Depression among elderly people in an urban slum of Central India

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Abstract

In India 7.5% population is above 60 yrs and about half of them are suffering from some chronic disease. This population is vulnerable to chronic and silent depressive changes which can be enhanced by social neglect, physical and economical dependability, loss of spouses or near ones, increased disease susceptibilities and chronic debilities. A community based Cross-sectional study of 200 elderly people was carried out with help of questionnaire consisting of socio-demography, dependency, substance abuse, physical and psychological morbidity data along with Geriatric Depression Scale (Short Version). Mean age of the study subjects 65.54±5.63 years. 52% population was economically dependent on others. Prevalence of depression was found to be 39.5%. Depression was significantly associated with advancing age, illiteracy, nuclear or three generation family, living away from family. Depression was also found significantly associated with morbidities like ocular disorders, genitourinary tract diseases, musculoskeletal disorders, skin diseases and anorexia. No association was found between addiction and depression.

Keywords: Elderly people, Depression, Geriatric depression scale, Gerontology.

Introduction

India is rapidly growing socially, economically, culturally and psychologically; and even its demographic profile is changing. As the lifestyle and health care system is improving day by day the life expectancy is increasing proportionately. Life expectancy at birth has reached over 70 years in the developed countries across the world. In India, the life expectancy at birth is lower than these developed countries but still the elderly population is swelling and looks far more if seen in absolute numbers. By 2025, the number of elderly people is expected to rise more than 1.2 billion with about 840 million people of these from low income countries.[1-2] According to the 2011 census of India, 7.5% of the total population were above the age of 60 years.[3]

Morbidity has been defined as the rate of incidence of disease or the state of being morbid. From the morbidity point of view, at least 50 per cent of elderly in India have chronic diseases.[4-5] This poses a greater responsibility on the health care services especially in developing countries like India, where there is greater strain on available health infrastructure. Out of these psychiatric disorders have higher incidence and prevalence in the elderly. They pose a reasonable threat as these diseases remain silent for years together and are not easily accepted by the patients and their relatives. Elderly people lack resources for their medical care and often find themselves lonely in unforgivable situations.

Geriatric population though vulnerable to many diseases is particularly highly vulnerable for depressive changes. Social neglect, physical and economical dependability, loss of spouses or near ones, increased disease susceptibilities, chronic debilities are among a few reason enhancing the chances of depressive disorders in elderly people. Depression is not a natural part of aging. Depression is often reversible with prompt recognition and appropriate treatment. However, if left untreated, depression may result in the onset of physical, cognitive, functional, and social impairment, as well as decreased quality of life, delayed recovery from medical illness and surgery, increased health care utilization, and suicide. In the National Health Service, the cost of treating depression exceeds the cost of treating both hypertension and diabetes.[6]

Studies have been conducted in Chennai, Udupi, Pune, Mumbai, Vellore, Raichur, Manipal[7-13] on finding out prevalence of depression but very few studies have targeted the geriatric population in the slum settings. Prevalence of depression in elderly population among various studies conducted around India ranged from 12.7% to 45%. This study in central India was aimed to find out prevalence of depression among elderly people in urban slum and also to find out its association with socio-demographic factors, dependency, addiction and physical morbidities.

Materials and Methods

A community based cross sectional study was carried out in the field practice area under the Urban Health Training Centre (UHTC), Jaitala attached to the Department of Community Medicine, N.K.P. Salve Institute of Medical Sciences and Research Centre, Nagpur. Permission has been achieved from the Institutional Ethical Committee of NKPSIMS and RC. The field practice area of UHTC is divided into five slum areas. Out of which one named Ramabai Ambedkar Nagar area was selected by simple random sampling (Lottery method).

According to WHO, Elderly age group consists of the people above the age of 60 years.[14] Therefore the

study population was the elderly people above age of 60 years residing in the place of study. Considering the value of 'P=0.15',[7] and CL of "95%" and d=0.05, the calculated sample size is 196.[15] But for better coverage a total of 200 elderly people were interviewed. Study was carried out by the help of pre-structured and pretested questionnaire by the means of a personal one on one interview in complete privacy. Questions were asked in local vernacular language. The questionnaire consisted of a preformed section for socio-demographic data. Questions for dependency, co- morbid conditions and addiction habits were included. The addiction data was obtained by detailed and in depth questioning. Mainly alcohol, smoking and tobacco/ghutka chewing were considered as these are the most common addictions present in the general population. Co-morbid conditions self-reported by the respondent were investigated by checking the medical reports of the elderly person.

A standard scale was used for assessing the prevalence of depression. The instrument used in the study is a scale for diagnosis of depression in geriatric age group. Geriatric depression scale-15 (short version): The Geriatric depression scale (GDS), which is a self-report scale for assessing depression, was developed by Yesavage et al. in 1983.[16] The 15-item scale, which is the most common version currently, was used in this study.[17] The scoring system was according to GDS scale criteria, Darkened response to a particular question when given is considered as 1 point. Score ≥5 is considered as suggestive of depression and would be regarded as a depression case in this study. The validated Hindi version of Geriatric Depression Scale was used in the study for better understanding of the questions by the interviewee.[18]

The special psychiatric scale used was interpreted by the scoring system associated with it. All data was entered in Microsoft Excel sheet. Data was analyzed by using Epi-Info™ 7 statistical software. Statistical analysis was done by using Proportions, means, standard deviations. Chi-square test was used to find out the association.

Results

Socio-demography: The mean age of the study subjects included in the study was 65.54±5.63 years. Among the 200 people, 115(57.50%) were females and 85(42.50%) were males. In the study population, majority was illiterate 105(52.5%) or studied below SSC 62(31%). Most of them were unskilled laborer 121(60.5%) or unemployed 61(30.5%), with only a few being pension holders 18(9%).

Among respondents, 148(74%) were married and 50(25%) widow/widower. Respondents lived commonly in nuclear families 137(68.5%), Joint families 33(16.5%) or three generation families 30(15%). When socio-economic status was calculated using modified B.G. Prasad Scale, majority of respondents belonged to class V 83(41.5%) and class IV 75(37.5%).

Dependency: Among the study population 125(62.5%) people lived with their family, 58(29%) lived with their spouses, 15(7.5%) lived alone. Nearly half 104(52%) respondents were economically dependent. For travel from one place to another 120(60%) were dependent on someone else while 69(34.5%) drove themselves. Cooking of food was done by family member in most of the cases 90(45%), while 56(28%) people cooked their own food. Medical care of the elderly respondents was taken mainly by family member in 97(48.5%), by spouse in 55(27.5%) and themselves in 48(24%) people. Majority of the people are dependent for money, travelling, cooking food and medical care.

Addiction: Addiction data was assessed in terms of addiction of alcohol, smoking and tobacco consumption through chewing with slaked lime, pan or ghutkha. Tobacco consumption was the most common addiction and nearly equally distributed among females and males. 92(46%) people consumed tobacco out of which 44 were females and 48 were males. Smoking bidi was next common addiction with 26(13%) people including 1 female was addicted to smoking. Alcohol consumption was present in 22(11%) respondents with 21 being males.

Morbidities (Self-reported): Most common self-reported physical morbidities were Musculoskeletal disorders 118(59%), Ocular disorders 89(44.5%), Cardiovascular disorders 49(24.5%), Respiratory disorders 43(21.5%), Endocrinal disorders 33(16.5%), Hearing disorders 29(14.5%), Gastrointestinal disorders 27(13.5%), Genitourinary disorders 26(13%). The less prevalent were skin diseases, malignancies, acute or chronic infection.

Psychological aspects were assessed by few questions like recent death in family and 37(18.5%) had witnessed a recent death in the family. Anorexia was prevalent in study population with 91(45.5%) people. Insomnia was present in 49(24.5%) people included in the study. Motor disability was present in 9(4.5%), sensory disability in 4(2%) and pre-diagnosed psychiatric disorder in one out of the study population. Earlier surgical procedure was done in 95(47.5%) of elderly and the most common operations done were for cataract in both sexes; hernia in males; sterilization and hysterectomy in females.

Geriatric Depression Scale: In the study out of the total 200 elderly people 79(39.5%) were found out to be in depression according to the geriatric depression scale. The mean score for the study population it turned out to be 4.7050±4.5166(Table 1).

Table 1: Responses of the patients according to Geriatric Depression Scale (Short version)

Geriatric Depression Scale	Yes	No
1. Are you basically satisfied with your life?	139(69.5%)	**61(30.5%)**
2. Have you dropped many of your activities and interests?	**65(32.5%)**	135(67.5%)
3. Do you feel that your life is empty?	**62(31%)**	138(69%)
4. Do you often get bored?	**69(34.5%)**	131(65.5%)
5. Are you in good spirits most of the time?	131(65.5%)	**69(34.5%)**
6. Are you afraid that something bad is going to happen to you?	**46(23%)**	154(77%)
7. Do you feel happy most of the time?	122(61%)	**78(39%)**
8. Do you often feel helpless?	**70(35%)**	130(65%)
9. Do you prefer to stay at home, rather than going out and doing new things?	**45(22.5%)**	155(77.5%)
10. Do you feel you have more problems with memory than most?	**73(36.5%)**	127(63.5%)
11. Do you think it is wonderful to be alive now?	145(72.5%)	**55(27.5%)**
12. Do you feel pretty worthless the way you are now?	**49(24.5%)**	151(75.5%)
13. Do you feel full of energy?	116(58%)	**84(42%)**
14. Do you feel that your situation is hopeless?	**37(18.5%)**	163(81.5%)
15. Do you think that most people are better off than you are?	**81(40.5%)**	119(59.5%)

Association of depression with various factors: Depression was significantly associated with the age, education and the type of family the individual lives in. Depression was directly proportional to increasing age of the individual (p =0.013). Education was inversely proportional to depression with high significance (p=0.006), i.e. less the education more are the chances of landing up in depression. Type of family was also significant factor towards depression (p=0.02). People living in nuclear or three generation families were more prone towards depression(Table 2).

Table 2: Association between Socio-demographic Variables and Depression

Variables	Depression Present (n=79)	Absent (n=121)	X^2 value	P value
Age (in yrs)			6.142	**0.0138***
60-65 yrs	31	61		
65-70 yrs	20	40		
70-75 yrs	18	12		
75 yrs and above	10	8		
Education			7.34	**0.006***
Illiterate	52	53		
<SSC	17	45		
≥SSC	10	23		
Type of Family			7.518	**0.02***
Nuclear	60	77		
Joint family	6	27		
Three generation family	13	17		

*significant P<0.05

Elderly people living alone, at old age homes or even only with their spouse were supposedly more depressed than the elderly people living with their families with highly significant (p=0.003).

Various morbidities were associated with depression. Ocular disorders with depression had high significance with p value of 0.001. Genito-urinary diseases also showed significant direct relationship with (p=0.003). Musculoskeletal disorders and skin diseases also had significant direct relationship with depression (p=0.02 and p=0.04respectively). In psychological morbidities, anorexia had significant direct relationship with depression (p=0.008)(Table 3).

Table 3: Association between morbidities with geriatric depression

Morbidity Variable	Depression Present (n=79)	Absent (n=121)	X^2value	P value
1. Musculoskeletal disorders	54	64	4.72	**0.02***
	25	57		
2. Skin disorders	7	3	4.09	**0.04***
	72	118		
3. Ocular disorders	46	43	9.96	**0.001***
	33	78		
4. GUT diseases	17	9	8.37	**0.003***
	62	102		
5. Anorexia	45	46	6.91	**0.008***
	34	75		

*significant P<0.05

Discussion

Mean age of the respondents in the study was 65.54±4.51years which was lower than the other studies on prevalence of depression among elderly people which were 68.07±12 years, 72.54±5.87 years, 73.9 years in the studies conducted by Sreejith S Nair et al,[12] A.P. Rajakumar et al[11] and K. Seby et al[9] respectively. In this study 115(57.50%) were females and 85(42.50%) were males, which is nearly same as documented by A.P. Rajakumar et al[11] at 54.6% females and 45.4% males but is in contrast to another study by K. Seby et al[9] according to which the overall number of males and females was almost equal (male 50.9%; female 49.1%). Most followed religion was Hinduism and Buddhism with 100(50%) and 95(47.5%) followers respectively which is in contrast to study conducted by K. Seby et al[9] and A. Barua et al[8] where most common religion was Hinduism with 70.3% and 80.1% respectively study population. This may be due to the demographic dynamics of this region.

In the study population, majority was illiterate 105(52.5%) or studied below SSC 62(31%) which is in contrast to other studies carried out by R. Bhatt et al[5] and A.P. Rajakumar et al[11] where the people who are illiterate are 23.54% and 66.1% respectively, this may be because of the population dynamics of a slum population where people do not concentrate on education more. In terms of occupation of the study population, 121(60.5%) were unskilled workers and 61(30.5%) were unemployed which was in contrast to R. Bhatt et al[5] who reported 52.3% elderly were not indulge in any occupation and 39% were working but in sedentary ways. This may be due to the fact that the sample population belonged to majorly lower class urban slum people.

Marital status of the respondents revealed most being married 148(74%) or widow/widower 50(25%) which is in contrast to 48.1% married and 51.4% widow/widower which is reported by A.P. Rajakumar et al.[11] Marital status obtained in the study was also in contrast to values reported by Sreejith S Nair et al,[12]Jain RK et al[10] and A. Barua et al.[8] In this study 125(62.5%) people lived with their family, 58(29%) lived with their spouses, 15(7.5%) lived alone while 2(1%) lived in old age home which is in contrast to study conducted by R. Bhatt et al[5] mentioning 92.7% elderly were living in joined family and K. Seby et al[9] mentioning that 73.8% elderly were staying along with their children. In this study Economic burden of nearly half 104(52%) respondents were on someone else's money and other half 96(48%) were living on their money which is in contrast to study conducted by K. Seby et al[9] which states a majority were dependent, either partially (*n*=67; 33.2%) or completely (*n*=78; 38.6%), on other family members (mostly children) for financial support.

In this study it was found out that tobacco consumption is highest with 46%, smoking 13% and alcohol 11% these were less than the figures reported by A.P. Rajakumar et al[11] which were 53% for smokers and 19% for alcohol consumers.

In this study most common physical morbidities self-reported were Musculoskeletal disorders 118(59%), Ocular disorders 89(44.5%), Cardiovascular disorders 49(24.5%), Respiratory disorders 43(21.5%), Endocrinal disorders 33(16.5%), Hearing disorders 29(14.5%), Gastrointestinal disorders 27(13.5%), Genitourinary disorders 26(13%) which were persistent with the figures reported by R. Bhatt et al[5] who reported morbidity profile of their surveyed elderly had

maximum problem of locomotors (48.6%), followed by vision (42.7%) and hypertension (34.4%), respiratory (20.2%), hearing (17.9%), Diabetes (10.6%). The study findings of M. K. Murlidhar et al[13] were in contrast with the study in certain aspects as the findings they reported were about 67 (27.49%) study participants had diabetes mellitus, 140 (57%) had hypertension, of which the proportion among females (78%) were more compared to males (36%). Ischaemic heart diseases (IHD) were reported by 23 elderly (9.34%). Forty study subjects (16%) suffered from osteoarthritis which was higher among females (23%) as compared to males (10%). About 30 (12.19%) had bronchial asthma and 2 (1.5%) had been affected by cancer.

In the study prevalence of depression among 200 elderly people was found out to be 79(39.5%) which was less than the reported values of Jain RK et al (45.9%)[10] in slums of Mumbai and Nandi PS *et al* (52.2%)[19] in the rural areas of West Bengal. And our prevalence was more than that reported by A. Barua et al {l21.7% (95% CI=18.4 - 24.9)},[8] K. Seby et al(*n*=33; 16.3%),[9]Sreejith S Nair et al (32.4%),[12] A.P. Rajakumar et al {12.7% (95% CI 10.64–14.76 %)},[11] Nandi DN et al (22.0%),[20] Ramachandran V et al (24.1%)[21] and Tiwari SC (13.5%).[22] Relatively higher prevalence in this study may be because of the poor and dependent elderly living in the slum.

Association between depression and socio-demographic profile shows depression to be significantly related to increasing age, illiteracy, nuclear or three generation family, living away from family. Depression was also significantly associated with physical morbidities like ocular disorders, genitourinary tract diseases, musculoskeletal disorders, skin diseases and anorexia. The risk factors associated with depression reported by K. Seby et al[9] were consistent with this study like, not staying with spouse due to separation or death of spouse or never being married, staying in nuclear families, economic dependence on others and co-morbid physical illnesses, specifically cardiovascular disorders and visual impairment. Another study named CURES-70 conducted in Chennai by Subramani Poongothai et al[7] reported that there was an increasing trend in the prevalence of depression with age among both female (p,0.001) and male subjects (p,0.001). Prevalence of depression was also higher among divorced (26.5%) and widowed (20%) compared to married subjects (15.4%, p, 0.001) which are consistent with this study except that prevalence of depression was higher in the low income group (19.3%) compared to the higher income group (5.9%, p,0.001) which is in contrast to this study wherein no significant relation was found between socioeconomic status and depression.

Studies done by A.P. Rajakumar et al,[11]Sreejith S Nair et al[12] and Hussaini[23] showed no relationship between age and depression which is in contrast to this study. This study showed no significant relationship of

depression with insomnia which is in contrast to studies conducted by Sreejith S Nair et al,[12] Jain RK et al[10] and Foley DJ et al.[24] Low income (OR 1.78; 95% CI 1.08–2.91), experiencing hunger (OR 2.58; 95% CI 1.56– 4.26), history of cardiac illnesses (OR 4.75; 95% CI 1.96–11.52), transient ischemic attack (OR 2.43; 95% CI 1.17–5.05), past head injury (OR 2.70; 95% CI 1.36–5.36) and diabetes (OR 2.33; 95% CI 1.15–4.72) increased the risk for geriatric depression was reported by A.P. Rajakumar et al(11) which is in contrast to this study.

Conclusions

Around 2/5 of elderly population was found to be suffering from depression. Depression was significantly associated with advancing age, illiteracy, nuclear or three generation family, living away from family. Family support should be given to elderly population.

Depression was also found significantly associated with morbidities like ocular disorders, genitourinary tract diseases, musculoskeletal disorders, skin diseases and anorexia. Geriatric morbidities should be early diagnosed and proper treatment should be given.

References

1. Park K. Textbook of Preventive Social Medicine.22nd edition: M/s Banarsidas Bhanot Publishers; 2013:549-51.
2. Kashyap S, Sidhu R. A study of health and subjective well-being of the aged. Indian Journal of Gerontology2011;25(1):111–122.
3. Available at: http://censusindia.gov.in/Census_Data_2001/India_at_glance/broad.aspx, accessed on June 23, 2015.
4. Srinivasan K, Vaz M, Thomas T. Prevalence of health related disability among community dwelling urban elderly from middle socio economic strata in Bangaluru, India. Indian Journal of Medical Research 2010;131:515–521.
5. Bhatt R., Gadhvi MS, Sonaliya KN, Solanki A, Nayak H. An epidemiological study of the morbidity pattern among the elderly population in Ahmedabad, Gujrat. National Journal of Community Medicine 2011;2(11):233–236.
6. Department of Health. NHS executive report: Burden of Disease. Leeds: Dept. of Health, 1996.
7. Subramani Poongothai, Rajendra Pradeepa, Anbhazhagan Ganesan, Viswanathan Mohan. Prevalence of Depression in a Large Urban South Indian Population — The Chennai Urban Rural Epidemiology Study (Cures – 70). PLoS ONE2009;4(9):e7185.
8. AnkurBarua, Nilamadhabkar. Screening for depression in elderly Indian population. Indian J Psychiatry. 2010 Apr-Jun;52(2):150-153.
9. K Seby, Suprakash Chaudhury, Rudraprosad Chakraborty. Prevalence of psychiatric and physical morbidity in an urban geriatric population. Indian journal of psychiatry 2011;53(2):121-127.
10. Jain RK, Aras RY. Depression in Geriatric Population in Urban Slums of Mumbai. Indian Journal of Public Health 2007;51(2):112-113.
11. Rajkumar AP, Thangadurai P, Senthikumar P, Gayathri K, Prince M, Jacob KS. Nature, prevalence and factors associated with depression among the elderly in rural south Indian community. Int Psychogeriatr 2009;21(2):372-378.

12. Sreejith S Nair, SG Hiremath, Ramesh, Pooja, Sreekanth S Nair. Depression among geriatrics: prevalence and associated factors. Int J Cur Res Rev, April 2013;05(08):110-112.

13. MK Muralidhar, RS Shetty, A Kamath, BB Darshan, K Sujatha, VG Kamath. Morbidities among Elderly in a Rural Community of Coastal Karnataka: A Cross-Sectional Survey. Journal of The Indian Academy of Geriatrics, March-June 2014;10(1-2):29-33.

14. Available at: http://www.who.int/healthinfo/survey/ageingdefnolder/en/; Accessed on September 01, 2014.

15. Lwanga SK, Lemeshow S. Sample size determination in Health Sciences-A practical manual. Geneva, Switzerland: World Health Organization1991.

16. 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 Psychiatr Res 1983;17:37-49.

17. Sheikh J, Yesavage J. Geriatric Depression Scale; recent findings in development of a shorter version. In: Brink J, editor. Clinical Gerontology: A Guide to Assessment and Intervention. New York: Howarth Press; 1986.

18. Ganguli M, Dube S, Johnston JM, Pandav R, Chandra V, Dodge HH. Depressive Symptoms, Cognitive Impairment, and Functional Impairment in a Rural Elderly Population in India: A Hindi Version of the Geriatric Depression Scale (GDS-H). International Journal of Geriatric Psychiatry 1999;14(10):807-820.

19. Nandi PS, Banerjee G, Mukherjee SP, Nandi S, Nandi DN. A study of Psychiatric morbidity of the elderly population of a rural community in West Bengal. Indian J Psychiatry 1997;39:122-9.

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

21. Ramachandran V, MenonSarada M, Arunagiri S. Socio-cultural factors in late onset depression. Indian J Psychiatry 1982;24:268-73.

22. Tiwari SC. Geriatric psychiatric morbidity in rural northern India: Implications for the future. Int Psychogeriatr 2000;12:35-48.

23. Hussaini Ph.D., Bagar A. Predictors of depression among the elderly: racial differences over time. American Orthopsychiatric Association 1997;G7(1),48-58.

24. Foley DJ, Monjan AA, Izmirlian G, Hays JC, Blazer DG. Incidence and remission of insomnia among the elderly adults in a biracial Cohort. Sleep 1999 May 1;22 (Suppl 2):S373-8.