

Community-based cross-sectional study to determine depression among elderly persons residing in urban area of north Karnataka

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Abstract

Background: Depression is one of the most common treatable illnesses affecting individuals after the age of 60 years. In India, 39.04% of elderly persons are estimated to experience depression, whose prevalence is higher in slum areas and old age homes.

Objective: To assess the prevalence of depression among elderly persons residing in urban households and various factors contributing to it.

Materials and Methods: It is a community-based cross-sectional study where urban households of Ashok Nagar and Ram Nagar areas of Belagavi city, Karnataka, India, were selected randomly. A total of 150 elderly persons were interviewed using pretested and predesigned questionnaire from GDS-30. Data were analyzed using percentages and χ^2 -test.

Result: The prevalence of depression in elderly persons was 37.1%; among these, 24.7% were mildly depressed and 9.3% severely depressed. Depression was more prevalent in those who were not physically active (46%) than those who were active (54%) ($\chi^2 = 6.902$, $p = 0.032$). About 75.3% of illiterates were found to be depressed than literate ones (24.7%) ($\chi^2 = 9.391$, $p = 0.009$).


Conclusion: Four of ten individuals suffered from depression after 60 years of age. Depression was seen higher in illiterates and individuals leading sedentary lifestyle and was found to be statistically significant.

KEY WORDS: Community, elderly, depression, illiteracy, lifestyle, urban

Introduction

According to the World Health Organization, depression is a general mental illness depicting features such as sadness, loss of interest or pleasure, feelings of guilt or low self-esteem, disturbed sleep or appetite, feelings of fatigue, and poor concentration.^[1]

One hundred and twenty one million people around the world are affected with major depression. In India, its prevalence is around 36%.^[2] World geriatric population is 11.3% (2013) of total population and has been rising steadily.^[3] Depression is assuming an epidemic form in society which is further worsened by beliefs of people refusing treatment believing it as being a part of aging process and associated with social stigma. Prevalence of depression among different age groups is still not known in India. Elderly population of India is affected by a disease unknown to them increasing the morbidity of later years of life. This study focuses on finding prevalence of depression among elderly persons and its association with other factors. The objective of this study is to know the prevalence of depression among urban elderly persons and its association with other factors.

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Materials and Methods

This study was conducted in urban field practice areas of Ashok Nagar and Ram Nagar urban health centers attached to KLE University's JN Medical College in Belagavi city of Karnataka from June 2014 to August 2014.

Elderly individuals with age 60 years and older residing in the area for at least 1 year preceding the survey (as per census 2011 definition) were selected as study participants.^[4]

Ethical clearance was obtained from Institutional Ethics Committee for Human Subjects Research of the medical college. Prevalence of depression in elderly persons was considered as 40%.^[5] Formula for sample calculation $n = 4pq/d^2$ for cross-sectional study was used to calculate sample size where, p is the prevalence of depression in elderly, q is $1-p$, and d is relative error of 20%. One hundred and fifty participants were included in the study. Every fifth house was selected by the investigator in each area and visited by the investigator, and elderly persons who agreed to participate in this study were included till sample size was reached. Written informed consent was obtained from all the study participants after explaining the purpose of the study in their own language.

A predesigned and structured detailed questionnaire with Geriatric Depression Scale (GDS)-30 items was used as a data collection tool.^[6] It included information related to sociodemographic characteristics of study participants such as age, sex, occupation, socioeconomic status, and education. It takes into account a person's mental status by asking questions which are conveyed as yes or no. GDS includes questions regarding their daily routine, social interactions, capability to think, and general emotional status.

Elderly persons who consumed more than one unit of alcohol per day where one unit is 360 mL of beer, 150 mL of wine, or 45 mL of spirits were considered as alcohol consumers.^[7] Elderly persons who smoked cigarettes or chewed tobacco daily were considered as smokers and tobacco chewers, respectively. Socioeconomic status was graded using modified BG Prasad's classification.^[8] Educational status was divided into literates, who had done primary, secondary, and PUC or degree and illiterates, who were unable to read and write in any language (as per census 2011).^[4] Type of family was divided into nuclear, joint, three-generation, problem, or broken families.^[9] Hypertension & Diabetes Mellitus were diagnosed on basis of History.

Elderly persons who did some kind of aerobic exercise such as walking in park for 30 min or any equivalent activity for minimum 3 days per week were considered as physically active, otherwise were considered to be physically inactive.^[10]

GDS was pretested in another locality which was not in the study area. GDS was translated into Hindi, Kannada, and Marathi languages by experts proficient in respective languages and checked for consistency by review from two experts, and pilot testing was done among 15 participants. GDS score ranges from 0 to 30. The answers were scored by summing up the responses. On the basis of GDS guidelines, 0–9 is normal, 10–19 mild depression, while 20–30 major depression.^[11] Data were coded and entered in MS Excel sheet.

The participants were interviewed separately going house to house. Those elderly persons who were showing signs of mild depression were called to Urban Health Center and counselled to improve their lifestyle by adding exercise and social bonding to their day-to-day life. Severely depressed were referred to the psychiatry outpatient department of the teaching hospital for further management.

Statistical Analysis

Statistical analysis was done with SPSS software 16th edition (trial version) and χ^2 -test. Associations were calculated for gender, marital status, education, physical activity, hypertension, diabetes mellitus, alcohol intake, smoking, tobacco consumption.

Result

Of 172 elderly residents approached, 150 agreed to participate in the study giving response rate of 87.2%. A total of 73 (48.8%) individuals were in the age group of 60–65 years. Of 150 individuals, 81 (54%) were female and 69 (46%) male subjects [Table 1]. According to modified BG Prasad's classification, 48 (32%) were in grade II, 48 (32%) in grade III, and 38 (25%) in grade IV socioeconomic classes. One hundred and thirty-one (87.3%) elderly individuals lived in a joint family.

One hundred and thirteen (75.33%) elderly persons were illiterates. There was statistically significant association between illiteracy and depression. Thirty four (30%) illiterates were mildly depressed while 12 (10.6%) severely depressed.

On the basis of GDS score ranging from 0 to 30, 51 (37%) elderly individuals were found to be depressed, of which 24.7% were mildly depressed and 9.3% severely depressed.

Eighty one (54%) elderly individuals were found to be physically active. Statistically significant association was also found between physical inactivity and depression. Of physically inactive elderly persons, 23 (33.3%) were mildly depressed while 8 (11.6%) severely depressed [Table 2].

Ninety seven (64.7%) elderly persons exhibited hypertension, while 50 (33.3%) of them presented diabetes mellitus. Thirty three (34%) elderly individuals of 97 showed both hypertension and depression, while 20 (40%) elderly persons of 50 presented diabetes mellitus and depression [Table 3].

Tobacco was consumed by 30 (20%) elderly individuals, of which 14(46.6%) showed depression. Seventeen elderly participants were alcohol consumers, of which 5 (29.4%) were depressed [Table 4].

Discussion

This study found overall prevalence of depression among elderly persons to be 37%, which was similar to the studies conducted in Dharwad and Bengaluru cities of Karnataka showing prevalence of depression to be 32.4%^[12] and 36%^[13], respectively. Statistical significant association between illiteracy and depression was found in this study. Most of the illiterates felt that they were worthless or others were better off than

Table 1: Association of depression and sociodemographics

Sociodemographic variables	GDS score			Total	p	χ^2
	0–9 (normal), n (%)	10–19 (mild depression), n (%)	20–30 (severe depression), n (%)			
Gender						
Male	48 (69.6)	17 (24.6)	4 (5.8)	69	0.376	1.961
Female	51 (63)	20 (24.7)	10 (12.3)	81		
Total	99	37	14	150		
Marital status						
Married	67 (69.8)	20 (20.8)	9 (9.4)	96	0.338	2.172
Widow/single	32 (59.3)	17 (31.8)	5 (9.3)	54		
Total	99	37	14	150		
Education						
Illiterate	67 (59.4)	34 (30)	12 (10.6)	113	0.009	9.391
Literate	32 (86.5)	3 (8.1)	2 (5.4)	37		
Total	99	37	14	150		

Table 2: Association of depression and physical activity

Physical activity	GDS score			Total	p	χ^2
	0–9 (normal), n (%)	10–19 (mild depression), n (%)	20–30 (severe depression), n (%)			
No activity	38 (55.1)	23 (33.3)	8 (11.6)	69	0.032	6.902
Activity	61 (75.3)	14 (17.3)	6 (7.4)	81		
Total	99	37	14	150		

Table 3: Association of depression and chronic illnesses

Chronic illnesses	GDS score			Total	p	χ^2
	0–9 (normal), n (%)	10–19 (mild depression), n (%)	20–30 (severe depression), n (%)			
Hypertension						
Yes	64 (66)	25 (25.8)	8 (8.2)	97	0.785	0.531
No	35 (66)	12 (22.6)	6 (11.3)	53		
Total	99	37	14	150		
Diabetes mellitus						
Yes	30(60)	16(32)	4(8)	50	0.335	2.192
No	69(69)	21(21)	10(10)	100		
Total	99	37	14	150		

them. Illiterates felt more dependent, while literates required less help from others. Similar results were found in the South Korean study.^[14] Significant statistical association was also found between physical inactivity and depression. Elderly persons with depression were those who also had a sedentary lifestyle. The reverse may also be true, that is, depressed elderly individuals might not feel to exercise physically. A study revealed that prevalence of depression was three times higher for physically inactive when compared with individuals who did

regular exercise.^[15] Regular physical exercise not only improves self-esteem but also releases chemicals in brain called endorphins. These chemicals interact with receptors in brain and reduce perception of pain. They also trigger a positive feeling. Socioeconomic status of the elderly was not found to be associated with depression. This could be because mental status of an individual at old age depends more on good relationships and self-satisfaction than amount of money they have. Very few studies are conducted on elderly persons and depression

Table 4: Association of depression and habits

Habits	GDS score			Total	p	χ^2
	0–9 (normal), N (%)	10–19 (mild depression), N (%)	20–30 (severe depression), N (%)			
Alcoholic						
Yes	12(70.6)	3(17.6)	2(11.8)	17	0.754	0.572
No	87(65.4)	34(25.6)	12(9)	133		
Total	99	37	14	150		
Smokers						
Yes	10(52.6)	8(42.1)	1(5.3)	19	0.161	3.666
No	89(67.9)	29(22.1)	13(9.9)	131		
Total	99	37	14	150		
Consumes tobacco						
Yes	16(53.3)	10(33.3)	4(13.3)	30	0.260	2.701
No	83(69.2)	27(22.5)	10(8.3)	120		
Total	99	37	14	150		

in this area, and, in this study, standard GDS-30 questionnaire was used. The study is limited to small study group. Hence, results of this study cannot be generalized for whole Indian population. Results might vary from place to place.

Four out of ten elderly persons showed depression after the age of 60 years. The prevalence of depression was found to be higher in elderly individuals who were physically inactive and among those who were illiterates. India's culture and social stigma attached to mental disorders just enhances and magnifies the burden of morbidity by these illnesses.^[16] A study has shown that there is an inadequacy of knowledge in health-care workers in India regarding mental illnesses which is becoming a major concern and needs to be readdressed.^[17] Individuals need to be aware of this disorder. They should be able to recognize it among family and friends so that they can encourage them to seek help. Community-based social activities should be promoted where elderly persons can actively participate. More social groups of elderly persons should come up so that a support system is set up, where they can interact with each other freely and on a regular basis. Results of this study unravels a need for conducting large-scale, multicentric studies on depression, as the prevalence of depression in India is among the highest in the world. All regions including old age homes need to be regularly surveyed for this lingering epidemic. India's National Program for Health Care of the Elderly (NPHCE) in 2007 has started dealing with medical health care for the elderly persons. Under this program, Regional geriatric centers provide preventive, curative, and rehabilitation service for various geriatric illnesses including mental diseases.^[18]

Conclusion

Four of ten individuals exhibited depression after 60 years of age. Depression was seen higher in illiterates and individuals leading sedentary lifestyle and was found to be statistically significant.

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