EFFECTS OF AEROBIC EXERCISE ON SELECTED PHYSIOLOGICAL PARAMETERS AMONG INACTIVE YOUNG WOMEN

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Abstract

The purpose of the study was to find out the effects of Aerobic exercise on selected physiological parameters among inactive young women. To achieve the purpose of the study thirty inactive young women were selected randomly as subjects from St.johns college of education, Veeravanallur, Tirunelveli District, Tamilnadu, India and their age were ranged from 18 to 25 years. The subjects divided into two groups in equal numbers (N=20). Group I underwent Aerobic exercise group and group II acted as control group who did not attended any special training other than their daily college schedule curriculum. The duration of the training period was restricted into six weeks for three alternative days per week. The pre and post tests data were collected before and after the training period. The dependent variables pulse rate, and VO2 Max were tested by standardized tests respectively. The collected data from the two groups prior to and after the experimental treatments on selected variables pulse rate, and VO2 Max were statistically analyzed by using the statistical technique of dependent 't' test and analysis of covariance (ANCOVA). In all the cases the level of confidence was fixed at 0.05 significant. The result of the study indicated that the experimental group had shown significantly improved in pulse rate, and VO2 Max variables among inactive young women due to the effects of aerobic exercise. However the control group did not shown any significant improvement on selected variables such as pulse rate, and VO2 Max.

Keywords: Aerobic exercise, physiological parameters, pulse rate, and VO2 Max.

Introduction

Aerobic exercise is physical exercise of low to high intensity that depends primarily on the aerobic energy-generating process "Aerobic" means "relating to, involving, or requiring free oxygen", and refers to the use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Generally, light-to-moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time what is generally called aerobic exercise might be better termed "solely

aerobic", because it is designed to be low-intensity enough so that all carbohydrates are aerobically turned into energy. And bulk of the energy in this type of exercise is due to mitochondria ATP production which relies on oxygen for the metabolism of carbs, proteins and fats for energy Smith (2007).most health power full workout takes this training very usefully for women society.

Statement of the Problem

The purpose of this study was to find out the effects of Aerobic exercise on selected physiological parameters among inactive young women.

Hypothesis

1. It was hypothesized that there may be a significant difference on selected among inactive young women.

2. There would be a significant difference among experimental and control groups on selected Pulse Rate

3. There would be a significant difference among experimental and control groups on selected VO2 max test.

Methodology

The purpose of this study was to find out the effects of Aerobic exercise on selected physiological parameters among inactive young women. To achieve the purpose of the study twenty inactive young women were selected randomly as subjects from St.johns college of education, Veeravanallur, Tirunelveli District, Tamilnadu, India and their age were ranged from 18 to 25 years. The inactive young women were assigned at random into two groups of each ten (N=10). Group-I underwent Aerobic exercise and Group–II acted as control group who did not attended any special training other than their regular daily college schedule curriculum. The duration of the training period was restricted to six week for three alternative days per week. The pre and post data were collected before and after the training period. The dependent variables physiological parameters were tested by standardized tests Pulse Rate and VO2 max.

Analysis of the data

The effects of Aerobic exercise on selected physiological parameters among inactive young women. Were analyzed and presented below.

Back strength Test

The t-test on Pulse Rate test (second) of the pre and post test scores of Aerobic exercise group and control group have been analyzed and presented in table I.

TABLE-I
THE PRE TEST AND POST TEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON PULSE RATE TEST

Group	Pre Mean	SD	Post Mean	SD	Obtained t-ratio
Aerobic exercise group	78.59	3.03	72.46	2.44	6.41 *
Control Group	78.65	2.10	78.62	1.69	1.01

*Significant at .05 level. (The table value required for 0.05 level of significance with df 9 is 2.26)

The table I show that the pre-test mean value of Aerobic exercise group and control group are 78.59 and 78.65 respectively and the post test means are 72.46 and 78.62 respectively. The obtained dependent t-ratio values between the pre and post test means of Aerobic exercise group and control group are 6.41 and 1.01 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of Aerobic exercise group was greater than the table value, it is understood that Aerobic exercise group had significantly improved the pulse rate test. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

Analysis of covariance (ANCOVA) on Pulse Rate test of experimental and control groups have been analyzed and presented in table II.

TABLE II
**ANALYSIS OF COVARIANCE (ANCOVA) ON PULSE RATE TEST OF EXPERIMENTAL GROUP AND CONTROL GROUP**

Adjusted Post Test Means		Source of Variance	Sum of Squares	df	Mean Square	F – ratio
Aerobic exercise group	Control Group	Between	2022.26	1	2022.26	30.21*
75.52	78.63	Within	1280.31	19	67.38	

Significant at 0.05 level. (The table value required for significance at 0.05 levels with df 1 and 19 is 4.38)

Table II shows that the adjusted post test means values on Pulse Rate test. The obtained f- ratio of 30.21 for adjusted post test mean is greater than the table value 4.38 with df 1 and 19 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant means difference exists between the adjusted post test means of Aerobic exercise and control groups on back strength test.

The bar diagram shows the mean values of pre test, post test and adjusted post test on Pulse Rate test of Aerobic exercise group and control group.

FIGURE I
PRE TEST, POST TEST AND ADJUSTED POST TESTMEAN VALUES OF AEROBIC EXERCISE AND CONTROL GROUPS ON PULSE RATE TEST

PULSE RATE

■ Aerobic Exercise Group   ■ Control Group

78.59 78.65 / 72.46 / 78.62 / 75.52 / 78.63

Pre Mean   post Mean   Adjusted Post Test Means
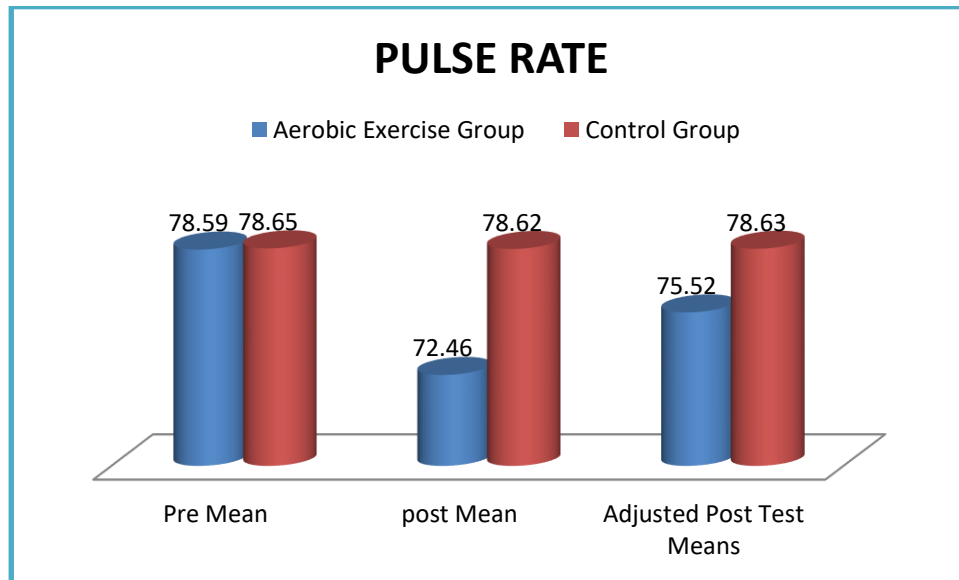
VO2 max test

The t-test on VO2 max test of the pre and post test scores of Aerobic exercise group and control group have been analyzed and presented in table III.

TABLE-III

THE PRE TEST AND POST TEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON VO2 max TEST

Group	Pre Mean	SD	Post Mean	SD	Obtained t-ratio
Aerobic exercise group	210.25	1.65	255.67	1.60	13.59
Control Group	210.36	1.63	210.93	1.50	1.36

*Significant at .05 level. (The table value required for 0.05 level of significance with df 9 is 2.26)

The table III shows that the pre-test mean value of Aerobic exercise group and control group are 210.25 and 210.36 respectively and the post test means are 255.67 and 210.93 respectively. The obtained dependent t-ratio values between the pre and post test means of Aerobic exercise group and control group are 13.59 and 1.36 respectively. The table value required for significant difference with df 1.and 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of Aerobic exercise group was greater than the table value, it is understood that Aerobic exercise group had significantly improved VO2 max test. However, the control group has not improved significantly. The 'obtained t' value is less than the table value, as they were not subjected to any specific training.

Analysis of covariance (ANCOVA) on VO2 max test of experimental and control groups have been analyzed and presented in table IV.

TABLE IV
ANALYSIS OF COVARIANCE (ANCOVA) ON VO2 max TEST OF EXPERIMENTAL GROUP AND CONTROL GROUP

Adjusted Post Test Means		Source of Variance	Sum of Squares	df	Mean Square	F – ratio
Aerobic exercise group	Control Group	Between	3926.10	1	3926.10	21.33*
232.96	210.64	Within	1481.05	19	130.58	

Significant at 0.05 level. (The table value required for significance at 0.05 levels with df 1 and 19 is 4.38)

Table IV shows that the adjusted post test means values on VO2 max test. The obtained f- ratio of 21.33 for adjusted post test mean is greater than the table value 4.38 with df 1 and 19 required for significance at 0.05 level of confidence. The results of the study indicate that there is a significant mean difference exist between the adjusted post test means of Aerobic exercise and control groups on VO2 max test.

The bar diagram shows the mean values of pre test, post test and adjusted post test on wall sit test of Aerobic exercise group and control group.

FIGURE II
PRE TEST, POST TEST AND ADJUSTED POST TESTMEAN VALUES OF AEROBIC EXERCISE AND CONTROL GROUPS ON VO2 max TEST
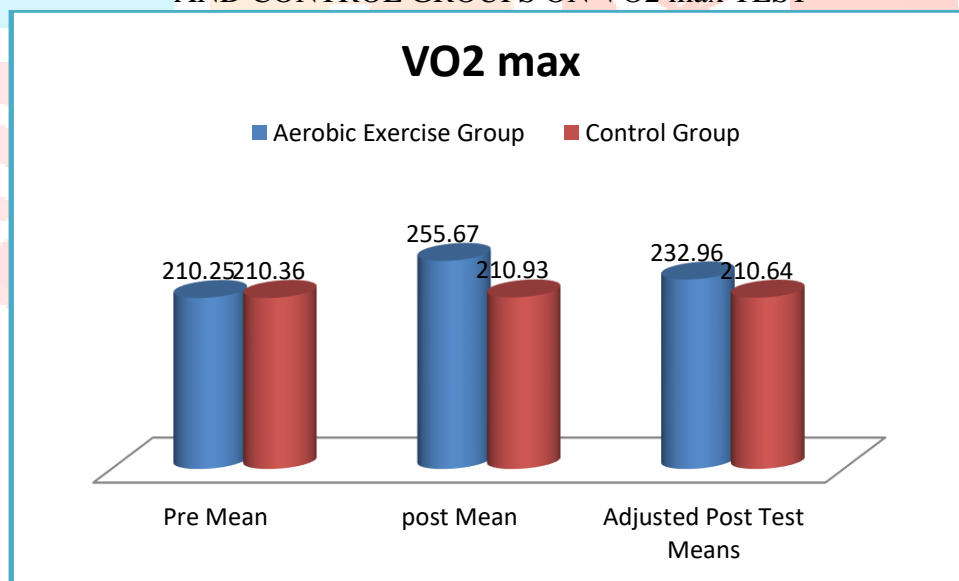
Conclusions

1. There was significant improvement on Pulse Rate test due to the effects of Aerobic exercise among inactive young women

2. There was significant improvement on VO2 max test due to effects of Aerobic exercise among inactive young women

. However the control group had not shown any significant improvement on any of the selected variables.

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