Original Article

Comparative assessment of psychosocial status of elderly in urban and rural areas, Karnataka, India

Govindarajan Venguidesvarane Akila[1], Banavaram Anniappan Arvind[2], Arjunan Isaac[3]

[1]Department of Community Medicine, Sri Ramachandra Institute of Higher Education and Research, No. 1, Sri Ramachandra Nagar, Porur, Chennai, Tamil Nadu, [2]Department of Epidemiology, Centre for Public Health, National Institute of Mental Health and Neuro Sciences, [3]Department of Community Medicine, M S Ramaiah Medical College, Bangaluru, Karnataka, India

Abstract

Background and Aims: Psychological and social factors form an integral part in the health and well being of an elderly. Understanding these factors and their differential distribution based on geographical location will help in providing quality care. The aim of this study is to provide a comparative assessment of the psychological and social status of the elderly living in urban and rural area of Karnataka and to identify factors associated with the occurrence of psychological problems among elderly. **Methods:** This comparative cross-sectional study was done by interviewing 510 elderly in house to house survey in urban and rural area. A pre-tested semi-structured questionnaire was used to collect information pertaining to social and demographic characteristics Cognitive assessment of the elderly was done using Hindi Mini Mental State Examination. Subsequently cognitively normal elderly was assessed for depression using Geriatric depression scale (GDS 15). The Barthel's Activities of Daily Living and Lawton's Instrumental Activities of Daily Living was used for functional assessment of elderly. **Results:** The proportion of elderly who were at risk of developing depression was higher in rural area (32.6%) when compared to urban area (30.4%). Logistic regression analysis showed that illiteracy, poor perceived mental health, having no one to confide to when they have a problem and feeling financially insecure were significantly associated with risk of depression. **Conclusion:** Study showed that there is a significant difference in the social and psychological status of elderly in urban and rural areas. Understanding these differences is essential to plan and implement services specifically for urban and rural population.

Keywords: Elderly, psychological status, rural, social status, urban

Introduction

Ageing is a period of transition affecting not only the physical well-being but also the social and mental well-being of an individual.[1] Industrialisation and globalisation have broken the traditional values and norms within society resulting in disintegration of joint or extended family structures into nuclear ones, increasing the susceptibility of the older population.[2,3] Mental and neurological problems account to 6.6% of disability adjusted life years (DALYs) and 17.4% of Years Lived with Disability (YLDs) among elderly.[4]

Dementia and depression are the most common mental and neurological problem among the elderly. Community based studies conducted among elderly in India have reported a depression prevalence rate ranging from 8.9% to 62.16%.[1] The mental health of elderly has an influence on their physical health.[4] Individuals with depression have 1.52 times higher chance of mortality than the general population.[5]

Ageing is accompanied by lot of social problems. Social roles and responsibility changes. Retirement from work leads to economic

Address for correspondence: Dr. Banavaram Anniappan Arvind, Department of Epidemiology, Centre for Public Health, National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka, India.
E-mail: aravind_baa@yahoo.co.in

Received: 12-07-2019 **Revised:** 22-08-2019 **Accepted:** 29-08-2019

Access this article online

Quick Response Code:

Website: www.jfmpc.com

DOI: 10.4103/jfmpc.jfmpc_536_19

How to cite this article: Akila GV, Arvind BA, Isaac A. Comparative assessment of psychosocial status of elderly in urban and rural areas, Karnataka, India. J Family Med Prim Care 2019;8:2870-6.

insecurity and financial dependence. Isolation, loneliness, sense of neglect and boredom are the common complaints of elderly. All these factors influence the mental health of the elderly.[6]

Though physical health of the elderly is taken care of to some extent, mental health and the social factors influencing it are largely ignored and variations in these factors based on geographic location are less explored. Hence the present study aims to provide a comparative assessment of the psychological and social status of the elderly living in urban and rural area of Karnataka, and to identify factors associated with the occurrence of psychological problems among elderly.

Methodology

The comparative cross-sectional study was conducted in both the urban and rural field practice area of medical college, Bangalore. The urban field practice area covers a population of 87,259 and rural field practice area covers 23 villages with a population of 20, 835. Elderly above the age of 60 years who were permanent residents (>6 months) of the study area were included in the study. The study is part of the larger study which aimed to assess differential health needs of elderly in urban and rural area.[7] The present paper highlights findings with respect to psychosocial factors among elderly. The minimum required sample size for urban and rural area was 242 and 240, respectively. A stratified multistage cluster random sampling technique was used for the study. The study area in urban is distributed into 2 wards (ward 17 and ward 36). The sample size of 242 was proportionately divided between two wards and hence 138 and 104 individuals were selected from ward 17 and 36 respectively. The wards were further divided into sub units viz census enumeration blocks (CEB), which is defined as a cluster for the study (107 CEBs and 70 CEBs in ward 17 and 36, respectively). With an average of 500 individuals in each CEB and assuming 7% of them are elderly, 4 CEB from ward 17 and 3 CEB from ward 36 was selected using simple random sampling technique in order to get the required sample size. Within the selected CEB, complete enumeration of the elderly was done. In rural area, villages were stratified according to the sub-centres and the sample size of 240 was proportionately divided among the three sub-centre and consequently 69, 67 and 104 elderly were selected from three subcentres. Under each sub-centre, one village which is defined as a cluster was selected by simple random sampling technique. In selected villages, complete enumeration of elderly was done.

House-to-house survey was undertaken to enrol elderly individuals for the study. Informed written consent was obtained from study subjects prior to interview and only those consented were interviewed. A pre-tested semi-structured questionnaire was used to collect information pertaining to socio demographic factors like age, gender, education, religion, etc. Socio economic status was assessed using updated B.G Prasad classification. Based on the current perception about health status, the elderly were asked to self-rate their physical and mental health as very good, good, moderate, bad, very bad. Information pertaining to their hospitalization status (elderly who were admitted in hospital for >24 hours in past 6 months) was obtained.

The cognition assessment of the elderly was done using Hindi Mini Mental State Examination (HMSE). The items covered in HMSE are cognitive functioning such as memory, recognition of objects, attention, language function, concentration, orientation to time and place, speech, motor functioning and praxis.[8] In HMSE, not literate elderly scoring 19 and above and literate elderly scoring 24 and above were considered to have normal cognition. Subsequently cognitively normal elderly was assessed for depression using geriatric depression scale. The geriatric depression scale (short form) GDS is a 15 item self-rated questionnaire with "yes" or "no" responses. Each item is assigned a score of "0" or "1" and the total score ranges from 0 to 15. The elderly was classified as follows: those who scored 0-4 points suggests "no risk of depression", and those who scored 5+ points suggests 'at risk of depression". GDS (SF) has a sensitivity of 92% and a specificity of 81% at a cut-off of 5.[9]

The Barthel's Activities of Daily Living (ADL) and Lawton's Instrumental Activities of Daily Living. (IADL) was used for functional assessment of elderly. The Barthel's ADL includes assessment of activities pertaining to self-care (feeding, grooming, bathing, dressing, bowel and bladder care, and toilet use) and mobility (ambulation, transfers, stair climbing).[10] Elderly with a score of 0 – 19 in Barthel's scale were grouped as functionally dependent and those with a score of 20 were grouped as functionally independent. The Lawton IADL was used to assess an individual's independent living skill. There are 8 domains of function measured with the Lawton IADL scale. In our study, elderly with a score of 0-7 were grouped as functionally dependent and those with a score of 8 were grouped as functionally independent.[11] Ethics approval was obtained from institutional ethic committee.

Statistical analysis

Qualitative variables such as socio-demographic characteristics were expressed as frequency and percentages. Difference in proportions of psychological and social problem among elderly in urban and rural areas was tested using chi- square test. Logistic regression analysis was utilised to identify factors associated with depression in urban and rural area. $P < 0.05$ was considered as statistically significant.

Results

The mean age of the elderly in urban area was 67.8 ± 7.2 years and in rural area it was 71.4 ± 9.8 years ($P < 0.001$). In both urban and rural areas, the proportion of females was more. Not literate elderly was more in rural area (83.9%), when compared to urban area (31.0%). Around one-third (urban 30.2%, rural 33.7%) of elderly were divorced/widowed/unmarried. It was also observed that 59.6% of elderly in the study area lived in joint family and a small proportion were living alone (5.1%) ($P < 0.001$). Most

of the elderly in urban area belonged to upper socioeconomic class (79.6%) whereas those in rural area belonged to lower socioeconomic class (80.4%) (P < 0.001). [Table 1]

Depression was assessed among those elderly who had normal cognition (n = 424). It was observed that 31.2% of the study population were at risk of depression. Risk of depression was observed to be more among the elderly in rural area (32.4%), when compared to those in urban area (30.3%). However, the difference was statistically insignificant. [Figure 1]

Social circumstances can have a significant impact on physical and mental health of elderly. It was observed that 93.3% of elderly in urban area and 89.8% of elderly in rural area were looked after by their family member when they were ill [P = 0.151]. Family members (92.4%) were the main source for the health expenses of elderly and the proportion was more in urban area (94.5%) when compared to rural area (90.2%). It was observed that 20% of the elderly in rural were employed whereas only 9.4% of elderly in urban were employed (*P* = 0.001). The feeling of being financially insecure was more in rural elderly (21.6%) when compared to elderly in urban area (12.5%) [*P* = 0.007). Around 20.8% of elderly in urban area had health insurance whereas none of the elderly in rural area had health insurance. Willingness to work was more among the rural elderly (22.4%) as compared to urban elderly (11.4%) [*P* = 0.001] [Table 2].

Table 3 shows that in urban area not literate [2.96 (1.65-5.31)], unemployed elderly [3.36 (1.97-11.63)] had statistically significant higher odds of risk of depression than literate and employed elderly whereas in rural area, unemployed [2.98 (1.29-6.88)], being unmarried, divorced or widowed [2.88 (1.48-5.63)], living with more than 6 members in family [2.23 (1.07-4.63)] had statistically significant higher odds of risk of depression than elderly who were employed, married, living in smaller families.

Table 4 shows that the elderly in both urban and rural area who felt that their physical health and mental health were bad had statistically significant higher odds of risk of depression than those who felt it was good. In urban area, elders who were hospitalised in past 6 months and social factors like no one to confide, feeling financially insecure [14.90 (5.39-41.24)] and functionally dependant elderly [ADL 2.59 (1.12-5.77) and IADL 1.93 (1.06-3.49)] had statistically significant higher odds of risk of depression. Whereas in rural area, presence of a morbidity [3.13 (1.23-7.97)] and various social factors like having no one to confide their problems [3.43 (1.68-7.01)], feeling financially insecure [12.22 (4.63-32.29)] had statistically significant higher odds of risk of depression. Among the elderly in urban area, logistic regression analysis showed that poor perceived mental health [9.12 (1.64-50.60)], having no one to confide in [4.34 (1.79-10.52)] and illiteracy [2.80 (1.49-5.27)] had statistically significant higher odds for risk of depression, whereas in rural area, perceived mental health as moderate 3.01 (1.35-6.72) or poor 10.20 (3.13-33.27) and feeling financially insecure 10.92 (3.88-30.74) were significantly associated with risk of depression.

Table 1: Distribution of the study participants according to their socio demographic characteristics

Socio demographic characteristics	Urban *n*=255 *n* (%)	Rural *n*=255 *n* (%)	Total *n*=510 *n* (%)
Age group (in years)			
Young old (60 - 74)	218 (85.5)	169 (66.3)	387 (75.9)
Old old (75 - 85)	31 (12.2)	67 (26.3)	98 (19.2)
Very old (>85)	6 (2.4)	19 (7.5)	25 (4.9)
Gender			
Male	114 (44.7)	93 (36.5)	207 (40.6)
Female	141 (55.3)	162 (63.5)	303 (59.4)
Religion			
Hindu	242 (94.9)	255 (100)	497 (97.5)
Others	13 (5.1)	0 (0)	13 (2.5)
Education			
Degree and above	67 (26.3)	4 (1.6)	71 (13.9)
High school (IX to XII)	82 (32.2)	21 (8.2)	103 (20.2)
Middle school (VI to VIII)	20 (7.8)	9 (3.5)	29 (5.7)
Primary school (I to V)	7 (2.7)	7 (2.7)	14 (2.7)
Not literate	79 (31.0)	214 (83.9)	293 (57.5)
Marital status			
Married	178 (69.8)	169 (66.3)	347 (68.0)
Divorced widowed/unmarried	77 (30.2)	86 (33.7)	163 (32.0)
Family type			
Nuclear family	119 (46.7)	61 (23.9)	180 (35.3)
Joint family	126 (49.4)	178 (69.8)	304 (59.6)
Living alone	10 (3.9)	16 (6.3)	26 (5.1)
Socio economic status			
Class 1	148 (58)	3 (1.2)	151 (29.6)
Class 2	55 (21.6)	14 (5.5)	69 (13.5)
Class 3	39 (15.3)	33 (12.9)	72 (14.1)
Class 4	12 (4.7)	108 (42.4)	120 (23.5)
Class 5	1 (0.4)	97 (38.0)	98 (19.2)
Total	255 (100)	255 (100)	510 (100)

Table 2: Association between social factors and elderly residing in urban and rural area

Social factors *n*=510	Urban *n* (%)	Rural *n* (%)	Total *n* (%)	*p*
Person who takes care				
Self	17 (6.7)	26 (10.2)	43 (8.4)	
Family members	238 (93.3)	229 (89.8)	467 (91.6)	0.151
Sources of health expenses				
Self	14 (5.5)	25 (9.8)	39 (7.6)	
Family members	241 (94.5)	230 (90.2)	471 (92.4)	0.067
Occupation				
Unemployed	231 (90.6)	204 (80)	435 (85.3)	
Employed	24 (9.4)	51 (20)	75 (14.7)	**0.001**
Financial Insecurity				
Yes	32 (12.5)	55 (21.6)	87 (17.1)	
No	223 (87.5)	200 (78.4)	423 (82.9)	**0.007**
Health insurance				
Yes	53 (20.8)	0 (0)	53 (10.4)	
No	202 (79.2)	255 (100)	457 (89.6)	**0.000**
Willingness to work				
Yes	29 (11.4)	57 (22.4)	86 (16.9)	
No	226 (88.6)	198 (77.6)	424 (83.1)	**0.001**

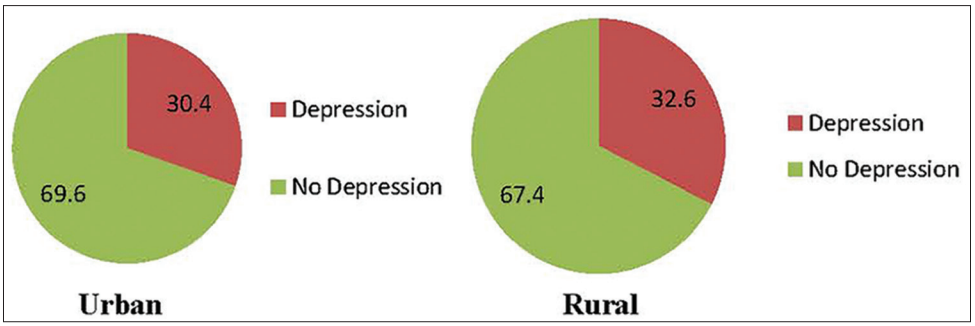

Figure 1: Prevalence of risk of depression among elderly in the study area

Table 3: Association of socio-demographic factors and risk of depression among elderly in urban and rural study area

Socio-demographic factors	Urban *n*=240		*p*	Rural *n*=184		*P*
	Depression	Odds ratio		Depression	Odds ratio	
Age						
<75	60 (28.4)			42 (31.3)		
>=75	13 (44.8)	2.04 (0.93-4.51)	0.072	18 (36.0)	1.23 (0.62-2.44)	0.549
Gender						
Male	28 (25.5)			22 (28.6)		
Female	45 (34.6)	1.55 (0.88-2.72)	0.124	38 (35.5)	1.34 (0.73-2.59)	0.322
Education						
Literate	39 (23.2)			14 (35.9)		
Illiterate	34 (47.2)	2.96 (1.64-5.31)	**0.000**	46 (31.7)	0.83 (0.39-1.74)	0.622
Employed						
Yes	3 (12.5)			8 (17)		
No	70 (32.4)	3.36 (1.97-11.63)	**0.04**	52 (38)	2.98 (1.29-6.88)	**0.008**
Marital status						
Married	47 (27)			34 (25.8)		
Unmarried/divorced/widowed	26 (39.4)	1.76 (0.97-3.19)	0.063	26 (50.0)	2.882 (1.48-5.63)	**0.002**
Members in family						
<6	63 (29.6)			42 (28.8)		
>=6	10 (37.0)	1.40 (0.61-3.23)	0.427	18 (47.4)	2.23 (1.07-4.63)	**0.029**
Socioeconomic status						
Class 1&2	53 (27.9)			4 (26.7)		
Class 3	15 (38.5)	1.62 (0.79-3.31)	0.191	7 (29.2)	1.13 (0.27-4.80)	0.866
Class 4	5 (45.5)	2.15 (0.63-7.36)	0.221	24 (30.8)	1.22 (0.35-4.23)	0.751
Class 5	0 (0)			25 (37.3)	1.64 (0.47-5.70)	0.439

Discussion

The present study is a unique attempt to understand the difference in social and psychological status (depression) between urban and rural elderly. The study further looks into the factors influencing the occurrence of depression among elderly depending on the place of residence. The highlight of the study was that it was community-based study and all the elderly were visited in their houses and complete assessment was done. Majority of studies carried out in India were either done in urban area or rural area, comparative studies were less. A deeper understanding of the problem and targeted intervention can be carried out only by exploring these finer differences.

Literacy and employment status played a major role in access, utilisation and affordability of health care services. The proportion of illiterate was high in rural area (84%) when compared to urban area (31%). Even though literacy rate was low in rural area elderly in rural area (20%) were employed more than those in urban area (9.4%). National surveys done in India also showed similar findings.[12-14] As agriculture is predominant occupation in rural area and there exists no formal age for retirement, we find more of the elderly employed in rural area when compared to urban area. Although employment was higher among rural elderly, the feeling of financial insecurity and willingness to work was also high among the rural elderly when compared to urban elderly. About 20.8% of elderly in urban area were covered by health insurance whereas none of them in rural area had health insurance. This difference could be due to illiteracy, lack of awareness and poor socioeconomic status of elderly in rural area. Study done by HelpAge India showed 19.5% of elderly were covered by insurance in urban area similar to our study findings.[15] Elderly living alone were more in rural area (6.3%) when compared to urban area (3.9%). Studies done by Thakur RP, Alam M, Grover S

Table 4: Association of physical health, social factors and disability with risk of depression among elderly in urban and rural study area

Variables	Urban *n*=240		*p*	Rural *n*=184		*P*
	Depression	Odds ratio		Depression	Odds ratio	
Self perceived physical health						
Good	43 (26.5)			14 (17.3)		
Moderate	23 (33.3)	1.38 (0.75-2.55)	0.297	31 (38.8)	3.03 (1.46-6.29)	**0.003**
Bad	7 (77.8)	9.69 (1.94-48.44)	**0.006**	15 (65.2)	8.97 (3.19-25.22)	**0.000**
Self perceived Mental health						
Good	43 (26.5)			14 (17.1)		
Moderate	23 (33.3)	1.38 (0.75-2.55)	0.297	32 (39.5)	3.17 (1.53-6.57)	**0.002**
Bad	7 (77.8)	9.69 (1.94-48.44)	**0.006**	14 (66.7)	9.71 (3.32-28.44)	**0.000**
Presence of morbidity						
No	16 (23.5)			6 (15.8)		
Yes	57 (33.1)	1.61 (0.85-3.07)	0.145	54 (37.0)	3.13 (1.23-7.97)	**0.013**
Hospitalised in past 6 months						
No	69 (29.4)			56 (32.0)		
Yes	4 (80.0)	9.62 (1.06-7.65)	**0.015**	4 (44.4)	1.70 (0.44-6.57)	0.437
Medication						
No	37 (28.9)			46 (31.3)		
Yes	36 (32.1)	1.16 (0.67-2.02)	0.587	14 (37.8)	1.34 (0.63-2.83)	0.448
Takes care of elderly						
Family members	68 (30.2)			52 (30.8)		
Self	5 (33.3)	1.15 (0.38-3.50)	0.806	8 (53.3)	2.57 (0.89 - 7.46)	0.074
Confide						
Yes	57 (26.)			37 (26.1)		
No	16 (59.3)	3.98 (1.74-9.09)	**0.001**	23 (54.8)	3.43 (1.68-7.01)	**0.000**
Financial Insecurity						
No	50 (23.6)			37 (23.9)		
Yes	23 (82.1)	14.90 (5.39-41.24)	**0.000**	23 (79.3)	12.22 (4.63-32.29)	**0.000**
ADL						
Independent	59 (27.8)			41 (30.6)		
Dependant	14 (50)	2.59 (1.12-5.77)	**0.017**	19 (38)	1.39 (0.70-2.74)	0.341
IADL						
Independent	46 (26.4)			18 (31.6)		
Dependant	27 (40.9)	1.93 (1.06-3.49)	**0.030**	42 (33.1)	1.07 (0.55-2.09)	0.842

et al. showed that 6-11% of elderly live alone and the proportion was more in rural area.[16-18] In both urban and rural areas, family members were the immediate caregivers and important source for health expense. Country wide studies done by HelpAge India showed similar findings.[15]

Depression was the most common unidentified mental health problem in elderly. In our study setting, the proportion of elderly who were at risk of developing depression was high (31.2%). A review by Grover showed that prevalence rate of depression among elderly varied from 8.9-62.16% in community-based studies involving 70 to 7,150 subjects.[1] The proportion of elderly being depressed was slightly higher in rural area (32.6%) when compared to urban area (30.4%). Studies by Anand A, Manjubhasini *et al.*, Arumugam *et al.*, Pilania M *et al.* observed that the prevalence of depression in elderly was high in rural areas when compared to urban areas.[19-22] The probable reason for this difference could be because of rural to urban migration of the younger population leading to lack of social support in the rural areas. Another reason could be the lack of professional health service for identification and treatment of depression in rural areas. Studies done by Thakur *et al.*, Pracheth R, Sengupta *P et al.* depicted the prevalence of depression to be more in urban area than rural area in contrast to our study findings.[16,23,24] This could be due to different study setting, methodology and different methods of assessment of depression. National Programme for Health Care of elderly proposes to have speciality like psychiatrist only in regional geriatric centres, but one third of elderly in the study area is at risk of depression, which is quite high. Training the medical officer to identify the psychiatric problems and strengthening national mental health programme in primary health care itself will help in early identification and appropriate management.

Significant predictors for risk of depression among elderly in urban area were illiteracy [2.96 (1.65-5.31)], unemployment [3.36 (1.97-11.63)] hospitalised in past 6 months, having no one to confide to, feeling financially insecure [14.90 (5.39-41.24)] and functionally dependant elderly [ADL 2.59 (1.12-5.77) and IADL 1.93 (1.06-3.49)] whereas in rural area it was unemployment [2.98 (1.29-6.88)]

being unmarried, divorced or widowed [2.88 (1.48-5.63)], living with more than 6 members in family [2.23 (1.07-4.63)], presence of a morbidity [3.13 (1.23-7.97)], having no one to confide their problems [3.43 (1.68-7.01)], feeling financially insecure [12.22 (4.63-32.29)]. Study done in Ludiana in both urban and rural area, Jain RK *et al.* in urban slums, Goel PK *et al.*, Reddy NB *et al.* Pilania M *et al.* showed that female gender, increasing age, marital status, illiteracy, lower socioeconomic state, presence of morbidity were significant predictors of depression.[24-28] In our study, though increasing age and female gender was associated with risk of depression, it was not statistically significant. Functional dependence was also an important factor resulting in depression. Both urban and rural elderly who were functionally dependent were at risk of depression. As an individual becomes older, they become more functionally dependent on their family members and lack of this support system makes them more at risk of depression. Study done in china showed that functionally dependent elderly was at higher risk of depression (RR = 7.28 for urban, R = 2.22 for non-urban). Studies done by Kim BJ *et al.*, Sanjay *et al.*, Reddy *et al.* in India also observed similar findings.[27,29,30]

Though several factors were associated with depression among elderly in univariate analysis, multivariate analysis clearly shows that most of the studied factors mediate their influence on depression through factors such as self perceived poor mental health, feeling financial insecure, and having no one to confide to when they have a problem. Illiteracy was also identified as an independent risk factor for depression among elderly in urban area. A study done by Bodhare *et al.* and meta-analysis done by Chang-Quan H *et al.* (RR: 2.40, 95% CI: 1.94-2.97)) showed that risk of depression was high in elderly with poor self rated health.[31,32] Poor rating of mental health can itself be taken as an early signs of depression because of the strong associations seen. Study done by Akhtar *et al.* showed that elders who were dependent financially were at higher risk (AOR = 1.75) for depression.[33] Unemployment, lower income and being dependent financially on family members for their daily needs as well as their health expenses make the elderly insecure and more at risk for depression. Study done by Legget *et al.*, Tengku Mohd *et al.*, Buvneshkumar M *et al.*, Zou C *et al.* showed that elderly with no emotional support from family members were at higher risk of depression.[34-37] Sense of loneliness and no one to confide their physical and mental problems make them more at risk for depression. Being illiterate had 3 times higher odds of risk of depression than literates in urban area. One probable reason would be literate elderly will have more awareness of mental health problems and as a result their health seeking behaviour would be better when compared to illiterates. Studies done among elderly in urban area by Jain RK *et al.*, Goel PK *et al.*, Rathod S, Sangma RJ *et al.*, showed risk of depression was high among illiterate elderly.[25,26,38,39] This study highlights the fact that apart from identifying and treating depression, emphasis should be given on factors contributing to depression like financial insecurity and lack of emotional support like in our case. Interventions should be implemented to address these underlying causes which are beyond health sector.

Few limitations of the study was because of cross sectional nature of the study, temporality of association between factors studied and risk of depression could not be established. Secondly diagnosis of depression was through the study instrument. This study instrument only identifies those at risk of depression and does not provide definite diagnosis of depression. Despite the limitation, the study gives insights about the difference in social and psychological problems faced by the elderly in urban and rural area.

Conclusion

The various sociodemographic and psychological factors are differently distributed between urban and rural area. Though the factors influencing depression are similar in both urban and rural areas, their proportionate distribution (i.e relative importance of such factors) differ. Understanding of these is essential for a primary care physician to plan and implement services specifically for the urban and rural population. Further, we would like to suggest more in-depth studies with a larger sample size to understand the urban-rural difference of social and psychological factors and their influence on the health of the elderly.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Self-funded.

Conflicts of interest

There are no conflicts of interest.

References

1. Grover S, Malhotra N. Depression in elderly: A review of Indian research. J Geriatr Ment Health 2015;2:4-15.
2. Raju SS. Studies on Ageing in India: A Review. New Delhi: United Nations Population Fund (UNPFA); 2011.
3. Parkar SR. Elderly mental health: Needs. Mens Sana Monogr 2015;13:91-9.
4. Mental health of older adults [Internet]. 2017 [cited 2019 Feb 10]. Available from: https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults.
5. Depression in India. Lets Talk [Internet]. 2017 [cited 2019 Jan 01]. Available from: http://www.searo.who.int/india/depression_in_india.pdf.
6. Problems in elderly [Internet]. 2012 [Cited 2014 Apr 12]. Available from: http://helpageindiaprogramme.org/Elderly%20Issues/problems_of_the_elderly/index.html.

7. Akila GV, Arvind BA, Arjunan I. A comparative study on health profile and health seeking behaviour of the elderly in urban and rural areas of Bangalore, Karnataka. Indian J Public Health Res Dev 2019;10.
8. Ganguli M, Chandra V, Gilby JE, Ratcliff G, Sharma SD, Pandav R, *et al.* Cognitive test performance in a community-based nondemented elderly sample in rural India: The Indo-U.S. cross-national dementia epidemiology study. Int Psychogeriatr 1996;8:507-24.
9. Lyness JM, Noel TK, Cox C, King DA, Conwell Y, Caine ED. Screening for depression in elderly primary care patients: A comparison of the center for epidemiologic studies—Depression scale and the geriatric depression scale. Arch Intern Med 1997;157:449-54.
10. Title of measure: Barthel Index of Activities of Daily Living (ADLs) [Internet]. [cited 2018 Nov 10]. Available from: https://www.rtog.org/LinkClick.aspx?fileticket=WFmhDMpabFE%3D&tabid=118.
11. Coyne R, Kluwer W. The Lawton Instrumental Activities of Daily Living (IADL) Scale [Internet]. [cited 2019 Jul 10]. Available from: https://consultgeri.org/try-this/general-assessment/issue-23.pdf.
12. Situational analysis of the elderly in India [Internet]. 2011 [cited 2018 Sep 12]. Available from: http://mospi.nic.in/Mospi-New/upload/elderly-in-India.Pdf.
13. Primary census highlights data abstract [Internet]. 2011 [cited 2018 June 05]. Available from: http://www.censusindia.gov.in/2011census/PCA/PCA_Highlights/pca_highlights_file/karnataka/Chapter-III.pdf.
14. Borah H, Shukla P, Kajal J KS. Elderly in India- Profile and Programmes [Internet]. 2016 [cited 2017 Oct 25]. Available from: www.mospi.gov.in.
15. Economic and health survey on india's oldest old (80+)-needs, care and access [Internet]. 2010 [cited 2017 Jul 10]. Available from: https://www.helpageindia.org/pdf/surveysnreports/economichealth.pdf.
16. Thakur RP, Banerjee A, Nikumb V. Health problems among the elderly: A cross-sectional study. Ann Med Health Sci Res 2013;3:19-25.
17. Alam M, James KS, Giridhar G, Sathyanarayana KS, Kumar S, Raju SS. Report on the Status of Elderly in Select States of India. New Delhi: United Nations Population Fund (UNPFA); 2012.
18. Grover S, Avasthi A, Sahoo S, Lakdawala B, Dan A, Nebhinani N, *et al.* Relationship of loneliness and social connectedness with depression in elderly: A multicentric study under the aegis of Indian Association for Geriatric Mental Health. J Geriatr Ment Health 2018;5:99-106.
19. Anand A. Understanding depression among older adults in six low middle income countries using WHO-SAGE survey. Behav Health 2015;1:1-10.
20. Sundru MB, Goru KB. Epidemiological study of depression among population above 60 years in Visakhapatnam, India. Int J Med Sci Public Health 2013;2:695-702.
21. Arumugam B, Nagalingam S, Ravikumar N. Geriatric depression among urban and rural community in Chennai—A cross sectional study. J Evol Med Dental Sci 2013;2:795-801.
22. Pilania M, Yadav V, Bairwa M, Behera P, Dutt Gupta S, Khurana H, *et al.* Prevalence of depression among the elderly (60 years and above) population in India, 1997–2016: A systematic review and meta-analysis. BMC Public Health 2019;19:832. doi: 10.1186/s12889-019-7136-z.
23. Pracheth R. Urban–rural comparison of depression among the elderly population: A cross-sectional study. Int J Med Sci Public Health 2016;5:866-72.
24. 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.
25. Jain RK, Aras RY. Depression in geriatric population in urban slums of Mumbai. Indian J Public Health 2007;51:112-3.
26. Goel PK, Garg SK, Singh JV, Bhatnagar M, Chopra H, Bajpai SK. Unmet needs of the elderly in a rural population of Meerut. Indian J Community Med 2003;28:165-6.
27. Reddy NB, Pallavi M, Reddy NN, Reddy CS, Singh RK, Pirabu RA. Psychological morbidity status among the rural geriatric population of Tamil Nadu, India: A cross-sectional study. Indian J Psychol Med 2012;34:227-31.
28. Pilania M. Prevalence and predictors of depression in community-dwelling elderly in rural Haryana, India. Indian J Community Med 2017;42:13-8.
29. Tomita A, Jonathan K. Depression, disability and functional status among community-dwelling older adults in South Africa: Evidence from the first South African National Income Dynamics Study. Int J Geriatr Psychiatry 2013;28:1270-9.
30. Sanjay TV, 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.
31. Bodhare TN, Kaushal V, Venkatesh K, Anil Kumar M. Prevalence and risk factors of depression among elderly population in a rural area. Perspect Med Res 2013;1:11-5.
32. Chang-Quan H, Xue-Mei Z, Bi-Rong D, Zhen-Chan L, Ji-Rong Y, Qing-Xiu L. Health status and risk for depression among the elderly: A meta-analysis of published literature. Age Ageing 2010;39:23-30.
33. Akhtar H, Khan AM, Vaidhyanathan KV, Chhabr P, Kannan, AT. Socio-demographic predictors of depression among the elderly patients attending out patient departments of a tertiary hospital in north India. Int J Prev Med 2013;4:971-5.
34. Leggett A, Zarit SH, Nguyen NH, Hoang CN, Nguyen HT. The influence of social factors and health on depressive symptoms and worry: A study of older Vietnamese adults. Aging Ment Health 2012;16:780-6.
35. Tengku M, Yunus RM, Hairi F. Social support and depression among community dwelling older adults in Asia: A systematic review BMJ Open 2019;9:e026667.
36. Buvneshkumar M, John K R, Logaraj M. A study on prevalence of depression and associated risk factors among elderly in a rural block of Tamil Nadu. Indian J Public Health 2018;62:89-94.
37. Zou C, Chen S, Shen J, Zheng X, Wang L, Guan L, *et al.* Prevalence and associated factors of depressive symptoms among elderly inpatients of a Chinese tertiary hospital. Clin Interv Aging 2018;13:1755-62.
38. Rathod MS, Dixit JV, Goel AD, Yadav V. Prevalence of depression in an urban geriatric population in Marathwada region of western India. Indian J Psychol Med 2019;41:32-7.
39. B Sangma RJ, Konjengbam S, Laishram J, Elangbam V. Depression and its associated risk factors among elderly in an urban area: A cross- sectional study. J Med Soc 2018;32:106-10.