.6	24.4	48	11,246	26.7	22.5	50.9	9,265
Education								
No schooling	37.8	25.2	37.1	16,322	37.6	23.5	38.9	16,889
Less than 5 years complete	32.8	25.4	41.8	4,273	32.5	22.4	45.1	3,781
5-9 years complete	29.0	24.7	46.4	10,892	26.5	21.6	51.9	6,017
10 or more years complete	25.4	20.8	53.8	9,299	17.2	18.5	64.3	4,777
Work status								
Currently working	30.4	24.9	44.8	23,683	31.9	23.7	44.4	9,307
Worked in past but currently not working	36.9	22.5	40.6	4,587	32.4	21.3	46.2	13,377
Never worked	34.8	23.3	42.0	12,516	32.0	22.4	45.7	8,780
MPCE quintile								
Poorest	35.5	24.8	39.7	7,674	38.4	24.0	37.6	6,484
Poorer	33.1	25.5	41.4	8,053	34.1	22.9	43.0	6,477
Middle	32.4	25.8	41.8	8,121	30.2	22.9	46.9	6,416
Richer	30.0	24.3	45.7	8,516	28.4	21.9	49.7	6,170
Richest	30.9	20.1	49.1	8,422	28.2	19.3	52.5	5,917
Total	**32.4**	**24.1**	**43.5**	**40,786**	**32.1**	**22.4**	**45.5**	**31,464**

** Including spouse irrespective of age.*

Table 15.6 Percent distribution of older adults by perceived level of satisfaction with their life, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Age 45-59*				Age ≥ 60			
	Low	Medium	High	Number	Low	Medium	High	Number
India	**32.4**	**24.1**	**43.5**	**40,786**	**32.1**	**22.4**	**45.5**	**31,464**
North								
Chandigarh	9.0	23.1	67.9	632	11.8	13.8	74.4	394
Delhi	28.3	32.5	39.2	824	36.1	24.8	39.1	495
Haryana	26.4	26.8	46.8	1,050	28.5	26.7	44.8	848
Himachal Pradesh	4.9	18.3	76.8	767	7.4	18.3	74.3	621
Jammu & Kashmir	36.6	32.8	30.6	882	40.1	31.2	28.8	731
Punjab	22.6	27.3	50.1	1,120	22.9	22.7	54.4	1,004
Rajasthan	40.9	24.1	35.0	1,166	43.5	23.1	33.4	1,078
Uttarakhand	21.2	26.8	52.0	717	23.2	23.0	53.8	641
Central								
Chhattisgarh	30.2	23.5	46.4	1,275	30.0	26.5	43.5	780
Madhya Pradesh	26.6	22.0	51.4	1,601	28.9	21.1	50.0	1,313
Uttar Pradesh	34.8	30.6	34.6	2,398	35.2	27.8	37.0	2,169
East								
Bihar	30.9	23.7	45.4	1,712	30.2	23.8	46.0	1,808
Jharkhand	43.2	22.6	34.2	1,296	42.2	18.2	39.7	1,168
Odisha	37.4	27.7	35.0	1,680	39.7	25.7	34.6	1,237
West Bengal	36.6	32.4	31.0	2,389	38.8	31	30.3	1,544
Northeast								
Arunachal Pradesh	28.4	34.4	37.2	897	29.3	32.6	38.2	318
Assam	29.0	30.2	40.8	1,550	25.8	29.8	44.4	816
Manipur	32.4	22.4	45.2	763	30.1	25.3	44.7	606
Meghalaya	23.0	30.5	46.5	557	21.7	23.3	55.0	412
Mizoram	8.9	34.1	57.1	715	10.2	30.0	59.8	531
Nagaland	46.4	16.1	37.6	708	35.5	22.4	42.1	608
Tripura	27.4	31.8	40.8	734	25.6	28.4	46	461
West								
Dadra & Nagar Haveli	17.8	17.8	64.5	639	12.5	22.8	64.7	451
Daman & Diu	11.6	20.6	67.8	557	9.9	12.6	77.5	434
Goa	17.8	35.3	46.9	790	19.4	33.8	46.8	637
Gujarat	11.7	15.9	72.4	1,350	8.4	11.5	80.1	991
Maharashtra	19.9	17.1	63.0	2,183	19.4	16.8	63.9	1,790
South								
Andaman & Nicobar Islands	26.4	22.3	51.3	721	26	20.7	53.3	523
Andhra Pradesh	44.5	16.6	38.9	1,574	44.7	14.2	41.1	1,105
Karnataka	43.3	25.2	31.6	1,416	38.4	24.7	36.9	1,004
Kerala	32.5	25	42.5	1,288	38.5	19.7	41.8	1,209
Lakshadweep	27.6	29.5	42.9	637	30.8	27.9	41.3	502
Puducherry	22.4	32.7	44.9	788	23.7	32.5	43.7	640
Tamil Nadu	29.3	19.2	51.6	1,996	34.7	20.0	45.2	1,534
Telangana	38.2	18.7	43.1	1,414	40.9	16.3	42.9	1,061

** Including spouse irrespective of age.*

15.4 DISCRIMINATION EXPERIENCED EVERYDAY

Research on discrimination experienced everyday has been scarce, and the literature is even scarcer amongst older adults who live in developing countries (Braga et al., 2019). Perceived discrimination has been defined as an individual's perception of being treated unfairly by other people due to personal attributes such as race, ethnicity, age, gender, socioeconomic status, sexual orientation, or other characteristics (Kessler et al., 1999; Ayalon and Gum, 2011). Capturing perceived everyday discrimination amongst older adults is necessary because the research suggests that older adults who internalise negative attitudes towards themselves are at increased risk of functional and cognitive decline (Levy et al., 2012a; Levy et al., 2012b), depression, and life dissatisfaction (Kessler et al., 1999). They also withdraw themselves from social and cultural gatherings and reduce their engagement (Sutin et al., 2015; Rippon et al., 2014). It has been already discussed that there are many forms of discrimination and they are experienced for various reasons such as gender, age, social categories, physical disabilities, financial status, and other reasons. Due to the lower social and financial status in old age, the elderly are at a greater risk of being treated badly by others. While the mistreatment of the elderly is not new, it has not been sufficiently recognised due to inadequate data, especially in developing countries such as India. Due to poor recognition and under-reporting, such incidents of discrimination remain undocumented in India.

To understand the everyday discrimination experienced by the elderly, the following six statements were read in LASI about their experiences in their day-to-day life: a) *You are treated with less courtesy or respect than other people*; b) *you receive poorer service than other people at restaurants or stores*; *c) people act as if they think you are not smart*; *d) people act as if they are afraid of you*; e) *you are threatened or harassed*; and f) *you receive poorer service or treatment than other people from doctors or hospitals*. Each statement had six response categories of 'almost every day', 'at least once a week', 'a few times a month', 'a few times a year', 'less than once a year', or 'never'. The responses were then categorised as 'no discrimination', 'one type of discrimination', and 'two or more types of discrimination'.

Tables 15.7 and 15.8 present the percentage of elderly age 60 and above who perceive discrimination in everyday life and illustrates that 93% of the elderly interviewed do not feel that they were discriminated against, while 4% stated that they have experienced one type of discrimination, and 3% experience two or more types of discrimination. Experiencing two or more types of discrimination is high amongst the elderly who are living alone, widowed, and belong to the richest MPCE quintile. More elderly women than men experienced any one type of discrimination in their day-to-day life. Across the states and UTs of India, the proportion of the elderly experiencing two or more types of discrimination is highest in Delhi (12%), Chhattisgarh (10%), and Jammu & Kashmir (10%).

Among the elderly age 60 and above who experience day-to-day discrimination, the majority (62%) perceive their age as the main reason for the discrimination (Tables 15.9 and 15.10). Whereas almost two-fifths of the elderly age 60 and above perceive the main reason for discrimination as their financial status (37%), and 8% think that they are discriminated against because of their physical appearance. In addition, 14% perceive their religion or caste affiliation as the main reason behind the discrimination, and 40% of the elderly age 60 and above who belong to the poorest MPCE quintile consider their financial status as the main reason.

Three-quarters of the elderly age 60 and above who are divorced, separated, or deserted consider their age as the main reason behind the everyday discrimination they face, with 9% considering their gender. More than a third of the elderly age 60 and above from Rajasthan (37%), and 21% from Maharashtra, perceive their religion or caste as the main reason behind the discrimination. More than half of the elderly age 60 and above from the states of Himachal Pradesh (61%), Andhra Pradesh (55%), Bihar (54%), and Maharashtra (50%) consider their financial status as the main reason for the everyday discrimination that they face.

While religion or caste-based discrimination and financial status-based discrimination is more common in rural areas, gender-based discrimination is more common in urban areas. More women experience age and gender-based discrimination, and discrimination based on financial status is higher amongst the poor and elderly with no scooling and those belonging to scheduled tribes. Religion or caste-based discrimination is reported more commonly amongst the elderly belonging to scheduled castes and scheduled tribes.

Table 15.7 Percent distribution of elderly age 60 and above who perceive being discriminated by background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	No discrimination	One kind of discrimination	Two or more kinds of discrimination	Number
Place of residence				
Rural	92.7	4.1	3.2	20,725
Urban	92.5	4.6	2.9	10,739
Sex				
Male	93.2	3.7	3.1	15,098
Female	92.1	4.7	3.1	16,366
Marital status				
Currently married	93.5	3.6	2.9	19,920
Widowed	91.1	5.5	3.4	10,719
Divorced/Separated/Deserted/Others	94.6	2.1	3.3	825
Living arrangement				
Living alone	90.6	3.7	5.7	1,622
Living with spouse	93.4	3.3	3.3	6,215
Living with spouse and children	93.5	3.7	2.7	13,465
Living with children (without spouse)	91.3	5.8	3.0	8,418
Living with others only	92.2	4.6	3.2	1,744
Religion				
Hindu	92.2	4.5	3.3	23,037
Muslim	93.9	3.6	2.5	3,731
Christian	95.3	1.6	3.1	3,150
Others	96.3	2.4	1.3	1,546
Caste				
Scheduled tribe	94.0	3.1	3.0	5,173
Scheduled caste	91.9	4.6	3.6	5,140
Other backward class	91.9	4.9	3.2	11,886
None of the above	94.0	3.3	2.6	9,265
Education				
No schooling	92.4	4.1	3.5	16,889
Less than 5 years complete	93.6	3.8	2.6	3,781
5-9 years complete	91.6	5.7	2.7	6,017
10 or more years complete	94.1	3.5	2.5	4,777
Work status				
Currently working	92.3	5.0	2.7	9,307
Worked in past but currently not working	92.5	3.8	3.8	13,377
Never worked	93.3	4.2	2.5	8,780
MPCE quintile				
Poorest	92.3	4.2	3.5	6,484
Poorer	93.2	4.0	2.9	6,477
Middle	93.5	3.7	2.8	6,416
Richer	91.6	5.8	2.6	6,170
Richest	92.5	3.5	4.0	5,917
Total	**92.6**	**4.3**	**3.1**	**31,464**

Table 15.8 Percent distribution of elderly age 60 and above who perceive being discriminated, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	No discrimination	One kind of discrimination	Two or more kinds of discrimination	Number
India	**92.6**	**4.3**	**3.1**	**31,464**
North				
Chandigarh	93.5	2.5	4.0	394
Delhi	74.8	12.9	12.3	495
Haryana	95.5	3.0	1.5	848
Himachal Pradesh	98.5	1.2	0.4	621
Jammu & Kashmir	87.9	2.5	9.6	731
Punjab	97.3	2.4	0.3	1,004
Rajasthan	90.9	2.5	6.5	1,078
Uttarakhand	97.1	2.8	0.2	641
Central				
Chhattisgarh	85.3	4.9	9.9	780
Madhya Pradesh	88.7	6.4	4.9	1,313
Uttar Pradesh	87.5	8.2	4.3	2,169
East				
Bihar	95.0	3.2	1.8	1,808
Jharkhand	95.6	3.0	1.5	1,168
Odisha	98.2	1.3	0.5	1,237
West Bengal	98.4	1.3	0.3	1,544
Northeast				
Arunachal Pradesh	93.4	2.5	4.2	318
Assam	95.9	2.6	1.5	816
Manipur	98.5	1.0	0.5	606
Meghalaya	100.0	0.0	0.0	412
Mizoram	99.4	0.3	0.3	531
Nagaland	100.0	0.0	0.0	608
Tripura	100.0	0.0	0.0	461
West				
Dadra & Nagar Haveli	96.0	2.7	1.4	451
Daman & Diu	95.7	2.7	1.5	434
Goa	95.8	2.7	1.6	637
Gujarat	94.1	3.5	2.4	991
Maharashtra	95.0	3.6	1.4	1,790
South				
Andaman & Nicobar Islands	97.8	1.2	1.1	523
Andhra Pradesh	93.5	1.2	5.3	1,105
Karnataka	87.4	8.6	3.9	1,004
Kerala	93.9	3.7	2.4	1,209
Lakshadweep	98.0	1.8	0.2	502
Puducherry	87.4	5.6	7.0	640
Tamil Nadu	93.5	2.9	3.7	1,534
Telangana	93.6	1.8	4.7	1,061

Table 15.9 Percent distribution of elderly age 60 and above by perceived reasons for discrimination they face according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Perceived reasons for discrimination						Number
	Age	Gender	Religion/ Caste	Physical appearance	Physical disability	Financial status	
Place of residence							
Rural	63.4	6.6	16.6	8.4	5.0	38.2	20,725
Urban	56.8	16.5	7.2	7.3	4.9	31.8	10,739
Sex							
Male	59.9	3.3	15.7	9.0	6.3	38.5	15,098
Female	63.4	14.0	13.2	7.4	3.7	35.1	16,366
Marital status							
Currently married	58.3	6.7	15.9	9.6	5.0	38.5	19,920
Widowed	66.4	12.6	11.5	5.9	4.5	33.7	10,719
Divorced/Separated/Deserted/Others	75.3	9.9	23.4	8.7	10.0	41.0	825
Living arrangement							
Living alone	74.6	5.7	11.9	8.6	7.2	42.8	1,622
Living with spouse	58.3	6.1	15.3	8.9	6.6	41.1	6,215
Living with spouse and children	58.0	7.0	16.3	10.0	4.1	37.1	13,465
Living with children (without spouse)	64.0	13.9	11.5	5.2	3.9	30.5	8,418
Living with others only	71.8	13.3	15.9	7.0	6.2	41.8	1,744
Religion							
Hindu	62.7	9.5	14.1	8.4	5.1	35.3	23,037
Muslim	57.8	7.5	15.7	7.5	2.4	43.3	3,731
Christian	51.8	4.2	8.6	4.1	9.7	59.2	3,150
Others	55.0	1.4	21.6	6.0	6.5	36.3	1,546
Caste							
Scheduled tribe	63.6	10.5	27.5	5.3	4.3	31.0	5,173
Scheduled caste	60.1	8.9	25.4	5.3	5.1	42.8	5,140
Other backward class	60.4	9.8	8.2	10.0	4.7	36.0	11,886
None of the above	65.9	7.0	11.9	8.0	5.4	33.8	9,265
Education							
No schooling	64.4	8.0	17.0	7.5	4.3	39.4	16,889
Less than 5 years complete	66.1	7.3	13.9	7.4	7.4	35.9	3,781
5-9 years complete	50.4	17.4	9.6	10.7	5.1	32.4	6,017
10 or more years complete	59.8	3.0	6.3	8.5	5.8	27.5	4,777
Work status							
Currently working	55.9	6.4	17.0	8.8	2.6	43.2	9,307
Worked in past but currently not working	67.0	5.7	14.3	8.0	7.1	36.1	13,377
Never worked	60.0	20.8	10.1	7.3	3.9	27.0	8,780
MPCE quintile							
Poorest	68.5	6.7	16.6	7.8	5.7	39.7	6,484
Poorer	65.4	6.5	15.0	8.8	5.5	38.9	6,477
Middle	58.0	5.7	15.9	7.0	4.4	39.3	6,416
Richer	55.6	17.5	9.8	6.4	3.6	34.2	6,170
Richest	59.6	9.1	14.2	11.5	5.5	29.1	5,917
Total	**61.8**	**9.0**	**14.3**	**8.1**	**4.9**	**36.7**	**31,464**

Table 15.10 Percentage of elderly age 60 and above by perceived reasons for discrimination they face, states/ UTs, LASI Wave 1, 2017-18

States/Union Territory	Perceived reasons for discrimination						Number
	Age	Gender	Religion/ Caste	Physical appearance	Physical disability	Financial status	
India	**61.8**	**9.0**	**14.3**	**8.1**	**4.9**	**36.7**	**31,464**
North							
Chandigarh	80.2	0.0	1.4	4.0	9.1	20.4	394
Delhi	58.2	0.5	4.8	3.5	3.4	38.1	495
Haryana	69.1	7.9	7.4	7.6	12.8	24.4	848
Himachal Pradesh	63.5	2.2	10.3	0.0	2.6	61.3	621
Jammu & Kashmir	53.9	24.7	19.8	3.0	2.3	35.3	731
Punjab	53.3	0.0	15.2	10.1	3.3	27.0	1,004
Rajasthan	73.6	17.1	37.2	7.5	2.8	16.3	1,078
Uttarakhand	63.5	15.6	3.6	0.0	5.0	25.0	641
Central							
Chhattisgarh	87.5	9.9	7.9	1.9	2.0	19.9	780
Madhya Pradesh	76.0	7.7	13.7	3.9	2.5	28.5	1,313
Uttar Pradesh	60.7	8.6	17.1	7.0	3.3	36.5	2,169
East							
Bihar	52.5	3.0	17.9	7.4	3.9	53.9	1,808
Jharkhand	82.8	16.7	6.2	1.8	0.7	39.9	1,168
Odisha	48.7	0.0	3.6	1.6	7.5	47.6	1,237
West Bengal	70.3	14.5	17.0	7.1	12.0	39.4	1,544
Northeast							
Arunachal Pradesh	93.1	0.8	11.5	9.7	0.0	9.0	318
Assam	87.1	14.4	17.1	12.3	2.8	21.5	816
Manipur	66.8	10.6	8.8	4.8	1.4	27.5	606
Meghalaya	81.8	13.0	9.5	5.2	6.5	11.9	412
Mizoram	87.6	0.0	4.3	3.6	2.0	4.5	531
Nagaland	65.7	53.1	0.0	18.7	12.6	18.7	608
Tripura	39.7	0.0	20.8	0.0	0.0	25.9	461
West							
Dadra & Nagar Haveli	52.0	1.0	4.4	2.5	15.3	21.2	451
Daman & Diu	54.5	0.9	8.8	2.5	11.0	34.4	434
Goa	76.5	8.1	15.0	4.1	4.3	9.6	637
Gujarat	40.3	6.1	3.5	5.5	25.2	32.2	991
Maharashtra	61.8	0.8	21.3	13.8	3.3	49.8	1,790
South							
Andaman & Nicobar Islands	64.4	0.0	2.9	13.3	8.9	14.8	523
Andhra Pradesh	47.4	0.0	7.9	3.5	8.6	55.1	1,105
Karnataka	56.4	16.5	12.0	13.4	2.8	36.0	1,004
Kerala	62.8	8.7	2.9	3.7	13.9	19.3	1,209
Lakshadweep	100.0	7.2	0.0	0.0	0.0	5.0	502
Puducherry	95.0	0.3	0.0	0.9	6.5	2.6	640
Tamil Nadu	69.9	2.0	7.5	14.4	4.7	28.3	1,534
Telangana	53.8	3.2	7.5	5.0	3.0	49.4	1,061

Key findings: life satisfaction and discrimination

- About 46% of the elderly reported a 'high level of satisfaction in their life'. Life satisfaction is higher amongst the urban elderly age 60 and above, and it increases with education and economic status.

- Seven percent of the elderly age 60 and above reported that they face day-to-day discrimination. Amongst them, the majority (62%) perceive age as the main reason for the discrimination followed by financial status (37%).

- In addition, 14% of the elderly age 60 and above who experienced day-to-day discrimination report their religion or caste affiliation as the reason for this discrimination. The elderly age 60 and above who belong to scheduled castes and scheduled tribes are more likely to experience discrimination, and this is higher in rural areas.

16. SOCIAL SECURITY SCHEMES FOR THE ELDERLY

Social welfare schemes play an important role in addressing the problems of the weaker and vulnerable sections of society, particularly of the elderly. The government has launched many policies and programmes for the welfare of the elderly, and such programmes are designed to enhance their quality of life. Apart from national schemes, there are many state specific schemes for the welfare of the elderly that provide health care and economic support for older people. To access and avail themselves of the benefits, the elderly need to be aware of the relevant schemes and programmes implemented by the central and state governments. Many eligible elders are not aware of these schemes, or even if they are aware, do not receive the benefits of such schemes for various reasons.

Social Security Schemes for Older People (age 60 and above)

The Government of India has launched various schemes for elderly to promote the health, well-being, and overall welfare of senior citizens. In LASI, information was collected on awareness and out-reach of various social security programmes that are targeted at the elderly population age 60 and above. This chapter is based only on the data collected from the elderly age 60 and above.

Indira Gandhi National Old Age Pension Scheme (IGNOAPS)

IGNOAPS was introduced in 1995 as part of the National Social Assistance Programme (NSAP) to provide financial assistance to the BPL elderly. The scheme was later transferred to the state in 2002–2003 for implementation with additional central financial assistance. The main objective of this scheme is to provide social security to make older people economically independent. The scheme covers the elderly age 60 and above who have little or no regular means of subsistence either from their own source of income or through financial support from family members or other sources. The central government contributes INR 200 per month to beneficiaries who are aged between 60 and 79, and INR 500 to those age 80 years and above. The state government is advised to add the matching amount or more, and their contribution varies. At present, old-age pension beneficiaries receive anywhere between INR 200 to INR 2,500 per month depending on the amount granted by the state.

Indira Gandhi National Widow Pension Scheme (IGNWPS)

The Indira Gandhi National Widow Pension Scheme (IGNWPS) is implemented by the Ministry of Rural Development, Government of India. The applicant should belong to a household falling below the poverty line as per criteria prescribed by the Government of India. The pension amount is INR 200 per month, and the state government is also urged to provide the matching amount or more. The pension is credited into a post office or public sector bank account of the beneficiary and is discontinued if the widow remarries or moves above the poverty line.

Annapurna Scheme

The Annapurna Scheme is a centrally sponsored food security scheme that was launched in 2000 as part of the National Social Assistance Programme (NSAP). It provides food security for senior citizens who, although eligible, remain uncovered by the National Old-Age Pension Scheme (NOAPS). The Annapurna scheme is targeted to cover 20% of the people eligible to receive a pension under NOAPS and is provided to the beneficiaries who fulfil the following criteria:

1. The age of the applicant (male or female) should be 65 years or above.

2. The applicant must be destitute in the sense of having little or no regular means of subsistence from their own source of income, or through financial support from family members or other sources.

3. The applicant should not be in receipt of a pension under the NOAPS or state pension scheme. All beneficiaries are given 10 kg of food (grain) per month free of cost.

In LASI, all of the respondents age 60 and above were asked about the extent of their awareness and utilisation of the three national social security schemes mentioned above. In addition, questions were asked regarding their awareness and utilisation of government facilities or concessions for the elderly such as concessions for air, train, and road travel tickets.

16.1 AWARENESS OF SOCIAL SECURITY SCHEMES AMONG THE ELDERLY

Table 16.1 presents the percentage of the elderly age 60 and above who are aware of the various social security schemes according to their background characteristics. A significant proportion of the elderly are aware of the IGNOAPS (55%) and IGNWPS (44%), whilst awareness of the Annapurna scheme is rather limited (12%).

A higher proportion of the elderly age 60 and above are aware of the IGNOAPS than the other two programmes. Interestingly, a higher proportion of the elderly from rural areas are aware of these social security schemes than those from urban areas. Of the elderly respondents, 58% from rural areas and 49% from urban areas are aware of the IGNOAPS, and 45% from rural areas and 42% from urban areas are aware of the IGNWPS. Awareness of the IGNOAPS (59% of men and 52% of women) and the Annapurna scheme is lower amongst elderly women (9%) than elderly men (16%), while a slightly higher proportion of elderly women knew of the IGNWPS (45%) than elderly men (43%; Figure 16.1). Across India, amongst the interviewed elderly (age 60 and above), the majority of widows have not heard about the IGNWPS.

The level of awareness amongst the elderly is lower amongst Muslims compared to other religions. Regarding IGNOAPS, 46% of elderly Muslims are not aware and around 57% are not aware of IGNWPS, and more than 92% are not aware of the Annapurna scheme. The level of awareness for the IGNOAPS, IGNWPS, and Annapurna schemes increases as the level of education of the respondent increases. The working status and MPCE quintile do not show any consistent variation in the awareness of different social security programmes.

Figure 16.1 Percentage of elderly age 60 and above who are aware of social security schemes according to sex and place of residence, India, LASI Wave 1, 2017-18

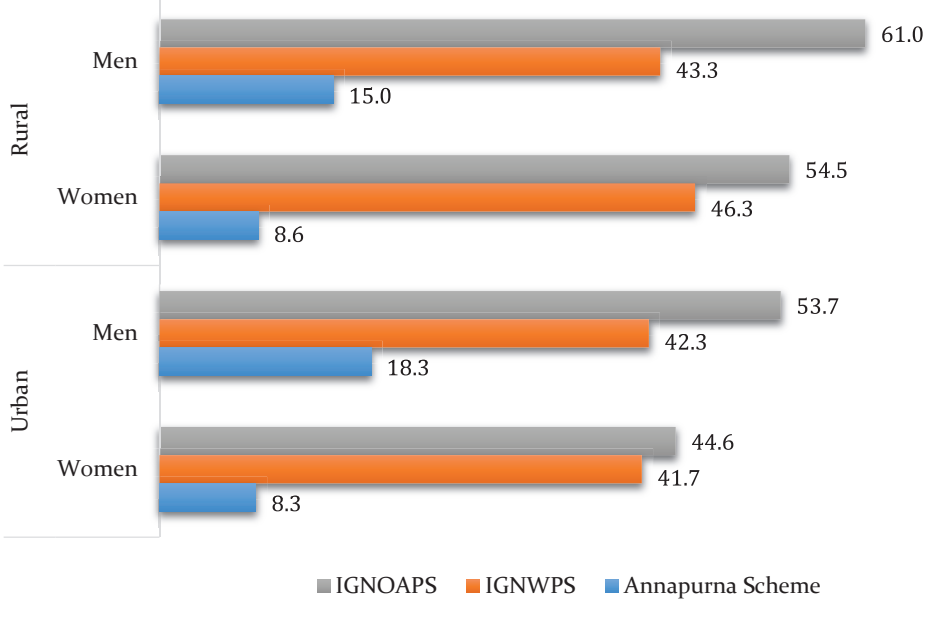


Table 16.1 Percentage of elderly age 60 and above with awareness of social security schemes according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Indira Gandhi National Old Age Pension Scheme	Indira Gandhi Widow Pension Scheme	Annapurna Scheme	Number
Place of residence				
Rural	57.6	44.8	11.7	20,725
Urban	48.6	42.0	12.7	10,739
Sex				
Male	59.0	43.0	15.9	15,098
Female	51.5	44.9	8.5	16,366
Marital status				
Currently married	56.6	42.6	14.1	19,920
Widowed	52.5	46.7	8.3	10,719
Divorced/Separated/Deserted/Others	53.1	37.4	12.4	825
Living arrangement				
Living alone	55.1	50.4	10.9	1,622
Living with spouse and/or others	58.1	42.1	13.5	6,215
Living with spouse and children	55.8	43.0	14.5	13,465
Living with children and others	51.2	45.6	8.2	8,418
Living with others only	58.2	43.7	8.4	1,744
Religion				
Hindu	55.1	44.4	12.6	23,037
Muslim	53.5	42.9	7.9	3,731
Christian	61.1	48.5	16.5	3,150
Others	53.5	36.1	6.0	1,546
Caste				
Scheduled tribe	54.8	41.2	9.9	5,173
Scheduled caste	58.8	44.9	10.4	5,140
Other backward class	56.1	44.6	12.9	11,886
None of the above	50.8	43.2	12.1	9,265
Education				
No schooling	56.0	43.2	8.3	16,889
Less than 5 years complete	52.7	40.6	8.9	3,781
5-9 years complete	56.0	45.9	16.8	6,017
10 or more years complete	51.8	47.8	23.4	4,777
Work status				
Currently working	56.3	44.8	13.6	9,307
Worked in past but currently not working	57.4	45.6	13.5	13,377
Never worked	49.8	40.6	7.8	8,780
MPCE quintile				
Poorest	58.5	43.9	10.8	6,484
Poorer	57.3	44.7	12.0	6,477
Middle	54.9	44.3	12.0	6,416
Richer	51.2	42.8	11.4	6,170
Richest	52.2	44.2	14.2	5,917
Total	**55.0**	**44.0**	**12.0**	**31,464**

Table 16.2 shows the percentages of the elderly age 60 and above who are aware of social security schemes. Across all of the states/UTs, the awareness of the IGNOAPS and IGNWPS is higher amongst the elderly in the states of Haryana, Himachal Pradesh, Bihar, Jharkhand, Odisha, Assam, and Dadra & Nagar Haveli. However, awareness regarding the IGNWPS is as low as 6% in Arunachal Pradesh and 7% in Tripura. The level of awareness of the Annapurna scheme is extremely low across all states.

Table 16.2 Percentage of elderly age 60 and above with awareness of social security schemes, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Indira Gandhi National Old Age Pension Scheme	Indira Gandhi Widow Pension Scheme	Annapurna Scheme	Number
India	**55.0**	**44.0**	**12.0**	**31,464**
North				
Chandigarh	51.0	46.8	18.5	394
Delhi	54.3	28.3	4.7	495
Haryana	78.4	67.6	8.4	848
Himachal Pradesh	77.1	70.2	15.0	621
Jammu & Kashmir	61.5	50.5	1.3	731
Punjab	62.5	40.4	4.3	1,004
Rajasthan	75.7	49.4	11.8	1,078
Uttarakhand	58.7	52.0	11.3	641
Central				
Chhattisgarh	62.5	47.7	20.0	780
Madhya Pradesh	49.7	34.0	7.8	1,313
Uttar Pradesh	48.0	43.4	6.9	2,169
East				
Bihar	81.8	58.6	23.2	1,808
Jharkhand	77.7	67.6	17.0	1,168
Odisha	74.4	66.6	31.5	1,237
West Bengal	40.9	37.2	11.2	1,544
Northeast				
Arunachal Pradesh	18.3	5.6	1.3	318
Assam	83.6	61.5	30.2	816
Manipur	67.0	36.9	6.6	606
Meghalaya	39.6	11.3	0.0	412
Mizoram	62.5	31.0	0.8	531
Nagaland	40.5	18.5	6.9	608
Tripura	46.7	6.9	0.6	461
West				
Dadra & Nagar Haveli	78.3	66.9	11.2	451
Daman & Diu	69.2	40.7	5.9	434
Goa	35.7	17.6	2.5	637
Gujarat	34.8	46.9	8.3	991
Maharashtra	29.6	28.8	5.8	1,790
South				
Andaman & Nicobar Islands	34.6	10.2	0.4	523
Andhra Pradesh	54.5	45.1	5.7	1,105
Karnataka	57.6	28.6	4.3	1,004
Kerala	67.6	58.2	13.4	1,209
Lakshadweep	51.5	49.2	7.4	502
Puducherry	65.9	46.0	22.1	640
Tamil Nadu	69.4	56.9	26.9	1,534
Telangana	35.3	27.8	5.2	1,061

16.2 UTILISATION OF SOCIAL SECURITY SCHEMES BY THE ELDERLY

It has often been seen that the awareness of a scheme alone does not necessarily lead to its utilisation. Therefore, it is important to understand the coverage of these schemes alongside the levels of awareness. Table 16.3 presents the percentage of elderly age 60 and above who receive benefits from the various social security schemes according to their background characteristics. About a third of the rural elderly (29%) from BPL households receive benefits from IGNOAPS. Amongst the elderly widows belonging to BPL households, a quarter of them (24%) receive the widow pension. The percentages of the elderly receiving these benefits are lower in urban areas than in rural areas. Of the elderly who live alone and belong to BPL households, 27% receive IGNWPS and 32% receive IGNOAPS benefits. Almost a quarter of elderly Hindu women with a BPL card (23%) receive IGNWPS benefits.

Although the schemes are meant for elderly in BPL households and destitute, as reported, 16% of the elderly men belonging to non-BPL households received the benefits of an old-age pension, and 15% of the elderly women of non-BPL households received the benefits of the widow pension. For elderly widows, they can either receive an old-age pension or a widow pension, but they cannot be beneficiaries of both schemes simultaneously.

Table 16.3 Percentage of elderly age 60 and above who receive benefits from various social security schemes by background characteristics, India, LASI Wave 1, 2017-18

Background Characteristics	Old Age Pension Scheme					Widow Pension Scheme						Annapurna Scheme					
	BPL	Number	Non-BPL	Number	Total	Number	BPL	Number	Non-BPL	Number	Total	Number	BPL	Number	Non-BPL	Number	Total	Number
Place of residence																		
Rural	30.3	12,076	20.4	8,649	26.3	20,725	25.4	3,389	17.8	2,013	22.6	5,402	2.5	12,076	0.3	8,649	1.6	20,725
Urban	22.1	4,007	9.7	6,732	14.0	10,739	17.8	1,327	9.4	1,697	12.5	3,024	1.5	4,007	0.1	6,732	0.6	10,739
Sex																		
Male	31.4	7,539	16.4	7,559	24.1	15,098	NA	NA	NA	NA	NA	NA	2.5	7,539	0.3	7,559	1.4	15,098
Female	26.3	8,544	15.9	7,822	21.3	16,366	23.7	4,716	13.9	3,710	19.2	8426	2.3	8,544	0.2	7,822	1.3	16,366
Marital status																		
Currently married	28.4	9,726	14.8	10,194	21.7	19,920	NA	NA	NA	NA	NA	NA	2.5	9,726	0.3	10,194	1.4	19,920
Widowed	29.4	5,896	18.2	4,823	24.2	10,719	NA	NA	NA	NA	NA	NA	2.1	5,896	0.1	4,823	1.2	10,719
Divorced/Separated/Deserted/Others	24.6	461	20.4	364	22.9	825	NA	NA	NA	NA	NA	NA	2.5	461	0.2	364	1.6	825
Living arrangement																		
Living alone	32.1	992	21.3	630	27.6	1,622	26.5	751	17.3	421	22.9	1,172	3.7	992	0.1	630	2.2	1,622
Living with spouse and/or others	30.3	3,317	16.4	2,898	24.0	6,215	NA	NA	NA	NA	NA	NA	3.3	3,317	0.1	2,898	1.9	6,215
Living with spouse and children	27.2	6,302	14.0	7,163	20.4	13,465	NA	NA	NA	NA	NA	NA	2.0	6,302	0.4	7,163	1.2	13,465
Living with children and others	28.1	4,531	16.7	3,887	22.6	8,418	23.2	3,410	14.1	2,841	18.9	6,251	1.9	4,531	0.2	3,887	1.1	8,418
Living with others only	31.9	941	24.5	803	28.7	1,744	22.6	555	9.0	448	16.7	1,003	1.7	941	0.0	803	1.0	1,744
Religion																		
Hindu	28.7	11,891	16.0	11,146	22.7	23,037	23.3	3,472	13.9	2,717	19.0	6,189	2.4	11,891	0.2	11,146	1.4	23,037
Muslim	30.1	1,898	11.5	1,833	21.3	3,731	27.0	582	12.4	461	20.5	1,043	0.9	1,898	0.2	1,833	0.6	3,731
Christian	27.2	1,894	14.9	1,256	23.4	3,150	27.1	552	15.9	285	24.3	837	5.8	1,894	0.0	1,256	4.1	3,150
Others	22.5	400	27.1	1,146	25.8	1,546	13.1	110	17.7	247	16.1	357	0.8	400	0.8	1,146	0.8	1,546
Caste																		
Scheduled tribe	32.9	3,262	20.6	1,911	29.4	5,173	24.8	943	5.1	470	22.4	1,413	2.6	3,262	0.3	1,911	2.0	5,173
Scheduled caste	31.7	3,196	26.7	1,944	29.9	5,140	26.5	942	16.1	524	22.9	1,466	2.4	3,196	0.3	1,944	1.7	5,140
Other backward class	28.5	6,592	16.0	5,294	22.6	11,886	22.5	1,891	14.2	1,247	18.6	3,138	2.7	6,592	0.2	5,294	1.5	11,886
None of the above	23.1	3,033	11.6	6,232	15.8	9,265	22.3	940	12.5	1,469	16.5	2,409	1.4	3,033	0.2	6,232	0.7	9,265
Education																		
No schooling	30.9	10,321	23.0	6,568	27.8	16,889	25.0	3,832	16.8	2,451	21.7	6,283	2.3	10,321	0.3	6,568	1.5	16,889
Less than 5 years complete	30.5	2,038	14.4	1,743	23.2	3,781	19.9	414	11.6	407	15.2	821	1.7	2,038	0.2	1,743	1.0	3,781
5-9 years complete	23.6	2,620	14.9	3,397	18.6	6,017	18.6	389	8.8	553	12.4	942	2.8	2,620	0.3	3,397	1.4	6,017
10 or more years complete	14.1	1,104	4.4	3,673	6.6	4,777	3.6	81	4.1	299	4.0	380	3.0	1,104	0.2	3,673	0.9	4,777
Work status																		
Currently working	24.2	5,631	15.3	3,676	20.8	9,307	24.4	839	21.5	375	23.6	1,214	2.5	5,631	0.5	3,676	1.7	9,307
Worked in past but currently not working	33.2	6,616	17.0	6,761	25.3	13,377	26.2	2,018	15.3	1,220	22.0	3,238	2.5	6,616	0.1	6,761	1.4	13,377
Never worked	27.3	3,836	15.5	4,944	20.4	8,780	20.1	1,859	11.9	2,115	15.3	3,974	1.8	3,836	0.2	4,944	0.9	8,780
Total	**28.7**	**16,083**	**16.1**	**15,381**	**22.6**	**31,464**	**23.7**	**4,716**	**13.9**	**3,710**	**19.2**	**8,426**	**2.3**	**16,083**	**0.2**	**15,381**	**1.3**	**31,464**

Table 16.4 shows the percentages of the elderly receiving benefits from various social security schemes across the states/UTs of India. Compared to all other states, a much higher proportion of the elderly from BPL households receive IGNOAPS benefits in Rajasthan (69%), whereas it is lowest in Maharashtra (4%).

Table 16.4 Percentage of elderly age 60 and above receiving benefits from various social security schemes, states/UTs, LASI Wave 1, 2017-18

States/Union Terroirs	National Old Age Pension Scheme						Widow Pension Scheme						Annapurna Scheme					
	BPL	Number	Non-BPL	Number	Total	Number	BPL	Number	Non-BPL	Number	Total	Number	BPL	Number	Non-BPL	Number	Total	Number
India	**28.7**	**16,083**	**16.1**	**15,381**	**22.6**	**31,464**	**23.7**	**4,716**	**13.9**	**3,710**	**19.2**	**8,426**	**2.3**	**16,083**	**0.2**	**15,381**	**1.3**	**31,464**
North																		
Chandigarh	41.2	28	10.7	366	12.7	394	29.9	9	25.0	77	25.5	86	0.0	28	0.0	366	0.0	394
Delhi	43.1	141	24.3	354	29.4	495	44.2	27	18.1	79	23.0	106	0.6	141	0.0	354	0.2	495
Haryana	60.1	266	49.8	582	53.0	848	39.3	84	50.6	155	46.6	239	0.0	266	0.1	582	0.1	848
Himachal Pradesh	28.0	177	15.8	444	19.3	621	41.6	65	10.3	100	23.6	165	0.0	177	0.0	444	0.0	621
Jammu & Kashmir	35.2	374	9.4	357	22.7	731	42.7	77	16.0	75	29.1	152	0.0	374	0.0	357	0.0	731
Punjab	54.8	98	34.0	906	35.9	1,004	20.9	16	15.8	198	16.1	214	0.0	98	0.8	906	0.7	1,004
Rajasthan	68.9	310	45.3	768	51.9	1,078	32.5	83	18.9	185	22.7	268	4.5	310	0.5	768	1.6	1,078
Uttarakhand	30.2	287	13.4	354	21.2	641	37.3	99	11.6	76	25.9	175	0.8	287	0.0	354	0.4	641
Central																		
Chhattisgarh	32.3	600	13.0	180	27.5	780	35.8	148	16.6	39	31.5	187	10.7	600	0.9	180	8.3	780
Madhya Pradesh	43.7	684	10.0	629	28.5	1,313	36.2	191	8.8	113	25.6	304	3.0	684	0.4	629	1.8	1,313
Uttar Pradesh	15.2	864	9.0	1,305	11.5	2,169	20.0	199	17.0	291	18.2	490	0.6	864	0.0	1,305	0.3	2,169
East																		
Bihar	46.1	1,143	23.2	665	36.7	1,808	17.1	235	20.2	112	18.1	347	5.7	1,143	0.6	665	3.6	1,808
Jharkhand	34.9	689	18.1	479	27.5	1,168	30.3	181	33.8	105	31.7	286	2.3	689	0.2	479	1.3	1,168
Odisha	42.1	735	26.0	502	35.7	1,237	41.1	212	33.6	121	38.4	333	2.7	735	0.1	502	1.7	1,237
West Bengal	18.8	803	4.6	741	12.7	1,544	22.8	300	11.3	206	18.9	506	0.0	803	0.0	741	0.0	1,544
Northeast																		
Arunachal Pradesh	4.9	198	3.8	120	4.6	318	2.3	57	1.3	27	2.1	84	0.0	198	0.0	120	0.0	318
Assam	29.2	488	11.1	328	21.7	816	3.7	191	0.7	92	2.7	283	5.4	488	2.0	328	4.0	816
Manipur	23.9	436	9.4	170	19.4	606	2.4	126	0.0	35	1.9	161	0.1	436	0.0	170	0.1	606
Meghalaya	37.4	282	19.2	130	30.9	412	7.2	110	3.2	46	5.9	156	0.0	282	0.0	130	0.0	412
Mizoram	28.8	242	12.5	289	19.3	531	0.0	59	0.0	55	0.0	114	0.0	242	0.0	289	0.0	531
Nagaland	18.0	424	8.8	184	15.2	608	2.2	92	5.6	30	2.8	122	0.0	424	0.0	184	0.0	608
Tripura	54.1	271	24.0	190	41.8	461	15.1	77	10.6	56	13.3	133	0.0	271	0.0	190	0.0	461
West																		
Dadra & Nagar Haveli	41.2	203	29.3	248	33.7	451	41.1	49	20.5	69	28.1	118	0.0	203	0.0	248	0.0	451
Daman & Diu	51.2	130	39.8	304	43.4	434	47.2	39	27.7	93	32.8	132	0.0	130	0.0	304	0.0	434
Goa	37.7	228	19.2	409	25.5	637	19.5	86	11.5	111	14.7	197	0.5	228	0.0	409	0.2	637
Gujarat	11.5	355	2.9	636	6.0	991	6.0	110	7.1	155	6.6	265	0.0	355	0.1	636	0.1	991
Maharashtra	4.3	764	2.5	1,026	3.3	1,790	9.6	225	6.6	265	8.0	490	0.1	764	0.1	1,026	0.1	1,790

continued

continued

States/Union Terroirs	National Old Age Pension Scheme					Widow Pension Scheme						Annapurna Scheme						
	BPL	Number	Non-BPL	Number	Total	Number	BPL	Number	Non-BPL	Number	Total	Number	BPL	Number	Non-BPL	Number	Total	Number
South																		
Andaman & Nicobar Islands	29.0	153	32.1	370	31.2	523	14.6	37	26.5	88	23.0	125	0.0	153	0.0	370	0.0	523
Andhra Pradesh	34.2	961	7.9	144	30.7	1,105	51.0	281	12.2	44	45.7	325	0.4	961	0.0	144	0.3	1,105
Karnataka	48.2	758	19.1	246	38.1	1,004	26.5	243	6.9	76	18.1	319	0.2	758	0.0	246	0.1	1,004
Kerala	34.7	508	23.3	701	27.9	1,209	35.3	178	20.1	169	27.2	347	0.2	508	0.1	701	0.1	1,209
Lakshadweep	9.3	154	5.7	348	6.9	502	25.8	56	22.6	90	23.8	146	1.9	154	0.0	348	0.7	502
Puducherry	53.0	362	34.0	278	44.7	640	16.8	144	18.5	70	17.3	214	2.3	362	0.1	278	1.3	640
Tamil Nadu	13.0	1,126	14.0	408	13.3	1,534	6.1	361	7.7	149	6.6	510	7.0	1,126	0.9	408	5.4	1,534
Telangana	24.8	841	8.1	220	21.2	1,061	41.3	269	28.6	58	38.9	327	0.1	841	0.5	220	0.2	1,061

16.3 REASONS FOR NOT UTILISING THE SCHEMES

The reasons for not utilising the social security schemes were also explored in the survey, with reasons of 'no need', 'not eligible or not applicable', 'do not have the proper documents', 'not yet applied', 'process of getting benefits is cumbersome', and 'other reasons'. Table 16.5 presents the reasons reported for not utilising the social welfare schemes and shows that more than a third (35%) of the elderly men report that the process of getting benefits is cumbersome. However, a quarter of the elderly men (26%) have not applied for an old-age pension. For IGNWPS, 10% of the elderly widows said that they do not need this pension, and 47% of the elderly widows are not eligible for it.

Table 16.5 Percent distribution of elderly age 60 and above of BPL households not utilising the social security scheme by reasons according to sex, India, LASI Wave 1, 2017-18

Men							
Social Security Scheme	**No need**	**Not eligible/Not applicable**	**Not having documents**	**Not yet applied**	**Process of getting benefits is cumbersome**	**Other reasons**	**Number**
Old Age Pension Scheme	7.2	19.9	8.3	25.6	35.1	3.8	**2,244**
Annapurna Scheme	12.1	38.4	10.5	19.9	18.4	0.6	**867**
Women							
Social Security scheme	**No need**	**Not eligible/ Not applicable**	**Not having documents**	**Not yet applied**	**Process of getting benefits is cumbersome**	**Other reasons**	**Number**
Old Age Pension Scheme	5.9	22.5	6.9	24.5	36.5	3.7	**2,437**
Widow Pension Scheme	10.3	47.4	5.2	14.9	20.0	2.2	**2,720**
Annapurna Scheme	8.7	46.3	8.6	17.3	18.3	0.8	**589**

In the LASI, questions were also asked about the types of problems usually faced by the elderly in receiving the benefits. Table 16.6 shows the percent distribution of the elderly age 60 and above of BPL households by the type of problems they face while receiving the pension. Thirty percent of the elderly beneficiaries of the old-age pension scheme state that there was a delay in receiving the money, and 24% experience problems in producing the required documents. Similarly, 35% of the beneficiaries of IGNWPS report a delay in receiving financial assistance, and 17% have problems in producing the required documents.

Table 16.6 Percent distribution of elderly age 60 and above of BPL households by type of problems faced in receiving pension benefits, India, LASI Wave 1, 2017-18

Social Security Scheme	**Delay in receiving money**	**Non-receipt of pension**	**Documentation Problems**	**Other Problems**	**Number**
Old Age Pension Scheme	29.9	5.7	24.2	40.3	689
Widow Pension Scheme	35.4	9.1	16.7	38.8	169

16.4 AWARENESS AND UTILISATION OF CONCESSIONS FOR SENIOR CITIZENS

The Ministry of Social Justice and Empowerment, the nodal ministry responsible for the welfare of senior citizens along with many other ministries provide various types of concessions, insurance, and tax benefits. In addition to collecting information on social security schemes, LASI also gathered data on the awareness and utilisation of special concessions provided by the government to senior citizens which aimed to improve their quality of life. These include concessions in train, bus, and air travel, telephone connections, special interest rates for bank accounts and loans, and income tax benefits for the elderly.

Table 16.7 provides the percentage of the elderly who are aware of any concessions according to the background characteristics. Awareness is higher amongst the elderly in the urban (37%) than in rural areas (25%). A higher proportion of elderly men (33%) than elderly women (24%) are aware of the concessions. With an increase in education as well as the MPCE quintile, there is an increase in the awareness of concessions amongst both elderly men and women. The proportion of awareness of concessions increases from 18% amongst elderly women with no education to 54% of women with 10 or more years of education.

Figure 16.2 provides information on the awareness and utilisation of concessions provided by the government and shows that less than a third (28%) of the elderly age 60 and above are aware of any of the concessions provided by the government. Awareness of the concessions amongst the rural elderly is comparatively lower than their urban counterparts. The awareness of concessions amongst the elderly is highest in the state of Maharashtra (65%) and lowest in the state of Nagaland (2%). With the exception of Maharashtra, in the other states or UTs, the majority of the elderly are not aware of any concessions provided by the government. In Nagaland, Telangana, Arunachal Pradesh, and Jammu & Kashmir, 6% or less of the elderly are aware of these concessions.

Table 16.7 Percentage of elderly age 60 and above who are aware about any concessions given by government by sex according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Men		Women		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
Place of residence						
Rural	30.2	10,077	19.7	10,648	24.9	20,725
Urban	40.0	5,021	33.6	5,718	36.7	10,739
Marital status						
Currently married	34.3	12,398	23.9	7,522	30.5	19,920
Widowed	27.7	2,293	24.0	8,426	25.0	10,719
Divorced/Separated/Deserted/Others	21.1	407	27.7	418	24.3	825
Living arrangement						
Living alone	26.6	365	21.7	1,257	22.9	1,622
Living with spouse and/or others	32.4	3,739	23.2	2,476	28.9	6,215
Living with spouse and children	35.3	8,528	24.4	4,937	31.4	13,465
Living with children and others	28.5	1,928	25.4	6,490	26.4	8,418
Living with others only	23.0	538	18.7	1,206	20.1	1,744
Religion						
Hindu	33.9	11,078	24.8	11,959	29.3	23,037
Muslim	28.1	1,804	17.4	1,927	22.8	3,731
Christian	33.0	1,468	19.4	1,682	25.2	3,150
Others	26.6	748	28.2	798	27.7	1,546
Caste						
Scheduled tribe	18.9	2,436	11.5	2,737	14.9	5,173
Scheduled caste	25.2	2,448	18.7	2,692	21.8	5,140
Other backward class	34.1	5,781	25.8	6,105	30.0	11,886
None of the above	40.2	4,433	28.6	4,832	34.2	9,265
Education						
No schooling	20.5	5,479	18.3	11,410	19.1	16,889
Less than 5 years complete	33.4	2,184	29.6	1,597	32.1	3,781
5-9 years complete	38.1	3,850	37.8	2,167	38.1	6,017
10 or more years complete	48.3	3,585	54.0	1,192	49.8	4,777
Work status						
Currently working	32.1	6,331	23.5	2,976	29.4	9,307
Worked in past but currently not working	34.8	8,011	25.3	5,366	31.0	13,377
Never worked	16.7	756	23.2	8,024	22.9	8,780
MPCE quintile						
Poorest	26.1	3,035	17.9	3,449	21.7	6,484
Poorer	30.6	3,068	21.6	3,409	25.9	6,477
Middle	34.3	3,064	23.7	3,352	29.0	6,416
Richer	34.6	2,990	28.1	3,180	31.4	6,170
Richest	40.6	2,941	31.2	2,976	36.2	5,917
Total	**32.9**	**15,098**	**24.0**	**16,366**	**28.4**	**31,464**

Figure 16.2 Percentage of elderly age 60 and above who are aware about any concessions given by government, states/UTs, LASI Wave 1, 2017-18

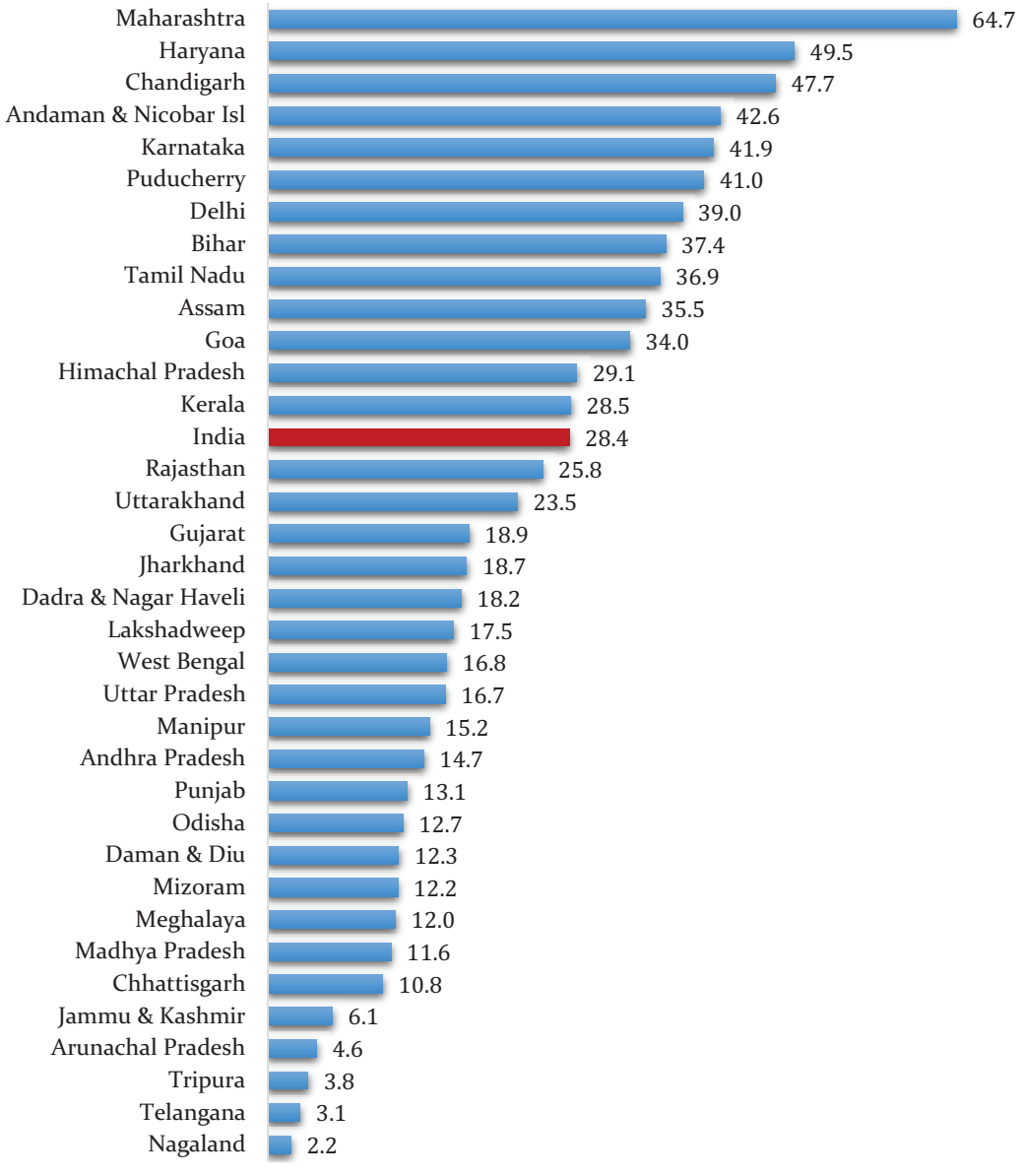
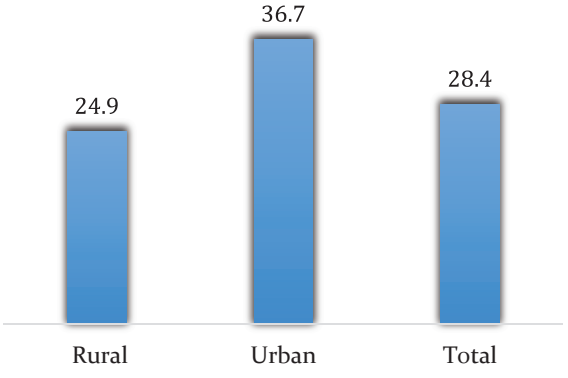


Figure 16.3 shows that 28% of the elderly are aware of the concessions given by the government, and awareness of the concessions is higher amongst the urban elderly (37%) compared to their rural counterparts (25%).

Figure 16.3 Percentage of elderly age 60 and above who are aware about any concessions for senior citizens, according to place of residence, India, LASI Wave 1, 2017-18



A higher proportion of the elderly age 60 and above from urban areas compared to rural areas have used the concessions. Similarly, a higher proportion of elderly men than elderly women are using concessions. The concessions are also being utilised more by the elderly who are economically well-off because of their enhanced awareness. Higher education and better household economic conditions also lead to a higher utilisation of these concessions (Table 16.8).

The proportion of the elderly who utilise the various types of concessions is low. Only 15% of the elderly have received concessions for train and bus travel, and 2% of the elderly utilise concessions for air travel. However, 3% of the elderly have benefitted from special interest rates for bank accounts or loans (Table 16.9).

Table 16.8 Percentage of elderly age 60 and above who received concessions according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Train travel	Bus travel	Air travel	Telecommuni-cations services (phone, etc.)	Special interest rates on bank account or loan	Income tax rebate	Number
Place of residence							
Rural	11.4	12.3	1.1	0.5	2.2	0.7	20,725
Urban	23.0	20.4	4.7	2.3	5.9	3.2	10,739
Sex							
Male	17.4	15.5	3.1	1.5	5.4	2.3	15,098
Female	12.4	13.9	1.3	0.5	1.5	0.6	16,366
Marital status							
Currently married	16.3	14.9	2.8	1.3	4.2	1.9	19,920
Widowed	12.5	14.5	1.1	0.5	1.8	0.6	10,719
Divorced/Separated/Deserted/Others	12.8	9.7	0.2	0.1	3.5	0.2	825
Living arrangement							
Living alone	11.1	12.8	0.6	0.3	1.7	0.3	1,622
Living with spouse and/or others	15.4	14.1	2.5	1.0	3.5	1.6	6,215
Living with spouse and children	16.7	15.4	3.0	1.4	4.6	2.1	13,465
Living with children and others	13.9	15.7	1.3	0.6	2.1	0.6	8,418
Living with others only	7.5	8.3	0.5	0.3	1.0	0.4	1,744
Religion							
Hindu	15.7	15.5	2.3	1.1	3.6	1.5	23,037
Muslim	9.7	9.3	1.2	0.5	1.8	0.5	3,731
Christian	10.1	8.6	1.8	0.9	2.9	2.1	3,150
Others	14.0	17.2	2.3	0.9	2.5	1.4	1,546
Caste							
Scheduled tribe	5.1	7.4	0.7	0.3	1.1	0.4	5,173
Scheduled caste	11.1	11.0	1.1	0.5	2.0	0.7	5,140
Other backward class	15.2	15.4	1.7	0.9	3.1	1.2	11,886
None of the above	19.6	18.1	4.0	1.8	5.2	2.6	9,265
Education							
No schooling	8.2	10.3	0.5	0.3	1.1	0.3	16,889
Less than 5 years complete	15.8	17.3	0.8	0.3	2.2	0.3	3,781
5-9 years complete	20.6	18.1	2.6	1.0	4.2	1.5	6,017
10 or more years complete	33.0	25.8	9.1	4.6	12.1	6.7	4,777
Work status							
Currently working	14.5	14.9	2.0	0.8	3.6	1.1	9,307
Worked in past but currently not working	15.5	15.9	2.5	1.4	4.2	2.0	13,377
Never worked	14.2	12.4	1.6	0.7	1.6	0.8	8,780
MPCE quintile							
Poorest	10.2	10.5	0.9	0.6	2.0	0.5	6,484
Poorer	12.7	12.5	1.5	0.5	2.2	0.9	6,477
Middle	14.4	15.0	2.1	1.3	3.7	1.4	6,416
Richer	17.6	18.1	2.4	1.1	3.6	1.7	6,170
Richest	21.0	18.7	4.2	1.7	5.7	3.1	5,917
Total	**14.8**	**14.7**	**2.1**	**1.0**	**3.3**	**1.4**	**31,464**

State-wise differences in the utilisation of concessions are presented in Table 16.9. Delhi has the highest usage of income tax rebates, special bank interest rates, train, air, and bus travel concessions, and telephone connections on a priority basis. A sizeable proportion of the elderly from Chandigarh, Haryana, Bihar, Maharashtra, and Puducherry have used travel concessions, while none of the elderly interviewed from Arunachal Pradesh have used any concessions. A small proportion of the elderly from the states /UTs of Jammu and Kashmir, Nagaland, Tripura, and Mizoram are using the concessions meant for the senior citizens.

Table 16.9 Percentage of elderly age 60 and above who received concessions, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Train travel	Bus travel	Air travel	Telecommuni-cations services	Special interest rates on bank accounts or loan	Income tax benefits	Number
India	**14.8**	**14.7**	**2.1**	**1.0**	**3.3**	**1.4**	**31,464**
North							
Chandigarh	32.3	34.8	1.3	0.0	2.6	2.8	394
Delhi	33.1	25.5	9.7	7.1	14.9	8.6	495
Haryana	27.4	32.7	2.7	0.8	5.8	1.6	848
Himachal Pradesh	6.6	15.3	2.4	1.1	8.4	3.1	621
Jammu & Kashmir	1.1	0.9	0.5	0.2	0.2	0.1	731
Punjab	5.9	3.8	0.3	0.2	1.0	0.4	1,004
Rajasthan	11.5	17.8	4.4	1.7	5.0	2.4	1,078
Uttarakhand	9.9	11.8	0.6	0.1	2.9	1.0	641
Central							
Chhattisgarh	7.8	1.0	0.8	0.0	3.1	1.3	780
Madhya Pradesh	6.5	2.1	0.6	0.0	1.1	0.2	1,313
Uttar Pradesh	11.8	6.8	2.1	1.2	3.1	1.6	2,169
East							
Bihar	22.2	4.8	1.5	1.6	3.5	1.7	1,808
Jharkhand	14.2	2.0	1.4	1.0	5.2	2.3	1,168
Odisha	11.1	6.3	2.5	0.5	3.4	1.4	1,237
West Bengal	10.3	4.1	3.0	1.1	3.9	1.0	1,544
Northeast							
Arunachal Pradesh	0.0	0.0	0.0	0.0	0.0	0.0	318
Assam	4.3	2.5	1.6	0.1	0.7	0.1	816
Manipur	7.9	6.7	6.5	4.1	5.1	1.4	606
Meghalaya	0.2	0.0	0.2	0.2	0.2	0.0	412
Mizoram	0.5	3.2	0.0	0.0	0.0	0.0	531
Nagaland	0.4	0.0	0.1	0.0	0.0	0.0	608
Tripura	1.9	1.2	1.3	0.0	1.0	0.8	461
West							
Dadra & Nagar Haveli	3.7	2.6	0.0	0.0	0.9	0.0	451
Daman & Diu	6.2	0.6	0.1	0.0	1.7	1.2	434
Goa	7.6	14.6	3.0	1.9	2.8	1.5	637
Gujarat	10.3	5.0	2.6	1.3	3.7	3.3	991
Maharashtra	30.4	55.6	3.2	0.7	4.1	0.9	1,790
South							
Andaman & Nicobar Islands	4.7	40.9	3.6	0.0	0.0	0.0	523
Andhra Pradesh	6.5	10.2	2.2	1.6	2.3	1.7	1,105
Karnataka	17.2	29.3	0.6	0.4	2.4	0.4	1,004
Kerala	11.9	5.6	2.5	1.9	2.9	1.9	1,209
Lakshadweep	2.7	5.3	3.5	0.9	0.8	0.4	502
Puducherry	22.1	22.9	6.9	2.2	1.8	0.8	640
Tamil Nadu	17.8	12.0	3.9	2.0	5.9	2.7	1,534
Telangana	1.8	1.7	0.9	0.7	1.0	0.9	1,061

16.5 AWARENESS OF THE MAINTENANCE AND WELFARE OF PARENTS AND SENIOR CITIZENS ACT

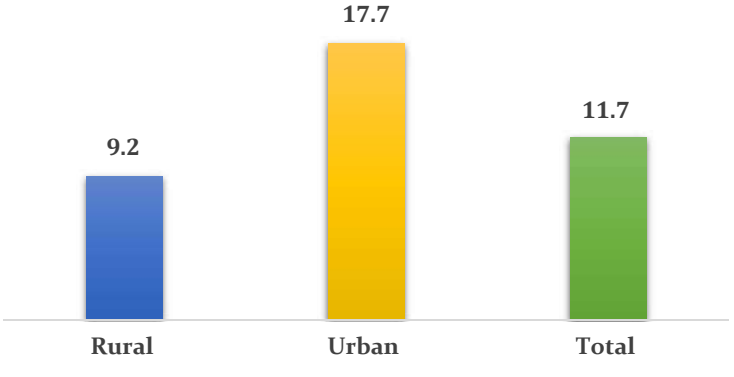
The Maintenance and Welfare of Parents and Senior Citizens Act was enacted in 2007 to ensure the needs-based maintenance and welfare of parents and senior citizens.

The Act provides for:

i. Maintenance of parents or senior citizens by children or relatives made obligatory and justiciable through tribunals.
ii. Revocation of the transfer of property by senior citizens in case of negligence by relatives.
iii. Penal provision for the abandonment of senior citizens.
iv. Establishment of old-age homes for indigent senior citizens.
v. Protection of life and property of senior citizens.
vi. Adequate medical facilities for senior citizens

In LASI, the elderly respondents were asked: 'Are you aware of or heard about the Maintenance and Welfare of Parents and Senior Citizens Act?' Figure 16.4 shows the percentage of the elderly who are aware of this Act in rural and urban areas. Only 12% of the elderly are aware of the Act, and awareness is relatively higher amongst the urban elderly (18%) than those from rural areas (9%).

Figure 16.4 Percentage of elderly age 60 and above who are aware of "Maintenance and Welfare of Parents and Senior Citizens Act" by place of residence, India, LASI Wave 1, 2017-18



More elderly men compared to women are aware of the Act, and awareness amongst the elderly increases with the increased levels of education. Only 5% of elderly women with no formal education are aware of the Act, however, 39% of elderly women with 10 or more years of education are aware of it. Across the states/UTs, awareness of the Act amongst elderly men is highest in the state of Assam (54%) followed by Puducherry (51%), Tamil Nadu (28%), and Chandigarh (23%). Awareness of the Act amongst elderly women is almost absent in the states of Punjab (1%), Nagaland (1%), and Jharkhand (2%) (Table 16.11). These results demonstrate that awareness campaigns in local languages on the provisions of the Act are necessary, helplines for senior citizens should be used for spreading information about the Act, and Panchayats must be involved in creating awareness in rural areas.

Table 16.10 Percentage of elderly age 60 and above who are aware of "Maintenance and Welfare of Parents and Senior Citizens Act" by sex according to background characteristics, India, LASI Wave 1, 2017-18

Background characteristics	Men		Women		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
Place of residence						
Rural	12.5	10,077	6.1	10,648	9.2	20,725
Urban	21.9	5,021	14.3	5,718	17.7	10,739
Marital status						
Currently married	16.0	12,398	10.1	7,522	13.8	19,920
Widowed	12.0	2,293	7.6	8,426	8.5	10,719
Divorced/Separated/Deserted/Others	8.0	407	6.3	418	7.2	825
Living arrangement						
Living alone	15.0	365	6.2	1,257	8.1	1,622
Living with spouse and/or others	14.8	3,739	9.9	2,476	12.9	6,215
Living with spouse and children	16.5	8,528	10.4	4,937	14.3	13,465
Living with children and others	12.7	1,928	8.1	6,490	9.2	8,418
Living with others only	6.6	538	5.3	1,206	5.7	1,744
Religion						
Hindu	15.7	11,078	8.9	11,959	12.1	23,037
Muslim	12.0	1,804	7.2	1,927	9.6	3,731
Christian	17.1	1,468	12.2	1,682	14.3	3,150
Others	10.0	748	4.9	798	7.3	1,546
Caste						
Scheduled tribe	9.1	2,436	5.2	2,737	6.9	5,173
Scheduled caste	12.0	2,448	5.1	2,692	8.3	5,140
Other backward class	14.7	5,781	10.4	6,105	12.5	11,886
None of the above	19.6	4,433	9.4	4,832	14.2	9,265
Education						
No schooling	6.4	5,479	4.9	11,410	5.4	16,889
Less than 5 years complete	14.3	2,184	9.7	1,597	12.4	3,781
5-9 years complete	15.5	3,850	14.2	2,167	15.0	6,017
10 or more years complete	30.0	3,585	38.7	1,192	32.1	4,777
Work status						
Currently working	13.0	6,331	6.3	2,976	10.8	9,307
Worked in past but currently not working	17.4	8,011	8.7	5,366	13.8	13,377
Never worked	8.1	756	9.6	8,024	9.5	8,780
MPCE quintile						
Poorest	9.8	3,035	4.9	3,449	7.1	6,484
Poorer	13.2	3,068	6.6	3,409	9.7	6,477
Middle	15.5	3,064	9.6	3,352	12.5	6,416
Richer	15.9	2,990	7.4	3,180	11.5	6,170
Richest	22.6	2,941	17.1	2,976	19.8	5,917
Total	**15.1**	**15,098**	**8.7**	**16,366**	**11.7**	**31,464**

Table 16.11 Percentage of elderly age 60 and above who are aware of "Maintenance and Welfare of Parents and Senior Citizens Act" by sex, states/UTs, LASI Wave 1, 2017-18

States/Union Territory	Men		Women		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
India	**15.1**	**15,098**	**8.7**	**16,366**	**11.7**	**31,464**
North						
Chandigarh	23.2	190	23.3	204	23.3	394
Delhi	16.7	251	9.0	244	12.9	495
Haryana	12.1	363	2.6	485	6.6	848
Himachal Pradesh	12.7	304	1.7	317	7.1	621
Jammu & Kashmir	12.1	382	3.6	349	7.8	731
Punjab	4.0	501	1.2	503	2.6	1,004
Rajasthan	16.4	505	5.6	573	10.5	1,078
Uttarakhand	13.4	303	2.8	338	7.9	641
Central						
Chhattisgarh	9.9	392	2.8	388	6.3	780
Madhya Pradesh	17.6	644	11.2	669	14.4	1,313
Uttar Pradesh	5.7	1,119	2.9	1,050	4.3	2,169
East						
Bihar	12.4	925	7.8	883	10.2	1,808
Jharkhand	7.2	585	1.6	583	4.3	1,168
Odisha	16.5	601	6.5	636	11.3	1,237
West Bengal	24.5	752	9.4	792	16.7	1,544
Northeast						
Arunachal Pradesh	3.8	176	0.0	142	2.0	318
Assam	54.3	388	35.7	428	44.3	816
Manipur	13.2	261	8.8	345	10.7	606
Meghalaya	7.6	164	6.0	248	6.6	412
Mizoram	14.6	265	13.3	266	14.0	531
Nagaland	0.0	301	1.3	307	0.7	608
Tripura	20.3	227	15.0	234	17.6	461
West						
Dadra & Nagar Haveli	28.6	197	11.5	254	19.2	451
Daman & Diu	20.0	184	6.9	250	12.1	434
Goa	25.5	289	19.2	348	22.0	637
Gujarat	17.8	454	8.5	537	12.7	991
Maharashtra	15.6	829	6.7	961	10.7	1,790
South						
Andaman & Nicobar Islands	6.1	276	5.2	247	5.7	523
Andhra Pradesh	9.3	551	6.2	554	7.8	1,105
Karnataka	10.6	479	9.4	525	10.0	1,004
Kerala	27.4	538	13.6	671	19.4	1,209
Lakshadweep	17.7	240	6.1	262	11.5	502
Puducherry	51.2	275	42.7	365	46.4	640
Tamil Nadu	28.3	685	20.0	849	23.7	1,534
Telangana	6.2	502	3.7	559	4.9	1,061

Key findings: social security schemes for the elderly

- Overall, the awareness of the social security schemes among the elderly in India is low. Slightly more than half of the elderly (55%) are aware of the old-age pension scheme (IGNOAPS), 44% of the elderly are aware of the widow pension scheme (IGNWPS), and only 12% of the elderly interviewed are aware of Annapurna Scheme. A higher proportion of the elderly from rural areas are aware of social security schemes than those from urban areas.
- About a third of the rural elderly from BPL households are recipients of old-age pension benefits. Amongst the elderly widows belonging to BPL households, 24% are recipients of the widow pension scheme.
- The two main reasons reported for not using the social security schemes is that the process of enrolment in the scheme is cumbersome (35%) and because of not having the required documents (8%).
- Slightly more than a third (35%) of the beneficiaries of the widow pension scheme state that there is a considerable delay in receiving the money.
- About a quarter of the elderly are aware of concessions provided by the government such as for train, bus, and air travel, telephone connections, special interest rates for bank accounts and loans, and income tax benefits. This proportion is lower amongst the rural elderly than their urban counterparts.
- Only 12% of the elderly are aware of the Maintenance and Welfare of Parents and Senior Citizens Act 2007.

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GLOSSARY

AADHAAR CARD: is a 12-digit unique identification number containing the demographic and biometric information of an individual and is issued to the residents of India. The Aadhaar card is issued by the Unique Identification Authority of India (UIDAI), Government of India.

ACTIVITIES OF DAILY LIVING (ADL): Activities of Daily Living (ADL) is a term used to refer to normal daily self-care activities (such as movement in bed, changing position from sitting to standing, feeding, bathing, dressing, grooming, personal hygiene etc.) The ability or inability to perform ADLs is used to measure a person's functional status, especially in the case of people with disabilities and the elderly. Elders who maintain their ADL's have a higher level of independence.

ALZHEIMER'S DISEASE: Alzheimer's disease is an irreversible, progressive brain disease that slowly destroys memory and thinking skills, and eventually even the ability to carry out the simplest tasks. Alzheimer's disease is the most common cause of dementia among older people.

ANEMIA: Anemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status.

ANNAPURNA SCHEME: The Annapurna Scheme was launched in the year 2000. Under this scheme food grains provides to the senior citizens who, though eligible, have remained uncovered under the National Old Age Pension Scheme (NOAPS). The Scheme is targeted to cover 20% (13.762 lakh) of persons eligible to receive pension under NOAPS.

ANY NEUROLOGICAL OR PSYCHIATRIC PROBLEMS: Neurological disorders are physical diseases of the nervous system and psychiatric illnesses are the disorders that manifest as abnormalities of thought, feeling, or behavior.

ARTHRITIS / OSTEOARTHRITIS (degenerative joint disease), a result of trauma to the joint, infection of the joint, or age. It involves the wearing away of the cartilage that caps the bones in your joints.

ARTHRITIS OR RHEUMATISM, Osteoporosis or other bone/joint diseases- "Arthritis" is a form of joint disorder that involves inflammation of one or more joints.

ASTHMA: Asthma is a chronic inflammatory disorder of the airways, usually associated with airway hyper-responsiveness and variable airflow obstruction, that is often reversible spontaneously or under treatment. Allergen sensitization is an important risk factor for asthma. Asthma is often associated with rhinitis, an inflammation of the nasal mucosa.

AYUSHMAN BHARAT YOJANA (NATIONAL HEALTH PROTECTION SCHEME): is a national scheme launched in 2018, under the aegis of Ministry of Health and Family Welfare in India. The scheme aims at making interventions in primary, secondary and tertiary care systems, covering both preventive and promotive health, to address healthcare holistically. It is an umbrella of two major health schemes namely: Health and Wellness Centres (HWC) which will bring health care closer to the homes of the people and Pradhan Mantri Jan Arogya Yojana (PM-JAY) which provides health protection cover to poor and vulnerable families.

BENIGN PROSTATIC HYPERPLASIA (BPH): Age-associated prostate gland enlargement that can cause urination difficulty. With this condition, the urinary stream may be weak, or stop and start.

Body functions are the physiological functions of body systems (including psychological functions).

CANCER: Cancer is a generic term for a large group of diseases characterized by the growth of abnormal cells beyond their usual boundaries that can then invade adjoining parts of the body and/or spread to other organs. Other common terms used are malignant tumors and neoplasms. Cancer can affect almost any part of the body or organ

Cardiovascular Disease: Cardiovascular diseases (CVDs) are disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease and other conditions.

Cataract: Cataract is an eye condition in which the lenses of the eyes become cloudy and opaque, causing partial or total blindness. If the cataract becomes too thick, surgery can be done to repair the lens of the eye.

Central Government Health Scheme (CGHS): CGHS is a contributory health scheme that provides comprehensive medical care to the central government employees and their dependents.

Chronic bronchitis: Chronic productive cough for 3 months in each of 2 consecutive years in a patient in whom other causes of productive chronic cough have been excluded.

Chronic obstructive pulmonary disease (COPD): Chronic obstructive pulmonary disease (COPD) is a lung disease characterized by chronic obstruction of lung airflow that interferes with normal breathing and is not fully reversible. The main symptoms include shortness of breath and cough with sputum production. COPD typically worsens over time. Eventually walking up stairs or carrying things becomes difficult. Chronic bronchitis and emphysema are older terms used for different types of COPD.

Chronic renal failure is a progressive loss in kidney function over a period of months or years.

Community/Cooperative Health Insurance Program (CHIP): Community-based health insurance (CBHI) is a mechanism that allows for pooling of resources to cover the costs of future, unpredictable health-related events.

Complete Edentulism: Oral Condition in which there is complete loss of natural teeth of oral cavity in elderly people.

Congestive Heart failure (CHF) or congestive cardiac failure (CCF), occurs when the heart is unable to provide sufficient pump action to maintain blood flow in the body.

Convulsions: A sudden, violent, irregular movement of the body caused by involuntary contraction of muscles and associated especially with brain disorders.

Coronary heart disease: Is the most common type of heart disease and cause of heart attacks. The disease is caused by plaque building up along the inner walls of the arteries of the heart, which narrows the arteries and reduces blood flow to the heart. It is also known as Coronary artery disease (CAD) /atherosclerotic heart disease.

Current work: Current work refers to the work status at the time of the survey. It includes those working at the time of the survey or those who are temporarily laid off, sick, or in training

Dementia: Is a group of conditions characterized by impairment of at least two brain functions, such as memory loss and judgment. Symptoms include forgetfulness, limited social skills and thinking abilities so impaired that it interferes with daily functioning.

Dental caries: Dental caries develops over time; loss of tooth substance (enamel and dentine) is caused by acid production resulting from bacterial metabolism of sugars. Advanced stages of dental caries may lead to pain, infections and abscesses, or even sepsis.

Depression: A condition of mood disorder or anxiety, characterized by a depressed mood, lack of interest in activities normally enjoyed, changes in weight and sleep, fatigue, feelings of worthlessness or guilt, difficulty concentrating and thoughts of death

DIABETES MELLITUS: Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves.

elderly people.

EMPHYSEMA: Permanent enlargement of the airspaces distal to the terminal bronchioles, accompanied by destruction of their walls without obvious fibrosis.

EMPLOYEES STATE INSURANCE SCHEME (ESIS): Employees State Insurance Scheme is a self-financing social security and health insurance scheme for Indian workers.

EVER WORK: ever work means that a person has worked continuously for at least three months in his or her lifetime. Work includes agricultural work, wage work, self-employed activities, and unpaid family business work.

EYE PROBLEMS/CONDITIONS: Eye problem referred to any eye or vision problem or condition, including ordinary nearsightedness or farsightedness

Gastrointestinal problems: Refer to diseases involving the gastrointestinal tract, namely the esophagus, stomach, small intestine, large intestine and rectum, and the accessory organs of digestions, the liver, gallbladder, and pancreas

GLAUCOMA: Glaucoma can be regarded as a group of diseases that have as a common end-point a characteristic optic neuropathy which is determined by both structural change and functional deficit.

HEAD OF THE HOUSEHOLD: 'A member of the household who is recognized to be so by the other household members as the head of the household'. This person may be acknowledged as the head on the basis of age (older), sex (generally, but not necessarily, male), and economic status (main provider) of the member, or any other reason. The household members determine who heads the household.

HEARING IMPAIRMENT implies a total or partial loss of the hearing ability. Hearing loss is diagnosed when hearing testing finds that a person is unable to hear 25 decibels in at least one ear

HEARING LOSS/DEAFNESS: A person who is not able to hear as well as someone with normal hearing – hearing thresholds of 25 dB or better in both ears – is said to have hearing loss. 'Hard of hearing' refers to people with hearing loss ranging from mild to severe. People who are hard of hearing usually communicate through spoken language and can benefit from hearing aids, cochlear implants, and other assistive devices as well as captioning. People with more significant hearing losses may benefit from cochlear implants.

HEART DISEASE: Generally, refers to conditions that involve narrowed or blocked blood vessels of the heart that can lead to a coronary heart disease, congestive heart failure, heart attack, chest pain (angina) or stroke. Other heart conditions, such as those that affect heart's muscle, valves or rhythm, also are considered forms of heart disease.

HEART RATE: The heat rate represents the number of complete cardiac cycles and therefore the number of times the left ventricles eject blood into the aorta per minute. The average resting heart rate of a human is 72 beats per minutes, but this can vary tremendously depending upon levels of fitness. Heart rate is measured by palpating your radial or carotid arteries. This is referred as pulse rate.

HUMAN PAPILLOMAVIRUS (HPV) is the most common viral infection of the reproductive tract. Most sexually active women and men will be infected at some point in their lives and some may be repeatedly infected. Cervical cancer is by far the most common HPV-related disease. Nearly all cases of cervical cancer can be attributable to HPV infection.

Hypertension or high blood pressure: Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure.

Hysterectomy is a surgical procedure to remove a woman's uterus.

Impairments are problems in body function or structure as a significant deviation or loss

Incontinence: Urinary incontinence is the voluntary leakage of urine; in simple terms, to wee when one doesn't intend to. It is the inability to hold urine in bladder because voluntary control over the urinary sphincter is either lost or weakened.

Indira Gandhi National Widow Pension Scheme (IGNWPS): The Indira Gandhi National Widow Pension Scheme (IGNWPS) is implemented by Ministry of Rural Development, Government of India since 1995. The individuals belong to a household falling below the poverty line as per the Government of India criteria. The pension amount is Rs.200 per month per beneficiary and the concerned state government is also provides the equal amount to the beneficiaries. The pension is to be credited into a post office or public sector bank account of the beneficiary. The pension will be discontinued if there is the case of remarriage or once the widow moves above the poverty line.

Indoor air pollution: Indoor air pollution refers to chemical, biological, and physical contamination of indoor air. Households using solid and unclean fuel (for cooking or any other purpose) inside the household and cooking in traditional *chullah/stove* or open fire without any ventilation.

Industry: An industry refers to the type of firm for which a person works. LASI follows the abridged version of the National Classification of Industry, 2015 (www.mospi.nic.in).

Infectious diseases: Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi; the diseases can be spread, directly or indirectly, from one person to another. Zoonotic diseases are infectious diseases of animals that can cause disease to humans.

Inpatient care (hospitalisation): a person who has stayed at least one night in a health care institution for treatment. Health care institution, for the purpose of survey, is referred to any medical institution having provision for admission of sick persons as indoor patients (inpatients) for treatment.

Instrumental activities of daily living (IADL): Activities of daily living that are not necessary related to fundamental functioning of a person, but they let an individual live independently in a community. These task are necessary for independent functioning in the community.

Kidney stones: a hard mass formed in the kidneys, usually consisting of insoluble calcium compounds; a renal calculus.

LASI age-eligible household: The LASI eligible household (LEH) refers to the household having at least one member aged 45 and above. LASI covered all men and women aged 45+, and their respective spouses even if they were outside this age range (<45).

Locomotor impairment: It is the form of physical disability related to musculoskeletal system. (Legs, arms) having reduced function of legs, finger, arms and hands includes the lack of arms or hands, or reduced ability to use them due to no or low strength or co-ordination

Lung function test: Lung function tests (also called pulmonary function tests) include a variety of tests that check how well the lungs work. The most basic test is spirometry. This test measures the amount of air the lungs can hold. The test also measures how forcefully one can empty air from the lungs. Spirometry is used to screen for diseases that affect lung volumes. It also is used to screen for diseases that affect the airways, such as COPD or asthma.

Main job: Main job is defined as a paid job at which a person works for the longest hours.

Mammography: A mammography, or mammogram, is an X-ray of the breast. It's a screening tool used to detect and diagnose breast cancer. Together with regular clinical exams and monthly breast self-examinations, mammograms are a key element in the early diagnosis of breast cancer.

Migraine: A headache of varying intensity, often accompanied by nausea and sensitivity to light and sound.

Mobility: is about moving by changing body position or location or by transferring from one place to another, by carrying, moving or manipulating objects, by walking, running or climbing, and by using various forms of transportation.

Morbidity-Morbidity has been defined as any departure, subjective or objective, from a state of physiological or psychological well-being. In practice, morbidity encompasses disease, injury, and disability. In addition, it can also be used to describe the periods of illness, or the duration of these illnesses

National Old Age Pension Scheme (NOAPS): The Indira Gandhi National Old Age Pension Scheme (IGNOAPS) is a non-contributory old age pension scheme that covers Indians who are 60 years and above and live below the poverty line. All IGNOAPS beneficiaries aged 60–79 receive a monthly pension of Rs. 300 (Rs. 200 by central government and Rs.100 by state government). Those 80 years and above receive a monthly pension amount of Rs. 500. States are strongly urged to provide an additional amount at least an equivalent amount to the assistance provided by the Central Government so that the beneficiaries can get a decent level of assistance.

Neurological problems: Neurological problems include the diseases of the brain, spine and the nerves that connect them.

Non-communicable diseases: Non-communicable diseases (NCDs), also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behaviors factors. Diseases that spread because of changing lifestyles, principally cardiovascular diseases, cancer, chronic respiratory disorder, and diabetes.

Normal Blood pressure: Normal adult blood pressure is defined as a blood pressure of 120 mm Hg when the heart beats (systolic) and a blood pressure of 80 mm Hg when the heart relaxes (diastolic). Blood pressure is measured in millimeters of mercury (mm Hg)

Occupation: Occupation refers to a specific task or set of tasks with which a person is engaged. LASI follows the abridged version of the International Classification of Occupation, 2015 (www.ncs.gov.in).

Official retirement: Official retirement refers to retirement from an organised sector of employment, including the government, state-owned enterprises, and private sector enterprises. An organised sector provides employment terms that are fixed or regular and up to a specific age. Moreover, official retirement is usually applicable for permanent employees.

Oral Health: It is defined as a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infection and sores, periodontal (gum) disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial wellbeing.

Osteoporosis is a progressive bone disease that is characterized by a decrease in bone mass and density with an increased risk of fracture.

Out-patient visit: Visits to a health care facility for consultation, treatment or diagnosis without getting hospitalized are termed as outpatient visits.

PAP SMEAR TEST: A Pap smear, also called a Pap test, is a screening procedure for cervical cancer. It tests for the presence of precancerous or cancerous cells on your cervix. The cervix is the opening of the uterus.

PARKINSON'S DISEASE: A progressive disease of the nervous system marked by tremor, muscular rigidity, and slow, imprecise movement, chiefly affecting middle-aged and elderly people.

PARTIAL EDENTULISM: Oral Condition in which there is partial loss of natural teeth of oral cavity in

PERIODONTITIS is defined as an inflammatory disease of supporting tissues of teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with periodontal pocket formation, gingival recession or both.

PRESBYCUSIS (AGE-RELATED HEARING LOSS): In the initial stages, a person with hearing loss may have difficulty in understanding words. He/she is often able to hear the sounds but unable to make out the words. This may be more evident when the background noise is high (eg in a restaurant). Such a person may also start speaking in a louder voice than normal, without being aware of it. A ringing sensation in the ear (tinnitus) and inability to hear high pitched sounds can also indicate Presbycusis.

PSYCHIATRIC PROBLEMS: A wide range of mental conditions that affect mood, thinking, and behavior.

RASHTRIYA SWASTHYA BIMA YOJANA (RSBY): Ministry of Labour and Employment, Government of India, in 2007, launched a scheme for providing health insurance to unorganized sector workforce which comprises 94% of India's total working population.

REFRACTIVE ERROR: A refractive error is a very common eye disorder. It occurs when the eye cannot clearly focus the images from the outside world. The result of refractive errors is blurred vision, which is sometimes so severe that it causes visual impairment.

RHEUMATOID ARTHRITIS (RA): It is an autoimmune inflammatory disease that usually involves various joints in the fingers, thumbs, wrists, elbows, shoulders, knees, feet, and ankles. In RA, the synovial membrane that protects and lubricates joints becomes inflamed, causing pain and swelling. Joint erosion may follow pain, swelling, stiffness, malformation, and reduced movement and function. Joint erosion may follow

SCHIZOPHRENIA: Schizophrenia is a severe mental disorder, characterized by profound disruptions in thinking, affecting language, perception, and the sense of self. It often includes psychotic experiences, such as hearing voices or delusions.

Self-care: Self-care is about caring for oneself, washing and drying oneself, caring for one's body and body parts, dressing, eating and drinking, and looking after one's health.

SELF-EMPLOYED: Self-employed includes two categories of workers: own account worker and non-agricultural business owner. Own account worker refers to an individual who works for him/herself, without employees. Non-agricultural business owner includes entities with one or more employees, wherein the business entity is owned by the respondent.

SELF-RATED HEALTH: SRH is a subjective reflection of health status, called "perceived" or "subjective" health. Self-rated health (SRH) (also known as self-assessed health or self-perceived health) refers to a single-item health measure in which individuals rate the current status of their own health on a five-point scale from very good to very poor.

SIDE JOB: Side job is defined as any job other than the respondent's main job.

SKIN DISEASE: Conditions that irritate, clog, dry or inflame your skin can cause symptoms such as redness, swelling, burning, and itching. Allergies, irritants, your genetic makeup, and certain diseases and immune system problems can cause dermatitis, hives, skin cancer and other skin conditions.

Speech impairment refers to inability of an individual to speak properly. The impairment may influence speech in a general way, or only certain aspects of it, such as fluency or voice volume.

STROKE: Stroke are caused by disruption of the blood supply to the brain. This may result from either blockage (ischemic stroke) or rupture of a blood vessel (hemorrhagic stroke). It can cause permanent or temporary paralysis (inability to move, usually lower part of the body) and loss of speech.

THYROID DISORDER is a common problem that can cause symptoms because of over- or under function of the thyroid gland. The thyroid gland is an essential organ for producing thyroid hormones, which maintain our body metabolism.

UNIPOLAR/BIPOLAR DISORDER: A disorder associated with mood swings ranging from depressive lows to manic highs.

UROGENITAL CONDITION: Urogenital diseases are disorders that affect the urinary tract (kidneys, ureters, bladder, urethra) or reproductive organs (genitals).

UTERINE FIBROID/ CYST: Fibroids are abnormal growths that develop in or on a woman's uterus. Sometimes these tumors become quite large and cause severe abdominal pain and heavy periods. In other cases, they cause no signs or symptoms at all. The growths are typically benign, or noncancerous. The cause of fibroids is unknown.

UTERINE PROLAPSE occurs when the uterus sags or slips from its normal position and into the vagina (birth canal).

VECTOR-BORNE DISEASES: Vector-borne diseases are illness that are transmitted by vectors, like mosquitoes, ticks, and fleas, etc.

VISUAL IMPAIRMENT: also known as vision impairment or vision loss, is a decreased ability to see to a degree that causes problems not fixable by usual means, such as glasses or surgery.

WAGE/SALARIED WORKERS: Wage/salaried workers are persons working on another's non-agricultural farm or non-farm enterprise (both household and non-household and in the public or private sector) who receive salary or wages.

WATER-BORNE DISEASES: Waterborne diseases are caused by drinking contaminated or dirty water. Contaminated water can cause many types of diarrheal diseases, including Cholera, and other serious illnesses such as Guinea worm disease, Typhoid, and Dysentery.

WORK: Work refers to participation in any economically productive activity with or without compensation, wages, or profit. Unpaid helpers who assist in the operation of an economic activity on the household farm or in non-farm activities are also considered as workers.

WORK-RELATED PENSION: Pension is a fixed sum paid regularly to a retired person in connection to his/her work once the person retires. There are different types of pensions, including defined benefit plans and defined contribution plans.

APPENDIX - 1

State-wise number of districts, Talukas, villages, households, total population and 60+ Population of India, State & UTs, Census 2011.

Table A1 State-wise number of districts, Talukas, villages, households, total population and 60+ Population, Census of India, 2011

Region	State / UT	Number of				Total Population	60+ Population
		Districts	Talukas	Villages	Households		
	India	640	5924	640867	249,501,663	1,210,854,977	103,849,040
North							
	Delhi	9	27	112	3,435,999	16,787,941	1,147,445
	Haryana	21	74	6,841	4,857,524	25,351,462	2,193,755
	Himachal Pradesh	12	117	20,690	1,483,280	6,864,602	703,009
	Jammu & Kashmir	22	82	6,551	2,119,718	12,541,302	922,656
	Punjab	20	77	12,581	5,513,071	27,743,338	2,865,817
	Rajasthan	33	244	44,672	12,711,146	68,548,437	5,112,138
	Uttarakhand	13	78	16,793	2,056,975	10,086,292	900,809
Central							
	Chhattisgarh	18	149	20,126	5,650,724	25,545,198	2,003,909
	Madhya Pradesh	50	342	54,903	15,093,256	72,626,809	5,713,316
	Uttar Pradesh	71	312	106,704	33,448,035	199,812,341	15,439,904
East							
	Bihar	38	534	44,874	18,913,565	104,099,452	7,707,145
	Jharkhand	24	260	32,394	6,254,781	32,988,134	2,356,678
	Orissa	30	476	51,313	9,637,820	41,974,218	3,984,448
	West Bengal	19	341	40,203	20,380,315	91,276,115	7,742,382
West							
	Goa	2	11	334	343,611	1,458,545	163,495
	Gujarat	26	225	18,225	12,248,428	60,439,692	4,786,559
	Maharashtra	35	355	43,663	24,421,519	112,374,333	11,106,935
South							
	Andhra Pradesh	13	664	17,366	12,664,762	49,386,799	5,008,662
	Telangana	10	464	10434	8,357,826	35,193,978	3,269,579
	Karnataka	30	176	29,340	13,357,027	61,095,297	5,791,032
	Kerala	14	63	1,018	7,853,754	33,406,061	4,193,393
	Tamil Nadu	32	215	15,979	18,524,982	72,147,030	7,509,758
Northeast							
	Arunachal Pradesh	16	188	5,589	270,577	1,383,727	63,639
	Assam	27	153	26,395	6,406,471	31,205,576	2,078,544
	Manipur	9	38	2,515	557,859	2,855,794	200,020
	Meghalaya	7	39	6,839	548,059	2,966,889	138,902
	Mizoram	8	26	830	222,853	1,097,206	68,628
	Nagaland	11	114	1,428	396,002	1,978,502	102,726
	Sikkim	4	9	452	129,006	610,577	40,752
	Tripura	4	40	875	855,556	3,673,917	289,544
Union Territories							
	Andaman & Nicobar Islands	2	9	555	94,551	380,581	25,424
	Chandigarh	1	1	5	241,173	1,055,450	67,078
	Dadra & Nagar Haveli	1	1	65	76,458	343,709	13,892
	Daman & Diu	2	2	19	60,956	243,247	11,361
	Lakshadweep	1	10	21	11,574	64,473	5,270
	Puducherry	4	8	90	302,450	1,247,953	120,436

Source: Census of India, 2011

Table A2 Sub-state regional classification of districts.

State	Region	LASI-Wave 1 (2011 Census Districts)
1.Jammu & Kashmir	I	Leh(Ladakh), Kargil
	II	Badgam, Baramula, Bandipore, Srinagar, Ganderbal, Pulwama, Shupiyan, Anantnag, Kulgam
	III	Kupwara, Punch, Rajouri
	IV	Kathua, Doda, Ramban, Kishtwar, Udhampur, Reasi, Jammu, Samba
2.Himachal Pradesh	I	Chamba, Lahul-Spiti, Kinnaur
	II	Kangara, Kullu, Mandi, Hamirpur, Una
	III	Bilaspur, Solan, Sirmaur, Shimla
3. Punjab	I	Gurdaspur, Firozpur, Amritsar, Tarn Taran
	II	Kapurthala, Jalandhar, Hoshiarpur, Shahid Bhagat Singh Nagar, Rupnagar
	III	Fatehgarh Sahib, Ludhiana, Patiala, Sahibzada Ajit Singh Nagar, Sangrur, Barnala
	IV	Moga, Muktsar, Faridkot, Bathinda, Mansa
4.Chandigarh	I	Chandigarh
5. Uttarakhand	I	Dehradun, Udham Singh Nagar, Hardwar
	II	Uttarkashi, Rudraprayag, Tehri Garhwal, Garhwal
	III	Chamoli, Pithoragarh, Bageshwar, Almora, Champawat, Nainital
6.Haryana	I	Sonipat, Gurgaon, Mewat, Faridabad, Palwal
	II	Panchkula, Ambala, Yamunanagar, Kurukshetra, Kaithal, Karnal, Panipat
	III	Sirsa, Bhiwani, Mahendragarh, Rewari
	IV	Jind, Fatehbad, Hisar, Rohtak, Jhajjar
8.Rajasthan	I	Ganganagar, Hanumangarh, Bikaner, Churu, Nagaur, Jodhpur, Jaisalmer, Barmer, Jalor, Sirohi, Pali
	II	Jhunjhunum, Alwar, Bharatpur, Dhaulpur, Karauli, Sawai Madhopur, Dausa, Jaipur, Sikar, Ajmer, Tonk, Bhilwara
	III	Rajsamand, Dungarpur, Banswara, Udaipur, Pratapgarh
	IV	Bundi, Chittaurgarh, Kota, Baran, Jhalawar
9. Uttar Pradesh	I	Shaharanpur, Muzaffarnagar, Bijnor, Moradabad, Rampur, Jyotiba Phule Nagar, Meerut, Baghpat, Ghaziabad, Gautam Buddha Nagar, Bulandshahr, Aligarh, Mahamaya Nagar, Mathura, Agra, Firazabad, Mainpuri, Budaun, Bareilly, Philibhit, Shahjahanpur, Farrukhabad, Kannauj, Etawah, Auraiya, Etah, Kanshiram Nagar
	II	Kheri, Sitapur, Hardoi, Unnao, Lucknow, Rae Bareili, Kanpur Dehat, Kanpur Nagar, Fatehpur, Bara Banki
	III	Pratapgarh, Kaushambi, Allahabad, Faizabad, Ambedkar Nagar, Sultanpur, Bahraich, Shrawasti, Balrampur, Gonda, Siddharthnagar, Basti, Sant Kabir Nagar, Mahrajganj, Gorakhpur, Kushinagar, Deoria, Azamgarh, Mau, Ballia, Jaunpur, Gazipur, Chandauli, Varanasi, Sant Ravidas Nagar (Bhadohi), Mirzapur, Sonbhandra
	IV	Jalaun, Jhansi, Lalitpur, Hamirpur, Mahoba, Banda, Chitrakoot
10.Bihar	I	Paschim Champaran, Purba Champaran, Gopalganj, Siwan, Saran
	II	Sheohar, Sitamarhi, Madhubani, Supaul, Saharsa, Darbhanga, Muzaffarpur, Vaishali, Samastipur
	III	Araria, Kishanganj, Purnia, Katihar, Madhepura
	IV	Patna, Bhojpur, Buxar, Kaimur (Bhabua), Rohtas
	V	Khagaria, Bhagalpur, Banka, Munger, Lakhisarai, Sheikhpura, Jamui
	VI	Begusarai, Nalanda, Aurangabad, Gaya, Nawada, Jehanabad, Arwal
11.Sikkim	I	North District
	II	West District
	III	South District
	IV	East District
12. Arunachal Pradesh	I	Tawang, West Kameng, East Kameng
	II	Papumpare, Upper Subansiri, Lower Subansiri, Kurung Kumey
	III	West Siang, East Siang, Upper Siang
	IV	Dibang valley, Lower dibang valley, Lohit, Anjaw
	V	Tirap, Changlang

State	Region	LASI-Wave 1 (2011 Census Districts)
13. Nagaland	I	Mon,Tuensang, Longleng, Kiphire
	II	Mokakchung, Zunhebota
	III	Wokha , Dimapur
	IV	Kohima, Peren , Phek
14. Manipur	I	Senapati, Tamenglang, Ukhrul
	II	Churchandpur, Chandel
	III	Bishnupur, Imphal West, Imphal East, Thoubal
15. Mizoram	I	Kolasib, Mamit, Aizwal, Champhal, Serchip
	II	Lunglei
	III	Lawangttai, Saita
16. Tripura	I	West Tripura
	II	South Tripura
	III	Dhalai
	IV	North Tripura
17. Meghalaya	I	West Garo Hills
	II	East Garo Hills, South Garo Hills
	III	West Khasi Hills
	IV	Ribhoi, East Khasi Hills
	V	Jantia Hills
18. Assam	I	Goalpara, Kamrup, Kamrup Metropolitan, Marigaon, Nagaon, Darrang, Udalguri
	II	Kokrajhar, Dhubri, Bongaigaon, Barpeta, Nalbari, Sonitpur, Chirang, Baksa
	III	Golaghat, Jorhat, Sibsagar, Dibrugarh, Tinsukia, Karimganj, Hailakandi, Cachar
	IV	Lakhimpur, Dhemaji
	V	Karbi Anglong, Dima Hasao
19. West Bengal	I	Jalpaiguri, Darjeeling
	II	Koch Bihar, West Dinajpur (Uttar Dinajpur and Dakshin Dinajpur), Maldah, Murshidabad
	III	Nadia, Haora, Hugli, North Twenty-Four Parganas, South Twenty-Four Parganas, Barddhaman
	IV	Purba Medinipur, Paschim Medinipur, Bankura, Birbhum
	V	Puruliya
20. Jharkhand	I	Deogarh, Godda, sahibganj, Pakur, Dumka, Jamtara
	II	Chatra, Hazaribagh,Ramgarh Kodarma, Giridh, Bokaro, Dhanbad
	III	Garhwa, Palamu, Latehar, Lohardagga, Gumla, Simdega, Ranchi, Khunti, Pashchim Singhbhum, Saraikela-Kharswan, Purbi Singhbhum
21. Odisha	I	Sundargarh, Kendujhar, Mayurbhanj
	II	Kandhamal, Koraput, Baudh, Malkangiri, Nabarangapur, Rayagada
	III	Sambalpur, Balangir, Kalahandi, Bargarh, Debagarh, Jharsuguda, Nuapada, Subarnapur
	IV	Baleshwar, Cuttack, Ganjam, Puri, Dhenkanal, Anugul, Bhadrak, Gajapati, Jagatsinghapur, Jajapur, Kendrapara, Khordha, Nayagarh
22.Chhatisgarh	I	Koriya, Surguja, Bilaspur, Korba, Janjgir-champa, Jashpur, Raigarh
	II	Kabeerdham, rajnandgao, Durg, Raipur, Mahasamund, Dhamtari
	III	Kanker, Bastar, Narayanpur, Dakshin Bastar Dantewada, Bijapur
23. Madhya Pradesh	I	Panna, Rewa, Satna, Sidhi, Singrauli, Shahdol, Anuppur, Chhatarpur, Tikamgarh, Umaria
	II	Raisen, Sagar, Damoh, Vidisha, Bhopal, Sehore
	III	Dewas, Dhar, Indore, Jhabua, Alirajpur Ujjain, Rajgarh, Ratlam, Mandsaur, Shajapur, Neemuch
	IV	Mandla, Jabalpur, Seoni, Narsimhapur, Chhindwara, Balaghat, Dindori, Katni
	V	Betul, Hoshangabad, East Nimar, Burhanpur, West Nimar, Barwani, Harda
	VI	Gwalior, Bhind, Morena, Datia, Guna, Ashoknagar, Shivpuri, Sheopur
24.Gujarat	I	Jamnagar, Rajkot
	II	Surendranagar, Bhavnagar, Amreli
	III	Junagadh, Porbandar
	IV	Kachchh, Banaskantha

State	Region	LASI-Wave 1 (2011 Census Districts)
	V	Sabarkantha, Mahesana, Patan
	VI	Gandhinagar, Ahmedabad
	VII	Kheda, Anand
	VIII	Panch Mahals, Vadodara, Dohad
	IX	Bharuch, Surat, Tapi, Valsad, The Dangs, Narmada, Navsari
25.Daman Diu	I	Diu
	II	Daman
26. Dadra & Nagar Haveli	I	Dadra & Nagar Haveli
27. Maharashtra	I	Thane, Raigad, Ratnagiri, Sindhudurg
	II	Nasik, Dhule, Jalgaon, Nandurbar
	III	Ahmednagar, Pune, Satara, Sangli, Solapur, Kolhapur
	IV	Aurangabad, Jalna, Parbhani, Bid, Latur, Osmanabad, Buldhana, Akola, Amaravati, Washim, Hingoli
	V	Yavatmal, Wardha, Nagpur, Nanded
	VI	Bhandara, Chandrapur, Gadchiroli, Gondiya
28. Karnataka	I	Bidar, Bijapur, Gulbarga, Yadgir, Raichur, Bagalkot, Koppal
	II	Belgaum, Dharwad, Gadag, Haveri
	III	Dakshina Kannada, Kodagu, Uttara Kannada, Udupi
	IV	Chikmagalur, Shimoga
	V	Bangalore, Bangalore rural, Ramanagara, Bellary, Chitradurga, Kolar, Chikballapura, Tumkur, Davangere
	VI	Hassan, Mandya, Mysore, Chamrajnagar
36. Telangana	I	Mahbubnagar, Rangareddy, Hyderabad, Medak, Nizamabad, Adilabad, Nalgonda
	II	Karimnagar, Warangal, Khammam
29. Andhra Pradesh	I	Srikakulam, Vizianagaram, Visakhapatnam
	II	East Godavari, West Godavari, Krishna, Guntur
	III	Prakasam, Nellore
	IV	Chittoor, Y.S.R, Anantapur, Kurnool
30. Goa	I	North Goa
	II	South goa
31. Lakshadweep	I	Lakshadweep
32. Kerala	I	Kasargod,Kannur,Wayanad, Kozhikode, Malappuram
	II	Palakkad, Thrissur, Ernakulam
	III	Idukki, Kottayam, Alappuzha, Pathanamthitta, Kollam, Thiruvanantpuam
33. Tamil Nadu	I	Coimbatore, Tiruppur, Dindigul Anna (Dindigul), Madurai (Madura and Theni), Periyar (Erode), Nilgiri
	II	North Arcot-Ambedkar (Vellore), Dharmapuri, Krishnagiri, Tiruvannamalai-Sambuvarayan, Salem (Salem and Namakal), Tiruchirappalli (Tiruchirapalli, Karur and Perambalur), Ariyalur
	III	Kanniyakumari
	IV	Chengalpattu-MGR (Kanchipuram and Tiruvallur), South Arcot (Cuddalore and Villupuram), Thanjavur, (Thanjavur, Nagappattinam and Tiruvarur)
	V	Pudukkottai, Muthuramalinga Thevar (Sivaganga), Kamarajar (Virudhunagar), Ramanathapuram, Chidambaranar (Thoothukkudi), Tirunelveli Kattabomman (Tirunelveli)
34. Puducherry	I	Yanam
	II	Puducherry
	III	Mahe
	IV	Karaikal
35. Andaman and Nicobar Islands	I	Nicobars
	II	North & Middle Andaman
	III	South Andaman

Standard Error and Confidence Interval

Standard error and confidence interval - Household Sections															
Indicators	Rural					Urban					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
3: Household Population characteristics, and Housing and Environment															
Housing and Environment															
Proportion															
Households with electricity	0.8864	0.0019	0.8826	0.8901	27,465	0.9824	0.0011	0.9803	0.9845	15,273	0.9166	0.0013	0.9140	0.9192	42,738
Households with improved source of drinking water	0.9480	0.0013	0.9454	0.9507	27,465	0.9217	0.0022	0.9175	0.9260	15,273	0.9397	0.0012	0.9375	0.9420	42,738
Households with water facility inside dwelling/ own yard	0.5855	0.0030	0.5796	0.5913	27,465	0.8072	0.0032	0.8010	0.8135	15,273	0.6553	0.0023	0.6508	0.6598	42,738
Households with improved sanitation facility	0.6215	0.0029	0.6157	0.6272	27,462	0.9444	0.0019	0.9408	0.9481	15,271	0.7232	0.0022	0.7190	0.7275	42,733
Households using clean cooking fuel	0.3557	0.0029	0.3500	0.3614	27,464	0.8895	0.0025	0.8845	0.8944	15,272	0.5239	0.0024	0.5191	0.5286	42,736
Household exposed to Indoor pollution	0.1892	0.0024	0.1846	0.1938	27,465	0.0334	0.0015	0.0305	0.0362	15,273	0.1401	0.0017	0.1368	0.1434	42,738
Living in pucca house	0.5498	0.0035	0.5429	0.5566	20,267	0.8359	0.0031	0.8298	0.8419	14,415	0.6540	0.0026	0.6490	0.6590	34,682
4: Economic well-being of older adults in India															
Mean															
Monthly per capita consumption expenditure (MPCE)	2543	22	2501	2586	27,576	3944	28	3889	4000	15,373	2967	18	2932	3001	42,949
Monthly per capita health expenditure (inpatient)	81	3	74	88	27,576	137	5	126	147	15,373	98	3	92	103	42,949
Monthly per capita health expenditure (outpatient)	280	4	272	288	27,576	308	7	295	321	15,373	288	4	281	295	42,949
Monthly per capita out-of-pocket expenditure	361	6	350	372	27,576	444	9	426	463	15,373	386	5	376	396	42,949
Household Health Insurance															
Proportion															
Central Government Health Scheme	0.0222	0.0008	0.0204	0.0239	27,208	0.0288	0.0013	0.0261	0.0315	14,987	0.0243	0.00075	0.0228	0.0257	42,195
Employees State Insurance Scheme	0.0074	0.0005	0.0064	0.0084	27,207	0.0524	0.0018	0.0489	0.0560	14,987	0.021433	0.0007	0.0200	0.0228	42,194
Rashtriya Swasthya Bima Yojana & Allied Schemes	0.2351	0.0025	0.2301	0.2401	27,203	0.1442	0.0028	0.1386	0.1499	14,985	0.206916	0.0019	0.2030	0.2107	42,188
Community Cooperative Health Insurance Scheme	0.0021	0.0002	0.0015	0.0026	27,212	0.0010	0.0002	0.0005	0.0016	14,989	0.001788	0.0002	0.0013	0.0021	42,201
Medical reimbursement / health insurance through an employer	0.0048	0.0004	0.0040	0.0056	27,209	0.0289	0.0013	0.0262	0.0316	14,990	0.012338	0.0005	0.0112	0.0133	42,199
Privately Purchased Commercial Health Insurance	0.0047	0.0004	0.0038	0.0055	27,212	0.0332	0.0014	0.0303	0.03611	14,989	0.013577	0.0005	0.0124	0.0146	42,201

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
5: Demographics															
Proportion															
Rural	0.6621	0.0023	0.6575	0.6667	40,786	0.7055	0.0026	0.7004	0.7105	31,464	0.6820	0.0017	0.6786	0.6854	72,250
Widowed women	0.0935	0.0014	0.0906	0.0963	40,786	0.3620	0.0027	0.3567	0.3673	31,464	0.2166	0.0015	0.2136	0.2196	72,250
Hindu	0.8166	0.0019	0.8129	0.8204	40,786	0.8222	0.0022	0.8180	0.8265	31,464	0.8192	0.0014	0.8164	0.8220	72,250
Muslim	0.1199	0.0016	0.1168	0.1231	40,786	0.1128	0.0018	0.1093	0.1163	31,464	0.1167	0.0012	0.1143	0.1190	72,250
Scheduled tribe	0.0888	0.0014	0.0861	0.0916	40,786	0.0812	0.0015	0.0782	0.0842	31,464	0.0853	0.0010	0.0833	0.0874	72,250
Scheduled caste	0.1935	0.0020	0.1896	0.1973	40,786	0.1891	0.0022	0.1847	0.1934	31,464	0.1915	0.0015	0.1886	0.1943	72,250
Other backward class	0.4572	0.0025	0.4524	0.4620	40,786	0.4523	0.0028	0.4468	0.4578	31,464	0.4550	0.0019	0.4513	0.4586	72,250
None of them	0.2605	0.0022	0.2562	0.2647	40,786	0.2774	0.0025	0.2725	0.2824	31,464	0.2682	0.0016	0.2650	0.2715	72,250
No schooling	0.4356	0.0025	0.4307	0.4404	40,786	0.5652	0.0028	0.5597	0.5707	31,464	0.4950	0.0019	0.4914	0.4987	72,250
Staying since birth in the current place of residence	0.3793	0.0024	0.3746	0.3840	40,786	0.4347	0.0028	0.4292	0.4402	31,464	0.4047	0.0018	0.4011	0.4083	72,250
6: Work, Retirement, and Pension															
Proportion															
Ever worked	0.7144	0.0022	0.7101	0.7188	40,786	0.7357	0.0024	0.7308	0.7406	31,464	0.7242	0.0016	0.7209	0.7275	72,250
Currently working	0.6185	0.0024	0.6138	0.6232	40,786	0.3571	0.0027	0.3518	0.3624	31,464	0.4986	0.0018	0.4950	0.5023	72,250
Agricultural and allied activities	0.5191	0.0032	0.5128	0.5254	24,318	0.6480	0.0046	0.6390	0.6571	10,638	0.5613	0.0026	0.5561	0.5665	34,956
Self employed	0.1761	0.0024	0.1713	0.1809	24,318	0.1662	0.0036	0.1592	0.1733	10,638	0.1729	0.0020	0.1689	0.1769	34,956
Wages/salary	0.3046	0.0029	0.2989	0.3104	24,318	0.1856	0.0037	0.1782	0.1930	10,638	0.2657	0.0023	0.2611	0.2703	34,956
Officially retired						0.0725	0.0015	0.0697	0.0754	31,464					
Work related pension	0.0202	0.0007	0.0188	0.0216	40,786	0.063	0.0014	0.0603	0.0657	31,464	0.0398	0.0007	0.0384	0.0412	72,250
Receiving pension						0.0567	0.0013	0.0541	0.0592	31,464					
Individual earnings from agricultural and allied activities in (₹)	5275	55	5167	5383	11,571	4856	78	4704	5009	6,235	5117	45	5028	5205	17,806
Individual earnings from self-employed in (₹)	9568	142	9289	9847	4,356	8142	234	7684	8600	1,913	9119	122	8879	9359	6,269
Individual earnings from wage/salaried workers in (₹)	12178	154	11877	12480	7,769	7012	196	6627	7397	2,121	10996	129	10743	11250	9,890
7. Chronic Health Conditions															
Proportion															
Poor Self Rated Health	0.1205	0.0016	0.1173	0.1237	40,513	0.2421	0.0024	0.2373	0.2469	30,798	0.1757	0.0014	0.1729	0.1785	71,311
Self-Reported Prevalence of Diagnosed Chronic Health Conditions															
Prevalence															
Cardiovascular diseases	0.2187	0.0021	0.2147	0.2227	40,661	0.3464	0.0027	0.3412	0.3517	31,365	0.2772	0.0017	0.2739	0.2805	72,026
Hypertension	0.2049	0.0020	0.2010	0.2088	40,663	0.3204	0.0026	0.3152	0.3256	31,367	0.2578	0.0016	0.2546	0.2610	72,030
Heart disease	0.0222	0.0007	0.0207	0.0236	40,679	0.0516	0.0012	0.0491	0.0540	31,381	0.0356	0.0007	0.0343	0.0370	72,060
Stroke	0.0101	0.0005	0.0092	0.0111	40,681	0.0268	0.0009	0.0250	0.0286	31,382	0.0178	0.0005	0.0168	0.0187	72,063
Diabetes Mellitus	0.0923	0.0014	0.0894	0.0951	40,670	0.1416	0.0020	0.1378	0.1455	31,376	0.1149	0.0012	0.1125	0.1172	72,046
High Cholesterol	0.0187	0.0007	0.0174	0.0200	40,678	0.0248	0.0009	0.0231	0.0265	31,383	0.0215	0.0005	0.0204	0.0225	72,061
Anaemia	0.0474	0.0011	0.0454	0.0495	40,656	0.0473	0.0012	0.0449	0.0496	31,360	0.0474	0.0008	0.0458	0.0489	72,016
Any chronic lung disease	0.0442	0.0010	0.0422	0.0462	40,682	0.0827	0.0016	0.0797	0.0858	31,383	0.0619	0.0009	0.0601	0.0636	72,065
Asthma	0.0314	0.0009	0.0297	0.0331	40,682	0.0589	0.0013	0.0563	0.0615	31,383	0.0440	0.0008	0.0425	0.0455	72,065
Bronchitis	0.0074	0.0004	0.0066	0.0082	40,682	0.0159	0.0007	0.0145	0.0173	31,383	0.0113	0.0004	0.0105	0.0121	72,065
COPD	0.0157	0.0006	0.0145	0.0169	40,682	0.0283	0.0009	0.0265	0.0301	31,383	0.0214	0.0005	0.0204	0.0225	72,065
Any Neurological/psychiatric problems	0.0192	0.0007	0.0179	0.0205	40,675	0.0259	0.0009	0.0241	0.0276	31,381	0.0223	0.0005	0.0212	0.0233	72,056
Depression	0.0047	0.0003	0.0040	0.0053	40,675	0.0080	0.0005	0.0070	0.0090	31,381	0.0062	0.0003	0.0056	0.0068	72,056
Other psychiatric problems	0.0038	0.0003	0.0032	0.0044	40,675	0.0036	0.0003	0.0029	0.0043	31,381	0.0037	0.0002	0.0033	0.0042	72,056
Alzheimer's diseases and dementia	0.0041	0.0003	0.0035	0.0047	40,675	0.0095	0.0005	0.0084	0.0106	31,381	0.0066	0.0003	0.0060	0.0072	72,056

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
Other neurological problems	0.0132	0.0006	0.0121	0.0143	40,675	0.0158	0.0007	0.0144	0.0171	31,381	0.0144	0.0004	0.0135	0.0152	72,056
Any bone/joint diseases	0.1173	0.0016	0.1142	0.1205	40,682	0.1882	0.0022	0.1839	0.1925	31,384	0.1498	0.0013	0.1472	0.1524	72,066
Arthritis	0.0699	0.0013	0.0674	0.0724	40,682	0.1075	0.0017	0.1041	0.1109	31,384	0.0871	0.0011	0.0851	0.0892	72,066
Rheumatism	0.0468	0.0010	0.0448	0.0489	40,682	0.0756	0.0015	0.0726	0.0785	31,384	0.0600	0.0009	0.0583	0.0617	72,066
Osteoporosis	0.0062	0.0004	0.0054	0.0069	40,682	0.0131	0.0006	0.0118	0.0143	31,384	0.0093	0.0004	0.0086	0.0100	72,066
Cancer or malignant tumour	0.0055	0.0004	0.0048	0.0062	40,679	0.0070	0.0005	0.0061	0.0079	31,382	0.0062	0.0003	0.0056	0.0068	72,061
Thyroid disorder	0.0376	0.0009	0.0358	0.0395	40,666	0.0225	0.0008	0.0209	0.0241	31,371	0.0307	0.0006	0.0294	0.0319	72,037
Gastrointestinal problem	0.1675	0.0019	0.1639	0.1711	40,666	0.1910	0.0022	0.1866	0.1953	31,371	0.1783	0.0014	0.1755	0.1811	72,037
Skin diseases	0.0512	0.0011	0.0491	0.0533	40,666	0.0524	0.0013	0.0499	0.0548	31,371	0.0517	0.0008	0.0501	0.0534	72,037
Self-reported prevalence of diagnosed organ related conditions															
Prevalence															
Any urogenital condition	0.0548	0.0011	0.0526	0.0570	40,666	0.0770	0.0015	0.0740	0.0799	31,375	0.0650	0.0009	0.0632	0.0668	72,041
Chronic renal failure	0.0044	0.0003	0.0038	0.0051	40,666	0.0084	0.0005	0.0074	0.0094	31,376	0.0062	0.0003	0.0057	0.0068	72,042
Incontinence	0.0223	0.0007	0.0209	0.0237	40,666	0.0409	0.0011	0.0387	0.0431	31,376	0.0308	0.0006	0.0295	0.0321	72,042
Kidney stone	0.0270	0.0008	0.0254	0.0286	40,666	0.0243	0.0009	0.0226	0.0260	31,376	0.0257	0.0006	0.0246	0.0269	72,042
Any eye problem	0.3874	0.0024	0.3827	0.3921	40,672	0.5533	0.0028	0.5478	0.5588	31,378	0.4634	0.0019	0.4597	0.4670	72,050
Cataract	0.0459	0.0010	0.0439	0.0479	40,672	0.2324	0.0024	0.2277	0.2371	31,378	0.1313	0.0013	0.1288	0.1338	72,050
Glaucoma	0.0127	0.0006	0.0116	0.0138	40,672	0.0245	0.0009	0.0228	0.0262	31,378	0.0181	0.0005	0.0171	0.0191	72,050
Refractive errors	0.3394	0.0023	0.3348	0.3440	40,672	0.3539	0.0027	0.3486	0.3592	31,378	0.3460	0.0018	0.3426	0.3495	72,050
Any hearing/ ear related problem	0.0413	0.0010	0.0394	0.0432	40,665	0.0961	0.0017	0.0928	0.0993	31,376	0.0664	0.0009	0.0646	0.0682	72,041
Common oral health problems	0.4418	0.0025	0.4370	0.4467	40,665	0.5128	0.0028	0.5073	0.5184	31,374	0.4744	0.0019	0.4707	0.4780	72,039
Dental caries	0.1815	0.0019	0.1777	0.1852	40,665	0.1955	0.0022	0.1911	0.1999	31,374	0.1879	0.0015	0.1850	0.1908	72,039
Periodontal diseases	0.1545	0.0018	0.1510	0.1580	40,665	0.1596	0.0021	0.1555	0.1636	31,374	0.1568	0.0014	0.1542	0.1595	72,039
Partial edentulism	0.4878	0.0025	0.4829	0.4926	40,661	0.7197	0.0025	0.7148	0.7247	31,370	0.5940	0.0018	0.5904	0.5976	72,031
Complete edentulism	0.0305	0.0009	0.0288	0.0322	40,661	0.1120	0.0018	0.1085	0.1154	31,370	0.0678	0.0009	0.0660	0.0696	72,031
No morbidity	0.6308	0.0024	0.6261	0.6355	40,682	0.4787	0.0028	0.4732	0.4843	31,386	0.5612	0.0018	0.5576	0.5648	72,068
Single health condition	0.2426	0.0021	0.2384	0.2468	40,682	0.2879	0.0026	0.2829	0.2929	31,386	0.2634	0.0016	0.2601	0.2666	72,068
Two or more health conditions	0.1266	0.0016	0.1234	0.1298	40,682	0.2333	0.0024	0.2286	0.2380	31,386	0.1755	0.0014	0.1727	0.1782	72,068
8. Symptoms, Injuries, Endemic Diseases and Women's Health															
Prevalence															
Angina pectoris	0.0541	0.0011	0.0519	0.0563	40,649	0.0625	0.0014	0.0598	0.0651	31,356	.05792	.0008	.05621	.05962	72,005
Pain	0.2332	0.0021	0.2291	0.2373	40,642	0.2932	0.0026	0.2881	0.2982	31,355	0.2606	0.0016	0.2574	0.2638	71,997
Sleep problem	0.1089	0.0015	0.1059	0.1120	40,648	0.1477	0.0020	0.1437	0.1516	31,358	0.1267	0.0012	0.1242	0.1291	72,006
Self-Reported Prevalence (%) Of Injury and Falls															
Injury	0.1395	0.0017	0.1361	0.1428	40,662	0.1876	0.0022	0.1833	0.1919	31,368	0.1615	0.0014	0.1588	0.1642	72,030
Fall	0.1651	0.0018	0.1614	0.1687	40,662	0.2289	0.0024	0.2242	0.2335	31,368	0.1943	0.0015	0.1914	0.1972	72,030
Any Injury or Fall	0.1838	0.0019	0.1801	0.1876	40,662	0.2448	0.0024	0.2400	0.2495	31,368	0.2117	0.0015	0.2087	0.2147	72,030
Health Conditions Due to Natural and Man-Made Disasters															
Health problems	0.0353	0.0009	0.0335	0.0371	40,655	0.0357	0.0010	0.0336	0.0377	31,367	0.0355	0.0007	0.0341	0.0368	72,022
Permanent physical disability	0.0027	0.0003	0.0022	0.0032	40,655	0.0038	0.0003	0.0031	0.0045	31,367	0.0032	0.0002	0.0028	0.0036	72,022
Psychological problems	0.0230	0.0007	0.0215	0.0244	40,655	0.0227	0.0008	0.0210	0.0243	31,367	0.0228	0.0006	0.0217	0.0239	72,022
Chronic illness	0.0065	0.0004	0.0058	0.0073	40,655	0.0064	0.0004	0.0055	0.0073	31,367	0.0065	0.0003	0.0059	0.0071	72,022
Self-Reported Diagnosed Endemic Diseases															
Water-borne disease	0.1800	0.0019	0.1763	0.1837	40,659	0.1958	0.0022	0.1914	0.2002	31,360	0.1872	0.0015	0.1844	0.1901	72,019
Vector-borne disease	0.1041	0.0015	0.1012	0.1071	40,659	0.1085	0.0018	0.1050	0.1119	31,360	0.1061	0.0011	0.1039	0.1084	72,019
Other infectious disease	0.0273	0.0008	0.0257	0.0289	40,659	0.0346	0.0010	0.0326	0.0366	31,360	0.0306	0.0006	0.0294	0.0319	72,019

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
Any endemic disease	0.2550	0.0022	0.2507	0.2592	40,659	0.2714	0.0025	0.2665	0.2763	31,360	0.2625	0.0016	0.2593	0.2657	72,019
Self-Reported Prevalence (%) of Diagnosed Water-Borne Diseases															
Jaundice/ hepatitis	0.0310	0.0009	0.0293	0.0327	40,659	0.0250	0.0009	0.0233	0.0267	31,360	0.0282	0.0006	0.0270	0.0295	72,019
Diarrhea	0.1199	0.0016	0.1167	0.1230	40,659	0.1482	0.0020	0.1443	0.1521	31,360	0.1328	0.0013	0.1304	0.1353	72,019
Typhoid	0.0606	0.0012	0.0583	0.0629	40,659	0.0550	0.0013	0.0525	0.0576	31,360	0.0581	0.0009	0.0564	0.0598	72,019
Self-Reported Prevalence (%) of Diagnosed Vector-Borne Diseases															
Malaria	0.0768	0.0013	0.0742	0.0794	40,659	0.0863	0.0016	0.0832	0.0895	31,360	0.0812	0.0010	0.0792	0.0832	72,019
Dengue	0.0106	0.0005	0.0096	0.0116	40,659	0.0104	0.0006	0.0093	0.0116	31,360	0.0106	0.0004	0.0098	0.0113	72,019
Chickungunya	0.0269	0.0008	0.0253	0.0284	40,659	0.0216	0.0008	0.0200	0.0232	31,360	0.0245	0.0006	0.0233	0.0256	72,019
Self-Reported Prevalence (%) of Diagnosed Other Infectious Diseases															
Tuberculosis	0.0087	0.0005	0.0078	0.0096	40,659	0.0109	0.0006	0.0097	0.0120	31,360	0.0097	0.0004	0.0090	0.0104	72,019
Urinary tract infection	0.0205	0.0007	0.0191	0.0219	40,659	0.0255	0.0009	0.0237	0.0272	31,360	0.0228	0.0006	0.0217	0.0239	72,019
Self-Reported Prevalence (%) of Diagnosed Reproductive Health Problems															
Genital prolapse	0.0269	0.0010	0.0249	0.0289	25,136										
Uterine fibroid/ cyst	0.0132	0.0007	0.0118	0.0146	25,136										
Any reproductive health problem	0.1584	0.0023	0.1539	0.1629	25,136										
Percentage of older adult women undergone Hysterectomy	0.1253	0.0021	0.1212	0.1294	25,198	0.0986	0.0023	0.0940	0.1031	16,296	0.1142	0.001561	0.111139	0.11726	41,494
9. Direct Health Examinations: Biomarkers															
Mean															
Systolic blood pressure (Mean)	123.2140	0.0918	123.0340	123.3939	37,256	131.7286	0.1162	131.5009	131.9564	28,495	127.1118	0.0744	126.9659	127.2577	65,751
Diastolic blood pressure (Mean)	81.6221	0.0530	81.5182	81.7259	37,256	80.3357	0.0631	80.2119	80.4595	28,495	81.0332	0.0407	80.9534	81.1131	65,751
Pulse rate (Mean)	81.6997	0.0591	81.5839	81.8156	37,256	80.3571	0.0711	80.2176	80.4965	28,495	81.0851	0.0457	80.9956	81.1746	65,751
Prevalence of Measured Blood Pressure															
Prevalence															
Normal	0.3505	0.0025	0.3456	0.3553	37,256	0.2460	0.0026	0.2410	0.2510	28,495	0.3026	0.0018	0.2991	0.3061	65,751
Prehypertension	0.3974	0.0025	0.3924	0.4024	37,256	0.3926	0.0029	0.3869	0.3983	28,495	0.3952	0.0019	0.3915	0.3989	65,751
High BP	0.2521	0.0022	0.2477	0.2565	37,256	0.3615	0.0028	0.3559	0.3670	28,495	0.3022	0.0018	0.2987	0.3057	65,751
Mild hypertension	0.1824	0.0020	0.1785	0.1863	37,256	0.2531	0.0026	0.2481	0.2582	28,495	0.2148	0.0016	0.2116	0.2179	65,751
Moderate hypertension	0.0581	0.0012	0.0557	0.0605	37,256	0.0978	0.0018	0.0943	0.1012	28,495	0.0763	0.0010	0.0742	0.0783	65,751
Severe hypertension	0.0116	0.0006	0.0105	0.0127	37,256	0.0105	0.0006	0.0094	0.0117	28,495	0.0111	0.0004	0.0103	0.0119	65,751
No hypertension	0.6242	0.0025	0.6192	0.6291	37,236	0.4651	0.0030	0.4593	0.4709	28,471	0.5513	0.00194	0.5475	0.5551	65,707
Undiagnosed hypertension	0.1768	0.0020	0.1730	0.1807	37,236	0.2159	0.0024	0.2111	0.2206	28,471	0.1946	0.0015	0.1916	0.1976	65,751
Controlled hypertension	0.1236	0.0017	0.1203	0.1270	37,236	0.1731	0.0022	0.1687	0.1775	28,471	0.1463	0.0014	0.1436	0.1490	65,707
Uncontrolled hypertension	0.0754	0.0014	0.0727	0.0781	37,236	0.1459	0.0021	0.1418	0.1500	28,471	0.1077	0.0012	0.1053	0.1100	65,707
Untreated hypertension	0.1071	0.0035	0.1003	0.1139	7,938	0.1002	0.0030	0.0942	0.1061	9,697	0.1031	0.0023	0.0986	0.1076	17,635
Undertreated hypertension	0.2716	0.0050	0.2618	0.2814	7,938	0.3575	0.0049	0.3480	0.3671	9,697	0.3210	0.0035	0.3141	0.3279	17,635
Adequately treated hypertension	0.3577	0.0054	0.3472	0.3683	7,938	0.4229	0.0050	0.4130	0.4327	9,697	0.3952	0.0037	0.3880	0.4024	17,635
Prevalence of Lung function test															
Mean % predicted FEV1 (male)	76.5873	0.1675	76.2589	76.9156	10,300	75.9161	0.2249	75.4752	76.3570	8,296	76.2687	0.1374	75.9993	76.5380	18,596
Mean absolute PEFR (male)	5.8414	0.0173	5.8076	5.8753	10,297	4.8117	0.0185	4.7754	4.8480	8,294	5.3526	0.0132	5.3268	5.3784	18,591
Mean % predicted FEV1 (female)	80.5667	0.1621	80.2490	80.8845	15,673	82.9100	0.4666	81.9953	83.8247	6,949	81.3571	0.1862	80.9921	81.7221	22,622
Mean absolute PEFR (female)	4.3527	0.0107	4.3316	4.3737	15,665	3.5790	0.0160	3.5476	3.6105	6,944	4.0917	0.0092	4.0736	4.1098	22,609
Mean % predicted FVC (male)	81.0254	0.1688	80.6945	81.3563	8,721	80.9007	0.2161	80.4771	81.3244	6,828	80.9671	0.1345	80.7034	81.2308	15,549
Mean % predicted FEF25-75 (male)	74.9810	0.3104	74.3726	75.5894	8,721	78.5620	0.4598	77.6606	79.4633	6,828	76.6556	0.2690	76.1283	77.1830	15,549
Mean absolute FEV1/FVC (%) (male)	78.9530	0.0842	78.7879	79.1181	8,721	75.8081	0.1225	75.5679	76.0483	6,828	77.4823	0.0732	77.3388	77.6258	15,549

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
Mean % predicted FVC (female)	84.1782	0.1588	83.8670	84.4894	13,092	85.6664	0.2880	85.1019	86.2309	5,532	84.6481	0.1412	84.3714	84.9248	18,624
Mean % predicted FEF25-75 (female)	76.3994	0.2673	75.8755	76.9233	13,092	84.0525	0.5502	82.9739	85.1312	5,532	78.8159	0.2519	78.3223	79.3096	18,624
Mean absolute FEV1/FVC (%) (female)	81.0475	0.0635	80.9231	81.1720	13,092	78.9885	0.1146	78.7638	79.2131	5,532	80.3974	0.0567	80.2861	80.5086	18,624
Normal PFT	0.5185	0.0034	0.5118	0.5251	21,813	0.5061	0.0045	0.4973	0.5149	12,360	0.5137	0.0027	0.5084	0.5190	34,173
Restrictive lung disease	0.3953	0.0033	0.3888	0.4018	21,813	0.3988	0.0044	0.3902	0.4074	12,360	0.3966	0.0026	0.3915	0.4018	34,173
Mild obstructive lung disease	0.0430	0.0014	0.0403	0.0457	21,813	0.0390	0.0017	0.0356	0.0424	12,360	0.0415	0.0011	0.0393	0.0436	34,173
Moderate-severe obstructive lung disease	0.0432	0.0014	0.0405	0.0459	21,813	0.0561	0.0021	0.0520	0.0602	12,360	0.0482	0.0012	0.0459	0.0505	34,173
Prevalence of Measured Vision															
Prevalence															
Low near vision	0.2387	0.0022	0.2343	0.2430	37,252	0.3222	0.0028	0.3168	0.3277	28,478	0.2769	0.0017	0.2735	0.2803	65,730
Low distance vision	0.0395	0.0010	0.0375	0.0414	37,252	0.1468	0.0021	0.1427	0.1509	28,478	0.0886	0.0011	0.0864	0.0908	65,730
Low vision	0.2569	0.0023	0.2524	0.2613	37,252	0.3706	0.0029	0.3650	0.3762	28,478	0.3089	0.0018	0.3054	0.3125	65,730
Blindness	0.0060	0.0004	0.0052	0.0068	37,252	0.0383	0.0011	0.0361	0.0406	28,478	0.0208	0.0006	0.0197	0.0219	65,730
Anthropometry															
Mean and proportion															
Mean height (male)	163.3347	0.0571	163.2228	163.4467	13,911	161.3570	0.0596	161.2403	161.4738	13,509	162.3132	0.0417	162.2314	162.3949	27,420
Mean weight (male)	60.1284	0.1047	59.9231	60.3337	13,911	55.3434	0.1039	55.1398	55.5470	13,509	57.6567	0.0751	57.5095	57.8040	27,420
Mean BMI (male)	22.478	0.035	22.409	22.546	13,911	21.1913	0.0353	21.1220	21.2605	13,509	21.8133	0.0251	21.7640	21.8626	27,420
Mean height (female)	151.3246	0.0393	151.2475	151.4018	23,222	148.3516	0.0555	148.2428	148.4603	14,541	150.1026	0.0332	150.0375	150.1678	37,763
Mean weight (female)	54.5457	0.0835	54.3820	54.7095	23,222	49.2249	0.1067	49.0157	49.4341	14,541	52.3587	0.0672	52.2271	52.4904	37,763
Mean BMI (female)	23.7476	0.0332	23.6826	23.8126	23,222	22.2585	0.0433	22.1737	22.3434	14,541	23.1356	0.0266	23.0834	23.1878	37,763
Underweight	0.1560	0.0019	0.1523	0.1597	37,133	0.2668	0.0026	0.2616	0.2719	28,050	0.2064	0.0016	0.2033	0.2095	65,183
Overweight	0.2398	0.0022	0.2355	0.2442	37,133	0.1666	0.0022	0.1623	0.1710	28,050	0.2065	0.0016	0.2034	0.2096	65,183
Obesity	0.0897	0.0015	0.0868	0.0926	37,133	0.0548	0.0014	0.0522	0.0575	28,050	0.0738	0.0010	0.0718	0.0758	65,183
Mean waist circumference (male)	86.2468	0.1001	86.0506	86.4431	13,908	84.4041	0.1072	84.1939	84.6142	13,502	85.2951	0.0736	85.1509	85.4393	27,410
Mean hip circumference (male)	90.5698	0.0736	90.4254	90.7142	13,908	88.3918	0.07531	88.2441	88.5394	13,502	89.4449	0.0531	89.3409	89.5490	27,410
Mean waist to hip ratio (male)	0.95044	0.0006	0.9492	0.9516	13,908	0.9525	0.0006	0.9511	0.95388	13,502	0.9515	0.0005	0.9506	0.9524	27,410
Mean waist circumference (female)	85.1128	0.0880	84.9401	85.2855	23,216	83.6655	0.1179	83.4342	83.8968	14,525	84.5183	0.0709	84.3794	84.6573	37,741
Mean hip circumference (female)	94.0937	0.0749	93.9468	94.2406	23,216	91.3378	0.1012	91.1393	91.53624	14,525	92.9617	0.0609	92.8424	93.0810	37,741
Mean waist to hip ratio (female)	0.90313	0.0005	0.9021	0.9041	23,216	0.9147	0.0007	0.9133	0.91613	14,525	0.9079	0.0004	0.9071	0.9087	37,741
High risk waist circumference (male)	0.09374	0.0024	0.0889	0.0985	13,908	0.0889	0.0024	0.0841	0.0937	13,502	0.0912	0.0017	0.0878	0.0947	27,410
High risk waist circumference (female)	0.41177	0.0032	0.4054	0.4181	23,216	0.3696	0.0040	0.3618	0.3775	14,525	0.3945	0.0025	0.3895	0.3994	37,741
Low risk (normal) WHR	0.26033	0.0022	0.2558	0.2647	37,124	0.2469	0.0025	0.24188	0.2519	28,027	0.2542	0.0017	0.2509	0.2576	65,151
High-risk WHR	0.7396	0.0022	0.7352	0.7441	37,124	0.7530	0.0025	0.74801	0.7581	28,027	0.7458	0.0017	0.7424	0.7491	65,151
Grip Strength															
Mean															
Mean grip strength (dominant hand-male)	30.4137	0.0611	30.2939	30.5335	13,830	23.856	0.0602	23.7387	23.97509	13,412	27.0317	0.0473	26.9391	27.1244	27,242
Mean grip strength (non-dominant hand-male)	27.9220	0.0596	27.8052	28.0389	13,501	21.5556	0.0584	21.4411	21.6702	13,041	24.6408	0.0461	24.5505	24.7311	26,542
Mean grip strength (dominant hand-female)	20.0710	0.0338	20.0047	20.1374	22,958	15.5892	0.0410	15.5087	15.6696	14,327	18.2309	0.0285	18.1751	18.2867	37,285
Mean grip strength (non-dominant hand-female)	18.0047	0.0326	17.9408	18.0687	22,539	13.7606	0.0389	13.6842	13.8370	13,897	16.2760	0.0273	16.2224	16.3295	36,436
Timed Walk															
Mean time for 4-meter walk	4.9020	0.0059	4.8904	4.9136	36,909	6.0324	0.0140	6.0049	6.0598	27,495	5.4126	0.0073	5.3982	5.4269	64,404
10. Mental Health: Cognition and Depression															
Mean and Proportion															
Measured Cognition															
Mean total word recall	9.7850	0.0187	9.7484	9.8216	36,521	8.1003	0.0213	8.0585	8.1422	26,947	9.0347	0.0144	9.0064	9.0630	63,468

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
Percentage of older adults in lowest 10th percentile of total word recall	0.0652	0.0013	0.0627	0.0678	36,521	0.1587	0.0022	0.1544	0.1631	26,947	0.1069	0.0012	0.1045	0.1093	63,468
Mean verbal fluency	12.1165	0.0219	12.0736	12.1595	38,227	10.9969	0.0246	10.9487	11.0451	29,069	11.6088	0.0165	11.5765	11.6411	67,296
Lowest 10th percentile of Verbal fluency	0.0717	0.0013	0.0691	0.0742	38,227	0.1235	0.0019	0.1197	0.1273	29,069	0.0952	0.0011	0.0929	0.0974	67,296
Mean Arithmetic function	5.0983	0.0149	5.0692	5.1275	38,223	4.1923	0.0177	4.1577	4.2269	29,065	4.6875	0.0115	4.6649	4.7101	67,288
Lowest 10th percentile of Arithmatic function	0.1323	0.0017	0.1289	0.1357	38,223	0.2364	0.0025	0.2315	0.2413	29,065	0.1795	0.0015	0.1766	0.1824	67,288
Composite cognition	26.4825	0.0352	26.4135	26.5515	36,504	23.1024	0.0432	23.0178	23.1870	26,935	24.9771	0.0282	24.9219	25.0323	63,439
Lowest 10th percentile of Composite cognition	0.0564	0.0012	0.0541	0.0588	36,504	0.1501	0.0022	0.1459	0.1544	26,935	0.0982	0.0012	0.0959	0.1005	63,439
Measured depression															
Measured Depression (CIDI)	0.0718	0.0013	0.0693	0.0744	40,264	0.0827	0.0016	0.0797	0.0858	30,637	0.0768	0.0010	0.0748	0.0787	70,901
11. Functional Health															
Proportion															
Physical and Mental Impairments															
Locomotor impairment	0.0355	0.0009	0.0337	0.0373	40,604	0.0588	0.0013	0.0562	0.0614	31,323	0.0462	0.0008	0.0447	0.0477	71,927
Mental impairment	0.0160	0.0006	0.0148	0.0173	40,604	0.0298	0.0010	0.0279	0.0317	31,323	0.0223	0.0006	0.0213	0.0234	71,927
Visual impairment	0.0175	0.0007	0.0163	0.0188	40,604	0.0408	0.0011	0.0386	0.0429	31,323	0.0282	0.0006	0.0270	0.0294	71,927
Hearing impairment	0.0057	0.0004	0.0049	0.0064	40,604	0.0260	0.0009	0.0242	0.0277	31,323	0.0150	0.0005	0.0141	0.0158	71,927
Speech impairment	0.0025	0.0002	0.0020	0.0030	40,604	0.0091	0.0005	0.0081	0.0102	31,323	0.0055	0.0003	0.0050	0.0061	71,927
Any impairment	0.0574	0.0012	0.0551	0.0597	40,604	0.1045	0.0017	0.1012	0.1079	31,323	0.0790	0.0010	0.0770	0.0810	71,927
Mobility Restrictions and Work Limiting Health Conditions															
Any mobility restriction	0.5074	0.0025	0.5025	0.5123	40,611	0.7572	0.0024	0.7525	0.7620	31,336	0.6218	0.0018	0.6183	0.6254	71,947
Work limiting health conditions	0.1949	0.0025	0.1899	0.1998	24,278	0.2934	0.0044	0.2848	0.3021	10,676	0.2270	0.0022	0.2226	0.2314	34,954
Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL) And Helpers															
1+ ADL limitations	0.0928	0.0014	0.0900	0.0957	40,607	0.2377	0.0024	0.2330	0.2424	31,336	0.1592	0.0014	0.1565	0.1619	71,943
1+ IADL limitations	0.2568	0.0022	0.2526	0.2611	40,786	0.4797	0.0028	0.4742	0.4852	31,464	0.3591	0.0018	0.3556	0.3626	72,250
2+ ADL limitations	0.0446	0.0010	0.0425	0.0466	40,607	0.1416	0.0020	0.1378	0.1455	31,336	0.0890	0.0011	0.0869	0.0911	71,943
2+ IADL limitations	0.1598	0.0018	0.1562	0.1633	40,786	0.3711	0.0027	0.3658	0.3765	31,464	0.2567	0.0016	0.2535	0.2599	72,250
Helpers	0.0389	0.0010	0.0370	0.0408	40,606	0.1292	0.0019	0.1255	0.1330	31,335	0.0803	0.0010	0.0783	0.0822	71,941
Difficulties in ADL															
Dressing						0.0715	0.0015	0.0686	0.0743	31,336					
Walking across room						.074907	.001487	.071992	.077822	31,336					
Bathing						0.0738	0.0015	0.0709	0.0767	31,336					
Eating difficulties						0.0835	0.0016	0.0805	0.0866	31,336					
Getting in/out of bed						0.1209	0.0018	0.1172	0.1245	31,336					
Toilet use						0.1753	0.0021	0.1711	0.1795	31,336					
Difficulties in IADL															
Proportion															
Preparing hot meal						0.1842	0.0022	0.1799	0.1885	31,336					
Shopping						0.2367	0.0024	0.2319	0.2414	31,336					
Making telephone calls						.2855	.0025	.2805	.29057	31,336					
Taking medication						0.1568	0.0021	0.1528	0.1608	31,336					
Gardening work						0.2651	0.0025	0.2602	0.2700	31,336					
Managing money						0.2765	0.0025	0.2716	0.2815	31,336					
Getting around in unfamiliar places						0.2979	0.0026	0.2928	0.3029	31,336					

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
Aids or Supportive Devices															
Proportion															
Hearing aid	0.0028	0.0003	0.0022	0.0033	40,602	0.0072	0.0005	0.0062	0.0081	31,333	0.0048	0.0003	0.0043	0.0053	71,935
Spectacles/ Contact lenses	0.2916	0.0023	0.2871	0.2960	40,602	0.3745	0.0027	0.3692	0.3799	31,333	0.3296	0.0018	0.3261	0.3330	71,935
Denture	0.0150	0.0006	0.0138	0.0162	40,602	0.0308	0.0010	0.0289	0.0327	31,333	0.0222	0.0005	0.0212	0.0233	71,935
Aids used for physical disabilities	0.0159	0.0006	0.0147	0.0171	40,602	0.1009	0.0017	0.0976	0.1042	31,333	0.0548	0.0008	0.0532	0.0565	71,935
Any aid or supportive devices	0.3032	0.0023	0.2988	0.3077	40,602	0.4325	0.0028	0.4270	0.4380	31,333	0.3624	0.0018	0.3589	0.3660	71,935
12. Health Behaviour and Risk Factors															
Proportion															
Tobacco Consumption (Smoking/Smokeless)															
Currently smoking (men)	0.2607	0.0035	0.2538	0.2677	15,302	0.2550	0.0036	0.2480	0.2620	14,942	0.2578	0.0025	0.2529	0.2627	30,244
Currently smoking (women)	0.0172	0.0008	0.0156	0.0188	25,108	0.0339	0.0014	0.0311	0.0367	16,263	0.0241	0.0008	0.0227	0.0256	41,371
Currently using smokeless tobacco (men)	0.2830	0.0036	0.2758	0.2901	15,302	0.2749	0.0037	0.2677	0.2820	14,941	0.2788	0.0026	0.2737	0.2838	30,243
Currently using smokeless tobacco (women)	0.1237	0.0021	0.1196	0.1278	25,108	0.1616	0.0029	0.1559	0.1673	16,263	0.1395	0.0017	0.1361	0.1428	41,371
Alcohol Consumption															
Proportion															
frequent non-heavy drinker (men)	0.1723	0.0031	0.1663	0.1783	15,309	0.1785	0.0031	0.1723	0.1846	14,942	0.0567	0.0013	0.0541	0.0593	30,251
frequent non-heavy drinker (women)	0.0125	0.0007	0.0111	0.0139	25,112	0.0133	0.0009	0.0116	0.0151	16,268	0.0058	0.0004	0.0051	0.0066	41,380
Frequent episodic drinker (men)	0.0650	0.0020	0.0611	0.0689	15,309	0.0489	0.0018	0.0454	0.0523	14,942	0.0621	0.0014	0.0593	0.0648	30,251
Frequent episodic drinker (Women)	0.0054	0.0005	0.0044	0.0063	25,112	0.0065	0.0006	0.0053	0.0077	16,268	0.0051	0.0003	0.0044	0.0057	41,380
Physical Activities and *Yoga,* Meditations, *Asanas, Pranayama*															
Physically active (Male)											0.5980	0.0028	0.5925	0.6035	30,260
Physically active (Female)											0.6868	0.0023	0.6823	0.6912	41,384
Physically inactive (Male)											0.4020	0.0028	0.3965	0.4075	30,260
Physically inactive (Female)											0.3132	0.0023	0.3088	0.3177	41,383
Daily-Yoga, meditation, asanas, pranayama etc	0.0885	0.0014	0.0857	0.0913	40,403	0.0947	0.0017	0.0915	0.0980	31,183	0.0914	0.0011	0.0892	0.0935	71,586
Once a week- Yoga, meditation, asanas, pranayama etc	0.0298	0.0008	0.0281	0.0314	40,403	0.0286	0.0009	0.0268	0.0305	31,183	0.0292	0.0006	0.0280	0.0305	71,586
Food Availability															
Reduced the size of the meal											0.0597	0.0009	0.0580	0.0615	71,595
Hungry but didn't eat											0.0531	0.0008	0.0515	0.0547	71,608
Didn't eat for whole day											0.0376	0.0007	0.0362	0.0390	71,607
Food security											0.0810	0.0010	0.0790	0.0830	71,617
13: Health Care, Utilization and Health Financing															
Proportion and Mean															
Inpatient rate (Last year)	0.0631	0.0012	0.0607	0.0654	40,786	0.0794	0.0015	0.0764	0.0824	31,464	0.0706	0.0009	0.0687	0.0724	72,250
Outpatient rate (Last month)	0.2391	0.0021	0.2350	0.2432	40,786	0.2855	0.0025	0.2805	0.2905	31,464	0.2604	0.0016	0.2572	0.2636	72,250
Mean number of days hospitalised	10	0.3608	10	11	2,264	6	0.1706	5	6	2,516	8	0.1973	8	8	4,780
Public health facility - inpatient care	0.3231	0.0098	0.3038	0.3424	2,266	0.3763	0.0096	0.3574	0.3953	2,517	0.3506	0.0069	0.3371	0.3641	4,783
Private health facility - inpatient care	0.6576	0.0099	0.6381	0.6772	2,266	0.5914	0.0098	0.5722	0.6106	2,517	0.6234	0.0070	0.6097	0.6372	4,783
Public health facility - outpatient care	0.2256	0.0029	0.2198	0.2313	20,393	0.2286	0.0031	0.2224	0.2348	17,516	0.2270	0.0021	0.2228	0.2312	37,909
Private health facility - outpatient care	0.6455	0.0033	0.6390	0.6521	20,393	0.6331	0.0036	0.6260	0.6402	17,516	0.6396	0.0024	0.6347	0.6444	37,909
Mean OOPE - inpatient care (in ₹) (Public facility)	9929	1512	6961	12897	967	8028	682	6688	9367	1,058	8876	788	7329	10424	2,025
Mean OOPE - inpatient care (in ₹) (Private facility)	71232	3472	64420	78044	1,242	31932	1661	28673	35192	1,373	52021	1944	48208	55834	2,615
Mean OOPE - outpatient care (in ₹)	976	25	927	1025	6,678	1148	61	1028	1269	6,108	1061	32	997	1124	12,786

Standard error and confidence interval - Individual Sections															
Indicators	Age 45-59*					Age ≥ 60					Total				
	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number	Mean	Std. Err. (SE)	Mean - 2SE	Mean + 2SE	Number
14: Family and Social Network															
Proportion															
Living alone	0.0140	0.0006	0.0129	0.0152	40,786	0.0568	0.0013	0.0542	0.0594	31,464	0.0337	0.0007	0.0323	0.0350	72,250
Satisfied with current living arrangement	0.7969	0.0020	0.7929	0.8008	40,170	0.7484	0.0025	0.7435	0.7532	30,571	0.7748	0.0016	0.7717	0.7779	70,741
Received financial support	0.1229	0.0016	0.1197	0.1261	40,158	0.1521	0.0020	0.1481	0.1561	30,979	0.1363	0.0013	0.1338	0.1388	71,137
Provided financial support	0.0822	0.0014	0.0795	0.0849	40,165	0.0592	0.0013	0.0566	0.0618	30,973	0.0716	0.0010	0.0697	0.0735	71,138
Any member unable to carry basic daily activities	0.0291	0.0008	0.0275	0.0308	40,180	0.0237	0.0009	0.0220	0.0254	30,997	0.0266	0.0006	0.0254	0.0278	71,177
Instrumental care given to family member/s	0.7866	0.0122	0.7627	0.8106	1,129	0.6371	0.0174	0.6030	0.6712	766	0.7256	0.0103	0.7055	0.7457	1,895
Instrumental care given to other than family member/s	0.0346	0.0009	0.0328	0.0364	40,182	0.0170	0.0007	0.0156	0.0185	31,006	0.0265	0.0006	0.0254	0.0277	71,188
Experienced ill treatment						0.0522	0.0013	0.0497	0.0547	30,427					
Experienced ill treatment by spouse						0.0671	0.0079	0.0516	0.0827	999					
15: Decision-Making, Social Participation and Life Satisfaction															
Proportion															
No role in the household in buying and selling of property	0.0425	0.0010	0.0404	0.0445	37,940	0.1000	0.0018	0.0965	0.1035	28,292	0.0684	0.0010	0.0664	0.0703	66,232
Having membership in any organisation	0.0902	0.0014	0.0874	0.0930	40,190	0.0469	0.0012	0.0446	0.0493	31,013	0.0704	0.0010	0.0685	0.0722	71,203
Senior citizen club member	0.0654	0.0037	0.0581	0.0727	4,410	0.1064	0.0067	0.0933	0.1195	2,126	0.0780	0.0033	0.0715	0.0845	6,536
Low satisfaction with life	0.3240	0.0023	0.3194	0.3286	39,963	0.3214	0.0027	0.3162	0.3267	30,370	0.3229	0.0018	0.3194	0.3263	70,333
No discrimination experienced	0.9244	0.0013	0.9219	0.9270	40,786	0.9263	0.0015	0.9234	0.9292	31,464	0.9253	0.0010	0.9234	0.9272	72,250
16: Social Security Schemes for The Elderly															
Proportion															
Utilization of old age pension						0.2869	0.0035	0.2799	0.2939	16,083					
Utilization of widow pension						0.1876	0.0051	0.1776	0.1976	5,896					
Utilization of Annapurna scheme						0.0234	0.0012	0.0211	0.0257	16,083					
Received concessions- In Train travel						0.1481	0.0020	0.1442	0.1520	31,464					
Received concessions- In Bus travel						0.1467	0.0019	0.1428	0.1506	31,464					
Received concessions- In air travel						0.0212	0.0008	0.0196	0.0228	31,464					
Received concessions- In telecommunication services						0.0099	0.0006	0.0088	0.0110	31,464					
Received concessions- In Special interest rates on bank account or loan						0.0332	0.0010	0.0312	0.0352	31,464					
Received concessions- Income tax rebate						0.0140	0.0006	0.0127	0.0154	31,464					

APPENDIX – 3A

Biomarker's measurement tools and protocols

Test	Equipment	Protocol
• Blood pressure (BP) and pulse rate	• BP monitor (Omron HEM 7121) • Soft measuring tape (Gulick Tape) • Stopwatch	• Respondent in sitting position with legs uncrossed and flat on the floor, left arm with single layer of clothing. • Mid-arm circumference is measured to ensure use of appropriate cuff • Arm held steadily on a flat surface with palm facing up and the centre of arm at the level of the heart. • Cuff snugly placed approximately 1 cm (1/2‖) above the elbow. • Three readings are taken with a 1-minute gap between each reading; the average of the last two readings is calculated.
• Grip strength	• Hand dynamometer (Smedley's dynamometer) • Stopwatch	• The dynamometer is adjusted to the respondent's dominant hand. • Upper arm is held close to the body with forearm at right angle to the upper arm. • Respondent is asked to squeeze the dynamometer with the left hand as hard as they can for a few seconds. • Reading is taken at the eye level and grip strength was recorded in kilograms up to one decimal place. • Test repeated with the right hand after a 30-second break. • Total of four readings taken, two for each hand.
• Balance test	• Stopwatch	• Mid-level balance test (semi-tandem) is conducted first, progressively testing either the full-tandem or the side-by-side stance depending on the performance in the semi-tandem test. • Semi-tandem position - Respondent in standing position with the side of the heel of one foot touching the big toe of the other foot. The stopwatch is started immediately after the respondent begins to hold the semi-tandem position. The stopwatch is stopped after 10 seconds or when the respondent steps out of the position or grabs the supports. The time is recorded. • Full-tandem position - Criteria: Respondent was able to complete the semi-tandem test for the full 10 seconds. • Respondent stands with the heel of one foot in front and touching the toes of the other foot for 30 seconds (for elderly age over 70) or 60 seconds (for elderly age under 70). When the respondent steps out of position or grabs the supports, the time is recorded. • Side-by-side position - Criteria: Respondent was not able to complete the semi-tandem for 10 seconds. Respondent stands with feet together, side-by-side, for 10 seconds. When the respondent steps out of position or take support, the time was is recorded.

Test	Equipment	Protocol
• Timed walk	• 4-metre walk • Steel tape • Stopwatch	• A 4-metre distance is marked with measuring tape. • Time is recorded from the moment either foot crosses the start line until the moment when either foot touches or moves across the finish line.
• Vision test	• Computer-assisted personal interviewing (CAPI) enables visual acuity test for near and distance vision (log mart vision chart) • Steel measuring tape • Soft measuring tape • Masking tape	• Initial vision assessment is performed by holding a hand with moving fingers at a 2-feet distance. • Distance vision is measured at 3 metres by CAPI at the eye level of the respondent. Respondent should answer at least three E orientations correctly to determine visual acuity level. CAPI records the visual acuity level at which the respondent fails to answer at least three orientations correctly. The test is repeated for the other eye. • Near vision is measured at the distance of 40 cm by CAPI at the eye level of the respondent. Respondent must answer at least three E orientations correctly to be categorised into any visual acuity level. CAPI records the visual acuity level at which the respondent fails to answer at least three orientations correctly. The test is repeated for the other eye.
• Height measurement	• Height measuring board (pocket stadiometer with spirit level bubble)	• Respondent standing straight close to wall and stepping onto the base of the stadiometer with feet together maintaining Frankfort plane parallel to the floor. • Foot plate is placed on the topmost point of the head ensuring the spirit bubble is level at the centre. • The height is recorded in centimetres at the red line on the tape window.
• Weight measurement	• Digital weight measuring scale (Seca 803)	• The weighing scale is placed on the floor on a flat, firm surface. • Respondent is asked to remove excess or heavy clothing, purse, and ornaments. • Respondent is asked to step on the scale. • The weight is recorded in kilograms.
• Waist circumference	• Gulick's soft tape for waist measurement	• Respondent in standing position with feet together. • Gulick tape is placed around the waist at the navel parallel to the floor. • Light pressure is applied until calibration point is visible on the tensioning device. • Measurement is recorded in centimetres.
• Hip circumference	• Gulick's soft tape for waist measurement	• Respondent in standing position with feet together. • Gulick tape is placed around the highest part of the hip parallel to the floor. • Light pressure is applied until calibration point is visible on the tensioning device. • Measurement is recorded in centimetres.

Test	Equipment	Protocol
• Lung function test	• CAPI-enabled lung function test • Spirometer • Mouthpiece with filter • Barcode scanner • Thermo hygrometer	• Respondent in upright sitting position. • The spirometer, with mouthpiece with filter attached, is held between teeth and sealed with lips. • Respondent takes deep and complete breaths and blows as hard, fast, and long as possible (minimum 6 seconds or until 1 second plateau is achieved). • Three acceptable tests were performed, out of which two should be repeatable. • The spirometry parameters (forced vital capacity, peak expiratory flow, and forced expired volume in 1 s) are generated.
Dried blood spot (DBS)	• Whatman filter paper for DBS collection • Barcode scanner • Sterile consumables	• Written consent is obtained from respondent for DBS collection and storage. • Respondents wash and air-dry hands. • DBS is collected via aseptic method, from side prick of proximal phalanx of the middle or ring finger. • DBS cards are dried overnight, packed, and sent to the ICMR-NARI with maintained humidity and temperature within 10 days of collection for storage and testing. • All soiled consumables are disposed at nearby health centre or destroyed according to universal safety precautions.

APPENDIX – 3B

Acceptability criteria for spirometry test:

The graph's Flow-Volume and Volume-Time should both start at the zero point.

- Respondent should inhale and then blow immediately, and as hard and as fast as possible, without delay.
- There should be a sharp peak.
- The respondent should exhale as long as he/she can without any breaks or stops.
- There should be no cough or abrupt stop.
- The respondent should exhale for minimum 3 seconds or until 1-second plateau is achieved.
- The second-deep inhalation should be within zero.

Repeatability criteria for spirometry test:

The difference between the first and second highest values of FVC and FEV1 must be within 250 ml.

To calculate the mean values of lung function parameters, such as FEV1 and PEFR, acceptability criteria are modified so that the maximum number of spirometry tests can be used.

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