Physical Activity Levels among Community Dwelling and Care Home Dwelling Elderly Population

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Abstract

Background: Ageing is frequently associated with a decrease in physical activity and consequently a decline in physical fitness. Physical activity is associated with psychological health, and a large number of studies have begun to document preventive effects for depression or neurodegenerative diseases. However, health-related quality of life is composed not only of a physical or cognitive functioning domain, but also by the feelings of well-being.

Objective: To determine the difference in physical activity levels among community dwelling and care home dwelling elderly population.

Method: 100 healthy elderly subjects aged 60 to 85 years were included in the study, out of which 50 subjects were recruited from community and 50 subjects were recruited from care homes. Physical activity level of all the subjects was assessed using Frenchay Activity Index (FAI).

Results: Krushkal Wallis ANOVA test was carried out to compare the values between the groups for Frenchay Activity Index (FAI) and it was found to be statistically significant ($p<0.05$).

Conclusion: Based on the results of the study, it can be concludedthat the physical activity levels of the elderly population in community dwelling was significantly better than those who were living in care homes.

Keywords: *Physical activity, Community dwelling, Care home dwelling, Frenchey Activity Index (FAI)*

Introduction

The elderly population is growing very fast and United Nations have estimated that the number of the people aged 60 and older around the world would be over 1.9 billion by 2050. The American College of Sports Medicine (ACSM) recommends that regular, moderate intensity physical activity is the key to good health. The Center for Disease Control and Prevention (CDC) and theAmerican Heart Association also agree with ACSM'S recommendation that to maintain good health, adults need a minimum of 30 minutes, 5 days/ week moderate intensity physical activity or atleast 20 minutes vigorous-intensity activity for a minimum of 3 days/week. Along with health benefits that are associated with regular physical activity for older adults, there is a strong relationship between physical

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activity, physical fitness, risk of falling and cognitive ability.[1]The WHO has many recommendations for people aged 65 years and above which provides options for individuals who choose either moderate-intensity exercises (150 min/week)or vigorous-intensity exercises (75 min/week).[2] Though there are a lot of benefits from maintaining an active lifestyle, many older adults are inactive.[1]The lifeexpectancy in India is much less than 60 years. Research shows that most Indians appear to consider themselves old much earlier than their chronological age of 60 years and that the Indian women regard themselves to be older even much earlier than that.[3]

Physical activity can be defined as "any movement of the bodyproduced by the skeletal muscles resulting in energy expenditure". The level of physical activity is often used as a means to monitor and evaluate public health and almost always is associated with health status. This monitoring is important especially for older people over 60 years of age to prevent many diseases and inactivity and thereby helps in reduction of mortality rates.[1, 4]

Regular physical activity is important in improving and developing both physical and mental health of individuals. Literature review revealsthat chronic diseases can be prevented when individuals are physically active. Active life increases social interaction by developing their cognitive functions and helps individuals to stay independent.[5]Being physically active increases strength, balance, and stamina and decreases the risk of, or helps control, many chronic diseases. As people age, there is a tendency to be less physically active, and this decrease in activity has been shown to have a negative effect on a person's strength, balance, and stamina leading to increase in falls and loss of confidence.[2]

Physical activity is associated with psychological well-being, and many studies have begun to understand the preventive effects for depression or neurodegenerative diseases. However, health related quality of life is not only of a physical or cognitive functioning domain, but also by the feelings of wellbeing. Well-being, considered as the way people feel about their life, is a multifaceted phenomenon especially in the aging population.[6]

Care home or old age home is ahome environment primarily for those elderly persons who are unable to stay with family members due to various reasons. It is an alternative shelter where the older individuals live, can share their feelings and experiences with each other. It is an institutional type of setup and the people live here according to some rules and regulations.Community dwelling elders are the elderly individuals who reside in the community with their family members.[7]ArunaDubey, et al concluded in a study that the general feelings of the elderly women living in the families were better than that of the women living in the institutions. Better social relations were maintained by the family dwellers because they had regular interaction, expressions of feelings and support from the family. Women living in the care homes felt lonelier, depressive and had a lower level of satisfaction withlife.[3]On the contrary, Rishi Panday et al, in their study stated that the QOL was better in those elderly people who were living in old age homes compared to those who were living within family setup which was due to the facilities available at the old age homes.[7]However, there is a lack of literature on the physical activity levels of the community dwelling and care home dwelling elderly population. As the emotional well-being of a person can affect the physical activity levels[5] and thereby can affect the quality of life of a person, there exists a need to determine if there will be any difference in the physical activity levels among community dwelling and care home dwelling elderly population.

Methodology

100 healthy subjects aged between 60 to 85 years

were selected for the study, 50 subjectswere selected from the community and 50 from care home dwellings across Bangalore. Subjects with any acute illness, neurological or perceptual disorders, acute or unstable musculoskeletal injuries, high blood pressure, visual deficits affecting mobility or test performance and unwilling patients were excluded from the study. Permission was obtained from the old age homes and written consent was taken from the subjects prior to the study.Institutional Ethical Committee permission was obtained. Demographic variables such as age, gender were documented.Subjects were assessed for their physical activity levels using the Frenchay Activity Index (FAI).[8, 9, 10]Results were compared to know the physical activity levels of the elderly population living in the community and care homes.

Results

Table 1 and 2 represent the distribution of the subjects according to their gender and age categories respectively.Table-3 represents the comparison of physical activity level of elderly subjects between community dwelling and care home dwelling subjects over the age groups. Table-4 shows the distribution of the subjects according to physical activity level in both the groups and Table-5 represents the correlation between age and physical activity of elderly subjects in both the groups.

Table-1: Distribution of the subjectsaccording to gender in both groups

S. No.	Gender	Group	
		Community dwelling	Care dwelling
1	Male	26(52.0%)	28(56.0%)
2	Female	24(48.0%)	22(44.0%)
NS-Not Significant ie. p>0.05		Chi-Square value=0.161, df=1, p=0.688,NS (p>0.05)	

Table-2: Subjects according to age categories in both the groups

S.No.	Age in years	Community dwelling		Care home dwelling		Chi-Square Value
		No.	%	%	%	
1	60-65	20	40	25	50	2.75,df = 4 NS
2	66-70	15	30	13	26	
3	71-75	9	8	10	20	
4	76-80	3	6	1	2	
5	81-85	3	6	1	2	

Table-3: Comparison of physical activity level of elderly subjects in between community dwelling and care home dwelling subjects over the age groups

S. No.	Age	Community dwelling elderly		Care home dwelling elderly	
		Range	Mean ± SD	Range	Mean ± SD
1	60-65	13-36	20.85±6.13	5-25	14.64±5.42
2	66-70	8-35	23.27±6.46	7-27	14.46±5.79
3	71-75	21-33	23.56±4.06	8-20	13.90±3.84
4	76-80	22-33	28.0±5.56	8-8	8.00±0
5	81-85	11-24	15.67±7.23	14-14	14.00±0
6	Overall age	8-36	24.58±6.40	5-27	14.30±5.12
Krushkal Wallis ANOVA		Hcal=2.898, p<0.05, S		Hcal=0.404, p>0.05, NS	

Table-4: Distribution of elderly subjects according to Physical activity level in both the groups

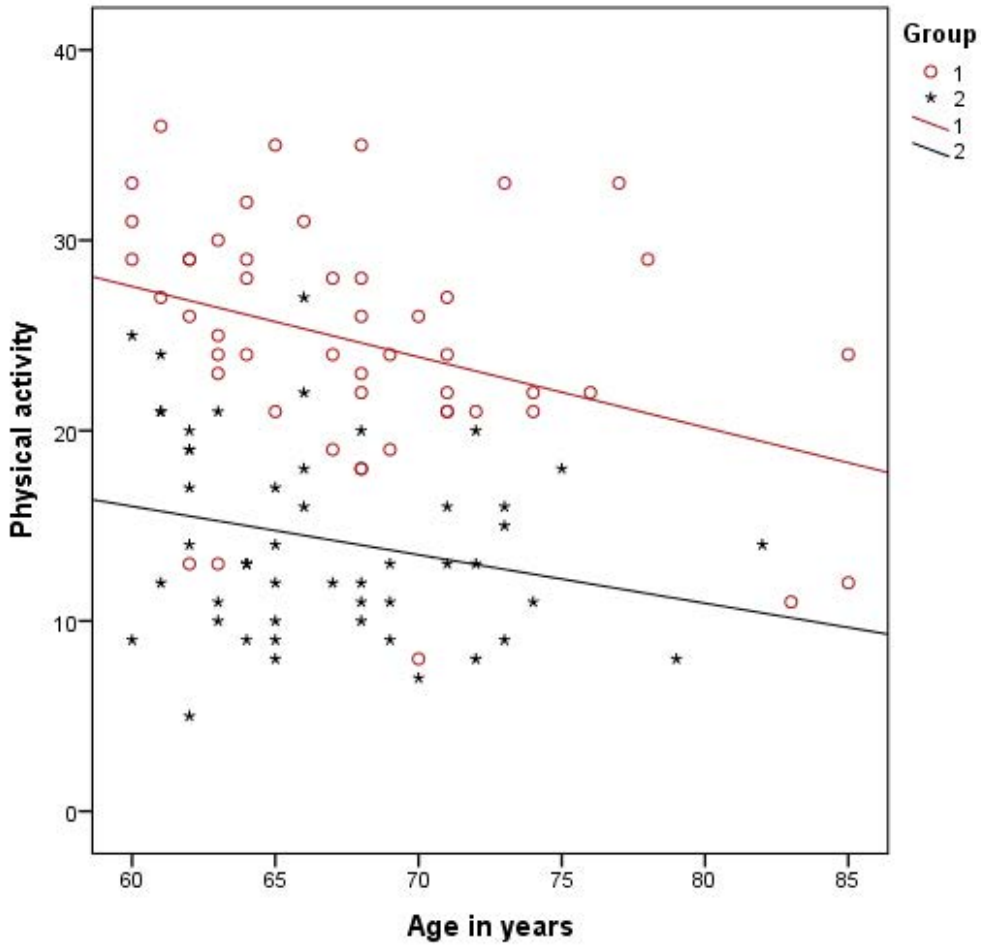
S.No.	Physical activity level	Community dwelling		Care dwelling	
		Frequency	Percentage	Frequency	Percentage
1	(<50%)	18	36.0	47	94.0
2	(50% -75%)	29	58.0	3	6.0
3	(>75%)	3	6.0	0	0
4	Over all	50	100	50	100

Note: % of maximum physical activity score was 45.

Table-5 Relation between age and physical activity of the subjects in both the groups

Groups	r-value	p-value
Community dwelling	-0.357*	p<0.01
Care dwelling	-0.248NS	p>0.05

Significant (p<0.05); NS- Not Significant (p>0.05)



Discussion

Ageing is commonly associated with a reduction in physical activity and as a result, physical fitness declines.[11]Physical activity is associated with mental health, and many studies have begun to report preventive effects for depression or neurodegenerative diseases. However, health-related quality of life is not only composed of physical and cognitive functioning domain, but also includes the feelings of well-being.[6]

This study aimed to determine if there is any difference in physical activity levels among community dwelling and care home dwelling elderly population. The statistical analysis of the baseline characteristics of gender and age of the elderly subjects included in the study were homogenous in both the groups.The FAI score for the physical activity suggests that the physical activity level of subjects in the community dwelling group was statistically significant than the physical activity level of subjects in the care home dwelling group. The results are in line with a study conducted by the BekirMehtap et al where physical activity levels of elderly individuals were examined and it was found that 28.8% of them were very active, 53.6% of them wereminimally active and 17.6% of them were inactive. Their study suggested that gender, age, perception level of health, smoking habits and presence of any chronic disease affects the physical activity level of aged individuals living in a nursing home.[5] In the present study, among the community dwelling elderly subjects, 36.0% of them had <50% physical activity, 58.0% of them had 50% - 75% physical activity and 6.0% of them had >75% physical

activity. But, in the subjects living in care homes, 94.0% of them had <50% physical activity, 6.0% of them had 50% - 75% physical activity and none of them had >75% physical activity. Results show that the subjects living in the community were more active and their physical activity levels were better. A negative correlation was observed between age and physical activity levels in both groups. It is seen that with increase in the age of the subjects, the level of physical activity reduced. This is in accordance with a study done by SasaPantelic et al in which there was reduction in physical activity level and the functional fitness due to ageing.[4] Another study concluded that the reduction in physical activity level and functional fitness was the same in men and women and is due to aging process, reduction of muscle strength, changes in body fat percentage, flexibility, agility and endurance.[12]Being a time bound study, sample size was small and the population included in the study were from one geographical location and hence the results cannot be generalized. The facilities available in the care homes were not considered and that could have also affected the results of the study. Another limitation of the study was that height, weight and BMI of the subjects was not considered. Future studies can be carried out on larger samples and wider geographical area. Researchers can also attempt to consider other social aspects which are related to ageing.Based on the results of the present study, it can be concluded that the physical activity levels of the elderly subjects in the community dwelling group was better than the subjects in the care home dwelling group and that physical activity levels of the elderly population decreases as the age of the subjects increases.

Conflict of Interest – None

Source of Funding – Self

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