

Ageing in India: Mapping the Interstate Variation of Demographic, Socioeconomic and Health Variables Using LASI Wave 1 Data

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Abstract

This study used data from the Longitudinal Ageing Study in India (LASI) 2017-18 to examine the socio-demographic, economic, and health characteristics of older adults (60 years and above) in India. Using a multistage stratified sampling design, the analysis included 31,464 individuals across 35 states and union territories. Key findings highlight significant regional disparities in socio-demographic factors, such as age, gender, caste, religion, living arrangements, educational level, and economic status. For instance, most older adults reside in rural areas, where educational levels are notably lower. Economically, older adults in states like Chhattisgarh are often classified as poor, whereas Goa and Punjab report higher wealth indices. Health issues also vary, with high rates of depressive symptoms (33.94%) and disabilities in Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) across the country. Regions such as Kerala and Tamil Nadu show a high prevalence of depressive symptoms and ADL/IADL disabilities, while states like Nagaland and Meghalaya demonstrate lower rates of health challenges. Life satisfaction is greatest in states such as Himachal Pradesh, with notable regional differences in mental and physical health. The findings emphasise the urgent need for region-specific policies and interventions to address the diverse challenges faced by older adults in India, including mental health support, disability care, and socio-economic development.

Keywords: Older adults, interstate variation, self-rated health, depressive symptoms, disability (ADL & IADL), and life satisfaction

Introduction

According to United Nations data, India has overtaken China to become

the world's most populous country, with a population of 1.42 billion. China's population is also reported as

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1.42 billion by the UN World Population Dashboard (United Nations, 2015). India, one of the most populous countries in the world, is undergoing a significant transformation in its demographic landscape. Over the years, various socio-economic factors, improved healthcare, and changing societal dynamics have contributed to shifts in the age structure of the population, leading to an ageing population in India (Jamuna, 2000).

This ageing population presents unique challenges and opportunities for India that require careful consideration and planning by policymakers, healthcare providers, and society as a whole (World Population Ageing, 2019). An increasing median age characterises population ageing, driven by declining fertility rates and rising life expectancy. Developed countries such as Japan, Italy, Finland, Portugal, and Germany exemplify this trend.

As countries develop, they enter the fourth stage of demographic transition, characterised by declines in both birth and death rates, resulting in an ageing population. In contrast, developing countries often have high birth rates and low death rates, leading to a predominantly young population. For instance, India boasts the highest youth population, with 356 million individuals. Meanwhile, among the elderly population, China leads with 167 million, followed by India with 103 million (LASI, 2017).

Population ageing results from declines in mortality and fertility rates and is closely linked to demographic

transitions. This shift can significantly alter a population's age structure by increasing the proportion of older individuals and decreasing the proportion of children. As mortality rates decrease, life expectancy rises, and the number of survivors increases, thereby directly contributing to the growth of the aged population. Conversely, a decline in fertility changes age ratios, further contributing to population ageing (Bhagat & Kumar, 2011).

The consequences of this demographic shift are extensive. A broader base in the age pyramid raises concerns about potential labour shortages and increased dependency ratios, necessitating innovative workforce strategies and robust social security systems. Ageing also presents unique challenges for healthcare systems, as there are rising costs associated with chronic non-communicable diseases and mental health issues (Kastor et al., 2018).

On a global scale, the elderly population (aged 60 and above) is projected by the UN Population Division to grow from just under 800 million today (11% of the total population) to over 2 billion by 2050 (22% of the total population). While the world population is expected to increase 3.7 times from 1950 to 2050, the number of individuals aged 60 and above will rise nearly tenfold (World Population Ageing, 2019).

According to the 2011 Census of India, there were 103 million people aged 60 and above, representing 8.6% of the country's total population. By 2050, this number is projected to rise to 319 million, with an annual growth

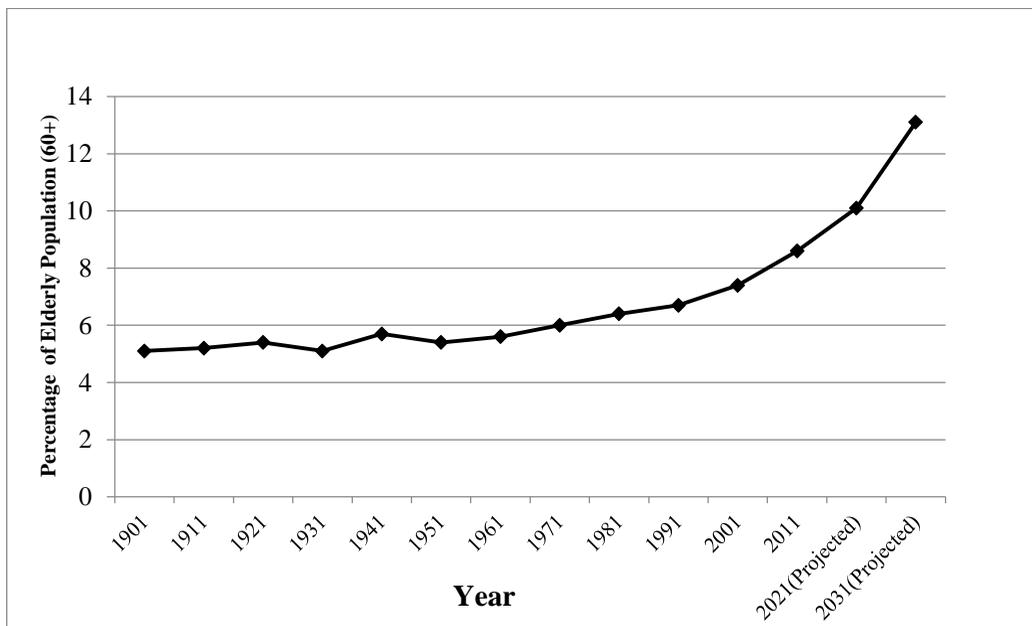
rate of 3% (World Population Ageing, 2019).

This study is motivated by several factors. Over the past 20 years, demographic, economic, and epidemiological changes have increased the proportion of Indians aged 60 and older (Kastor et al., 2017). However, the rate of this demographic shift varies across different geographic regions and socio-economic groups. Despite numerous extensive surveys, there is limited information on socio-demographic, economic, and health characteristics at the state level in India.

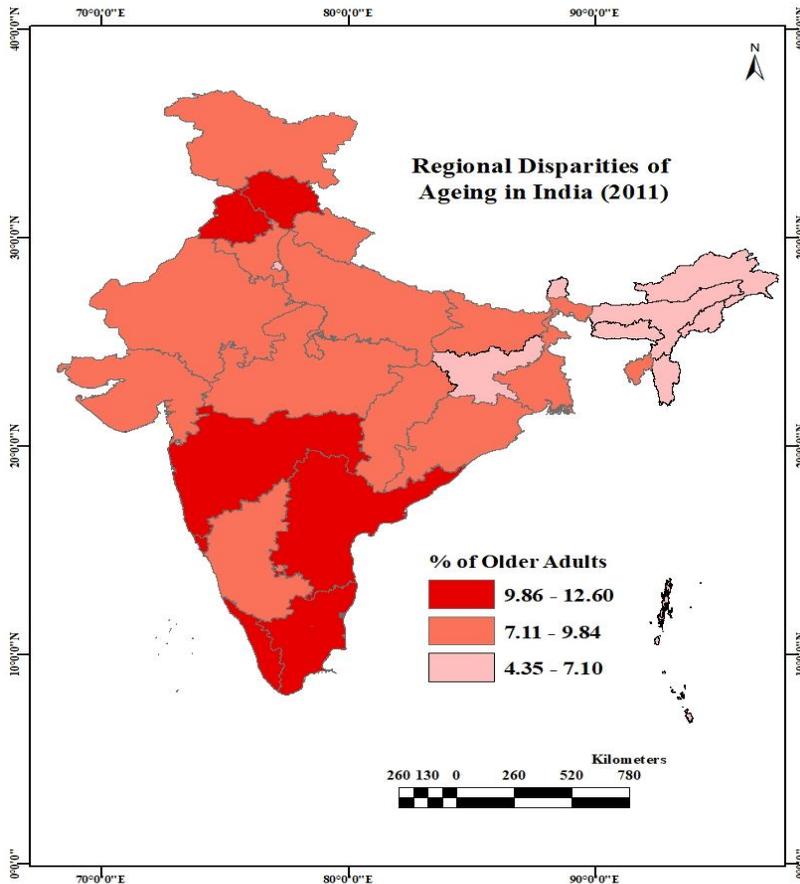
Additionally, socio-economic development and demographic transition stages differ significantly across states. Understanding the spatial distribution of older adults, along with variations in their socio-demographic, economic, and health characteristics, is therefore crucial. This study aims to investigate these spatial variations across India's states. India has experienced a change in trends in the elderly population (aged 60 and above) from 1901 to the projected figures for 2031, highlighting the broader demographic shift towards an ageing population (Figure 1).

Figure 1

Trends of the Elderly in India



Source of Data: Up to 2011, Population Census Data, for 2021 and 2031 Report of the Technical Group on Population Projections, November 2019, Population Projections for India and States 2011-2036, (*Projected Figure)

Figure 2

Source of data: Census of India (2011)

Regional Disparities of Ageing in India

A picture illustrating regional disparities in ageing across Indian states, using a choropleth map (Figure 2) to show the percentage of the elderly population (60+) exhibits states with high percentages, such as Kerala, Goa, Andhra Pradesh, Maharashtra, Punjab, and Himachal Pradesh, alongside those with the lowest percentages, including Meghalaya, Arunachal Pradesh, Mizoram, Nagaland, Dadra & Nagar Haveli, Daman & Diu, Bihar, Sikkim, Assam, and Delhi. The latter group

reflects earlier stages of ageing, attributed to higher fertility rates and younger populations. Kerala stands out for its high life expectancy and healthcare standards, which contribute to its larger elderly population.

Data and Methods

Study Design and Sample

We used data from Wave 1 (2017–18) of the Longitudinal Ageing Study in India (LASI), the first nationwide survey to provide comprehensive information on ageing, social relationships, family support, and life

satisfaction among older adults in India. While LASI covers individuals aged 45 and above, our analysis focused on respondents aged 60 years and older (IIPS, 2017). LASI employed a multistage, stratified, area-probability cluster sampling design. Primary sampling units (PSUs)—sub-districts or Tehsils/Talukas—were selected using Probability Proportional to Size (PPS), followed by the selection of secondary sampling units (SSUs) from rural villages and urban wards (IIPS, 2017). In the final stage, a fixed number of households were chosen from each selected village and census enumeration block (CEB). Wave 1 of LASI included 72,250 individuals aged 45 and above. For this study, we analysed a subsample of 31,464 adults aged 60 and older from 35 Indian states and Union Territories (excluding Sikkim) (IIPS, 2017).

Tools & Techniques

Centre for Epidemiological Studies-Depression Screening Tool (CES-D)

The abbreviated Centre for Epidemiological Studies-Depression (CES-D) scale was created by Andresen et al. (1994). One on the CES-D-10 means "rarely or never (less than one day)," two means "sometimes (1 or 2 days)," three means "often (3 or 4 days)," and four means "most or all of the time (5–7 days)." All ten items on the test had the same rating system. The cut-off scores for depressed symptoms were 19 or higher, while total scores might vary from 10 to 40 (Andresen et al., 1994).

Satisfaction with Life Scale

To measure life satisfaction, LASI employed five items: (i) I am happy with my life; (ii) I have excellent circumstances; (iii) I am almost ideal in most parts of my life; (iv) I now have the main things I want in life; and (v) If I could go back in time, I would change very little. All five questions were answered using a Likert scale with a range of 1 to 7, and the codes "Strongly disagree," "Somewhat disagree," "Slightly disagree," "Neither agree nor disagree," "Slightly Agree," "Somewhat Agree," and "Strongly Agree" followed. The internal consistency of the five items was evaluated using Cronbach's alpha. An extremely high level of internal consistency and reliability was indicated by the Cronbach's alpha value of 0.90. The five items listed above were combined to get the final life satisfaction variable. The continuous life satisfaction variable has a mean of 23.93, a standard deviation of 7.25, and a range of 5 to 35. Older adults who scored less than 20 were considered to be low satisfied, those who scored between 20 and 25 as medium satisfied, and those who scored 26 or more as highly satisfied.

ADL and IADL Disability

The study's outcome variables, Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL), are binary and dichotomous measures. ADLs encompass difficulties in getting in and out of

bed, dressing, eating, bathing, using the toilet, and moving around the room. IADLs include challenges with shopping, making phone calls, preparing meals, tending to gardens, managing finances, taking medication, and adjusting to new situations. The assessment of these outcome variables is derived from a self-reported health questionnaire that asks, "Do you have any difficulty related to ADLs and IADLs?" Responses are coded as "Yes" (1) and "No" (0).

ADL scores were converted to a scale of 0 to 6, with higher scores indicating increased dependence (Cronbach's Alpha: 0.93) (Joe et al., 2020). Arokiasamy (2016) observed that a score of 0 signifies complete independence in ADLs, while a score of 6 indicates complete dependence. Similarly, the IADL scale ranges from 0 to 7, with higher scores indicating greater dependence on instrumental activities of daily living. A score of 2 or above indicates high IADL dependence, while a score of 1 or less suggests low IADL dependence. In this context, a score of 7 signifies complete dependence for IADLs, whereas a score of 1 or lower indicates independence.

Study Covariates

The study's variables have been categorised based on previous research in the field. Living arrangements are divided into two

groups: Non-Empty Nesters (those living with husband and children or with children) and Empty Nest older adults (those living alone, with a spouse, or with others). Additional variables include age (60–64, 65–69, 70–74, and 75 years and older), sex (male and female), caste (SC, ST, OBC, and General), religion (Hindu, Muslim, Christian, and Others), and place of residence (rural and urban). Marital status is categorised into two groups: currently married and others (includes never married, widowed, divorced / separated /or deserted). Educational status includes No education, Primary, Upper Primary, and Secondary. Employment status is recorded as Yes or No. The wealth index for monthly per capita consumption and expenditure is classified into three categories: poor, middle, and rich. Self-rated health is divided into Poor, Fair, and Good. Table 1 provides full details of each explanatory variable.

Statistical Analysis

The study utilised Stata 16 to compute descriptive statistics for the target population, including cross-tabulations and univariate analyses to explore variable relationships. Choropleth maps provided a clear visual representation of interstate variation, aiding geographic comparisons and identifying regions that need targeted interventions based on observed disparities.

Table 1*Definition/Codes of the Variables*

Variables	Code/Definition
Age Group	0 = 60-64 Years, 1 = 65-69 Years, 2 = 70-74 Years, 3 = 75 and above Years
Sex	0 = Male, 1 = Female
Caste	0 = SC, 1 = ST, 2 = OBC, 3 = General
Religion	0 = Hindu, 1 = Muslim, 2 = Christian, 3 = Sikh, 4 = Others
Residence	0 = Rural, 1 = Urban
Marital Status	0 = Currently Married, 1 = Others
Living Arrangement	0 = Empty Nesters (living alone or with spouse and others), 1 = Non-Empty Nesters (living with spouse and children or with children)
Educational Status	0 = No Education, 1 = Primary, 2 = Upper Primary, 3 = Secondary
MPCE	0 = Poor, 1 = Middle, 2 = Rich
Working Status	0 = Currently Working, 1 = Not Working
Financial Support	0 = No, 1 = Yes
Self-Rated Health	0 = Poor, 1 = Fair, 2 = Good
Depressive Symptoms	0 = Not Depressed, 1 = Depressed
Life Satisfaction	0 = Low Satisfied, 1 = Medium Satisfied, 2 = High Satisfied
ADL Difficulty	0 = No, 1 = Yes
IADL Difficulty	0 = No, 1 = Yes

Results***Background Characteristics of the Study Participants***

A comprehensive overview of the background characteristics of the elderly population (aged 60 and older) in India in 2017–18 is presented in Table 2. The sample reflects a diverse representation of socio-demographic, economic, and health-related factors that shape the lives of older adults.

The majority of the elderly population falls within the younger age brackets, with 32.2% aged 60–64 years and 28.1% aged 65–69 years, together accounting for over 60% of the sample. Additionally, 21.45% are aged 75 and above. Females slightly outnumber males, constituting 52.02% of the population.

In terms of caste distribution, Other Backward Classes (OBC) make up the largest group at 37.85%, followed by the General category at 29.32%. The Scheduled Castes (SC)

and Scheduled Tribes (ST) groups together account for approximately 33%.

Religiously, Hindus dominate the sample at 73.22%, followed by Muslims at 11.86%, Sikhs at 10.01%, Christians at 3.11%, and others at 1.8%. The majority of older adults reside in rural areas (65.87%), while 34.13% live in urban settings.

Regarding living arrangements, 69.55% live with family members (classified as non-empty nesters), while 30.45% are classified as empty-nesters, indicating a significant proportion live independently or without direct family support. Over half of the elderly population (53.68%) has no formal education, while 18.56% have completed primary education and 18.18% have attained secondary education.

In terms of economic status, 41.19% belong to the poor income group, followed by 38.42% in the rich category and 20.39% in the middle-

income category. The majority of participants (63.31%) are currently married, while 36.69% fall into other categories, including widowed, separated, or never married.

About employment, 41.04% are currently employed, while 58.96% are not. Health-related data show that 23.1% rate their health as poor, 43.45% as fair, and 33.46% as good. Depressive symptoms are prevalent among 33.94% of participants, indicating a significant mental health burden. Life satisfaction is reported as high among 45.61% of the elderly, while 23.78% express low satisfaction.

Disabilities related to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) also vary within the population; 21.36% experience ADL disabilities, whereas IADL disabilities affect a larger portion at 33.33%. Notably, an overwhelming majority (85.32%) of older adults receive no financial support, highlighting potential economic vulnerability within this demographic.

Table 2

Background Characteristics of the Older Adults (60 Years and Above)

Variables & Category	Frequency	Percentage (%)
Age Group		
60-64 Years	10,132	32.20
65-69 Years	8,842	28.10
70-74 Years	5,741	18.25
75 and above	6,749	21.45
Sex		
Male	15,098	47.98
Female	16,366	52.02
Caste		
SC	5,140	16.37
ST	5,173	16.47

OBC	11,886	37.85
General	9,208	29.32
Religion		
Hindu	23,037	73.22
Muslim	3,731	11.86
Christian	979	3.11
Sikh	3,150	10.01
Others	567	1.80
Residence		
Rural	20,725	65.87
Urban	10,739	34.13
Living Arrangements		
Empty Nest	9,581	30.45
Non-Empty Nesters	21,883	69.55
Educational Status		
No Education	16,889	53.68
Primary	5,840	18.56
Upper Primary	3,015	9.58
Secondary	5,720	18.18
MPCE		
Poor	12,961	41.19
Middle	6,416	20.39
Rich	12,087	38.42
Marital Status		
Currently Married	19,920	63.31
Others	11,544	36.69
Working Status		
Currently Working	9,307	41.04
Not Working	13,373	58.96
Financial Support		
No	26,430	85.32
Yes	4,549	14.68
Self-Rated Health		
Poor	7,113	23.10
Fair	13,381	43.45
Good	10,304	33.46
Depressive Symptoms		
Not Depressed	10,315	33.94
Depressed	20,074	66.06
Life Satisfaction		
Low Satisfied	7,222	23.78
Medium Satisfied	9,295	30.61
High Satisfied	13,853	45.61
ADL Disability		
Not Disabled	24,642	78.64
Disabled	6,694	21.36
IADL Disability		
Not Disabled	20,863	66.67
Disabled	10,432	33.33

Interstate Variation of Socio-Demographic Aspects Among the Older Adults in India (2017–18)

Considerable differences exist in socio-demographic variables among older adults across various states and union territories in India, based on 2017-18 data (Table 3). The percentages of older adults are divided into four age groups: 60-64, 65-69, 70-74, and 75 and above. For instance, Himachal Pradesh has the highest percentage (31.56%) of older adults in the 60-64 age group, while Nagaland has the largest proportion (32.24%) of those aged 75 and above. States like Jammu & Kashmir and Punjab exhibit a relatively even distribution across all age groups.

Most older adults in many states live in rural areas, with Himachal Pradesh (90.5%) and Bihar (89.99%) having the highest rural populations. In contrast, union territories such as Chandigarh (98.98%) and Delhi (98.38%) are predominantly urban. The gender ratio also varies, with females outnumbering males in states like Manipur (56.93%) and Meghalaya (60.19%). Conversely, males make up a slightly higher percentage in Jammu & Kashmir (52.26%) and Dadra & Nagar Haveli (43.68%).

Educational attainment is classified into four levels: no education, primary, upper primary, and secondary. States such as Arunachal Pradesh (83.33%) and Rajasthan (69.67%) report high percentages of older adults with no formal education. In contrast, union territories like Chandigarh (46.45%)

and Kerala (33.09%) have relatively high proportions of older adults with secondary education. States such as Mizoram (45.57%) also show a notable percentage of older adults with primary education. This data highlights significant regional disparities. Rural areas dominate in most states, while urban centres such as Delhi and Chandigarh exhibit a high concentration of older adults. Educational levels are markedly lower in many rural states, whereas urban areas and southern states such as Kerala have higher educational attainment among older adults. Additionally, gender distribution reveals diverse patterns, with some northeastern states exhibiting a higher proportion of females.

Similarly, Table 4 shows differences in other socio-demographic aspects among older adults in India for 2017-18. The data reveal significant variation across states in social groups, religious affiliations, living arrangements, and marital status. For social groups, Punjab has the highest proportion of Scheduled Castes (40.74%), while Nagaland records the lowest (0.82%). Scheduled Tribes are most prominent in Nagaland (97.7%) and least represented in Punjab (1%). Tamil Nadu has the highest proportion of Other Backward Classes (81.38%), whereas Arunachal Pradesh reports none. The general category is most common in Jammu & Kashmir (73.31%) and least represented in Dadra & Nagar Haveli (9.09%).

Regarding religion, Himachal Pradesh has the highest percentage of Hindus at 97.1%, while Lakshadweep

has the lowest at 0.6%. Lakshadweep also has the highest proportion of Muslims at 99.4%, with Mizoram reporting none. Christianity is most prevalent in Mizoram at 99.81% and is absent in Bihar. Sikhs constitute the largest group in Punjab at 76.39%, but are underrepresented in several other states. The "Others" religious category, which includes indigenous faiths, is highest in Arunachal Pradesh at 28.93% and lowest in Jammu & Kashmir and Punjab, where it is 0%.

Living arrangements also differ considerably. Tamil Nadu has the highest percentage of older adults living alone (50.78%), while Lakshadweep records the lowest (17.73%). Conversely, Lakshadweep has the highest proportion of non-empty nesters (82.27%), with Tamil Nadu showing the lowest (49.22%). In terms of marital status, Bihar has the highest percentage of married older adults (71.02%), whereas Meghalaya has the lowest (50.73%). The "Others" category, which includes widowed, separated, or never-married individuals, is most common in Meghalaya (49.27%) and least common in Bihar (28.98%).

Figure 3 highlights significant interstate differences in sex composition, representation of backward classes, empty-nesters (those living alone), rural populations, and uneducated older adults in India between 2017 and 18. Northern and eastern states such as Uttar Pradesh and Bihar have a higher proportion of elderly residents living in rural areas. In contrast, southern and western states like

Tamil Nadu and Maharashtra place greater emphasis on urban regions. The gender distribution shows that central and northern states have a larger share of elderly men, whereas states like Kerala and Tamil Nadu have a higher proportion of elderly women. The spatial distribution reveals distinct regional patterns: central, eastern, and southern states exhibit higher concentrations of older adults from lower socioeconomic backgrounds, while northern and northeastern states report relatively lower proportions. A similar regional divide is evident in educational attainment, with most central, northern, and eastern states recording a higher share of older adults with no formal education.

These findings demonstrate substantial state-level disparities in the socio-demographic composition of older adults in India. The diversity reflects varying cultural, religious, and social norms across the country, emphasising the need for tailored policies and programs for older adults. Figure 4 illustrates the educational status and living arrangements of older adults across different states in India. The figure shows that educational attainment among older adults varies significantly across states, with some regions, such as Kerala, having a higher proportion of educated older adults, while others, such as Bihar and Uttar Pradesh, report a larger proportion of older adults with no education.

Similarly, the living arrangements of the elderly are examined, revealing considerable differences in the

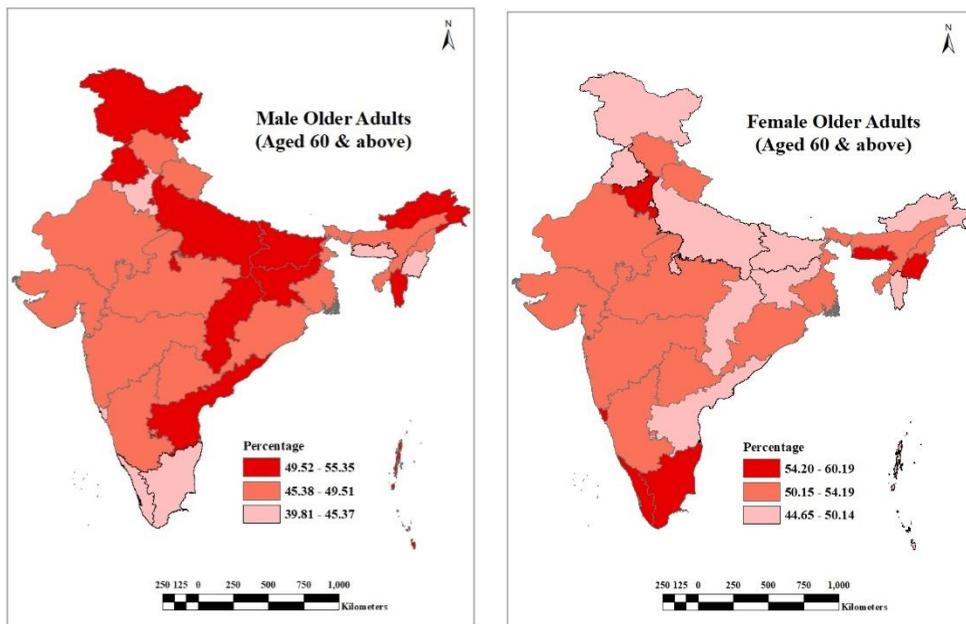
proportion of empty-nest and non-empty-nest older adults across states. States such as Kerala, Goa, and Tamil Nadu show a higher prevalence of non-empty-nest older adults. In contrast, states like Rajasthan and Uttar Pradesh have a higher proportion of older adults in the empty nest. These regional variations underscore the diverse social and educational conditions of older adults, underscoring the need for tailored interventions tailored to local contexts.

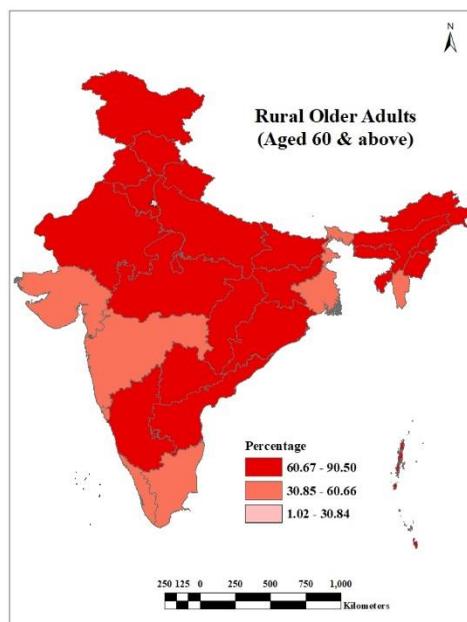
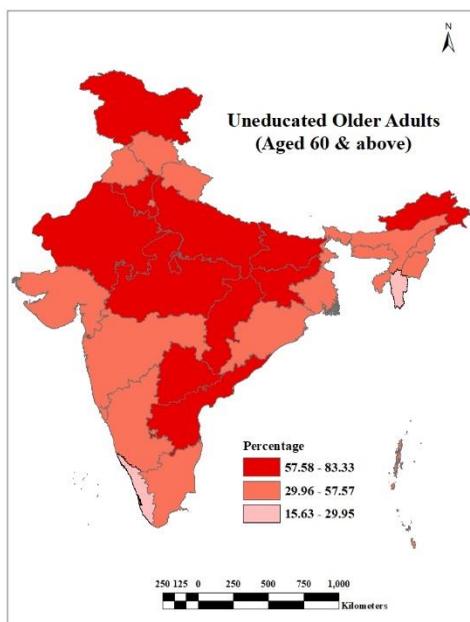
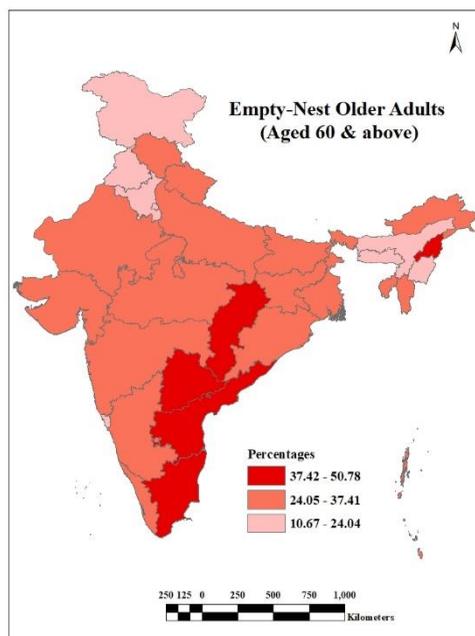
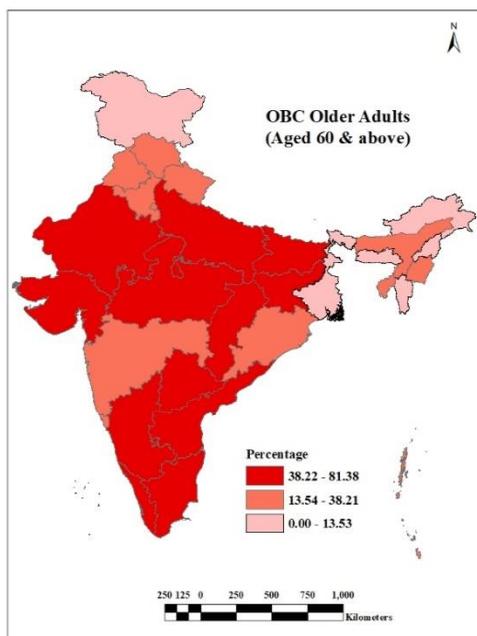
Interstate Variation of Economic Inequalities Among the Older Adults in India (2017-18)

Table 5 presents state-wise variation in economic indicators among older adults in India for 2017–18, highlighting disparities in monthly per capita consumption expenditure, employment status, and financial support. The proportion of older adults categorised as "poor" varies significantly across states. Chhattisgarh reports the highest percentage of poor individuals at 75%, while Chandigarh has the lowest at 13.96%. The middle-income group is most prevalent in Mizoram at 25.8% and least prevalent in Chhattisgarh at 11.15%. In terms of wealth, Goa leads with 62.01% of older adults classified as rich, while Chhattisgarh has the lowest proportion at 13.85%.

Figure 3

State Level Patterns of Sociodemographic Characteristics Among the Older Adults in India (2017–18)





Source of data: LASI Wave 1 (2017-18)

The employment status of older adults varies considerably across states. Arunachal Pradesh has the highest percentage of working older adults at 74.27%, whereas Lakshadweep records the lowest at 12.5%. Conversely, the highest proportion of non-working older adults is found in Lakshadweep at 87.5%, while Arunachal Pradesh has the lowest at 25.73%.

Regarding financial support, the percentage of older adults not receiving any assistance is highest in Chandigarh at 95.32% and lowest in Nagaland at 67.6%. Conversely, the proportion of older adults receiving financial support is highest in Nagaland at 32.4% and lowest in Chandigarh at 4.68%.

These findings reveal significant regional disparities. For instance, states such as Bihar (56.42%) and Odisha (54.89%) have a high proportion of poor older adults, while wealthier states like Goa (62.01%) and Punjab (60.36%) show a higher representation in the affluent category. Working status is more common in northeastern states like Arunachal Pradesh (74.27%) and Nagaland (58.44%), whereas union territories such as Lakshadweep (12.5%) and Goa (23.01%) have fewer working older adults.

Overall, these findings highlight substantial state-level disparities in the economic conditions faced by

Figure 5

older adults across India. Figure 5 illustrates the economic inequalities among older adults across different Indian states.

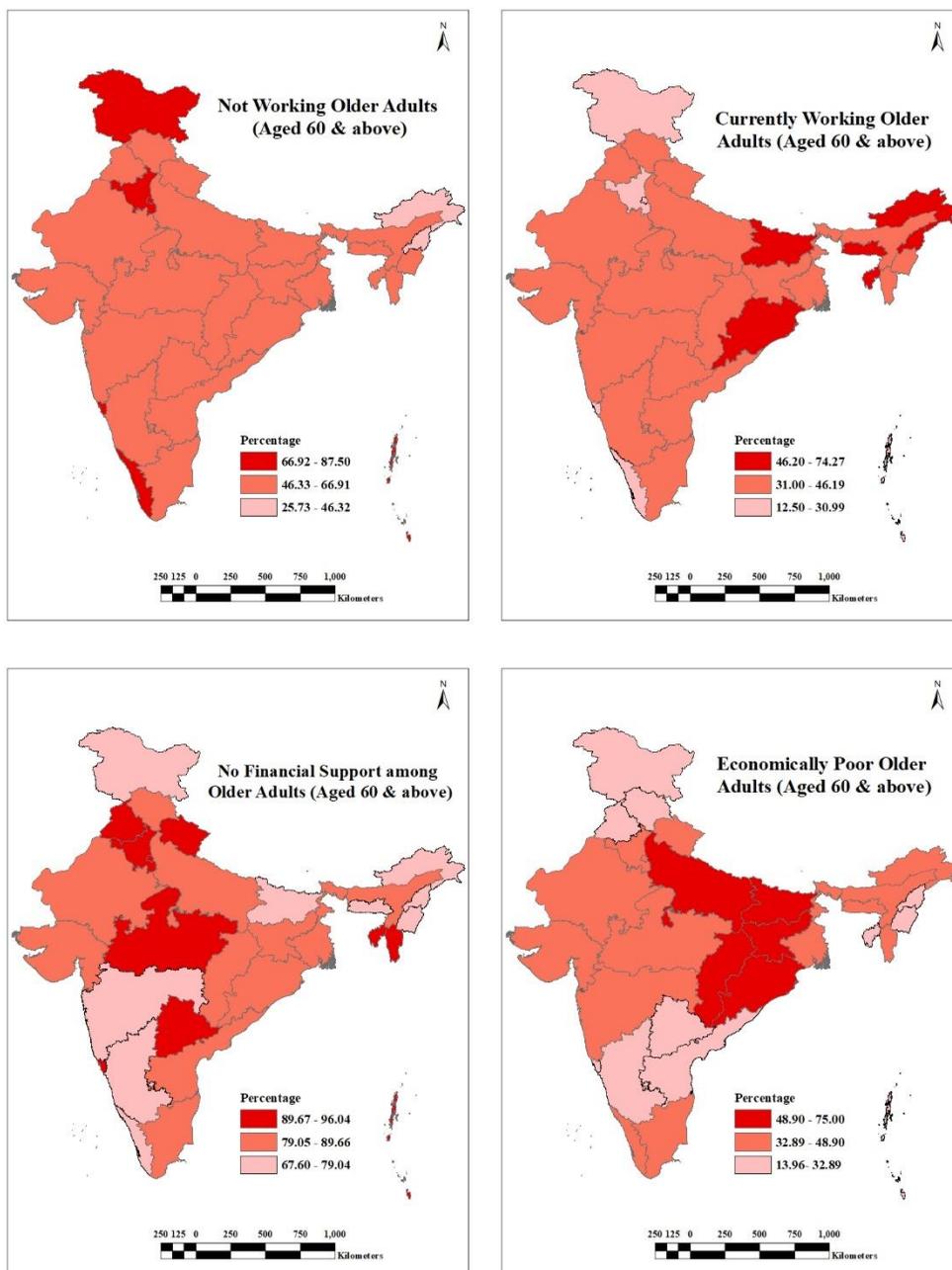
The graph illustrating variations in monthly per capita consumption and expenditure shows that states like Kerala and Goa have higher consumption rates. This suggests relatively better economic conditions for older adults in these regions.

Additionally, the graph reveals the employment status of older adults; many remain employed or engaged in economic activities in states such as Gujarat and Maharashtra, while regions like Bihar and Uttar Pradesh exhibit lower employment rates among older adults.

The availability of financial support is another crucial aspect highlighted in Figure 5. It indicates that a larger proportion of older adults in states like Delhi and Punjab receive financial assistance.

In contrast, states such as Jharkhand and Assam have lower levels of financial support for their older populations.

State-Level Patterns of Economic Inequalities Among Older Adults in India (2017–18)



Source of data: LASI Wave 1 (2017-18)

Interstate Variation of Various Health Issues Among the Older Adults in India (2017-18)

Table 6 presents state-wise variations in health indicators among older adults in India for 2017–18. It covers self-rated health, depressive symptoms, life satisfaction, and disabilities related to Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL).

Self-rated health among older adults differs across states. Meghalaya has the highest percentage of individuals rating their health as "good" at 67.07%, while Tamil Nadu reports the lowest at 10.81%. States such as Kerala (50.85%) and Tamil Nadu (50.2%) have a large proportion of older adults rating their health as "poor," indicating significant health difficulties in these regions.

The prevalence of depressive symptoms also varies. Lakshadweep (87.6%), Andhra Pradesh (72.69%), and Tamil Nadu (62.99%) report higher rates of depression, while Jammu & Kashmir (40.43%) and Chhattisgarh (56.94%) have lower rates.

Life satisfaction, categorised into low, medium, and high levels, shows significant differences across states. Himachal Pradesh has the highest percentage of older adults with high life satisfaction at 74.09%, while Kerala (40.02%) and Tamil Nadu (46.39%) show lower levels. States like Telangana (36.84%) and Andhra Pradesh (39.81%) also have a significant proportion of individuals reporting low life satisfaction.

The prevalence of ADL disabilities is lowest in Nagaland (6.1%) and highest in West Bengal (36.08%), indicating varying levels of dependence on others for basic daily tasks. Gujarat (25.13%) and Bihar (24.58%) show moderate levels of ADL disability.

IADL disability rates, which reflect limitations in performing more complex tasks, are highest in Tamil Nadu (41.73%) and West Bengal (43.67%). In contrast, states like Nagaland (17.3%) and Arunachal Pradesh (16.67%) report much lower levels of IADL disability.

Significant disparities exist across regions. Northeastern states like Meghalaya and Nagaland show better self-rated health and lower disability rates. In contrast, southern states like Kerala and Tamil Nadu report higher rates of poor health, depressive symptoms, and IADL disabilities. States such as Himachal Pradesh and Puducherry exhibit higher life satisfaction compared to regions like West Bengal and Andhra Pradesh.

These findings underscore the diverse health challenges faced by older adults across India, highlighting the need for targeted health interventions to address state-specific issues effectively.

Figure 6 focuses on the physical, functional, and mental health of older adults across different states. The map illustrates distinct interstate variations in poor self-rated health among older adults in India. Southern states, particularly Kerala and Tamil Nadu, report the highest prevalence of poor self-rated health, while many

northern and central states lie in the moderate range. In contrast, several eastern, northeastern, and western states demonstrate relatively lower levels of poor self-rated health among older adults.

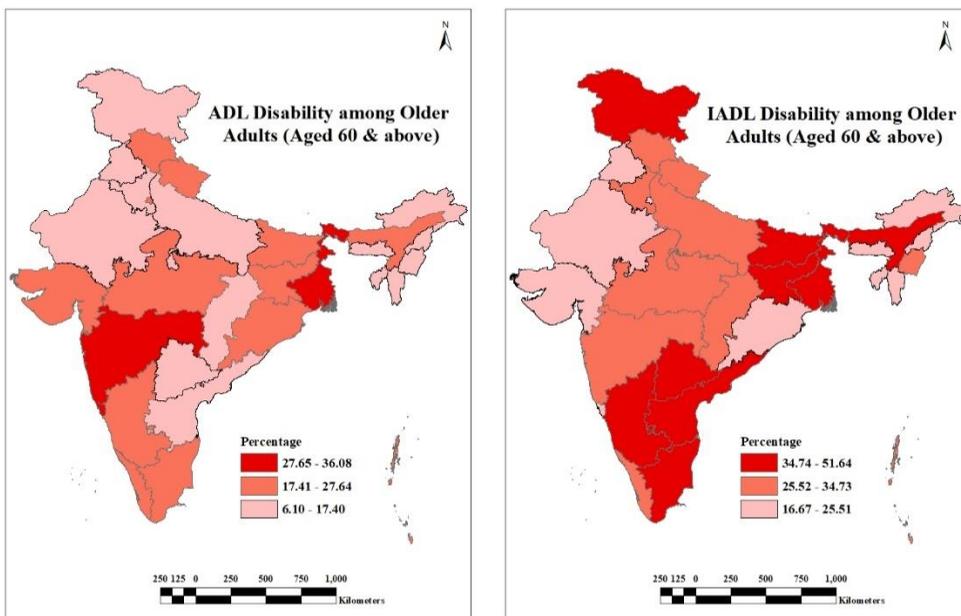
The accompanying figure shows variations in the prevalence of functional health issues (such as ADL and IADL disabilities) and mental health challenges (such as depressive symptoms). States like Kerala and Goa show lower levels of disability, possibly due to better healthcare and social support systems. Conversely, states like Bihar, Uttar Pradesh, and Madhya Pradesh exhibit higher levels of disability, indicating significant challenges in terms of functional health. Mental health is another critical aspect explored in this figure,

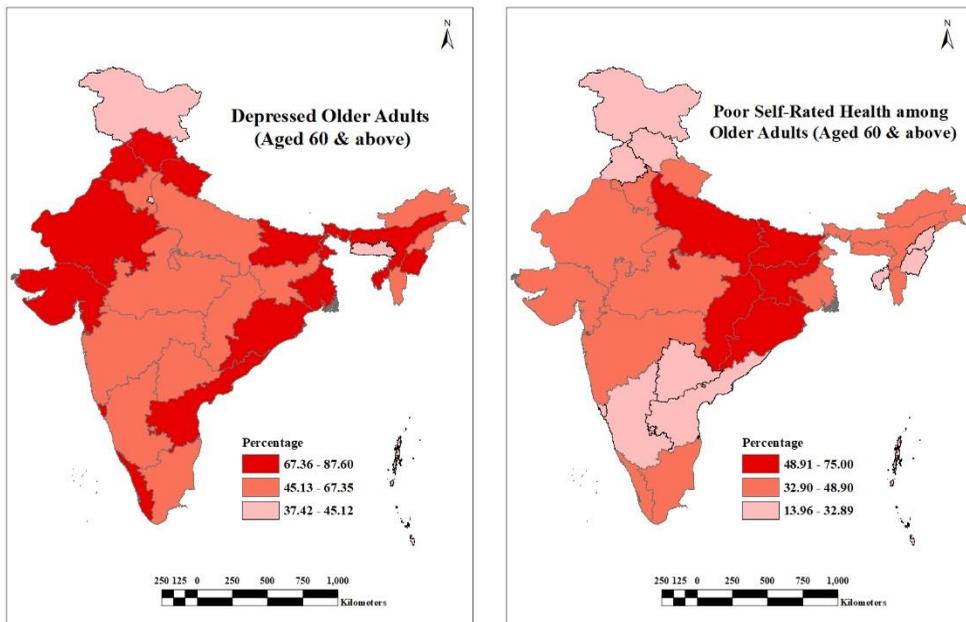
revealing that states with higher levels of disability, such as Uttar Pradesh and Bihar, also have higher levels of depressive symptoms. This indicates a correlation between physical limitations and mental health challenges among older adults, emphasising the need for integrated healthcare strategies that address both physical and mental health needs.

Figure 7 examines low life satisfaction among older adults across various Indian states. Low life satisfaction is highest in southern and eastern states, moderate across northern India, and lowest in a few central and western states. Bihar and Uttar Pradesh have a particularly high percentage of older adults reporting low life satisfaction.

Figure 6

State-Level Patterns of Physical, Functional & Mental Health Among Older Adults in India (2017–18)

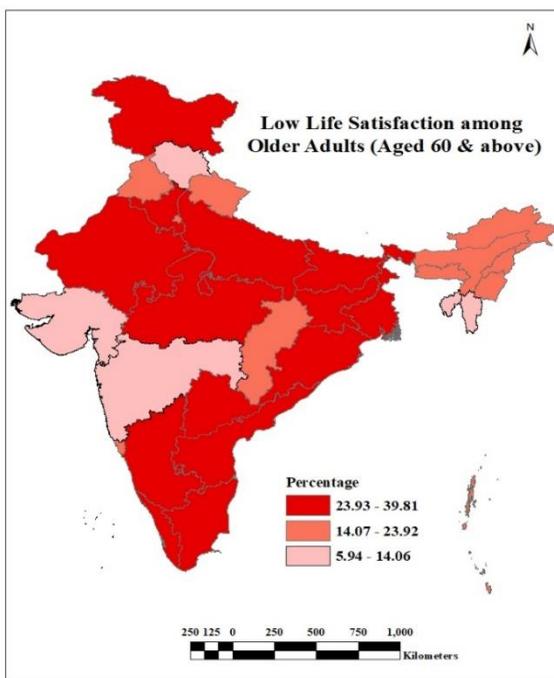




Source of data: LASI Wave 1 (2017-18)

Figure 7

State Level Patterns of Low Satisfaction With Their Life Among Older Adults in India (2017–18)



Source of data: LASI Wave 1 (2017-18)

These findings highlight how regional healthcare infrastructure, socio-economic conditions, and social support systems impact the overall well-being of older adults. States with better access to healthcare, social support, and favourable economic conditions tend to report higher life satisfaction and better health outcomes among older adults.

This emphasises the importance of investing in healthcare, social policies, and community support systems to improve the quality of life for older adults in less advantaged regions. Together, Figures 3 to 7 provide a comprehensive overview of the regional disparities in socio-demographic factors, economic conditions, health status, and mental well-being of older adults across India. The findings reveal significant variations at the state level in educational attainment, economic status, health issues, and levels of physical, functional, and mental health, as well as life satisfaction.

These disparities highlight the need for region-specific interventions and policies that address the unique challenges faced by older adults across India.

Strength & Limitation

This study highlights several important issues. First, the prevalence of Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) problems is based on self-reported data, which may be influenced by memory bias. Second, since the data is cross-sectional, we cannot determine a causal relationship between the independent

and dependent variables. Additionally, the study considered only variables available in the dataset, potentially leading to omitted-variable bias.

Depression symptoms were self-reported using the CES-D scale, which means older adults might exaggerate or underreport their level of depression. Since the scale is subjective, responses may also be biased because of cultural interpretations. Additionally, the CES-D scale gathered data over the previous twelve months, making the results vulnerable to recall bias and inaccuracies. Social desirability may also have influenced responses regarding life satisfaction, potentially leading to inflated self-reports due to societal stigma.

Overall, the study utilises LASI Wave 1 data to examine both health and socio-economic aspects of ageing, while accounting for regional disparities. This approach, combined with its potential to inform targeted policy measures, is a significant strength. These aspects make the study a valuable contribution to understanding ageing in India and to tackling the challenges posed by an increasingly ageing population.

Conclusion

The findings of this study reveal considerable differences across Indian states in the socio-economic, demographic, and health characteristics of older adults. Using data from the Longitudinal Ageing Study in India (LASI) Wave 1, we have highlighted several key aspects that vary significantly across states and

union territories, emphasising the complex landscape of ageing in the country.

There are clear regional differences in factors such as educational attainment, living arrangements, and gender composition. States in the northern and northeastern regions show lower levels of education, with a higher percentage of older adults lacking formal schooling. Conversely, urban centres like Delhi and Kerala have a greater proportion of older adults who have completed secondary education.

Living arrangements also vary considerably; for example, Tamil Nadu reports a higher proportion of elderly living without children, indicating different caregiving and support dynamics across states. Economic conditions show wide disparities as well—states like Goa and Punjab have higher levels of wealth among the elderly, whereas states like Chhattisgarh report a larger percentage of elderly individuals living in poverty.

The employment status and financial support for older adults also vary, with northeastern states such as Arunachal Pradesh and Nagaland reporting higher employment rates among their elderly populations. In contrast, regions like Lakshadweep and Goa have a greater number of older adults relying on financial assistance.

Health indicators—such as self-rated health, depressive symptoms, life satisfaction, and disabilities related to Activities of Daily Living (ADLs) and Instrumental Activities of

Daily Living (IADLs)—differ notably across states. For example, Meghalaya reports better self-rated health and lower disability rates, whereas southern states like Tamil Nadu and Kerala exhibit higher levels of poor health, depression, and IADL disabilities.

These findings highlight the diverse health challenges faced by older adults across different regions of India and emphasise the importance of region-specific health interventions. Mental health, as indicated by depressive symptoms and life satisfaction, also varies significantly by region. Himachal Pradesh stands out for its high life satisfaction, while states like Kerala and Tamil Nadu report lower satisfaction levels and a higher prevalence of depressive symptoms.

These disparities emphasise how social, economic, and health factors influence the overall well-being of older adults and highlight the need for targeted mental health and support services.

In conclusion, the study emphasises the importance of recognising regional differences in the socio-economic and health conditions of the ageing population. Given the diverse nature of India's elderly residents, state-specific policies and interventions are crucial to meet the unique needs of older adults across various regions. Customised programmes, improved healthcare services, and enhanced economic support systems can significantly improve the quality of life for elderly people across the country. Effective measures should focus on reducing

inequalities in education, health, financial stability, and social support, ensuring that ageing in India is marked by dignity, independence, and well-being for everyone.

List of Abbreviations

LASI: Longitudinal Ageing Study in India

ADL: Activities of Daily Living

IADL: Instrumental Activities of Daily Living

MPCE: Monthly Per Capita Consumption Expenditure

CESD: Centre for Epidemiological Studies-Depression

LS: Life Satisfaction

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Table 3

State-Wise Socio-Demographic Characteristics of Older Adults in India (2017-18)

States	Social Group				Religious Group				Living Arrangement (%)	
	SC	ST	OBC	General	Hindu	Muslim	Christian	Sikh	Empty Nest	Non-Empty Nester
Jammu & Kashmir	8.67	12.79	5.23	73.31	24.35	74.28	0.27	1.09	10.67	89.33
Himachal Pradesh	26.25	4.51	16.75	52.5	97.1	0.64	0	1.93	24.32	75.68
Punjab	40.74	1	16.53	41.73	22.81	0.6	0.2	76.39	20.52	79.48
Chandigarh	14.25	0.51	19.59	65.65	71.83	3.81	0.76	23.35	24.87	75.13
Uttarakhand	18.28	5.31	14.84	61.56	87.83	10.76	0.94	0.47	36.66	63.34
Haryana	20.87	0.12	32.78	46.23	90.57	6.25	0	2.71	18.75	81.25
Delhi	18.22	0.81	22.27	58.7	75.15	16.57	1.62	5.86	15.96	84.04
Rajasthan	21.17	14.95	42.8	21.08	93.78	3.34	0	1.58	33.02	66.98
Uttar Pradesh	26.83	1.94	43.43	27.8	85.2	13.97	0.05	0.28	26.23	73.77
Bihar	22.36	2.05	51.02	24.57	81.47	18.47	0	0	30.48	69.52
Arunachal Pradesh	5.03	77.67	0	17.3	17.61	0.31	53.14	0	27.04	72.96
Nagaland	0.82	97.7	0.33	1.15	1.48	0.66	97.86	0	42.11	57.89
Manipur	9.41	38.12	20.46	32.01	42.24	4.95	38.61	0	22.28	77.72
Mizoram	0.19	98.87	0.75	0.19	0.19	0	99.81	0	24.48	75.52
Tripura	27.33	31.24	22.78	18.66	85.25	0.43	6.29	0	31.02	68.98
Meghalaya	2.68	94.63	0.24	2.44	9.47	0.73	83.01	0	16.99	83.01
Assam	8.6	15.97	38.21	37.22	75.86	22.18	1.35	0	16.3	83.7
West Bengal	23.72	3.77	10.14	62.38	80.51	18.39	0.32	0.06	30.31	69.69
Jharkhand	11.9	18.24	52.91	16.95	80.82	10.79	4.11	0.34	26.63	73.37
Odisha	18.92	21.58	37.67	21.83	91.35	0.81	7.84	0	32.9	67.1
Chhattisgarh	12.82	31.41	46.67	9.1	96.79	1.67	1.15	0.13	37.69	62.31
Madhya Pradesh	12.41	12.26	54.84	20.49	92.61	5.56	0.08	0.3	34.5	65.5
Gujarat	12.65	14.18	44.69	28.47	87.99	10.6	0.81	0.2	30.17	69.83
Daman & Diu	17.02	17.95	44.06	20.98	92.63	4.84	2.07	0	36.87	63.13

Dadra & Nagar Haveli	0.89	76.5	13.53	9.09	82.04	5.32	6.65	0	27.72	72.28
Maharashtra	15.54	7.66	34.15	42.65	76.03	13.74	1.62	0.06	26.31	73.69
Andhra Pradesh	21.9	6.02	50.27	21.81	81.18	4.89	13.85	0	46.24	53.76
Karnataka	12.59	4.2	70.83	12.39	88.05	11.25	0.2	0	29.18	70.82
Goa	2.2	10.71	20.47	66.61	72.06	4.08	23.39	0.16	23.08	76.92
Lakshadweep	1.99	92.63	4.98	0.4	0.6	99.4	0	0	17.73	82.27
Kerala	6.47	1.66	51.58	40.3	57.82	18.44	23.66	0	37.3	62.7
Tamil Nadu	16.07	0.98	81.38	1.57	88.4	3.91	7.5	0	50.78	49.22
Puducherry	17.81	0.94	69.06	12.19	88.13	6.09	5.63	0	37.5	62.5
Andaman & Nicobar	14.97	23.22	19.19	42.61	54.11	7.27	38.43	0.19	28.3	71.7
Telangana	16.87	5.37	65.79	11.97	84.64	10.46	3.77	0.66	47.13	52.87
Total	16.37	16.47	37.85	29.32	73.22	11.86	10.01	3.11	30.45	69.55

Table 4*State-Wise Socio-Demographic Characteristics of Older Adults in India (2017–18)*

States	Age Group (%)				Residence (%)		Sex Composition (%)	
	60-64	65-69	70-79	75 & above	Rural	Urban	Male	Female
Jammu & Kashmir	28.73	30.51	17.51	23.26	73.6	26.4	52.26	47.74
Himachal Pradesh	31.56	23.83	18.68	25.93	90.5	9.5	48.95	51.05
Punjab	29.48	28.78	21.02	20.72	72.61	27.39	49.9	50.1
Chandigarh	33.5	26.14	17.77	22.59	1.02	98.98	48.22	51.78
Uttarakhand	37.75	27.3	20.12	14.82	76.76	23.24	47.27	52.73
Haryana	33.84	26.65	19.22	20.28	70.75	29.25	42.81	57.19
Delhi	35.76	29.09	16.77	18.38	1.62	98.38	50.71	49.29
Rajasthan	34.23	25.32	16.6	23.84	79.31	20.69	46.85	53.15
Uttar Pradesh	30.66	29.09	19.23	21.02	80.22	19.78	51.59	48.41
Bihar	33.96	28.87	18.36	18.81	89.99	10.01	51.16	48.84
Arunachal Pradesh	33.33	27.04	17.61	22.01	86.16	13.84	55.35	44.65
Nagaland	25.82	24.51	17.43	32.24	74.34	25.66	49.51	50.49
Manipur	27.72	29.21	18.48	24.59	66.5	33.5	43.07	56.93
Mizoram	30.7	26.74	16.57	25.99	51.04	48.96	49.91	50.09
Tripura	37.31	24.3	15.18	23.21	78.96	21.04	49.24	50.76
Meghalaya	32.52	23.3	17.72	26.46	84.95	15.05	39.81	60.19
Assam	30.88	29.41	18.75	20.96	85.54	14.46	47.55	52.45
West Bengal	31.74	26.1	17.36	24.81	49.81	50.19	48.7	51.3
Jharkhand	37.76	24.83	17.21	20.21	79.54	20.46	50.09	49.91
Odisha	33.79	26.35	17.06	22.8	84.32	15.68	48.59	51.41
Chhattisgarh	38.08	28.08	16.54	17.31	81.54	18.46	50.26	49.74
Madhya Pradesh	31.99	26.35	16.07	25.59	74.87	25.13	49.05	50.95
Gujarat	36.02	31.48	17.46	15.04	58.32	41.68	45.81	54.19
Daman & Diu	30.88	29.26	21.66	18.2	35.48	64.52	42.4	57.6
Dadra & Nagar Haveli	32.37	33.48	19.96	14.19	66.52	33.48	43.68	56.32
Maharashtra	29.16	29.66	21.06	20.11	52.85	47.15	46.31	53.69
Andhra Pradesh	34.75	32.13	15.93	17.19	75.11	24.89	49.86	50.14
Karnataka	29.58	31.18	17.23	22.01	70.32	29.68	47.71	52.29
Goa	30.46	27.47	19.62	22.45	38.62	61.38	45.37	54.63
Lakshadweep	38.45	28.69	16.73	16.14	19.72	80.28	47.81	52.19
Kerala	28.78	27.46	18.28	25.48	52.94	47.06	44.5	55.5
Tamil Nadu	31.23	27.44	19.56	21.77	43.22	56.78	44.65	55.35
Puducherry	30.94	28.13	19.69	21.25	27.66	72.34	42.97	57.03
Andaman & Nicobar	35.95	26.58	15.87	21.61	63.1	36.9	52.77	47.23
Telangana	26.96	32.23	20.08	20.74	68.71	31.29	47.31	52.69
Total	32.2	28.1	18.25	21.45	65.87	34.13	47.98	52.02

Table 5

State-Wise Socio-Economic Characteristics of Older Adults in India (2017–18)

States	MPCE Quintile (%)		Working Status (%)		Financial Support (%)	
	Poor	Rich	Working	Not Working	Not Getting	Getting
Jammu & Kashmir	14.36	68.81	30.95	69.05	78.56	21.44
Himachal Pradesh	26.73	52.5	44.05	55.95	86.83	13.17
Punjab	17.33	60.36	37.45	62.55	93.71	6.29
Chandigarh	13.96	65.74	26.03	73.97	95.32	4.68
Uttarakhand	41.03	34.48	38.59	61.41	94.98	5.02
Haryana	36.32	41.27	30.99	69.01	93.55	6.45
Delhi	44.44	34.75	30.69	69.31	95.91	4.09
Rajasthan	42.49	38.4	39.02	60.98	86.44	13.56
Uttar Pradesh	52.51	25.54	46.19	53.81	86.74	13.26
Bihar	56.42	24.72	49.04	50.96	69.15	30.85
Arunachal Pradesh	39.62	42.14	74.27	25.73	68.55	31.45
Nagaland	27.3	51.32	58.44	41.56	67.6	32.4
Manipur	20.63	59.9	45.14	54.86	75.93	24.07
Mizoram	46.89	27.31	41.46	58.54	96.04	3.96
Tripura	32.32	44.03	50.45	49.55	93.99	6.01
Meghalaya	44.66	34.71	50.0	50.0	78.38	21.62
Assam	48.9	31.86	42.72	57.28	88.85	11.15
West Bengal	42.16	36.27	41.74	58.26	86.0	14.0
Jharkhand	52.14	24.57	45.47	54.53	85.09	14.91
Odisha	54.89	23.93	50.54	49.46	87.85	12.15
Chhattisgarh	75	13.85	39.71	60.29	84.54	15.46
Madhya Pradesh	43.95	38.61	41.45	58.55	90.83	9.17
Gujarat	39.96	39.66	40.94	59.06	89.66	10.34
Daman & Diu	30.65	51.15	30.06	69.94	85.37	14.63
Dadra & Nagar Haveli	57.21	24.39	59.38	40.63	91.28	8.72
Maharashtra	43.46	35.31	39.7	60.3	76.57	23.43
Andhra Pradesh	29.41	50.32	38.51	61.49	87.8	12.2
Karnataka	26.69	47.11	42.17	57.83	77.7	22.3
Goa	18.21	62.01	23.01	76.99	93.94	6.06
Lakshadweep	60.36	20.32	12.5	87.5	83.17	16.83
Kerala	37.8	44.33	24.86	75.14	79.04	20.96
Tamil Nadu	42.44	37.35	42.02	57.98	88.75	11.25
Puducherry	55.94	25.78	33.59	66.41	83.94	16.06
Andaman & Nicobar Island	30.97	48.76	21.78	78.22	94.98	5.02
Telangana	32.89	47.6	36.62	63.38	92.53	7.47
Total	41.19	38.42	41.04	58.96	85.32	14.68

Table 6

State-Wise Health Profile of Older Adults in India (2017–18)

States	Self-Rated Health (%)		Depressive Symptoms (%)		Life Satisfaction (%)		ADL Disability (%)		IADL Disability (%)	
	Poor	Good	No	Yes	Low	High	No	Yes	No	Yes
	Jammu & Kashmir	26.75	34.87	59.57	40.43	26.95	26.95	82.6	17.4	48.36
Himachal Pradesh	26.11	30.05	28.88	71.12	5.94	74.09	76.18	23.82	65.48	34.52
Punjab	21.8	21.7	23.1	76.9	19.67	53.86	83.92	16.08	75.42	24.58
Chandigarh	16.49	42.53	38.01	61.99	6.81	75.2	81.25	18.75	77.55	22.45
Uttarakhand	18.84	23.7	28.28	71.72	17.03	55.21	78.78	21.22	70.2	29.8
Haryana	24.31	34.85	32.65	67.35	25.97	43.57	86.66	13.34	69.19	30.81
Delhi	12.12	43.64	62.58	37.42	23.11	41.72	76.52	23.48	75.51	24.49
Rajasthan	20.49	39.66	22.24	77.76	32.7	32.05	92.2	7.8	76.14	23.86
Uttar Pradesh	25.29	28.77	35.91	64.09	26.58	36.44	82.68	17.32	65.27	34.73
Bihar	21.37	33.47	30.51	69.49	25.43	43.23	75.42	24.58	57.23	42.77
Arunachal Pradesh	9.49	54.75	45.86	54.14	17.46	40	88.68	11.32	83.33	16.67
Nagaland	8.12	52.96	38.54	61.46	23.16	41.23	93.9	6.1	82.7	17.3
Manipur	15.45	40.92	21.11	78.89	23.92	42.46	88.93	11.07	66.61	33.39
Mizoram	12.42	47.45	38.04	61.96	6.94	57.96	83.99	16.01	78.34	21.66

Tripura	23.97	17.65	14.57	85.43	14.06	43.97	84.75	15.25	74.51	25.49
Meghalaya	5.12	67.07	62.1	37.9	15.65	54.28	89.54	10.46	75.18	24.82
Assam	21.18	29.95	26.61	73.39	20.05	44.14	79.73	20.27	60.39	39.61
West Bengal	31.65	17.65	27.86	72.14	31.21	28.8	63.92	36.08	56.33	43.67
Jharkhand	19.25	37.21	34.97	65.03	30.51	38.37	80.1	19.9	62.09	37.91
Odisha	22.85	24.17	24.69	75.31	32.42	34.74	79.43	20.57	81.46	18.54
Chhattisgarh	10.26	42.37	43.06	56.94	21	43.59	82.93	17.07	70.99	29.01
Madhya Pradesh	23.18	42.25	46.42	53.58	28.17	46.83	75.23	24.77	65.32	34.68
Gujarat	14.26	51.55	21.17	78.83	6.84	78.85	74.87	25.13	74.49	25.51
Daman & Diu	13.18	55.53	25.24	74.76	9.4	75.42	66.28	33.72	71.19	28.81
Dadra & Nagar Haveli	17.04	49.55	21.94	78.06	12.04	59.49	78.03	21.97	65.95	34.05
Maharashtra	15.55	30.48	38.22	61.78	13.64	64.44	64.94	35.06	66.91	33.09
Andhra Pradesh	22.67	34.47	27.31	72.69	39.81	41.87	84.79	15.21	60.77	39.23
Karnataka	11.04	44.27	48.11	51.89	30.81	38.17	80.98	19.02	51.55	48.45
Goa	32.96	38.93	23	77	16.99	44.44	64.2	35.8	77.76	22.24
Lakshadweep	21.41	39.19	12.4	87.6	10.66	41.6	75.6	24.4	72.4	27.6
Kerala	50.85	13.63	23.5	76.5	27.34	40.02	75.39	24.61	68.66	31.34
Tamil Nadu	50.2	10.81	37.01	62.99	28.61	46.39	75.6	24.4	58.27	41.73
Puducherry	41.12	15.52	33.12	66.88	21.43	38.8	81.16	18.84	69.07	30.93
Andaman & Nicobar	9.72	52.63	54.88	45.12	23.58	49.59	72.36	27.64	71.59	28.41
Telangana	21.51	37.38	39.86	60.14	36.84	41.81	84.16	15.84	56.01	43.99
Total	23.1	33.46	33.5	66.5	23.78	45.61	78.64	21.36	66.67	33.33