ORIGINAL ARTICLE

Study Of Depression in Elderly: Prevalence and Factors Associated

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Abstract

Introduction: *Ageing is a normal phenomenon. Various studies shows that there is a sharp rise in the elderly population in the last few years. Prevalence of depression in elderly is found to around 13% in the community sample in various countries. There is a dearth of study related to psychiatric illness in elderly in Nepal. This study was aimed to find the prevalence of depression in elderly and see for various factors associated with elderly depression.*

Material And Method: *This was a cross-sectional study conducted at Siddharthnagar Municipality, Bhairahawa, Rupandehi. 316 elderly were selected by using systematic random sampling technique. A Semi- structured interview schedule was developed to collect Socio-demographic data. The Short Form Geriatric Depression Scale (SF-GDS) was used to find out the prevalence of depression among elderly people. Ethical Approval was obtained from the Institutional Review Committee, Chitwan Medical College and permission was obtained from Siddharthnagar Municipality, Bhairahawa, Rupandehi. The collected data was entered in Epidata 3.1 and the data was exported and analyzed in IBM SPSS 20.*

Results: *There were a total of 316 samples in this study. The mean age of respondents was 68.47 years of age. Majority of the respondents (54.1%) were female and living in joint Family (72.2%). Almost 45.9% respondents were from upper caste groups, 90.5% of respondents were Hindus. Among the married(100%) respondents, 54.6% of respondents were living with spouse and 3.2% were divorced and separated from spouse. Depression was present in 49.4% of respondents were depressed. Among depressed respondents, 46.7% of respondents were having mild depression, 39.2% moderate depression and 14.1% severe depression.*

Conclusion: *The finding of this study concluded that depression among elderly people was a substantial problem in Siddharthnagar Municipality, Bhairahawa, Rupandehi.*

Keywords: Depression, Elderly, Factors Associated, Nepal

INTRODUCTION

Ageing is a world-wide phenomenon. These sharp rise in the elderly population is creating humanitarian, social and economic problems in many countries of the world including Nepal. The Senior Citizens Acts of Nepal 2063 also defines the senior citizen as "people who are 60 years and above.[1] There are 2.1 million elderly inhabitants, which constitute 8.1 percent of the total population in the country.[2]

Depression is common in late life, affecting nearly 5 million Americans aged 65 and over. Both major and minor depression are reported in 13% of community dwelling elderly, 24% of elderly medical outpatients, 30% of elderly acute care patients, and 43% of nursing home dwelling elderly.[3]

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Physical health problems are a common trigger for elderly depression which ultimately worsens the physical health problems. Because of the presence of physical health problems, symptoms of depression may be over-looked. It can leading to worsening of the symptoms. Depression decreases an individual's quality of life and increases dependence on others. If depression is left untreated, it can have significant clinical and social implications in the lives of the elderly.[4]

Though there are lots of studies done in Nepal, Very few have addressed the issue of Depression in Elderly. Majority of the Research in the elderly population is based on the data from the Old Age Homes. This study was carried out with an attempt to know the actual prevalence of Depression in the Community.

MATERIAL AND METHOD
This was a cross-sectional study conducted at Siddharthnagar Municipality, Bhairahawa, Rupandehi. The total area of the Municipality is 3,603 Sq. km which is divided into 13 wards having a total of 18,763 households. Among the 4,580 elderly residing in the Municipality, 316 elderly were selected by using systematic random sampling technique. The first household was selected randomly assuming at least one elderly people could be found in a household. The selection of households was started in ward 12. The first household was in left to Ganesh Temple. When the eligible respondent was not found the next to next household was selected till an eligible respondent was found. On basis of systematic random sampling the next 14th household was selected when the eligible respondent was found. The only one eldest respondent was interviewed from the selected household. All households were selected on the left side of the temple. Then all households were selected in wards of right side of the temple. In both sides, the households were selected by left turning of last household of a subway. The same process was continued till the desired sample of 316 was interviewed.

A Semi- structured interview schedule was developed to collect Socio-demographic data and note the factors associated with depression. About 25-30 minutes time was spent for collecting data through interview with each individual.

The Short Form Geriatric Depression Scale (SF-GDS) was used to find out the prevalence of depression among elderly people. This is a 15 items scale. Total Score of 0-4 were considered no depression, 5-8 mild depression; 9-11 moderate depression and 12-15 severe depression. It took 5-7 minutes to complete.

Ethical Approval was obtained from the Institutional Review Committee, Chitwan Medical College and permission was obtained from Siddharthnagar Municipality, Bhairahawa, Rupandehi. Confidentiality was maintained and the data was used for research purpose only. The collected data was entered in Epidata 3.1 and the data was exported and analyzed in IBM SPSS 20. The collected data were interpreted in frequency, percentage, mean and standard deviation and Inferential statistics (chi-square test, unadjusted and adjusted odd ratio) on basis of nature of data.

RESULT
There were a total of 316 samples in this study. The mean age of respondents was 68.47 years of age. Majority of the respondents (54.1%) were female and living in joint Family (72.2%). Almost 45.9% respondents were from upper caste groups, 90.5% of respondents were Hindus. Among the married(100%) respondents, 54.6% of respondents were living with spouse and 3.2% were divorced and separated from spouse. Details of the Socio-Demographic details is described in the Table 1.

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Table 1. **Socio-Demographic Characteristics of Respondents**

Variables	Frequency	Percentage
Age group (in years)		
60-69	180	57.0
70-79	102	32.3
80 and above	34	10.8
Sex		
Male	145	45.9
Female	171	54.1
Ethnicity		
Dalit	5	1.6
Disadvantaged janajatis	30	9.5
Disadvantaged non-dalit terai caste	67	21.2
Religious Minorities	10	3.2
Relatively Advantaged janajatis	59	18.7
Upper caste group	145	45.9
Religion		
Hindu	286	90.5
Buddhist	16	5.1
Christian	3	0.9
Islam	11	3.5
Marital status		
Having spouse	172	54.4
Divorced/Separated	10	3.2
Widow/widower	134	42.4
Type of family		
Nuclear	88	27.8
Joint	228	72.2
Education status		
Literate	187	59.2
Illiterate	129	40.8
Level of education (n=187)		
General literate	59	31.6
Basic	77	41.2
Secondary	9	4.8
Higher	18	9.6
Bachelor and above	24	12.8
Current working status		
Non working	177	56.0
Working	80	25.3
Retired	59	18.7
Type of work (n=80)		
Service	6	7.6
Business	35	43.8
Farming	26	32.5
Labor	7	8.8
Others	6	7.5
Sources of income*		
Personal income	274	86.7
Sibling/Family income	262	82.9
Adequacy of monthly family income		
Adequate	256	81.0
Inadequate	60	19.0

(Mean ± SD) age: (68.4 ± 7.6) years, min=60 years and max=95 years; Multiple Response*

Table 2. Prevalence and Level of Depression among Respondents

Presence Of Depression	Frequency (n=316)	Percentage (%)
No depression	160	50.6
Depression	156	49.4
If Yes (156)		
Mild depression	73	46.7
Moderate depression	61	39.2
Severe depression	22	14.1

Out of the total 316 elderly, 49.4% of respondents were depressed. Among depressed respondents, 46.7% of respondents were having mild depression, 39.2% moderate depression and 14.1% severe depression. (Table 2)

Among Socio-Demographic Factors, female (56.1%), Dalit (80.0%), divorced (70.0%), illiterate (62.0%), non working (57.1%), inadequate monthly family income (85.0%) had higher depression than others. Factors like sex, ethnicity, marital status, education status, working status and adequacy of monthly family income were found statistically significant associated with depression. (Table 3)

Personal Factors showing higher Depression include inadequate communication with family members (91.7%), having no vital role in family (55.4%), Being not involved in social activities (55.7%), Having no support from family for daily living activities (85.2%), Having incapability for daily living activities (66.7%), functional dependent (93.8%). Factors statistically associated with depression include communication with family, vital role in family, involving in social activities, support from family for daily living activities, capability for daily living activities and physical functional limitation. (Table 4)

The independent variables that were found to be associated with depression among the respondents in the bi-variate analysis were analyzed together to measure the effects of each variable on the dependent variable by adjusting the confounding effects of other variables. (Table 5.) Multi-variate analysis showed that dalit ethnicity and communication with family members were significantly associated Factors. This analysis of all significant factors was carried out at 95% Confidence Interval.

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Table3. **Association of Socio-demographic Characteristics with Depression (**n=316)

Variables	Depression		χ² value	p value
	Absent (n=160) No. (%)	Present (n=156) No. (%)		
Age group (in completed years)				
60-69	93(51.7)	87(48.3)		
70-79	51(50.0)	51(50.0)	0.267	0.875
80 and above	16(47.1)	18(52.9)		
Sex				
Male	85(58.6)	60(41.4)	6.840	0.009*
Female	75(43.9)	96(56.1)		
Religion				
Hindu	145(50.7)	141(49.3)		
Buddhist	9(56.3)	7(43.8)	0.541	0.763
Others	6(42.9)	8(57.1)		
Ethinicity				
Dalit	3(20.0)	12(80.0)		
Disadvantaged janajatis	19(63.3)	11(36.7)		
Disadvantaged nondalit terai caste	24(35.8)	43(64.2)	16.067	0.003*
Relatively advantaged janajatis	31(52.5)	28(47.5)		
Upper caste group	83(57.2)	62(42.8)		
Marital status				
Having spouse	103(59.9)	69(40.1)		
Divorced	3(30.0)	7(70.0)	13.317	0.001*
Widow/widower	54(40.3)	80(59.7)		
Type of family				
Nuclear	40(45.5)	48(54.5)	1.308	0.253
Joint	120(52.6)	108(47.4)		
Education status				
Literate	111(59.4)	76(40.6)	13.952	0.001*
Illiterate	49(38.0)	80(62.0)		
Working status				
Non working	76(42.9)	101(57.1)	10.180	0.006*
Working	46(57.5)	34(42.5)		
Retired	38(64.4)	21(35.6)		
Type of work				
Service	2(33.3)	4(66.7)		
Farming	13(50.0)	13(50.0)	5.496	0.136
Business	25(71.4)	10(28.6)		
Others (writing tamsuk/priest)	6(46.2)	7(53.8)		
Adequacy of monthly family income				
Yes	151(59.0)	105(41.0)	37.621	0.001*
No	9(15.0)	51(85.0)		

*Significance level at <0.05

Table 4. Association of Personal Factors with Depression

Variables	Depression		χ² value	p value
	Absent (n=160) No. (%)	Present (n=156) No. (%)		
Having communication with family members				
Adequate	157(56.1)	123(43.9)	29.083	0.001*
Inadequate	3(8.3)	33(91.7)		
Having vital role in family				
Yes	77(59.2)	53(40.8)	6.532	0.011*
No	83(44.6)	103(55.4)		
Involving in social activities				
Yes	75(60.5)	49(39.5)	7.923	0.005*
No	85(44.3)	107(55.7)		
Having support from family for daily living activities				
Yes	156(54.0)	133(46.0)	15.153	0.001*
No	4(14.8)	23(85.2)		
Having Chronic physical health problems				
Yes	118(50.6)	115(49.4)	0.000	0.995
No	42(50.6)	41(49.4)		
Having physical capability for daily living activities				
Yes	139(54.9)	114(45.1)	9.421	0.002*
No	21(33.3)	42(66.7)		
Physical Functional Limitation (n=63)				
Independent	20(42.6)	27(57.4)	7.079	0.008*
Dependent	1(6.2)	15(93.8)		
Having death of family member within one year				
Yes	9(40.9)	13(59.1.0)	0.894	0.344
No	151(51.4)	143(48.6)		

*Significance level at <0.05

Table 5. Multi-variate analysis for significantly associated factors for depression

Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	p-value
Sex			
Male*	1	1	0.576
Female	1.81(1.159-2.837**)	0.67(0.263-1.730)	
Ethnicity			
Upper Caste*	1	1	
Dalit	5.36(1.449-19.791**)	6.61(1.202-36.404**)	0.034*
Disadvantaged Non-dalit Terai Caste	2.399(1.319-4.362**)	1.65(0.514-5.316)	0.608
Level of Education			
Bachelor and Above*	1	1	
General Literate	5.93(1.804-19.468**)	5.33(1.224-23.221**)	0.059
Basic	3.370(1.050-10.815**)	2.68(0.698-10.295)	0.299
Working status			
Retired*	1	1	
Non working	2.40(1.306-4.428**)	1.02(0.356-2.933)	0.948
Working	1.337(0.669-2.675)	0.49(0.179-1.354)	0.170
Marital Status			
With Couple*	1	1	
Divorced	3.48(0.871-13.934)	4.59(0.673-31.329)	0.132
Widow/Widower	2.211(1.395-3.505)**	0.70(0.305-1.651)	0.435
Having communication with family members			
Adequate*	1	1	
Inadequate	14.04(4.207-46.861**)	8.72(1.662-45.784**)	0.014*
Having vital role in family			
Self*	1	1	
Other than Self	1.80(1.145-2.838**)	2.06(0.958-4.442)	0.054
Involving in social activities			
Yes*	1	1	
No	1.93(1.218-3.049**)	1.38(0.701-2.736)	0.268
Having support from family			
Yes*	1	1	
No	6.74(2.275-19.993**)	2.39(0.348-16.453)	0.693

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DISCUSSION:

Age is an important determinant of mental health. Old age is a period of transition when one has to

deal not only with the physical aging, but also with the challenges affecting the mental and social well-being. Various factors like aging process of the brain, deteriorating physical health and cerebral pathology, increases overall prevalence of mental and behavioral disorders in the elderly.[5]

Depression is common among the elderly people and is a major public mental health problem. Depression in late life is associated with significant morbidity, impaired physical and cognitive functions, disability and decreased quality of life. It has a negative effect on the body's recovery from health problem, increases the rate of suicide and increases the uses of health care services and expenses. It can result in early death and disturbance in the state of health.[6,7]

The prevalence of depression among elderly in this study was found to be 49.4%. Out of the Depressed elderly subjects, 46.7% were suffering from mild depression, 39.2% from moderate depression and 14.1% from severe depression. The findings of the study was more or less similar with the finding of the study by Kafle et. al.[8] and Khattri et.al.[9] . However, in a similar study done by Timalsina et. al.[10] prevalence of depression was found to be 79.2% which was much higher than the finding of our study. This difference could be due to the difference in the study sample. Our study was conducted in the community, whereas the study by Timalsina et. al. was conducted in an old age home.

Studies have consistently shown depression to be higher in elderly females. Other demographic factors that have been linked with depression among elderly include being unmarried, divorced or widowed elderly, residing in rural locality, being illiterate, increasing age, lower socioeconomic status, and being unemployed[11] This study also tried to find out the relation between Socio-demographic factors and depression.

Depression was statistically associated with sex (OR=1.81, CI: 1.159-2.837; p < 0.009) and ethnicity (p < 0.003) in our study consistent with the finding of Chalise et al.[12] Study done by Taqui et. al.[13] revealed that female were 2.6 times more likely to suffer from depression compared to males (p < 0.001). Depression was more common among illiterate respondents (62%) similar to the findings by the study of Choulagai et al.[14] and Taqui et al.[13] Working status of respondents was statistically associated with Depression (p < 0.006) as seen in other studies like Taqui et al.[13]

Societal modernisation has brought in its wake a breakdown in family values and the framework of family support. With ongoing economic development, children are moving to urban areas, sometimes leaving their parents alone at home. If the parents move with their children, they are sometimes unable to adjust to the new environment. The change in the family structure along with economic insecurity results in the elderly losing their relevance and significance in their own house and increasing feelings of loneliness. This has a detrimental influence on the psychological health of the elderly.[15]

This study Showed that inadequate communication with family members increases the chances of developing depression by 14.04 times(OR=14.04, CI: 4.207-46.861, p < 0.001) as compared to elderly having adequate communication with family members. This finding was in agreement with the study of Nanji et al.[16] which concluded that communication had a protective effect against depression.

Respondents who were not involved in social activities had 1.93 times more likelihood of developing depression than respondents who were involved in social activities (OR=1.93, CI: 1.218-3.049). The finding of this study was consistent with the finding of Chan et al.[17] that had concluded that the respondents who were involved in social activities was significantly associated with depression among respondents.

Regarding support from family for daily living activities the respondents who had no support from family for daily living activities (85.2%) had higher depression than respondents who had support from family for daily living

activities (46.0%). The depression among respondents who had no support from family for daily living had 6.74 times more likely than depression among respondents who had support from family for daily living (OR=6.74, CI: 2.275-19.993). The finding of the study was supported by a study of Choulagai et al.[14] which reported that lacking family support contributes to depression.

This Study showed that depression was statistically associated with physical capability for everyday living (p < 0.002) which was in agreement with the finding of the study of Imran et al. that revealed that the respondents who had physical incapability for everyday living had 2.68 times more likely than those who had physical capability for everyday living (p < 0.003). The finding of this study was also supported by the study of Choulagai et al.[14] which concluded that the respondents who were physically incapable for everyday living (81.8%) due to having chronic physical health problems contributed to depression among respondents.

Physical functional limitation was found to be statistically associated with Depression (p < 0.008) in this study. It showed physical functional dependent patients had 11.11 times more likely to have depression than respondents who were functional independent (OR=11.11, CI: 1.354-91.209). Finding of this study was consistent with the finding of Chan et al.[17] which stated that the respondents who were dependent had higher depression than those who were independent.

Early diagnosis and treatment of depression in elderly helps to improve their quality of life, prevent premature death, maintain optimal levels of functioning and independence, and significant reduction in the health care costs.

Though this is a community based study, we have conducted this study only in a municipality, study of this type involving the larger geographical area can be done which can provide the national data regarding various psychiatric illness in Nepalese elderly population.

CONCLUSION:

The finding of this study concluded that depression among elderly people was a substantial problem in Siddharthnagar Municipality, Bhairahawa,

Rupandehi. The associated factors with depression status were particularly found female, dalit, illiterate, non working, divorced, nuclear family, having inadequate communication with family members, having no vital role in family, having no support by family for daily living activities, having incapability for daily living activities and dependent physical function. The depression among dalit respondents had 6.61 times more likely than depression among upper caste, general literate respondents had 5.33 times more likely than higher educated respondents and the depression among respondents having inadequate communication with family had 8.72 times more likely than depression among respondent having adequate communication with family.

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