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Screening for Depression Among Elderly Population in Pune City

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ABSTRACT

Background: The Indian aged population is the second largest in the world. A high prevalence of mental disorders is a major public health problem with a global prevalence of 322 million; with India contributing to 31 million. The prevalence in elderly population varies from 13 to 25%. Early diagnosis and treatment are the key step towards curbing this mental health problem. We screened the elderly population for depression to determine the prevalence and to identify the risk factors of depression in elderly urban population in Pune city.

Material and Methods: A cross sectional study was conducted on 242 elderly subjects >60 years by administering the WHO (five) wellbeing index and the major International Classification of Diseases 10th Revision.

Results: The prevalence of depression was 21.07%**.** On analysis, age more than 80 years (p value 0.004, Odds ratio- 2.84,95% CI; 1.38-5.68), female gender (p value 0.03, Odds ratio- 1.94,95% CI; 1.03-3.64), loneliness (p value 0.001, Odds ratio- 2.56,95% CI; 1.50-5.27) and financial dependence (p value 0.001, Odds ratio- 3.17,95% CI; 1.53- 6.55) were statistically significantly associated with depression.

Conclusion: The prevalence of depression was 21.07%**.** The major risk factors identified were age more than 80 years, loneliness and financial dependence.

Key words: Depression, elderly, WHO (five) wellbeing index, ICD-10

INTRODUCTION

The Indian aged population is the second largest in the world.[1] With better control of infectious diseases and improvements in healthcare services, the ageing population is expected to increase by 2050 to reach 324 million.[2] As per the WHO reports, 0.5 million adults aged > 60 years suffered from moderate or severe depression in high-income countries and 4.8 million in low- and middle-income countries[3] These pose serious challenges to deal with mental health services and ageing related health ailments.[4] The prevalence of depression is likely to increase in the elderly population than other age groups; the risk factors are loneliness, stressful life events, lack of social security, financial dependence and associated comorbidity[1].The point prevalence in elderly varies from 13 to 25%.[5-7] Moreover, symptoms of depression in elderly are varied are overlooked and considered to be a part of normal ageing. This is a serious public problem which calls for psychological, social and physical support[8]. It was therefore deemed necessary to ascertain the prevalence of depression and assess the correlation between the sociodemographic characteristics and depression in the elderly population. The purpose of this study was to determine the prevalence of depression and to identify the risk factors with respect to depression in elderly urban population in Pune city using the WHO (five) wellbeing index (1998 version)[5] and the major International Classification of Diseases and Related Health Problems 10th Revision (ICD-10)[5] depression inventory of mastering depression in primary care version 2.2.

METHODOLOGY

A cross sectional study was designed to achieve the study objectives for a duration of 6 months in Pune city. Sample size was calculated by the formula $n=4pq/l^2$, with 95% confidence limits.[9] The prevalence of depression in elderly, "p", was set at 30%[10] with 6% allowable error. Therefore, the sample size was 216. The study was also approved by the ethics committee. We approached senior citizen groups, social networks, and senior citizen community gatherings for them to participate voluntarily in the study after taking consent. As a token of gratitude, we conducted general health check-up camps for the group. Individuals with past history of psychiatric disorders were excluded from the study. WHO (five) wellbeing index (1998 version)[5] and the major International Classification of Diseases and Related Health Problems 10th Revision (ICD-10) depression inventory of mastering depression in primary care version 2.2 questionnaire[5] was translated into Marathi by a language expert. The Marathi version was finalized after a pilot study on 10% of the estimated sample size was conducted. A pre-tested interview was conducted. WHO-5 questionnaire used to screen for depression and responses were rated on a scale of 0 (not present) to 5 (constantly present). Scores were summated, with raw score ranging from 0 to 25. The major International Classification of Diseases and Related Health Problems 10th Revision (ICD-10) depression inventory of mastering depression in primary care version 2.2 questionnaire was also administered to confirm the findings and arrive at an absolute number. The study findings were analyzed using the, Statistical Package for the Social Sciences (SPSS) for Windows, Version 16.0. Chicago, SPSS Inc. The level of statistical significance was set at $p<0.05$ (two sided).

RESULTS

A total of 242 individuals participated in our study. Table 1 shows the basic demographic characteristics of the individuals assessed. Overall there were more males (65.3%) than females (34.7%). The overall prevalence of depression was 21.07%; males 17% and females 28%. A slightly higher proportion of the subjects who participated were in the 60 - <70 age group (44.6%). 147 (60.7%) were married and living with their spouses whereas almost 40% were either living alone or were never married. Financial dependence was major trigger for depression in 58.7% out of 142 financially dependent individuals interviewed (Table 1). Age more than 80 years, female gender, loneliness and financial dependence were major risk factors identified and were statistically significant. Though we did not observe any statistically significant association between comorbidity and depression, a fair number of study subjects (68.1%) had some kind of associated morbidity. Table 2 shows that the most common comorbid conditions were eye related (20.2%) followed by hypertension (19%) and musculoskeletal problems (18.1%).

On analysis, age more than 80 years (p value 0.005, Odds ratio- 3.1,95% CI; 1.38-6.66) female gender (p value 0.03, Odds ratio- 1.94,95% CI; 1.03-3.64), loneliness (widow/widower; p value 0.004, Odds ratio- 3.2,95% CI; 1.70-6.24, never married; p value 0.03, Odds ratio- 13.4,95% CI; 1.16- 155.88) and financial dependence (p value 0.001, Odds ratio- 3.17,95% CI; 1.53- 6.55) were the major risk factors identified and were statistically significant. We did not establish a statistically significant association between comorbidity and depression (p value 0.15, Odds ratio- 1.43, 95% CI; 0.83- 3.21).

Table 1: Relationship between depression and baseline characteristics

Characteristics	Depression		Total (n=242) (%)	p- value	Odd's Ratio	95% C.I.
	Absent (n=191) (%)	Present (n=51) (%)				
Age group						
60 - <70	90 (46.8)	18 (44.7)	108 (44.6)	ref		
70 - <80	73 (38.4)	16 (36.7)	89 (36.8)	0.8	1.1	0.52-2.29
≥ 80	28 (14.7)	17 (18.6)	45 (18.6)	0.005	3.1	1.38-6.66
Gender						
Male	131 (68.6)	27 (65.3)	158 (65.3)	0.03	1.94	1.03-3.64
Female	60 (31.4)	24 (35.7)	84 (34.7)			
Marital status						
Married	128 (66.9)	19 (60.7)	147 (60.7)	ref		
Widow/Widower	62 (32.6)	30 (38.1)	92 (38)	0.004	3.2	1.70-6.24
Never Married	1 (0.5)	2 (1.2)	3 (1.3)	0.03	13.4	1.16- 155.88
Financial dependency						
Dependent/Partially dependent	102 (53.4)	40 (58.7)	142 (59.7)	0.001	3.17	1.53- 6.55
Independent	89 (46.6)	11 (41.3)	100 (41.3)			
Morbidity Status						
Absent	66 (34.6)	12 (34.6)	78 (31.8)	0.15	1.43	0.83- 3.21
Present	125 (65.4)	39 (76.4)	164 (68.2)			

Table 2: Morbidity status of elderly (n=242)

Type of Morbidity	Individuals (%)
Diabetes Mellitus	20 (8.3)
Hypertension	35 (14.5)
Musculoskeletal	31 (12.9)
Renal	2 (0.8)
Cardiovascular	16 (6.6)
Cerebrovascular	3 (1.2)
Gastrointestinal	10 (4.1)
Eye related	36 (14.8)
Others	12 (5)
No Morbidity	77 (31.8)

DISCUSSION

Our study findings revealed that 21.07% of the elderly individuals interviewed were depressed. This was also observed in the studies previously conducted elsewhere in India which provide a prevalence ranging from 13 to 25%[5-7, 11-13] while those in the west show a higher variation from 1% to 42%.[14]This variation can be explained due to better social security in the western world, better healthcare facilities and usage of different study tools and study settings. In our study, the association was statistically significant among those who were >80 years of age which was in line with the study findings of Thilak S. A et al[17]. However, this was contrary to the studies conducted by Naik et al and Rajkumar et al in rural South India. This difference may be attributed to the urban rural differences in the prevalence which we propose in our future studies. Females were more vulnerable for depression than males in our study. This can be linked to female gender being more sensitive to stressful situations and larger share of familial responsibilities or burden which can act as mental stressors[15]. Similar findings were observed by Pamagal Kavithai et al in their study conducted in Puducherry[18].We also observed that loneliness or living alone was significantly associated with depression. Similar statistically significant association of depression with gender, and marital status was observed by Pushparani et al and Kamble et al[19, 20]. Lack of mental and emotional support due to loneliness can result in making a person vulnerable to long standing mental stress resulting in a psychosocial breakdown. We however did not associate the role of type of family in depression. This can be considered as a limitation of our study as familial support offered by relatives gives a greater mental, financial and social security to the old[21]. We however analyzed financial dependence with depression and the findings were statistically significant. Similar observations were made by Gupta et al in a large study conducted in South east Asia[22]. The very fact that a person is financially independent provides him/her privilege of decision making and financial stability. Associated comorbidity and depression were not statistically significant. Research conducted by Patil K et al observed a significant association of comorbid conditions with depression, though in the present study we could not establish a significant link with the same.[23]This attribute can be due to the mental stress induced by an illness and the associated cost for management of the illness[24].

CONCLUSION

In this study, the prevalence of depression among the geriatric population was determined to be 21.07% (95% CI = 18.4 - 24.9). The prevalence rates of depression among the males and females were 17% and 28% respectively. The major risk factors for depression in elderly were age >80 years, female gender, loneliness and financial dependence. Awareness about risk factors would help in formulating policies and implementing appropriate strategies for early diagnosis and prevention of depressive disorders in geriatric population. This will pave a path to control this major public health problem in the vulnerable elderly population.

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