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Aishwarya Koppad
M.H.Sc. Student, Department of
Human Development and
Family Studies, College of
Community Science, UAS,
Dharwad, Karnataka, India

Vinutha U Muktamath
Assistant Professor, Department
of Human Development and
Family Studies, College of
Community Science, University
of Agricultural Sciences,
Dharwad, Karnataka, India

Corresponding Author:
Aishwarya Koppad
M.H.Sc. Student, Department of
Human Development and
Family Studies, College of
Community Science, UAS,
Dharwad, Karnataka, India

Prevalence of geriatric depression among community dwelling elderly

Aishwarya Koppad and Vinutha U Muktamath

Abstract
The prevalence and associated factors of depression among elderly residents in Ranebennur Taluk of Haveri district of Karnataka, India was explored. Snowball technique was used select 180 rural and urban elderly and differential design was used. A self-structured schedule was used to collect the general information, depression was measured by using Geriatric Depression Scale-short form (GDS) and Aggarwal socioeconomic status scale. The results revealed that less than fifty per cent of the rural respondents (48.89%) were normal followed by mild (23.33%), severe (14.45%) and moderate (13.33%) level of depression. Similar trend was observed among urban elderly where, less than half of them (34.40%) were normal, followed by mild (28.90%), moderate (18.90%) and severe (17.80%) level of depressive symptoms. However, the statistical analysis revealed no significant association and difference between the urban and rural elderly. The prevalence of geriatric depression was alarmingly high in rural and urban elderly. Hence, there is a need to strengthen the mental health programmes in the community and also giving health education to family members to spend time with elders.

Keywords: Elderly, depression, locality

Introduction

Aging is a normal process in the course of human life. It is not a disease, but a condition with many particularities. It is characterized by a drop in organic function and degeneration of the human body cells resulting in physical, biological, intellectual, mental and social downfall (Leggett and Zarit, 2014) [6]. One of the common neuropsychiatric disorders among elderly is depression and it constitutes a major public health problem worldwide.

Depression is a medical illness characterized by persistent sadness, discouragement, and loss of self-worth. It may be accompanied by reduced energy and concentration, sleep problems (insomnia), decreased appetite, weight loss, and bodily aches (Medical Encyclopaedia, retrieved October 31, 2008).

The epidemiological approach of depression in old age displays a constantly growing impact. According to the World Health Organization, 10%-20% of the elderly in the general population suffer from the disease, with females displaying a slight more prevalence. The aggravating factors for the development of depressive symptoms are usually associated with family factors such as partner's death or living away from close family core, with socio-economic conditions such as income reduction, incapacity to access health facilities as well as different cultural background (Barua *et al.,* 2011) [3].

Geriatric depression is a multifactorial disorder as it is caused by a combination of factors (genetic, biological, psychosocial) which contribute to the occurrence of the disorder at varying degrees. Depression is characterized by a set of clinical symptoms and signs. The frequency, the intensity and the duration of the clinical symptoms may vary among the elderly. These symptoms manifest both body and mental function (Wold, 2008) [13]. If depression is diagnosed early, even in the most severe forms, it can be treated with great success (Chapman and Perry, 2008) [4]. The biological, psychosocial and psychotherapeutic interventions are the main treatments of depression (UK Ect Review Group, 2003) [12]. If it is not treated by proper medication, its prognosis is unfavourable (Parashos *et al.*, 2002) [9].

What factors are related to the causes of depression? Some researchers have focused on socioeconomic variables such as advanced age, low education, poor economic status, manual occupation and current living situation as the causes of depression, and demonstrated that these variables had a relationship with depression (Lee & Hong, 2002) [5].

In particular low socioeconomic status was significantly associated with depression after adjustment for age, illness, gender and self-rated health (Murata *et al.*, 2008) [8]. Numerous community-based studies have been conducted on depression in the elderly population. However, there is little research that investigates the association between urban and rural residence with depression among older people. Studies on this topic may be meaningful to probe the prevalence of depression among elderly residents of urban and rural areas and establish differences between them. With this milieu, this study was carried out to compare the prevalence of depression among urban and rural elderly population.

Materials and Methods
A differential design study was conducted for a period of 2018 to 2019, in Ranebennur city area and two villages named Magod and Yarekuppi from Ranebennur Taluk, Haveri district, Karnataka state, India. The people who were aged 60 years and above and those who were willing participate were included in the study. Individuals aged 60 years and older, residing in the study area and able to speak were included. The 180 respondents (90 rural and 90 urban) were selected based on a process of simple random sampling.

Hypothesis
There is no significant difference between urban and rural elderly on depression.

Data collection tools
Self-structured schedule
The self-structured general information schedule was used to collect information about respondents age, gender, locality, religion, education, type of family, size of the family, marital status, living arrangement, working status, health problems, lifestyle (meditation, yoga, walking and physical exercise), hobbies and health affecting health (smoking, chewing betel leaf, alcohol consumption and chewing tobacco).

Geriatric Depression Scale-short form (GDS)
The Geriatric Depression Scale developed by Sheikh and Yesavage (1986) [11] was used to assess the depression among elderly. It consists of 15 statements. Each statement has to be answered as 'yes' or 'no' and is scored as '1' and '0' respectively. The maximum score is 15 and minimum is 0 and the scores are classified as normal (0-4), mild (5-8), moderate (9-11) and severe (12-15). The scale consists of both positive and negative statements. The reliability of the scale was 0.84.

Socio Economic Status (SES)
Socio Economic Status (SES) was measured by Aggarwal *et al.* (2005) [1] scale and the data was computed by IBM SPSS Statistics version 21 software.

Data collection procedure
A household survey was conducted and data collection tools were administered individually. The elderly were briefed about the purpose of the study and oral consent was obtained to conduct the study. The caregiver's opinion was also sought in cases wherever available in order to substantiate the responses given by the elderly. It took about nearly 30 minutes to collect the data from each sample.

Results

Table 1: Demographic characteristics of the respondents N=180

Characteristics	Category	Rural (n=90)	Urban (n=90)	Total
Age	Young old (60-74 years)	62 (68.90)	75 (83.33)	137 (76.11)
	Old old (75-84 years)	18 (20.00)	13 (14.44)	31 (17.22)
	Oldest old ($\geq$ 85 years)	10 (11.10)	2 (2.23)	12 (6.67)
	Total	90 (100)	90 (100)	180 (100)
Gender	Male	39 (43.30)	37 (41.10)	76 (42.22)
	Female	51 (56.70)	53 (58.90)	104 (57.78)
	Total	90 (100)	90 (100)	180 (100)
Religion	Hindu	85 (94.40)	87 (96.70)	172 (95.55)
	Muslim	5 (5.60)	3 (3.30)	8 (4.45)
	Total	90 (100)	90 (100)	180 (100)
Caste	Upper caste	5 (5.60)	20 (22.20)	25 (13.88)
	OBC	83 (92.20)	52 (57.80)	135 (75.00)
	Dalits	2 (2.20)	18 (20.00)	20 (11.12)
	Total	90 (100)	90 (100)	180 (100)
Education	Illiterate	43 (47.78)	37 (41.11)	80 (44.45)
	Higher primary	37 (41.11))	23 (25.56)	60 (33.33)
	PUC	9 (10.00)	8 (8.89)	17 (9.44)
	Graduation and above	1 (1.11)	22 (24.44)	23 (12.78)
	Total	90 (100)	90 (100)	180 (100)
Type of family	Nuclear	32 (35.60)	48 (53.30)	80 (44.44)
	Joint	58 (64.40)	42 (46.70)	100 (55.56)
	Total	90 (100)	90 (100)	180 (100)
Size of the family (Members)	Small ($\leq$ 4)	37 (41.10)	47 (52.20)	84 (46.66)
	Medium (5-7)	38 (42.20)	28 (31.10)	66 (36.67)
	Large ($\geq$ 8)	15 (16.70)	15 (16.70)	30 (16.67)
	Total	90 (100)	90 (100)	180 (100)
Marital status	Married	52 (57.78)	61 (67.78)	113 (62.78)
	Widow/ widower	38 (42.22)	29 (32.22)	67 (37.22)
	Total	90 (100)	90 (100)	180 (100)
Living arrangement	With spouse and children	46 (51.10)	44 (48.90)	90 (50.00)
	Only with spouse	5 (5.60)	17 (18.90)	22 (12.22)

	Only with children	30 (33.30)	20 (22.20)	50 (27.78)
	Alone	7 (7.80)	5 (5.60)	12 (6.67)
	Others/ Relatives	2 (2.20)	4 (4.40)	6 (3.33)
	Total	90 (100)	90 (100)	180 (100)
Working status	Working	50 (55.60)	35 (38.90)	85 (47.22)
	Non-working	40 (44.40)	55 (61.10)	95 (52.78)
	Total	90 (100)	90 (100)	180 (100)
Socio-Economic Status	Upper middle (46-60)	22 (24.40)	35 (38.89)	57 (31.67)
	Lower middle (31-45)	59 (65.60)	48 (53.33)	107 (59.44)
	Poor (16-30)	9 (10.00)	7 (7.78)	16 (8.89)
	Total	90 (100)	90 (100)	180 (100)
Number of health problems	No health problems	20 (22.22)	11 (12.22)	31 (17.22)
	1-2	57 (63.33)	65 (72.22)	122 (67.78)
	3-4	13(14.45)	14 (15.56)	27(15.00)
	Total	90 (100)	90 (100)	180 (100)

Figures in parenthesis indicate percentages

Demographic characteristics of the respondents

The demographic characteristics of the sample selected for the study is presented in the Table 1. It is apparent from the table that equal proportion of sample (90 each) is selected from rural and urban area. With respect to age, in rural area 68.90 per cent belonged to 'young old', 20 per cent were 'old old' and 11.10 per cent were in 'oldest old' category. In urban area, 83.33 per cent were 'young old', 14.44 per cent 'old old' and 2.23 per cent belonged to 'oldest old' category.

With regard to gender 43.30 per cent were males and 56.70 per cent females from rural area, whereas 41.10 per cent were males and 58.90 per cent were females in urban area.

Majority of the subjects were Hindus (94.40%) and only 5.60 per cent were Muslims from rural sample. Among urban respondents, majority were Hindu (96.70%) and 3.30 per cent were Muslims. With respect to caste, majority (92.20%) of the rural respondents belonged to other backward class, 5.60 per cent belonged to upper caste and only 2.20 per cent belonged schedule caste. In urban area, most (57.80%) of them were from other backward class, 22.20 per cent and 20 per cent subjects belonged to upper caste and schedule caste respectively.

In rural area 47.78 per cent were illiterates, 41.11 per cent completed higher primary, 10 per cent PUC and only 1.11 per cent were graduates. In urban area 41.11 per cent were illiterates, 25.56 per cent completed higher primary, 8.89 per cent completed PUC and 24.44 per cent were graduates.

Regarding family type, in rural sample 64.40 per cent respondents were from joint family and 35.60 per cent were from nuclear family. Among urban respondents, 53.30 per cent were from nuclear family and 46.70 per cent were from joint family system. With regard to family size, among rural sample 42.20 per cent and 41.10 per cent of subjects belonged to medium and small families respectively. In urban area, 52.20 per cent of subjects belonged to small and 31.10 per cent to medium size families. Almost equal percentage (16.70%) of subjects belonged to large families in both urban and rural area.

With regard to marital status, 57.78 per cent of respondents were married and 42.22 per cent widowed in rural area. Among urban respondents 67.78 per cent were married and 32.22 per cent were widow/widower.

With respect to living arrangement 51.10 per cent were living with spouse and children, 33.30 per cent with children, 5.60 per cent with spouse, 7.80 per cent living alone and only 2.20 per cent were living with others or relatives in rural area. Among urban elderly, 48.90 per cent were living with spouse and children, 22.20 per cent with children, 18.90 per cent with

spouse, 5.60 per cent living alone and only 4.40 per cent were living with others or relatives.

In rural area 55.60 per cent of subjects were currently working and 44.40 per cent non-working and in urban area 61.10 per cent of subjects were non-working and 38.90 per cent of them were working.

With regard to socioeconomic status of the rural families, 65.60 per cent of the respondents belonged to lower middle class followed by 24.40 per cent in upper middle and 10 per cent in poor category. Most of the urban respondents (53.33%) belonged to lower middle class, followed by upper middle (38.89%) and poor (7.78%) category.

In rural area, most (63.33%) of the subjects reported 1 to 2 health problems (hypertension and diabetes) followed by no health problems (22.22%) and 3 to 4 (cataract, arthritis, heart disease and joint pain) health problems (14.45%). With respect to urban elderly, majority of the respondents (72.22%) reported 1 to 2 health problems, followed by 3 to 4 health problems (15.56%) and no health problems (12.22%).

Table 2: Distribution of rural and urban elderly based on lifestyles
N=180

Life styles	Locality					
	Rural			Urban		
	Yes	No	Total	Yes	No	Total
Meditation	11 (12.20)	79 (87.80)	90 (100)	22 (24.40)	68 (75.60)	90 (100)
Yoga	9 (10.00)	81 (90.00)	90 (100)	11 (12.20)	79 (87.80)	90 (100)
Walking	29 (32.20)	61 (67.80)	90 (100)	57 (63.30)	33 (36.70)	90 (100)
Physical exercise	10 (11.10)	80 (88.90)	90 (100)	38 (42.20)	52 (57.80)	90 (100)

Figures in parenthesis indicate percentages

Distribution of rural and urban elderly based on lifestyles

Table 2 represents the distribution of elderly based on lifestyles. With regard to rural elderly, majority of the subjects did not practice meditation (87.80%), yoga (90.00%) and only a less percentage practiced meditation (12.20%) and yoga (10.00%) regularly. More than half of the participants (67.80%) revealed that they never engaged in walking and 32.20 per cent of participants were doing regular walk. Similarly, majority (88.90%) of the elderly did not engage in regular physical exercise and only 11.10 per cent of elderly were doing regular physical exercise.

With regard to urban area, a large percentage of subjects did not engage in doing meditation (75.60%) and yoga (87.80%) regularly. Only 24.40 per cent practiced meditation and 12.20

per cent yoga regularly. Most of the respondents (63.30%) were regularly engaged in walking and 36.70 per cent were never engaged with walking. Most of the elderly (57.80%)

revealed that did not perform physical exercise, whereas 42.20 per cent of the elderly performed physical exercise.

Table 3: Gender wise distribution of rural and urban elderly based on habits affecting health N=180

Habits	Number of respondents habituated					
	Rural (n=90)			Urban (n=90)		
	Male (n=39)	Female (n=51)	Total	Male (n=37)	Female (n=53)	Total
	n (%)	n (%)	(n=90)	n (%)	n (%)	(n=90)
Betel leaf chewing	20 (51.28)	41 (80.39)	61 (67.77)	18 (48.64)	26 (49.05)	44 (48.88)
Tobacco chewing	11 (28.20)	18 (35.29)	29 (32.22)	6 (16.21)	-	6 (6.66)
Alcohol consumption	2 (5.12)	-	2 (2.22)	5 (13.51)	-	5 (5.55)
Smoking	7 (17.94)	-	7 (7.77)	6 (16.21)	-	6 (6.66)

Figures in parenthesis indicate percentages

Gender wise distribution of rural and urban elderly based on habits affecting health

Table 3 presents that gender wise distribution of rural and urban elderly based on habits affecting health. In rural area most of the males (51.28%) and females (80.39%) were habituated to regular betel leaf chewing, totally 67.77 per cent of the rural participants reported betel leaf chewing. Both males (28.20%) and females (35.29%) were habituated with tobacco chewing with as total of 32.22 per cent of the respondents habituated to tobacco chewing. Only 5.12 per cent and 17.94 per cent of male subjects were addicted to alcohol and smoking respectively. In total, 2.22 per cent and

7.77 per cent of rural respondents reported alcohol and smoking respectively.

With regard to urban area, most of the males (48.64%) and females (49.05%) were engaged in betel leaf chewing and a total of 48.88 per cent of the urban respondents reported betel leaf chewing. Only 16.21 per cent of the male respondents were addicted to tobacco chewing, 13.51 per cent of alcohol consumption and 16.21 per cent reported smoking regularly. In total, 6.66, 5.55 and 6.66 per cent were habituated to tobacco chewing, alcohol consumption and smoking respectively.

Table 4: Depression among elderly by locality N=180

Locality	Levels of depression					χ^2	Mean ± SD	t-value
	Normal	Mild	Moderate	Severe	Total			
Rural	44 (48.89)	21 (23.33)	12 (13.33)	13 (14.45)	90 (100)		6.01 ± 4.04	
Urban	31 (34.40)	26 (28.90)	17 (18.90)	16 (17.80)	90 (100)	3.95[NS]	6.96 ± 4.07	1.57[NS]
Total	75 (41.67)	47 (26.11)	29 (16.11)	29 (16.11)	180 (100)		6.48 ± 4.07	

Figures in parentheses indicate percentage
NS- Non-Significant

Depression among elderly by locality

Distribution of rural and urban elderly on the basis of depression level is represented in Table 4. Most of the rural respondents (48.89%) were normal followed by mild (23.33%), severe (14.45%) and moderate (13.33%) level of depression. With respect to urban, most of them (34.40%) were normal, followed by mild (28.90%), moderate (18.90%) and severe (17.80%) level of depressive symptoms. Among the overall sample, most of the subjects (41.67%) were normal, followed by mild (26.11%), moderate (16.11%) and severe (16.11%) depression. However, the statistical analysis revealed no significant association and difference between the urban and rural elderly.

Discussion

With respect to depression (Table 4) no significant association was observed with locality. Less than fifty per cent of rural and urban elders were in normal state. However, the prevalence of depression was 51.11 per cent and 65.60 per cent among rural and urban elderly respectively. Thus, the rate of the depressed elderly people was found to be marginally higher in urban area than rural area. The reason for this could be attributed to sociodemographic factors like nuclear family, non-working condition that lead to physical inactivity as well as neglected behaviour of family members.

Majority of rural elders were found to be currently engaged in agriculture, domestic activities and reported less health problems than urban elders. Joint families were highly prevalent in rural area and nuclear families in urban area. Hence, the care and concern from other family members was more in joint family system.

The finding was in line with Pracheth (2016) who also reported no significant association between locality and depression in Dharwad. The study showed that the prevalence of depression was found to be 27.71 per cent and 24.46 per cent among the urban and rural elderly respectively. A high prevalence of depression was reported among those who were physically inactive and experiencing chronic conditions. Results of Babatsikou *et al.* (2017) demonstrated that 84.93 per cent of the elderly exhibited depressive symptoms. Depressive symptomatology appeared to be more commonly prevalent among the elderly living in urban (Athens) area. Therefore, null hypothesis that is no significant difference between urban and rural elderly on depression was accepted. However, the prevalence of geriatric depression was alarmingly high in rural and urban elderly. Hence, there is a need to strengthen the mental health programmes in the community and also giving health education to family members to spend time with elders.

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