

Original Research Article

Depression and its associated factors among elderly people of old age homes and community of Kathmandu district, Nepal: a comparative study

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ABSTRACT

Background: Depression is a common public health problem among elders worldwide and is associated with high morbidity and disability. This study aims to assess depression and its associated factors among elderly in old-age homes and a community of Kathmandu district.

Method: A comparative cross-sectional study recruited 122 elderly from old-age homes and a community of Kathmandu district. Depression was measured using the Geriatric Depression Scale-short scale (GDS-15). Socio-demographic and medical history was collected using semi-structured questionnaire. We utilized bivariate logistic regression to assess the association of depression with each variable.

Results: The prevalence of depression among elderly in old-age homes was 74.6% and in community was 41.8%. The study found that elderly residing at old age homes were four (OR=4.087; 95% CI=2.373-7.038) times more likely to have depression than those residing in the community. Age was found to be associated with depression among the respondent of both settings. In old-age homes, not receiving old-age allowance, bad perception of life, bad social relation, having a chronic disease, lack of care from family, stress and weeping as stress coping strategy were associated with depression. In the community, stress, non-involvement in family decision making, feeling of neglect, dysfunctional capability, bad social relation, lesser monthly income had positive relation with depression.

Conclusion: Depression is highly prevalent among Nepalese elderly, with higher burden in those living in old-age homes. This emphasizes the need for screening of depression among elderly, to initiate early intervention measures.

Key words: Geriatric depression, Geriatric depression scale, Old-age home

INTRODUCTION

Ageing is considered as the continuous, universal, progressive and deleterious process of growing older with the flow of time in one's life.¹ According to the senior citizen act of Nepal 2006, senior citizens are "People who are 60 years and above".² During the old age, elderly people may become victim of various mental problems. Among these disorders, depression is considered as a

common public health problem with the increasing life expectancy worldwide which is associated with morbidity as well as disability among the elderly. It is projected that, the world's above 60 years population will be nearly double from 12% to 22% between the years 2015 and 2050 and similarly, depression's prevalence is also projected to increase in alarming rate.^{3,4} Elderly with depression suffering from various physical disorders have a negative influence on the course of the depression

which increases functional impairment, health costs, and use of health services. Female gender, family history of depression, widow(er) hood; being divorced, poverty, living in a residential or nursing home, lack of social support, medication and alcohol etc. were the significant risk factors for depression.^{5,6} Mental disorders including depression found to be affecting more than 20% of elderly population. Similarly, these mental disorders causes 6.6% of overall disability (DALYs) and 17.4% YLDs (Year lived with disability) among elderly and depression alone causes 5.7% of YLDs.⁷

Thus, it was vital to conduct the study to find out the relation between various factors and depression among the elderly residing in community and old-age homes and to know the preventive measures which would in turn help to improve the health and well-being of the elderly population.

METHODS

Community based comparative cross-sectional study was conducted among 244 elderly people (122 each) from two sites; old age home and community. The total duration of data collection was one month from December 15, 2015 to January 15, 2016. Ethical approval was obtained from the Institutional Review Committee of Chitwan Medical College (Ref no. CMC-IRC/072/073-023). Permission was taken from respective old age home and Kageshwori –Manahara Municipality Office before conducting the study. The interview was conducted after receiving Informed consent from respondents.

Study population

Elderly people aged 60 year and above without diagnosed severe psychiatric problems, who could hear, speak, understand the questions and who were willing to participate were included in the study population.

Sample size calculation and sampling technique

The sample size required for this study was determined using formula based on two proportion.⁸ For the sample size calculation, prevalence of depression in old age home (p1) was considered to be 52.73% and prevalence of depression in community (p2) was taken i.e. 25.45%, at 99% confidence level i.e. 2.576 and with power of the test (1-β) 95% i.e. 1.645, the calculated sample size was 110.73.⁹ After adding 10% non-response rate, the actual sample size was 122 in each group.

The data from elderly people living in old age home was collected in different old age home; Janakbaba Bridhhashram, Old age management and social welfare trust, Tapasthali Bridhhashram, Nisahaya Sewa Kendra, Nijanand Bridhhashram, Matatirtha Bridhhashram and Himalaya Bridhhashram. They were selected randomly from list of old age home of Kathmandu district, Nepal. Similarly, the data of elderly people living in community was collected from two wards of the Kageshwori-

Manahara Municipality, namely ward no.8 (Gothatar) and 11 (Mulapani) which was selected by using simple random sampling method from total 16 wards of the municipality.

Data collection tool

Data was collected through face to face Interview using semi-structured questionnaire with Standard Geriatric depression scale- short form. Standard and Scientific tool (Geriatric depression scale- short form-GDS 15) was applied, having good sensitivity (92%) and specificity (89%). Altogether 15 yes/no questions related to respondent's daily life was used. The scoring was done as 1 and 0 for each question. Score 1 meant that the answer to the question gave one point for depressive symptoms and 0 indicated no point. The symptoms of depression were categorized as normal (0-4), mild (5-8), moderate (9-11) and severe (12-15).¹⁰

In the present study, score between 0-4 were considered as normal and more than 4 was considered as depressive. Further, Question was developed to measure the associated factors based on objective of the study. Pretesting of questionnaire was done among ten percent of the calculated sample of elderly people of Devghat NRN bridhhashram of Chitwan district which was not included in the study. Translation of GDS-15 was done to understandable Nepali format. Cronbach's Alpha was calculated which was 0.73.

Data analysis

Researcher herself collected the data. Data was entered in Epi-data 3.1 and analysis was done in IBM SPSS 20. To identify the factors, bivariate analysis was done where factors were significant with the level of significance less than 0.05.

RESULTS

Association of depression with the place of residence

While comparing the prevalence of the depression according to the place of residence, it was found that place of residence was significantly associated with depression (P value<0.001) and elderly people residing at old age home were four (OR=4.087 95% CI=2.373-7.038) times more likely to have depression than those residing at community (Table 1).

Table 1: Association of depression with place of residence.

Characteristic	Depression			Unadjusted OR (95%CI)
	No N (%)	Yes N (%)	P value	
Old age home	31(25.4)	91 (74.6)	<0.001	4.087(2.37-7.038)
Community	71(58.2)	51(41.8)		1

1-Reference category

Table 2: Bivariate analysis of socio-demographic characteristics.

Variables	Depression among old age home			Depression among community		
	No N (%)	Yes N (%)	Unadjusted O R 95% C.I	No N (%)	Yes N (%)	Unadjusted OR 95% C I
Sex						
Female	29(25.9)	83(74.1)	1	35(63.6)	20(36.4)	1
Male	2(20)	8(80)	1.3989(0.280-6.965)	36(53.7)	31(46.3)	1.507(0.726-3.126)
Age group						
60-69	17(51.5)	16(48.5)	1	48(73.8)	17(26.2)	1
70-79	14(25.90)	40(74.1)	3.036(1.2163-7.576)	19(44.2)	24(55.8)	3.567(1.575-8.077)
80+	-	35(100)	-	4(28.6)	10(71.4)	7.059(1.953-25.508)
Old age allowance						
Yes	17(35.4)	31(64.6)	1	20(42.6)	27(57.4)	2.869(1.349-6.102)
No	14(18.9)	60(81.1)	2.350(1.025-5.388)	51(68)	24(32)	1
Monthly income						
< NRs.5000 ^a	14(33.3)	57(80.3)	2.037(0.17-24.082)	20(36.4)	35(63.6)	9.450(3.142-28.420)
>NRs.5000 ^b	1(33.3)	2(66.7)	1	27(84.4)	5(15.6)	1
Chronic disease						
No	30(40.5)	44(59.5)	1	44(65.7)	23(34.3)	1
Yes	1(2.1)	47(97.9)	32.045(4.19-245.06)	27(49.1)	28(50.9)	1.984(0.955-4.119)

, a -includes < NRs.1000, NRs. 1000-5000, b- includes NRs. 5000-10000 and > NRs.10000

Bivariate analysis of Socio-demographic characteristics

Bivariate association between socio-demographic characteristics and Elderly depression is shown in Table 2. Regarding the age group, Age group 70-79 was three (OR=3.036, CI=1.2163-7.576) times more likely to had depression than respondents of age group 60-69 in the old age home while in the community age group 80+ was seven times (OR=7.059, CI =1.953-25.508) more likely than 60-69 to have depression and again age group 70-79 was four (OR=3.567, CI=1.575-8.077) times more likely to had depression than age group 60-69 . There was no association between the depression and sex of the respondents in both of the settings. Respondents receiving old age allowance were found to be two (OR=2.350, CI=1.025-5.388) times less likely to have depression than those who did not received old age allowance. Monthly income less than NRs 5000 was nine (OR=9.450, CI=3.142-28.420) times more likely to have depression than more than NRs 5000 in community setting. Respondent with chronic disease was thirty two (OR=32.045, CI=4.19-245.059) times more likely to have depression than those without disease in respondent of old age home, but, in case of the respondent of community, chronic disease did not show association with depression (OR=1.884, CI=0.955-4.119) (Table 2).

Bivariate analysis of depression and its predisposing factors among elderly people living in old age home and community

Table 3 shows association of depression with various predisposing factors. Perception regarding life was significantly associated with depression in respondents in old age home but not in the respondents living in the community. Respondent who perceived life as both happiness and sorrow was five (OR=4.909, 95% CI=1.645-14.654) times more likely to had depression than those who perceived life as other than happiness and sorrow both in old age home while in the community, perception of life was not significant with the depression. Functional disability was significantly associated with depression in the community. Respondents who were dysfunctional were two (OR= 2.176, 95% CI=1.033-4.587) times more likely to have depression than normal, when normal was taken as reference. Similarly, there was significant association between the care of the family and depression in the case of the respondent of old age home. Respondents without care were three (OR=3.345, 95% CI=1.427-7.845) times more likely to had depression than those with care of the family member and relatives in old age home. Social relation was also found to be statistically significant with depression with those whose relation was other than good (satisfactory and bad) were

seven (OR =7.323, 95% CI=2.726-19.673) times more likely to had depression in old age where as respondent of community were four (OR=3.575, 95% CI=1.636-7.813) times more likely to had depression in community when good was taken as reference. Stress was found to have significant relation with depression in both group, those respondent who felt stress were five (OR=5.278, 95%CI=2.207-12.621) times more likely to had depression than those who did not in old age homes. Similarly in case of the community, respondents with stress were four (OR=3.680, 95% CI=1.723-7.861) times more likely to had depression than those without the stress. Coping mechanism with stress had significant association in case of respondents living in old age home

but not in the respondents living in community. Respondents living in old age homes with depression who cope with stress with weeping was three (OR=2.929, 95% CI=1.215-7.064) times more likely than those without weeping (Table 3).

Feeling neglected was significantly associated with depression in community group but not in the old age home. Respondent with feeling of neglected were two (OR= 2.406, 95%CI=1.094-5.291) times more likely to have depression than those without in the community but not in the old age home. Similarly, there was significant association between the care of the family and depression in the case of the respondent of old age home (Table 3).

Table 3: Bivariate analysis of depression and its predisposing factors among elderly people living in old age home and community.

Variables	Depression in old age home		Unadjusted OR CI 95%	Depression in community		Unadjusted OR CI 95%
	No N (%)	Yes N (%)		No N (%)	Yes N (%)	
Perception regarding life						
Other than happiness and sorrow ^a	9(56.3)	7(43.8)	1	21(67.7)	10(32.3)	1
Happiness and sorrow both	22(20.8)	84(79.2)	4.90(1.645-14.65)	50(54.9)	41(45.1)	1.722(0.730-4.065)
Functional capability						
Normal	8(42.1)	11(57.9)	1	37(68.5)	17(31.5)	1
Dysfunctional	23(22.3)	80(77.7)	2.53(0.910-7.029)	34(50)	34(50)	2.176(1.033-4.587)
Care of family						
Yes	16(42.1)	22(57.9)	1	71(60.2)	47(39.8)	
No	15(17.9)	69(82.1)	3.345(1.427-7.845)	-	4(100)	-
Involvement in family decision making						
Yes	6(35.3)	11(64.7)	1	62(65.3)	33(34.7)	1
No	25(23.8)	80(76.2)	1.745(0.586-5.199)	9(33.3)	18(66.7)	3.758(1.520-9.286)
Social relation ^b						
Good	25(43.1)	33(56.9)	1	55(68.8)	25(31.3)	1
Other than good	6(9.4)	58(90.6)	7.323(2.726-19.673)	16(38.1)	26(61.9)	3.575(1.636-7.813)
Stress						
No	19(47.5)	21(52.5)	1	46(73)	17(27)	1
Yes	12(14.6)	70(85.4)	5.278(2.207-12.621)	25(42.4)	34(57.6)	3.680(1.723-7.861)
Weeping as Stress Coping Mechanism						
Yes	13(41.9)	18(58.1)		1	7(63.6)	4(36.4)
No	18(19.8)	73(80.2)	2.929(1.215-7.064)	64(57.7)	47(42.3)	1.285(0.356-4.645)
Feeling of Neglected						
No	11(25)	33(75)	0.967(0.413-2.264)	55(64.7)	30(35.3)	1
Yes ^c	20(25.6)	58(74.4)	1	16(43.2)	21(56.8)	2.406(1.094-5.291)

* Multiple response; 1-Reference category; a-other than happiness and sorrow both includes happiness, sorrow, struggle and living; b- other than good includes satisfactory and bad, c-includes sometimes and most often.

DISCUSSION

Various study conducted by Ghimire et al., Nagaraj AKM et al, Qadir F et al., Karini D. et al revealed that prevalence of the depression was higher in the old age home than community which was similar to present study.^{9,11-13} But in contrast with present study, a study done by George S et al. in Ernakulam, Kerala State, India showed no significant difference in both groups.¹⁴ Such difference in findings might be due to the variation in the sociocultural factors, study tools, study population and settings. In the present study, age was significantly associated with depression in both groups of elderly with 80+ with a higher likelihood of having depression than 60-69 and 70-79. Same as in the previous study conducted by George S. et al.¹⁴ But in contrast with present study, a study conducted by McDougalls et al. found that depression was significantly associated with young age.¹⁵ The result of this study was in accordance with the study of Timalcina R et al. which revealed that, depression was not significantly related to sex, marital status and education where prevalence of the depression was quite similar in both sex.¹⁶

But Qadir F et al. found opposing finding that depression was significantly related to sex, marital status, and education in respondents of old age home while compared with present study.¹² Similarly, in contrary with this study, a study conducted by Leal MC et. al, Bojorquez-Chapela et al. revealed that sex of elderly was significantly associated with depression.^{17,18} Chronic comorbidities were found to have association with depression in the elderly of old age home which agrees with the study of Ranjan S et al.¹⁹ But in case of the community it did not show association with depression in the study which was found to be in consistent with cross sectional study conducted by George S et al.¹⁴ Again, study conducted by Peltzer K et.al, Bodhare et al. and Grover and Malhotra revealed that there was association between depression and chronic disease in community which is in contrary with the present study. Contradictory result might be due to use of different diagnostic tool i.e. PHQ-9 and DSM-IV, study population, setting and different study design.²⁰⁻²² Care of family was significantly associated with depression in the elderly of the old age home where care of family was five (OR=5.278, CI 2.207-12.621) times less likely to cause depression than those without care similarly, it was strong predictor in the cross sectional study conducted by Grover and Malhotra.²²

The study revealed that those having lesser income were about ten times more prone to have depression than that of higher (P value=0.005), which was in accordance with cross sectional study conducted by Ghimire et al., Rashid and colleague on rural Malaysia, Rajkumar AP et al. in India.^{9,23,24} Elderly having functional disabilities in IADLs (Instrumental Activity of Daily living), an important predictor of depression among the elderly in the community. This finding was consistent with many

other studies conducted by Chalise H N, Peltzer K & colleague, Imran et al., Kim J and A Rashid et al.^{3,20,25,26,23} Social relationship was found to be associated with the depression in both the group which was similar to the finding of various studies.²⁷⁻³⁰

Weeping was found to be significant as a coping mechanism for the stress in present study which was contrary with the study conducted by Timalcina R et al.¹⁶ The study found that those who weep were at lower risk of the depression regarding respondent of the old age home. Findings of the study conducted by Dong X et al. suggests that depression was a major risk factor associated with elder abuse and neglect (p<0.003) among Chinese elderly. Similar finding was found in this study.²⁶

CONCLUSION

Elderly residing at old age homes were more likely to have depression than those residing at community. Age was significantly associated with depression in both groups of elderly population. In old-age home, depression was found to be associated with old-age allowance, bad perception of life, bad social relation, having a chronic disease, lack of care from family, stress and weeping as stress coping strategy were associated with depression. Whereas among the people living in their own home only the determinants like stress, non-involvement in family decision making, feeling of neglect, dysfunctional capability, bad social relation, lesser monthly income had positive relation with depression. It might be said that there might be slightly different associated factors of depression for residents of old age home and the residents of a community.

So, the family members in community and concerned authorities in old age homes should be made aware of the magnitude of this problem and should encourage them to provide care and support to the elderly. Regular health checkups should be done in old age homes to address the comorbidities and screening for depression can be combined with health checkups. Counseling and psychological services should be provided at old age homes so that depression can be prevented.

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