



Prevalence of Psychiatric
Disorders among the Rural
Geriatric Population: A Pilot Study
in Karnataka, India

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Abstract

Background: Increasing life expectancy around the world, an outstanding achievement of our century, has brought with it new public health challenges. India is the second most populous country in the world, with over 72 million inhabitants above 60 years of age as of 2001. The life expectancy in India increased from 32 years in 1947 to over 66 years in 2010, with 8.0% of the population now reaching over 60 years of age. Few studies in India target the health, especially mental health, of this geriatric population. This study aims to estimate the current prevalence of psychiatric disorders in the geriatric population of the rural area of Singanodi, Karnataka, India.

Methods: This cross sectional, epidemiological, community-based study was conducted in a rural health training area of Singanodi, Raichur District, Karnataka, India. The General Health Questionnaire-12, Mini Mental State Examination, and Geriatric Depression Scale were administered to 366 participants. Chi square tests with Yates correction were utilized for statistical analysis using SPSS 19.0 software.

Results: We found that 33.9% of the geriatric population in the selected province were above the threshold for mental illness based on the GHQ-12 questionnaire. Females had a higher prevalence of mental disorder at 77.6% (152 out of 196) as compared to males who had a prevalence of 42.4% (72 out of 170). The most common psychiatric disorder was depression (21.9%), and generalized anxiety was present in 10.7% of the study population. Prevalence of cognitive impairment was 16.3%, with a significantly higher percentage of affected individuals in 80+ age group.

Conclusion: Mental disorders are common among elderly people, but they are not well documented in rural India. The assessment of psychiatric disorder prevalence will help strengthen psycho-geriatric services and thus improve the quality of life of the elderly. A system that ensures comprehensive health care will have to be developed for this purpose as part of our future efforts.

Keywords: *psychiatric disorder, depression, anxiety, geriatric, aging, India*

Prevalence of Psychiatric Disorders among the Rural Geriatric Population: A Pilot Study in Karnataka, India

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Research

Aging refers to the multidimensional process of physical, psychological, and social change.¹ Recent advances in health sciences and improvement in social conditions have led to an increase in life expectancy in most countries of the world.² However, increased life expectancy around the world also brought new public health challenges, such as increasing incidence and prevalence of chronic, age-related disorders.³

In India, the second most populous country in the world, the proportion of those 60 years and older was 5.4% in 1951, and it increased to 8.0% in 2010.⁴ Life expectancy at birth for males increased from 42 years (1951-1960) to 58 years (1986-1990).⁴ Life expectancy is projected to increase to 67 years for males and 69 years for females by the year 2016.⁵ Furthermore, the United

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Nations indicated that 21.0% of the Indian population will be aged 60+ years by 2050.⁵

Mental disorders in the elderly often go untreated due to the misperceptions that these disorders are a normal part of aging and a natural reaction to chronic illness, loss of family members, and social transition occurring with age.⁶ The burden of late-life psychiatric disorder on physical health, social support systems, and overall functioning is considerable, making mental disorders a leading cause of burden in elderly adults.⁷ Additionally, mental disorder is a preventable risk factor for mortality, particularly suicide attempts.⁸

Western countries have conducted numerous studies on the resources, needs, and outcomes on the community-based care of the elderly, which helped in the estimation of public health burden of the geropsychiatric population.⁹⁻¹⁴ Few studies have been conducted in India on the extent of mental disorder burden in these geriatric age groups. Pathak¹⁴ noted that there have been few publications on the health problems of those aged 60 years and above in India,¹⁵ while even fewer have examined the mental health of the elderly in India.¹⁶ The purpose of this article is to highlight the psychiatric problems faced by the elderly Indian population as well as develop strategies to improve the quality of life for the elderly.¹⁷

Methods

This cross-sectional, observational, community-based study was conducted in the rural health training area of Singanodi, Raichur District, Karnataka, India. The Navodaya Medical College and Research Centre Institutional Ethical Review Board approval was obtained before commencing the study. Informed consent was obtained prior to study participation.

Study Population

We used the United Nations (UN) guideline of 60+ years to refer to the elderly population.¹⁸ The area of

Singanodi has a population of 25,486 with a geriatric population of approximately 2,500 residents. A sample size of 383 was estimated using the formula $4pq/L^2$ (prevalence of 42%,¹⁹ allowable error 12% and 95% confidence).

Of the 383 elderly participants, 17 persons could not be included in the study due to the individuals or their family members' refusal to participate. Thus, a total of 366 were included in the final sample.

Procedures

The team made twenty visits between January 15 and April 15, 2014. A community medicine post-graduate physician and 3 social workers visited the study area once or twice a week. Prior to the start of the study, the team members underwent training in the use of the screening devices and a degree of standardization was achieved. All interviewers were trained in the standard operating procedure of survey administration to avoid any information bias.

Commencing from the eastern end of the town, a door-to-door survey was implemented. Residents of the houses were queried for the presence of any resident aged 60 years and above in the house. If due to some reason the potential participant was not available during first visit, he/she was contacted during the subsequent visit. Inclusion criteria for the study were: aged 60 years or above at the time of survey, a resident of the study area (Singanodi) for at least one year prior to the start of the study or those staying for less than a year but intended to stay permanently. Individuals were excluded if they were guests or lived in the area for less than one year and did not intend to stay permanently.

Measures

Four survey instruments were utilized. First, the General Health Questionnaire-12 (GHQ-12)^{20,21} is a self-administered screening test, which is the most commonly used screening instrument for detecting psychiatric disorders in community settings and non-psychiatric

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clinical settings. A score of ≥ 2 is the cut-off score for possible psychiatric disorder for this screening instrument.²⁰ Second, the Mini-Mental State Examination (MMSE) is the most widely used cognitive screening instrument worldwide.²² It is commonly used to screen for dementia. Any score ≥ 27 points indicates a normal cognition. Below this, scores can indicate severe (< 9 points), moderate (10-18 points) or mild (19-26 points) cognitive impairment. The Hindi translation of MMSE that was suitably modified was used in this study, which has been validated in various studies.¹⁶⁻¹⁸ Third, the Geriatric Depression Scale-15, short version (GDS) is a 15 item self-report scale for assessing depression.²³ In this scale, scores of 0-9 are considered normal, 10-19 indicated mild depression, and 20-30 indicated severe depression. Fourth, the Generalized Anxiety (GA) Scale was adapted from the CARE²⁴ schedule as a subscale. Scores of 5-9 points is indicative of mild anxiety, and a score of 10 points or higher is indicative of major anxiety.¹⁹⁻²¹

Data Analysis

Descriptive statistics were used to gather basic participant characteristics as well as the prevalence of psychiatric disorders. Chi square analyses with a Yates correction were used to analyze age group differences for psychiatric disorder prevalence and to analyze gender differences for psychiatric disorder prevalence. All analyses were conducted using SPSS 19.0 software.

Results

There were 366 persons from 205 households aged 60 years and above in the surveyed population who agreed to participate in the study, with women comprising 53.6% of the sample. The distribution of participants in each age group was similar for both the sexes. Table 1 shows the distribution of the sample population according to age and gender.

[Table 1: Distribution of study population stratified by sex and age group](#)

The majority of participants were in 60-64 age group (42%). Table 2 shows the distribution of psychiatric disorder prevalence stratified by age, sex, and marital status.

[Table 2: Distribution of psychiatric disorder prevalence stratified by age, sex, and marital status](#)

Presence of psychiatric morbidity was defined as having screened positive for at least one of the following: cognitive decline, dementia, depression, or generalized anxiety. Participants in the age group 80+ screened positive for more psychiatric disorders as compared to younger age groups ($X^2 = 10.25, p < 0.05$). Similarly, significantly more females were mentally ill as compared to males ($X^2 = 23.75, p < 0.001$). Further, we observed that significantly more widowed participants have been affected by mental disorders compared to married participants ($X^2 = 25.17, p < 0.001$).

Prevalence of psychiatric disorders

33.9% had scores ≥ 2 in GHQ-12, i.e. above the cut-off score for possible psychiatric disorder for this screening instrument and requiring further mental health evaluation (Table 3).

[Table 3: Participants who screened positive for psychiatric disorders stratified by age group](#)

Of these subjects, cognitive impairment was present in 60 participants (16.3%). Depression was present in 80 (21.9%) of the study participants. Generalized anxiety was present in 39 (10.66%) study participants. There was a significant effect of age on

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having a diagnosable disorder based on the GHQ-12 ($p=0.03$) and cognitive impairment based on the MMSE ($p=0.03$). However, there was no statistically significant effect of age on depression ($p=0.82$) and anxiety ($p=0.87$).

Discussion

This study demonstrated that the prevalence of mental disorder was 33.9% of the elderly population (60 years and older). One previous study estimated that the prevalence of mental disorder in those 50 years and older was 34.9% in the area of Madras, India.²⁵ Another study conducted in the UK estimated that the prevalence of mental disorder in those 65 years and older was 46.0%.^{13,26} In our sample, the burden of mental disorder was higher in females, corroborating the findings of many studies conducted in India^{25,27-29} and western countries.^{30,31}

The most prevalent disorder amongst the elderly population, as reported by many field-surveys conducted in India and abroad, was depression. Depression was found in 16.4% of the population, which is similar to a 13.3–18.3% prevalence reported in the literature.^{32,33} The prevalence rates in Indian studies have been widely varied, ranging from 6.0% to 55.2%.³⁴ Banerjee and MacDonald¹³ found that depression was prevalent in 26.0% of their sample comprising persons aged 65 years and above. A significant finding of this study, which may have important implications for both social and psychological perspectives, is the high prevalence of psychiatric disorder amongst widowed people. Stressful factors such as isolation and low socioeconomic status are closely associated with widowhood.

In the present study, 10.66 % of the persons had GAD, which is similar to the 4.6% prevalence rate reported by Ritchie et al.³⁵ Most Indian researchers reported a low prevalence of anxiety disorders in the elderly population.^{25,34}

It is therefore evident that the mental health care needs of the elderly are multifaceted. A system that ensures a comprehensive health care needs to be developed for this purpose. We should not, however, lose sight of the fact that provision of health facilities does not necessarily ensure its adequate utilization.^{36,37}

Strengths and Limitations

One limitation of this study is that all of the study participants were from one rural location instead of multiple sites. Future studies wanting to understand the impact of psychological disorders among the elderly in rural populations could focus on a multi-centric approach, using cohorts from multiple rural populations. Another limitation is that the data was gathered by self-report methods, which might cause bias due to the fact that the study population is relatively small. Major strengths of this study are the inclusion of reliable screening questionnaires and standardization of interviewers to reduce bias.

Conclusion

There are many barriers to the utilization of health facilities by the community, with more barriers experienced by the elderly. Apart from their limited mobility, limited information access, and inadequate awareness of treatability of mental disorders, the elderly are likely to experience a lack of family support and social isolation. The basic philosophy of geriatric research is neither the prevention of old age nor a mere addition of years, but to “add life to years.” By assessing the social and familial risk factors of mental disorder among elderly persons residing in a rural community, community-based rehabilitation and suicide prevention programs could be developed. Raising awareness about mental disorders and its association with the geriatric age group may be an effective measure for the early detection and treatment of such disorders.

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Table 1: Distribution of study population age and sex

Age Group	<i>N</i> (%)	
	Male	Female
60 – 64	80 (47.0)	74 (37.7)
65 – 69	52 (30.6)	58 (29.6)
70 – 74	16 (9.4)	28 (14.3)
75 – 79	10 (5.9)	18 (9.2)
80+	12 (7.1)	18 (9.2)
Total	170 (100.0)	196 (100.0)

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Table 2: Distribution of psychiatric disorder prevalence stratified by age, sex, and marital status

Variable	N (%)	
	Normal Screen	Positive Screen
Age Group*		
60 – 64	62 (44.9)	92 (40.4)
65 – 69	50 (36.2)	60 (26.3)
70 – 74	8 (5.8)	36 (15.8)
75 – 79	14 (10.2)	14 (6.1)
80+	4 (2.9)	26 (11.4)
Gender**		
Male	98 (69.0)	72 (32.1)
Female	44 (31.0)	152 (67.9)
Marital Status**		
Married	106 (74.6)	82 (36.6)
Widowed	36 (25.4)	142 (63.4)

Note. *indicates $p < 0.05$; ** indicates $p < 0.001$. Participants who scored above the threshold in at least one psychiatric disorder screening tool were counted as a “positive screen.” Participants who did not score above the threshold were counted as “normal.”

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Table 3: Participants who screened positive for psychiatric disorders stratified by age group

	Age Group <i>N</i> (%)					Total
	60 – 64	65 – 69	70 – 74	75 – 79	80+	
GHQ-12	32	31	35	4	22	124
MMSE	15	7	5	15	18	60
GDS	27	15	11	13	14	80
GA	18	7	4	3	7	39

Note. GHQ-12 is the General Health Questionnaire-12. MMSE is the Mini-Mental Status Examination. GDS is the Geriatric Depression Scale. GA is the Generalized Anxiety Scale.

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