A CROSS-SECTIONAL STUDY OF THE DEPRESSIVE SYMPTOMS IN THE ELDERLY PATIENTS ATTENDING THE GENERAL MEDICINE OPD OF A TEACHING HOSPITAL

Niveditha Vasireddy[1], Arudhra Gopalakrishnan[2], Ganesan Gopalakrishnan[3]

[1]Assistant Professor, Department of Psychiatry, Andhra Medical College, Visakhapatnam.
[2]Consultant Psychiatrist, Department of Psychiatry, Sowmanasya Hospital, Trichy.
[3]Professor and HOD, Department of Psychiatry, MVJ Medical College and Research Hospital.

ABSTRACT

BACKGROUND

As the population is ageing, many of the older adults will experience depressive disorders. Projections are that, by the year 2020, depression will be second only to heart disease in its contribution to the global burden of disease. In older adults, several environmental challenges can potentially trigger the onset of depression. The depressive symptoms in the elderly are often wrongly thought to be a part of the normal ageing process. Depression if left unidentified, can worsen the physical co-morbidities; again, the physical co-morbidities can lead to depression or worsen already existing un-identified depression. They do not often seek the help of a psychiatrist due to lack of awareness and the associated stigma. Hence, the General Medicine Outpatient department of a Hospital provides an important setting for the detection of depression in the older adults.

The objectives of the study were 1) To identify the presence of depression among the patients aged 60 years and above coming to a General Medicine OPD as their first point of contact. 2) To assess the severity of the depression in such elderly. 3) To correlate the depressive symptoms in the said elderly with the existing medical co-morbidities.

MATERIALS AND METHODS

The elderly subjects aged 60 years and above, visiting the general medicine OPD of MVJ Medical College and Research Hospital were recruited for the study. One hundred consecutive elderly meeting the inclusion criteria were included after excluding those meeting the exclusion criteria. A detailed history was taken, physical and mental state examination was done. Details were collected in the socio-demographic and medical co-morbidity schedule after cross-verifying with a reliable and adequate informant. The Geriatric Depression Scale-15 was then administered. Results were calculated using the SPSS 11.0 version. Results were recorded in the form of means, standard deviations, frequencies, percentages, chi square, p value, t test and one-way ANOVA where applicable.

RESULTS

62% of the elderly were found to have significant depressive symptoms which is a large number. When we looked at the severity of depression; 58.06% had mild, 25.80% had moderate and 16.12% had severe, depressive symptoms. Considering that the majority had mild depression, it could easily be overlooked and go undiagnosed. There was no statistical significance between both the groups of depressive symptoms (present/absent) with regards to number of medical co-morbidities. However, when multiple co-morbidities were present, the mean GDS-15 score was found to be higher when compared to none and single co-morbidity.

CONCLUSION

A significant number of elderly attending the general medicine OPD had depressive symptoms. Majority of these cases had mild depression followed by moderate and severe deppression. Elderly with multiple co-morbidities were found to have higher mean GDS-15 score indicating more severe symptoms. This study not only throws light on the high proportion of geriatric depression but also on the fact that the General Medicine OPD is an important locus for geriatric depression identification and screening.

KEYWORDS

Depressive symptoms, Elderly, Geriatric depression, Medical co-morbidities.

BACKGROUND

Ageing confronts the individual with physical and mental changes, and with changes in roles that have been central in viewing of oneself throughout life. Demographic ageing is a global phenomenon. The aging of the global population is one of the biggest challenges facing the world health services. The United Nations (UN) also declared 1999 as the "International Year of the Older Persons" and adapted the theme "Towards a society for all ages".

In 1990, a clear majority (58%) of the world's population aged 60 years and above was found to be living in developing countries.[1] By 2020, this proportion is estimated to rise to 67%. It has been estimated that over three-fourths (77%) of worldwide rise in elderly population is contributed by the developing regions. India too is not left unaffected by this changing global situation. By 2015 more than one quarter of the aged population would belong to India. India's elderly population is likely to touch 12% (from its present 7%) by 2025, when the number will burgeon to 150 million.[2]

In this context of global ageing, the common mental health conditions of late life like depression, dementia, and delirium command attention because of their relationship with disability, diminished quality of life and the demands they place on family members and other care-givers.[3,4,5,6] It has been estimated that 8.9% of elderly persons in India are having psychiatric illness in the geriatric age group and 5.9% have depression.[7,8]

Geriatric depression has serious consequences such as functional decline, diminished quality of life, and demands on caregivers and increased health service utilization apart from mortality due to associated illness or suicide.[9] Because of the seriousness of these consequences, geriatric depression has been identified as a major public health problem, yet it is undiagnosed in 50% of the cases.[10]

Surprisingly, unipolar major depression was the fourth leading cause of disorders among ten leading specific causes of global disability adjusted life years (DALYs) lost in the Global Burden of Disease (GBD) Study in 1990 and 2000 accounting for 3.7% and 4.4% of total disability adjusted life years (DALYs) lost respectively.[1,11]

The stigma of mental illness is perhaps the most fundamental reason why older people do not seek treatment often. Another reason is the ageist assumption that depression is an inevitable consequence of old age which permeated lay people as well as medical publications.[12,13] This assumption is clearly unjustified. The elderly most often have depressive symptoms that do not meet the diagnostic criteria laid down. They do not often seek the help of a psychiatrist due to lack of awareness and the associated stigma. Various factors such as presence of co-morbid medical conditions influence the mental health of elderly and can contribute to development of depressive symptoms. Depression makes medical illness or physical disability worse, and an increasing number of medical problems is a risk factor for depression.[14,15]

Hence, a General Medicine Out-Patient Department (OPD) is very often their initial point of contact as they consult for other medical co-morbidities or because depression in elderly often presents as somatic complaints thus making it an important setting for identifying elderly with depression. Therefore, the present study proposes to identify the presence of depressive symptoms among the elderly visiting the General Medical OPD, and assess the severity of the depressive symptoms, and study their relation with number of existing medical co-morbid conditions.

MATERIALS AND METHODS
Sample and Setting
The sample comprised of patients aged 60 years and above attending the General Medicine outpatient department of MVJ Medical College and Research Hospital. The subjects for the study were collected over a period of 6 months. The sample size was 100 subjects selected by consecutive sampling technique. This hospital caters to patients mainly from the rural areas in and around Hoskote and neighbouring districts. General Medicine OPD is being chosen, as it is usually the first point of contact for elderly. The elderly visit their general practitioners more often due to associated co-morbidities and the depressive symptoms most often go un-noticed by them as they are considered a part of the normal ageing process.

Inclusion Criteria
1) Patients aged 60 years and above attending the General Medicine OPD of MVJ Medical College and Research Hospital.
2) Those who agreed to participate in the study and gave a written, informed consent.

Exclusion Criteria
1) Critically ill patients as was determined by their treating team.
2) Patients with MMSE Score less than 15/30 were excluded.
3) Patients diagnosed with depression before the age of 60 years based on the history given by the patient, after cross-verification with a reliable and adequate informant and with the available medical records.
4) Known case of psychiatric disorders diagnosed before the age of 60 years and on treatment as reported by the patient after cross-verification with a reliable informant and with the available medical records.
5) Patients with severe visual, hearing, and language impairment.

Instruments / Tools
1) **Socio-demographic and Medical Co-morbidity schedule:**
   A self-prepared semi structured proforma was used to collect data on chronological age, gender, religion, marital status, educational level, socio-economic status, current employment status, current living arrangements, source of income. Medical co-morbidity data was collected in the form of absence or presence of illness: 0=absent, 1=presence of 1 medical co-morbidity, 2=multiple medical co-morbidities based on patient history and available medical records.

2) **Mini Mental State Examination (MMSE):**
   It is the scale developed by Folstein MF et al[16] for the screening purpose of cognitive impairment. The first section of MMSE consists of items for testing the orientation, registration, immediate recall, attention and concentration with maximum score of 21 and the second

section for testing language namely naming, repetition, three-stage command, reading, writing and copying with maximum score of nine. The total MMSE score is calculated by adding the scores in both the sections. Scores of 24-30 are considered as no cognitive impairment, 18-23 as mild cognitive impairment, and 0-17 as severe cognitive impairment. In this study, we have used MMSE to exclude patients with a cut off score of 15 as studies have questioned the validity of GDS-15 in cognitively impaired elderly.

3) 15-item Geriatric Depression Scale (GDS-15):

The GDS-15 is a short form of the original Geriatric Depression Scale of 30 items developed by Brink et al[17] in 1982. It is a self-administered or interviewer-administered rating scale used to assess depressive symptomatology in the elderly, proven valid and reliable by Yesavage et al.[18] The GDS-15 has been found to correlate significantly with the longer version of the scale and to have similar levels of sensitivity and specificity. The 15 items/questions require a "yes" or "no" format in relation to how they felt during the past week, with ten items coded positively and five items coded negatively. Scores range from 0 to 15, with greater than 5 indicating significant depressive symptoms. The authors of the original studies did not recommend a clear cut-off value for the GDS-15, though in systematic review the cut-off of most included studies in out-patient and primary care geriatric settings was about five.[19] A score of 0 to 4 has been reported to be normal, 5 to 9 is considered to reflect mild depression and 10 to 15 indicates moderate to severe depression.[20,21]

It was found that the GDS is as accurate a screening test for depression in cognitively impaired as in intact patients[22] and that it is a valid measure of mild to moderate depressive symptoms in Alzheimer patients with mild to moderate dementia.[23] While there are studies that argue that GDS-15 has a reduced ability to detect depression in those with significant cognitive impairment,[24] at the same time other studies have concluded that the GDS ratings remain valid in patients with MMSE scores of atleast 15.[25] Therefore based on the previous studies, for the purpose of this study MMSE has been used to include subjects with a score of more than 15.

Procedure of the Study

- This was a cross-sectional hospital-based study. One hundred consecutive elderly subjects aged 60 years and above attending the General Medicine OPD of MVJ Medical College and Research Hospital were recruited for the study. A written informed consent was obtained from all the elderly who met the inclusion criteria after explaining the nature and the purpose of the study.
- Socio-demographic data was collected using the pre-designed self-prepared semi structured socio-demographic schedule.

- A detailed history was taken, a complete Physical Examination and Mental Status Examination was done, and the subjects were enrolled for the study only after discussing with a qualified Psychiatrist in the department.
- A Mini Mental State Examination (MMSE) was done to assess for significant cognitive impairment and subjects with scores less than 15 were excluded.
- Medical co-morbidity data was collected in the form of absence or presence of medical illness (0 = absent, 1= presence of 1 medical co-morbidity, 2 = multiple medical co-morbidities) based on patient history and available medical records.
- To assess depressive symptoms Geriatric Depression Scale 15-items (GDS-15) was used. A score of less than 5 was considered as normal or no depressive symptoms and more than 5 as presence of depressive symptoms. To assess the severity of the depressive symptoms the cut-off values used were: 5 to 8 taken as mild depressive symptoms present, 9-11 as moderate depressive symptoms present, and 12-15 as severe depressive symptoms present for the purpose of this study.
- All interviews were conducted in one sitting in a language that the subjects understood and were comfortable with. The scales also were translated accordingly. The interviewer, clearly explained each question/item, and administered all the schedules and scales.
- All the information and data furnished by the subjects regarding socio-demographic data, medical co-morbidities and medical history was cross verified with a reliable and adequate informant. The scores were calculated according to the previously mentioned cut offs.

Statistical Data Analysis

The data was analysed using the SPSS software version 13.0 Descriptive statistics were performed. The results were recorded as frequencies, means and standard deviations and p-values. Univariate comparison of variables was done between the subjects with depressive symptoms and subjects without depressive symptoms. One-way ANOVA was used to compare the GDS Scores with number of existing medical co-morbidities.

RESULTS

A) **Prevalence of Geriatric Depression:** The mean GDS-15 Score of the sample was 6.36 and the standard deviation was 3.645. Out of the total sample size of 100, 62% tested positive for depressive symptoms while 38% tested negative.

| Depression	Number of Subjects
Present	62(62%)
Absent	38(38%)
Table 1. Prevalence of Depressive Symptoms in the Sample	

B) Severity of Depressive Symptoms

Out of the 62 who tested positive for depressive symptoms, 36 had mild symptoms, 16 had moderate depressive symptoms. Only 10 were found to have severe depressive symptoms.

Severity	Frequency	Percent %
Mild	36	58.06
Moderate	16	25.80
Severe	10	16.12

Table 2. Severity of Depressive Symptoms

C) Medical Co-morbidities and Depressive Symptoms

77.27% (i.e. 17 out of 22) of those with multiple co-morbidities had depressive symptoms and 63.414% (i.e. 26 out of 41) with single co-morbidity had depressive symptoms. The difference between the two groups was not statistically significant.
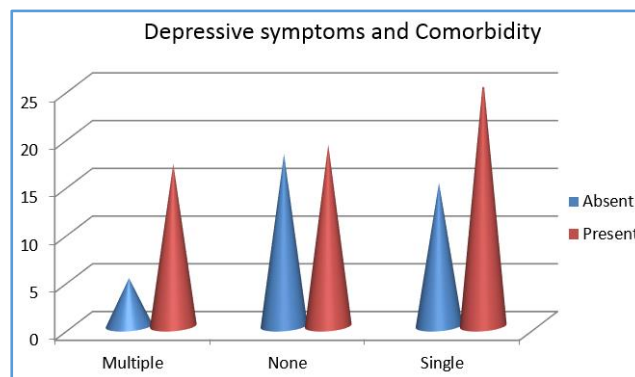
Graph 1: Distribution of Number Of Medical Comorbidities Calculated using One Way ANOVA

Chi square = 3.994, p = 0.136

The mean GDS-15 Score increased with an increase in the number of co-morbidities. Thus, with increasing medical co-morbidities the severity of depressive symptoms increased.

	None (n = 37)		Single (n = 41)		Multiple (n = 22)		F	p value
	Mean	S D	Mean	S D	Mean	SD		
GDS	5.5	3.52	6.0	3.31	8.5	3.80	5.29	0.007

Table 3. Mean GDS-15 Score and Number of Medical Co-Morbidities (P=0.007)

DISCUSSION

In this study, 62% of the elderly were found to have significant depressive symptoms. This is higher than the prevalence rates for depression revealed by community studies in India, which varied from 6% to 50%. Nandi DN et al,[26] Ramachandran V et al[27] and Tiwari SC[28] who had determined the prevalence of depressive disorders in the elderly population to be 22.0%, 24.1%, 13.5% and 52.2% respectively. This result is higher when compared to the studies done overseas where they assessed depressive symptoms in the elderly attending a non-psychiatric OPD; Afolabi MO et al[29] and PY Chui et al[30] who reported 59.6% and 39% respectively.

It is a well-known fact that comparing the rates of geriatric depression is difficult because of the use of different scales and different cut-off points. The difference in the rates of other studies when compared to this study could be due to differences in the assessment tools used and sample selection.

As far as severity of depressive symptoms is concerned in this study, majority of the elderly had mild depression which is the same trend seen in other studies such as Afolabi et al[29] and Khattri et al.[31]

Elderly people tend to have medical co-morbidities. Depression makes medical illness or physical disability worse, and an increase in medical problems is a risk factor for depression.[14,15] Hence, in this study we attempted to study the association between the number of medical co-morbidities present and depressive symptoms. No significant difference was seen between the number of medical co-morbidities and the two groups of depressive symptoms (present/absent). However, the mean GDS-15 scores of those with multiple co-morbidities was higher indicating severe depressive symptoms. This finding is in accordance with the findings of PY Chui et al,[30] O Salimah et al[32] and Seby et al.[33]

CONCLUSION

1. Significant proportion of the elderly had depressive symptoms (62%).
2. When the severity was measured, majority had mild depressive symptoms (58.06%).
3. There was no significant association between the number of medical co-morbidities and the two depressive symptoms groups. However, as the number of medical co-morbidities increased, the mean GDS-15 score also increased indicating the presence of more severe depressive symptoms.
4. This study highlighted the importance of watching out for depression among the elderly patients reporting to a General Medicine OPD. The study showed that the General Medical OPDs are an important locus point for the detection of geriatric depression. Hence, there is a need to train physicians in detecting the depressive symptoms and establishing consultation liaison.

Limitations

1. The sample size of 100 is small for a cross-sectional study. A larger sample will give results that are more reliable.
2. In the study, we have only looked at the number of co-morbidities present/absent and not at the particulars of them and control over the co-morbidity, which could be a more significant factor.

3. The instruments used such as MMSE, GDS-15 were in English and not standardized for local regional languages such as Kannada and Telugu.

Future Directions

Further research needs to be carried out in larger samples in general medical out-patient departments to establish them as an important locus for detecting geriatric depression. Based on this, further research training of physicians can be carried out to detect depression symptoms. Further studies should be carried out looking at the type of co-morbidities and control over the co-morbidity as it could be a more significant association factor.

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