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## Comparing the functional status among rural and urban elderly population: A pilot study

**Umesh Kunderagi and Meenaxi R Devangmath**

### Abstract

**Background:** One of the major determinants of the quality of life of elderly subjects is their functional status. This is the individual's ability to live independently and relate to his/her environment or perform normal daily activities for basic needs and carry out normal functions to maintain health and well-being. One of the approaches to study the well-being of the elderly is to study their competence in activities of daily living (ADLs) or a self-care activity that an individual has to perform daily, which is a composite index of the individual's ability to perform some basic functions.

**Methodology:** A quantitative approach with descriptive comparative design was adopted for the study. The samples from the selected rural and urban areas Belagavi district were selected using purposive sampling technique. The sample consisted of 40 elderly peoples (20 from urban and 20 from rural areas). The tools used for data collection was Katz functional assessment scale and Lawtan instrumental activities of daily living.

**Results:** Among the urban 09(45%) of them were having full functional status, 07(35%) of them were having moderate impairment in functional status, 04(20%) of them were having severe impairment of functional status, whereas in rural 11(55%) were having full functional status, 06(30%) of them were having moderate impairment of functional status, and 03(15%) of them were having severe impairment of functional status. Among urban 12(60%) of them were having High function, independent and 08(40%) were had low function, dependent where as in both in rural 06(30%) were having Low function, dependent and 14(70%) high function, independent. There was no significant difference of functional status and instrumental activities of participants of urban and rural areas.

**Conclusion:** There is a need for family support and health care support system for this population to improve their functional status and their quality of life.

**Keywords:** Functional status, elderly people, rural and urban areas, comparison

### Introduction

Aging is an inevitable process which brings with it many chronic diseases and disabilities as a result of gradual degeneration. Because of various public health policies, implementation of programs, and socioeconomic development, aging of the population has emerged as one of the most significant trends of the present century.

As per the WHO statistics, the number and proportion of the world's elderly population in 2000 were 605 million and 11%, respectively, and it is estimated that the corresponding figures in 2050 will be 2 billion and 20%. In India, at present around 90 million elderly persons are living. There were 20 million people aged 60 years and above in 1951 in the country under reference.

According to Population Census 2011 there are nearly 104 million elderly persons (aged 60 years or above) in India; 53 million females and 51 million males. According to Central Statistics Office Ministry of Statistics and Program Implementation Government of India as on 2019 the elderly population comprises of 103.9 million, which contributes 8.6% of total population and is expected to rise to 315 million (i.e., 20% of the total population) by 2051.

As the steady increase in the elderly population, there is also multiplicity of morbidities and functional disabilities in old age, geriatric care places a considerable burden on the health system and family members. One of the major determinants of the quality of life of elderly subjects is their functional status. This is the individual's ability to live independently and relate to his/her environment or perform normal daily activities for basic needs and carry out normal functions to maintain health and well-being. One of the approaches to study the well-being of the elderly is to study their competence in activities of daily living (ADLs) or a self-care activity that an individual has to perform daily, which is a composite index of the individual's ability to perform some basic functions.

Functional ability refers to the capability of performing tasks and activities that people find necessary or desirable in their lives. One way of examining the effects of disease on people and communities is through mortality and morbidity (illness) statistics. But another way, which took on increased significance in the last decades of the twentieth century, is through examining functional status or functional ability. Whereas mortality and morbidity tends to be examined relative to specific diseases or conditions, functional ability tends to be considered over and above the various combinations of diseases a person has that might contribute to functional difficulties. Considering the fact that limitations to ADLs are unavoidable in the elderly, an assessment of their functional status becomes a fundamental aspect of care. This assessment has significant policy implications and predicts the need for assistance for this age group. Further inputs provided as a result of the assessments will help in the design and implementation of interventions to assist the aged live safely and independently.

Although there are some studies on the functional status of the elderly in urban settings, a comprehensive study on the overall life and the prevalence of functional disabilities based on ADL performance has been not undertaken in south India, where geriatric care is largely absent and health conditions of the elderly are far from satisfactory. With this background, the present study was conducted among rural and urban elderly subjects (60 years and above).

### Objectives

1. To assess the functional status among the elderly rural population in selected areas of Belagavi district.
2. To assess the functional status among the elderly urban population in selected areas of Belagavi district.
3. To compare the functional status of rural and urban elderly population in selected areas of Belagavi district.

### Hypothesis

**H<sub>1</sub>:** There will be significant difference between the mean functional status scores among urban and rural elderly

population

**H<sub>2</sub>:** There will be significant difference between the mean activities of daily living scores among urban and rural elderly population

**H<sub>3</sub>:** There will be significant difference between the mean health status scores among urban and rural elderly population

### Methodology

Research Approach: Quantitative Research Approach

Research Design: Descriptive comparative survey design

Sampling technique: Non-Probability; Purposive Sampling Technique

Sample size: 40 (20 Rural and 20 Urban)

Setting of study: Selected rural and urban area of Belagavi district

Method of data collection: Structured interview technique

### Tools Used

**Section I:** Socio-demographic variables of Participants

**Section II:** Assessment of Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs). Assessment of functional status among elderly people through the standardized Katz functional assessment scale and Lawtan instrumental activities of daily living.

### Procedure of data collection

Data was collected after obtaining administrative permission from selected urban and rural areas of Belagavi district. Required permission from authorities was taken before study.

A total of 20 (10% of total population of main study) elderly people from rural and urban areas were selected by following sampling criteria of the study. After obtaining written agreement from the participants, information was analyzed using a combination of self-administered questionnaires and observation.

### Results

#### a. Findings related to socio demographic variables of the participants

**Table 1:** Frequency and percentage distribution according to demographic variables N=20+20

Demographic variables	Urban		Rural	
	Frequency	Percentage	Frequency	Percentage
<b>Age in years</b>				
60-69 Years	7	35	6	30
70-79 Years	8	40	10	50
80 Years & above	5	25	4	20
<b>Gender</b>				
Male	11	55	12	60
Female	9	45	8	40
<b>Religion</b>				
Hindu	12	60	14	70
Muslim	6	30	5	25
Christian	2	10	1	5
<b>Educational Status</b>				
Primary	0	0	5	25
Higher Primary	6	30	4	20
Higher Secondary	7	35	6	30
Graduates	4	20	3	15
Post graduates	3	15	2	10
<b>Type of family</b>				
Nuclear	16	80	2	10
Joint	4	20	16	80

Extended	0	0	2	10
<b>Marital Status</b>				
Unmarried	0	0	0	0
Married	20	100	20	100
<b>Current living status</b>				
Living with children	2	10	13	65
Living separately with spouse	16	80	4	20
Living alone	2	10	3	15
<b>Socioeconomic status</b>				
Upper middle	13	65	7	35
Lower middle	7	35	12	60
Poor	0	0	1	5
<b>Suffering with medical conditions</b>				
Yes	11	55	12	60
No	9	45	8	40
<b>Devices used</b>				
Walker	1	5	2	10
Spectacles	13	65	15	75
None	6	30	3	15
<b>Undergone surgery</b>				
Cataract surgery	4	20	7	35
Cardiac procedures/surgery	5	25	4	20
Musculoskeletal	7	35	5	25
None	4	20	4	20

### b. Findings related to functional status of the participants

**Table 2:** Frequency and percentage distribution regarding functional status related to activities of daily living N=20+20

Sl. No.	Functions	URBAN		RURAL	
		f	%	f	%
1.	Full Functions	09	45	11	55
2.	Moderate impairment of functions	07	35	06	30
3.	Severe impairment of functions	04	20	03	15
4.	<b>Total</b>	20	100	20	100

The data represented in the table 2 shows that in urban 09(45%) of them were having full functional status, 07(35%) of them were having moderate impairment in functional status, 04(20%) of them were having severe impairment of functional status, whereas in rural 11(55%) were having full functional status, 06(30%) of them were

having moderate impairment of functional status, and 03(15%) of them were having severe impairment of functional status

**Table 3:** Frequency and percentage distribution regarding instrumental activities of daily living N=20+20

Sl. No	Activities of daily living	URBAN		RURAL	
		f	%	f	%
1.	Low function, dependent	08	40	06	30
2.	High function, independent	12	60	14	70
	<b>Total</b>	20	100	20	100

The data represented in the table 3 shows that both in urban 12(60%) of them were having High function, independent and 08(40%) were had low function, dependent where as in both in rural 06(30%) were having Low function, dependent and 14(70%) high function, independent.

### c. Findings related to comparison functional status between urban and rural participants

**Table 4:** Comparison between of functional status among rural and urban elderly persons N=20+20

Sl. No.	Areas	Mean	Median	Mode	SD	"t" Value
1.	Urban	3.82	4	4	1.58	1.23
2.	Rural	3.43	3	3	1.63	

The data represented in the table 4 shows that the mean functional status score was 3.82, median was 4 and mode was 4, and standard deviation 1.58, on other side in rural mean score was 3.43, median and mode was same that is 3, and standard deviation 1.63. To test significant difference of

functional status between urban and rural participant independent t test was calculated and the calculated t value is 1.23 at 0.05 level of significance indicating there was no significant difference of functional status of participants of urban and rural areas

**Table 5:** Comparison between of instrumental activities of daily living among rural and urban elderly persons N=20+20

Sl. No.	Aspects	Mean	Median	Mode	SD	"t" Value
1.	Urban	5.89	5	4	1.83	1.64
2.	Rural	4.68	4	4	1.59	

The data represented in the table 5 shows that among urban participants, mean score was 5.89, median 5 and mode was

4, and standard deviation 1.83, on other side in rural mean score was 4.68, median and mode was same that is 4, and

standard deviation 1.59. To test significant difference of instrumental activities between urban and rural participant independent t test was calculated and the calculated t value

is 1.64 at 0.05 level of significance indicating there was no significant difference of instrumental activities of participants of urban and rural areas

**Table 6:** Description of Independence in Activities of Daily Living among urban and rural elderly people. N=20+20

Functional Activities	Urban				Rural			
	Independent (Score 1)		Dependent (Score0)		Independent (Score 1)		Dependent (Score0)	
	F	%	F	%	F	%	F	%
Bathing	15	75	5	25	16	80	4	20
Dressing	14	70	6	30	15	75	5	25
Toileting	15	75	5	25	14	70	6	30
Transferring	14	70	6	30	14	70	6	30
Continence	14	70	6	30	13	65	7	35

The above table describes the activities of daily living among urban and rural elderly people. It show that the majority of the samples in urban area, 15(75%) were independent and 5(25%) were dependent on bathing, 14(70%) were independent and 6(30%) were dependent in dressing, 15(75%) were independent and 5(25%) were dependent in toileting, 14(70%) were independent and 6(30%) were dependent on transferring, 14(70%) were not

having any continence and 6(30%) were had incontinence. In the rural, 16(80%) were independent and 4(20%) were dependent on bathing, 15(75%) were independent and 5(25%) were dependent in dressing, 14(70%) were independent and 6(30%) were dependent in toileting, 14(70%) were independent and 6(30%) were dependent on transferring, 13(65%) were not having any continence and 7(35%) were had incontinence.

**Table 7:** Description of Instrumental Activities of Daily Living among Urban and rural elderly people (I.A.D.L.) N=20+20

Items	Urban				Rural			
	High function independent		Low function dependent		High function independent		Low function dependent	
	F	%	F	%	F	%	F	%
Ability to Use telephone	14	70	6	30	13	65	7	35
Shopping	15	75	5	25	12	60	8	40
Food Preparation*	7	77.78	2	22.22	6	75	2	25
Housekeeping*	6	66.67	3	33.33	7	87.5	1	12.5
Laundry*	7	77.78	2	22.22	6	75	2	25
Transportation	14	70	6	30	16	80	4	20
Responsibility for Own Medications	16	80	4	20	17	85	3	15
Ability to Handle Finances	16	80	4	20	16	80	4	20

The majority of the areas of dependency in the urban elderly people was seen the areas of Housekeeping 03(33.33%), food preparation and laundry 02(22.22%), 6(30%) was in transportation, 6(30%) is use of telephone, 5(25%) in shopping, 4(20%) in medications and ability to handle finances.

In the rural areas, The majority of dependency was seen in the area of shopping, 8(40%), 7(35%) were in the ability to use, 4(20%) were had dependency on transportation, 03(15%) were had on medications, 04(20%) were had dependency on handling finances, 5(25%) were had food preparation, 1(12.5%) were had on housekeeping, and 2(25%) were had dependency on laundry.

## Conclusion

The findings of the study revealed that, functional status among elderly people was altered and there was no significant difference between the functional status among the elderly people of rural and urban areas. There is a need for family support and health care support system for this population to improve their functional status and their quality of life.

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