

ORIGINAL RESEARCH

A community based cross sectional study of depression among elderly population in an urban area of Gujarat

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ABSTRACT

Background: Today depression is one of the commonest causes of disability in the elderly. The various consequences due to depression are reduced life satisfaction and quality of life, social deprivation, loneliness, etc. So it is necessary to know about the magnitude of depression among geriatrics. **Materials and Methods:** A cross-sectional study was conducted in Ahmedabad city. Total of 268 elderly participants of more than 60 years were studied. Data was collected on the standardised, pre tested, semi-structured questionnaires by interview. Long form of Geriatric Depression Scale (GDS- 30) was used to identify the depression among elderly. Data were analyzed applying descriptive statistics and chi-square test. **Results:** Total of 268 elderly participants was studied. Out of which 30.22% were male and 69.78% were female. As per the Geriatric Depression Scale (GDS- 30), 19.8% of total participants had severe depression and 42.53% had mild depression. Prevalence of severe and mild depression was observed to be more among low socio-economic class (class V), (30.2% and 38.1%) elderly with comorbidities (21.6% and 46.3%), widow (20.7% and 48.8%), divorcee (100% and 0%) and elderly doing substance abuse (23.4% and 47.3%) respectively. **Conclusion:** Depression is common among female elderly persons, lonely individuals, economically weak and substance abusers. Healthcare workers need to be trained to identify depression and take appropriate action. The issue of geriatric depression should be addressed by a national program.

Key-words: Depression, Elderly, Geriatric Depression Scale (Gds-30), Urban

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INTRODUCTION

Elderly are those people who have crossed average life span of human beings.[1] There is no exact definition of old age as the age limit for old age is not the same in different types of societies.[2] Government of India launched 'National Policy on Older Persons' in January, 1999. According to that person who is of age 60 years or above is called as 'senior citizen' or 'elderly'. [3] According to Population Census 2011, there are nearly 104 million elderly persons (53 million females and 51 million males) in India. [4] India's elderly population is estimated to increase from 10 crores (2011) to 20 crores (2030). Proportion of elderly persons is expected to increase from 8.3 percent (2011) to 12.4 percent (2026).[5]

The social and cultural shift leads shift of society from joint family to nuclear family which leads to

ignorance towards elderly.[6] Depression was the most common disability among the elderly in India [6] Depression among elderly causes reduced life satisfaction and quality, social deprivation, loneliness, increased use of health and home care services, cognitive decline, impairments in activities of daily living, suicide and other mortality.[7] So this study would throw some light to know about the magnitude of depression among geriatrics. This study will help to find out extent of depression among the elderly population and identify the factors associated with depression.

AIM & OBJECTIVE(S)

1. To study the prevalence of depression among the elderly population
2. To identify the risk factors associated with Geriatric depression.

SUBJECTS AND METHODS

The present community based cross sectional study was conducted among geriatric population of Ahmedabad city. The data was conducted from September 2018 to November 2018.

Inclusion criteria: All elderly (more than 60 years of age) were included in the study.

Exclusion criteria: Those who are not willing to participate in the study, terminally ill and those who were diagnosed of psychiatric and neurological disorder excluded from study.

The sample size was calculated through open Epi software using single population proportion formula.

$$n = (Z_{\alpha/2})^2 * p(1 - p) / d^2$$

Based upon following assumption: 95% confidence interval, 5% margin of error, 80% as a power, 30% as anticipated prevalence of depression among elderly. [6,8–10] The calculated sample size is

$$n = \frac{(1.96)^2 \times 30 \times 70}{6^2} = 224$$

After adjoin the 10% as non response rate, the final calculated sample size was 247. Data was collected from the 268 participants from Ahmedabad city.

The sample was selected by multistage probability sampling method. In the first stage we select a one area from each zone of Ahmedabad city (North Zone, East Zone, West Zone, South Zone, Central Zone and New West Zone) randomly. So, a total of six areas

were selected. In the second stage houses was selected by systematic sampling method. If any eligible participant not found from the selected house than next house searched form study participant. Total of 268 elderly participants (>60 years) were studied. Informed consent was taken before interview.

Data was collected on the standardised, pre tested, semi-structured questionnaires by interview. Data collection tool include information regarding socio demographic characteristics, comorbid condition and substance abuse and Geriatric Depression Scale (GDS- 30). Geriatric depression scale (GDS-30) is standardised and validated tool to screen depression among elderly population. Data collection tool was originally prepared in English. It was translated to Gujarati language and back translated to English to check consistency. Final version of data collection tool was pre tested among 15 participants to see the validity of tool and necessary correction were made. The total score was calculated for each subject. Score between 0-9 were categorized as a no depression, 10-19 as a mild depression and 20-29 as a severe depression.

STATISTICAL ANALYSIS

We entered and compiled data into Microsoft office Excel 2016 and exported the data to Epi Info 7 software to analyze. Descriptive and inferential statistics were applied to analyze, and results were presented in tabular and graphical forms.

RESULTS

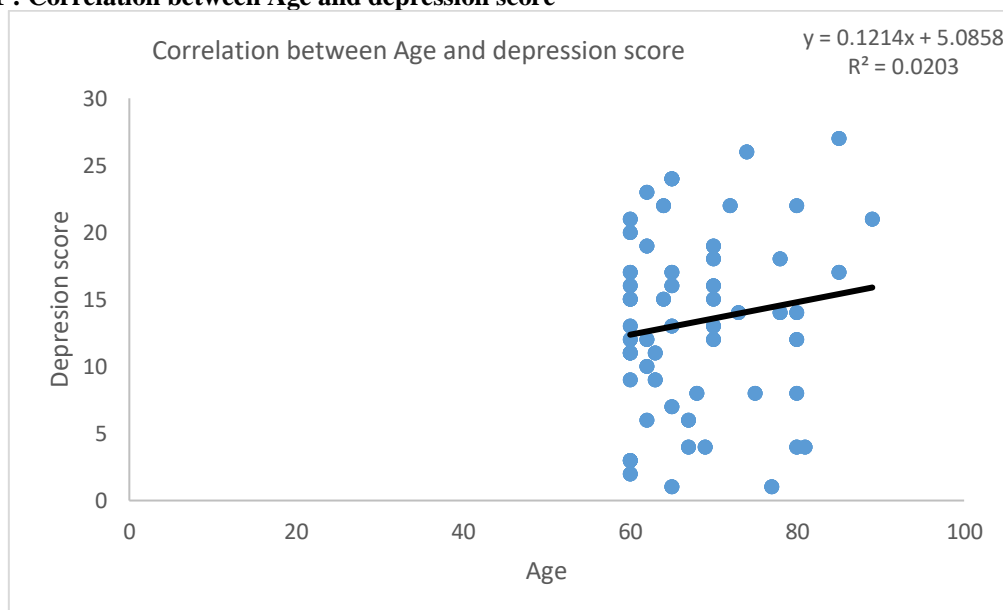
Out of total 268 subjects, 53(19.8%) had severe depression and 114(42.5%) had mild depression.

Table 1 : Gender wise prevalence of Depression

Gender	Severe Depression (n=53)	Mild Depression (n=114)	No Depression (n=101)	Total (n=268)
Male	13 (16.0%)	23 (28.4%)	45 (55.6%)	81
Female	40 (21.3%)	91 (48.7%)	56 (30.0%)	187
$\chi^2=16.109, df=2, p < 0.001$				

In table no 1 gender wise distribution of depression is given. Out of total 268 subjects, 81(30.2%) were males and 187(69.8%) were females. Prevalence of Severe (21.3% vs. 16%) and mild depression (48.7% vs. 28.4%) was found to be higher among females compared to males which was statistically significant ($p < 0.05$).

Figure 1 : Correlation between Age and depression score



In Figure no 1 correlation between Age and depression score is plotted on the scatter diagram. There is a positive correlation between Age and depression scores which statistically significant. The R^2 value is 0.0203. ($r=0.1425$ and p value= 0.019)

Table 2 : The association between socioeconomic class and depression.

SEC CLASS	Severe Depression (n=53)	Mild Depression (n=114)	No Depression (n=101)	Total (n=268)	P value
Class 1	2 (16.7%)	4 (33.3%)	6 (50%)	12	yates' $\chi^2 = 0.817$, $df=2$, $p>0.05$
Class 2	2 (12.5%)	6 (37.5%)	8 (50%)	16	$\chi^2 = 1.242$, $df=2$, $p>0.05$
Class 3	10 (14.1%)	27 (38.0%)	34 (47.9%)	71	$\chi^2 = 4.711$, $df=2$, $p>0.05$
Class 4	20 (18.9%)	53 (50%)	33 (31.1%)	106	$\chi^2 = 4.368$, $df=2$, $p>0.05$
Class 5	19 (30.2%)	24 (38.1%)	20 (31.7%)	63	$\chi^2 = 5.643$, $df=2$, $p>0.05$

In table no 2 relationship between socioeconomic class and depression is given. Mild depression was found to be maximum among Class 4 (50.0%) followed by Class 5 (38.1%) and minimum among Class 1 (33.3%). severe depression was found to be maximum among class 5 (30.2%) subjects and minimum among Class 2 (12.5%) subjects. Depression was found to be higher among the lower socioeconomic class.

Table 3 :- The association between marital status, living condition, comorbidity and depression

Marital Status	Severe Depression (n=53)	Mild Depression (n=114)	No Depression (n=101)	Total (n=268)	P value
Married	23 (16.2%)	55 (38.7%)	64 (45.1%)	142	$\chi^2 = 7.35$, $df=2$, $P<0.05$
Unmarried	0	0	0	0	
Divorced	5 (100%)	0	0	5	
Widow	25 (20.7%)	59 (48.8%)	37 (30.5%)	121	$\chi^2 = 7.35$, $df=2$, $P<0.05$
Living With					
Family	40 (17.2%)	98 (42.1%)	95 (40.7%)	233	$\chi^2 = 10.744$, $df=2$, $P<0.05$
Alone	13 (37.1%)	16 (45.7%)	6 (17.1%)	35	

Comorbidity					
Present	47 (21.6%)	101 (46.3%)	70 (32.1%)	218	$\chi^2 = 15.473$ df=2, P<0.05
Not Present	6 (12%)	13 (26%)	31 (62%)	50	
Substance abuse					
Yes	39 (23.4%)	79 (47.3%)	49 (29.3)	167	$\chi^2 = 13.424$ df=2, P<0.05
No	14 (13.9%)	35 (34.7%)	52 (51.5%)	101	

In the table no 3 marital status, living condition, comorbidity and substance have been correlated with depression. Depression was found to be higher among divorced subject (100%) followed by the widow (69.5%) and minimum among married (54.9%). Severe depression was found to be higher among those who are living alone (37.1%) compared to those who are living with family (17.2%). Total 218 patients had some of the comorbidity, among them 21.6% had severe depression and 46.3% had mild depression. Severe depression was found to be higher (23.4%) among patients having substance abuse compared to subjects who do not have any addiction (13.9%) (p<0.05).

DISCUSSION

This study was conducted in Ahmedabad city to find out the prevalence of geriatric depression in Ahmedabad city. In the present study prevalence of severe depression was 19.8% whereas 42.5% had mild depression. In the study by Shankar Radhakrishnan et al., in 2013,[6], 37.8% had mild depression and 21% were severely depressed. Similarly, In the study done by Sreejith Nair et al., in 2013,[10], depression was found in 32.4% of individuals. In the study by Pooja Chauhan et al., in 2016,[11] depression was found in 30.50% among age group of 70-79 years and 25% in the age group above 80 years. Whereas in the study by Mamta S Rathod et al., in 2019,[9] total 400 participants interviewed among them 67 (16.75%) suffered from depression.

In the present study prevalence of severe and mild depression was 16% and 28.4% respectively among males. Females had a prevalence of severe and mild depression of 21.3% and 48.7%, which was significantly higher than males. In the study done by Sreejith Nair et al., in 2013[10] prevalence of depression among males and females were 41.2% and 51.7% respectively which is similar to our study. Whereas in the study done by Pooja Chauhan et al., in 2016[11] prevalence of depression in males and females were 9.18% and 9.38% respectively. In the study by P K Goel et al., in 2014,[8] the prevalence of mild depression among male and females were 6.3% and 6.1% respectively and for severe depression the prevalence were 3.4% and 6.1% respectively. Overall depression was found to be higher among females.

In our study with an increase in age, there is an increase in depression score (r=0.1425 and p

value=0.019). In the study by Shankar Radhakrishnan et al., in 2013,[6], an increase in the age there is an increase in depression after 70 years. In the study by Pooja Chauhan et al., in 2016,[11] among 60-69 years age group 1.45% had depression whereas it increases to 30.5% in the age group of 70-79 years. So overall with an increase in the age there is an increase in the depression.

In present study prevalence of depression (severe and mild depression) was more among Class 4 (68.9%) and Class 5(68.3%) compared to Class 1(50%) And Class 2(50%) socioeconomic class subjects. Similarly, in the study by P K Goel et al., in 2014,[8] depression was found to be more among Class 4 (12.5%) and Class 5 (17.5%) compared to class 1 (0%) and Class 2 (5.7%). Also, in the study by Sreejith S. Nair et al., in 2013,[10] depression was found to be more among Class 4 (55.3%) and Class 5 (65.2%) compared to class 1 (28.6%) and Class 2 (27.9%). So, Depression is found to be higher among the lower socio-economic class.

In the present study, Depression was found to be higher among divorced subject (100%) followed by the widow (69.5%) and minimum among married subjects (54.9%). Also, depression was found to be higher among those who are living alone (37.1%) compared to those who are living with family (17.2%). In the study by P K Goel et al., in 2014,[8] depression was found to be higher among widowed or alone (14.2%) compared to married (8.8%). In the study by Sreejith S. Nair et al., in 2013[10] depression was found to be more among widowed (68%) compared to living with a spouse (33%). So, depression was found to be more among subjects living alone or widowed.

In this study, severe and mild depression was found to be higher (21.6% and 46.3% respectively) among subject having a chronic disease like diabetes, hypertension, etc compared to those who had not any comorbidity (12% and 26% respectively). In the study by Pooja Chauhan et al., in 2016,[11] subjects were categorised in three categories ≤ 2 comorbidities, 3-5 comorbidities and ≥ 6 comorbidities. Among these groups prevalence of depression was 2.7%, 7.52% and 36.7% respectively. In the study by Shankar Radhakrishnan et al., in 2013,[6] the prevalence of depression was higher among subjects who had a history of chronic illness (odd ratio=2.8, 95%CI=1.15-6.78).

In the present study, depression was found to be higher among subjects having substance abuse (70.7%) compared to those who do not have any type of addiction (49.5%). Similarly, in the study by Sreejith S. Nair et al., in 2013, depression was found to be higher among subject having substance abuse (58%) compared to those who do not have any substance abuse (32.4%). In the study by Shankar Radhakrishnan et al., in 2013, the prevalence of depression was higher among subject having history of smoking (odd ratio=5.93) and alcohol (odd ratio=1.27). Thus substance abuse has a role in depression among old age people.

CONCLUSION

At the end of the study, we came to the conclusion that there is a high prevalence of depression among elderly people which is mostly misdiagnosed. Substance abuse, comorbidity, loneliness and marital status of people are strongly associated with geriatric depression. Geriatric depression is also associated with age, gender, and socioeconomic status. Addressing these factors properly will help alleviate the problem of geriatric depression. Primary level healthcare worker should be trained to diagnose depression in early phase. Nationwide strategic programme should be implemented to combat the problem of depression among elderly. This study will provide baseline data for further research.

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