



IMPACT OF AEROBIC TRAINING ON ENDURANCE AND FLEXIBILITY OF MEDICAL STUDENTS

Physiotherapy

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ABSTRACT

The word aerobic is made up of two Greek words, 'Aeros' meaning air and 'Bios' meaning life. Aerobic exercise is vigorous enough to increase the body's need for oxygen and hence air intake and breathing rate increase. Aerobic exercise is done at a pace that allows an adequate supply of oxygen to reach the muscles as one work out. The research investigated the effects of aerobic exercises on muscle endurance and flexibility of female medical students. The purpose of the study is to assess the impact of 12 weeks training program of aerobic exercise on endurance and flexibility of female medical students. Subjects were selected from Prem Physiotherapy and Rehabilitation College, Panipat, Haryana. They were divided randomly into two groups control and experimental group. These groups consist of thirty subjects. Each group consists of fifteen subjects. 12 weeks aerobic training is given to Experimental group only. The training program was given for three days a week for 60 minutes. Pre-test and post-test were conducted and the data was computed and statistically examined by SPSS. The result revealed that the experimental group has a significant effect on endurance and flexibility of a muscle.

KEYWORDS

Aerobic exercises, Flexibility, Muscular endurance.

INTRODUCTION

Numerous data are suggesting that aerobic-type exercise improves lipoprotein-lipid profiles, for cardiorespiratory fitness and body composition in healthy young women^{1,2,3}. Many research studies say physical exercise is important for the development of all physical fitness but no research was done in India especially in Female medical students of Haryana. According to many research studies finding physical inactivity is one of the causes for the development of chronic disease and poor fitness. Physical exercise is any bodily activity that enhances or maintains physical fitness and overall health and wellness. It is performed for various reasons including strengthening muscles, cardiovascular system and enhancing athletic skills, weight loss or maintenance, as well as for enjoyment. Endurance is the ability to perform repetitive, moderate to the high-intensity movement for a prolonged period. Aerobic endurance improves the function of the heart, lungs and blood vessels and is associated with a low risk of premature death from all causes. Functions of daily life that become easier include walking, shopping, sightseeing, recreational & sports activities. Flexibility exercises stretch and lengthen the muscles of the body. Activities such as stretching help to improve joint flexibility and keep muscles agile. The goal is to improve the range of motion which can reduce the chance of injury.

MATERIAL & METHOD:

A random sampling technique was used to recruit participants. Ethical approval of the Departmental Research Committee of Prem Physiotherapy and Rehabilitation College was obtained before the commencement of the study. The study procedure was explained to the participants and their informed consent was obtained. The study was conducted on 30 physiotherapy studying female students (15 in experimental and 15 in the control group) and their ages between 17 - 23 years. The experimental group underwent aerobic exercise and Control group general exercises. Muscular endurance and flexibility were tested and the data was analyzed.

Result and discussion

To achieve the purpose of the study 30 females from Prem Physiotherapy and Rehabilitation College were selected as subjects and their age was 17-23 years. Aerobic exercise was given for 12 consecutive weeks for 3 days in a week. Pre and post-test were conducted for all the 30 subjects on endurance and flexibility. The scores were recorded and then the collected data were analyzed by paired t-test by using SPSS.

Table 1 for Endurance

	Pre-test	Post-test
Control	13.46 ±3.18	13.20 ±3.12
Experimental	14.06 ±3.45	16.80 ±3.14
F ratio	0.245	9.904

When we analyze the analysis of variance, there was no significant difference between both the groups for Flexibility on pre-test but significant difference post-test.

Table 2 for Flexibility

	Pre-test	Post-test
Control	21.66 ±2.28	21.40 ±2.35
Experimental	20.93 ±2.34	23.40 ±2.74
F ratio	0.752	4.585

When we analyze the analysis of variance, there was no significant difference between both the groups for Endurance on pre-test but significant difference present post-test.

The results of this study are in line with the study done by Mathewos Hosiso et al they state that Moderate aerobic exercise has a positive effect on the improvement of cardiovascular endurance, muscular strength, muscular strength and flexibility of sedentary female communities⁴. As per Shahana A et al after 12 weeks of aerobic training cardio-respiratory endurance, flexibility, muscular strength endurance and decreased skinfold thickness (body fat %) group of middle-aged women⁵. As per Mohammadi H.R et al there study showed that 12-week workout, 20–60 min/session, and 3 days a week of moderate-intensity exercise improves body composition, intercellular adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1), and C-reactive protein (CRP) than those who did not participate in any training⁶.

CONCLUSION:

It is concluded that there is a significant improvement in endurance and flexibility for the experimental group due to Aerobic training protocol effect. 12 weeks of aerobic exercise training has induced significant changes in muscle endurance and flexibility.

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