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The effect of aerobic exercises on vital capacity variables of women college students

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Abstract

The main aim of this study is to find Aerobic Exercises on Vital Capacity Variables of Women. Considering the mentioned objective, 40 students of B.A.J.S.S. Arts and Commerce College for women, Ranebennur, Haveri District of Karnataka state, India are selected as cases for this study and they are randomly divided into training group and controlling group. The first group, participated in Aerobic Exercises training process continued 12 weeks, while; the latter group did not participate in any exercise programs and continued with their daily activities.

Keywords: Aerobic exercises, vital capacity

Introduction

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 and the cardiovascular system, honing athletic skills, weight loss or maintenance, as well as for the purpose of enjoyment. Frequent and regular physical exercise boosts the immune system, and helps prevent the "diseases of affluence" such as heart disease, cardiovascular disease, Type 2 diabetes and obesity. It also improves mental health, helps prevent depression, helps to promote or maintain positive self-esteem, and can even augment an individual's sex appeal or body image, which is also found to be linked with higher levels of self-esteem. Childhood obesity is a growing global concern and physical exercise may help decrease some of the effects of childhood and adult obesity. Health care providers often call exercise the "miracle" or "wonder" drug-alluding to the wide variety of proven benefits that it provides.

Aerobic exercise meaning

Aerobic exercise is any physical activity that makes you sweat, causes you to breathe harder, and gets your heart beating faster than at rest. It strengthens your heart and lungs and trains your cardiovascular system to manage and deliver oxygen more quickly and efficiently throughout your body.

Meaning of vital capacity

Vital capacity (VC) is the maximum amount of air a person can expel from the lungs after a maximum inhalation. It is equal to the sum of aspiratory reserve volume, tidal volume, and expiratory reserve volume. It is approximately equal to Forced Vital Capacity (FVC).

The aim of this study

The aim of this study is to find the effect of 12 weeks of Aerobics Exercise on the Vital capacity of women's college students.

Method

Study sample

Study participants were recruited from the class of B.A.J.S.S. Arts and Commerce College for women, Ranebennur, Haveri District of Karnataka state, India. The purposeful sampling method was used to select 40 students aged between 16 to 22 years. Then, the random sampling method was adopted to divide students into the experimental (N=20) and control (N=20) groups.

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Study methods and procedures

The study was conducted Every Monday to Friday, the Aerobics Exercise training was administered from 5:00 p.m to 6.00p.m. The random sampling method helped to divide students into the experimental (N=20) and control (N=20) groups, and all students went through a pre-test of Vital capacity. Students in the experimental group were then provided with 12 weeks of Aerobics Exercise training, and those in the control group were asked to keep regular hours. A post-test of Vital capacity was performed after the 12-week training intervention.

Training prescriptions in the experimental group

Exercise pattern

Aerobic exercise includes increasing the duration of sessions 5 to 10 minutes every 1-2 weeks for the first 4-6 weeks, Second 6-8 weeks, Third 8-12 weeks. Frequency and intensity can be tolerated as progressed. Overall volume should be monitored for adverse effects decreased if necessary. Aerobics was the primary activity in this experimental study. Students had done some Aerobic exercise in every training session. In addition, the students Performed warm-up and relaxation stretching exercises, which included stretches of the neck, arms, waist, leg muscles, ankles, and wrists. Both warm-up and relaxation stretches took 5 minutes, leading to a

total of 45 minutes per training session.

Exercise duration and frequency

Students in the experimental group were provided with a 12 - week Aerobics training program, delivered 6 times a week, for 45 minutes each time.

Data management and analysis

Test results were analyzed using SPSS 17.0 for Windows.

Statistical methods included

The significance was fixed at 0.05 levels to test the ‘F’ ratio obtained by analysis of covariance.

Results

In order to gather the required data, 40 students between 16 to 22 years old of B.A.J.S.S. Arts and Commerce College for women, Ranebennur, Haveri District of Karnataka state, India. , some families have accepted to participate in the study. The selected cases are divided into two groups (20 for each) which are training and controlling groups. The demographic characteristics of the subjects are presented in Table. The results has shown that the two groups significance differences in Vital Capacity.

Table 1: Analysis of Co-variance of aerobic Exercises experimental and control groups on vital capacity.

Vital Capacity	Test	Experimental group- (Aerobic exercises)	Control group	Source of variance	Sum of the Squares	Df	Mean squares	F-Ratio	Remarks
Pre test	Mean	41.4000	57.9000	BG	12.056	1	12.056	.232	NS
	SD	5.20526	23.94050	WG	626.144	112	34.7126		
Post test	Mean	121.3000	57.3000	BG	7463.961	1	7463.961	43.617	S
	SD	5.77745	23.55754	WG	30120.239	112	171.124		
Adjusted Post Test Means	Mean	121.2995	57.3693	BG	3167.993	1	3167.993	51.452	S
				WG	1046.719	17	61.5717		

**The level of significance is 0.05=table value = 2.15

Table No.1 Shows the mean, SD values of pre-test of Experimental Group and control Group on Vital Capacity is observed that mean score value of Experimental Group and control Group are 41.4000 and 57.9000 and their SD values are 5.20526 and 23.94050 respectively.

The calculated F- value found to be .232 at 0.05 level of significant it is found to be non significant it can be concluded that the Vital Capacity found to be similar among Experimental subjects and control Group subjects.

The mean, SD values of post- test of Experimental Group and control Group on Vital Capacity. It is observed that mean score value of Experimental Group and control Group are 121.3000 and 57.3000 their SD value are 5.77745 and 23.55754 respectively.

The calculated F- value found to be 43.617 at 0.5 level of significant it is found to be significant it can be concluded that the Vital Capacity found to be significant difference among Experimental Group subjects and control Group subjects.

The mean values of adjusted post- test of Experimental Group subjects and control Group subjects on Vital Capacity found to be, 121.2995 and 57.3693 respectively.

The calculated F- value found to be 51.452 at 0.05 level of significant there is a significant difference is observed between Experimental subjects and control group subjects.

The Vital Capacity Performance has been displayed in figure 1.

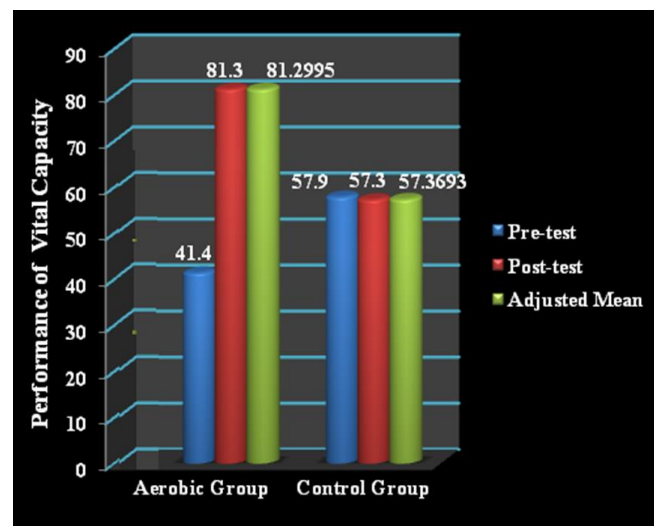


Fig 1: Bar diagram showing the pre, post and adjusted means of the experimental and control groups on vital capacity.

The above figure 1 indicates that the post-test values of Experimental group and adjusted post-test significantly improved the performance of Vital Capacity and also the post-test values of Vital Capacity were more than the pre-test values due to 12 weeks of Aerobic Exercise was training. The Control group pre- test and post- test performance of Vital Capacity shows no improvement.

Conclusion

This study indicates that there was a highly significance difference in vital capacity between pretest and post-test among Experimental group of B.A.J.S.S. Arts and Commerce College for women athletes Ranebennur, Haveri District of Karnataka state, India. According to the obtained results, it is concluded that, Aerobics Exercise increases the Vital Capacity of 16 to 22 years college students.

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