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Effectiveness of exercise program on the functional status of older adults in selected old age home, Vellore

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Abstract

The percentage of the elderly in India has been increasing at an increasing rate in recent years and the trend is likely to continue in the coming decades. The share of population over the age of 60 is projected to increase from 8 percent in 2015 to 19 percent in 2050 by the end of the century; the elderly will constitute nearly 34 percent of the total population in the country. Between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12% to 22%. By 2020, the number of people aged 60 years and older will outnumber children younger than 5 years. As the age progresses the functional capacity of older adults decreases. This research study was focused on the functional status of the older adults. An intervention of exercise was given to assess the improvements in the functional status and to find out the association between the post and the selected demographic variables. In pretest majority 94% of older adults were highly dependent, whereas in posttest 77% of them were highly dependent. No one in pretest was independent, but after the exercise program 8% of them became independent. Exercises have a vital role in improving the functional status of older adults.

Keywords: Exercise program, functional status, older adults

Introduction

Ageing is a natural process of life is due to gradual changes in metabolic activity of organs and disability in regeneration capacity of cells. Several factors including heredity, life style and healthy diet, avoiding smoking and physical activity can effect on the longevity of life. There is evidence from high quality studies to strongly support the positive association between increased levels of physical activity, exercise participation and improved health in older adults. Worldwide, around 3.2 million deaths per year are being attributed to inactivity. In industrialized countries where people are living longer lives, the levels of chronic health conditions are increasing and the levels of physical activity are declining.

The physical environment in which people live has been shown to influence physical activities, at least for children and younger adults. Access to parks and other recreational facilities, safe footpaths and areas relatively free from crime have been identified as important factors. There are promising indicators but it is not yet clear if the environment changes and transport policy changes will sufficiently influence physical activity in older adults.

Need for the study

Aging is generally a process of deterioration in the functional capacity of an individual that results from structural changes with advancement of age. Longevity must come along with the quality and then feeling of contentment could be achieved. Old age is a period of physical deterioration and social alienation in some cases, loss of spouse, friends, Job, property and physical appearance. In old age physical strength deteriorates, mental stability diminishes, financial power becomes bleak and eye sight suffers a setback. It is a period of disappointment, dejection, disease, repentance and loneliness. Exercising can have numerous positive effects for older people because of its ability to increase balance, increase flexibility, increase mobility and lower blood pressure. It can also help people maintain a healthy weight and reduce the chance of developing diseases and disabilities. Exercise can have an especially positive effect on heart and brain health. Research in this field would be helpful to know the exact status of the quality of lives of the elderly people. Result of the study could provide a baseline initiative for more research and intervention strategies with this in the

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prospect, a study would be very much beneficial among the elderly population to know their quality of lives.

Statement of the Problem

Effectiveness of Exercise Program on Functional Status among Older Adults

Objectives

- ❖ To assess the functional status before exercise program of older adults.
- ❖ To assess the effectiveness of exercise program on functional status of older adults.
- ❖ To associate the effectiveness of exercise program on functional status of elderly with selected demographic variables.

Operational Definitions

Effectiveness

It refers to the significant difference in the functional status before and after exercise program.

Exercise Program

It refers to the types of exercises that includes flexibility, strengthening and balancing exercise with the demonstration and guidance of a nurse that is adopted for the purpose of study performed for 30minutes (3days a week) for a period of 6 weeks.

Functional Status

It is an individual's ability to perform normal daily activities and instrumental activities of daily living required to meet basic needs, fulfill usual roles and maintain health and well-being. It is measured Katz Index of Independence activities of daily living (ADL) and Lawton – Brody Instrumental activities of daily living (IADL scale).

Older adults

It refers to the persons aged 60 and above in a selected old age home.

Hypotheses

- ❖ H_1 – There will be significant difference in the functional status of elderly before and after exercise program.
- ❖ H_2 – There will be significant association between the post test level functions status and the selected demographic variables.

Research Methodology

One group pretest posttest only design

$O_1 \times O_2$

O_1 – Pretest to assess the functional status of older adults by using,

- Katz-Index of Independence in Activities of daily living (ADL)
- Lawton-Brody Instrumental activities of daily living (IADL)
- WHO-QOL-BREF.

X - Exercise program

O_2 - Post test to determine the functional status of older adults who has undergone exercise program.

The study was conducted in the selected old age home; Tamilnadu. The population selected for this study was older adults of 60 years and above. The sample selected for this study was older adults residing in Old Age Home; Tamilnadu. Simple random sampling technique was used to select the elderly for the study. The study included 150 older adults, who met the inclusion criteria.

Variables

Independent variable

Exercise program which included flexibility, balance and strengthening exercise.

Dependent variable

Function status of older adults.

Demographic variable

Age, Gender, Marital status, Educational Status, Habits, Hobbies and History of co-morbid illness.

Data Collection Methods and Tools

Based on the objectives of the study, demographic profile, standardized tools like Katz-Index of Independence in activities of daily living (ADL), Lawton-Brody Instrumental activities of daily living (IADL) scale was used to assess functional status and WHO-QOL-BREF was used to assess the quality of life of elderly.

Validity

Standardized research tool used for the study, such as Katz-Index Activities of daily living, Lawton-Brody instrumental activities of daily living and WHO-QOL-BREF to measure the quality of life of elderly.

Reliability

The functional status scale was administered to 15 elderly, using test and retest method to obtain the reliability of the tool. Since the co-efficient correlation is 0.87, the tool was found to be reliable.

Data Collection

The administrator of old age home has granted permission to conduct the study with in each facility. Demographic data was collected by the researcher prior to the start of the study which consisted of information related to age, gender, marital status, educational level, Habits, Hobbies and history of any co-morbid illness. Once informed consents were signed, an interview schedule was done individually to assess their, activities of daily living using Katz-Index of Activities of daily living and instrumental activities of daily living using Lawton-Brody instrumental activities of daily living. Once the exercise schedule completed for 6 weeks, after one week of interval, posttest was done to assess their ADL & IADL.

Data Analysis

Descriptive Statistics

- ✓ Frequency and percentage distribution was used to analysis the demographic variables of the participants.
- ✓ Mean and standard deviation to assess the activities of daily living and Instrumental activities of daily living of older adults.

Inferential Statistics

- Paired ‘t’ test was used to compare the pretest and post value of ADL, IADL.
- Pearson chi-square to find out the association between posttest ADL, IADL with their demographic variables.

Results and Discussion

Data Analysis was done by calculating frequency, percentage, mean, standard deviation and Chi-square to find the association between the selected demographic variables and functional status of older adults.

Table 1: Frequency and percentage of activities of daily living

Functional Status	ADL					
	Highly dependent		Dependent		Independent	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Pretest	132	88.0	18	12.0	0	0.0
Posttest	36	24.0	41	27.3	73	48.7

Table.1. outlines the ADL of older adults in pretest and posttest. In pretest majority 88% of them were highly dependent and none of them were independent. In posttest

majority 73% of them became independent after exercise intervention.

Table 2: Frequency and percentage of instrumental activities of life

Functional Status	IADL					
	Highly dependent		Dependent		Independent	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Pretest	141	94.0	9	6.0	0	0.0
Posttest	77	51.3	61	40.7	12	8.0

Table 2, depicts the instrumental activities of life, in both pretest and posttest. In pretest majority 94% of older adults were highly dependent, whereas in posttest 77% of them

were highly dependent. No one in pretest was independent, but after the exercise program 8% of them became independent.

Table 3: Mean, stand deviation, standard error mean and t value of functional status of older adults

Functional Status		Mean	Standard Deviation	Standard Error Mean	t-value	p-value
Katz ADL	Pretest	1.7933	1.10092	0.08989	0.696	0.487
	Posttest	4.36	1.53387	0.12524		
Lawton IADL	Pre Test	2.1133	1.59503	0.13023	0.036	0.971
	Post Test	4.52	1.50489	0.12287		

Table. 3. Represents the mean, standard deviation, standard error mean and standard error mean, t value and the p value which shows the effectiveness of exercise program. The ADL pretest mean is 1.79 and post mean is 4.52. The IADL pretest mean is 2.11 and the posttest mean is 4.52.

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Conclusion

The study assessed the effectiveness of exercise program on the functional status of older adults in selected old age home, Vellore. Before the exercise program, majority of older adults were highly dependent. After the exercise program it was found that majority of older adults were independent in their functional status. There was association between the functional status and selected demographic variables such as age, hobbies and history comorbid illness. The results indicated that teaching exercises and motivating them to perform regularly will improve their functional status further it will reflect in their quality of life.

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