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Demographic and Socioeconomic Determinants of Mental Health among the Ageing Population in India: Evidence based on LASI data

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Abstract

This study has recognized the significance of mental health as an essential component of overall wellness; it is important to assess how sociodemographic factors like age, sex, living standard, economic status, and education affect mental health. This study aims to investigate the relationship between demographic and socioeconomic conditions and the mental well-being of the elderly population in India. "The study utilises data from LASI, 2020," focusing on 30656 individuals aged 60 years and above. By utilising anxiety and depression scores, we have evaluated mental health status. For this study, logistic regression is used, with results interpreted as OR accompanied by a 95% confidence interval. Analysis of this study shows that individuals aged 85 and above are 1.64 times more likely to experience anxiety and 1.63 times more likely to experience depression compared to those in the 60-70 age group. Additionally, females have 1.42 times higher odds of anxiety and 1.37 times increased odds of having depression compared to males. This study emphasizes the importance of socioeconomic and demographic characteristics like age, residence, gender, marital status, literacy, financial status, and caste on the mental health of the elderly in India. It stresses the importance of integrating mental health with SDGs to improve the mental well-being of the older population effectively.

Keywords

Mental health, Demographic, Socioeconomic, Older adults, India

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Introduction

The age distribution of the global population is undergoing significant changes as a result of rising life expectancy and declining fertility rates. Consequently, this change is causing a considerable increase in the population of individuals aged 65 and above (Medici). Projections indicate that the world's elderly population will triple over the span of three decades, surpassing 1.5 billion by 2050. Moreover, the proportion of the global population aged 65 and above in 2020 is 9.3% and is expected to increase by 16% by 2050 (Desa) . Similarly, India is experiencing a noticeable demographic shift in ageing, with a notable increase in individuals aged 60 and above. The population aged 60 and above in India is growing at three times the growth of the general population (Agarwal, Mohanty and Lubet). Furthermore, projections suggest that India's median age of 24.9 in 2020 will rise to 34.5 by 2036 (Sudan), signalling a clear trend toward an ageing population in the country. As a result of this demographic shift in ageing, individuals become more prone to non-communicable diseases as they age. In India, these ailments are more prevalent among older adults. Additionally, ageing is linked to an increased incidence of common mental disorders (CMDs), and the link has become stronger over the last two decades (Jokela, G.D. and Kivimäki). According to a World Health Organization (WHO) estimate, 15% of individuals aged 60 and above suffer from poor mental health. It is important because older people's mental health is crucial as they make contributions to society as family members and active workers. While many older adults have good mental health, there is a significant chance of developing mental illnesses or neurological abnormalities (WHO). In low- and middle-income countries, mental diseases contribute to 25.3% and 33.5% of the total years lived with a disability, respectively, when the disability component of disease burden is included (Organization). Furthermore, in the ageing population, mental and neurological disorders contribute to 6.6% of total disabilities (DALYs). According to recent estimates from the World Health Organization, depression is expected to become the leading source of disease burden globally by 2030. Specifically, in India, ten million individuals suffer from depression (Menon, Singh and Sharma). The mental health of the ageing population poses a major global threat to public health. Therefore, India needs to address these mental health issues. It is critical because mental illness can significantly impact health and social services usage, and also the standard of life in old age (Dening and Barapatre). The societal context in which we live impacts our mental health. Therefore, identifying these demographic and socioeconomic determinants can enhance mental health outcomes markedly via systemic societal transformations that encourage individuals to alter their life circumstances (Bala, Newson and Thiagarajan). These socioeconomic determinants include variables such as place of birth, living conditions, employment, age, and access to hospitals, which have a considerable impact (Carod-Artal). Indeed, mental health is integral to complete well-being and is influenced by various biological, socioeconomic, and environmental factors (Chaudhury, Liu and Han). Moreover, the mental health of older individuals is influenced by early life experiences, post-retirement conditions, and cultural/social factors (Allen, Balfour and Bell). Together, these aspects can broadly affect individuals, families, and societies. For instance, factors such as adverse childhood events, low-income backgrounds, limited social connections, and social exclusion are key factors of mental health issues across the lifespan

(WHO). The United Nations (2020) reports that older people are not only at risk of illness and death, but they are also more susceptible to income reduction or loss. The older adults who have not taken advantage of their pension benefits suffer more economically and face mental health issues due to these economic challenges. In addition, many older adults live alone, especially those who struggle with using technology or mobile phones, which further increases their loneliness (UN). Poor income is linked to the development of mental illnesses, and urban areas will be particularly affected (Murthy). Moreover, research has also found a strong connection between mental health and lower socioeconomic status (Dohrenwend, Levav and Shrout). Specifically, depressive disorders are closely associated with lower socioeconomic status (Lorant, Deliège and Eaton).

Figure 1. Conceptual framework of demographic and socioeconomic determinants of mental health

In light of the above-discussed works, researchers from other countries in the context of mental health have pointed out that stress induced by discrimination plays a significant role in causing variations in mental health outcomes among individuals from different socioeconomic backgrounds (Kohrt, Speckman and Kunz; Gupta and Coffey). Despite previous studies indicating that caste and religion significantly influence many health outcomes in India, to our knowledge, no study has examined mental health disparities by social group utilizing population-representative data in India (Kohrt, Speckman and Kunz; Gupta and Coffey). Interestingly, male-dominated homes were related to better mental health in males and worse mental health in women (Kohrt, Speckman and Kunz; Gupta and Coffey).

It has also been observed that females experience more mental health issues compared to males across all levels of household income (Carod-Artal; Harpham, Snoxell and Grant). Even after controlling for diverse socioeconomic and demographic variables, men outperform women in cognitive ability. Notably, improved cognitive ability is linked to better mental and physical health (Sharma and Pradhan). In addition, individuals with stronger social support tend to have better mental health outcomes, while those with lower levels of support may experience poorer mental health outcomes (Berkman). However, these findings are mainly from developed nations. It is not feasible to predict if they will be relevant in the Indian socio-cultural setting. It is

needed to be studied in the Indian setting. This comprehension disparity highlights the need for more research within the Indian setting. Only by better understanding the link between demographic and socioeconomic status and the mental health of older people in India will we be able to correctly and effectively conduct interventions for them. It is essential to integrate mental health with international development goals in international research and policy around the Sustainable Development Goals (SDGs) (Sachs). Sustainable development goal three is to "ensure healthy life, promote wellbeing for all ages." Mental health is an integral part of wellbeing. This study examined the relationship between demographic and socioeconomic factors and the mental health of older adults in India.

Data and Methodology

This research is based on the Longitudinal Ageing Study in India (LASI) data. Specifically, the first wave of the LASI (2020), India's first across-the-nation survey, focuses on studying the Family, health condition, social environment, and economic aspects of ageing. Notably, LASI is supervised by the Indian government and implemented by the IIPS Mumbai in partnership with the Harvard T.H. Chan School of Public Health (HSPH) and the University of Southern California. Moreover, the Longitudinal Ageing Study in India (LASI) is financially supported by the National Program for Health Care of Elderly, the Ministry of Health and Family Welfare of the Government of India, the United Nations Population Fund in India, and the National Institute on Aging, part of the National Institutes of Health in the USA. However, the Data includes a sample of the 45 and above age group. Our study focused on the population aged 60 and above. The final sample size includes 30656 people in this age range. Importantly, data were gathered from India's 28 states and eight union territories.

Measurable variable

Mental health status is considered an outcome variable in this study. According to the World Health Organization (WHO), "Mental health is not just the absence of mental disorders. It is a state of mental well-being that empowers individuals to handle life's challenges, recognize their potential, learn efficiently, work productively, and contribute to society" (WHO, Mental Health). Thus, the most common mental health conditions for older adults, depression and anxiety, were selected as a measurable variable in this study. For assessing the presence of mental disorders, this study utilizes several factors in LASI data that are linked to symptoms of anxiety and depression. We began by examining self-reported questions related to symptoms of anxiety and depression asked in the LASI dataset. Next, we applied factor analysis on the relevant 190 variables based on the literature. Outcome of factor analysis 48 factors were extracted. Among these factors, seventeen have eigenvalues exceeding 1, explaining 37% of the total variance. These factors were evaluated using Principal Component Analysis (PCA) with Varimax rotation to refine the analysis. The result indicates that the KMO index was 0.96, more than the recommended threshold of 0.6. In addition, Bartlett's test for sphericity was statistically significant, confirming the appropriateness of the data for factor analysis. From the extracted factors, three factors that are related to anxiety symptoms, such as sleep disorder, appetite, and loss of interest in daily life activities for the previous two weeks and more, were selected for measuring anxiety. The clinical symptoms of anxiety

encompass restlessness, exhaustion, diminished focus, appetite disruptions, abdominal pain, discomfort, and sleep difficulties (Geddes and Andreasen). Similarly, to measure depression, four factors that are associated with depression symptoms, such as sleep disorder, appetite, low mood, and loss of interest in daily life activities for the previous two weeks and more, were identified. The clinical symptoms of depression comprise disturbances in sleep and activity patterns, fluctuations in appetite and weight, feelings of sadness and fatigue that could continue for two weeks or longer, and a sense of regret, cognitive impairment, and insecurity (Geddes and Andreasen). These factors encompass variables such as sleep disorder (waking up in the middle of the night, waking up prematurely, feeling unrefreshed during the day), appetite (eating enough food of choice, being hungry but not eating, not eating for a whole day, lost weight in the last 12 months) and loss of interest (lost interest in various pursuits such as hobbies, work, or activities), low mood (trouble in concentration, feeling tired or lacking in energy, feeling overall satisfied, feeling alone, bothered by things, hopeful about the future, feeling happy). All these questions have been asked as 'yes' or 'no'.

After performing factor analysis, we calculated factor loading for each variable included in that factor. Subsequently, the factor loadings were multiplied by the values of the corresponding variable to get the score of the factors. This factor score lies in the following ranges: sleep disorder (3.64 – 14.54), appetite (0 – 3.16), loss of interest in daily life activity and depression (0 – 1.61), and low mood (4.65 - 18.60). To calculate the anxiety score, we added the scores of sleep disorder, appetite, and loss of interest in daily life activities for the previous two weeks and more. Similarly, depression scores were calculated by summing the score of sleep disorder, appetite and loss of interest in daily life activities for the previous two weeks and more and low mood. After calculations, the resulting ranges were (18.7 – 90.20) for anxiety and (37.76- 162.33) for depression. According to the National Centre for Biotechnology Information (NCBI), approximately. 20% of the Indian old age population is suffering from anxiety and depression (Shamsi, Tiwari and Tripathi). Using the inference from the NCBI report, we split the score of anxiety and depression into two parts. Specifically, higher scores indicate higher levels of anxiety and depression. Anxiety is classified as present when scores fall between 47.45 and 90.20. Scores ranging from 18.7 to 47.44 indicate the absence of anxiety. Similarly, the presence of depression is identified for scores between 81.29 and 162.33, while scores from 37.76 to 81.28 suggest no depression.

Predictor

For this study, we included several key explanatory socio-demographic variables such as age, sex, residential place, marital status, living status, economic status, literacy, religion, and caste. Specifically, age was categorised into three groups (60-70, 71-84, and 85 and above). Gender was divided into two categories (male and female). Similarly, the place of residence was classified as rural and urban. Marital status was further split into three categories (currently married, separated, and never married). Living arrangements were categorised into five groups (spouse and children, spouse and others, children and others, and others alone). Financial Status is evaluated using the monthly per capita consumption expenditure (MPCE) quintile, categorised into five parts (poorest, poorer, middle, richer, and richest). Likewise, literacy has been divided into two distinct categories (literate and illiterate). Religion was grouped into five cat-

egories (None, Hindu, Muslim, Christian, and others), and caste was divided into non-tribe and tribe.

Table 1. Demographic Characteristics of Survey Participants

Variable		Frequency	Percentage
Age	60-70	20859	68.1
	71-84	8509	27.8
	85 and above	1288	4.2
Residence	Rural	20267	66.1
	Urban	10389	33.9
Regional classification of the state	Northern	4989	16.3
	Southern	6786	22.1
	North-eastern	4005	13.1
	Eastern	6047	19.7
	Central	4704	15.3
	Western	4125	13.5
Sex	Male	14715	48.0
	Female	15941	52.0
Marital Status	Currently Married	19736	64.4
	Separated	10634	34.7
	Never Married	286	0.9
Living arrangement	Spouse and children	13393	43.7
	Spouse and others	5949	19.4
	Children and others	8182	26.7
	Others only	1568	5.1
	Alone	1564	5.1
MPCE quintile	Richest	5758	18.8
	Richer	6034	19.7
	Middle	6265	20.4
	Poor	6318	20.6
	Poorer	6281	20.5
Literacy	Yes	14213	46.4
	No	16443	53.6
Educational qualification	Professional course	482	1.6
	Graduate	788	2.6
	Diploma	3376	11.0
	Primary and middle	5861	19.1
	Less than primary	3706	12.1
	Never attended school	16443	53.6
Religion	None	62	0.2
	Hindu	22432	73.2
	Muslim	3563	11.6
	Christian	3040	9.9
	Others	1559	5.1
Tribal	Non-tribe	26972	88.0
	Tribe	3684	12.0

Statistical Analysis

We have used descriptive statistics to know the socio-demographic characteristics of the elderly population in India. Additionally, descriptive statistics were used to demonstrate the preliminary findings by the selected variables and their associations. To further investigate the link between the presence of anxiety and depression among older people, binary logistic regression was utilized. Importantly, the regression results were stated as a relative risk ratio with 95% confidence intervals. The data was codified, scored, consolidated, tabulated, and analysed using SPSS version 26 and Stata version 14 for this analysis.

Results

The study includes the socioeconomic and demographic characteristics of the study population, as shown in Table 1. Specifically, the study reveals that nearly 68% of respondents belong to the 60-70 age group, and roughly one-third belong to the 71-84 age group. Overall, 52% of the respondents are female, and more than half (66.1%) of the respondents live in rural areas. Among all participants, 16.3, 22.1, 13.1, 19.7, 15.3 and 13.5 belong to northern, southern, north-eastern, eastern, central and western, respectively. Further analysis of the study indicates that 5.1% of older adults live alone, and 5.1% live with other than spouse and children, which is a matter of concern for mental health.

Table 2. Percentage of anxiety and depression in the presence of demographic and socioeconomic factors

Variable		Total frequency	Percentage (Anxiety)		Percentage (Depression)	
			Frequency	Percentage	Frequency	Percentage
Age	60-70	20859	3876	18.6	3887	18.6
	71-84	8509	1899	22.3	1876	22.1
	85 and above	1288	352	27.3	351	27.3
Residence	Rural	20267	4135	20.4	4128	20.4
	Urban	10389	1992	19.2	1986	19.1
Regional classification of state	Northern	4989	1056	21.2	976	19.6
	Southern	6786	1353	19.9	1400	20.6
	North-eastern	4005	496	12.4	529	13.2
	Eastern	6047	1293	21.4	1293	21.4
	Central	4704	1209	25.7	1300	27.6
	Western	4125	720	17.5	616	15.0
Sex	Male	14715	2514	17.1	2549	17.3
	Female	15941	3613	22.7	3565	22.4
Marital Status	Currently Married	19736	3518	17.8	3455	17.5
	Separated	10634	2554	24.0	2594	24.4
	Never Married	286	55	19.2	286	22.7
Living arrangement	Spouse and children	13393	2377	17.8	2291	17.1
	Spouse and others	5949	1054	17.7	1093	18.4
	Children and others	8182	1921	23.5	1853	22.7
	Others only	1568	359	22.9	394	25.1
	Alone	1564	416	26.6	483	31.0
MPCE quintile	Richest	5758	1184	20.6	1147	20.0
	Richer	6034	1190	19.7	1152	19.1
	Middle	6265	1201	19.2	1187	19.0
	poor	6318	1240	19.6	1266	20.0
	poorer	6281	1312	20.9	1362	21.7
Literacy	Yes	14213	2383	16.8	2356	16.6
	No	16443	3744	22.8	3758	22.9
Educational qualification	Professional course	482	62	12.9	54	11.2
	Graduate	788	94	11.9	90	11.4
	Diploma	3376	489	14.5	500	14.8
	Primary and middle	5861	1042	17.8	1031	17.6
	Less than primary	3706	696	18.8	681	18.4
	Never attended school	16443	3744	22.8	3758	22.9
Religion	None	62	13	21	14	22.6
	Hindu	22432	4669	20.8	4674	20.9
	Muslim	3563	738	20.7	702	19.7
	Christian	3040	414	13.6	491	16.2
	Others	1559	293	18.8	233	14.9
Tribal	Non-tribe	26972	5674	21.0	5582	20.7
	Tribe	3684	453	12.3	532	14.5

Additionally, loneliness and social connection are essential for mental well-being. Moreover, 34.7% of respondents are separated from marital unions, and 53.7% are not literate. Additionally, only 1.6% have professional degrees, and 2.6% are graduates. Furthermore, around 20.61% of the respondents are poor, and 20.5% belong to poorer socioeconomic conditions. Among the study population, 12% of the respondents were tribal, with the more significant proportion (88%) being non-tribals.

Table 3. Odds ratio of anxiety and depression among older adults by socioeconomic and demographic determinants

Variable		Anxiety	Depression
		OR (95% CI)	OR (95% CI)
Age	60-70	1	1
	71-84	1.26* [1.18, 1.34]	1.23* [1.16, 1.31]
	85 and above	1.64* [1.45, 1.87]	1.63* [1.44, 1.85]
Residence	Rural	1	1
	Urban	0.92* [0.87, 0.98]	0.92* [0.87, 0.98]
Regional classification of the state	Northern	0.78* [0.71, 0.85]	0.64* [0.58, 0.70]
	Southern	0.72* [0.66, 0.79]	0.68* [0.62, 0.74]
	North-eastern	0.40* [0.36, 0.46]	0.40* [0.36, 0.44]
	Eastern	0.79* [0.72, 0.86]	0.71* [0.65, 0.78]
	Central	1	1
	Western	0.61* [0.55, 0.68]	0.46* [0.41, 0.51]
Sex	Male	1	1
	Female	1.42* [1.34, 1.50]	1.37* [1.30, 1.45]
Marital Status	Currently Married	1	1
	Separated	1.45* [1.37, 1.54]	1.52* [1.43, 1.61]
	Never Married	1.10 [0.8, 1.48]	1.38* [1.04, 1.83]
Living arrangement	Spouse and children	1	1
	Spouse and others	0.99 [0.92, 1.08]	1.09* [1, 1.18]
	Children and others	1.42* [1.33, 1.52]	1.42* [1.32, 1.52]
	Others only	1.38* [1.21, 1.56]	1.62* [1.44, 1.84]
	Alone	1.68* [1.49, 1.89]	2.16* [1.93, 2.43]
MPCE quintile	Richest	0.98 [0.90, 1.07]	0.89* [0.82, 0.98]
	Richer	0.93 [0.85, 1.02]	0.85* [0.78, 0.93]
	Middle	0.90* [0.83, 0.98]	0.84* [0.77, 0.92]
	Poor	0.93 [0.84, 1.01]	0.90* [0.83, 0.99]
	Poorer	1	1
Literacy	Yes	1	1
	No	1.46* [1.38, 1.55]	1.49* [1.41, 1.57]
Educational qualification	Professional course	0.50* [0.38, 0.65]	0.42* [0.32, 0.57]
	Graduate	0.46* [0.37, 0.57]	0.44* [0.35, 0.54]
	Diploma	0.57* [0.52, 0.64]	0.59* [0.53, 0.65]
	Primary and middle	0.73* [0.68, 0.79]	0.72* [0.67, 0.78]
	Less than primary	0.78* [0.72, 0.86]	0.76* [0.69, 0.25]
	Never attended school	1	1
Religion	None	1	1
	Hindu	0.99 [0.54, 1.82]	0.90 [0.50, 1.63]
	Muslim	0.98 [0.53, 1.83]	0.84 [0.46, 1.53]
	Christian	0.59 [0.32, 1.10]	0.66 [0.36, 1.21]
	Others	0.87 [0.47, 1.63]	0.60 [0.33, 1.11]
Tribal	Non-tribal	1.90* [1.72, 2.10]	1.54* [1.40, 1.70]
	Tribal	1	1

Note: OR: Odds ratio; *p < 0.05

As shown in Table 2 illustrates that the percentage of anxiety and depression among older adults in India varies based on selected socioeconomic and demographic characteristics. For example, those who are separated or never married

are more likely to have anxiety and depression. Also, tribals have a lower percentage of anxiety and depression in comparison to non-tribals.

Table 3 shows the odds ratio, which highlights key factors influencing anxiety and depression among older adults in India. Age is a significant determinant; individuals aged 85 and above are 1.64 times more likely to experience anxiety [OR = 1.64, 95% CI: (1.45, 1.87)] and 1.63 times more likely to experience depression [OR = 1.63, 95% CI: (1.44, 1.85)] compared to those in the 60-70 age group. Females have 1.42 times higher odds of anxiety [OR = 1.42, 95% CI: (1.34, 1.50)] and 1.37 times higher odds of depression [OR = 1.37, 95% CI: (1.30, 1.45)] than males. Rural residents have 0.92 times lower odds of both anxiety and depression [OR = 0.92, 95% CI: (0.87, 0.98)] compared to urban residents. Regionally, individuals from central India show higher odds of anxiety and depression, while those from the northeastern region have 0.40 times lower odds of anxiety [OR = 0.40, 95% CI: (0.36, 0.46)] and depression [OR = 0.40, 95% CI: (0.36, 0.44)]. Separated individuals are 1.52 times more likely to experience depression [OR = 1.52, 95% CI: (1.37, 1.54)] and 1.45 times more likely to experience anxiety [OR = 1.45, 95% CI: (1.43, 1.61)] compared to those who are married. Social support is crucial; those living alone have 1.68 times higher odds of anxiety [OR = 1.68, 95% CI: (1.49, 1.89)] and 2.16 times higher odds of depression [OR = 2.16, 95% CI: (1.93, 2.43)] compared to those living with a spouse and children. Illiterate older adults have 1.46 times higher odds of anxiety [OR = 1.46, 95% CI: (1.38, 1.55)] and 1.49 times higher odds of depression [OR = 1.49, 95% CI: (1.41, 1.57)] compared to their literate counterparts. Non-tribal individuals have 1.90 times higher odds of anxiety [OR = 1.90, 95% CI: (1.72, 2.10)] and 1.54 times higher odds of depression [OR = 1.54, 95% CI: (1.40, 1.70)] compared to tribal individuals.

Discussion

The present study examined the relationship between demographic and socioeconomic conditions and the status of the mental health of elderly individuals in India. Specifically, this study uses the Longitudinal Ageing Study in India (LASI) dataset. The findings of this study indicate that demographic and socioeconomic conditions (age, sex, residence, marital status, living arrangements, MPCE quantile, literacy, religion, and tribals) impact the mental well-being of older adults. It is evident that people's social and economic circumstances significantly affect their health. Mental health is a vital aspect of overall well-being and is influenced by various biological, socioeconomic, and social-environmental factors (Carod-Artal; Chaudhury, Liu and Han). In support of this, according to a report from the World Health Organization (WHO), about 15% of individuals aged 60 and above suffer from poor mental health (WHO). This study yielded similar results in the Indian context, indicating that as age increases, the likelihood of experiencing mental health issues also rises. Also, the mental health of ageing individuals varies between genders. For example, there is strong evidence that women are more likely than men to acquire common mental health disorders, with gender effects usually intertwined with societal determinants of mental health (Harpham, Snoxell and Grant). In line with this, our study found a gender differential in mental health issues, and females have higher chances of having anxiety and depression. This study reveals that disparity can be attributed to the fact that men have most of the economic, decision-making, and political power over women. Such inequali-

ties contribute to higher mental health issues among women. Moreover, this study also shows that the place of residence and region affect individuals' mental health. Furthermore, the educational status of older individuals is essential for their mental health. Previous research has consistently shown that wealthier and more educated people have good mental health (Gupta and Coffey; Lorant, Deliège and Eaton). Because education brings awareness about health and gives capabilities to cope with adverse situations in life, otherwise, it leads to mental health issues. Similarly, in our study, we found that older adults who are illiterate have a higher likelihood of experiencing mental health disorders compared to educated individuals. In addition to education, living arrangements also play a critical role in mental health. It is evident that many older adults living alone, especially those who are very old, struggle with using computers or mobile phones, which further increases their isolation (UN). This isolation is significant because social exclusion and isolation are some of the causes of mental health issues. Indeed, social isolation is often connected with poor mental health among older people, although living with a spouse and close family members can be favourable in later life (Shamsi, Tiwari and Tripathi). A noteworthy social change in Indian society is the loss of joint family structures and the emergence of nuclear family systems, leading to older individuals' isolation (Chadda and Deb). In alignment with this, our study found that people who live alone have odds that are 1.5 times increased anxiety and twice the odds of depression compared with those who are living with a spouse and children. Thus, living arrangements play a crucial role in the mental well-being of older adults. For instance, studies show that married people have fewer episodes of psychological distress and mental disorders and better life satisfaction and subjective well-being than unmarried people (Fincham and Beach; Waite, Luo and Ye). Consistent with these findings, our study found that marital status significantly impacts mental health. However, separated individuals have higher odds of experiencing anxiety and depression compared to those who are married. It is essential to recognize that the current study has few limitations. First, this study relied on self-reported symptoms of anxiety and depression, and there was no direct measure of mental disorder. It is essential to highlight that self-reported health can be biased because an individual's subjective health judgment influences it. Despite these limitations, this study will help the government to come up with ways to help India's elderly with their mental health problems. Given that older adults in India are expected to grow in the future decades, our results highlight the vital need for enhanced mental health treatments for older adults. In India, mental health difficulties among older adults are often neglected and undertreated, in part because of the negative perceptions surrounding mental illness (Jha, Mishra and Pandey). The government should establish specialized geriatric mental health units in hospitals and community-based programs to help older people connect and prevent isolation. Furthermore, the government should create mechanisms for a cohesive environment for the identification of ageing individuals having mental health symptoms and the treatment of mental health issues. Also, the government should create social awareness in this regard. Additionally, the government should strengthen and expand pension plans to ensure older people have enough money and reduce stress and anxiety caused by unstable finances. By implementing these measures, the government may improve India's older adults' mental health and quality of life.

Conclusion

In conclusion, we found strong linkages between different demographic and socioeconomic determinants, including sex, age, living situation, and marital status, with mental health. In particular, this study found that among all demographic and socioeconomic determinants, sex, age, and living arrangements significantly impact the mental well-being of older people in India. Moreover, mental health was shown to be worse among individuals at more advanced age (85+), females, lower levels of literacy, lower incomes, and those who are unmarried or separated and living alone. Our research has identified an additional domain where policy intervention can be helpful. The government should expand hospital-based geriatric mental health facilities and community programs to help older individuals connect with others and prevent isolation. Since women are more vulnerable to mental health issues, the government needs to focus more on this regard. More mental well-being centres for the ageing population to support and mitigate their mental health issues. Finally, it is essential to integrate mental health with the Sustainable Development Goals (SDGs). Overall, this study highlights the necessity of implementing policy measures to improve the mental well-being of older adults in India.

Ethical Considerations

For this study, we used LASI data without being involved in its collection, which does not require ethical approval or consent. The data is accessible upon request. Survey agencies obtained respondent consent and adhered to protocols, with the Indian Council of Medical Research (ICMR) providing ethical guidelines.

Data sharing statement

The study's datasets are available at the International Institute for Population Sciences, Mumbai, India, repository and are accessible via the provided [link]. This link leads to a data request form designed by the International Institute for Population Sciences.

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Authors' contributions

Conceptualization and design of the study: Sunit Kumar; Analysis and interpretation: Anjali Mishra, Ashutosh Gaurav; Drafting the manuscript: Anjali Mishra, Ashutosh Gaurav; Critical revision of the manuscript: Sunit Kumar, Anjali Mishra, Ashutosh Gaurav.

Conflict of interest

The authors declared no conflict of interest.

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