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

Pranay Jadav¹, Maharshi V. Patel²*

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

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

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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 a 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. 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.3 It is one of the major causes of morbidity which affects quality of life and increases dependability.2 It is characterised by various features like mood deviation, impaired memory, behavioural changes etc.3 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.7 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 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%. 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. 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. 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. 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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REFERENCES

1. Singh C, Mathur JS, Mishra VN, Singh JV, Singh RB, Garg BS, et al. Social Problems Of Aged In A Rural Population. IJCM. 1995;20(1-4):24-7.
2. Arokiasamy JT. Malaysia's Ageing Issues (Editorial). Med J Malaysia. 1997;52:197-201.
3. Tipple P, Sharma SN, Shrivastava AS. Psychiatric morbidity in geriatric people. Indian J Psychiatry. 2006;48:88-94.
4. Swami HM, Bhatia V. Primary Geriatric Health Care In India Needs Initiatives In The New Millenium. IJCM. 2003;34(3&4):147-52.
5. Sherina MS, Rampal L, Mustaquin A. The prevalence of depression among the elderly in Sepang, Selangor. Med J Malaysia. 2004;59(1):45-9.
6. Jariwala V, Bansal RK, Patel S, Tamakuwala B. A study of depression among aged in Surat city. National J Community Med. 2010;1(1):47-9.
7. Sheikh JJ, Yesavage JA. Geriatric Depression Scale (GDS). Recent evidence and development of a shorter version. Clin Gerontol. 1986;5:165-73.
8. Begda A, Kantharia SL. Screening of Cognitive Impairment and Depression in Elderly Patients. Indian J Gerontol. 2006;20(4):347-58.
9. Folstein MF, Folstein SE, Mc Hugh SE. Mini Mental State: a practical method for guide the cognitive state of patient for the clinician. J psychiatr Res. 1975;12:189-98.
10. Jain RK, Aras RY. Depression in geriatric population in urban slums of Mumbai. Indian J Public Health. 2007;51(2):112-3.

11. Rajkumar AP, Thangadurai P, Senthilkumar P, Gayathri K, Prince M, Jacob KS. Nature, prevalence and factors associated with depression among the elderly in a rural south Indian community. International Psychogeriatrics. 2009;21(2):372–8.

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