Original Article

General Health Status and Functional Independence of Rural and Urban Elderly Population of Sub-Himalayas Region, India: Comparative Study

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Abstract

Introduction: Preserving independence in tasks and continuing an active life are the most significant features in improving elderly's health care. The aim of the present study was to identify and compare elderly general health status and functional independence among rural and urban areas of the Sub-Himalayas region, India. **Materials and Methods:** The study was nonexperimental comparative design, in which multistage sampling techniques were used. 200 elderly participants were selected, i.e., 100 elderly from rural and urban areas, respectively. **Results:** Majority elderly of rural and urban areas belong to 61–70 years, male, Hindu, married, living with their children, receiving government pension, taking three times meals/day and have a previous history of medical illness. The general health status of the rural elderly is good (P = 0.000 [3.45, 5.16]) as compared to the urban elderly. Rural elderly were functional independent (P = 0.009 [0.37, 1.38]) than urban elderly. **Conclusions:** It is important to monitor the general health status and functional independence of the elderly. The status of daily living activity always has a great impact on the level of happiness, well-being, and quality of life of the elderly.

Keywords: Functional independence, general health status, rural elderly, urban elderly

Introduction

As everyone knows aging is a natural process which will happen with every human being either today or tomorrow. The World Health Organization (WHO) defines old age begins at age of 55 years onward. The global estimated population of elderly in the year 2017 was 962 million at the age of 60 years or above which consist of about 13% of the total population.[1] As per the 2011 census of India, about 104 million population of the country were of 60 years or above.[2] Census of Uttarakhand 2016 stated that about nine lakh people belong to geriatric age group.[3]

Biological theory quotes that elderly people undergo various changes like physical changes, mental changes and changes in capacities as well as functional decline also.[4] Elderly people are always rich in life experiences as they had very good skills in younger life so elderly people are also pronounced as older adults.[5]

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The WHO defines elderly people's health as all aspects, i.e., physical, mental, social and spiritual well-being important for their independence, autonomy, and totality of health.[6] Globally, nowadays, health of elderly people is considered the fourth leading risk factor for mortality.[7] Healthy aging means a person will maintain functional ability and well-being in their older age. Many older people believe that the ability to carry out everyday tasks (functional independence) is critical for disease prevention also. To maintain functional independence in older adults, only a small amount of physical activity or exercise is needed.[8] There is very little literature available about functional independence and general health status of elderly people, to the best of my knowledge. The main aim of this present study was to assess and compare general health

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status and functional independence among the rural and urban elderly population of Uttarakhand.

Materials and Methods

Study design and setting

The study was conducted using a nonexperimental comparative descriptive design to compare general health status and functional independence of rural and urban elderly population. Using the multistage sampling technique, a total of 200 elderly peoples of age more than 60 years were included in this study.

The study settings were Rishikesh, Uttarakhand where there are a total of seven urban and six rural areas. Of which two areas from urban and two areas from rural areas were selected by using the lottery method. Two rural areas, i.e., Raiwala and Shyampur consisted of 552 and 570 elderly people, respectively. Two urban areas, i.e., Bharat Vihar and Kale Ki Dhal consisted of 467 and 394 elderly people, respectively. A total of 50 participants were selected from both rural and urban communities each.

Tools

Data collection tools mainly consist of three sections. Section-I consists of socio demographic profile sheet. Section-II consists of the Mini Nutritional Assessment Scale. Section-III consists of Instrumental Activities of Daily Living scale (IADL). Socio demographic profile sheet mainly includes age, gender, religion, educational status, marital status, living with, economic status, occupation, dietary pattern (veg/non-veg), and previous history of illness. Mini Nutritional Assessment Scale[9] is standardized tool to assess general health which included questions related to food intake, weight loss, mobility, psychological stress, neuropsychological problems, body mass index, live independently, take prescriptions drugs, having pressure sores, meals per day, consuming protein intake, consuming fruits, consuming liquids, mode of feeding, self-view for nutrition's status, health status perceptions, mid-arm circumference, and calf circumference. The scoring is done in three categories: Normal/fair health status of score from 24 to 30, good health status of score from 17 to 23 and poor health status of score of <17. Instrumental Activities of the Daily Living Scale[10] is used to assess functional independence which included daily activities of living like the ability to use telephone, food preparation, shopping, housekeeping, mode of transportation, laundry, responsibility for own medication, ability to handle finances. Scoring of this score is done in five categories: Not frail to score 0–5, Vulnerable to score 6–7, Mild frailty to score 8–9, Moderate frail of score 10–11, Severe frailty to score 12–17. Nine specialists in community health medicine and nursing helped to validate research tools. The kappa value of 0.92 indicates excellent test-retest reliability. The study was approved by the Institutional Ethics Committee (AIIMS/IEC/18/263) AIIMS, Rishikesh on dated 05/04/2018. Written informed consent was taken from each participant. Anonymity and confidentiality were maintained. Participants were assured that the study will not affect them in any way and they always have freedom of choice to participate in the study or can leave the study at any point.

Statistical analysis

Data analysis was done using SPSS version 23.0 (IBM SPSS Statistics version 23.0) using descriptive and inferential statistics.

Unpaired *t*-test with confidence level of 95% with $P < 0.05$ was considered statistically significant was used to compare general health status score and functional independence score of rural and urban elderly people, as scores were normally distributed among sociodemographic variables.

Results

Out of 200 elderly people, majority belongs to 61–70 years age group (70% rural; 76% urban), male (76% urban; 66% rural) and were illiterate in rural participants (50%) while graduate among urban participants (38%). Participant's education (0.00*) and economic status (0.04*) were significantly different in rural and urban elderly. In contrast, all other sociodemographic variables of elderly people were matched and no significant difference was noted between urban and rural elderly groups [Table 1].

Majority of rural elderly people have good general health status (66% good general health status), whereas urban elderly people (62% poor general health status). Statistically significant values ($P = 0.000$ [3.45, 5.16]) also suggested that rural elderly general health status is good as compared to urban elderly people [Table 2].

Urban elderly people (8%) were more functional dependent than rural elderly people (2%). Statistically significant difference ($P = 0.009$ [0.37, 1.38]) showed that urban elderly were functionally more dependent as compared to rural elderly [Table 3].

Discussion

Aging is a natural process which is equally happening with rural and urban areas population. The present study tries to identify differences between rural and urban areas, elderly general health status, and functional independence. Uttarakhand is place in sub-Himalayas where lot of geographical variation in rural and urban areas. As per the researcher's review of the literature, no study was found to relate to elderly health status in this region. The study findings showed that majority of elderly male people of 61–70 years age group were included in this study. Most of them were married, living with their children and receiving government pension, doing their previous occupation, taking three meals, and have previous history of medical illness. Living with their children and getting government pension money is a factor for having good general health status. As in rural areas, the cost of living is very low so elderly people can easily survive in money provided by the government under senior citizen pension scheme, Uttarakhand.[11]

Table 1: Sociodemographic profile sheet (*n*=200)

Variables	Options	Frequency, *n* (%)		*P*
		Urban (*n*=100)	Rural (*n*=100)	
Age (years)	61-70	76 (76)	70 (70)	0.63
	71-80	16 (16)	20 (20)	
	>80	8 (8)	10 (10)	
Gender	Male	76 (76)	66 (66)	0.12
	Female	24 (24)	34 (34)	
Education	Illiterate	22 (22)	50 (50)	0.00*
	Primary education	6 (6)	24 (24)	
	Secondary education	14 (14)	14 (14)	
	Intermediate education	20 (20)	4 (4)	
	Graduate or above	38 (38)	8 (8)	
Religion	Hindu	94 (94)	100 (100)	NA
	Others	6 (6)	-	
Marital status	Single	2 (2)	2 (2)	0.66
	Married	68 (68)	62 (62)	
	Widower/widow	30 (30)	36 (36)	
Living with	Children	94 (94)	88 (88)	0.26
	Alone	1 (1)	4 (4)	
	With spouse	5 (5)	8 (8)	
Economic status	Dependent to children	10 (10)	6 (6)	0.04*
	Government pension	66 (66)	80 (80)	
	Other government scheme	10 (10)	2 (2)	
	None	14 (14)	12 (12)	
Occupation	Previous occupation	90 (90)	88 (88)	0.65
	Not doing any work	10 (10)	12 (12)	
Dietary pattern	One time in a day	1 (1)	2 (2)	0.80
	Two time in a day	7 (7)	8 (8)	
	Three time in a day	92 (92)	90 (90)	
Previous history of illness	Medical history	50 (50)	58 (58)	0.27
	Surgical history	18 (18)	20 (20)	
	None	32 (32)	22 (22)	

NA: Not available, *Significance at 0.05 level

Table 2: General health status of urban and rural elderly (*n*=200)

Community	General health status score			Mean±SD	*t*	*P* (95%CI)
	Fair	Good	Poor			
Urban	-	38 (38)	62 (62)	15.77±2.28	6.99	0.000* (3.45-5.16)
Rural	14 (14)	66 (66)	20 (20)	20.08±3.66		

*Significant at 0.05 level. SD: Standard deviation, CI: Confidence interval

Table 3: Functional independence of urban and rural elderly (*n*=200)

Community	Functional independence score			Mean±SD	*t*	*P* (95% CI)
	Not frailty	Vulnerable	Mild frailty			
Urban	60 (60)	32 (32)	8 (8)	4.16±1.92	-2.389	0.009* (0.37-1.38)
Rural	74 (74)	24 (24)	2 (2)	5.04±1.72		

*Significant at 0.05 level. SD: Standard deviation, CI: Confidence interval

In this study, the general health status of elderly people was measured by mini nutritional assessment scale. A similar tool was used by many researchers to identify the general health status of rural and urban communities.[12] 66% of rural elderly population had good general health status whereas only 38% of urban elderly population had good general health. The majority of the urban elderly population had poor general health (62%). Another study also reported that about 30% of elderly people had fair general health. The majority were having (55%) good general health, and only 15% had poor

health in rural areas (urban elderly had (47.33%) good general health, whereas 21.33% of elderly people had poor general health).[13,14] Another study from Nepal stated that about 24% of rural elderly were malnourished and 50% were also at risk of malnutrition.[15] These contradictory findings in studies are due to their sample size, poor sampling technique, and setting of the study.

In our study, functional independence status measured by the instrumental activity of daily living tool which is standardized tool used by researchers to assess functional independence of elderly globally.[16] The findings of our study suggested that the majority of the rural and urban elderly population were functionally independent. More urban elderly were functionally dependent than rural population which is indicating toward their routine lifestyle of walking habits in rural areas. Another study showed that in rural community 90.43% of elderly people were functionally independence, 5.26% of elderly people were mild frail, 2.64% of elderly people were moderately frail, and 1.67% of elderly people were severely frail whereas in urban community 57.1% of elderly people were functional dependence and remaining were functionally independent.[17,18] In the sub-Himalayas region, rural community resources are very much diverse and available so people have to move a lot to complete their basic needs.

The present study finding suggested that general health status and functional independence of rural elderly people is good over urban elderly due to the good environment in villages as compared to big cities and people are more active, i.e., long walking habits than urban elderly in Sub-Himalayas regions.

Limitations

The study has the limitation of not including other domains such as cognition, social support, mood, and continence. Researchers included only two domains, i.e. general health status and functional independence status level of elderly people in rural and urban areas. The research tools used in this present study, i.e., the Mini Nutritional Assessment scale and IADL were used to assess general health status and functional independence status, which covers all common issues and problems faced by elderly people in rural and urban areas as per Indian context.

Conclusions

It is highly advised that health policymakers have an age-friendly atmosphere to offer all programs in healthcare settings. It is recommended that official organization's and supporting agencies have critical human health to improve the health of the elderly independent activities. Providing appropriate services, comfortable and appropriate human resources for caring for the elderly should be taken into consideration.

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Conflicts of interest

There are no conflicts of interest.

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