Original Research Article

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The prevalence of loneliness and its determinants among geriatric population in Bengaluru City, Karnataka, India

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ABSTRACT

Background: Loneliness affects all the individuals, but the extent of problem among geriatric population is not really known. This study is conducted to different socio-economic environment, co-morbid conditions and disabilities affecting daily activities related to old age loneliness with an objective to estimate the prevalence of loneliness among elderly aged population and to determine the factors influencing loneliness among them.

Methods: A community based, quantitative, descriptive, cross sectional and explorative study was conducted among 370 elderly populations residing in ward 32 in Bengaluru city between July and August 2015. Information was collected using revised UCLA loneliness questionnaire at the doorsteps and analysis was done using SPSS.

Results: The prevalence of loneliness with a score of 50 and above was 37.6%, among males and females it was observed 29.6% and 42.7% respectively. The increase in prevalence was proportional to their age group. Elderly people aged 80 years and above were more affected. The problem of loneliness increased as the family size decreases (85.7%), either of the spouse was separated or dead (46.7%), presence of disabilities affecting basic and instrumental daily activities (61% and 39%) and financial dependency (38.5%). Likewise Loneliness decreased as the number of family members aged 60 years and more increased in the family.

Conclusions: The prevalence of loneliness was 37.6% among the elderly population. Females were affected more. The factors influencing loneliness are older age group, illiterates, not living with spouse, only person in the family aged 60 years and above, family size of more than five and presence of daily activity disability.

Keywords: Bengaluru, Elderly, Geriatric, Loneliness

INTRODUCTION

The geriatric population in the world is estimated to double from 11% to 22%, and the number is expected to be 2 billion by 2050. The proportion of elderly in India in the year 2012 was 8% and will double by 2050. Ageing is a natural process associated with many biological and psychological factors. Loneliness is defined as the perception of being alone and isolated, a subjective, negative feeling related to the deficient social relations. Loneliness may be considered as symptom of depression or other mental disease conditions including Alzheimer's

or senile dementia. Loneliness was a symptom of mental illness but now it has become a disease in itself for the elderly. It is influenced by factors like changing living situations, dependency, type of family, social network, place of residence, population migrations etc.

Family structure is undergoing a change with rapid economic development, and the elderly are losing their significance in their own households. They face difficulties in doing their daily activities, mobility and communications. Loneliness affects the well-being of an individual and also has its effect on physical health.²

In this view, this study was conducted to estimate the prevalence of loneliness and assess the influencing factors among elderly population.

METHODS

This is a quantitative, descriptive and cross sectional study conducted among the elderly population residing in ward 32 of Bengaluru city, carried out between July and August 2015. Individuals aged 60 or more were included as subjects for the study. House visits in the locality were done to identify the subjects and the importance of the study was explained to them before the data collection and consent was taken to utilize the information for research purpose.

Personal interview was conducted to collect the data using a structured questionnaire. The questionnaire was prepared referring to Revised UCLA loneliness scale.³ A standard 20 questions on loneliness score were included in the questionnaire along with the details regarding demographic variables, financial aids and current chronic disease conditions. Loneliness was assessed by asking the individual to indicate how often each of the statements was descriptive of them and scoring was done according to the response of the subjects.

Sample size was calculated as 370 based on pilot study with prevalence of 33.3% of loneliness among elderly subjects in this area with an allowable error of 15% and CI of 95%.

Statistical analysis

Loneliness was considered in individuals who scored 50 and above in the Revised UCLA loneliness scale, for analysis purpose. All data was analysed using SPSS.

Terms used

Financially dependent

One who does not have any source of income and is completely dependent on any of their family member.

Financially independent

One who has a source of income. (Including financial assistance from the government)

Chronic diseases

It includes all the chronic non communicable diseases based on self-reporting, prescriptions and medications available with the individuals.

Basic daily activity

A person's ordinary daily living activity like going and using the toilet, walking, climbing, eating etc.

Instrumental daily activity

Daily functional activities that require the use of an instrument like using a mobile phone, cleaning, managing one's own medication, preparing food, etc.

RESULTS

Among 370 subjects in this study, 145 (39.2%) and 225 (60.8%) were males and females as shown in the Table 1. Majority were in the age group of 60-69 years (65.4%). Half of the subjects were living with their spouse (51.5%). The families having more than one person as aged 60 and above were 34%. Individuals staying in a family of more than five were 50% and 56.2% of the aged were financially dependent. Literates were 36.5% and chronic diseases were observed in 68.1% of the subjects.

Table 1: General characteristics of the elderly population.

Characteri-	Males	Females	Total			
stics	=145	=225				
	n (%)	n (%)	n (%)			
Age group in years						
60-69	92 (63.4)	150 (66.6)	242 (65.4)			
70-79	44 (30.3)	56 (24.8)	100 (27)			
≥80	9 (6.2)	19 (8.4)	28 (7.6)			
Marital status						
Married	118 (81.3)	72 (32)	190 (51.5)			
Spouse not alive	24 (16.5)	150 (66.6)	174 (47)			
Not married	3 (2)	1 (0.5)	4(1)			
Separated/divo	-	2 (0.9)	2 (0.5)			
Education						
Illiterate	57 (39.3)	178 (79.1)	235 (63.5)			
Literate	88 (60.7)	47(20.9)	135 (36.5)			
Currently on job						
Yes	61 (42.1)	27 (12)	88 (23.8)			
No	84 (57.9)	198 (88)	282 (76.2)			
Financial dependency						
Dependent	84 (57.9)	124 (55.1)	208 (56.2)			
Independent	61 (42.1)	101 (44.9)	162 (43.8)			
Number of chronic diseases						
0 (Healthy)	52 (35.9)	66 (29.3)	118 (31.9)			
1	56 (38.6)	87 (38.7)	143 (38.6)			
>1	37 (25.5)	72 (32)	109 (29.5)			
Total	145 (39.2)	225 (60.8)	370 (100)			

Table 2 depicts the prevalence of loneliness among the elderly with different factors associated with loneliness. The prevalence of loneliness increased proportionately with their increase in age. Individuals aged more than 70 years having 48-50%. The subjects living with their spouse have lesser prevalence of loneliness (28.9%). If there is more than one person aged 60 or more in a

household, the prevalence of loneliness decreased (24.6%), likewise it is inversely proportionate to the number of family members (85.7% vs. 28.6%). Presence of basic activity (60.6%) and instrumental activity (39.5%) disabilities increased the problems of loneliness

among the elderly. Non communicable diseases did not make any difference in the loneliness pattern as it was observed to be same in both the groups (37%). Subjects who are financially dependent are more prone to loneliness (38.5%).

Table 2: Distribution of elderly population according to prevalence of loneliness.

Characteristics	Males =145 Fema		Females=225	males=225		Total		
	Yes	No	Yes	No	Yes	No		
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Age group in years								
60-69	21 (22.8)	71 (77.2)	56 (37.3)	94 (62.7)	77 (31.8)	165(68.2)		
70-79	19(43.2)	25 (56.8)	29 (51.8)	27 (48.2)	48 (48)	52 (52)		
≥80	3 (33.3)	6 (66.7)	11 (57.9)	8 (42.1)	14 (50)	14 (50)		
Living with spouse								
Yes	32 (27.1)	86 (72.9)	23 (32)	49 (68)	55 (28.9)	135(71.1)		
No	11 (40.7)	16 (59.3)	73 (47.7)	80 (52.3)	84 (46.7)	96 (53.3)		
Number of family numbers aged 60 or more								
1 person	31 (33.3)	62 (66.7)	77 (51)	74 (49)	108(44.3)	136(55.7)		
More than one person	12 (23)	40 (77)	19 (25.7)	55 (74.3)	31 (24.6)	95 (75.4)		
Number of family members								
Single	1 (100)	0 (0)	17 (85)	3 (15)	18 (85.7)	3 (14.3)		
2-4 members	24 (32.4)	50 (67.6)	44 (48.9)	46 (51.1)	68 (41.5)	96 (58.5)		
>5 members	18 (25.7)	52 (74.3)	35 (30.4)	80 (69.6)	53 (28.6)	132(71.4)		
Presence of basic activity di	Presence of basic activity disability							
Yes	15 (60)	10 (40)	28 (60.9)	18 (39.1)	43 (60.6)	28 (39.4)		
No	28 (23.3)	92 (76.7)	68 (38)	111 (62)	96 (32.2)	203 (67.8)		
Presence of instrumental ac	Presence of instrumental activity disability							
Yes	39 (30.5)	89(69.5)	77 (46.4)	89 (53.6)	116 (39.5)	178 (60.5)		
No	4 (23.5)	13(76.5)	19(32.2)	40 (67.8)	23 (30.3)	53 (69.7)		
Presence of non-communica	able diseases							
Yes	26 (27)	70 (73)	69 (44.2)	87 (55.8)	95 (37.7)	157(62.3)		
No	17 (34.7)	32 (65.3)	27 (39.1)	42 (60.9)	44 (37.3)	74 (62.7)		
Financial dependency								
Dependent	29 (34.5)	55 (65.5)	51 (41.1)	73 (58.9)	80 (38.5)	128(61.5)		
Independent	14 (23)	47 (77)	45 (44.5)	56 (55.5)	59 (36.4)	103(63.5)		
Total	43 (29.6)	102(70.4)	96 (42.7)	129(57.3)	139(37.6)	231(62.4)		

The study population suffering from loneliness are influenced by various factors and there association is shown in Table 3. The difference in proportion of loneliness among male and female was observed in these factors – living with spouse, education and employment status (z test p <0.05). The factors living with spouse, education, employment status, and number of family members were associated with loneliness and was found to be statistically significant (chi-square p <0.05)

Table 4 shows the odds ratio (OR) estimation for prevalence of loneliness. Subjects aged 80 years and above are prone to loneliness by two times. (OR=2). Subjects not living with spouse and only person in the family aged 60 years and above had double the risk of

loneliness. Both these factors are found to be statistically significant (OR=2.1 and 2.4 p <0.05) Elderly member with a family size five or more are less likely to have loneliness (OR=0.6, p<0.05). Subjects suffering from basic daily activity disability (OR=3.2, p<0.05) and instrumental daily activity disability (OR=1.5) had the higher risk of loneliness. Illiteracy was another factor observed to be influencing on loneliness problem (OR = 2.3, p<0.05).

DISCUSSION

Loneliness can be defined as a subjective experience, a feeling of a gap between desired and actual relationships, a perceived deficit in social relationships according to cognitive theory.⁴ Loneliness can be considered as an indicator for psycho - social wellbeing. Various mental health problems can occur because of being lonely such as depression, alcohol abuse, child abuse, sleep problems, personality disorders and Alzheimer's disease.⁵ Loneliness is associated with all the mental problems

especially depression (OR=10.8), phobia (OR=11.6) and OCD (OR=9.7).⁶ A study reveals that there is a positive correlation between depression and loneliness which means there is an increase in the level of depression with an increase in loneliness among elderly.⁷

Table 3: Distribution of study population suffering from loneliness problem.

Characteristics	Male = 43 n (%)	Female = 96 n (%)	Total = 139 n (%)*	p-value #	
Age group in years					
60-69	21 (48.8)	56 (58.3)	77 (55.4)	0.2553	
70-79	19 (44.1)	29 (30.2)	48 (34.5)		
≥80	3 (6.9)	11 (11.5)	14 (10.1)		
Living with spouse					
Yes	32 (74.4)	23 (24)	55 (39.6)**	0.0000##	
No	11 (25.6)	73 (76)	84 (60.4)**		
Education					
Literates	23 (53.5)	12 (12.5)	35 (25.2)**	0.0000##	
Illiterates	20 (46.5)	84 (87.5)	104 (74.8)**		
Currently on job					
Yes	19 (44.2)	13 (13.5)	32 (23)**	0.0001##	
No	24 (55.8)	83 (86.5)	107 (77)**		
Financial dependency	7				
Dependent	29 (67.4)	51 (53.1)	80 (57.5)	0.1213	
Independent	14 (32.6)	45 (46.9)	59 (42.5)		
Number of family me	mbers				
Single	1 (2.3)	17 (17.7)	18 (12.9)	0.0450##	
2-4 members	24 (55.8)	44 (45.8)	68 (48.9)		
>5 members	18 (41.9)	35 (36.5)	53 (38.2)		
Number of family me	mbers aged more than	60 years			
1 person	31 (72)	77 (80.2)	108 (77.7)	0.2899	
>1 person	12 (28)	19 (19.8)	31 (22.3)		
Presence of basic acti	vity disability				
Yes	15 (34.9)	28 (29.2)	43 (31)	0.5003	
No	28 (65.1)	68 (70.8)	96 (69)		
Presence of instrumen	ntal activity disability				
Yes	39 (90.7)	77 (80.2)	116 (83.5)	0.1244	
No	4 (9.3)	19 (19.8)	23 (16.5)		
Presence of Non com	nunicable diseases				
Yes	26 (60.5)	69 (71.8)	95 (68.3)	0.1922	
No	17 (39.5)	27 (28.1)	44 (31.7)		
Total	43 (100)	96 (100)	139 (100)		

*Difference between proportions of males and females in each sub variables; **p value <0.05 (z test); *indicates chi square test ##p value <0.05

A few studies have reported that prevalence of loneliness is higher among the elderly suffering from illnesses such as diabetes, auto immune disorders (Rheumatoid Arthritis, lupus) cardiovascular diseases (coronary heart disease, hypertension) obesity, cancer and poor hearing.⁵

As we are aware about the proportion of elderly in India is rapidly rising, it becomes a challenging factor to deal

with psycho social conditions. Loneliness is different from depression. A study in 1980 concluded that loneliness and depression are two separate entities. Because of multiple losses, like loss of income, spouse, friends etc, burden of loneliness can cause depressive symptoms, poor mental health and cognition, alcoholism, suicidal tendencies and mortality among the elderly aged group. 9

In this study population, majority were female subjects (60.8%) since, many men were unavailable at their homes at the time of data collection. The mean age of the study

population was 67.3±6.7 years and ranged from 60 to 96 years. The cumulative age of male and female subjects was 9833 and 15100 years respectively.

Table 4: Odds ratio for loneliness with associated risk factors.

e group in years 64 69 74 79 0 ing with spouse	52 40 24 20 9	1 1.1 3.1 2.4	85 65 38	1 0.7 1.5	137 105	OR 1
64 69 74 79 0 ing with spouse	40 24 20	1.1 3.1 2.4	65 38	0.7		-
69 74 79 0 ing with spouse	40 24 20	1.1 3.1 2.4	65 38	0.7		-
74 79 ing with spouse	24 20	3.1 2.4	38		105	
79 ing with spouse	20	2.4		1.5		0.9
ing with spouse				1.5	62	1.9
ing with spouse	9		18	1.8	38	1.8
		1.8	19	2	28	2
3	118	1	72	1	190	1
	27	1.8	153	1.9*	180	2.1*
mber of family members aged more than 60 years						
person	52	1	74	1	126	1
erson	93	1.7	151	3*	244	2.4*
mber of family members						
members	74	1	90	1	164	1
erson	1	Nil	20	5.9*	21	8.4*
person	70	0.7	115	0.4*	185	0.6*
sence of basic activity disability						
	120	1	176	1	299	1
3	25	4.9*	46	2.5*	71	3.2*
sence of instrumental activity disability						
	17	1	59	1	76	1
3	128	1.4	166	1.8	294	1.5
ancial dependency						
ependent	61	1	101	1	162	1
pendent	84	1.8	124	0.9	208	1
rrently on job						
3	61	1	27	1	88	1
	84	0.8	198	0.7	282	1
sence of Non communicable diseases						
	49	1	69	1	118	1
3	96	0.7	156	1.2	252	1
ucation						
erates	88	1	47	1	235	1
erates	57	1.5	178	2.6*	135	2.3*

^{*}chi square test applied separately for males, females and total; *p value < 0.05

Females are affected more than males (42.7% vs. 29.6%) which were similar to one of the study conducted in Chandigarh which showed 72.8% of females and 65.6% of males suffered from loneliness. ¹⁰ One of the study in Malaysia showed that, 20.9% felt lonely always and 32.5% felt lonely sometimes. ¹¹ Another study showed that, factors like presence of chronic diseases or physical disabilities, use of medications regularly, lack of hobbies and living with a spouse were associated with increased

feelings of loneliness among the elderly. ¹² Among males, loneliness is more in the age group of 70–79 years (OR = 3.1 & 2.4), not living with spouse (OR = 1.8), only person in the family aged 60 years and above (OR=1.7), presence of daily activity disabilities (OR = 4.9, p<0.05) and financially dependent (OR=1.8) as shown in Table 4. Basic daily activity disabilities affected loneliness more, than compared to instrumental daily activity disabilities in men more than compared to instrumental daily activity

disabilities. (OR=4.9 vs. 1.4). Loneliness was lower among who lived in families with more than 5 people (OR=0.7). It was observed that absence of noncommunicable diseases increased loneliness in case of men. This is because of multiple factors influencing among men like being away from the work environment, unable to express their feelings and inability to do basic activity.

The distribution of prevalence of loneliness among females had a similar pattern compared to men as shown in Table 4. But there are factors to be noted, loneliness is directly proportional to age group. Loneliness is not dependent on financial status (OR = 0.9), and presence of non-communicable diseases increases loneliness among females (OR=1.2).

Illiterate females were two and half times more prone to loneliness than compared to their educated counterparts (OR=2.6), basic and instrumental daily activity disabilities increased loneliness by 2.5 and 1.8 times respectively than compared to healthy individuals. Family members more than 5 was more protective (OR = 0.4) and only person aged 60 years and above in the family increased loneliness by 3 times.

The limitations in this study are 1. Loneliness is a temporary phenomenon or only is an early symptom of mental diseases or depression and this may be reported at the timing of the study. 2. There is possibility of subjective bias. 3. Assessment of chronic diseases was based on self-reporting, prescriptions and medications available with the individuals.

CONCLUSION

The problem of loneliness was observed in 37.6% of the elderly population. Females were more vulnerable. The influencing factors for loneliness are older age, living without spouse, lonely aged person in the family, family size of more than five and presence of daily activity disabilities.

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