Original article

Depression in elderly: a community –based study from Assam.

Dr Anku Moni Saikia[1], Dr Neelakshi Mahanta[2], Anjana Moyee Saikia[3], Dr Himamoni Deka[4], Dr Beeva Boruah[5], Rhea Mahanta[6].

1- Professor, Dept. of Community Medicine, Assam Medical College
2- Associate Professor, Dept. of Medicine, Gayhati Medical College
3- Statiscian, Dept of Community Medicine, Gauhati Medical College
4- Assistant Professor, Dept of Anatomy, Gauhati Medical College
5- Professor, Dept of Community Medicine, FAA Medical College
6- Master student, Delhi University

Corresponding author - Dr Anku Moni Saikia

Abstract:

Background: Depression is a major cause of disability among elderly. It is often undetected in old age and considered as part of normal ageing process. But depression is a major cause of disability in old age. However, this issue has yet to be get due priority in elderly. There is limited research on this issue in India.

Objectives: To study the prevalence of depression among community- dwelling elderly and also to study the various factors associated with it.

Materials and methods: This community based cross sectional study was conducted in 10 randomly selected wards of Guwahati City. Vernacular adaptation of Geriatric Depression Scale-15 was used in screening for depression. Information on socio-demographic profile, living status, co-morbidities, Functional status, and economic independence were collected in a pre-designed and pretested schedule.

Results: Prevalence of depression was found to be 17.25%. Age, living status, functional status, financial status, social and leisure engagement, multiple morbidities were found to be significantly associated with depression. Gender was not significantly associated with depression.

Conclusion: The high prevalence in the present study can be an eye opener for researcher to do further study with larger sample size. Screening for depression is crucial for early interventions. All efforts for functional and financial independency should be ensured. These will eventually improve social participation.

Keywords: Depression, Elderly, Geriatric Depression Scale, Hindi Mini Mental State Examination.

Introduction:

Along with the whole world, India is also experiencing the demographic transition with increased life expectancy. India has attained the label of 'aging nation' in 2001 .Along with increased life expectancy; there is exponential increase of morbidities and disabilities. Depression is one of the important causes of disability. Depression among the elderly population being the most common treatable medical condition and is the most frequent cause of emotional distress in the elderly.[1] It is estimated that by the year 2020,if current trends for demographic and epidemiological transition continues, the burden of depression will increase and it would be the second leading cause of disability adjusted life years(DALYs), second only to Ischemic Heart Disease.[2] Depression in later life, traditionally defined as age older than 65, is associated with disability, increased mortality, and poorer out-

comes from physical illness. Most clinicians will encounter older patients with depression in their day to day practice, but although treatment is as effective for older patients as for younger adults, the condition is often under-recognised and under-treated.[3] Depression decreases an individual's quality of life and increases dependence on others. People with depression suffer from impairment of all major areas of functioning.[4] The Geriatric Depression Scale-15 (GDS-15) suitable instrument to diagnose depression in the general population across different age, gender, ethnicity and chronic illness status .[5-8] Early detection and effective interventions are crucial for improving the functioning of elderly and hence quality of life. Urban life in India is gradually losing the age-old custom of joint family and elders living in urban areas are more susceptible to various mental stress situations like depression, loneliness etc. However, there is absence of information regarding the magnitude of the problem among the community-dwelling elderly of urban areas of North-East region of the country. The present study was undertaken to assess the prevalence of depression and also to study the different factors associated with it.

Materials and methods:

This community based cross sectional study was conducted from 1st June 2013 to 30th September'13. Elderly in the age of 60 years and above and those who were willing to participate were included in the study. GDS -15 was used to assess the prevalence of depression. Elderly who were found to be on anti-depressant medication although negative on GDS-15 were also included. Informed consent was obtained from the elderly and also from the caregiver as and when necessary. Subjects included in the study were first screened for dementia using Hindi Mini Mental State Examination (HMSE)[9] as dementia could be the

major confounder in this study. Both the tools were translated to vernacular medium by one bilingual expert and again translated back to English/Hindi by an-other bilingual expert and one bilingual investing-tor compare the two for any discrepancy. This was done to check the integrity of translation. For HMMSE, we considered the cut off as less than or equal to 23. Elders who were found to score positive on HMMSE were excluded. Necessary referral was advised for subjects having dementia for further diagnostic work-up and interventions. A score more than 5 in GDS-15 indicates depression and they were referred accordingly. No attempt was made to classify the severity of depression. History of known psychiatric illness other than depression, critically ill elderly, and elderly with severe hearing or speech impairment making elderly unable to comprehend the questions were excluded from the study. Necessary approval was obtained from Institutional Ethics Committee. Considering the wide range of variation of prevalence exists across the country, sample size was calculated considering P as 0.5.[10] Applying the formula $4PQ/L^2$, allowable error as 10% of prevalence, the sample size was calculated as 400.From 31 Municipality Wards of Guwahati city, 10 wards were selected randomly and from each ward 40 elderly were interviewed. The first house in the ward was selected randomly. After that, door to door survey was done in the selected ward to identify the residents aged 60 years and above. Face to face interview was conducted after adequate rapport building. Confidentiality and privacy was assured and maintained during interview. Timing of interview was fixed according to the convenience of the elderly. A pre designed and pretested schedule was used to collect information on --- demographic profile, living status, functional and financial status, number of

co-morbidities and social and leisure engagement. Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) were measured for assessment of Functional status. Katz[11] and Lawton[12] Scales were used for ADL and IADL respectively. Financially independent elders have been defined as those who had one or other means of current income which was sufficient for self maintenance. Morbidity was assessed based on history and medical records. Enquiries were only made for presence of chronic diseases and conditions like diabetes, hypertension, musculoskeletal diseases, stroke and related disability, vision and hearing impairment. An operational definition of social and leisure engagement was made. Participating in community, religious or social gatherings, engaging in physical exercises/yoga/meditation, engagement in their hobbies, participating in household activities in their leisure time on daily basis have been considered as adequate social or leisure engagement. The information obtained from the participants regarding their social and leisure engagement was further verified with the first informant, in case of discrepancy, information was sought from another informant of the family or neighbourhood. The data collected were subjected for analysis using appropriate methods like Chi-square and Fisher's exact test and p value. *P* value of <.05 was considered as statistically significant.

Table 1: Relationship between depression and certain socio-demographic characteristics

Socio-demographic Variables	Depression		Total (%)(n=400)
	Yes (%)(n=69)	No (%) (n=331)	
Age (in years)			
60-74	18 (5.34)	319 (94.66)	337 (100)
75-84	46 (83.64)	9 (16.36)	55(100)
>85	5(62.5)	3(37.5)	8(100)
χ^2=214.77, df=2, p<0.001			
Gender			
Female	42(19.63)	172 (80.37)	214(100)
Male	27 (14.52)	159 (85.48)	186(100)
χ^2=1.82, df=1, p=0.1773			
Living status			
Living alone	14 (73.68)	5 (26.32)	19(100)
With spouse	4 (20)	16(80)	20(100)
Spouse and children	6(2.61)	224(97.39)	230(100)
Children and relatives	45(34.35)	86(65.65)	131 (100)
χ^2=103.88, df=3, p<0.0001			

Table 2: Relationship between functional status, morbidity status and financial status with depression

Variables	Depression		Total (%)(n=400)
	Yes (%)(n=69)	No (%) (n=331)	
ADL			
Intact	57(14.77)	329(85.23)	386(100)
Non-intact	12(85.71)	2(14.29)	14(100)

44

Fisher's exact test, p<0.0001			
IADL			
Intact	25(8.53)	268(91.47)	293(100)
Non-intact	44(41.12)	63(58.88)	107(100)
χ^2=58.32, df=1, p<0.0001			
Co-morbidity			
Yes (n=313)			
>2	24(28.57)	60(71.43)	84(100)
≤2	30(13.10)	199(86.90)	229(100)
No	15(17.24)	72(82.76)	87(100)
χ^2=10.305, df=2, p=0.0058			
Financial status			
Independent	12(3.83)	301(96.17)	313(100)
Dependent	57(65.52)	30(34.48)	87(100)
χ^2=181.46, df=1, p<0.0001			

Table 3: Relationship between social and leisure engagement with depression

Social and leisure engagement	Depression		Total (%), (n=400)
	Yes (%) (n=69)	No (%)(n=331)	
Inadequate	55(22.36)	191 (77.64)	246 (100)
Adequate	14 (9.09)	140 (90.91)	154(100)
χ^2=11.68, df=1, p<0.0001			

Results and Observations:

Out of the total 400 elderly interviewed, 69 (17.25%) were found to be depressed on GDS-15 scale. Table 1 depicts the demographic characteristic of the study population. Out of the total 400 elderly interviewed, majority (337/400, 84.25%) were in young old group i.e. 60-74 years. Only 8 elders (2%) were above 80 years age group. A significant relationship was seen between age and depression (p<0.001). Female were more (214/400, 53.5%) than male in the study sample. Gender was not seen to be significantly associated with depression (p=0.1773). In relation to living arrangement, only 19 (5%) elderly were found to be living alone and majority (74%) had depression. Elders who lived alone are either widow or widower. Out of the total 400 respondents, 230(57.6%) were found to live with their spouses and children. Amongst them, depression was found only in 2.61% of respondents. Depression was found only in 20% of respondents who lived with their spouses but without children. Again, 131 (32.75%) elders were found to live with their children or relatives but without spouse. This group includes widow/widower and unmarried elders. No elder was found to be divorced by their spouses. Living status was found to be significantly associated with depression (p<0.0001) (Table 1).Table 2 depicts the relationship between functional status, number of co-morbid conditions, and finan-cial status with depression. Regarding functional sta-tus, out of the 400 elderly interviewed, ADL a-nd IADL were found to be intact in 386(96.5%) and 293(73.3%) elderly respectively. Significant association was seen

between functional status (ADL and IADL) with depression (p<0.0001). Re-garding number of morbidities, 313(78.25%) had one or other chronic morbidities .Out of the subj-ects who had not reported to have any morbidities, only 17% had depression .A statistically significant association was seen between morbidities and dep-ression (p=0.0058).

Regarding financial dependency, 87(21.75%) eld-ers were found to be dependent on others. Among the dependent group, majority (65.52%) had depre-ssion. Among the financially independent group, o-nly 3.83% had depression. Again among the depr-essed elderly, majority (82.61%) were found to be dependent. A statistically significant relationship was seen between financial dependency and dep-ression. (Table 2)Table 3 shows relationship between social and leis-ure engagement of elderly with depression. Elders who were found to be socially engaged and had ad-equate leisure engagement, only 9.09% had depre-ssion, whereas 22.36% of elders who had inadequ-ate social and recreational engagement had depression. The association was found to be significant (p<0.0001).

Discussion:

 The prevalence in the present study is 17.25% which   can be considered as just the tip of the ice-berg. The present finding is in conformity with other studies done across the country that revealed that the point prevalence of depressive disorders in elderly Indian population varies between 13% and 25%[13,14,15]. Many studies done in urban locality of India reported comparatively higher prevalence th-an the present finding[16,17]..However, in contrast to present finding,   comparatively lower prevalence was also reported among urban residents[18]. The prevalence has been reported to be very high in the urban slums of Mumbai[19] and in Punjab where it was reported to be 77%[20]. Great variation have been observed in the prevalence reported by vario-

us studies done in urban setting .This could be due to the fact that some studies were done in urban slums or poor socio-economic section with vari-able socio-demographic and cultural factors .The present study was done in non-slum areas. Other factors that may contribute to these wide variations are—adoption of different methodology, defining criteria, screening instruments used in different studies. However, the prevalence observed in the present study is in conformity with the study done in rural area of Assam .[21]

In relation to risk factors for depression, various predictors have been identified from time to time. Increasing age was seen to be significantly associa-ted with depressive diseases in various studies. [17,18,21] ,which was in conformity with the present finding. However, age was not found to be signi-ficantly associated with depression in another stu-dy.[22] The finding of insignificant association betw-een gender and depression in the present study was in conformity with other study done in other setti-ng.[22,] However, many studies revealed higher prevalence of depression in elderly female-s.[18,23,24].The widowhood along with financial dependency were the common reasons cited in those studies for higher prevalence in females. The insignificance relationship between gender and depression in the present study could be due to status of female in the prevailing socio-cultural context of the study area. The significant relation-nship of living status with depression in the prese-nt study was in conformity with other studies[25,26] This could be attributed to the fact that living with spouse or family gives a opportunity for interaction and also gives a sense of security. Breaking of Ind-ian traditional family system specially in urban are-as may be an important predictor for depression in older adult.

Functional dependency on others for daily activity-es is an important determinant for depression, [18, 26]

which was observed in the present study. This could be due to the fact that limitation in the activities of daily living affects the independence and autonomy of elderly which also affects the self esteem of the person. Functional limitation could be due to presence of multiple morbidities. Elders with multiple co-morbidities are particularly vulnerable to debilitating impact of depression[17,26]. Our study finding of significant relationship of financial dependency with depression is in conformity with various studies.[17,23,27] .There is a great scope for intervention specially by ensuring social security to all elderly. Awareness regarding the financial rights is also crucial in this regard.The significant relationship of adequate social engagement with depression in late life has been revealed in many studies done across the globe.[29,30,31,32,] and consistent finding was observed in the present study. By helping elders to be functionally active , elders' participation in various activities at family and societal levels could be improved. The role of family, society and government   is vital in this regard. The important limitation is the small sample size. Relationship of severity and duration of morbidities could not be assessed in details. Temporal association could not be established due to cross sectional study design.

Conclusion and recommendations:

This considerably high prevalence of depression demands further studies with larger sample size.It also calls for screening for depression as a part of geriatric assessment . Even the mild depression cases can be brought to light for treatment through screening. Considering the significant relationship between functional and financial dependency, proper screening and treatment of different morbidities that causes functional impairment along with adequate social security needs to be ensured for every elderly. Opportunities for social interaction and participation should be the focus at every level for a depression free quality life . The role of family, the government and the society as a whole should make sure that the elders are actively participating in their lives.

References:

1. Satcher D. Mental Health: A report of the surgeon generalexecutive summary. Prof Psychol Res Pr 2000;31:5-13

2. Murray CJ, Lopez AD. Alternative projections of mortality and disability by cause 1990-2020: Global Burden of Disease Study. Lancet 1997;349:1498-504

3. Rodda J, Walker Z,Carter J. Depression in older adults. ,BMJ 2011;343:d5219

4. Pilania M, Bairwa M, Kumar N, Khanna P, Kurana H. Elderly depression in India: An emerging public health challenge. Australas Med J. 2013; 6: 107–11

5. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, et al. Development and validation of a geriatric depression screening scale: A preliminary report. J Psych Res. 1982–1983;17:37–49

6. Paradelaa EMP. Lourençob RA, Veras RP. Validation of geriatric depression scale in a general outpatient clinic. Rev Saude Publica.2005;39:1-5.

7. de Craen AJ, Heeren TJ, Gussekloo J .Accuracy of the 15-item geriatric depression scale (GDS-15) in a community sample of the oldest old. Int J Geriatr Psychiatry. 2003 Jan;18(1):63-6.

8. Nyunt MS[1], Fones C, Niti M, Ng TP. Criterion-based validity and reliability of the Geriatric Depression Screening Scale (GDS-15) in a large validation sample of community-living Asian older adults.Aging Ment Health. 2009 ;13(3):376-82

9. Ganguli M, Ratcliff G, Chandra V, Sharma S, Gilby J, Pandav R et al . A Hindi version of MMSE: The development of a cognitive screening instrument for a largely illiterate rural elderly population in India. .Int J of Geriatr Psychiatry 1995;10: 367-77.

10. Lwanga SK, Lemeshow S. Sample Size Determination in Health Studies. A Practical Manual. WHO; 1991:9

11. Available from:clas.uiowa.edu/socialwork/files/socialwork/.../Katz%20ADL_LawtonIADL.pdf

12. Available from: https://consultgeri.org/try-this/general-assessment/issue-23.pdf

13. Nandi DN, Ajmany S, Ganguli H, Banerjee G, Boral GC, Ghosh A. The Incidence of mental disorders in one year in a rural community in West Bengal. Indian J Psychiatry. 1976;18:79–87

14. Ramachandran V, Menon Sarada M, Arunagiri S. Socio-cultural factors in late onset Depression. Indian J Psychiatry. 1982;24:268–73

15. Barua A, Kar N. Screening for depression in elderly Indian population Indian J Psychiatry. 2010 Apr-Jun; 52(2): 150–153

16. Nair S, Hiremath SG, Ramesh , Pooja, Nair SS. Depression among geriatrics: Prevalence and associated factors. Int J Curr Res Rev 2013;5:109-2

17. Sanjay T V, Jahnavi R, Gangaboraiah B, Lakshmi P, Jayanthi S. Prevalence and factors influencing depression among elderly living in the urban poor locality of Bengaluru city. Int J Health Allied Sci 2014;3:105-9

18. Sengupta P, Benjamin AI. Prevalence of depression and -*associated risk factors among the elderly in urban and rural field practice areas of a tertiary care institution in Ludhiana. Indian J Public Health 2015;59:3-8)

19. Jain RK, Aras RY. Depression in geriatric population in urban slums of Mumbai. Indian J of Public Health. 2007 ;5: 112.-3

20. Goyal A, Kajal KS. Prevalence of Depression in Elderly Population in the Southern Part of Punjab. J Family Med Prim Care. 2014 Oct-Dec; 3(4): 359–361

21. Hakmaosa A,Baruah KK,Baruah R,Hajong S.PREVALENCE OF DEPRESSION AMONG ELDERLY IN RANI BLOCK, KAMRUP (RURAL) DISTRICT, Assam. Indian Journal of Applied Research. 2015; 5 :369-71

22. 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

23. Reddy NB, Pallavi M, Reddy NN, Reddy CS, SINGH rk, Piraba RA. Psychological morbidity status among the rural geriatric population of Tamil Nadu, India: a cross-sectional study.Ind J Psychol Med 2012;34:227-31

24. Taqui AM, Itrat A, Qidwai W, Qadri Z. Depression in the elderly: Does family system play a role? A cross-sectional study. BMC Psychiatry 2007;7:5

25. Sinha SP , Saurabh R. Shrivastava MD, Ramasamy J Depression in an Older Adult Rural Population in India MEDICC Review 2013;15:41-4.

26. Cole MG, Dendukuri N.Risk factors for depression among elderly community subjects:a systematic review and meta-analysis.Am J Psychol.2003;160:147-56.

27. Raul A, Sagare SM. Screening for depressionin elderly urban population of Pune. Eur Psychiatry 2013;28:1

28. Ramachandran V, Menon Sarada M, Arunagiri S. Socio-cultural factors in late onset Depression. Indian Journal of Psychiatry. 1982; 24: 268-73

29. Socio-demographic Predictors of Depression among the Elderly Patients Attending Out Patient Departments of a Tertiary Hospital in North India. Akhtar H,Khan AM,Vaidhyanathan KV,Chhabra P,Kannan AT. Int J Prev Med. 2013 Aug; 4(8): 971–975)

30. Sandhya GI. Geriatric depression and related factors-A cross-sectional study from a rural community in South Kerala. Journal of Indian Acad of Geriatr.2010;6:61-63

31. Rotenberg KJ, Hamel J . Social interaction and depression in elderly individuals Int J Aging Hum Dev. 1988;27(4):305-18

32. Tsai CF, Ouyang WC, Chen LK, Lan CF, Hwang SJ, Yang CH, Su TP. Depression is the strongest independent risk factor for poor social engagement among Chinese elderly veteran assisted-living residents .J Chin Med Assoc. 2009 Sep;72(9):-478-83.