

Original Research Article

Associates of prevalence of depression among urban elderly of Kendujhar district: a study in Odisha, India

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ABSTRACT

Background: There is wide variation in the estimated prevalence of depressive disorder among older in India. The estimated prevalence of depression in India is ranging from 6 to 80% depending on various factors of population studies. The present research is an attempt to assess the factors associated with depression among elderly in urban area.

Methods: A descriptive study was carried out among older in urban area of Kendujhar district of Odisha, India with sample size 150 by random sampling method. A pre-structured questionnaire containing socio-demographic data sheet and geriatric depression scale (GDS) was used.

Results: The overall depressive symptom among elderly was reported to be 66%. Socio-demographic factors such as 70-75 age group, female sex, illiteracy, low education, widowhood and no personal income were significantly associated with depression ($p < 0.05$), where no significant association existed between depression and family income as well as family type. The results showed high significant association of meditation, yoga and exercise with depression. Activity such as marketing and record keeping were positively associated with depression ($p < 0.05$), where no significant association of depression with gardening, cooking and cleaning ($p > 0.05$). Health problems such as weakness, leg pain, knee pain and medical illnesses such as cataract and tuberculosis were positively associated with depression. The findings show depression was not significantly associated with gardening, cooking, cleaning back pain, shoulder pain, headache and asthma ($p > 0.05$).

Conclusions: A majority of participants are having depression (66%). There is need to identify and diagnose the problems of aged in urban area and start treatment earlier as possible.

Keywords: Depression, Elderly, Urban area

INTRODUCTION

Population aging worldwide is the result of demographic transition. The major factors contribute population of aging are reduction in high fertility and mortality along with rapid expansion of medical sciences, leading to an increase life expectancy. The life expectancy at birth in 2000 is 62.5 year and that increase to 66.8 years in 2011; in which there is a shift from low life expectancy to high as consequences a proportional share of older person in the total population of India.^{1,2} In India aging population has been increasing from first census in 1951 to 2011 that is

19.8 million to 104 million.^{3,4} World Health Organization (WHO) estimated that the global aging population will be almost double from about 12% to 22 % between the years 2015 to 2050.⁵

Depression is a common mental health disorder in older population. WHO report says late life depression affect about 7% of world's normal older population.⁵ There is wide variation in the estimated prevalence of depressive disorder in older in India. The estimated prevalence ranging from 6 to 80% depending on various factors of population studies.⁶⁻⁸

There are several risk factor associated with depression in old age. Physical ill health, socioeconomic status (SES) and life style of an individual greatly affect mental health in later age.^{9,10} As aging is a biological process, continuous changes occur in physical and mental competencies with advancing age and they are likely to suffer several problems like health, health care, economic, housing, family composition and social isolation.^{11,12} The global disability adjusted life year (DALY) in the year 2020 show that unipolar major depression could become the second leading cause in disease burden after ischemic heart disease in high income countries.¹³

Though depression is the common mental health disorder in later age, very less community studies have been conducted in India. In Kendujhar district of Odisha, no similar study has been conducted in the past. This is purely a new piece of work in Kendujhar district of Odisha. However, Kendujhar district is one among four industrialized district of Odisha. Depressive symptoms are higher among elderly in urban areas due to impact of industrialization, urbanization and changing pattern of life style, considering this factor Kendujhar district was chosen for study area.

METHODS

The study was aimed to find out the prevalence of depression of older adults in urban areas of Kendujhar district. Descriptive study design and survey method were used. The study was conducted in selected wards of Kendujhar District under municipal administration. Multistage random sampling techniques was used in this study. Older adults age 60-75 year (young old) were selected from urban areas by following method. In the first stage of sampling, out of four municipality namely, Anandapur, Barbil, Joda and Kendujhargarh of Kendujhar district, one municipality, Kendujhargarh municipality was selected randomly by using random number table. There are twenty one wards for the Kendujhargarh municipality. From these seven wards were selected in the second stage. In the third stage, the method of random sampling was adopted for selecting 150 sample units. The men and women between 60 to 75 years were taken for the study. Person above 75 year, with hearing impairment, severe ill health, and not interested to consent and not able to understand the questionnaire were excluded from the study. The estimated elderly population in the study area was 1134. Only 150 samples were selected by systematic sampling procedure. Information was collected by a pre-structure questionnaire. Face to face interview was conducted by survey method. Socio-demographic information of the individual such as age, sex, education, personal income, family income, spousal status and type of family was collected. The health habits such as meditation, yoga, exercise and other activity like gardening, cooking, cleaning, marketing and record keeping were collected by self-report of participants. Self-reported-health (SRH) data was collected from the participants when they were interviewed. The health data was included common

physical problems (weakness, leg pain, knee pain, back pain, shoulder pain, headache) and illnesses (asthma, cataract and tuberculosis) suffered by elderly.

Study tool

Geriatric depression scale (GDS) developed by Yesavage et al which consisted of 20 items was used to measure the depressive disorder of participants. GDS was used for the interview of subject. Out of 20 items, 16 items indicated depression when answered positively. Similarly, 4 items indicated depression when answered negatively. The scale was on psychological basis: 1 score was taken for yes response of 16 items where 4 items for no response. The score 1 and 0 was given depending on the answer for 20 items. The cutoff for normal state was score 0-6, for moderate 7-13 and for severe depression 14-20. The GDS scale was administered to elicit information about depression among older adults. Face to face interview was conducted in the local language for screening the level of depression in study participants. GDS has been widely used for screening depression among elderly in the community. The depression score was found to 58.7% moderate and 7.3% severe depression when evaluated. The validity and reliability of the tool have been supported both study area and research. Data were entered in MS-excel. Statistical package for the social sciences (SPSS) 16.0 was used to analyze the data. The analysis included frequencies and percentage. The statistical test Chi-square was used to find out the association between variables with 95% confidence interval (CI). 5% level of significance ($p < 0.05$) was considered to be statistically significant.

RESULTS

Table 1 reveals the socio economic status as well as association between socio-demographic variables and depression of older adults. A total 75 males and 75 females were interviewed. Majority of the elderly participants were 66-70 years (39.3%). 41.3% study participants were in intermediate and above educational qualifications. Majority 47.3% not get pension from any source. Based on SES of study participant majority 35.3% in class I (low) followed by class III (high) and class II (middle) income group.

With regard to type of family 59.3% subjects were from nuclear and 40.7% from joint family. 81.3% participants reported that their partners were alive. Personal income status of the participants implies that the high percentage (65.33%) had personal income. However, 45.33% were economically dependent on others. The socio-demographic factors such as 70-75 age group, female sex, illiteracy and low education, widowhood and no personal income were significantly associated with depression ($p < 0.05$).

The information about health habits and other activities performed by elderly depict in Table 2. Results reported that 38.7%, 47.3% and 23.3 % participants were doing

yoga, meditation and exercise respectively. Majority of respondents (61.3%, 52.6% and 76.6%) were not doing yoga, meditation and exercise. The association between depression and health habits of participants such as not performing meditation, yoga and exercise were significantly associated with depression ($p < 0.05$).

Table 3 reveals the association between depression and activity performed by participants. Activity performed by respondents were gardening (46.7), marketing (54%), cooking (54.7), cleaning (46%) and record keeping (43.3). Depression was found to be associated with not doing marketing and not keeping records. There was no significant association found between depression and activity such as gardening, cooking and cleaning ($p > 0.05$).

Table 4 shows the distribution of health data with relation to depressive symptoms of study participants. Health data of the participants reported about the common health

problems suffered by elderly such as weakness (45.3%), knee pain (42%), leg pain (44%), back pain (24.66), shoulder pain (21.33%) and headache (14.66%). Statistically significant association was found between depression and health problems such as depression and feeling of weakness (χ^2 value 12.277, $p < 0.0001$), depression and Knee pain (χ^2 value 5.001, $p < 0.05$) and depression and leg pain (χ^2 value 5.001, $p < 0.05$). The findings show that the depression was not significantly associated with back pain, shoulder pain and headache ($p > 0.05$).

Table 5 reports the presence of medical illnesses among subjects were asthma, diabetes, hypertension, cataract and tuberculosis. Depression was found to be statistically significant with cataract and tuberculosis ($p < 0.05$), where no significant association of asthma, diabetes and hypertension with depression ($p > 0.05$).

Table 1: Association between depression and socioeconomic status of elderly.

Socioeconomic variable	Depression present (%)	Depression absent (%)	χ^2	df	Significance
Age (in years)					
60-65	28 (59.6)	19 (40.4)	9.125	2	0.010
66-70	34 (57.6)	25 (42.4)			
>71	37 (84.1)	07 (15.9)			
Sex					
Male	44 (58.7)	31 (41.3)	3.616	1	0.042
Female	55 (73.3)	20 (26.7)			
Educational status					
No formal	13 (81.2)	3 (18.8)	11.864	3	0.008
Upto primary	18 (90)	2 (10)			
Upto matric	36 (67.9)	17 (32.1)			
Up to graduation and above	32 (52.5)	29 (47.5)			
Spousal status					
Live	71 (58.2)	51 (41.8)	17.735	1	0.000
Not live	28 (100)	0 (0)			
Personal income					
No personal income	42 (80.8)	10 (19.2)	13.287	2	0.001
<5000	20 (76.9)	6 (23.1)			
>5000	37 (51.4)	35 (48.6)			
Economic status					
Low	26 (72.2)	10 (27.8)	4.953	2	0.084
Middle	16 (84.2)	3 (15.8)			
High	57 (60.0)	38 (40.0)			
Pension					
1	38 (58.5)	27 (41.5)	6.228	2	0.044
2	13 (92.9)	1 (7.1)			
3	48 (67.6)	23 (32.4)			
Family type					
Nuclear	59 (66.3)	30 (33.7)	0.008	1	0.927
Joint	40 (65.6)	21 (34.4)			

Table 2: Association between depression and health habits of elderly.

Health habits	Depression present (%)	Depression absent (%)	χ^2	df	Significance
Meditation					
Yes	40 (56.3)	31 (43.7)	5.608	1	0.018
No	59 (74.7)	20 (25.3)			
Yoga					
Yes	30 (51.7)	28 (58.3)	8.588	1	0.003
No	69 (75.0)	23 (25.0)			
Exercise					
Yes	14 (40)	21 (60)	13.753	1	0.000
No	85 (73.9)	30 (26.1)			

Table 3: Association between depression and activity of elderly.

Activity	Depression present (%)	Depression absent (%)	χ^2	df	Significance
Gardening					
Yes	41 (58.6)	29 (41.4)	3.228	1	0.072
No	58 (72.5)	22 (27.5)			
Cooking					
Yes	53 (64.6)	29 (35.4)	0.150	1	0.690
No	46 (67.6)	22 (32.4)			
Cleaning					
Yes	48 (69.6)	21 (30.4)	0.724	1	0.395
No	51 (63.0)	30 (37.0)			
Marketing					
Yes	46 (56.8)	35(43.2)	6.656	1	0.008
No	53 (76.8)	16(23.2)			
Record keeping					
Yes	32 (49.2)	33(50.8)	14.374	1	0.000
No	No (78.8)	18(21.2)			

Table 4: Association between depression and health problems of elderly.

Health problems	Depression present (%)	Depression absent (%)	χ^2	df	Significance
Weakness					
Yes	55 (80.9)	13 (19.1)	12.277	1	0.000
No	44 (53.7)	38 (46.3)			
Knee pain					
Yes	47 (74.6)	16 (25.4)	3.583	1	0.042
No	52 (59.8)	35 (40.2)			
Leg pain					
Yes	50 (75.8)	16 (24.2)	5.001	1	0.025
No	49 (58.3)	35 (41.7)			
Back pain					
Yes	27 (73.0)	10 (27.0)	1.064	1	0.302
No	72 (63.7)	41 (36.3)			
Shoulder pain					
Yes	22 (66.7)	11 (33.3)	0.008	1	0.927
No	77 (65.8)	40 (34.2)			
Headache					
Yes	14 (63.6)	8 (36.4)	0.064	1	0.800
No	85 (66.4)	43 (33.6)			

Table 5: Association between depression and medical illness among elderly.

Medical illnesses	Depression present (%)	Depression absent (%)	χ^2	df	Significance
Asthma					
Yes	11 (84.6)	2 (15.4)	2.198	1	0.138
No	88 (64.2)	49 (35.8)			
Diabetes					
Yes	24 (63.2)	14 (36.8)	0.183	1	0.669
No	75 (67.0)	37 (33.0)			
Hypertension					
Yes	13 (92.9)	1 (7.1)	4.963	1	0.026
No	86 (63.2)	50 (36.8)			
Cataract					
Yes	21 (91.3)	2 (8.7)	7.751	1	0.005
No	78 (61.4)	49 (38.6)			
Tuberculosis					
Yes	7 (100)	0 (0)	5.992	1	0.014
No	92 (64.3)	51 (35.7)			

In the study, majority of participant were experiencing moderate depression (58.7%) followed by no depression (34%) and severe depression (7.3%) according GDS. The result of the level of depression among young elderly were presented in Table 6 and visualized in Figure 1.

Table 6: GDS indicating level of depression of total participants.

Depression	N	%
Normal	51	34
Moderate	88	58.7
Severe	11	7.3

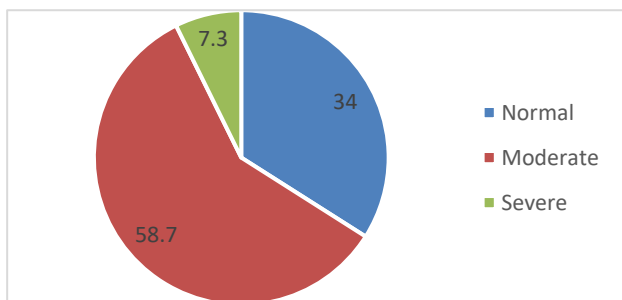


Figure 1: Level of depression of participants.

DISCUSSION

In this study the prevalence of depression was found 66%. Socio demographic factors were found to be statistically significant with depression. Study by Sangma et al showed significant association between depression and socio demographic factors like age, education, occupation, marital status, type of family, financial dependency, health condition and limitation of daily activities.¹⁵ The result obtained in the study were similar with the study done by Buvneshkumar et al and other.¹⁶⁻¹⁸ Similar findings were observed that depression was associated with increasing

age, female gender, no formal education and lower educational status.^{6,19,20} This may be said that as age increases physical competencies slower down consequently higher morbidities make them alienated from doing physical and other activity and they become more dependent on others for their daily needs, this in turn contribute to psychological depression. However, depression was significantly associated with female sex, Thirthahalli et al and other supported this finding.^{8,21} Gender role playing a significant role in many societies, Female are deprived of many rights in family and society. Low and unequal right make them vulnerable and reach to its extremities in old age.

In health factors, depression was significantly associated with regularly experiencing health problems (weakness, knee pain and leg pain), $p < 0.05$. However, cataract and tuberculosis was significantly associated with depression ($p < 0.05$). The is supported by Mylona et al and Ige et al where poor health status and medical illness are the risk factors for depression.^{22,23} Physical deterioration and illness make a person isolate or alienate. As result an individual loss his personal interest and desire. Many face problems in doing their daily activities as well as loss their dignity in both family and society.

Health habits such as meditation, yoga and exercise are indicator of better mental health of an individual. In the study higher proportion of participants were not doing meditation, yoga and exercise. Depression was found to be associated with meditation, yoga and exercise, Cherubala et al argued that yoga and exercise are effective in reducing the severe and common health disorder.²⁴⁻²⁶

In the study, depression was associated with gardening, marketing and record keeping ($p < 0.05$). This study is supported by Sangma et al where the limited involvement in daily activities are significantly associated with depression.¹⁵ In the study Participants who were less involved in gardening marketing and record keeping had

more depression. In the present study higher percentage of older adults were prone to mental health disorder like depression. The prevalence of depression among older adults in our study congruents with the study of Sangma et al and others.^{15,17,21}

CONCLUSION

The present research revealed that the prevalence of depression was higher in older adults. As the proportion of older has been increasing at high speed, it is important to identify and diagnose the problems of aged in urban area and start treatment earlier as possible. Innovative programs, policies and public welfare services should be launched in favor of older person. Separate geriatric ward and hospitals should be established for senior citizen. Special geriatric ward should be established in each hospital for regular health checkup and medical counseling. Voluntary organization should expand their horizon on the welfare of aged. It is needed to awareness of social worker, health care professionals and family members about care of older. Yoga and day care centre should be established along with trained professional for healthy living of elderly. Encourage them to develop health habits like Meditation, yoga and exercise in regular basis by the help of trained professionals. Hence, they can enjoy better mental health with no depression.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

- Shettar SC, Azim S. Care of elderly in changing Indian family. *Social Welfare*. 2011;58:21-3.
- CIA World Fact Book. Available at: <https://www.cia.gov/library/puboications/the-world-factbook>. Accessed on 05 September 2011.
- Central Statistics Office. Elderly in India- profile and programmes, Ministry of statistics and programme implementation government of India. 2016.
- Verma MM. Elder abuse: The problem and the way out. *Social Welfare*. 2011;58:5-11.
- World Health Organization (WHO). Mental health of older adults. Available at: <https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults> 2017. Accessed on 05 September 2011.
- Arumugam B, Nagalingam S, Nivetha R. Geriatric depression among rural and urban slum community in Chennai- A crosssectional study. *J Evol Med Dent Sci*. 2013;2:795-801.
- Mathias K, Goicolea I, Kermodé M, Singh L, Shaidhayé R, Sebastian MS. Crosssectional study of depression and help-seeking in Uttarakhand, North India. *BMJ Open*. 2015;5:e008992-8.
- Pilania M, Yadav V, Bairwa M, Behera P, Gupta SD, Khurana H, Mohan V, Baniya G, Poongothai S. Prevalence of depression among the elderly (60 years and above) population in India, 1997-2016: a systematic review and meta-analysis. *BMC Public Health*. 2019;19:832-18.
- 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. *Int Psychogeriatr*. 2009;21:372-8.
- Zalavadiya DD, Banerjee A, Sheth AM, Rangoonwala M, Mitra A, Kadri AM. A comparative study of depression and associated risk factors among elderly inmates of old age homes and community of Rajkot: A Gujarati version of the geriatric depression scale-shortform (GDS-G). *Indian J Community Med*. 2017;42:204-80.
- Jariwala V, Bansal, RK, Patel S, Bimal T. A Study of depression among aged in Surat city. *Nat J Comm Med*. 2010;1:47-9.
- Pilania M, Bairwa M, Kumar N, Khanna P, Kurana H. Elderly depression in India: An emerging public health challenge. *Australasian Med J*. 2013;6:107-11.
- The World Health Organization (WHO). *World Health Report: Mental Health: New understanding*. New Hope. Geneva. The Institute. 2001.
- Yesavage JA, Brink T, Rose TL, Lum O, Huang V, Adey M, Leirer VO. Development and validation of a geriatric depression among young adults, institutionalized aged and non- institutionalized aged. *J Psychiatr Res*. 1983;17:37-49.
- Sangma RJB, Konjengbam S, Laishram J, Elangbam V. Depression and its associated risk factor among elderly in an urban area: A cross-sectional study. *J Med Soc*. 2018;32:106-10.
- Buvneshkumar M, John KR, Logaraj M. A study of prevalence of depression and associated risk factors among elderly in rural block of Tamil Nadu. *Indian J Public Health*. 2018;62:89-94.
- Rathod MS, Dixit JV, Goel AD, Yadav V. Prevalence of depression in an urban geriatric population in Marathwada region of West India. *Ind J Psychol Med*. 2019;41:32-7.
- Pracheth R. Urban-rural comparison of depression among the elderly population: A cross sectional study. *Int J Med Sci Public Health*. 2016;5:866-72.
- Radhakrishnan S, Nayeem A. Prevalence of depression among geriatric population in a rural area in Tamilnadu. *Int J Nutr Pharmacol Neurol Dis*. 2013;3:309-12.
- Seby K, Chaudhury S, Chakraborty R. Prevalence of psychiatric and physical morbidity in an urban geriatric population. *Ind J Psychiatr*. 2011;53:121-7.
- Thirahalli C, Suryanarayana SP, Sukumar GM, Bharath S, Rao GN, Murthy NS. Proportion and factor associated with depressive symptoms among elderly in an urban slum in Bangalore. *J Urban Health*. 2014;91:1065-75.
- Mylona I, Floros G, Dermenoudi M, Ziakas N, Tsinopoulos I. A comparative study of depressive symptomatology among cataract and age-related

- macular degeneration patients with impaired vision. *Psychol Health Med*. 2020;25:1130-6.
23. Ige OM, Lasebikan VO. Prevalence of depression in tuberculosis patients in comparison with non-tuberculosis family contacts visiting the DOTS clinic in a Nigerian tertiary care hospital and its correlation with disease pattern. *Ment Health Fam Med*. 2011;8:235-41.
 24. Cherubala AG, Suhavana B, Padmavati R, Raghavan V. Physical activity and mental health in India: A narrative review. *Int J Soc Psychiatr*. 2019;65:656-67.
 25. Chong CSM, Tsunak M, Chan EP, Cheung WM. Effect of yoga on stress management in healthy adults : A systematic review. *Alternative Therap Health Med*. 2011;17:32-8.
 26. Palinkas LA, Wingard DL, Barrett-Conner E. Chronic illness and depressive symptoms in the elderly: A population based study. *J Clin Epidemiol*. 1990;43:1131-41.
 27. Saikia DAM, Mahanta DN, Saikia AM, Deka DH, Borua DB, Mahanta R. Depression in elderly: a community based study from Assam. *Indian J Basic App Med Res*. 2016;5:42-8.

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