Depression in an Older Adult Rural Population in India

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ABSTRACT

INTRODUCTION With a rapidly aging society, geriatric mental health is emerging as an important public health concern. According to the WHO, prevalence of depression in adults aged ≥60 years in developed and developing countries was 0.5 million and 4.8 million respectively in 2004. In India, increased life expectancy led to a rise in the older adult population between 2001 and 2011, expected to reach 324 million by 2050.

OBJECTIVES To estimate the prevalence of depression and assess association between sociodemographic parameters and depression among older adults in a rural Indian community.

METHODS A cross-sectional descriptive study was conducted in February and March 2012 in the rural village of Sembakkam, Kancheepuram District in the state of Tamil Nadu, India; the village has a population of 5948, 3.1% of whom are aged ≥60 years. Universal sampling technique was employed, in which every household in the community was visited and all elderly persons were selected. After obtaining written informed consent (a thumbprint was taken if the person was illiterate), participants were assessed face to face for depression using the Short Form Geriatric Depression Scale. The inclusion criterion was a score >24 on the mini-mental state examination. Final sample size was 103. Study variables included sociodemographic parameters such as age, sex, education, occupation, socioeconomic status, and marital status. Data entry and statistical analysis used SPSS version 17.

RESULTS Of 103 respondents interviewed, 73 (70.9%) were aged 60–69 years and 58 (56.3%) were male. Forty-four (42.7%) individuals (17 males, 27 females) were found to be depressed; 23 (22.3%) with mild depression, 14 (13.6%) moderate depression and 7 (6.8%) severe depression. Female sex and widowhood were significantly associated with depression.

CONCLUSIONS Depression, particularly mild depression, is common in this rural population of older adults, particularly among women and widowed elderly. These study findings can help program managers implement a more comprehensive strategy in this community for timely interventions to promote mental health and prevent geriatric depression.

KEYWORDS Depression, aging, elderly, rural, mental health, India

INTRODUCTION

Rapid population aging in developing countries and the accompanying increase in numbers of people with aging-related diseases pose a serious challenge to health services, including mental health services.[1] Characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-esteem, disturbed sleep or appetite, fatigue and poor concentration, depression is a common mental disorder that puts constraints on quality of life among older adult individuals.[2] WHO reports that in 2004 there were 0.5 million adults aged ≥60 years with moderate or severe depression in high-income countries and 4.8 million in low- and middle-income countries.[3] Depression prevalence among older adults has been reported to be 5.1% in Mexico,[4] 3.6% in the United States,[5] and 19.8–33.5% in four Japanese communities.[6] Yet, underdiagnosis of depression in the older adult population—often overlooked clinically because its symptoms are erroneously assumed to be a normal part of aging—represents a serious public health problem.[7,8]

According to WHO, factors increasing depression risk in older adults include genetic susceptibility, chronic disease and disability, pain, frustration with limitations in activities of daily living (ADL), personality traits (dependent, anxious or avoidant), adverse life events (separation, divorce, bereavement, poverty, social isolation) and lack of adequate social support.[9] Many studies have demonstrated a relationship between depression and various socioeconomic variables such as advanced age, low education, poverty and manual occupation.[10–12] Thus, an older adult patient suffering from depression often has a combination of psychological, physical and social needs.[7]

Depression in later life is particularly costly because of the excess disability it causes and its deleterious interaction with physical health.[8] In fact, depression is a common cause of disability in older adults. Among its consequences are reduced life satisfaction and quality, social deprivation, loneliness, increased use of health and homecare services, cognitive decline, ADL limitations, suicide and increased non-suicide mortality.[13,14]

It is essential to assess the magnitude and scope of depression in older adult homecare patients (including both patients living at home who are in ambulatory care and patients who receive care in the home by visiting health personnel);[15] however, in clinical practice where time is at a premium, diagnostic instruments such as the Structured Clinical Interview for Diagnostic and Statistical Manual-IV (SCID) are not routinely used in homecare settings.[16] The Geriatric Depression Scale (GDS) was developed as a simple, easy-to-use tool to screen for depression in older adults; the original GDS Long Form is a 30-item questionnaire in which participants are asked to answer *yes* or *no* to questions about their feelings over the past week;[17] a Short Form GDS (GDS-15) was developed later, incorporating 15 questions from the Long Form GDS that correlated most strongly with depression in validation studies.[18]

In the year 2001, almost 7.7% of the total population was aged ≥60 years, increasing to 8.6% in 2011. While this increase may appear modest, better control of infectious diseases and improvements in health care services are expected to stimulate greater increases; by the year 2050, India's older adult population is expected to reach 324 million.[19] Population aging poses a serious challenge to available health services, including those for mental health. Across India, many studies have estimated depression prevalence in urban older adults, but there are few such studies in rural settings. In a South Carolina, USA study, depression prevalence was significantly higher in rural than urban populations (6.1% versus 5.2%). Depression risk was also higher in those most often encountered in primary care settings: those with fair or poor self-reported health, hypertension, and ADL limitations.[20]

The purpose of this study was to ascertain depression prevalence and assess the association between sociodemographic parameters and depression in older adult individuals in a rural Indian village, using the GDS-15 scale.

METHODS

A cross-sectional descriptive study was conducted from February through March 2012 to explore depression prevalence and its association with sociodemographic parameters in older adult persons (aged ≥60 years, the accepted criterion for elderly in India). The research was carried out in the rural area of Sembakkam, in the Kancheepuram district, located in the southern Indian state of Tamil Nadu. Sembakkam—intermediate between village and district jurisdictions—comprises six villages: Sembakkam, Manamathy, Vembedu, Arungundram, Karanai and Kottamedu. Their total population is 28,568, of which 51% are male and 49% female. The present study was done in Sembakkam village which has a population of 5948; the study universe consisted of village residents aged ≥60 years (3.1% of total). Universal sampling technique was employed, in which every household in the community was visited and all older adult persons were selected for assessment of cognitive status using the mini-mental state examination (MMSE).[21] Of the 185 villagers in the target age group, 12 refused participation; 21 were excluded because of dementia or delirium; 26 were away at the time of the survey; and in 13 cases, the dwelling was locked. Of the remaining 113, 10 were excluded because of an MMSE score ≤24, for a final sample size of 103.

Data collection All participants were assessed face to face and sociodemographic data were obtained in the same interview. The Kuppuswamy scale—a composite tool incorporating education, occupation and family income—was used to classify socioeconomic status (SES) as lower (score 0–10), middle (score 11–25) or upper (score 26–29).[22] Using GDS-15, scores of 0–4 were considered normal; 5–8 indicated mild depression; 9–11 moderate depression and 12–15 severe depression.[18]

Study variables Depression was the dependent variable; independent variables were the sociodemographic characteristics displayed in Table 1.

Table 1: Sociodemographic characteristics of study subjects (n = 103)

Characteristic		No. (%)
Age (years)	60–69	73 (70.9)
	70–79	26 (25.2)
	80–89	4 (3.9)
Sex	Male	58 (56.3)
	Female	45 (43.7)
Marital status	Never married	1 (0.9)
	Married	63 (61.2)
	Widowed	39 (37.9)
Education	None	47 (45.6)
	Some primary or secondary	39 (37.9)
	At least some post-secondary	17 (16.5)
Socioeconomic status	Lower	29 (28.2)
	Middle	67 (65.0)
	Upper	7 (6.8)
Occupation (Male)	Farmer	37 (63.8)
	Other (laborer/shopkeeper/ retiree)	21 (36.2)
Occupation (Female)	Homemaker	34 (75.6)
	Other (tailor/shopkeeper)	11 (24.4)

Data analysis Data entry and statistical analyses used SPSS version 17. Frequency distributions were calculated for all variables. The chi-square test was used to test significance of associations between independent variables and depression, with the threshold for significance set at $p = 0.05$.

Ethics Approval for the study was obtained from the Shri Sathya Sai Medical College & Research Institute's ethics committee. Prior written informed consent in the form of signature or (if illiterate) thumbprint was obtained after thoroughly explaining study objectives to the participants. Elicited information was kept confidential.

RESULTS

Table 1 displays the distribution of sociodemographic characteristics in the sample. Of 103 respondents interviewed, 73 (70.9%) were aged 60–69 years; 58 (56.3%) were male. Most were married (63; 61.2%). Most women were homemakers (34; 75.6%) and most men were farmers (37; 63.8%). The sample was predominantly of middle SES (67; 65%).

Table 2 shows distribution of GDS-15 scores in the sample. At least mild depression was present in 44 respondents (42.7%).

Table 2: Distribution of GDS-15 scores (n = 103)

Depression per GDS score	No.	%
Absent (0–4)	59	57.3
Mild (5–8)	23	22.3
Moderate (9–11)	14	13.6
Severe (12–15)	7	6.8

GDS-15: Short Form Geriatric Depression Scale

Table 3 displays associations between sociodemographic parameters and depression. Depression was more common in women (27/45, 60%) than men (17/58, 29.3%) and in the widowed (30/39, 76.9%) compared to married (14/63, 22.2%). Both associations were statistically significant. Among the 39 who were widowed, depression was present in 76.2% (16/21) of male respondents and 77.8% (14/18) of female respondents. No statistical significance was observed related to age, educational level or SES.

DISCUSSION

Prevalence of depression was highest in the group aged 60–69 years; age effect was not statistically significant, probably due to small sample size. Depression was observed to be more common among women than men, similar to other study findings in older adult populations in both urban and rural settings.[23–26]

Our results differed from those of a study conducted in seniors' welfare centers (which provide health care and social support to older adults) and public health centers located in urban settings of South Korea, where overall prevalence of depression was 63% and 21% respectively.[27] The observed difference in prevalence of depression was not only due to the quantitative scoring criteria used in the MMSE but also to different study settings (urban versus rural). In another study of older adult rural Chinese, almost 26.5% subjects met criteria for mild depression.[28] A possible reason for higher prevalence in the Korean and Chinese studies could be their inclusion of persons with dementia, who were excluded from our research.

Table 3: Sociodemographic characteristics and depression (n = 103)

Characteristic		Depression present	Depression absent	p Value
Age (years) (n)	60–69 (73)	36 (49.3)	37 (50.7)	>0.05
	70–79 (26)	7 (26.9)	19 (73.1)	
	80–90 (4)	1 (25.0)	3 (75.0)	
Sex (n)	Male (58)	17 (29.3)	41 (70.7)	<0.001
	Female (78)	27 (60.0)	18 (40.0)	
Marital status* (n)	Married (63)	14 (22.2)	49 (77.8)	<0.001
	Widowed (39)	30 (76.9)	9 (23.1)	
Education (n)	Illiterate (47)	18 (38.3)	29 (61.7)	>0.05
	Primary, middle and high school (39)	18 (46.2)	21 (53.8)	
	Post-secondary (17)	8 (47.1)	9 (52.9)	
Socioeconomic status (n)	Lower (7)	2 (28.6)	5 (71.4)	>0.05
	Middle (67)	27 (40.3)	40 (59.7)	
	Upper (29)	15 (51.7)	14 (48.3)	

*only one participant had never married, hence n = 102 for this comparison

In this study, we observed that depression was most prevalent in widowed older adults; this is consistent with study findings in China, where significantly higher prevalence of depression was observed among widowed persons (9.2% vs. 4.9% in married and 4.5% in unmarried, the latter including never married and divorced).[29]

In a study of a non institutionalized US household population, marital status and female sex were associated with major depressive disorder, whereas socioeconomic characteristics were not.[5] Similar results were obtained in our research, although the particularly small size of the low SES sample constitutes a limitation of this study.

The high prevalence of depression observed among older adults in the village studied indicates an urgent need, both for greater awareness of depression among community members and to ensure availability and accessibility of appropriate health care services to manage it. At the same time, it is important to increase community support and create networks for better geriatric care, in accordance with WHO findings. This type of study is important to persuade community-based medical personnel of the importance of diagnosing and treating depression. When dealing with older adults, health personnel must always keep in mind the possibility of depression; it frequently manifests with somatic symptoms (headache, tension, heaviness, etc.), for which patients visit non-psychiatric outpatient departments seeking relief for their symptoms.[30]

The cross-sectional nature of this study is a limitation, in that causal relationships cannot be inferred. Also, the small sample size limits generalizability, so larger-scale studies are needed for a better picture of mental health in rural older adults in India.

CONCLUSION

Depression in older adults is a substantial problem in this village, particularly among female and widowed residents. These findings could guide community-based program managers to devise and implement effective and timely mental health interventions for older adults, in order to prevent geriatric depression and develop a comprehensive strategy for its early diagnosis.

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Submitted: December 14, 2012
Approved for publication: August 18, 2013
Disclosures: None