

Is mental health a burning health issue for indian elderly?

Abstract

One of the important public health issues worldwide is the rise of higher proportion of older aged with advancement of medicine, prolonged life expectancy and for improved health care facilities. Demographic projections suggest that mental illness along with heart diseases, AIDS and cancer will account for the top four illnesses around the globe very soon. It ranks up at the top along with heart disease, cancer, obesity, AIDS and injuries as leading causes of suffering. Increased longevity of elderly led to higher prevalence of age related neurological disorder like depression, anxiety and so on.

In view of this, main objective of the paper is to evaluate the level of depression and anxiety among the rural and urban Indian elderly aged 65years to 79years and their possible socio-demographic correlates. Severity in depression and anxiety level is found to be significantly higher among rural males and females in comparison to their urban counterparts. The result of logistic regression analysis indicates that several socio-demographic covariates are the significant predictor of depression and anxiety occurrence. It can be inferred from the present study that rural population is in more vulnerable condition than urban elderly in depression and anxiety prevalence.

Keywords: older aged, mental illness, depression, anxiety, socio-demographic correlates

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Introduction

Mental health problems are considered to be one of the most important health issues of the elderly, the world over. The burden of illnesses resulting from psychiatric and behavioural disorders is much conspicuous for them. It, however, remains grossly under represented by conventional public health statistics, in many countries. Mental and behavioural disorders account for 12% of the global burden of disease. It is estimated that nearly 450million people suffer from a mental or behavioural disorder in the world. Nearly 10% of total population suffers from these disorders. The psychiatric disorders account for 5 of 10 leading causes of disability as measured by years lived with a disability. The overall Disability Adjusted Life Years (DALYs) burden for neuropsychiatric disorders is projected to increase to 15% by the year 2020.

Mental health can be considered to be the key to happiness, productivity, and harmony. A major study conducted by the World Health Organization, the World Bank, and Harvard University concluded that mental illnesses account for a substantial portion of the burden of diseases in the developing countries.¹ It is believed² that the dividing line between mental health and mental disorder is not simple. However, mental health can be conceptualized simply as the absence of mental disorders or mental illnesses, as for instance, guided through the current *Diagnostic and Statistical Manual of Mental Disorders DSM IV*.³

Mental health is determined by biological, social, economic and environmental factors which interact in complex ways.^{4,5} Problems of mental health are considered to be one of the most important health issues of the elderly, the world over.⁶ It is one part of an interrelated component of overall health including physical, mental and social comprised spiritual health. The US department of health and human services defines mental health as the successful performance of mental functions, resulting in productive activities, fulfilling relationships, the ability to adapt to change and successful coping with adversity.⁷

Of the several mental health traits, depression and anxiety remain certainly very important ones in the mental health discourse and has received much research attention. Depression is the most common psychiatric disorder and cause of mental ill-health among the elderly, and population based studies have estimated that around 12-15% of people living in ordinary homes are afflicted by depressive syndromes.⁸ Among the most common problems of mind, major depression consists of depressed mood or a loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, low energy, and poor concentration.⁹ Changes in mood, thinking, behavior, physical condition are observed to be associated the state of depression.¹⁰

Studies by different authors demonstrated the relationship between prevalence of depression and place of residence.^{7,11,12} In some studies, prevalence of depression was common among urban elderly^{7,13} while in some other studies rural elderly had relatively higher prevalence of depression.^{14,15} To identify the socio-culturally specific characteristics of depressive symptoms, some studies have been conducted in the United Kingdom¹⁶⁻²⁰ and the United States.²¹ These studies found age, illiteracy, abuse and neglect, family conflicts, social isolation, physical health, feeling of burden, the loss of self-respect, dependency on others, low social support, inadequate housing, insufficient income to be the predictors for depressive symptoms. A Karachi based study on prevalence of depression by type of family system and correlation of depression with other important socio-demographic variables found nuclear family system, female sex, a low level of education, single/widowed/divorced, living alone and being childless were the factors related to depression.²² A study by Lai DWL & Surood S²³ examined the linkages between socio-cultural factors and depression in older South Asians in Canada which suggested that the mental health interventions should consider the cultural uniqueness of that target population and the service delivery system should ensure that services are known and accessible to the increasingly culturally diverse aging population. Physical illnesses, disability, pain and psychosocial variables were also found to be closely related to the symptoms of depression.²⁴

Turning to the situation in India, it is observed that though depression is the commonest mental health problem in old age, very few community-based studies have been conducted to understand the problem. A cross-sectional study in South India has revealed 21.7 percent of total elderly aged 60 years and above with depressive systems (36.0 percent were males and 64.0 percent were females) and prevalence of cognitive impairment was higher among the depressive individuals.²⁵ A study related to the nature, prevalence and factors associated with depression among rural South Indian community found poverty and physical ill health were the risk factors for the depression even when good social support was available.²⁶ Lower prevalence of depression was associated with higher standards of living, matriarchal family and a high female literacy rate and higher prevalence of depression was associated with unemployed, illiterate, housewife and widow in rural South India.²⁷ Another large population-based study from South India reported about 15.1 percent prevalence of depression with higher prevalence among older population, females, individual with lower socio-economic status.²⁸ Age,²⁹ education,²⁹ occupation and marital status were also significantly correlated with elevated depression³⁰ and also being single or widowed³¹ and divorced or separated were important factors for depression among elderly.³² According to Reddy VM & Chandrasekar CR,³³ depression was more common among the female elderly.

Anxiety disorders are also a common and heterogeneous group of mental illnesses marked by varied clinical presentations, ranging from relatively moderate symptom levels to severe functional impairment and profound disability among the elderly. The feelings of fear, worry, uneasiness and dread are all associated with the feeling of anxiety.³⁴ The emotional effects of anxiety include “feelings of apprehension or dread, trouble concentrating, feeling tense or jumpy, and anticipating the worst, irritability, restlessness, watching (and waiting) for signs (and occurrences) of danger, and feeling like your mind’s gone black”.³⁵ Epidemiological studies have shown that anxiety is common psychological problem throughout the life cycle.³⁶ Epidemiological studies have shown a strong association between anxiety disorders and functional disability. Anxiety prevalence was not significantly different in urban and rural elderly population of Britain but, living in the highest density and intermediate low-density areas were associated with higher anxiety prevalence compared to the lowest density areas.³⁷

In some studies rural elderly showed the higher anxiety prevalence than their urban counterparts.³⁸ Women report mental complaints, for example nervousness or anxiety, to a considerably larger extent than men do, as is shown in some studies. For example, the proportion of men who state that they suffer from nervousness or anxiety increased between the two interview occasions, while there were no changes, on the other hand, among women.³⁹ Stress related to the occupation specially farmers and their family members elevated the levels of anxiety.⁴⁰ Anxiety disorders are indeed common among older people and risk factors of it are panic disorder, female gender, and lower level of education, being married, loneliness and family history.³⁶

Again, considering studies on aspects of elderly anxiety profile, Indian research revealed that anxiety related to death was significantly higher among women especially for relatively older ones, and those living with family.⁴¹ In a study on anxiety profile from rural West Bengal by Nandi et al.,⁴² it was observed that prevalence of anxiety disorder was only 2 percent and widowed females showed relatively higher prevalence. Sharan P & Rai S⁴³ observed that among Indian women age, socio-economic status, education, marriage and family support are the risk factors for higher prevalence of anxiety.

As depression and anxiety are the two most frequent mental health problems worldwide among elderly, the present study mainly focused to evaluate the depression and anxiety level and their possible socio-demographic correlate among rural and urban aged of West Bengal, India.

Material and methods

The present study was conducted on middle class Bengalis inhabiting the Salt Lake City, Bidhannagar municipality, North 24 Parganas, selected as urban group and few villages in a remote rural setting under the Horkhali gram panchayat of Haldia subdivision of PurbaMedinipur district, West Bengal constituting rural groups. In both the settings, middle class Bengalis is the predominant group.

Mean age of the two study populations combined is 70.9 ± 4.7 years, while for rural it is 70.7 ± 4.8 years and for urban it is 71.0 ± 5.2 years. Data were collected between 2009 and 2010, simultaneously from both the communities. The study population consists of 176 urban (male:93 and female:83) and 205 rural (male:103 and female:102) participants. The study was approved by the ethics committee of the Indian Statistical Institute, Kolkata. Written informed consent to express willingness to participate in the study was obtained from all elderly individuals after the objectives and methods of the study were explained to them.

Information on socio-demographic characteristics was collected using a pretested questionnaire. This questionnaire includes information on age, sex, marital status, education, employment status, self income, family income, total number of family members, number of children, living arrangement etc. Participants were categorized as “younger old” (65-71 yrs) and “older old” (72-79 yrs). ‘Married’ and ‘Unmarried/widow/widower’ were the two categories for marital status. Total family size was categorized as ‘< 5 members’ and ‘≥ 5 members’. Total number of living offspring was categorized as ‘<3 offspring’ and ‘≥ 3 offspring’. Living arrangement was categorized into two groups, ‘living with offspring’ and ‘living without offspring’. For rural study participants, there have been two categories viz. ‘non-educated’ meaning not exposed to any formal schooling, and ‘educated’ meaning having some degree of formal schooling. Again, for the urban study participants, there have been two categories viz. ‘below graduation’ and ‘graduation and above’. Occupational status of the study participants was categorized into two occupational groups, i.e. “pension holder/peasant or labor” and “home maker/idler”. Self earning is categorized as ‘lower self earning’ (<Rs. 400 per month in case of rural group and <Rs. 5000 per month in case of urban group) and ‘higher self earning’ (≥ Rs. 400 per month in case of rural group and ≥ Rs. 5000 per month in case of urban group). Family earning is categorized as ‘lower family earning’ (<Rs. 2000 per month in case of rural group and <Rs. 30,000 per month in case of urban group) and ‘higher family earning’ (≥ Rs. 2000 per month in case of rural group and ≥ Rs. 30,000 per month in case of urban group).

Information about depression was obtained following the standard questionnaire named “Geriatric Depression Scale” (Short Form) or GDS 15.⁴⁴ The Geriatric Depression Scale (GDS) is one of the most widely used instruments for the screening of depression in later life.³⁷ Cronbach’s alpha co-efficient is 0.86 for this scale.

Information on anxiety was recorded by using Hamilton Anxiety (HAM-A) Rating Scale.⁴⁵ It was one of the first rating scales developed to measure the severity of anxiety symptoms, and is still widely used today in both clinical and research settings. It consists of fourteen items, each defined by a series of symptoms and each item is rated on a 5-point scale ranging from 0 to 4. For this scale sample alpha is 0.79.

Theory/ calculation

Descriptive statistics was done to understand the trend in the depression and anxiety score by place of residence (urban and rural) and sex. t-test was performed to compare the means of the depression and anxiety scores between rural and urban settings and also between sexes. Contingency chi square test was done to compare depression and anxiety variables between residential settings.

Multinomial logistic regression model was utilized to find out the effect of socio-demographic factors on depression and anxiety occurrence. Logistic regression allowed us to examine which socio-demographic factors affected the odds of having a high score on depression and anxiety level. The covariates in the equation are age group, sex, marital status, family size, total number of living children, living arrangement, level of education, occupational status, self earning, and family earning.

Results

In both depression and anxiety scores, rural study participants have shown higher mean values compared to their urban counterparts, irrespective of sex (Table 1). In both the residential settings, females have shown higher mean scores as compared to their male counterparts.

Sex differences in anxiety mean score is significant among rural elderly (Table 2). Rural-urban differences in depression and anxiety scores have found to be significant in both the sexes.

The result of the age specific depression level by sex and residential

settings have been presented in Table 3, according to the GDS scoring cut-off points. Majority of the rural study participants showed prevalence of depression ranging from mild to severe, irrespective of sex (male: 88.35%; female 86.27%) than the urban participants (male: 50.54%; female: 62.65%). In both the sexes, a significant rural-urban difference in prevalence of depression has been found (male: $\chi^2=50.75^{**}$; female $\chi^2=58.02^{**}$).

It is seen from the same table that higher percentage of the rural study participants experienced severe anxiety, irrespective of sex (male: 45.63%; female 65.69%), while urban participants show relatively lower prevalence (male: 13.98%; female: 15.66%). In both the residential settings, females show higher prevalence of severe anxiety in comparison to their male counterparts considering all ages. In both the sexes, significant rural-urban difference has been found in prevalence of anxiety (male: $\chi^2=26.59^{**}$; female: $\chi^2=62.56^{**}$).

Results of logistic regression analysis done for prevalence of depression with socio-demographic variables as covariates are presented in Table 4. Odds ratio of older old and lower self earning are highly significant in favor of reporting mild and moderate depression of rural elderly as compared to the urban elderly. Unmarried/widow/widower elderly are significantly four times and eight times more in favor of reporting moderate and severe depression, respectively, in comparison to their married counterparts in rural and urban settings, respectively. Elderly individual surviving with < 3 living offspring are found to be significantly less likely to have moderate depression among urban elderly as compared to those who are surviving with ≥ 3 living offspring.

Table 1 Descriptive statistics (mean and standard deviation) pertaining to depression and anxiety scores, by age, sex and area of residence

Traits	Rural (n = 205)			Urban (n= 176)		
	Male	Female	Total	Male	Female	Total
Depression	Mean \pm SD 9.87 \pm 3.65	Mean \pm SD 10.04 \pm 3.80	Mean \pm SD 9.96 \pm 3.72	Mean \pm SD 5.37 \pm 3.55	Mean \pm SD 5.78 \pm 3.17	Mean \pm SD 5.56 \pm 3.37
Anxiety	23.26 \pm 10.82	27.42 \pm 7.12	25.33 \pm 9.38	14.42 \pm 8.91	15.72 \pm 7.83	15.03 \pm 8.42

Table 2 Test of significance (t-test) of difference in mean values of depression score, by age between sex and area of residence

Traits	Rural	Urban	Total	Male	Female	Total
	Male-Female	Male-Female	Male-Female	Rural-Urban	Rural-Urban	Rural-Urban
Depression	0.32	0.82	0.92	8.75**	8.14**	12.00**
Anxiety	3.25**	1.03	2.98**	6.21**	10.63**	11.20**

*p \leq 0.05; **p \leq 0.01

Table 3 Prevalence of depression and anxiety categories by age, sex and area of residence

Depression	Male Normal	Depression			χ^2	Female Normal	Depression			χ^2
		Mild	Moderate	Severe			Mild	Moderate	Severe	
Rural	12 (11.65)	25 (24.27)	22 (21.36)	44 (42.72)	50.75**	14 (13.73)	16 (15.69)	15 (14.71)	57 (55.88)	58.02**
Urban	46 (49.46)	31 (33.33)	6 (6.45)	10 (10.75)		31 (37.35)	37 (44.58)	10 (12.05)	5 (6.02)	
Total	58 (29.59)	56 (28.57)	28 (14.29)	54 (27.55)		45 (24.32)	53 (28.65)	25 (13.51)	62 (33.51)	
Anxiety	Male Normal	Depression			χ^2	Female Normal	Depression			χ^2
		Mild	Moderate	Severe			Mild	Moderate	Severe	
Rural		31 (30.10)	25 (24.27)	47 (45.63)	26.59**		11 (10.78)	24 (23.53)	67 (65.69)	62.56**
Urban		57 (61.29)	23 (24.73)	13 (13.98)			51 (61.45)	19 (22.89)	13 (15.66)	
Total		88 (44.90)	48 (24.49)	60 (30.61)			62 (33.51)	43 (23.24)	80 (43.24)	

Values in parentheses are percentages; *p \leq 0.05; **p \leq 0.01

Results of logistic regression analysis done for prevalence of anxiety categories with socio-demographic covariates are presented in Table 5. Urban elderly are significantly two times more likely in favor of reporting moderate anxiety who are staying with offspring in comparison to the mild category of anxiety. Rural participants' age and sex are found to be significantly associated with the prevalence

of severe anxiety as compared to mild anxiety category. Odds ratio in favor of reporting severe anxiety is 2.46 for rural older old compared to younger old. Rural females are four times more likely in favor of reporting severe anxiety as compared to rural females having mild anxiety.

Table 4 Results of logistic regression analysis showing association between socio-demographic variables and depression categories (odds ratio and 95% CI)

	Variables	Rural OR (95%CI)	Urban OR (95%CI)
Mild (Score: 5-8)	Age group		
	Younger old	1	1
	Older old	27.31 (3.19-233.62)**	1.49 (0.69-3.18)
	Sex		
	Male	1	1
	Female	0.73 (0.18-2.98)	1.62 (0.61-4.32)
	Marital status		
	Married	1	1
	Unmarried/widow/widower	1.61 (0.43-6.10)	1.06 (0.41-2.73)
	Family size		
	≥ 5 members	1	1
	< 5 members	0.42 (0.11-1.68)	1.24 (0.47-3.24)
	Number of living offspring		
	≥3 offspring	1	1
	< 3 offspring	1.15 (0.14-9.79)	0.59 (0.12-2.79)
	Living arrangement		
	Living without offspring	1	1
	Living with offspring	6.53 (0.55-78.17)	1.05 (0.45-2.46)
	Level of education		
	Educated/graduation and above	1	1
	Non-educated/below graduation	1.27 (0.36-4.43)	1.05 (0.31-3.56)
	Occupation		
	Pension holder / Peasant or labor	1	1
Homemaker/idler	0.21 (0.03-1.61)	1.13 (0.33-3.90)	
Self earning			
Higher self earning	1	1	
Lower self earning	7.43 (1.08-50.88)*	1.29 (0.43-3.89)	
Family earning			
Higher family earning	1	1	
Lower family earning	1.03 (0.30-3.52)	0.81 (0.39-1.69)	
Moderate Depression (Score: 9-11)	Age group		
	Younger old	1	1
	Older old	9.50 (1.09-82.68)*	0.63 (0.15-2.56)
	Sex		
	Male	1	1
	Female	0.37 (0.09-1.45)	3.34 (0.77-14.58)
	Marital status		
	Married	1	1
	Unmarried/widow/widower	4.14 (1.14-15.07)*	1.12 (0.23-5.41)
	Family size		
	≥ 5 members	1	1
	< 5 members	0.54 (0.14-2.07)	1.65 (0.3507.79)
	Number of living offspring		
	≥3 offspring	1	1
	< 3 offspring	0.16 (0.01-2.58)	0.11 (0.01-0.90)*
	Living arrangement		
	Living without offspring	1	1
	Living with offspring	1.65 (0.28-9.86)	1.51 (0.38-5.94)
	Level of education		
	Educated/graduation and above	1	1
	Non-educated/below graduation	1.24 (0.36-4.27)	0.51 (0.04-7.31)
	Occupation		
	Pension holder / Peasant or labor	1	1
Homemaker/idler	0.19 (0.02-1.53)	0.24 (0.03-1.74)	
Self earning			
Higher self earning	1	1	

Table Continued...

	Variables	Rural OR (95%CI)	Urban OR (95%CI)
Severe Depression (Score:12-15)	Lower self earning	15.74 (2.13-116.67)**	1.33 (0.23-7.67)
	Family earning		
	Higher family earning		
	Lower family earning	1.02 (0.31-3.38)	0.65 (0.19-2.23)
	Age group		
	Younger old		
	Older old	7.46 (0.92-60.62)	0.73 (0.20-2.72)
	Sex		
	Male		
	Female	1.00 (0.30-3.34)	0.28 (0.04-1.77)
	Marital status		
	Married		
	Unmarried/widow/widower	2.15 (0.70-6.59)	8.18 (1.92-34.83)**
	Family size		
	≥ 5 members		
	< 5 members	0.78 (0.27-2.28)	2.96 (0.49-17.90)
	Number of living offspring		
	≥3 offspring		
	< 3 offspring	1.67 (0.29-9.60)	0.12 (0.01-1.12)
	Living arrangement		
	Living without offspring		
	Living with offspring	1.55 (0.43-5.54)	1.58 (0.44-5.68)
	Level of education		
	Educated/graduation and above		
	Non-educated/below graduation	0.98 (0.34-2.79)	0.42 (0.03-6.23)
	Occupation		
	Pension holder / Peasant or labor		
Homemaker/idler	0.64 (0.13-3.13)	0.66 (0.07-6.40)	
Self earning			
Higher self earning			
Lower self earning	2.92 (0.71-12.06)	2.62 (0.4-16.30)	
Family earning			
Higher family earning			
Lower family earning	2.49 (0.88-7.07)	1.63 (0.44-6.01)	

*p ≤0.05; **p≤0.01; Reference category is Normal (Score: 0-4)

Table 5 Results of logistic regression analysis showing association between socio-demographic variables and anxiety categories (odds ratio and 95% CI)

	Variables	Rural OR (95%CI)	Urban OR (95%CI)
Moderate Anxiety (Score: 18-24)	Age group		
	Younger old		
	Older old	0.90 (0.32-2.51)	0.95 (0.39-2.26)
	Sex		
	Male		
	Female	2.50 (0.89-7.02)	1.03 (0.36-2.95)
	Marital status		
	Married		
	Unmarried/widow/widower	1.54 (0.58-4.10)	0.58 (0.19-1.78)
	Family size		
	≥ 5 members		
	< 5 members	0.61 (0.21-1.75)	1.87 (0.67-5.23)
	Number of living offspring		
	≥3 offspring		
	< 3 offspring	1.67 (0.33-8.38)	0.30 (0.08-1.14)
	Living arrangement		
	Living without offspring		
	Living with offspring	2.21 (0.42-11.62)	3.05 (1.21-7.69)*
Level of education			

Table Continued...

	Variables	Rural	Urban
		OR (95%CI)	OR (95%CI)
	Educated/graduation and above	1	1
	Non-educated/below graduation	0.70 (0.27-1.84)	0.54 (0.12-2.39)
	Occupation		
	Pension holder / Peasant or labor	1	1
	Homemaker/idler	0.43 (0.09-2.12)	0.51 (0.14-1.92)
	Self earning		
	Higher self earning	1	1
	Lower self earning	3.27 (0.67-15.89)	1.93 (0.60-6.16)
	Family earning		
	Higher family earning	1	1
	Lower family earning	1.21 (0.47-3.09)	1.17 (0.51-2.65)
	Age group		
	Younger old	1	1
	Older old	2.46 (1.02-5.90)*	1.84 (0.68-4.99)
	Sex		
	Male	1	1
	Female	4.52 (1.77-11.55)**	1.13 (0.32-4.04)
	Marital status		
	Married	1	1
Severe Anxiety (Score: 25-30)	Unmarried/widow/widower	1.53 (0.64-3.68)	1.02 (0.33-3.19)
	Family size		
	≥ 5 members	1	1
	< 5 members	1.03 (0.42-2.54)	2.16 (0.57-8.13)
	Number of living offspring		
	≥ 3 offspring	1	1
	< 3 offspring	0.74 (0.16-3.41)	1.67 (0.17-16.68)
	Living arrangement		
	Living without offspring	1	1
	Living with offspring	0.79 (0.23-2.68)	1.83 (0.63-5.35)
	Level of education		
	Educated/graduation and above	1	1
	Non-educated/below graduation	0.99 (0.43-2.28)	0.42 (0.07-2.46)
	Occupation		
	Pension holder / Peasant or labor	1	1
	Homemaker/idler	1.03 (0.26-4.09)	2.22 (0.42-11.73)
	Self earning		
	Higher self earning	1	1
	Lower self earning	0.94 (0.25-3.52)	0.80 (0.16-3.57)
	Family earning		
	Higher family earning	1	1
	Lower family earning	0.93 (0.41-2.09)	1.25 (0.48-3.31)

*p ≤ 0.05; **p ≤ 0.01; Reference category is mild anxiety (Score: ≤ 17)

Discussion

The bulk of the world's aging population resides in the developing countries, yet little is known about the distribution of, and risk factors for depression in these populations. The World Bank⁴⁶ has reported that depression ranks fifth and seventh in the global disease burden among women and men, respectively.⁴⁷ Eisenberg L⁴⁸ opined it is highly likely that many cases of depressive disorders are not recognized and treated. Still, many of these countries showed elevated frequency of depressive disorders. In the present study, a higher proportion of rural elderly is found to be suffering from depression in comparison to their urban counterparts. Interestingly, in the rural communities of West Bengal, an increasing trend of prevalence of depression is noticed, through decades. While Nandi DN et al.,⁴⁹ found a prevalence of depression to be 22% among the rural community in West Bengal, it has increased to 52% during 1990s.⁴² And again, the prevalence of

depression is observed to be much higher, i.e. 87% combining different categories, though in one of the rural West Bengal communities by the present study. According to Taqui AK et al.,²² female sex, low level of education, loss of spouse, unemployment were the factors related to depression which is in concordance with the findings of the present study. The present study demonstrated a strong association between depression and being female gender, lack of literacy, loss or absence of spouse. Several studies^{27,50-52} demonstrated higher level of depression with low economic status, and illiteracy as is found in the present study, as well. However, the present study did not find any positive correlation between depression and age except in case of rural females. This finding is corroborative with the study conducted by Blazer et al.,⁵³ Nevertheless, some other studies from Indian communities showed higher prevalence of depression with increasing age.^{26,27} It is clearly demonstrated in the present study that rural and urban elderly differ significantly in the prevalence of depression. It

also conforms to the views expressed in some literature that place of residence is an important influencing factor for emergence of the state of depression among the elders.^{7,11,12}

Anxiety disorder is also most common disorder among elderly population^{54,55} followed by depression. From a public health point of view, anxiety disorders may interfere with well-being and daily functioning.^{56,57} In some studies it has been documented that anxiety disorders occur two to seven times more often than depression problems.⁵⁸ In an Indian sample comprising nearly equal number of men and women,⁵⁹ reported anxiety or tension as the most common psychiatric symptoms. It has already been reported that prevalence rate in anxiety disorder was higher among women compared to men.^{8,60} Reddy VM & Chandrasekar CR³³ found that anxiety was significantly more common in women. Results of the present study are also similar with these studies about the higher prevalence of anxiety among women in comparison to their male counterparts. Lower level of education is found to be an important correlate of anxiety disorder;⁵³ lower level of education indeed has been found to significantly affect anxiety level in the present study. It has been documented by some studies that the possible risk factors for higher prevalence of anxiety in women in India are age, socio-economic status and education, marriage and widowhood.^{42,48,61} Poor financial condition is significantly associated with severity of anxiety in the present study, a finding which is congruent with another study in the UK.¹⁵ Again, age remains to be an influencing factor for anxiety level as revealed in the present study. Brown PJ & Roose SP⁶² had a similar finding, too. Rural elderly have shown significantly higher prevalence of severe anxiety in comparison to their urban counterparts which is congruent with other studies.⁶³

Conclusion

Mental disorders cause considerable burden on individuals, families and societies as well as of immense public health importance. At the international level, mental health is receiving increasing importance as reflected by the WHO focus on mental health since 2001. At the national level, mental health policy has been one of the important areas of Indian public health initiatives. Currently India is implementing a national level program of integrating mental health with primary health care, the largest such effort in a developing world. It is clearly demonstrated in the present study that urban elderly population of Salt Lake City experienced relatively lower prevalence of depression and anxiety, irrespective of gender owing to better socio-demographic profiles compared to their rural counterparts. Upliftment in economic condition and possible development in mental health policies may help to achieve realistic goals of better mental health condition especially among rural Indian.

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Conflicts of interest

Author declares there are no conflicts of interest.

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