

Effect of Aerobic Exercises On Flexibility Muscular Strength and Quickness for College Men Players

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Abstract

The purpose of the present study was to investigate the effect of aerobic exercise on flexibility, muscular strength and quickness for college men players. To achieve the purpose of the study thirty men players were selected from Mother Terasa College of physical education, during the year 2026. The subject's age ranges from 18 to 22 years. The selected players were divided into two equal groups consists of 15 men players each namely experimental group and control group. The experimental group underwent aerobic exercise program for six weeks. The control group was not taking part in any exercise during the course of the study. Flexibility, Muscular strength and Quickness were taken as criterion variables in this study. Pre-test was taken before the exercise period and post- test was measured immediately after the six week exercise period. Statistical technique 't' ratio was used to analyze the means of the pre-test and post test data of experimental group and control group. The results revealed that there was a significant difference found on the criterion variables. The difference found is due to aerobic exercise given to the experimental group on flexibility muscular strength and quickness when compared to control group.

Keywords: Aerobic Exercise, flexibility, muscular strength and quickness

1. Introduction

Sport exercise aims at improving sports performance. Therefore the nature and structure of sports performance determines to a great extent the means and methods of exercise as well as the total planning, organization, implementation and assessment of exercise. The knowledge about the nature and structure of sports performance must be considered as the first and perhaps the most important step towards the successful preparation of sportsmen for higher performance.

Aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Aerobic means "with oxygen", and refers to the use of oxygen in the body's metabolic or energy-generating process. Many types of exercise are aerobic and by definition are performed at moderate levels of intensity for extended periods of time. To obtain the best results, an aerobic exercise session involves a warming up period, followed by at least 20 minutes of moderate to intense exercise involving

large muscle groups and a cooling down period at the end. This exercise is designed to produce a sustained increase in heart rate and whose energy cost can be met by the body from aerobic sources i.e. from increased oxygen consumption (Yadav and Rachna, 1998).

2. Methodology

For the purpose of the study was to find out the effect of aerobic exercise on flexibility, muscular strength and quickness for college men players. To achieve this purpose of the study, thirty men players were selected as subjects at random. The age of the subjects were ranged from 18 to 22 years. The selected subjects were divided into two equal groups of fifteen subjects each, such as aerobic exercise group (Experimental Group) and control group. The experimental group underwent aerobic exercise for three days per week for six weeks. Control group which they did not undergo any special exercise program apart from their regular physical activities as per their curriculum.

Experimental Design

This study was formulated as post-test group design .one group was assigned Aerobics exercises program. The other group acted control group no training programmed.

Selection of Variables

- Flexibility - Sit and Reach (centimeters)
- Muscular strength - Push-Ups (per minute)
- Quickness - Human Benchmark online reaction time test (mille second)

Statistical Technique

The following statistical procedures were used. The “t” ratio was calculated to find out the significance of the difference between the mean of the initial and final test of the experimental group.

Analysis of the Data

The significance of the difference among the means of experimental group was found out by pre-test. The data were analyzed and dependent ‘t’ test was used with 0.05 levels as confidence.

Table I

Analysis Of ‘T’-Ratio For The Pre And Post Tests Of Experimental And Control Group On Flexibility (Sit And Reach Means In Centimeters)

Groups	Mean		Mean Dif-ference	S.D	Standard Error	‘t’ ratio
	Pre	Post				
Experimental	31.53	33.33	1.80	1.47	0.38	4.73*
Control	29.33	28.47	0.87	1.68	0.43	1.99

*Significance at .05 level of confidence. (The table value required for 0.05 level of significant with df of 14 is 2.14)

The Table-I shows that the mean values of pre-test and post-test of control group on flexibility were 29.33 and 28.47 respectively. The obtained ‘t’ ratio was 1.99, since the obtained ‘t’ ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of experimental group on flexibility were 31.53 and 33.33 respectively. The obtained ‘t’ ratio was 4.73* since the obtained ‘t’ ratio was greater than the required table value of 2.14 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in flexibility. It may be concluded from the result of the study that experimental group improved in flexibility due to six weeks of aerobic exercise.

Figure I
Mean values of Aerobic exercise group and control
Group on Flexibility (Sit and Reach means in Centimeters)

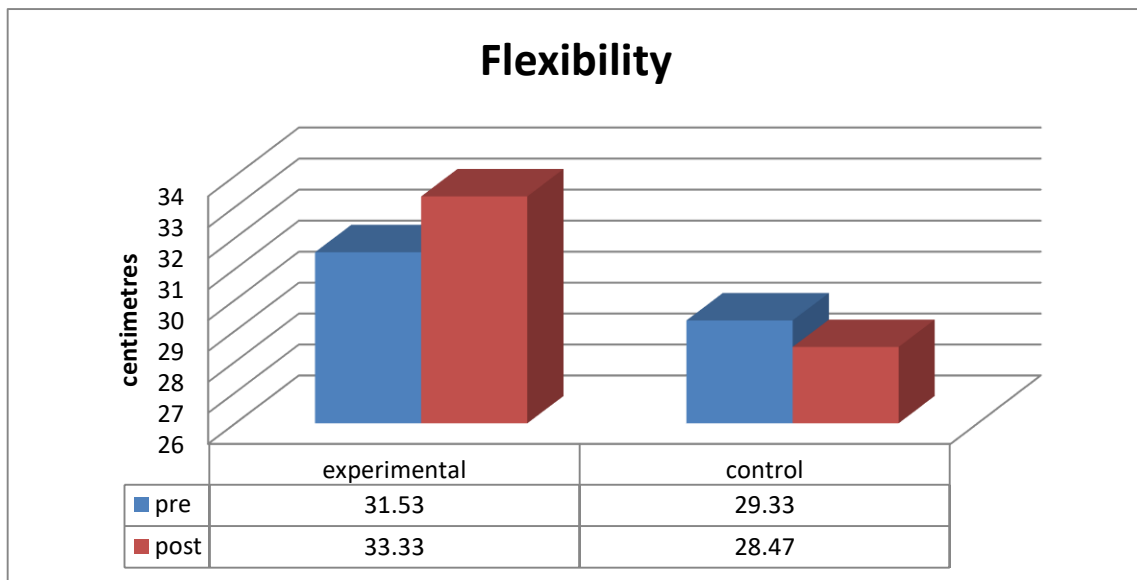


Table II

Analysis Of ‘T’-Ratio For The Pre And Post Tests Of Experimental And Control Group On Muscular Strength (Push-Ups Means In Per Minute)

Groups	Mean		Mean Dif-ference	S.D	Standard Error	‘t’ ratio
	Pre	Post				
Experimental	26.67	27.6	0.93	1.47	0.38	4.73*
Control	24.80	24.67	1.33	0.99	0.26	0.52

*Significance at .05 level of confidence. (The table value required for 0.05 level of significant with df of 14 is 2.14)

The Table-II shows that the mean values of pre-test and post-test of control group on muscular strength were 24.80 and 24.67 respectively. The obtained ‘t’ ratio was 0.52, since the obtained ‘t’ ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of

experimental group on muscular strength were 26.67 and 27.6 respectively. The obtained ‘t’ ratio was 4.73* since the obtained ‘t’ ratio was greater than the required table value of 2.14 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in muscular strength. It may be concluded from the result of the study that experimental group improved in muscular strength due to six weeks of aerobic exercise.

Figure II
Mean values of Aerobic exercise group and control
Group on Muscular Strength (Push-Ups means in per minute)

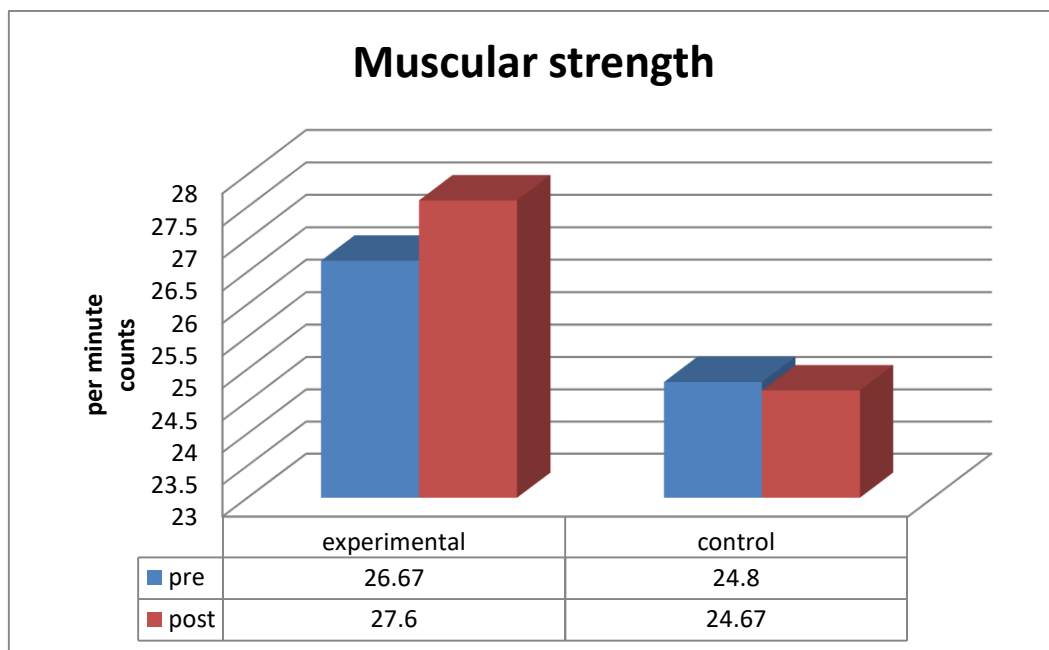


Table-III
Analysis Of ‘T’-Ratio For The Pre And Post Tests Of Experimental And Control Group On
Quickness (Human Benchmark online reaction time test means in mille second)

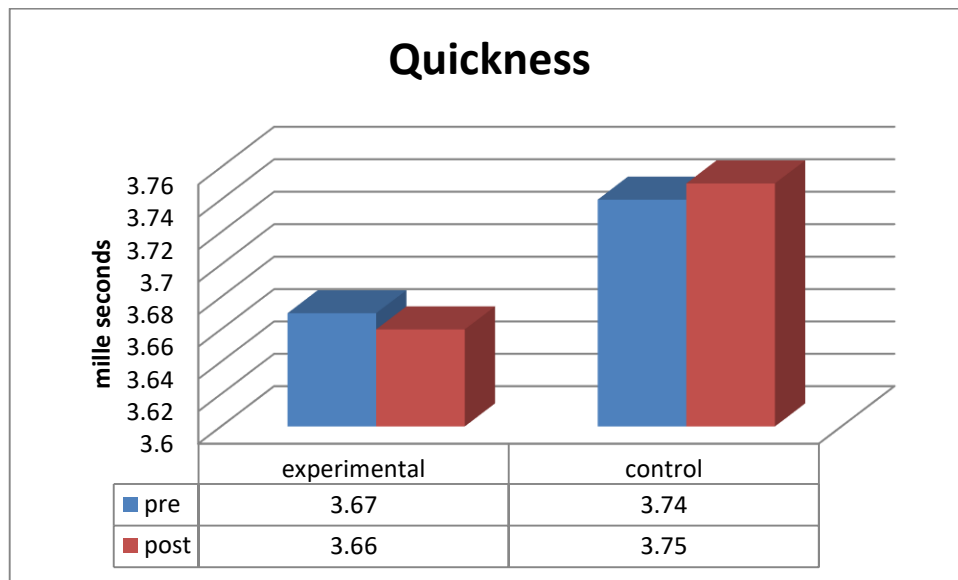
Groups	Mean		Mean Dif-ference	S.D	Standard Error	‘t’ ratio
	Pre	Post				
Experimental	3.67	3.66	0.42	0.38	0.10	4.24*
Control	3.74	3.75	0.02	2.89	2.89	0.03

*Significance at .05 level of confidence. (The table value required for 0.05 level of significant with df of 14 is 2.14)

The pre and post-test mean for the Experimental group were 3.67 and 3.66 and for control group was 3.74 and 3.75 respectively. The calculated ‘t’ value for the experimental group was 4.24 the higher than table value at 0.05 level. The control group was calculated value for ‘t’ ratio was 0.03, it’s lower

than table value this value was a significant difference in the experimental group following aerobic exercise for a period of six weeks.

Figure III
Mean values of Aerobic exercise group and control
Group on Quickness (Human Benchmark online reaction time test means in mille second))



Discussions on Findings

The result of the study indicates that the experimental group namely aerobic exercise group had significantly improved the selected dependent variables namely flexibility, Muscular strength and Quickness, when compared to the control group. It is also found that the improvement caused by aerobic exercise when compared to the control group.

Conclusions

1. There was a significant difference between experimental and control group on physical fitness variables after the exercise period.
2. There was a significant improvement in flexibility, muscular strength and quickness. However the improvement was in favor of experimental group due to six weeks of aerobic exercise.

References

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