

Original Research Article

Loneliness in later life: gender-based evidence from longitudinal ageing study in India

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ABSTRACT

Background: Loneliness among the elderly a growing public health concern, particularly in ageing societies like India. Study examines gender differences in prevalence and determinants of loneliness among Indian elderly using data from the Longitudinal Ageing Study in India (LASI) Wave-1 (2017–2018).

Method: Study focuses individuals aged 60 and above (N=31,092). Loneliness measured using a single-item question from the CES-D-10 scale: "During past week, how often did you feel alone?" Responses dichotomized into lonely (often/most of the time) and not lonely (rarely/sometimes). Descriptive statistics, test of proportions used to examine loneliness prevalence, while multiple logistic regression models assessed its socio-economic and demographic determinants by gender

Result: Findings reveal 14.95% elderly respondents reported feeling lonely, higher prevalence among females (17.5%) than males (12.08%), gender difference statistically significant ($p < 0.001$). Widowed elderly, those with no education, and individuals living alone more likely to report loneliness. Notably, loneliness highest among elderly lived alone (37%), without physical activity or reading habits. A U-shaped pattern observed with respect to economic status: poorest, richest elderly reported higher loneliness. Regression confirmed that elderly living alone, widowed, without regular reading habits, and those not engaged physical activity significantly more likely to report loneliness. Gender-stratified models indicated that females across categories residence, marital status, living arrangement more vulnerable to loneliness than males, though some gender differences not statistically significant in multivariate models.

Conclusion: The findings highlight urgent need for gender-sensitive interventions to reduce loneliness among India's ageing population, particularly through social engagement, physical activity, and inclusive support systems.

Keywords: Loneliness, Gender, Later life and LASI

INTRODUCTION

Loneliness is a negative and unpleasant feeling related to the deficient social relations, a perceived gap between the quality and quantity of relationships that we have and those we want. Loneliness not necessarily means being alone; instead, it is the perception of being alone and isolated that affects them. Loneliness is a negative and unpleasant feeling related to the deficient social relations, a perceived gap between the quality and quantity of

relationships that we have and those we want. The population of the elderly is growing fast, both in terms of proportion and absolute numbers. As the population of elderly has grown, the number of individuals experiencing loneliness often or all of the time has also increased. Loneliness is a serious psychosocial problem that can affect anyone at any age in any circumstances, but it has become a serious issue of concern among the elderly that causes feeling of disconnectedness, psychological distance and isolation.¹ Over recent years, there has been growing public attention to loneliness

among elderly. Healthcare professionals perceive loneliness as a subjective experience that can negatively affect older people's health. Dementia, cognitive decline, depression, anxiety, alcoholism, aggression, impulsivity, hypertension, obesity, stroke, and heart disease have been linked to loneliness.² Some people do not feel lonely when alone, while others may feel lonely when surrounded by other people. The risk for loneliness among older adults living in nursing homes, assisted living, and other long-term care environments may be heightened when actual social relations fall short of what is desired. Loneliness interacts with depression to diminish overall well-being,³ and has been associated with impaired sleep.⁴ It is generally accepted that consistent, overwhelming, and pervasive loneliness develops stress and ultimately culminates into serious physical morbidities.

Further, loneliness can be deadly, as it predicts suicidal ideation,⁵ and death, with an estimated 26% increased risk of premature mortality. Lonely people are at higher risk of the inception of disability. Loneliness puts individuals at higher risk of cognitive decline. It is also responsible for sleep problems, disturbed appetite, and so on.⁶ (Cacioppo & Cacioppo, 2018). Thus, from the available literature it is quite clear that loneliness has both physiological and physical health impact on elderly. Loneliness has psychological negative health impact such as depression, dementia, anxiety and aggression. And loneliness has negative life-threatening health impact such as hypertension, obesity, stroke and heart disease. Both psychological and physical impact of loneliness would ultimately result in poor well-being of elderly in their rest of the life-course.

Though loneliness is a serious psychological issue, there has been a small number of studies available to examine factors determining loneliness. Some of the studies⁷ (for made an attempt to determine the correlates of loneliness by considering socio-economic and demographic factors. It is found further that a high prevalence of loneliness across the lifespan and showed that it is associated with poorer physical and mental health outcomes, while higher levels of wisdom may act as a protective factor.⁸ However, what is the gender difference in determining loneliness has not been explored much. Examining the gender differences in determining loneliness is very much relevant as social, family circumstance, role, responsibilities and issues of men and women are quite different in day-to-day social affairs. Therefore, current study aimed at examining the gender specific difference across the determinants of loneliness among elderly.

Rationale of the study

The available studies have shown serious negative consequences of loneliness on health of older adults. The gender differences in loneliness have not been explored yet though it has important gender specific policy implications. Therefore, need for research on such topic

has grabbed attention of researchers and policy makers. The gender differences analysis of loneliness will certainly support gender specific policies to ensure health and wellbeing of older adults.

Objectives

To examine the gender differences in the prevalence of loneliness among elderly in India, with a specific focus on women. To assess the gender-based differences in the determinants of loneliness among Indian elderly, emphasizing factors affecting elderly women.

METHODS

Data source

The study is based on LASI wave-1 data to attain the said objectives. The LASI is a full-scale national survey of scientific investigation of health, economics and social determinants and consequences of population ageing conducted during 2017-18. The LASI is a nationally representative survey of 72,250 older adults aged 45 and above across all states and union territories. It was a cross-sectional study, which adopted the three-stage sampling design in rural areas and the four-stage design in urban areas. The ethical approvals were obtained from various collaborating institutions.

Inclusion criteria

The proposed study is based on secondary data from LASI Wave-1 (2017-2018). The study has considered the elderly (age 60 and above) which comprises a total of 31902 samples and in our analysis we have excluded population age below 60.

Outcome variable

The LASI questionnaire does not contain the well-recognized 3-item UCLA loneliness scale; therefore, as utilized by the previous studies (Srivastava & Srivastava, 2023), the level of loneliness among the older adults is captured by the single-item question from the 10-item Centre for Epidemiological Studies Depression Scale (CES-D-10). Respondents were asked the following question: "During the past week, how often do you feel alone?" The available responses included, rarely or never (less than 1 day), sometimes (1 or 2 days) often (3 or 4 days); and most or all of the time (5-7 days). From these responses, a binary variable was created, with 1 representing "lonely" (Often/Most or all of the time) and the remaining categories coded as 0, indicating "not lonely".

Explanatory variables

While selecting explanatory variable we referred study literatures related to loneliness as well as questions related to individual characteristics in the LASI schedule.

The independent variables considered are place of residence, marital status, religion, caste, education, living arrangements, reading habits of elderly, self-reported health status, physical activity and MPCE. Such variables were tested for possible association with outcome variable for final inclusion.

Statistical analysis

Descriptive statistics are used wherever appropriate for the analysis. Test of proportion is used to see the significance of difference in prevalence of loneliness by gender. Multiple logistic regression was used to estimate the predictors of loneliness across socio-economic demographic characteristics by gender. The data is analyzed using STATA version 16.1.

RESULTS

Socio-economic characteristics of study population

One third elderly population (age 60 and above) are residing in urban set-up and remaining are in rural areas. There is no much male female difference is observed in the distribution of such population age-group across type of residence. It is further observed that around one third (34%) of elderly are widowed, less proportion of males (15%) are widowed when compared to females (51%), this may be due to higher life expectancy of females when compared to males. Majority of population in the sample are Hindus (73%), followed by Muslims (11%).

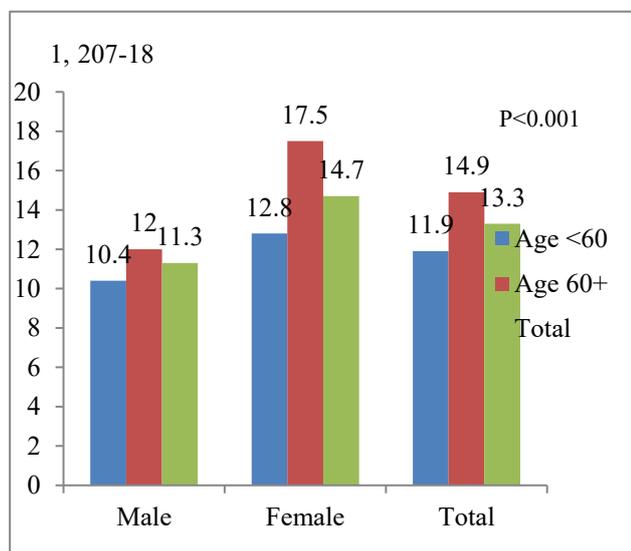


Figure 1: Prevalence of Loneliness according to age and sex, LASI wave.

There is no much difference is observed in such proportion as far as gender is concerned. Further, little more than half (54%) of the elderly found to be having no education. As a whole more males are better educated when compared to females. For instance, there is 16% points difference between males and females who

attained 10 or more years of education. The distribution of elderly across economic class (poorest to richest) not showed much difference as such. The poorest population among elderly comprised 21% whereas richest comprised around 19% further gender difference in economic class can said to be marginal.

Prevalence of feeling loneliness among adults and elderly

Figure 1 shows prevalence of feeling loneliness among respondents' elderly age 60 and above and respondents who are aged below 60 years (age 18-59 years) according to their sex. Such analysis would be helpful to understand how people feel loneliness as the age changes in life-course. As a whole, around 13% of respondents reported to be feeling loneliness in our study. It is evident that more proportion of elderly population feeling loneliness when compared to age group below 60yrs (14.9 vs 11.9). However, when we look from gender perspective more elderly females are feeling loneliness when compared male elderly. There is a difference of 4% points between female elderly and male elderly (15% vs 14%) who feel loneliness. Thus, it is females who are more suffering due to loneliness than males. Such difference found to be statistically significant ($p < 0.001$).

Prevalence of feeling loneliness according to socio-economic characteristics

Table 1 shows prevalence of feeling loneliness among elderly population according to socio-economic characteristics by gender. It is evident from the table that as a whole prevalence of loneliness is more among female elderly (17%) than male elderly (12%). However, there is considerable difference in such prevalence across socio-economic characteristics and gender of elderly. More females than males found be feeling loneliness both in rural area (17.5% vs 12.0% difference 4.99% points) as well as urban areas (difference 6.48% points). And such difference is statistically proved to be significant ($p < 0.001$).

When we look at the marital status of elderly, it is observed that higher proportion of widowed feeling loneliness when compared to currently married elderly (22% vs 11%) and elderly of other marital status (21%). Such loneliness is observed to be higher among female elderly than male elderly (23% vs 18%). Further feeling loneliness found to be higher among Hindu religion compared with other religion, by gender it is higher among Hindu females than Hindu males (17% vs 13%). Further it can be said that education has important role in keeping happy. The proportion of elderly who are feeling loneliness found be highest among those who have no education and least proportion of elderly feeling loneliness who attained maximum education. However, the gender differences in feeling loneliness across level of education of elderly is not that much glaring. Living arrangements of elderly has some role to play in elderly

feelings in modern dynamic society. It is observed that higher proportion (37%) of elderly feeling loneliness who are living alone when compared to elderly who are either living with their spouse/children/others.

And more females compared to males reported to be feeling loneliness across all form of living arrangements. Further higher proportion of female elderly compared to male elderly found to be feeling loneliness who has occasional reading habits, who has no physical activity compared to their counter parts. When we look at the economic status of elderly it is observed that there is a U-shaped relationship between economic status and feeling loneliness of elderly. Feeling loneliness observed to be high among poorest elderly and richest elderly. Across all the economic categories proportion of female elderly feeling loneliness is higher than male elderly.

Logistic regression estimates on feeling loneliness

Table 2 shows Logistic regression estimates on feeling loneliness for elderly age 60 and above according to socio-economic characteristics according to gender. By and large, logistic regression analysis for ‘feeling loneliness’ showed a statistically significant results for most of the socio-economic characteristics. It is found that urban elderly more likely to feel by 15% when compared to rural elderly (OR=1.15 95% CI=0.93,1.43). When authors look from gender dimension, female’s elderly are more likely to feel loneliness when compared to male elderly both in rural as well as urban areas. For males (OR=1.14 95% CI= 0.90, 1.44) and for females (OR=1.11 95% 0.84 1.46). Further, those elderly who are widowed are more likely to feel loneliness (37% higher)

when compared to married elderly. (OR=1.37 95% CI=0.81,2.32), further more female widowed are likely to feel lonely when compared to male widowed counterpart. For males (OR=1.19 95% CI=0.53,2.61) for females (OR1.32 95% CI=0.68, 2.57). Living arrangement of elderly has strong association with psychological satisfaction.

It is found that those elderly who live alone/independently more likely to feel alone than those who are living with any of family members or with other companions. For instance, it is evident by the table that elderly who are living with spouse and others are less likely (by 65%) to feel alone when compared to those elderly who live alone (OR=0.35 95% CI=0.21,0.61). Though female elderly more likely to feel alone across all category of living arrangements, the gender difference is not that much glaring but the regression results are statistically significant.

Further, those elderly who has regular reading habits less likely to feel alone when compared to occasional readers. It is found that the occasional readers more likely to feel alone by more than 2 times when compared to those who have regular habit of reading (OR=2.06 95% CI=1.19,3.57). Further, the elderly who do physical activity less likely to feel alone when compared to those who do not do any physical activity. But more male elderly likely to feel alone than female elderly who have occasional habit of reading when compared to those who have regular reading habits. Across economic category, the extreme class ie poorest and richest elderly more likely to feel alone when compared to rest of the economic categories.

Table 1: Prevalence of "feeling loneliness" by background characteristics according to gender, LASI wave 1 2017-18.

	Male	Female	Total	Proportion test Val for male female difference
Place of residence				
Rural	12.31	17.3	14.89	p<0.001
Urban	11.47	17.95	15.09	p<0.001
Current marital status				
currently married	10.67	10.75	10.7	0.1807
widowed	18.04	22.88	21.84	0.7366
Others	19.07	24.1	21.43	0.7358
Religion				
Hindu	12.72	17.73	15.37	p<0.001
Muslim	8.18	16.28	12.4	p<0.001
Others	10.45	16.56	13.79	0.0038
Caste category				
SC	15.01	18.26	16.72	0.002
ST	10.29	13.86	12.25	0.0011
OBC	12.85	19.39	16.29	p<0.001
None of them	9.31	15.03	12.33	p<0.001
Highest level of education				
No education	12.69	18.16	16.41	p<0.001
<5 years complete	13.4	12.66	13.11	0.8657
5-9 years complete	11.23	19.5	14.21	0.741

Continued.

	Male	Female	Total	Proportion test Val for male female difference
10 or more years complete	11.1	12.82	11.53	0.1398
Living arrangements				
Living alone	36.31	37.31	37.1	0.3278
Living with spouse and/or others	13.26	13.56	13.38	0.2088
Living with spouse and children	9.43	9.09	9.31	0.3168
Living with children and others	15.05	19.01	18.1	0.3503
Living with others only	17.32	27.57	24.28	0.0638
Reading habits				
Regular	8.39	16.77	11.22	0.006
Occasional	17.65	22.65	19.25	0.4637
Never	13.16	17.46	15.7	p<0.001
Self-rated health				
Excellent	13.92	10.12	12.44	0.024
Good	11.22	16.77	14.15	p<0.001
Poor	16.58	22.36	19.8	p<0.001
Physical activity				
Do physical activity	11.56	16.41	14.35	p<0.001
No physical activity	12.75	19.79	15.94	p<0.001
MPCE quintile				
Poorest	13.08	19.72	16.71	p<0.001
Poorer	11.51	14.52	13.1	p<0.001
Middle	11.2	15.37	13.38	p<0.001
Richers	11.3	19.99	15.88	0.0391
Richest	13.57	18.18	15.94	0.006
Total	12.08	17.5	14.95	p<0.001

*Religion Others-Sikh, Buddhists, Jain, Jewish and Paris

Table 2: Logistic regression estimates on feeling loneliness for elderly age 60 and above according to socio-economic characteristics LASI wave 1 2017-18.

	Male		Female		Total	
	OR	CI	OR	CI	OR	CI
Residence						
Rural	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Urban	1.14	(0.90,1.44)	1.11	(0.84,1.46)	1.15	(0.93,1.43)
Marital status						
Married	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Widowed	1.19	(0.54,2.61)	1.32	(0.68,2.57)	1.37	(0.81,2.32)
Others	1.05	(0.45,2.45)	1.2	(0.56,2.57)	1.09	(0.62,1.93)
Religion						
Hindu	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Muslim	0.69**	(0.54,0.88)	0.91	(0.69,1.18)	0.82*	(0.67,0.99)
Others*	0.74	(0.54,1.02)	0.95	(0.71,1.27)	0.86	(0.69,1.07)
Caste						
SC	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
ST	0.68*	(0.50,0.93)	0.76*	(0.57,0.99)	0.73**	(0.59,0.90)
OBC	0.87	(0.69,1.09)	1.1	(0.89,1.36)	1	(0.85,1.18)
None of them	0.62***	(0.48,0.80)	0.85	(0.66,1.11)	0.75**	(0.62,0.91)
Education						
No education	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
<5 years complete	1.15	(0.91,1.46)	0.59**	(0.41,0.84)	0.85	(0.70,1.03)
5-9 years complete	1.07	(0.84,1.37)	1.11	(0.71,1.74)	1.07	(0.82,1.39)
10 or more years	1.29	(0.94,1.77)	0.64	(0.29,1.41)	0.95	(0.66,1.38)
Living arrangements						
Living alone	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Living with spouse and or others	0.32**	(0.14,0.73)	0.35**	(0.17,0.70)	0.35***	(0.21,0.61)

Continued.

	Male		Female		Total	
Living with spouse and children	0.23***	(0.10,0.52)	0.22***	(0.11,0.44)	0.24***	(0.14,0.42)
Living with children and others	0.33***	(0.21,0.51)	0.38***	(0.29,0.50)	0.37***	(0.29,0.48)
Living with others only	0.39***	(0.23,0.66)	0.62**	(0.44,0.88)	0.55***	(0.41,0.74)
Reading habits						
Regular	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Occasional	2.51**	(1.32,4.76)	1.5	(0.70,3.23)	2.06*	(1.19,3.57)
Never	1.74***	(1.33,2.27)	0.83	(0.42,1.67)	1.27	(0.85,1.87)
Self-rated health						
Excellent	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Good	0.69*	(0.48,0.99)	1.58	(0.85,2.94)	0.96	(0.70,1.32)
Poor	0.99	(0.67,1.48)	2.12*	(1.14,3.95)	1.34	(0.97,1.86)
Physical activity						
do physical activity	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
no physical activity	1.09	(0.92,1.30)	1.2	(0.99,1.46)	1.14	(0.98,1.32)
MPCE						
Poorest	1	(1.00,1.00)	1	(1.00,1.00)	1	(1.00,1.00)
Poorer	0.88	(0.69,1.13)	0.73**	(0.58,0.92)	0.78**	(0.66,0.93)
Middle	0.87	(0.63,1.18)	0.74*	(0.58,0.95)	0.79*	(0.65,0.97)
Richer	0.9	(0.69,1.17)	1.01	(0.68,1.50)	0.98	(0.72,1.32)
Richest	1.08	(0.84,1.40)	0.92	(0.67,1.27)	0.99	(0.79,1.23)
Observations	15340		16562		31092	

Religion Others-Sikh, Buddhists, Jain, Jewish and Paris, 95% confidence intervals in brackets p<0.05, ** p<0.01, *** p<0.001

DISCUSSION

The present study indicates that loneliness is an emerging public health concern, with about 13% of respondents reporting that they felt lonely. The prevalence was higher among individuals aged 60 years and above compared with younger adults, supporting earlier evidence that advancing age, retirement, bereavement, and shrinking social networks increase vulnerability to loneliness.⁶ Gender differences were prominent, with elderly women consistently reporting greater loneliness than men, a finding that resonates with literature attributing women's higher risk to longer life expectancy, widowhood, and socioeconomic disadvantages.⁸ The markedly higher levels among widowed persons in the study further underline the protective role of marital companionship.

Living arrangement emerged as a key determinant, as older adults living alone were far more likely to experience loneliness, whereas those residing with spouse or family members reported lower levels; in the Indian context, where family provides the main support system, absence of co-residence may intensify psychological distress. Socioeconomic and behavioural differences were also evident: individuals with little education and those not engaged in regular reading or physical activity showed greater loneliness, suggesting that participation in meaningful activities may buffer emotional isolation. At the same time, loneliness among economically better-off groups indicates that financial security alone cannot guarantee social well-being. Overall, the findings highlight that loneliness is socially patterned and influenced by modifiable conditions, emphasizing the

need for community engagement strategies and special attention to elderly women and widowed persons to promote healthy ageing.

Limitations

This study has some limitations that shall be considered while interpreting the findings. First, the cross-sectional design restricts the ability to establish causal relationships between socio-economic factors and loneliness. Second, loneliness was assessed using self-reported measures, which may be subject to reporting bias and individual perception, furthermore the mood of a individual usually varies. Third, some potentially important determinants such as quality of social relationships and community-level influences were not available in the dataset.

CONCLUSION

Literatures reveal that loneliness is a serious psychosocial problem that can affect anyone at any age in any circumstances, but it has become a serious issue of concern among the elderly that causes feeling of disconnectedness, psychological distance and isolation. The gender differences in loneliness have not been explored yet though it has important gender specific policy implications. Therefore, our analysis focused on gender specific issue while analyzing loneliness among the elderly. The prevalence of loneliness is more among female elderly than male elderly and there is a considerable difference in such prevalence across socio-economic characteristics More females than males found to be feeling loneliness both in rural area as well as urban

areas, higher proportion of widowed feeling loneliness when compared to currently married elderly and elderly of other marital status and such loneliness is observed to be higher among female elderly than male elderly. Limited mobility of females compared to males in our society may be one of the reasons for more loneliness among females. It is also found that education has important role in keeping happy. The proportion of elderly who are feeling loneliness found be highest among those who have no education and least proportion of elderly feeling loneliness who attained maximum education. However, the gender differences in feeling loneliness across level of education of elderly is not that much glaring.

Living arrangements of elderly has some role to play in elderly feelings in modern dynamic society. It is observed that higher proportion of elderly feeling loneliness who are living alone and more females compared to males reported to be feeling loneliness across all form of living arrangements. Thus, it shows importance of family life to feel happy and involved for both males and females. Feeling loneliness observed to be high among poorest elderly and richest elderly. Across all the economic categories, proportion of female elderly feeling loneliness is higher than male elderly. Therefore, education and economic development are two important game changers in life-course of elderly. In addition, with the involvement of NGOs and social workers, the government can establish community, village, or ward-level clubs that can organize productive activities to improve the involvement of elderly especially females, whose mobility otherwise is quiet less. In addition, participation in old-age educational activities, participation in social leisure activities, and, religious participation may increase social involvement and mobility of elderly population especially females so that they feel having more Companionship. As a whole study contributes how loneliness is prevailing across gender and what are the possible remedies to overcome loneliness.

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