Influenced of 12 Weeks Planned Exercise Program on Physical Functional Fitness 55-65 Years Elderly Aged Male

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Abstract

The process of becoming older, a process that is genetically determined and environmentally modulated. Over time, aging affects the cell of every major organ of the body. Aging is accompanied by a progressive loss in muscle mass and strength. The accumulated loss of muscle mass and strength over several years may lead to sarcopenia which is defined as reduced muscle mass and strength or physical function. The purpose of the present study was to investigate the effect of 12 weeks multicomponent exercise program on physical functional fitness of 55-65 years aged male. A total 20 old age male age ranging from 55-65 were recruited for experimentation in this study. The subjects were taken 12 weeks multi-component exercise training with three days in a week. All the physical functional fitness parameters were measured before and after training. For statistical analysis and interpretation of data "t" test was conducted. The findings of the present study demonstrate that 12 weeks multicomponent exercise program were able to improve the physical functional fitness of old age male.

KEYWORDS: aging, multicomponent exercise, functional fitness, strength

Introduction

The process of becoming older, a process that is genetically determined and environmentally modulated. Over time, aging affects the cell of every major organ of the body. With advancing age the people suffers from different problems, such as- psychological problem, sociological problem, financial problem, emotional problem, physiological problem.

Physical functioning is widely recognized as a crucial component of quality of life and perhaps the most universally accepted indicator of health status in older persons. Physical functioning that comprise muscle strength, flexibility, endurance, agility and endurance is also known as functional fitness. It has been defined as having the capacity to perform day to day activity safely and independently without fatigue. Aging leads to a decline in physical functioning that causes a high level of dependency. Improving physical functioning or functional fitness components separately or in a combination enables older adults to maintain a range of functional movements, such as climbing stairs, walking, rising out of chair so that the older persons can adopt a more active lifestyle.

On the basis of age and sex skeletal muscle mass represents 30-40% of the total body (jenssan et al., 2000).Aging is accompanied by a progressive loss in muscle mass and strength. From the middle of the 5^{th} decade of the life annual rates of loss approximately 1% of muscle mass and 3% of muscle strength occur (jenssan et al.,

2000, Goodpaster et al., 2006).The accumulated loss of muscle mass and strength over several years may lead to sarcopenia (Rosenberg., 1997) which is defined as reduced muscle mass and strength or physical function (Muscaritoli et al., 2010,Fielding et al., 2011, Baumgartner et al., 1998) The age related annual loss in muscle strength exceeds the annual loss in muscle mass (Goodpaster et al., 2006) and is referred to as dynapenia (Clark and Manini, 2012).It was previously believed that the age related skeletal muscle fully accounted for poor muscle strength (Clark and Manini., 2012). However it is currently acknowledged that muscle atrophy cannot fully account for the loss of muscle strength (Delminico et al., 2009). Indeed, detrimental changes in nerves system including higher rate of denervation (Hepple and Rice., 2016), impaired nervous function (Ward et al., 2015) and loss of spinal motor neurons (Aagaard et al., 2010) have been suggested to contribute to loss of muscle strength.

Purpose of the study

The purpose of the present study was to find out the multicoponent exercise program on physical functional fitness of elderly aged male.

Methodology

Subjects

A total of 40 old aged male with the age ranging from 55-65 years from Cooch Behar District, West Bengal in the year of 2018 were taken as subject.

Tests and criterion measures

In the present study the following parameters were selected as measuring criteria- age, height and weight were taken as personal data. Upper and lower body strength and flexibility, agility and endurance were taken as physical functional fitness test parameters. The data was collected through administering the following tests: information of date of birth, standard weighing machine and stadio-meter were used for measuring personal data. For measuring physical functional fitness parameters: i.e. upper body strength, lower body strength, upper body flexibility, lower body flexibility, agility and endurance were measured by arm curl test, chair sit and stand test, seat and reach test, back stretch test, 8 feet up and go test and 2 minute step test respectively.

Statistical technique applied

Mean and standard deviation were calculated for measuring central tendency and variability. To observe the difference between two means‘t’ test was calculated. The level of significance was set as 0.05.

Result and Discussion

In table 1 the mean and Standard Deviation of personal data the subjects were presented. The mean, standard deviation and physical functional fitness parameters were presented in table no.2 to table no.7

Table-1

Represent the Mean and S.D. of Personal Data of the subjects.

Parameter	Mean	S.D.
Age	**59.25**	**3.88**
Height	**162.15**	**5.73**
Weight	**61.65**	**8.90**

The above table presents the mean of personal data (age, height and weight) for control group were 59.25, 162.15 and61.65 and S.D. were3.88, 5.73 and8.90 respectively.

Table 2.

Represent Mean and S.D. and 't' value of Upper Body Strength of old age male.

parameter	Pre-test		Post-test		Difference of mean	't'-value
	mean	S.D.	Mean	S.D.		
Upper body strength	**17.30**	**3.39**	**18.7**	**3.76**	**1.40**	**2.45***

df= 19, Significant value at 0.05 level 2.09*, Significant value at 0.01 level 2.86**
NS= Not significant

Table -10 indicates that the mean value of upper body strength during pre-test was 17.30 with a variation of 3.39. During post-test the mean value was 18.7 with a variation of 3.76.It appears from the table that the difference between two means was 1.40. To observe the significant difference between two means't' value was calculated and found to be 2.45 which was significant at 0.05 level. So there is a significant difference in pre-test and post-test and an improvement found of 12 weeks multicomponent exercise in upper body strength

Table-3

Table 3. represent the Mean and S.D. and 't' value of Lower Body Strength of old age male

parameter	Pre-test		Post-test		Difference of mean	't'-value
	mean	S.D.	mean	S.D.		
Lower body strength	**16.45**	**3.38**	**18.9**	**4.21**	**2.45**	**3.17****

df= 19, Significant value at 0.05 level 2.09*, Significant value at 0.01 level 2.86**
NS= Not significant

The mean value of lower body strength in pre-test and post-test was 6.45 and 18.90 and S.D. values were 3.38 and 4.21 respectively. It appears from the table that the difference between two means was 2.45. To observe the significant difference between two means't' value was calculated and found to be 3.17 which was significant at 0.01 level. On the basis of above result, it may concluded that 12 weeks multicomponent exercise improved lower body strength as post-test result found better than pre-test.

Table-4

Table 4. represent Mean and S.D. and 't' value of Upper Body Flexibility of old age male.

parameter	Pre-test		Post-test		Difference of mean	't'-value
	mean	S.D.	mean	S.D.		
Lower body flexibility	**0.48**	**7.73**	**-0.53**	**8.48**	**0.75**	**1.86** ^{NS}

df= 19, Significant value at 0.05 level 2.09*, Significant value at 0.01 level 2.86**
NS= Not significant

The mean value of lower body strength in pre-test and post-test was 7.73 and 8.48 and S.D. values were 7.73 and 8.48 respectively. It appears from the table that the difference between two means was 0.75. To observe the significant difference between two means't' value was calculated and found to be 1.86 which was not significant. Though there is a difference found in pre-test and post-test, the **'**t'-value was not statistically significant.

Table-5

Table 5. Mean and S.D. and 't' value of Lower Body Flexibility of old age male.

parameter	Pre-test		Post-test		Difference of mean	't'-value
	mean	S.D.	mean	S.D.		
Lower body strength	**8.55**	**5.78**	**10.08**	**5.73**	**1.53**	**2.09***

df= 19, Significant value at 0.05 level 2.09*, Significant value at 0.01 level 2.86**
NS= Not significant

The mean value of lower body strength in pre-test and post-test was 8.55 and 10.08. The S.D. values were 5.78 and 5.73 respectively.It appears from the table that the difference between two means was 1.53. To observe the significant difference between two means't' value was calculated and found to be 2.09 which was significant at 0.05 level. So there is a significant difference in pre-test and post-test and an improvement found of 12 weeks multicomponent exercise in lower body flexibility

Table-6

Table 6. Mean and S.D. and 't' value of Agility of old age male.

parameter	Pre-test		Post-test		Difference of mean	't'-value
	mean	S.D.	mean	S.D.		
Lower body strength	**6.20**	**0.76**	**5.76**	**0.65**	**0.44**	**1.38** ^{NS}

df= 19, Significant value at 0.05 level 2.09*, Significant value at 0.01 level 2.86**
NS= Not significant

The mean value of agility in pre-test was 6.20 with a variation of 0.76. In post-test the mean value was 5.76 with a variation of 0.65. The table indicates that the difference between two means was 0.44. To observe the significant difference between two

means‘t’ value was calculated and found to be1.38 which was not significant. Though there is a difference found in pre-test and post-test, the **‘**t’-value was not statistically significant.

Table-7

Table 7. Mean and S.D. and ‘t’ value of Endurance of old age male.

parameter	Pre-test		Post-test		Difference of mean	‘t’-value
	mean	S.D.	mean	S.D.		
Lower body strength	**97.40**	**12.47**	**105.75**	**15.02**	**8.35**	**2.38***

df= 19, Significant value at 0.05 level 2.09*, Significant value at 0.01 level 2.86**
NS= Not significant

The mean value of endurance in pre-test was 97.40 and the S.D. was 12.47. During post-test the mean value was 105.75 and S.D. value was 15.02.respectively.It appears from the table that the difference between two means was 8.35. To observe the significant difference between two means‘t’ value was calculated and found to be 2.38 which was significant at 0.05 level. So there is a significant difference in pre-test and post-test and an improvement found of 12 weeks multicomponent exercise in endurance.

Conclusion:

On the basis of result and discussion the following conclusion may be drawn:

1. Multicomponent exercise improves upper and lower body strength in elderly aged male.
2. Multicomponent exercises improve lower body flexibility in elderly aged male.
3. Multicomponent exercises improve endurance in elderly aged male.

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