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Original Article

# Depression and its determinants in the rural elderly of WestBengal -a cross sectional study

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ABSTRACT

Background Ongoing economic development and consequent change in family structure, makes the rising elderly population lose their relevance and significance in their own house and they start feeling lonely and depressed. Even though attention has been paid to the medical problems of the elderly their social problems demands considerable light in order to improve the quality of their lives and rehabilitate them to a useful productive member of the society. With this background a study was conducted on the elderly population in Singur Block of Hooghly district of West Bengal with the following objectives. To assess the psychosocial status of a population more than 60 years of age Method: It was as across sectional community based study conducted on a sample of 82 adults who had completed their 60 th birth day on the day of the survey. The study was conducted for a period of 3 months using a pretested semi structured schedule by interview method .Data was appropriately analysed using spss version 16.Result:. The prevalence of depression found in this study was 53.7%. Female sex, illiteracy ,poor PCI, absence of personal income, staying without spouse, not being consulted for decisions & feeling of ill being were significant risk factors of depression in the study population,their odds ratios being 3.5,5.5,5.6,5.87,2.65,2.94,3.03 respectively .other risk factors of depression found in this study like higher age ,separated/divorced , widowed ,nonpucca house and staying at home were not significant but had the odds ratios of1.39,2.62,2.13, 1.46, 3.04 respectively ConclusionThe status of mental health of the elderly should be improved specially in the rural areas for the wellbeing of the country.



## 1. Introduction

Ageing is a universal process associated with deteriorating health status. With the passage of time certain changes take place in an organism leading to morbidities, disabilities and even death. The rise in the proportion of the ageing population represents one of the most significant demographic shifts in history .In 1950 there were 205 million people who were over 60,in 2000 there were 606 million people and by 2050 there will be 2billion elderly people. Again two-thirds of the world's elderly people live in developing countries[1]. In India over the past few decades the proportion of 60 years and above has grown up to 7.5%(2001 census)[1].Social and cultural shift has also encroached the rural India which for centuries has boasted of a joint family system with high respect for its elderly members. A study to assess the depressive disorder of the elderly population has hardly been done in this part of the country and less in the rural community. Over the past decades India's health programs and policies have been focussing on issues like population stabilisation , maternal and child health and disease control, However the current statistics for the elderly in India gives a prelude to a new set of medical social and economic problems that could arise if a timely initiative in this direction is not taken by the program managers and policy makers [2-14].With on going economic development and consequent change in family structure the elderly lose their relevance and significance in their own house and start feeling lonely. This has detrimental influence on the health of the elderly( both sexes).There is a need to highlight the medical and social problems that are being faced by the elderly population in India. Strategies for bringing about rehabilitation and improvement in their quality of life is also the need of the hour . With this background a study was

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conducted on the elderly population in a village of Hoogly District, West Bengal with the following objectives. 1.To assess the status of depression in the study population 2.To find the association of their depression with sociodemographic and other relevant factors.

**2. Materials and Methods**

The crossectional, community based ,epidemiological study was conducted in a village of Singur Block, in Hooghly district of West Bengal over a period of 2 months from April 2011 to May 2011. A sample of 82 adults, aged 60 years and more (both male and female) were interviewed with translated Bengali(local language) version of a pretested semistructured schedule and geriatric depression scale(short form) .The depression scale consisted of 15 questions with answers of yes or no. and a score of above 5 was considered as depression.Taking the prevalence of depression (p) to be 55% from a study of rural West Bengal(4) ,.precision as 20%.,a sample of 82 adults of more than 60 yrs was calculated. From the list of all the villages of Singur block one village was selected by simple random sampling, then a list of all the villagers of the selected village who were more than 60 years was obtained of which 82 such persons were selected by simple random sampling. Appropriate statistical analysis was done using SPSSversion 1

**3. Result**

The prevalence of depression found in this study was 53.7%

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54.9% ,28%and17.1% of the study population belonged to the age groups of 60-69yrs,70-79yrs and >=80years respectively. Maximum proportion of depressed people that is 60.86% ,were found in the 70-79yrs age group, followed by 57.14% in the >80yrs group and 48.88 % in the 60-69yrs group. Thus 70-79yrs age group were at greater risk of depression than those of the 60-69yrs group OR=1.62 (CI=0.585-4.515).

67.08% of the study population was found to be females and 32.92% were males .Among the females 63.63%were found to be depressed and among the males it was only 33.33%.Thus,it was observed that females were more at risk of depression than the males with an odds ratio of 3.5(ci= 1.326-9.238).

51.21% of the study population were widowed ,45.12% were married and 3.65% were separated/divorced.The proportion of widows 67.27% were more than the widowers18.5%.

43.24%,61.9% and 66.66% of those who were married , widowed and separated/divorced respectively were found to be depressed. Thus it may be cocluded that separated /divorced were at greatest risk of depression OR=2.62(CI=0.218-31.567) followed by the widowed OR=2.13(CI=0.866-5.311) than those who were married.

47.56% of the study population lived in pucca houses, and they were less depressed than those who lived in nonpucca houses(52.53%).48.72 %& 58.14&% of those who lived in pucca & non pucca houses respectively were found to be depressed. Thus people living in nonpucca houses were at highest risk of depression OR=1.46(CI=0.611-3.498) than those in pucca ones.

9.75% of the study population were educated upto middle school or above ,28.04% completed primary school&62.19% were illiterate .Among the illiterates 83.4% were females. 64.7%,39.13%&25% of those who were illiterate, completed primary school and completed middle school or above respectively were found to be depressed. Thus illiterates were at greatest risk of depression OR=5.5(CI=1.004-30.114).

87.8% of the study population was at home and 12.19 % was still engaged in some occupation like business, farming, labourer etc. More than half (56.94%)of those who were at home , were depressed while only 30 % among those who were still working were depressed . Thus at home people were at greater risk of depression than those who were still working R=3.04(CI=0.7380-12.9048)

PCI of the family was<500 in 28.04%,500-1000 in 43.9% and > 1000 in28.04%. 78.26% of those whose per capita income of the family was<Rs 500 .were found to be depressed whereas among those whose PCI was between Rs 500 to Rs1000,it was47.22% and among those whose PCI was above Rs1000 it was39.13 %. Thus lower PCI(<Rs500 ) OR=5.6(CI=1.530-20.492) and moderate income PCI(Rs 500-Rs 1000) OR=1.39(CI=0.481-4.028) proved to be a greater risk for depression than higher income (PCI>Rs1000)

32.93% of them had some source of personal income like pension, property etc while67.07 % were completely dependent on others for their financial needs .67.27% of those who were financially dependant on others were depressed while it was only25.92 % among those who had some personal income. This made absence of personal income a significant risk factor for depression OR=5.87(CI=2.099-16.428).

45.12% of the elderly population stayed with spouse and family whereas 54.87% stayed with only children and their family. None of them were found to be staying alone. The proportion of the depressed (64.44%) OR=2.65 (CI=1.084-6.514)among those who stayed with children and their family was found to be greater than among those stayed with their spouses(40.54%.)

36.58% expressed a constant feeling of ill being whereas 63.41% did not.The proportion of the depressed(70%) OR=2.94(CI=1.134-7.634)among those who expressed feeling of ill being was found to be greater than among those who did not(42.59.%)

44.59% of those who were<=80 years were consulted by others for family decisions whereas 55.41 % were not. The proportion of the depressed (63.41%))among those were not consulted by others for decisions was found to be greater than among those who were consulted (36.36%) OR=3.03(CI=1.170-7.861)

Each of the variables which contributed to depression was scored accordingly .More the risk factor higher was the score. Total score of all the risk factor variables of the study population was calculated .The values ranged from a minimum score of 6 and a maximum of 19. These scores were categorised as low risk (6-10), medium risk (11-15) and high risk (16-19)for depression.(table2).Fishers exact test showed a significant association of the risk factors with depression(p=0.025).

**Table 1- Distribution of the study population according to status of depression and the various determinants of depression.**

| Parameters | Total(n=82) NO(%) | Depression NO(%) | Odds Ratio | 95% Confidence Interval |
|---|---|---|---|---|
| **Age** | | | | |
| 60-69 | 45(54.9) | 22(48.88) | 1 | |
| 70-79 | 23(28) | 14(60.86) | 1.62 | 0.585-4.515 |
| >80 | 14(17.1) | 8(57.14) | 1.3939 | 0.416- 4.67 |
| **Age** | | | | |
| Male | 27(32.92) | 9(33.33) | 1 | |
| female | 55(67.07) | 35(63.63) | 3.5 | 1.326-9.238* |
| Marital status | | | | |
| Married | 37(45.12) | 16(43.24) | 1 | |
| Widow/widower | 42(51.21) | 26(61.9) | 2.13 | 0.866-5.311 |
| Sep/divorced | 3(3.65) | 2(66.66) | 2.62 | 0.218-31.567 |
| Housing | | | | |
| Pucca | 39(47.56) | 19(48.72) | 1 | |
| nonpucca | 43(52.43) | 25(58.14) | 1.46 | 0.611-3.498 |
| Educational status | | | | |
| Middle school &above | 8(9.75) | 2(25) | 1 | |
| Primary completed | 23(28.04) | 9(39.13) | 1.92 | 0.316-11.739 |
| illiterate | 51(62.19) | 33(64.7) | 5.5 | 1.004-30.114* |
| Occupation | | | | |
| Working and Earning | 10(12.19) | 3(30) | 1 | |
| At home (not earning) | 72(87.8) | 41(56.94) | 3.04 | 0.7380-12.9048 |
| PCI | | | | |
| >1000 | 23(28.04) | 9(39.13) | 1 | |
| 1000-500 | 36(43.90) | 17(47.22) | 1.39 | 0.481-4.028 |
| <500 | 23(28.04) | 18(78.26) | 5.60 | 1.530-20.492* |
| Personal income | | | | |
| yes | 27(32.92) | 7(25.92) | 1 | |
| No | 55(67.07) | 37(67.27) | 5.87 | 2.099-16.428* |
| Staying | | | | |
| With Spouse & family | 37(45.12) | 15(40.54) | 1 | |
| With Children and family | 45(54.87) | 29(64.44) | 2.65 | 1.084-6.514* |
| Feeling of ill being | | | | |
| no | 52(63.41) | 23(42.59) | 1 | |
| yes | 30(36.58) | 21(70) | 2.94 | 1.134-7.634* |
| Consulted for decisions N=74 | | | | |
| yes | 33(44.59) | 12(36.36) | 1 | |
| no | 41(55.41) | 26(63.41) | 3.033 | 1.170-7.861* |

*Indicates significant odds ratio.

**Table 2. Distribution of the study subjects according to depression and the gradation of risk factors.(n=82)**

| Categorisation of Risk Factors (Score Range) | | Depressed Persons No(%) | Not depressed No(%) | Total No(%) |
|---|---|---|---|---|
| Low risk | 6-10 | 2 (2.4) | 4 (4.9) | 6(7.3) |
| Medium risk | 11-15 | 20(24.4) | 26(31.7) | 46(56.1) |
| High risk | 16-19 | 22(26.8) | 8(9.8) | 30(36.6) |
| Total | | 44(53.7) | 38(46.3) | 82(100) |

Fishers exact value = 7.579 ; p=0.025

## 4. Discussions

The prevalence of depression found in this study was 53.7% which is quite similar to the study of Nandi PS et al who found the prevalence to be 55.2% in a population of more than 60 years in their study conducted in a rural area of West Bengal in1997(4). In another study conducted in Udupi Karnataka the prevalence of depression was found to be 48% which is more .or less near to the present findings [5].Similarly Arun R etal found a prevalence of 44.5% in a study conducted among inmates of old age home in KottayamKerela.(6)However the prevalence of depressive disorders among the elderly of 60 years and above was found to be 21.7% .by Barua and Kar in 2010(7),22.0% by Nandi D N et al in Bengal(13),24.1% by Ramchandra V et al(14) and 13.5% by Tiwari SC [6-8] this difference in the prevalence with this study might be due to the different instruments used for measuring depression and also their larger sample size.

In another study conducted on empty nest elderly living in rural China it was seen that 74.46% suffered from depression [9] this large prevalence is due to the fact the study was conducted in a specialised section of the society which has obvious reasons to be depressed rather than this study which is done in a normal community. The 1-month prevalence rate of depressive disorders was estimated at 21.3% by Mian-YoonChongetal in a study on elderly of more than 65 years of age at Taiwan[10].

The proportion of depressed elderly women was more than their male counterpart (63.6% vs 36.44%) and this difference was statistically significant. This finding corroborates with other similar studies[6,7,11-14]

Married people were more depressed in this study but this difference was not found statistically significant as found by Stanley A[11],Arun R etal[6] ,Xie LQ [9] in their studies.This may be due to the small sample size in this study as compared to the other studies.

It was observed in this study that those who belonged to low per capita income of family (Less than Rs500), those who had no source of personal income and were dependant for financial

support were significantly more depressed.This was similar to the findings of Ramchandra et al [14] and Stanley A et al[11] in their studies.Positive association was also found between depression and economic status in a study conducted on elderly in rural china [6]

Illiterates were found to be more depressed in this study which is quite similar to the findings of Stanley A etal[11]Ramchandraetal($p<0.01$)(14).

In this study those who were feeling ill were found to be more depressed specially those who were suffering from chronic body ache ($p=0.00$) . This finding is quite similar to Arun R in his study in Kerela.

## 5. Conclusion

From this study it was concluded that the overall psychosocial status was below average in the rural geriatric population of West Bengal with the prevalence of depression being higher in the females than in the males. The significant determinants of depression in this study were female sex, low PCI, absent personal income, Illiteracy, staying without spouse, not consulted for decisions by family members and feeling of ill-being. Almost half of the elderly was illiterate &.most of them was at home and dependant on their relatives for financial support which was an important associated factor for depression. Most of them enjoyed respect and support from their children which points out to the fact that moral values are still retained in the rural area. With increasing number of old people and with radical change of social structure even in the rural area it is high time that health policy makers take steps to include mental health programme for the elderly within the purview of the primary health care. Since healthy mind leads to a healthy body, this will ensure health for a large vulnerable and more or less neglected segment of the population of our country

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