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Original Research Article

Prevalence of depression and factors associated with it in geriatric population in rural area of Vadodara, Gujarat

Pranay Jadav[1], Maharshi V. Patel[2]*

Department of Community Medicine, [1]GMERS Medical College, Gandhinagar, [2]S.B.K.S.M.I & R.C., Sumandeep Vidyapeeth, Piparia, Vadodara, Gujarat, India

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***Correspondence:**
Dr. Maharshi V. Patel,
E-mail: maharshivp84@yahoo.co.in

ABSTRACT

Background: Geriatric depression is becoming a global public health problem causing considerable morbidity and disability. This problem is also increasing in India but still not sufficient work has been done on depression in many parts of India. This study aimed to find out prevalence of and factors associated with depression in elderly population in Vadodara, Gujarat.
Methods: A community based cross sectional study was performed among 176 participants of more than 60 years of age. Simple random sampling was done to select talukas, villages and participants. Depression was screened by Geriatric Depression Scale-15 (GDS 15). Person with score more than 5 was considered as depressed. Descriptive and bivariate analysis was conducted with the help of SPSS version 11.5 for windows.
Results: The overall prevalence of depression in old age was 34.1% but in female it was higher (64.7%) than male (14.81%). Bivariate analysis revealed that gender (OR=10.64, 95% CI: 5.093 – 21.82), p<0.001), lower education (OR=4.167, 95% CI: 1.991 – 8.719, p<0.001) and cognitive impairment (MMSE score) (OR=121.333, 95% CI: 37.384 – 393.79, p<0.001) were independently associated with depression.
Conclusions: Gender, lower education and cognitive impairment are some of the factors associated with depression in older population.

Keywords: Depression, Elderly people, Cognition, Screening

INTRODUCTION

The elderly people are matured and experienced persons of any community. Their experience, wisdom and foresight can be useful for development and progress; they are valuable asset for any nation.[1] Elderly population (≥60 years) in the world will reach 1.2 billion by the year 2025, the majority of whom will be living in developing countries.[2] Geriatric psychiatric was emerged in early part of nineteenth century in with the differentiation of senile dementia, atherosclerotic dementia and presenile psychosis. The population of old age is rising tremendously due to improved health care facilities. High geriatric population leads to high geriatric psychiatric problems.[3] According to NFHS III Total population in India is 1028.61 million and old age population (≥60 years) is 7.46% that is 76.73 million.[3] From the morbidity point of view, almost 50 per cent of the Indian elderly have chronic diseases and 5% suffer from the immobility.[3] A major component of the burden of illness for the elderly derives from the prevalent chronic diseases.[3] India, in the associated epidemiological transition, is facing a double burden of communicable and non-communicable diseases.[3] In 1951 in India 20.2 million population was of 60 years and above, which was

5.60% of the total population which was increased to 7.63% in 2001, that was 70 million and it is expected to be 14% that is 177 million in 2015.[4]

Depression is the commonest psychiatric problem in old age.[5] It is one of the major causes of morbidity which affects quality of life and increases dependability.[5] It is characterised by various features like mood deviation, impaired memory, behavioural changes etc.[5] There is misconception regarding depression that it is due to aging and so cannot be treated. But, if it is left untreated it can leads to clinical and social implications in old age.[5]

METHODS

Study setting

Study was done in the villages of Vadodara district. Vadodara, (cultural capital of Gujarat) situated on either side on the banks of river Vishwamitri, is blessed with a rich legacy and varied background. This city of Banyan trees is famous for its all-round progress on diverse fronts like educational, commercial or industrial. Apart from this, its strategic position, in geographical terms, on the whole confers on it the advantage of being the nerve-center of business activity.

Study type: Cross sectional (Observational)

Study participants*:* Geriatric population-person having age ≥60 years.

Exclusion criteria

Persons who were unable to give verbal interview, who were

- Comatose,
- Persons who can't hear and/or speak,
- Non-cooperative,
- Persons who were not comfortable with Gujarati and English language.

Sample size

A sample size of 200 was obtained using the hypothesis testing method and based on following assumptions: 95% confidence intervals, prevalence of depression in geriatric population in Gujarat, India 39.04 and 7% margin of error.[6] The calculated minimum sample had been inflated by 10% to account for anticipated subject non response. So, 200 subjects were studied irrespective of their sex and religion.

Sampling technique

Five talukas were selected by simple random sampling from the 12 of the Vadodara district. From each of those selected 5 talukas, 4 villages were selected by simple random technique. From the selected 4 villages, from each of the village, 10 study participants were selected by house to house survey. Survey was started from the right hand side of the Village Panchayat Office.

Measurement tools

There was face to face interview in form of questionnaires. Questionnaires comprised of two parts: First part will be of socio-demographic questionnaire and second part will be of geriatric depression scale (GDS-15) and mini mental state examination (MMSE).

Socio-demographic details

It included information regarding name, age, gender, marital status, education, occupation, monthly total family income, family type, self-reported comorbidities etc.

Geriatric depression scale

For the assessment of the depression, geriatric depression scale-15 (GDS-15), prepared by Sheikh et al was used.[7] It was easy to administer and needed no prior psychiatric knowledge. It was used by Begda et al in Gujarati People of Vadodara city of Gujarat.[8] Total score is 15. Cut-off score for GDS is 5. Score >5 will be suggestive of depression.

MMSE scale

The Folstein mini mental state exam (MMSE) is a widely used and well-validated tool for the evaluation of cognitive impairment. It briefly measures orientation to time and place, registration, immediate recall, short-term verbal memory, calculation, language and construct ability.[9] Total score for MMSE is 30. Scores of >27 are generally considered normal, 22-26 as mild cognitive impairment and those less than 22 as possible dementia.

Procedure

House to house survey was done to find the study subjects from the selected villages. After acquiring the study subject the details regarding the study viz. purpose of the study, method of the study was explained in the vernacular language to each subject and head of the family. Written consent was taken from the each subject with assuring that their name was not disclosed other than the persons concern with the study. Questionnaires were filled by personal interview. Questionnaires were in two parts. First part contained socio demographic details Second part of questionnaires of Gujarati translation of geriatric depression score.

Study variables

Covariables

Age, gender, occupation, education, intake of alcohol, smoking, associated illness.

Outcome variable

Depression among geriatric population in form of geriatric depression score. A score >5 was considered as depression.

Statistical methods

Data was cleaned, validated and analyzed on the SPSS version of 17.

Descriptive statistic

For continuous variables range, mean and standard deviation were calculated and for categorical variables proportion and percentage were obtained.

Bi-variate analysis

To know the association between dependent and independent variable chi-square was applied accordingly.

RESULTS

Table 1 explains about the various characteristics of participants in brief.

Table 1: Characteristics of participants (continuous variables) (n=176).

Variables	Mean±SD
Age (in years)	67.16±7.013
Height (in centimeters)	155.13±9.372
Weight (in kilograms)	56.57±12.97
Body mass index	23.39±4.65
Systolic blood pressure (mm Hg)	137.18±14.49
Diastolic blood pressure (mm Hg)	86.34±9.84
Mini mental state examination score	26.55±4.80
Geriatric depression scale- 15	4.39±2.53

Table 2 explains in detail about the various characteristics of the participants.

In Table 3 it showed that depression was mainly present in females, unemployed/retired, illiterate individuals and in those who was suffering from respiratory problems and also in those individuals who was having visual and cognitive impairment.

Table 2: Characteristics of participants (n=176).

Variables	n (%)
Sex	
Male	108 (61.4)
Female	68 (38.6)
Religion	
Hindu	136 (77.3)
Islam	40 (22.7)
Marital status	
Married	128 (72.7)
Widow/widower	4 (2.3)
Separated/divorced	44 (25.0)
Living arrangements	
Alone	16 (9.1)
Only with spouse	36 (20.5)
Only with children	28 (15.9)
Both with spouse and children	96 (54.5)
Education	
Illiterate/just literate	40 (22.7)
Primary	68 (38.6)
Secondary/higher secondary	56 (31.8)
Graduate/post graduates	12 (6.8)
Occupation	
Not working/retired	132 (75)
Working	44 (25)
Smokers	
Never smokers	152 (86.4)
Current smokers	12 (6.8)
Past smokers	12 (6.8)
Alcohol addicts	
Yes	160 (90.9)
No	16 (9.1)
Poly medicine	
Yes	104 (59.1)
No	72 (40.9)

DISCUSSION

Jain et al 2007 found prevalence of depression among old age was 45.9% which was assessed by geriatric depression scale but in our study prevalence of depression in old age was 34.1%.[10] A community based study done in Vellore-south India by Raj Kumar et al had shown prevalence of depression among elderly was 12.7% and concluded that poverty and ill health are risk factors for the depression while good social support is protective while in our study risk factors were unemployment and illiteracy.[11] A previous study done by Begda et al in Vadodara city showed that males had more depression than females while in our study females had more depression than males.[8] The same study at Vadodara found out relationship between cognitive impairment and depression which is similar to our study.

A cross sectional study on old age was done in the Surat city by Jariwala et al in Gujarat showed high prevalence (39.04%) of depression in old age.[6] Depression was measured by Gujarati version of "Back Depression Inventory". It was seen that singles (separated or widow/widower) had more depression (74.35%) which was same as in our study and also literates had high proportion of depression whereas in our study illiterates had high proportion of depression.

Table 3: Bivariate analysis of factors associated with depression in old age (n=176).

Variables		Depression present (n=60)	Depression absent (n=116)	Odds ratio (95% confidence interval)	P value
Sex	Female	44	24	10.54 (5.093-21.82)	<0.001
	Male	16	92		
Marital status	Unmarried/widow/ separated	20	28	1.571 (0.792-3.117)	0.196
	Married	40	88		
Living arrangements	Alone	8	8	2.077 (0.738-5.843)	0.166
	With family	52	108		
Working	Unemployed/retired	56	76	7.368 (2.493-21.79)	<0.001
	Yes	4	40		
Education	Illiterate/ just literate	24	16	4.167 (1.991-8.719)	<0.001
	Literate	36	100		
Hypertension	Yes	20	44	1.222 (0.635-2.352)	0.548
	No	40	72		
Diabetes	Yes	12	32	1.524 (0.718-3.233)	0.272
	No	48	84		
Respiratory problems	Yes	28	16	5.469 (2.630-11.370)	<0.001
	No	32	100		
Cardiac problems	Yes	8	20	0.738 (0.304-1.792)	0.503
	No	52	96		
Musculoskeletal problems	Yes	40	60	1.867 (0.976-3.571)	0.059
	No	20	56		
Hearing impairment	Yes	12	12	0.462 (0.193-1.102)	0.082
	No	48	104		

CONCLUSION

Gender, unemployment, illiteracy and cognitive impairment were some of the factors associated with depression in old age.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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