



Original Research Article

SOCIODEMOGRAPHIC DETERMINANTS AND ITS EFFECT ON DEPRESSION AMONG ELDERLY POPULATION RESIDING IN SLUMS OF LUCKNOW DISTRICT

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ABSTRACT

Background: Medical advancements have driven a continuous expansion of the global older population; nonetheless, senescent progression introduces distinct physical, emotional, and social hurdles that impact senior well-being. Across low- and middle-income regions, geriatric mental health challenges especially depressive disorders receive insufficient clinical attention despite their high occurrence and ease of identification via basic screening instruments. Consequently, this investigation was designed to evaluate both the prevalence of geriatric depression and its contributing risk factors.

Materials and Methods: A cross-sectional survey was carried out among older individuals living in urban informal settlements across Lucknow district between February 2024 and February 2026. Depressive symptoms were evaluated using the (GDS-15 scale. Participants were enrolled via simple random sampling. The digitized responses were processed with SPSS version 26.0.

Results: 67.1% were aged 60-75 years and almost half of the sample consisted of males (50.5%) and females (49.5%). Over half of the participants were not depressed (57.6%), and 42.4% of participants were depressed, 28.6% mildly depressed, 8.6% moderately depressed and 5.2% severely depressed. Relationships between depressive illness and sociodemographic metrics were evaluated via Chi-square analysis. Variables including marital status, literacy level, family structure, socioeconomic status, and residential setups demonstrated statistically significant linkage with late-life depression ($p < 0.05$).

Conclusion: The findings from this survey highlight the urgent necessity for primary health workers and frontline personnel to detect geriatric depressive symptoms early. In addition, the application of longitudinal and mixed-method study suggested to gain insight into causal relationships, and to analyse the psychosocial, cultural, and behavioral determinants of depression in older people.

Keywords: Depression, Geriatric depression scale, Mental health, Geriatric population.

INTRODUCTION

The epidemiological shift toward an increasingly geriatric world is a key feature of the 21st century. This demographic shift is expected to double the number of older people globally, with almost all of them in LMICs, by 2050. This growth imposes significant demands on the existing health care systems especially in terms of the variety of physical, psychological and social needs of older citizens, mental health being a key element.^[1]

The main drivers of global population ageing are low fertility and low death rates coupled with longer lives. Thus almost all countries witness not only an absolute increase, but also a significant increase in the share of senior citizens, which is clearly visible in India. The country is facing a big demographic change and the share of the elderly population rose from 5.6% in 1961 to 8.6% in 2011, which has led to an ageing population and increased dependency ratio.^[2,3] The trend is likely to persist, and in 2050, about 20% of the nation's population will be older adults as compared to 10.1% in 2021. In the meantime, the living conditions of the slums have worsened in big cities due to the rapid increase in urbanization, particularly in Lucknow, where the proportion of urban poor population is very large, and neuropsychiatric disorders constitute a major proportion of the disease burden among old people, with untreated depression being a primary factor of functional disability.^[4] Although depression affects and significantly impacts overall health, function and quality of life, it is often overlooked, misdiagnosed, or poorly treated, especially in socioeconomically disadvantaged populations, where psychological service delivery is often limited.^[6]

According to the estimates of WHO, one in every 18 old adults (60 years or older) suffer from depressive disorders, and these are a complex condition due to the interaction of a wide range of biological, mental and environmental factors. In addition, the psychosocial risk factors of bereavement of the spouse, emotional isolation, losing independence and economic dependence on relatives are also very strong causal factors of depression.^[7]

Older adults generally have depression with atypical features including somatic complaints, cognitive dysfunction, sleeplessness and reduced motivation more than sadness. These unusual manifestations can be confused with normal ageing processes or physical diseases, resulting in them being under recognised, misdiagnosed or delayed in successful treatment.^[8]

Uncontrolled late life depression has been shown to have an adverse effect on the clinical trajectory of co-morbid chronic conditions such as diabetes, ischemic heart disease and cerebrovascular accidents which increases the DALYs for these chronic conditions. Depression is also another crucial risk factor for elderly people committing

suicide, especially men, and many countries show that the elderly group of people have the highest rates of suicide.^[9]

Urbanisation has helped the uncontrolled growth of informal settlements in developing countries. The numbers of people living in slum conditions today, according to United Nations projections, is as high as one billion people worldwide and is likely to grow even larger in the next few decades. The communities are generally densely populated, live in poor housing conditions, lack adequate sanitation, have limited access to health services, are unemployed, and marginalized in society, all of which are known risk factors for poor mental health.^[10,11]

Older people in slum communities are one of the most vulnerable and under-served population groups, with limited economic opportunities, poor physical functioning and rising dependency on others.^[12,24,25]

Therefore, this study evaluated the prevalence and sociodemographic drivers of depression among elderly residents in Lucknow's urban slums. The findings aim to support targeted health interventions that improve geriatric mental care and overall well-being.

MATERIALS AND METHODS

A community-based cross-sectional study was conducted in the slums of Lucknow district over a two-year period, from February 2024 to February 2026.

Objectives

1. To estimate the burden of depression among the geriatric population residing in the urban slums of Lucknow district.
2. To assess the socio-demographic correlates of depression amongst the study subjects.

Inclusion Criteria

Eligible participants included adults aged 60 or older who had lived in Lucknow slums for at least one year and gave written informed consent.

Exclusion Criteria

Exclusion criteria comprised individuals who were bedridden, non-verbal, severely hearing-impaired, cognitively incapacitated, or critically ill to the extent that coherent interaction was precluded.

Sample size and sampling method

Study participants were selected utilizing a multistage random sampling approach. Based on an estimated baseline geriatric depression prevalence of 44%, a relative precision margin of 5%, using a design effect of 2, the base sample size was set at 190, which was expanded to 210 participants to offset a potential 10% non-response rate.¹³

Lucknow district was selected for the study and was divided into 6 zones comprising of a total of 609 slums.¹⁴ From these 6 zones, 3 zones were randomly selected. From each of the 3 zones, 10 slums were randomly selected (total of 30 slums). From each of

the 10 slums, 7 participants were randomly selected (total of 70 participants from each zone) till the sample size was achieved.

Study tool

Assessment of depressive symptoms was conducted using a validated geriatric screening tool, the 15-item Geriatric Depression Scale (GDS-15). Scoring thresholds were defined as follows: 0-4 represented normal affective status, 5-8 indicated mild depressive symptoms, 9-11 signified moderate depressions, and 12-15 specified severe depression. Socio-demographic parameters were recorded via a pre-tested, semi-structured questionnaire.

Statistical analysis

Data analysis was performed using SPSS version 26.0. Descriptive metrics were computed to summarize frequencies and percentages, while Categorical relationships were assessed with Pearson's Chi-square test, defining statistical significance at $p < 0.05$.

RESULTS

The total number of elderly subjects studied was 210. Majority of the subjects (67.1%) belonged to the 60-75 years age group, with 50.5% males and 49.5% females. Most participants belonged to the Muslim (75.7%) faith. Nearly two-thirds (63.3%) of the participants were married. A substantial proportion of participants were illiterate (43.3%), followed by those educated up to primary school (23.3%). However, none of them were just literate. More than half of the participants (59.0%) were not engaged in any occupation at present. By family structure, 43.3% of participants lived in nuclear households, 26.7% in joint families, and 30.0% in three-generation families. Based on the Modified B G Prasad scale, 33.3% belonged to the lower-middle socioeconomic class. Sociodemographic determinants of the elderly are given in [Table 1].

Table 1: Socio-Demographic Profile of the Study Participants

Socio-Demographic Variable	No.	%
Age Group (Years)		
60 – 75	141	67.1%
76 – 90	55	26.2%
> 90	14	6.7%
Gender		
Male	106	50.5%
Female	104	49.5%
Religion		
Hindu	51	24.3%
Muslim	159	75.7%
Marital status		
Married Couple	133	63.3%
Separated/ Divorced	7	3.3%
Widow/ Widower	70	33.3%
Education Level		
Illiterate	91	43.3%
Primary School	49	23.3%
High School	21	10%
Intermediate	14	6.7%
Graduate	28	13.3%
Professional Degree	7	3.3%
Occupation		
Clerical Staff	3	1.4%
Shop Owner	14	6.7%
Skilled Worker	55	26.2%
Small Business	14	6.7%
None	124	59.0%
Family Type		
Nuclear	91	43.3%
Joint	56	26.7%
Three Generation	63	30.0%
Modified B G Prasad Socio-Economic Status		
Upper Class (I)	21	10.0%
Upper Middle Class (II)	35	16.7%
Middle Class (III)	42	20.0%
Lower Middle Class (IV)	70	33.3%
Lower Class (V)	42	20.0%

Among the 210 elderly subjects studied more than half of the participants (57.6%), had no depression. However, a considerable proportion (42.4%) exhibited depressive symptoms. Out of which

28.6% were suffering from mild depression, 8.6% from moderate depression, and 5.2% were suffering from severe depression. Details are given in [Table 2 & 3].

Table 2: Prevalence of depression among the study subjects (N=210)

Depression	No.	%
Absent	121	57.6%
Present	89	42.4%

Table 3: Distribution of the study subjects according to GDS-15 Grading (N=210)

GDS-15 Grading	No.	%
No Depression	121	57.6%
Mild Depression	60	28.6%
Moderate Depression	18	8.6%
Severe Depression	11	5.2%

Significant associations between depression and age groups were found ($\chi^2=21.296$, $p<0.001$), where the prevalence of depression increases with increasing age up to 100% among people aged more than 90years. Depression was observed in 43.40% of males and 41.35% of females; nevertheless, this variance did not achieve statistical significance (Chi-square = 0.090, $p = 0.764$). Likewise, while depressive symptoms were observed at a higher frequency among Hindu participants (52.94%) compared to Muslim participants (38.99%), the relationship between religious affiliation and depression lacked statistical significance (Chi-square = 3.076, $p = 0.079$). In contrast, marital status demonstrated a significant correlation with depressive status (Chi-square = 11.493, $p = 0.003$), showing a higher rate among widowed individuals (55.71%). Educational attainment was similarly

strongly linked with depression (Chi-square = 60.237, $p < 0.001$), where maximum prevalence occurred among subjects educated to the primary (75.43%) and high school (75.43%) tiers. Lastly, occupational status exhibited no statistically meaningful association with depression (Chi-square = 6.816, $p = 0.146$) although depression was more common among participants with no occupation (46.77%) and those engaged in shop ownership or small business (50.00%). Family structure showed significant relation with depression ($\chi^2=46.119$, $p<0.001$), in which depression was found to be significantly high among individuals who belong to the family structure of nuclear family (65.9%) rather than that of joint and three generation family. Significantly higher relationship was also found between depression and socio-economic status ($\chi^2=21.372$, $p<0.001$). Details given in [Table 4].

Table 4: Association between Sociodemographic Variables and Depression N=210

Socio-Demographic Variables		Depression		No Depression		Significance
		No.	%	No.	%	
Age Group (Years)	60 - 75	51	36.17%	90	63.83%	chi sq=21.296, $p<0.001$
	76 - 90	24	43.63%	31	56.37%	
	> 90	14	100.0%	0	0.0%	
Gender	Male	46	43.4%	60	56.6%	chi sq=0.090, $p=0.764$
	Female	43	41.35%	61	58.65%	
Religion	Hindu	27	52.94%	24	47.06%	chi sq=3.076, $p=0.079$
	Muslim	62	38.99%	97	61.01%	
Marital status	Married Couple	50	37.59%	83	62.41%	chi sq=11.493, $p=0.003$
	Separated/ Divorced	0	0.0%	7	100.0%	
	Widow/ Widower	39	55.71%	31	44.29%	
Education Level	Illiterate	39	42.86%	52	57.14%	chi sq=60.237, $p<0.001$
	Primary School	35	75.43%	14	28.57%	
	High School	15	75.43%	6	28.57%	
	Intermediate	0	0.0%	14	100.0%	
	Graduate	0	0.0%	28	100.0%	
Occupation	Professional Degree	0	0.0%	7	100.0%	chi sq=6.816, $p=0.146$
	Clerical Staff	0	0.0%	3	100.0%	
	Shop Owner	7	50.0%	7	50.0%	
	Skilled Worker	17	30.91%	38	69.09%	
	Small Business	7	50.0%	7	50.0%	
Family Type	None	58	46.77%	66	53.23%	chi sq=46.119, $p<0.001$
	Nuclear	60	65.93%	31	34.07%	
	Joint	22	39.29%	34	60.71%	
	Three Generation	7	11.11%	56	88.89%	
Modified B G Prasad Socio-Economic Status	Upper Class (I)	0	0.0%	21	100.0%	chi sq=21.372, $p<0.001$
	Upper Middle Class (II)	18	51.43%	17	48.57%	
	Middle Class (III)	14	33.34%	28	66.66%	
	Lower Middle Class (IV)	36	51.43%	34	48.57%	
	Lower Class (V)	21	50.0%	21	50.0%	

DISCUSSION

In this study among the 210 elderly subjects studied more than half of the participants (57.6%) had no depression & 42.4% had depressive symptoms. The pronounced frequency of depressive symptoms observed here likely stems from the synergistic impact of financial hardship, substandard living conditions, social insecurity, and sparse mental health care provision in slum environments. These findings closely mirror the 41.8% rate reported by Mirkena et al.

In our study 28.6%, 8.6% & 5.2% participants had mild, moderate & severe depression whereas Jemal et al,^[17] found that 23.1%, 20.0% & 11.4% participants had mild, moderate & severe depression.

Age distribution demonstrated a highly significant correlation with the occurrence of depressive symptoms (p-value less than 0.001) with the prevalence of depression increasing with advancing age and reaching 100% among those aged above 90 years whereas Bagga et al,^[18] & Zenebe et al,^[19] found that the burden of depression was greater among the elderly aged 70 years and above (98%) & age older than 75 years respectively. This trend may be explained by increasing physical dependency, loss of social roles, bereavement, and declining health status in older age groups.

Within the present cohort, current marital status exhibited a significant correlation with depressive symptoms (p-value = 0.003), with the highest burden documented among widowed subjects (55.71%). A comparable observation was reported in research conducted by Bagga et al,^[18] found that depression among widow/widower was 97%. Often, spousal bereavement is a significant disruption in the life cycle that causes individuals to experience a life shock, significant emotional distress, and social isolation.

Educational attainment showed a significant link with depression ($p < 0.001$), with the highest rates observed among participants educated up to primary school (75.43%) and high school (75.43%) in contrast, Sahoo et al,^[20] reported in their study that illiterate older people had a higher proportion of depressive symptoms. Short education reduces adaptive coping skills, poor health knowledge, and increases vulnerability to psychological stress. There was significant association with family type ($p < 0.001$) with the depression occurring more in nuclear families (65.9%). Likewise, Chawla et al,^[21] reported that people living in a nuclear family had more depressive symptoms. In addition, socio-economic standing showed statistically significant association with depression (p-value less than 0.001), with highest rates of depression reported in upper-middle (51.43%), lower-middle (51.43%) and lower socio-economic classes (50.00%) while Gadde et al.^{22, 23-25} They found that the lowest

income group (23%) had the highest rate of depression.

CONCLUSION

The results confirmed that more than two-fifths (42.4%) of elderly slum dwellers have symptoms of depression, highlighting geriatric depression as a key public health priority in urban informal settlements. Enhancing the health and quality of life for elderly slum residents requires stronger primary care systems and targeted mental health programs tailored for older adults.

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