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Effects of Fitness Training Intervention On Strength and Endurance of Upper and Lower Extremities of Aged Men

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ABSTRACT

Aged men are the valuable sections of the society. They are the guardians as well as the sources of knowledge and experiences. Despite all enriched qualities they are the most vulnerable sections suffering from diseases and susceptibilities. Sometime get less importance in the society and remain as a marginalized group. So far functional fitness is concerned they are in the back seat. Many researchers are of the view that aged men of our country mostly bear functional fitness status at below average level. As the Indian population over the age of 60 years continues to grow, there will be rise in the level of functional disability. The level of functional fitness depends on an individual's lifestyle inclusive of level of physical activity and health status. With advancing age the elderly population faces enormous challenges to maintain physical and cognitive function, quality of life and functional independence. The aging process and the physical inactivity alter functional fitness indicators. Physical inactivity to a great extent is the cause of the changes in functional abilities during the aging process (Nadel & Di Pietrol, 1995). Keeping in view the importance of aged men in the society and their vulnerable state with respect to health and fitness the scholar planned to conduct the study entitled "Effects of fitness training intervention on strength and endurance of upper and lower limbs of aged men". To accomplish the study the scholar involved 50 aged men within the age group 60 to 65 as volunteers of his study. He employed chair stand test and arm curl test for assessment of strength and endurance of the upper and the lower limbs. based on the results of the pre and the post tests he arrived at the conclusion that both the strength and the endurance of the upper and lower extremities developed significantly due to the fitness training intervention.

Keywords: *Fitness training intervention, strength, endurance.*

1. INTRODUCTION

Fitness of aged men is a challenge in the country like India where the strength of the particular class is at an upsurge. The development in medical science is obviously playing a role in augmenting the health of the aged people but how far the quality of health is assured is a big question. Though the life expectancy rate is getting enhanced, with respect to functional fitness and wellness the people are lagging behind.

The aging of a person is marked by several degenerative changes taking place in the bodily organs and systems resulting into poor functional capacities. In this area Physical Education and Sports Science has a major role to play. A systematic and organized age and health status specific fitness program directed towards development of functional abilities of the old age people can play a significant role in adding life to years rather than years to life.

2. PURPOSE

The Purposes are as follows:

To estimate the changes in strength of upper extremities due to fitness training intervention.

To estimate the changes in strength of lower extremities due to fitness training intervention.

To estimate the change in endurance of upper extremities due to fitness training intervention.

To estimate the change in endurance of lower extremities due to fitness training intervention

3. SIGNIFICANCE

It is believed that the outcomes of the study will make the society aware regarding the role of fitness training in development of functional fitness level of the aged men.

The findings will also help to boost the senior citizens mentally with respect to their good physique and fitness.

If the senior sections of the society will follow the schedule incorporated in the study, they will be able to lead a life full of energy strength vigor and stamina.

4. METHODOLOGY

In order to conduct the entire research, the scholar randomly selected 50 men within the age group 60 to 65 years from the Kalyani town and adjoining areas of Nadia District of West Bengal India. First of all, personal data like age height and body weight of the persons were measured and thereafter Fullerton functional fitness test battery was used to assess the initial functional fitness status of the aged men. The scholar involved the subjects in a fitness training program for a period of 16 weeks and again tested the fitness parameters; in order to ascertain the changes taken place among the volunteers due to the fitness training intervention.

The training protocol applied is given below:

INTERVENTION TRAINING PROTOCOL

Sl No	Exercise Name	Time Hold For (seconds)	Time Repititions of Number, Sets and Week Schedule			
			Weeks - 1 to 3	Weeks - 4 to 6	Weeks - 7 to 9	Weeks - 10 to 12
1	**Shoulder Blade Squeeze**	5-10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
2	**Forward Punch**	5-10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
3	**Biceps and Triceps**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
4	**Back Extension Stretch**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
5	**Lateral Trunk Stretch**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
6	**Back Flexion Stretch**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
7	**Trunk Rotation**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
8	**Biceps Stretch**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
9	**Triceps Stretch**	15 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
10	**Hamstring Stretch**	15 seconds	10 Times X 1 Set	10 Times X 2	10 Times X 3	10 Times X 4 Sets

				Sets	Sets	
11	**Knee Extension**	5-10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
12	**Hip Abduction**	5-10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
13	**Hip Flexion**	5-10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
14	**Leg Press**	5-10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
15	**Marching on the Spot**	---	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
16	**Hip Extension with Resistance Band**	---	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
17	**Mini Squats**	---	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
18	**Mini Lunge**	---	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
19	**Single Leg Balance**	10 seconds	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets
20	**Heal Raises**	---	10 Times X 1 Set	10 Times X 2 Sets	10 Times X 3 Sets	10 Times X 4 Sets

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5. RESULTS AND DISCUSSION

Based on the data gathered the scholar tried to present the results in this part of the writeup. The data are presented in tabular form along with bar diagrams.

Table No. 1 Showing mean SD and range of age height and weight of the subjects

	N	Minimum	Maximum	Mean	Std. Deviation
Age (yrs)	50	60	65	62.86	1.738
Height(cms)	50	152	177	163.58	5.425
Weight(kg)	50	48	85	66.34	8.113
Valid N (listwise)	50				

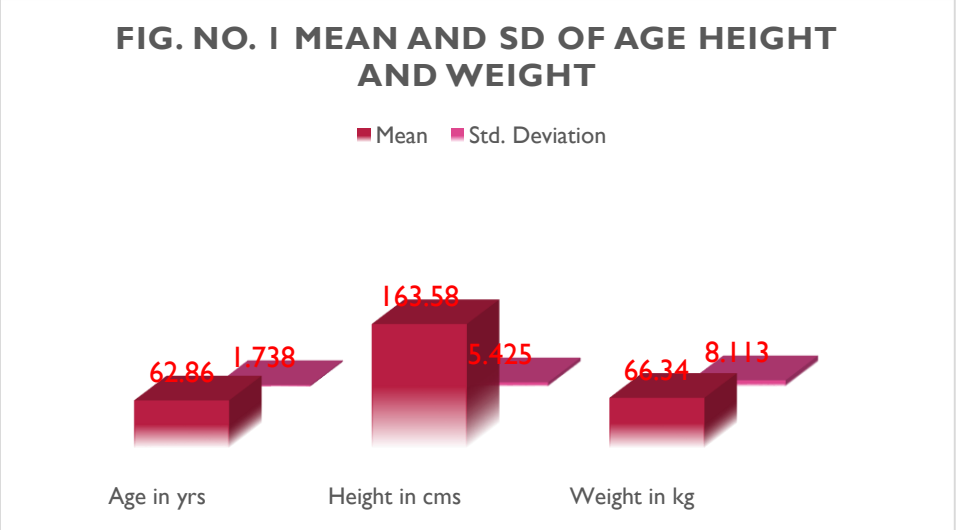
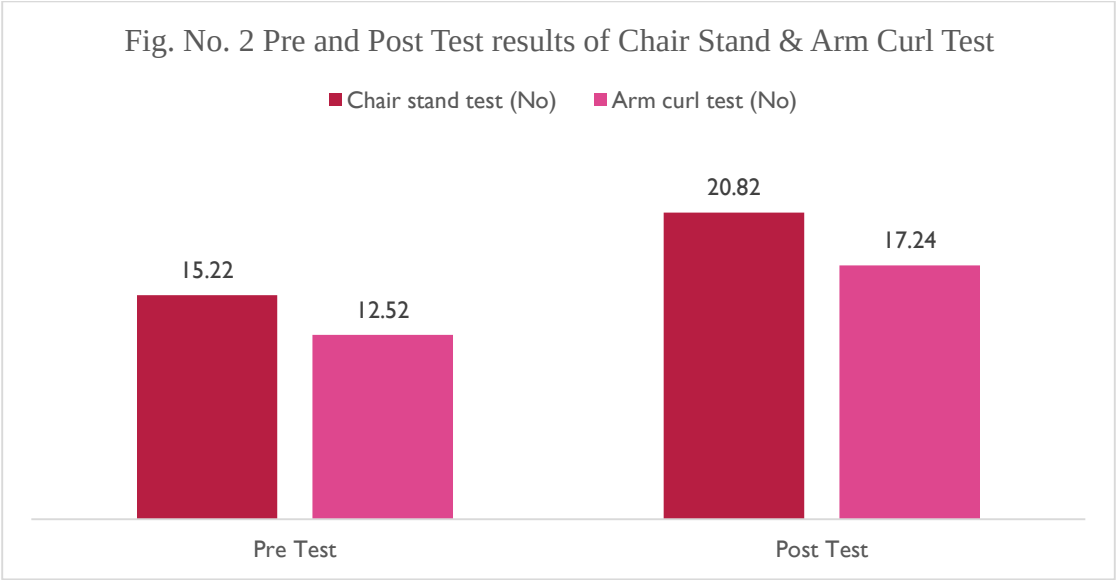


Table No. 2 Showing Mean SD and range of Pre-test results of Chair stand test

	N	Minimum	Maximum	Mean	Std. Deviation
Chair stand test (No)	50	8	20	15.22	2.597
Arm curl test (No)	50	9	19	12.52	2.112

Table No. 3 Showing Mean SD and range of Post-test results of Chair stand test

Fitness tests	N	Minimum	Maximum	Mean	Std. Deviation
Chair stand test (No)	50	11	26	20.82	3.173
Arm curl test (No)	50	14	22	17.24	2.209



from the data presented in table No. 2 and 3 and bar diagram presented in Fig 2 it is clear that the performance of the subjects improved due to the fitness training intervention

In order to ascertain the degree of difference between the means the scholar computed paired samples t test. The results are given hereunder.

Table No. 4 Paired Samples Correlations pre and post chair stand test

		N	Correlation	Sig.
Pair 1	Chair stand test Pre & Chair stand test(No)	50	.899	.000

Table No. 5 Paired Samples Test pre and post chair stand test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Chair stand test Pre - Chair stand test(No)	-5.600	1.414	.200	-6.002	-5.198	-28.000	49	.000

From the paired samples test results presented in Table No. 5 it is clear that the means of the pre and post tests for chair stand test are significantly different. It reveals that the performance of the aged males improved significantly due to the fitness training intervention.

Table No. 6 Paired Samples Correlations pre and post arm curl test

		N	Correlation	Sig.
Pair 1	Arm curl test Pre (No) & Arm curl test Post(No)	50	.826	.000

Table No. 7 Paired Samples Test pre and post arm curl test

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Arm curl test Pre (No) - Arm curl test Post(No)	-4.720	1.278	.181	-5.083	-4.357	-26.107	49	.000

From the paired samples test results presented in Table No. 7 it is clear that the means of the pre and post tests for arm curl test are significantly different. From the t test result it can be stated that the performance of the aged males developed significantly due the fitness training intervention.

6. CONCLUSION

As a whole from data analysis it is clear that the performance of the aged people improved significantly on both the chair stand and arm curl tests. As a whole it came out like this that the strength and endurance of both the upper and lower extremities improved significantly due to fitness training intervention. It may be summed up like this that fitness training can

be the best way for development of functional fitness of aged men which can upgrade the fitness status and quality of life of the elderly population. In true sense this kind of development to a great extent matches with the theme of healthy aging.

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