

Assessment of Depression in Older Adults in a Rural Field Practice Area of a Tertiary Health Care Centre of Western Maharashtra

Kale Kalpana M¹, Aswar Nandkeshav R², Mujumdar Harshawardhan N³

¹Associate Professor, ²Professor and Head, ³Post Graduate student, Department of Community Medicine, Govt. Medical College, Miraj.

How to cite this article: Kale Kalpana M, Aswar Nandkeshav R, Mujumdar Harshawardhan N. Assessment of Depression in Older Adults in a Rural Field Practice Area of a Tertiary Health Care Centre of Western Maharashtra. Indian Journal of Public Health Research and Development/Volume 15 No. 2, April - June 2024.

Abstract

Background: Depression in older adults is a disease as well as a risk factor for other diseases. The objective of the present study was assessment of depression in older adults residing in a rural field practice area of a tertiary health care centre of Western Maharashtra.

Methods: In the present cross-sectional study, systematic random sampling with population proportionate to sample size was used to select a sample of 660 older adults from the study population. A predesigned questionnaire was used and clinical examination was done. Patient Health Questionnaire (PHQ) 12 after translating into the local language (Marathi) was used for the diagnosis of depression. Those who gave consent to participate were included and those who could not give consent due to serious illness were excluded from the study. Data analysis was done in Microsoft Excel. Statistical association between variables was tested using chi square test.

Conclusion: Depression was significantly associated (p value < 0.05) with the female gender, widow/widower, illiteracy, sedentary life, anaemia and osteoarthritis. The community health workers in rural areas can help to provide health services including those for depression and so their proper training is necessary.

Keywords: Assessment, depression, older adults.

Introduction

In India, two-thirds of the geriatric population resides in rural areas and half of this belongs to poor socioeconomic status.¹ The increase in the geriatric population has resulted in an increase in the economically nonproductive dependent individuals and a higher dependency ratio. Due to migration of young people from rural to urban areas because of urbanization, the elderly people living in the rural

areas are left with very little economic and social support. Due to the social isolation, there is an increase in the morbidities of physical and mental health of the elderly. According to the World Health Organization (WHO), morbidity can be estimated by identifying the number of individuals who were ill, the illnesses that these individuals experienced and the period of illness.²

Globally, 15 percent of the older adults are

Corresponding Author: Mujumdar Harshawardhan N, Post Graduate student, Department of Community Medicine, Govt. Medical College, Miraj.

E-mail: harshmjmdr@gmail.com

Submission date: Jun 27, 2023,

Revision date: Jul 27, 2023,

Published date: Apr 4 2024

known to be suffering from mental health disorders, of which depression and dementia are the major ones. The prevalence of depression in the elderly increases as the age advances and therefore the elderly are considered as a vulnerable population for depression.³ Depression in the elderly is a disease as well as a risk factor for other diseases. It is the main cause of dementia, cognitive dysfunction, impaired daily routine activities and quality of life. It may also be a cause of cardiovascular diseases in the elderly. Social support and physical activity are protective against elderly depression.⁴

Depression is a very serious health problem in the elderly population all over the world, with global incidences that range from 1% to 16%.⁵ Up to two thirds of suicides that occur in the elderly all over the world are because of major depression.⁶ Depression is generally considered a normal part of aging and so most of the times, geriatric depression is under diagnosed and is not noticed as a serious concern. Depression itself is a risk factor for many serious diseases and so its early diagnosis and treatment is necessary to improve the quality of life of the older adults, maintain optimal levels of function and independence, which will lead to a significant reduction in mortality due to suicide and other medical illnesses.⁷ It is important to identify the magnitude of depression in the elderly and their health assessment should include psychological assessment as well.

In the year 2017, due to the continuing stigma associated with mental illness, the WHO World Health Day emphasized the importance of mental health with the theme "Depression: let's talk". On 10th October every year, 'World Mental Health Day' is observed as a day for global mental health education, awareness and advocacy against social stigma.⁸ Every year, "International Day for Older Persons" is also observed on 1st October and the government and societies actively take part in developing, ensuring and promoting access to comprehensive healthcare services that are oriented and better focussed towards older people.⁹

The present study was conducted with the objective of assessment of depression in older adults residing in a rural field practice area of a tertiary health care centre of Western Maharashtra.

Materials and Methods

The present community-based descriptive cross-sectional study was conducted in the rural field practice area of a tertiary health care centre of Western Maharashtra from October 2020 to December 2022. The RHTC (Rural Health Training Centre) is situated at a distance of 30 km from the medical college and the headquarters of the RHTC is situated at tahshil/ taluka place and provides OPD (Out-patient Department) services, dental OPD services, immunization services and laboratory diagnostic services to the people residing in the taluka and also to the people residing in all the villages at the periphery. The population of this headquarters is 40,700 and there are 20 wards. Hence this population is considered as urban population and for administrative purpose and for ease, the older adults above 60 years of age were selected from this population as the study population for the present study.

Systemic random sampling with PPSS (Population proportionate to sample size) was used for selecting the sample in the present study. The total population of the study area was about 40,700. Out of this, the total number of older adults was 3,132. The prevalence of common morbidities in the older adults residing in the study area was considered as 50% as it gives maximum sample size. With the confidence level set at 95%, and adding additional 10 percent considering non responses, the final sample size came out to be 660. The sample was drawn from a total of 20 wards of the study area according to population proportionate to size of the ward. Out of the total population 40,700, about 7.7% i.e., 3,132 consists of older adults.¹⁰ From the voters list, the people residing in a ward who were above 60 years of age were marked and from the list of these people, every 5th person was selected. Before conducting the study, ethical approval was obtained from the Institutional Ethics Committee. The purpose of the study was explained to the study participants and their verbal consent was obtained.

Inclusion criteria:

- i. All the people 60 years of age and above residing in the study area for more than one year.
- ii. People who were willing to give consent to participate in the study.

Exclusion criteria:

i. People who were not willing to participate in the study due to being seriously ill or due to some other reasons.

ii. People who were not traceable after three successive visits.

A predesigned and pretested questionnaire was used for collection of data. Sociodemographic information was noted and clinical examination was carried out. Clinical examination of female participants was carried out in the presence of a female attendant, for example, ASHA (Accredited Social Health Activist) worker or ANM (Auxiliary Nurse Midwife).

Past history was taken and participants who were already diagnosed with diseases like diabetes mellitus, hypertension, cataract, glaucoma, osteoarthritis, bronchitis, etc. and taking medications for the same were noted based on the investigations done before.

Patient Health Questionnaire (PHQ) 12¹¹ after translating into the local language (Marathi) was used for the diagnosis of depression.

Modified Kuppuswamy scale of socioeconomic status classification for the year 2022 was used in the study to classify the study participants according to their socioeconomic status.¹²

The study participants were classified as physically active or inactive based on the criteria for physical activity given by the CDC (Center for Disease Control and Prevention).¹³

Statistical analysis:

Data entry and analysis was done in Microsoft Excel. Percentages were calculated. The statistical association between variables was tested using chi square test.

Results

Out of the total 660 study participants, there were 345 females and 315 males. The mean age of all the participants was 67.73 5.17 years, the highest age was 84 years and lowest age was 60 years.

The number of married participants was 605 (92%) which included 299 (45.30%) males and 306 (46.36%) females while out of the 55 (8%) widows and widowers, there were 16 (2.42%) widowers and 39 (5.91%) widows.

There were 290 (44%) literate males and 25 (3.8%) illiterate males. 172 (26.06%) females were literate while 173 (26.21%) females were illiterate.

According to the modified Kuppuswamy classification, majority of the study participants i.e., 362 (54.84%) belonged to the upper lower class IV, 151 (22.87%) study participants belonged to lower middle class III, 120 (18.18%) study participants belonged to upper middle class II and only 27 (4.1%) study participants belonged to upper class I.

Out of the 660 study participants, 626 (94.84%) study participants were found to be physically active while 34 (5.15%) of them were leading a sedentary life.

Table 1: Distribution of study participants according to co-morbidities (n=660).

Comorbidities	Males		Females		Total	
	Number	Percent	Number	Percent	Number	Percent
Anaemia	8	1.21	164	24.84	172	26.06
Hypertension	197	30	129	19.54	326	49.39
Diabetes Mellitus	150	22.72	136	20.60	286	43.33
Cataract	43	6.51	60	9.10	103	15.60
Glaucoma	3	0.45	0	0	3	0.45
Hearing loss	13	1.97	14	2.12	27	4.10
Osteoarthritis	15	2.27	45	6.82	60	9.10
Rheumatoid arthritis	0	0	2	0.30	2	0.30
Past history of MI	5	0.76	0	0	5	0.76
Chronic bronchitis	6	0.91	0	0	6	0.91
Varicose veins	3	0.45	0	0	3	0.45
H/O major surgery	5	0.76	11	1.67	16	2.42

The major co-morbidities found in the study population were hypertension (49.39%), diabetes mellitus (43.33%), anaemia (26.06%) and cataract (15.60%).

There were 197 (30%) males and 129 (19.54%) females who had hypertension. Out of the 286

(43.33%) diabetic study participants, there were 150 (22.72%) males and 136 (20.60%) females. Out of the 172 (26.06%) participants having anaemia, most of them i.e., 164 (24.84%) were females compared to 8 (1.21%) males.

Table 2: Distribution of study participants according to PHQ (Patient Health Questionnaire) 12 item (n=660).

Grading of stress/ depression	Males		Females		Total	
	Number	Percent	Number	Percent	Number	Percent
No depression	303	46	296	44.84	599	90.75
Mild depression	12	1.82	41	6.21	53	8.03
Moderate depression	0	0	8	1.21	8	1.21
Severe depression	0	0	0	0	0	0
Total	315	47.72	345	52.27	660	100

Depression was present in 61 (9.24%) of the study participants out of which 53 (8.03%) were suffering from mild depression and 8 (1.21%) were suffering from moderate depression. There were no cases of severe depression found among the study participants.

Table 3: Association of demographic variables and sedentary lifestyle with depression.

Gender	Depression		Total
	Yes	No	
Male	12	303	315
Female	49	296	345
Total	61	599	660
Chi square value: 21.20 p value: < 0.05 df=1			
Marital Status	Depression		Total
	Yes	No	
Married	39	566	605
Widow/ Widower	22	33	55
Total	61	599	660
Chi square value: 67.67 p value: < 0.05 df=1			
Education	Depression		Total
	Yes	No	
Illiterate	29	169	198
Literate	32	430	462
Total	61	599	660
Chi square value: 9.85 p value: < 0.05 df=1			

Sedentary lifestyle	Depression		Total
	Yes	No	
Yes	8	26	34
No	53	573	626
Total	61	599	660
Chi square value: 8.72 p value: < 0.05 df=1			

The association between depression and the female gender was found to be statistically significant which meant that females were more likely to develop depression than males.

Out of the 605 study participants that were married, 39 (6.44%) participants had depression and out of the 55 participants that were widow/widower, 22 (40%) participants had depression. The association between depression and being widow/widower was statistically significant.

Out of the 198 illiterate participants, there were 29 (14.6%) participants that had depression while out of the 462 literate participants, only 32 (7%) participants had depression. Association of a participant being illiterate was significantly associated with depression.

Among the 34 study participants who were sedentary, 26 had diabetes mellitus, 24 had hypertension, 13 had anaemia and 8 had depression. Out of the 34 sedentary participants, 8 (23.53%) participants had depression while out of the 626 physically active participants, 53 (8.5%) participants had depression. The association between leading a sedentary lifestyle and depression (chi square value: 8.72) was statistically significant.

Table 4: Comparison of depression with co-morbidities of study population (n=61).

Co-morbidities	Grading of depression			Total	Chisquare value	p value
	Mild	Moderate	Severe	Number(%)		
Anaemia	33	8	0	41 (67.24)	59.07	< 0.05
Hypertension	25	8	0	33 (54.12)	0.60	> 0.05
Diabetes Mellitus	22	0	0	22 (36.08)	1.44	> 0.05
Cataract	5	2	0	7 (11.48)	0.87	> 0.05
Osteoarthritis	14	3	0	17 (27.88)	28.67	< 0.05

According to table 4, out of the 61 study participants who had depression, 41 (67.24%) participants were anaemic, 33 (54.12%) had hypertension, 22 (36.08%) had diabetes mellitus, 17 (27.88%) had osteoarthritis and 7 (11.48%) had cataract. The association of depression with anaemia and osteoarthritis was found to be statistically significant.

Discussion

In the present study, out of the total 660 study participants, there were total 345 females and 315 males. The mean age of all the participants was 67.73 5.17 years. The highest age was 84 years and lowest age was 60 years. A majority of the males and females i.e., 238 (36.05%) belonged to the age group of 60 to 64 years and those above 80 years of age were the least i.e., 9 constituting about only 1.36% of the study population.

A study done by Dasgupta A et al.¹⁴ in 2014 in a slum of Kolkata showed that the mean age of study participants was 70 years. Majority of the study participants were females (53.1%) which was similar to our study findings.

The prevalence of depression in the present study was 9.24%. A similar prevalence of depression was found by a study conducted by Sudarshan Ramaswamy et al.¹⁵ in which out of the 240 study participants, 23 participants (10%) had depression.

In the present study, the association between depression and the female gender was found to be statistically significant with a p value < 0.05.

Similar finding was seen in a study conducted by Ramesh D. Pawar et al.¹⁶ in which out of the total 290 study participants, there were 146 (50.34%) females and 144 (49.66%) males. There were 107 females and 61 males that had depression and so depression

was more common in females than the males with this difference being statistically significant having p value < 0.05.

In the present study, the association between depression and being widow/widower was statistically significant with a p value < 0.05.

Similar findings were reported by the study conducted by Ramesh D. Pawar et al.¹⁶ in which it was found that out of the 178 participants who were married, 77 had depression while out of the 112 participants that were widows/widowers, 91 had depression. Depression was more among elderly who were either widowed or separated or living single (54.17%) than elderly who were married (45.83%) and living with their spouses and it was statistically significant (p < 0.05).

A study done by Armugam B et al.¹⁷ in Chennai showed that 48% participants who had lost their spouse were having depression.

The findings of these studies were similar to the findings of the present study that showed that prevalence of depression was more in the study participants who were widows/widowers.

In the present study, depression was significantly associated with illiteracy with a p value of < 0.05. The following studies showed findings similar to the present study regarding the association of illiteracy with depression.

In a study done by Ramesh D. Pawar et al.¹⁶ it was found that out of the 192 illiterate study participants, 118 participants had depression while out of the 98 literate study participants, 50 participants had depression.

In a study done by Manjubhashini S et al.¹⁸ in 2013, in Vishakhapatnam, depression was found to

be more in illiterates (35%) when compared with other educated study participants.

A study done by Sharma DK et al.¹⁹ in 2016, in Belgaum showed that 40.6% of the illiterates had depression and this was more when compared with other educated study participants.

In the present study, the association between leading a sedentary life and depression was statistically significant with a p value < 0.05.

Similar findings were found in the study conducted by Ramesh D. Pawar et al.¹⁶, in which the elderly who were involved in physical activity were less depressed (52.11%) compared with elderly not doing regular physical activity (69.00%) and the difference was found to be statistically significant. Similar findings were seen in studies conducted by Goswami et al.²⁰ and Sharma R et al.²¹

In the present study, the association of depression with anaemia and osteoarthritis was found to be statistically significant with p value < 0.05.

Similar findings were found by the study done by Grover S et al.²² in which more than three fourth of the study participants with depression had at least one physical illness with hypertension being the most common physical comorbidity followed by diabetes mellitus and osteoarthritis. The presence of a physical illness was associated with depression.

Conclusion

The findings of the present study show that depression was more prevalent in females compared to males and this was statistically significant. It was also found that being a widow/widower, illiterate or leading a sedentary lifestyle was significantly associated with depression. The older adults have many comorbidities out of which in the present study, anaemia and osteoarthritis were significantly associated with depression. Many other studies have also shown findings similar to the present study.

Early diagnosis and treatment of depression in the older adults, proper counselling and follow up is necessary. The prevalence of depression increases with increasing age of a person and so proper counselling and treatment of the patients of depression is necessary. Health education of the older

adults, their family members and the community in which they live regarding ways to prevent depression like doing hobbies, doing regular exercise, getting oneself involved in cultural activities, religious activities, social gatherings, meeting relatives every once in a while, maintaining weight to prevent other diseases that also might be a cause of depression, etc. is necessary.

Depression can occur after a person retires from work but it should not be looked upon as a normal process because depression after retirement is preventable and treatable. Management of depression in older adults is related to complex interactions between various psychological, biological, and social risk factors. There are many barriers in proper diagnosis and treatment of depression and there are shortages in the geriatric mental health workforce. Therefore, intersectoral coordination between clinicians, non-clinical professionals and community health workers is necessary.

The community health workers in the rural areas can help significantly in providing all sorts of health services including those for depression and so proper training of such community health workers is equally important.

Along with health workers, community health workers and social service workers, family members can play a very important role in healthy aging of older adults by giving them the proper emotional, moral and financial support in times of need and also help to improve their compliance to their medications if they are having any chronic disease which will prevent them from getting ill and ultimately result in good physical, mental and social well-being of the older adults.

Ethical clearance: Taken from Institutional Ethics Committee of the Institution.

Source of funding: Self.

Conflict of Interest: Nil.

References

1. Lena A, Ashok K, Padma M, Kamath V, Kamath A. Health and social problems of elderly: Across-sectional study in Udupi taluk, Karnataka. *Indian J Community Med* 2009;34:131-4.

2. What is morbidity? Definition and meaning. BusinessDictionary. [online] 2016 [Cited 2016 August 8]. Available from: URL: <https://www.google.com.pk/search>.
3. Yesavage J A, et al. Development and validation of a geriatric depression scale: A preliminary report. *J Psychiat Res* 1983;17(1):37-49.
4. Satapathy R, Kar N, Das I, Kar GC, Pati T. A study of major physical disorders among the elderly depressives. *Indian J Psychiatry* 1997;39:278-281. [PubMed: 21584092]
5. Djernes JK. Prevalence and predictors of depression in populations of elderly: A review. *Acta Psychiatrica Scandinavica* 2006;113:372-387. [PubMed: 16603029].
6. Conwell Y, Brent D. Suicide and ageing I: Patterns of psychiatric diagnosis. *Int Psychogeriatr* 1995;7:149-164. [PubMed: 8829424].
7. Prakash O, Kukreti P. State of Geriatric Mental Health in India. *Curr Tran Geriatr Gerontol* 2013;2(1):1-6. <https://doi.org/10.1007/s13670-012-00341>.
8. World Health Organization. "Depression: let's talk" says WHO, as depression tops list of causes of ill health [Cited 2018 June 14] Available from: <http://www.who.int/news-room/detail/30-03-2017--depression-let's-talk-says-who-as-depression-tops-list-of-causes-of-ill-health>.
9. World Health Organization. International Day of Older Persons [Cited 2018 June 18] Available from: http://www.searo.who.int/india/topics/ageing/internationalday_older/en/.
10. Centers for Disease Control and Prevention. Identifying Vulnerable Older Adults and Legal Options for Increasing Their Protection During All-Hazards Emergencies: A Cross-Sector Guide for States and Communities. Atlanta: U.S. Department of Health and Human Services; 2012.
11. Poongothai S, Pradeepa R, Ganesan A, Mohan V. Reliability and validity of a modified PHQ-9 item inventory 9 (PHQ-12) as a screening instrument for assessing depression an Asian Indians (CURES-65). *J Assoc Physicians India* 2009 Feb;57:147-52.
12. Gunjan K et al. Socioeconomic status scale-Modified Kuppuswamy Scale for the year 2022. *Int J Comm Dent* 2022; 10(1):1-6.
13. <https://www.cdc.gov/physicalactivity/basics/adults/index.htm>
14. Dasgupta A, Mukhopadhyay M, Das S et al. Are our elderly really depressed? A cross sectional study on depression among geriatric population in a slum of Kolkata. *Int J Health Sci Res* 2014;4(6):25-30.
15. Ramaswamy S, Joshi SM, Velankar DH. An epidemiological study of health and morbidity profile among geriatric population in field practice area of a Medical College in Navi Mumbai. *Indian J Comm Health*. 2021;33(2):266-275.
16. Pawar R. D, Kale K. M, Aswar N. R, Solanke S. A cross sectional study on prevalence of depression and its socio-demographic correlates among elderly in rural India. *Indian J Forensic Community Med*. 2018;5(4):210-214.
17. Armugam B, Nagalingam S, Nivetha R. Geriatric depression among rural and urban slum community in Chennai. A cross sectional study. *Journal of evolution of Medical and Dental Sciences* 2013;2(7):798-801.
18. Manjubhashini S, Krishnababu G, Krishnaveni. Epidemiological study of depression among population above 60 years in Visakhapatnam, India. *Int J Med Sci Public Health* 2013;2(3):695-702.
19. Sharma D K. Prevalence of depression among elderly residing in urban area. *RGUHS Med Sciences* 2016;6(2):62-5.
20. Goswami S, Deshmukh PR, Pawar R, Raut AV, Bhagat M, Mehendale AM. Magnitude of depression and its correlates among elderly population in a rural area of Maharashtra: A cross-sectional study. *J Family Med Prim Care*. 2017;6:803-812.
21. Sharma R, Sharma R. Depression among the elderly population in a rural community: A study of its prevalence and correlates. *Indian Med Gazette*. 2012;467-472.
22. Grover S, Avasthi A, Sahoo S, Lakdawala B, Dan A, Nebhinani N, et al. Prevalence of physical comorbidity and prescription patterns in elderly patients with depression: A multicentric study under the aegis of IAGMH. *J GeriatrMent Health* 2018;5: 107-14.