Original Research

Depression among the elderly: A cross-sectional study in an urban community

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Received August 01, 2016. Accepted August 18, 2016

Abstract

Background: Elderly or senior citizens are the people who are of the age 60 and above. With the increase in ageing population, there is an increase in the prevalence of chronic diseases associated with old age. There is growing evidence that chronic diseases may lead to depression and vice versa.

Objective: To assess the burden of depression among the elderly in the urban field practice area of a medical college and to study the association of depression with various socio-demographic variables and co-morbidities.

Materials and Methods: It was a Community-based cross-sectional study, conducted among 229 elderly aged 60 years and above residing in the urban field practice area of a medical college of Mangalore. The study was conducted for a period of 3 months. Information regarding depression was obtained using pre-designed and pre-tested questionnaire, Geriatric depression rating scale (GDS-30) and information regarding socio-demographic variables were also obtained. The data obtained was analysed using SPSS 16.0.

Result: Prevalence of depression was found to be 75.5% among the elderly population. Out of the total individuals with depression, mild depression was found to be present in 84.97%. Age and gender were the statistically significant predictors of depression (p<0.05). 53.3%, 49.8%, and 34.5% of the study participants were having diabetes mellitus, hypertension, and musculo skeletal problems, respectively and that were found to have statistically significant association with depression (p<0.05).

Conclusion: Prevalence of depression was high among the study participants, necessitating stringent efforts towards creating awareness, early identification, and management.

KEY WORDS: Depression, Elderly, Urban

Introduction

The government of India, National policy on older persons defines an elderly or senior citizen as a person who is of age 60 and above.[1] Globally the world's population is rapidly ageing and according to WHO, between 2015 and 2050, the number is expected to increase from 900 million to 2 billion of people aged 60 and above.[2] In India, there were 98 million senior citizens in 2011 and is expected to increase to 143 million by 2021 with 51% being females.[3]

As the age progresses to 60 and above, many are at risk of developing mental disorders, neurological disorders or substance use problems, as well as other health problems such as diabetes, hearing loss, and osteoarthritis. More than 20% of the adults suffer from mental and neurological disorders which contribute to 6.6% of all disability adjusted life years (DALY's). The most common neuropsychiatric disorders among this age group are depression and dementia.[2]

Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feeling of guilt or low self-worth, disturbed sleep or appetite and poor concentration. According to WHO, the lifetime prevalence of depression for most countries falls

Access this article online	
Website: http://www.ijmsph.com	Quick Response Code:
DOI: 10.5455/ijmsph.2017.01082016609	

between 8 and 12%. By 2020, depression will be the second leading cause of world disability and by 2030, it is expected to be the largest contributor to disease burden.[4]

Depression can cause great suffering and impaired functioning in daily life. Unipolar depression affects 7% of the general elderly population and accounts for 5.7% of years lost due to disability (YLD's) among the elderly population.[2] In India, the prevalence of depression is much higher and varies from state to state, district to district and ranges from 24 to 62% as accounted by most recent studies.[5,6] Various risk factors have been employed, which makes one likely to get depression when compared to others, they are female gender, economic disadvantages, social disadvantages such as education, genetics, exposure to violence, being separated, divorced or widowed, and chronic illnesses.[4]

Depression though expected to be the second leading cause of world's disability, is both under diagnosed and under treated. Symptoms of depression in elderly are often overlooked and untreated as they coincide with other problems encountered by them and stigma surrounding mental illness makes people more reluctant to seek help.[2]

Thus considering the increasing prevalence of depression among elderly, the present study was conducted among the elderly population in the urban field practice area of a medical college in Dakshina Kannada district of Karnataka, to assess the magnitude of depression and association of various socio-demographic variables, existing co-morbidities with depression.

Materials and Methods

A cross-sectional study was conducted among the geriatric population viz., 60 years and above, willing to participate in the study, located in the urban field practice area of a medical college in Dakshina Kannada district of Karnataka. The study was conducted for a duration of 2 months viz., October 2015 to December 2015. The sample size was estimated using the formula $n = 4$ pq/L.[2] The prevalence of depression, "p" among elderly persons was taken as 46%.[7] With the precision of 15%, using the above mentioned statistical formula which considers 95% confidence limits, the sample size was estimated to be 229.

List of households in the selected area was taken as the sample frame. The systematic random sampling method was used to select the house, written informed consent from all the elderly study participants were taken. The data was collected by using a pre-designed and pre-tested questionnaire comprising of marital status, education status, occupation, socio-economic status (modified B.G Prasad classification 2013)[19] along with geriatric depression scale (GDS-30) which was created and validated by Yesavage JA[8] to assess depression. It screens for 7 characteristics of depression in elderly, which are somatic concerns, lower affect, and cognitive impairment, feelings of discrimination, impaired motivation, lack of future orientation, and lack of self-esteem. GDS consists of 30 questions with a maximum score of 30. Those who scored 10 and more were considered as depressed, the presence of existing co-morbidities was also collected. Institutional ethical clearance obtained prior to the data collection.

The data was analysed using SPSS 22. Chi –square test was used to find out the association between variables and $p<0.05$ was considered statistically significant.

Result:

Table 1 shows that, most of the study participants were in the age group of 60–64 years (38.42%) and majority were males (65.5%), belonging to 3rd generation family (72.9%) and Hindu religion (60.7%), 54.1% of the study participants had completed their education up to primary school and 52.4% were belonging to class IV socioeconomic status according to modified BG Prasad's classification.

As revealed by Figure 1, the prevalence of depression among the elderly population in the field practice area was found to be 75.5% with 84.97% having mild depression as shown in Table 2.

Table 1: Socio-demographic profile of the study participants (n = 229)

Variables	Frequency (n)	Percentage (%)
Age (yrs)		
60-64	88	38.42
65-69	60	26.20
70-74	38	16.59
75-79	25	10.91
80 and above	18	07.86
Gender		
Male	150	65.5
Female	79	34.5
Religion		
Hindu	139	60.7
Muslim	80	34.9
Christian	10	4.4
Type of Family		
Joint	62	27.1
Third generation	167	72.9
Education		
Post high school certificate	04	1.7
High school certificate	14	6.1
Middle school certificate	71	31.0
Primary School Certificate	124	54.1
Illiterate	16	7.0
Socio – Economic status		
Class II	20	8.7
Class III	80	34.9
Class IV	120	52.4
Class V	09	3.9

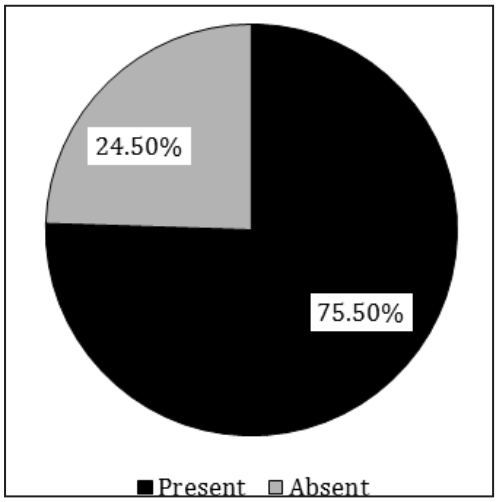

Figure 1: Prevalence of depression among the study participants (n=229)

Table 2: Grades of depression among the study participants with depression (n = 173)

Grades of depression	Frequency (n)	Percentage (%)
Mild Depression	147	84.97
Severe Depression	26	15.03

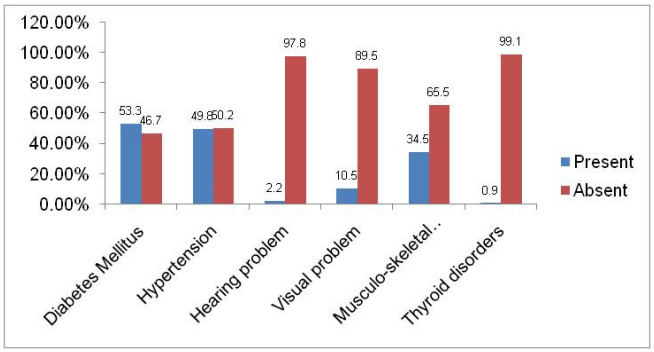

Figure 2: Co-morbidities among the study participants (n=229)

Figure 2 reveals that 53.3%, 49.8% and 34.5% of the study participants were having diabetes mellitus, hypertension, and musculo skeletal problems, respectively, as the existing co-morbidities.

As seen in Table 3, 87.7% of the study participants aged 70 and above when compared to 68.9% of the study participants of the age 60–69 years had depression and this has been found to be statistically significant (p<0.05). Also, 80% of the males, when compared to 67.1 of the females, had depression and was found to be statistically significant (p<0.05).

Table 3. Association of socio-demographic variables with depression (n=229)

Variables	Depression		Chi-Square value	*p*-value
	Yes (%)	No (%)		
Age				
60-69	102 (68.9)	46 (31.1)	8.958	0.0028
70 and above	71 (87.7)	10 (12.3)		
Gender				
Male	120 (80)	30 (20)	4.669	0.031
Female	53 (67.1)	26 (32.9)		

Table 4. Association of co-morbidities with depression (n=229)

Morbidity	Depression		Chi-Square value	*p*-value
	Yes (%)	No (%)		
DM				
Present	101 (82.7)	21 (17.3)	7.411	0.006
Absent	72 (68.6)	35 (33.4)		
Hypertension				
Present	95 (83.3)	19 (16.7)	7.452	0.006
Absent	78 (67.8)	37 (32.2)		
Musculo – Skeletal Disorders				
Present	72 (91.1)	07 (8.9)	15.784	<0.001
Absent	101 (67.3)	49 (32.7)		

When the association of co-morbidities with depression was assessed (Table 4), it was seen that 82.7% of the study participants with diabetes mellitus had depression and this was found to be statistically significant (p<0.05). And 83.3% of the elderly with hypertension, when compared to 67.8% without hypertension, had depression (X2=7.452, p=0.006, significant). Depression was found to be significantly higher among those who had musculoskeletal problems (91.1%) and this was found to be statistically significant (p<0.001).

Discussion

Depression predicts the onset and progression of both physical and social disability. Conversely, disability is an important prospective risk factor for depression in older adults and mediates most of the effects of specific physical health conditions in this group.[10] The present study found the prevalence of depression among the elderly in the study setting to be 75.5%. A study conducted by D'Souza L et al[11] found the prevalence of depression in the urban slum of Bangalore to be 51.9% and study by Jain RK et al,[7] among the elderly in the urban slum of Mumbai found the prevalence of depression to be 45.9%. Our study reported higher prevalence of depression and could be largely attributed to cultural variations,[12] high prevalence of existing co-morbidities such as diabetes mellitus, hypertension, musculoskeletal disorders

and also could be due to lower socio-economic status and poor education, as found in our study, where majority of our study participants were from lower socio-economic status and poor education.

The prevalence of depression was higher in males (52.4%) when compared to females (23.1%). A study conducted in a rural community in South Kerala by Sandhya GI et al[13] showed that the prevalence of depression was lower in females (22.9%) when compared to males (29.1%), the findings were in line with our study findings. On the contrary, studies done by Jain RK,[7] Pracheth R,[14] found that the prevalence of depression is more in females when compared to males, which falls in line with the WHO report on mental health[4] on risk factors of depression where female gender is more likely to get depressed when compared to males.

Our study revealed that majority of the study participants were having mild depression (84.97%), the findings were consistent with the findings of the study conducted by Naik PR et al[15] where, 79.5% and 20.4% of the depressed study participants were in the category of mild and severe depression, respectively. A study conducted by Pracheth R et al[14] also showed that majority of study participants (79.36%) were in the category mild depression.

Present study revealed that elderly with age more than 70 years and male gender have statistically significant association with depression, the former fall in line with the findings of the study conducted by Sengupta P et al[16] and Santosh D et al[17] found that the prevalence of depression was increasing with increasing age and the difference in prevalence of depression between different age group was statistically significant (p<0.05). A study by Sandhya GI et al[13], documented a higher rate of depression among males.

Our study found that 53.3%, 49.8%, and 34.5% of the study participants had diabetes mellitus, hypertension, and musculoskeletal problems, respectively and individuals with the above co-morbid conditions had higher prevalence of depression when compared to individuals without the above defined co-morbidities and this difference was found to be statistically significant (p<0.05). These findings were consistent with the findings of the Pracheth R et al,[14] where chronic diseases were found to have statistically significant association with depression (p<0.05), also a study conducted by Sanjay TV et al[18], found to have statistically significant association of depression with the existing co-morbidities (x^2-11.944; OR-5.82; p <0.05). According to WHO,[4] presence of chronic illness has been found to be one of the risk factors for developing depression.

Conclusion

The present study provides significant data on the higher prevalence of depression and their significant predictors. Elderly people are the significant contributors to the society as family members, volunteers, and advisors. They are more at risk of developing depression due to various risk factors, and this calls for immediate action for early diagnosis and treatment. The study found a high prevalence of depression among the elderly population residing in the urban field practice area, thus there is a need to create awareness among family members and community to identify depression at an early stage and seek appropriate counselling and treatment. Community level depression needs to be designed to enable the grass root level workers so as to create awareness in the community.

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How to cite this article: Mandolikar RY, Naik P, Akram MDS, Nirgude AS. Depression among the elderly: A cross-sectional study in an urban community. Int J Med Sci Public Health 2017;6:318-322

Source of Support: Nil, **Conflict of Interest:** None declared.