

Depression among the Geriatric Population is a Matter of Concern: A Community Based Study in a Rural Area of West Bengal

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Abstract

Background

Depression is commonest psychiatric disorder in elderly; it is often misdiagnosed and undertreated. People with depression suffer from impairment of all major areas of functioning ranging from personal care to social capability, which in turn decreases individuals' quality of life and increases dependency on others. Elderly patients with depression are more prone in developing chronic diseases like ischemic heart disease, diabetes mellitus, hypertension. This problem may be more severe in rural population. Objective of this study is to find out the magnitude of depression and its correlates among a rural geriatric population.

Materials and Methods

Population based cross sectional study was done in Singur,

West Bengal with a sample size of 85 with the help of a pretested semi structured schedule and a geriatric depression scale (short form).

Results

Majority 61.2(%) of the study population were in the age group of 60 to 69 years and most belonged to joint Hindu family. Cardiovascular disease (67.05%) especially hypertension followed by musculoskeletal problems (42.35%) were the two major health related conditions suffered by this population and they usually made avail of government health facilities during illness. About 58.8% of the population suffered from depression and this was associated with nuclear family AOR(95%CI)=8.625(1.697-43.831), with poor income AOR(95%CI)=7.628(1.862-31.847), financial dependence AOR(95%CI)=4.948 (1.044-23.554) and living without spouse AOR(95%CI)=7.422 (1.513-36.418) and also presence of disease OR =5.423 (1.348-21.81).

Conclusion

Alarming, the prevalence of depression was observed to be quite high in this rural population and so was prevalence of different morbidities. All these will hasten the isolation of this vulnerable population from general community and increase burden on younger generation.

Keywords: Geriatric, Depression, Prevalence, Determinants.

Introduction

Mental behavioral disease accounts for 12% of Global burden of disease and affect nearly 450 million people worldwide¹. Among mental disorders depression alone is projected to reach 2nd place of DALYs ranking worldwide by 2020 and by 2030 it will take 1st place². All age groups suffer from mental disorders but the most vulnerable age group is the geriatric population. At the same time this population is neglected, their problems are overlooked and no efforts are made to mitigate their suffering. With the advancement of medical science there is decline in mortality and increased life expectancy resulting in progressive increase in proportion of elderly people so that by 2050 every third person in the world will be aged above 60 years³. In India geriatric population is 7.5% compared to 5.3% in 1971⁴.

With increasing age there is progressive decline in normal functioning of body resulting in poor mobility, impaired vision and hearing ability, decline in memory, inability to control certain normal functions. There is increased burden of diseases affecting different systems with advancement of age, apart from that economic loss, dependency on others, loss of self worth perpetuate sufferings of old age. All these factors have detrimental influence on psychological health of the elderly⁵. Elderly patients with depression are more prone in developing chronic diseases like ischemic heart disease, diabetes mellitus, hypertension, cancers⁶. WHO report also reflect patients aged more than 55 years with depression are four times higher death rate compared to their normal counterpart, mostly due to heart diseases and strokes¹.

Studies in primary setting have pointed to higher prevalence of depressive disorder among elderly with chronic co morbidities ranging from 10% to 25%⁷. A Meta analysis of 74 studies related to geriatric depression revealed worldwide prevalence of 10.3% [IQR: 4.7-16] and Indian prevalence of 21.9% [IQR: 11.6-31.7]⁸. Though depression is commonest psychiatric disorder in elderly, it is often misdiagnosed and undertreated⁹. People with depression suffer from impairment of all major areas of functioning ranging from personal care to social capability, which in turn decreases individuals' quality of life and increases dependency on others.

An evaluation of their mental and physical health can help the policy makers and health administrators to plan an appropriate and high quality programme to reduce the suffering of this vulnerable population. With the above backdrop a study was planned to evaluate health status and depression profile of a rural community of West Bengal with the following objectives.

- a) To assess the point prevalence of common morbidities and depression among the elderly population
- b) To determine the correlates of depression with bivariate and multivariate analysis.

Material and Methods

Settings and design:

A cross sectional, community based study was conducted in a village of Singur Block, in Hoogly district of West Bengal, among people aged 60 years or more.

Study period:

2 months from April 2012 to May 2012.

Sample size and sample design:

A cross-sectional study on health status and depression was undertaken among the elderly in a village (Diara) of Singur Block, Hoogly District, and West Bengal. Diara village was randomly selected from 30 villages in Singur block under the purview of Rural Health Unit and Training Centre, the field practice area of All India Institute of Hygiene and Public Health, Kolkata. The study was conducted by house-to-house visit. Based on previous studies prevalence of depression on elderly rural population in West Bengal was 53.7%¹⁰ and with allowable error 20% the sample size was calculated to be 85 (rounded to multiple of 5). First, a house was randomly chosen then every house was visited for elderly people till the predetermined number of 85 persons aged 60 years and above was reached.

Exclusion Criteria:

Those who did not give consent, seriously ill were excluded from study.

Study instrument:

Collection of data was done by a predesigned pretested interview schedule whose face validity, content validity and construct validity were ensured by the researchers and the experts of the institution constituted of faculties from different departments like the department of Community Medicine, Health Education and Public Health Administration. Translation of the English schedule was done in Bengali, retranslation was done in English and the final modified schedule in Bengali was finalized for semantic equivalence. The schedule had three parts.

The first part of the schedule contained questions relating to personal, family and socio-demographic characteristics (age, sex, and level of education, marital status, occupation, and pension, number of family members, per capita income, and type of family).

The second part elicited data on morbidity pattern, past medical history and treatment seeking behavior (respiratory, cardiovascular, musculoskeletal, neurological, endocrine ailments and treatment history for majority of events). Blood Pressure was recorded, eyes were examined and other relevant clinical examination was performed to identify any morbidity overlooked by the respondents.

The third part contained Yesavage's Geriatric Depression Scale (short form) consisting of 15 questions with responses qualified as 'yes or no' all directed towards their feelings in the past week. Total score ranged from 0 to 15. Respondent's answers were scored by summing up the positive and negative responses. Based on GDS guidelines, a predetermined cut off of 5 was used to identify depression. Yesavage's Geriatric Depression Scale is considered to be a screening tool at community level for depression not a diagnostic tool with sensitivity of 92% and specificity of 89%¹¹.

Data collection procedure:

Prior to the start of the study the participants were explained regarding the purpose of the study. Informed consent was obtained from them and confidentiality and anonymity were ensured. For collection of data regarding different morbidities and diseases we relied on personal history and medical treatment card, prescription wherever available. Questions were directed to elicit past and present history of any Cardiovascular, Respiratory, Neurological, Endocrinal, Musculoskeletal diseases. Blood Pressure was measured with aneroid sphygmomanometer (standardized calibrated) maintaining standard operating procedure. Previously undiagnosed hypertension cases were diagnosed by using JNC 7 (2004) criteria. Cataract was examined by clinical examination with the help of a torch. Only measurement of BP and examination of cataract was possible in community setting due to constraint of resources.

Statistical analysis:

Data collected, were tabulated and analyzed using standard statistical methods (frequency distribution table, proportion) and suitable statistical tests with the help of SPSS 19.0 version statistical software. Proportion geriatric population with depression was presented as percentage. Risk factors(age, sex, religion, family type, literacy status, per capita income, economic dependence, presence of spouse and disease) for depression were employed for bivariate analysis by Odds Ratio with 95% confidence interval and were then put in as independent variables for a multiple logistic regression analysis model. Enter method was used for multiple logistic regression analysis by Adjusted Odds Ratio with 95% confidence interval.

Ethical issues:

Ethical clearance was obtained from institutional ethical committee prior to the study. Institutional Ethical committee was constituted of faculties from Community Medicine & Maternal and Child Health Dept., Public Health Specialist, Epidemiologist, Biostatistician, Legal Advisor, Representative of Local NGO.

Result:

About 61.2% of study population belonged to age group of 60-69 years (n=52), followed by 35.3% in age group of 70-79 years only 3.5% were over 80 years. Majority of them were Hindus (76.5%). Females were more in the study population (63.5%), joint families were more common in rural Bengal (70.6%). 63.5% study population were currently married. Only 8.2% of study population were not living with their families. 37.6% (n=32) of study population were illiterate and 44.5% (n=38) had studied till primary school while only 7.1 % had studied up to Higher Secondary or more. Only 35.3% (n=30) had some earning by any source either from working or by receiving pension (n=15). Among those who were working majority of them were cultivators or businessmen. Majority of the study population belonged to class 4 of Prasad's socioeconomic scale. Financial

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dependency was more among women (85.2%) than men (29%) OR=14.056 CI=4.776-41.365) and this dependence was more on their children. (OR=6.189 CI=4.776-16.495).

In Table 1, it is observed that those who were aged more than 80 were suffering from two or more diseases (100%), followed by 63.3% in 70-79 years age group and 55.8 % in age group 60-69 years. The most prevalent health problem was cardiovascular problem 67.05%, mainly hypertension followed by musculoskeletal problem 42.35%. Regarding health care seeking behavior majority 28.2% of study population visited government health facility followed by private practitioner 23.5%.

Table 1 Distribution of diseases among different age groups

Age Group in years	60-69 (n=52)	70-79 (n=30)	80-89 (n=3)	Total (n=85)
System wise disease				
Eye	16 (30.77)	13 (43.3)	2 (66.6)	31 (36.45)
Endocrine	6 (11.54)	7 (23.3)	0	13 (15.29)
Nervous system	5 (9.6)	3 (10)	0	8 (9.4)
Respiratory	14 (26.92)	4 (13.3)	0	18 (21.17)
Cardiovascular	37 (71.15)	17 (56.66)	3 (100)	57 (67.05)
Musculoskeletal	23 (44.23)	10 (33.3)	3 (100)	36 (42.35)
Total diseased (%)	45 (86.5)	25 (83.3)	3 (100)	73 (87.05)

In Table 2, it is observed that depression was present in 58.8% of the study population. Determination of the correlates of depression with bivariate and multivariate (Logistic Regression) showed that depression was more in nuclear families than joint families (AOR=8.625, 95% CI=1.697-43.831). Income was divided in two groups >1000 per capita income and <=1000 per capita income as Rs1000 is the median value of income for the study population. Depression was more in lesser income group (AOR=7.628, 95%CI=1.862-31.847). A very important determinant of depression was economic dependence and it was observed that depression proportion was more among those who were not earning and economically dependent on children

AOR=4.948, 95%CI=1.044-23.54).83.9% of those who were not living with spouse (separated, widowed, widower) were suffering from depression. (AOR=7.422, 95% CI=1.513-36.418).Presence of disease made people more depressed. (OR=5.423, 95%CI=1.348-21.81) but it lost its significance on multivariate analysis. No relation of depression was found with religion, sex, literacy status and age. (Nagelkerke's r^2 of this model was 0.49)

Table 2 Determinants of depression: A Bivariate and Multivariate analysis

Sl no	Correlates		Depression		OR	95% CI	AOR	95%CI
			Freq uency	%				
1	Age (median age 67)	>67	22	57.9	0.933	2.233	1.896	0.541-6.644
		60-67	28	59.6				
2	Religion	Muslim	15	75	2.571	7.908	1.334	0.281-6.332
		Hindu	35	53.8				
3	Sex	Female	35	64.8	1.965	4.828	0.249	0.041-1.503
		Male	15	48.4				
4	Type of Family	Nuclear	18	72	2.250	6.176	8.625	1.697-43.831
		Joint	32	53.3				
5	Literacy Status	Illiterate	23	71.9	2.461	6.301	1.48	0.360-6.077
		Literate	27	50.9				
6	Median PCI is 1000	<=1000	37	78.7	7.115	18.733	7.628	1.862-31.847
		>1000	13	34.2				
7	Economic Independence	No	36	65.5	2.165	5.366	4.948	1.044-23.554
		Yes	14	46.7				
8	Living with spouse	No	26	83.9	6.5	19.475	7.422	1.513-36.418
		Yes	24	44.4				
9	Disease	Present	47	64.4	5.423	21.81	2.240	0.375-13.376
		Absent	3	25				
Overall depression					50 (58.8%)			

Discussion:

Morbidities and diseases:

Most common morbidities in this study were cardiovascular disorders 67.05% as hypertension (55.3%) is a serious problem in rural communities. Similarly in Varanasi (1996)¹² showed 47.7% of the elderly were suffering from

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cardiovascular disorders. Second significant morbidity was musculoskeletal disorders (42.35%), mainly backache (21.3%) while about 57% of the elderly suffered from arthritis. Similarly, Padda et al (1998)¹³ reported high prevalence of arthritis in Amritsar. Eye problem in this study was 36.45% but high observations (70%) were made in Udaipur¹⁴ and Amritsar study (37.4%)¹³. Here 21.17% of study population was suffering from respiratory problem, which is consistent with findings of Varanasi study (20.4%)¹², and Rajasthan showed a prevalence of respiratory disease (36%)¹⁴.

Depression magnitude:

A study by Katon et al revealed prevalence of depression among general population attending primary care nearly 10-20% ,of which 50% remain undiagnosed¹⁵. Prevalence of depression among South Indian population was found around 15.1%¹⁶.Depression proportion in the present study was 58.8% which is similar to a studies in rural Bengal by Maulik et al(53.7%)¹⁰ and Nandi et al (61%)¹⁷,similarly Vikash Kumar¹⁸ and Swarnalatha¹¹ both found prevalence of depression 47% in rural elderly population of Wardha and Chittur respectively. But Barua¹⁹ et al found quite low prevalence in rural Bengal. Rajkumar et al²⁰ found 12.7% prevalence with ICD10 and 5.2% with DSM-IV in rural community of South India. While Sherina et al²¹ found prevalence of depression 7.6% in rural Malaysia with GDS 30 questionnaire. Married people were less depressed in this study. Apparently loneliness plays a very important role in initiation of depression. In a hospital based cross sectional study in psychiatry indoor in Nepal 15.8% of total admitted patients was suffering from depression²².

Socio demographic details and depression:

Among elderly depressed individuals 70% were female, similarly in Nepal²² and in Australia²³ depression was observed more in females compared to males. Majority of depressed were Hindus (70%) and belonged to the age group of 60-67 years (56%), Banerjee et al found proportion of Hindus 84.2% among in patient depressed individuals²². 80.5% of India's population are Hindus²⁴ and this was reason for high proportion of Hindus among depressed individuals.

Determinants of depression:

Depression was more among people who are economically underprivileged (income of PCI of less than Rs1000 or no source of personal income) and dependent on others for financial security. Rajkumar et al²⁰ found significant depression among people with less PCI(<1100),who experienced hunger in last 30 days, history of Diabetes Mellitus, TIA, Cardiac illness, history of head injury in multivariate logistic regression when adjusted for other factors. In a community based study in Brazil²⁵ with short psychiatric evaluation schedule (six item versions) has found association of depression with low income, never or no longer married, presence of systemic illness, visual or hearing impairment, lack of employment. In Nepal, depression was commonly seen among individuals with low

monthly income²² Swarnalatha¹¹ found significant depression among elderly females, people with poor literacy and socioeconomic status, those who are living alone and dependent on others for daily activity. These findings are similar to the study by Maulik et al¹⁰ and also the studies of Ramchandra et al²⁶ and Stanley A²⁷. Similarly a positive association between economic condition and depression was observed in a rural China study presence of Presence Co morbidities had increased chance of depression and other studies also support this fact. Himesh et al²⁸ found illness burden is associated with anxiety symptom. Though we did not find any significant association between literacy and depression, Maulik et al, Stanley et al, Ramchandra et al found it significant.

Conclusion:

Alarmingly, the prevalence of depression was observed to be quite high in this rural population and so was prevalence of different morbidities. All these will hasten the isolation of this vulnerable population from general community and increase burden on the younger generation. Therefore, all steps must be taken to bring the geriatric population to the normal mainstream of the society so that they may contribute to the society instead of being dependent on it and carrying forward the motto "Good health adds life to years"²⁹.

Limitation of the study:

Sample size was the limitation of this study.

Relevance of the study:

By means of this study one can acquire some ideas regarding geriatric depression in rural community and its probable determinants.

Future scope of the study:

A community based cross sectional study with larger sample size is required to identify prevalence of morbidities, depression and its determinants more accurately in rural community of West Bengal.

Author's Contribution:

DR designed the study, collected data and drafted manuscript. AD helped in designing the study and revision of manuscript. SR helped in data analysis and interpretation. TS, AD2, AG and JP critically revised manuscript. All the authors approved final document.

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Conflict of interest:

There is no conflict of interest among authors arising from the study.

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