A cross sectional study on prevalence of depression and its socio-demographic correlates among elderly in rural India

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Abstract

Introduction: India is presently undergoing demographic transition leading significant increase in elderly population. The advent of better health services and preventive care has raised life expectancy. Presently the population of elderly in India is 9.4% in 2017 which will rise to 19.1% in 2050. Elderly form a vulnerable group as they suffer from physical, psychological, economic, social and nutritional problems. These problems there by con-tribute to various disabilities. Prevalence of depression among elderly ranges from as low as 12.7% to as high as 60.0% from literature. The depression among the elderly often goes undetected and thus untreated which results in loneliness, social isolation, cognitive impairment, and decline in their ability to carry out the functional activities and thus compromises their quality of life. Determining the burden of depression among the elderly and to study various socio-demographic factors will facilitate formulating policies to plan better health care delivery services for them. Hence present study was planned with the objective to study the magnitude of depression and its socio demographic correlates among the elderly.
Material and Methods: Present study was a cross sectional study conducted in elderly (≥60 Years) residing in the field practice area of Rural Health Training Centre of one of the Government Medical College. Sample size calculated for the study was 290 and simple random sampling method was used for the data collection. Measurement was done using WHO Geriatric Depression Scale (GDS) long form of 30 questions. Ethical approval was obtained from institutional ethical committee and consent was taken from participants. Data entry and analysis was done by using software Epi Info version 7.2
Results: The Magnitude of Depression among elderly was found to be 57.66% (Mild Depression 23.91%, Moderate Depression 19.06% and Severe Depression 14.69%). The various factors associated with depression were, female sex, low Socio-economic status, and single/widowed/divorced, less physical activity, inadequate sleep and living alone.
Conclusions: The high prevalence of depression observed among the elderly population suggests there is need for improvement in policies and guidelines for early screening, treatment and counselling of elderly for timely detection and treatment of depression at community level. Formation of social groups at community level and more emphasis on improvement of quality of life of the elderly.

Keywords: Depression, Elderly, Factors affecting depression, Geriatric depression scale -30.

Introduction

Because of undergoing demographic transition in India it leads to significant increase in elderly population.[1] The improvement and provision of good health services and preventive care has further raised the life expectancy. In 1980 worldwide population of elderly 60 years or above was 382 million which became more than double and presently in 2017 global population of 60 years or above is 962 millions and the number of older persons is expected to get double again and is projected to reach nearly 2.1 billion by 2050.[2] The older population of the developing regions is growing much faster than in the developed regions and projections 79 per cent of the world's population aged 60 or over will be living in the developing regions by 2015.[2] In India the population of elderly is 9.4% and it is expected to rise to 19.1% till 2015.[2] Elderly faces many problems which include physical problems, psychological problems, Nutritional Problems like Anaemia and malnutrition, Socio-economic problems.[3,4] These health problems lead to various disabilities and limitations in the future.[5] Studies found that about one third of elderly are suffering from psychiatric illnesses and depression alone account for more than 50% them.[6] From the previous literature the prevalence of depression among elderly ranges between 12% to 60% and it varies in rural and urban areas.[7-11] Most of the time depression among elderly remains undetected and untreated leading to loneliness and social isolation which ultimately results in poor quality of life.[12,13] Determining the burden of depression among the elderly and to study various socio-demographic factors will facilitate formulating policies to plan better health care delivery services for them. Hence present study was planned to study the prevalence of depression among elderly and its socio-demographic correlates in rural Indian Population.

Objective
1. To study the prevalence of depression among elderly in rural areas
2. To study the correlates of Depression among elderly in rural areas

Material and Methods
Study settings: present study was a cross sectional study conducted under Department of Community Medicine of Government Medical College, Akola in rural filed practice area or Rural Health Training Centre, Barshi Takali between July to October 2018. Total population covered by Centre is of 10,750.
Study Population: Elderly ≥60 years (Both Males and Females) residing in the field practice area were included in the study.
Sample Size and Sampling Method: From pervious literature (a Study by Abhishek B et al[10]), by considering prevalence of depression as 25% among elderly population, 95% CI and absolute precision of 5, sample size for the study was calculated by using formula $4pq/l^2$ and it came out to be 287 hence we have included 290 participants in our study. RHTC (Rural Health Training Centre) has list of

all the geriatric population residing in the field practice area. We use simple random sampling method for the selection of geriatric people. Out of the total 780 geriatric people residing in filed practice area, 300 were randomly selected for the study purpose using random number table. Informed consent was taken from the participants. 10 participants did not volunteer for participation in the study, so finally in analysis 290 participants were included.

Measurements: WHO's long form of 30 questions of Geriatric Depression Scale (GDS) was used for screening depression among elderly population. It has three grades Normal- (0-9 Score), Mild Depression (10-19 Score) Severe Depression (20-30 Score).

Data Collection Tool: Data collection tool was a predesign and semi structured Questionnaire which was prepared by using, Elderly's Status among different states In India which was published in 2011. To achieve the objectives slight modifications in the questionnaire were done.

Data Collection: List of elderly (≥ 60 years of age) residing in the field practice area was obtained from RHTC. We use simple random sampling method for selection of participants. Random numbers were generated by using random number table and participants were interviewed by using study tool after obtaining informed consent.

Ethical Approval was taken from the institutional ethical committee and confidentiality was maintained thought the process. Patients detected for mild depression were counseled and that of severe depression were referred to psychiatrist for further treatment.

Analysis

Data Entry and analysis was done using statistical software Epi Info 7 and appropriate statistical test was applied to study the association between and dependent and independent variables.

Results

As shown in Table 1, Out of the 290 participants (144 Males and 146 Females) 68.27% were between the age group of 60-69 years. 61.38% of the elderly were married and 38.62% were Widowed/separated/Divorced or Living Single. We found that 66.21% of the elderly were illiterate and only 31.03% were working. Majority of the elderly were belonging to Hindu religion (64.48%) followed by Muslim Religion (32.76%). We used modified BG Prasad classification to assess the socio-economic status. Majority (46.55%) of the geriatric participants were falling in Class V. In present study prevalence of depression among elderly was found to be 57.66%. Mild Depression was found in 23.91% participants, moderate depression in 19.06% severe depression was found in 14.69% participants as depicted in (Table 2). In present study we found that depression was more common in 60 to 69 yrs of age group and there was statistically significant difference between depression and age groups. Females (63.69%) significantly more depressed compared with males (36.31%) as p value was <0.05 (Table 3). Depression was more among elderly who were either widowed or separated or living single (54.17%) than elderly who were married (45.83%) and living with their spouses and it was statistically significant (p<0.05). Although depression was more among illiterate (> 60.0%) but there was no statistically significant difference between education and depression. Depression was significantly lower among the elderly who were doing regular exercises (41.07%) as shown in (Table 4). Considering the living conditions, Depression was more among elderly who were either alone (82.00%) or staying with relatives (81.82%) as compared with elderly who were staying with spouse (46.15%) or children (63.24%) as Shown in (Table 5).

Table1: Distribution of participants according to basic demographic factors

Socio Demographic Factors	Males (n=144)	Females (n=146)	Total (N=290)
Age Group			
60-69	94 (65.28)	104 (71.23)	198 (68.27)
70-79	41 (28.47)	31 (21.23)	72(24.83)
≥80	9 (6.25)	11 (7.54)	20 (6.90)
Total	144 (49.66)	146 (50.34)	290 (100.00)
Marital Status			
Single	5 (3.47)	2 (1.37)	7(2.41)
Married	108 (75.00)	70 (47.94)	178 (61.38)
Widowed	29 (20.13)	73 (50.00)	102 (35.18)
Separated	2 (1.39)	1 (0.67)	3 (1.03)
Total	144 (49.66)	146 (50.34)	290 (100.00)
Religion			
Hindu	96 (66.67)	91 (62.33)	187 (64.48)
Muslim	44 (30.55)	51 (34.93)	95 (32.76)
Christians	4 (2.78)	4 (2.74)	8 (2.76)
Total	144 (49.66)	146 (50.34)	290 (100.00)

Educational Qualification			
Illiterate	80 (55.56)	112 (76.71)	192 (66.21)
Literate	64 (44.44)	34 (23.29)	98 (33.79)
Total			
	144 (49.66)	146 (50.34)	290 (100.00)
Current occupational status			
Working	46 (31.94)	44 (30.14)	90 (31.03)
Not working	98 (68.06)	102 (69.86)	200 (68.97)
Total	144 (49.66)	146 (50.34)	290 (100.00)

Table 2: Grading of depression in elderly according to geriatric depression scale (GSD-15)

Grading of Depression	Frequency
Absent	271 (42.34)
Mild	153 (23.91)
Moderate	122 (19.06)
Severe	94 (14.69)
Total	640 (100)

Table 3: Grading of Depression and Demographic factors

Demographic Factors	Grades of Depression				Total	P Value
Age (In Years)	**Absent**	**Mild**	**Moderate**	**Severe**		
60-69	94 (77.05)	54 (77.14)	31 (55.36)	19 (45.24)	198 (68.27)	X2=14.27, df=2, P<0.05
70-79	27 (22.13)	11 (15.72)	17 (30.36)	16 (38.09)	72 (24.83)	
≥80-89	1 (0.82)	5 (7.14)	8 (14.28)	7 (16.67)	20 (6.90)	
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	
Depression and Gender						
Males	83 (68.03)	25(35.71)	24 (42.86)	12(28.57)	144 (49.66)	X2= 28.45 Df=1, P<0.05
Females	39 (31.97)	45(64.29)	32 (57.14)	30(71.43)	146 (50.34)	
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	
Depression and Marital Status						
Married	101(82.79)	45 (64.28)	16 (28.57)	16 (38.09)	178 (61.38)	X2=40.71, df=1, P<0.05
Widowed/Separated /single	21(17.21)	25 (35.72)	40 (71.43)	26 (61.91)	112 (38.62)	
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	
Depression and Educational Qualification						
Illiterate	74(60.66)	48 (68.57)	40 (71.43)	30 (71.43)	192 (66.21)	X2=2.9006 Df=1 P>0.05
Literate	48 (39.34)	22 (31.43)	16 (28.57)	12 (28.57)	98 (33.79)	
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	

Table 4: Grading of depression, physical activity and adequacy of sleep

Depression and Physical activity	Grades of Depression					
	Absent	**Mild**	**Moderate**	**Severe**	**Total**	
Yes	91 (74.59)	46 (65.71)	27 (48.21)	26 (61.90)	190 (65.52)	X2=7.6734 Df=1 P<0.05
No	31 (25.41)	24 (34.29)	29 (51.79)	16(38.10)	100 (34.48)	
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	

Depression and adequacy of sleep						
Adequate	90 (73.77)	39 (55.71)	10 (17.86)	12 (28.57)	151 (50.07)	X2=39.7405
Inadequate	32 (26.2)	31 (44.29)	46 (82.14)	30 (71.43)	139 (47.93)	Df=1 P<0.05
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	

Table 5: Distribution of participants according to Grades of Depression and living conditions

Living Conditions	Grades of Depression					
	Absent	**Mild**	**Moderate**	**Severe**	**Total**	
Alone	9 (7.38)	10 (14.29)	13 (23.21)	18 (42.86)	50 (17.24)	X2=23.7601
Spouse	35 (28.69)	12 (17.14)	8 (14.29)	10 (23.81)	65 (22.41)	Df=4
Children	25 (20.49)	20 (28.57)	17 (30.36)	6 (14.29)	68 (23.44)	P<0.05
Spouse and Children	51 (41.80)	25 (35.71)	14 (25.00)	6 (14.29)	96 (33.10)	
Relatives	2 (1.64)	3 (4.29)	4 (7.14)	2 (4.75)	11 (3.79)	
Total	122 (42.07)	70 (24.14)	56 (19.31)	42 (14.48)	290 (100.00)	

Discussion

The Prevalence of depression among elderly was (57.66%) among of which 23.91% were suffering from mild depression, 19.06% from moderate depression and 14.69% were suffering from severe depression. Similar finding were reported by Nirgude et al[14] (59.6%), Maulik S et al[15] (53.0%), Naik P et al[13] (59.6%), Res. Bras[16] (40.0%). In Present study depression was more among 60- 69 age group (83.5%) similar findings was reported in study by Barua A et[17] al and Cole MG[18] et al in which they reported the depression was more common in 60-70 years of age group. In present study Depression was more common in females compared with males and the difference was statistically significant (p<0.05) Similar findings were reported by Barua A et al[17] (Depression: Males 35.20% and Females 64.80%) and Radhakrishnan S et al[19] (Depression: Males 42.00% and females 58.00%). Majority (46.55%) of the elderly who had depression were belonging to Class-V Socio-economic status according to Modified BG Prasad Classification; Similar findings were observed in study by Maulik et al.[15] Studies have found that education was one of the factor associated with depression.[17] In a systematic review authors found the differences between association of depression and education.[18,20-23] In our study although depression was more among illiterate (> 60.0%) but it was not significantly associated (p>0.05) as shown in (Table 3) the difference in study could be due differences in study settings and socio cultural factors which differ in different settings. In Present study depression was found to be more among elderly who were sinlges/ widowed/ divorced (54.17%) compared with elderly who were married (45.83%) and it was statistically significant (P=<0.05). Similar findings were observed in other studies.[15,19,20,24-28] In our study we found elderly involved in physical activity were less depressed (52.11%) compared with elderly not doing regular physical activity (69.00%) and the difference was found to be statistically significant. Similar results were observed in study by Goswami et al[29] and Sharma R et al.[11] Inadequacy of sleep also contributes to depression; in our study we found that elderly having history of inadequate sleep were found to be significantly p(<0.05) more depressed (61.69%) compared with elderly who had history of adequate sleep (38.31%). our findings were consistent with the study by Kanimozhi S et al.[30] In present study Depression was found to be more among elderly who were living alone (82.00%) or with relatives (81.82%) compared with the elderly who were living with spouse or children (below 47%) as shown in (Table 6) and it was statistically significant (p<0.05). similar result were observed in study by Kanimozhi S et al.[30]

Conclusions

Prevalence of Depression among elderly was found to be (57.66%) in rural area. The higher prevalence of depression observed among the elderly population is a serious concern. Screening of the elderly on mass scale is definitely going to help to detect the cases at earlier stages so that effective interventions can be planned to limit further disability and limitations. Presently no clear guidelines are available for screening hence many patients remains undetected and untreated. There is need for improvement in policies and guidelines for screening, treatment and counselling for timely detection and treatment of depression at community level. The various factors associated with depression in our study were aged, female sex, low Socio-economic status, single/widowed/divorced, less physical activity, inadequate sleep, living alone or with relatives. Depression among elderly who are either singles or Widowed or divorced as well as inadequate physical activity and inadequate sleep suggest that there is need of formation of more and more social groups at community level to improve the quality of life through meditation-relaxation techniques, more interaction, exchange of thought and problem solving among the peer groups. Various government schemes are available but because of illiteracy and strict norms; many of the elderly did not get the benefits of the schemes. Social security Schemes has to be revised and initiatives have to be taken for community participation. The NGOs and other voluntary workers have the role for facilitation in the process. High prevalence among the

elderly who are alone suggests the need of family support. The health care providers and patient's family members need to be trained and educated regarding elderly depression. More emphasis should be given on improvement of quality of life of the elderly through holistic approach in which efforts are to be put not only by elderly but also their families, health related sectors and the government.

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