Research Papers

EFFECT OF COMPLEX TRAINING ON SELECTED PHYSIOLOGICAL VARIABLES OF WOMEN SPORTS PARTICIPANTS

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Abstract

The purpose of the study was to find out the effect of complex training on selected physiological variables of women sports participants. To achieve the purpose of the present study, thirty women sports participants from Idhaya Engineering College for Women, Tamilnadu, India were selected as subjects and their ages were from 18 to 24 years. The subjects were divided into two equal groups. The groups were assigned as complex training and control group in an equivalent manner. The experimental group was participated the training for a period of twelve weeks to find out the outcome of the training package. Analysis of covariance (ANCOVA) was applied to find out the means difference between two groups. The result reveals that the complex training group showed significant improvement on all selected variables among women sports participants. It was also found that the experimental group shown significant improvement on all the selected variables than the control group.

Key Words: Complex Training, Physiology, Women, Sports.

INTRODUCTION

Complex training has been defined as combining plyometric training and weight training exercises in the same training session in a bid to realize a greater training effect on the targeted muscle groups, and to provide a more time-efficient method of combining strength and power training, particularly during competitive training cycles (Chu, 1996). The combination of plyometric training and weight training are thought to be useful for developing athletic power. More specifically, complex training alternates biomechanically similar high load weight training exercises with plyometric exercises, set for set, in the same workout (Ebben and Blackard, 1998). An example of complex training would include performing a set of squats followed by a set of jump squats. The idea behind complex training is to take advantage of postactivation potentiation. Postactivation potentiation is a phenomenon, which occurs when muscle force is enhanced as a result of its contractile history.

Today, women compete professionally and as amateurs in virtually every major sport, though the level of participation typically decreases when it comes to the more violent contact sports. Women in sports is dedicated to providing role models of women athletes that validate women's accomplishments and perpetuate a new vision of women's abilities, autonomy and self determination. Women will find the courage and daring to follow their goals. This study mainly focused on women sports participants those who regularly participated in training and sports. The purpose of the study was to find out the effect of complex training on selected physiological variables of women sports participants.

MATERIALS AND METHODS

To achieve the purpose of the present study, thirty women sports participants from Idhaya Engineering College for Women, Tamilnadu, India were selected as subjects and their ages were from 18 to 24 years. The subjects (N=30) were randomly assigned into two equal groups. The groups were assigned as complex training and control group in an equivalent manner. The experimental group was participated the training for a period of twelve weeks to find out the outcome of the training package. The study was formulated as a true random group design, consisting of a pre-test and post-test. Systolic blood pressure, diastolic blood pressure and resting heart rate were assessed by a digital heart rate monitor. Breath holding time was assessed using a stop watch and vital capacity was assessed by using spirometer.

Analysis of covariance (ANCOVA) was applied because the subjects were selected random, but the groups were not equated in relation to the factors to be examined. Hence the difference between means of the two groups in the pre-test had to be taken into account during the analysis of the post-test differences between the means. To test the obtained results on variables, level of significance 0.05 was chosen and considered as sufficient for the study.

RESULTS AND DISCUSSIONS

The results were presented in the following tables,

TABLE - I

DESCRIPTIVE ANALYSIS OF SELECTED PHYSIOLOGICAL VARIABLES OF COMPLEX TRAINING GROUP

Sl.No	Variables	Pre Test Mean	SD (±)	Post Test Mean	SD (±)	Adjusted Mean
1	Systolic Blood Pressure	114.93	5.76	125.60	4.08	125.63
2	Diastolic Blood Pressure	75.60	3.78	79.20	3.70	79.00
3	Resting Heart rate	71.00	2.42	57.80	2.30	57.80
4	Breath Holding Time	26.46	3.48	33.46	1.30	33.44
5	Vital Capacity	2.55	0.304	2.84	0.23	2.84

The above table documents the pre & post tests means, standard deviations and adjusted mean values of complex training on selected physiological variables among women sports participants.

TABLE - II

DESCRIPTIVE ANALYSIS OF SELECTED PHYSIOLOGICAL VARIABLES OF CONTROL GROUP

Sl.No	Variables	Pre Test Mean	SD (±)	Post Test Mean	SD (±)	Adjusted Mean
1	Systolic Blood Pressure	115.13	5.06	117.93	4.58	117.90
2	Diastolic Blood Pressure	75.30	4.27	75.70	3.87	75.86
3	Resting Heart rate	71.00	2.42	70.60	2.29	70.60
4	Breath Holding Time	27.60	3.45	29.13	4.42	29.15
5	Vital Capacity	2.55	0.24	2.56	0.24	2.56

The above table documents the pre & post tests means, standard deviations and adjusted mean values of control group on selected physiological variables among women sports participants.

TABLE - III

COMPUTATION OF ANALYSIS OF COVARIANCE ON SELECTED PHYSIOLOGICAL VARIABLES AMONG WOMEN SPORTS PARTICIPANTS

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Square	F
1	Systolic Blood Pressure	BG	448.42	1	448.42	27.79*
		WG	435.67	27	16.13	
2	Diastolic Blood Pressure	BG	73.91	1	73.91	7.27*
		WG	274.36	27	10.16	
3	Resting Heart rate	BG	1228.80	1	1228.80	254.78*
		WG	130.22	27	4.82	
4	Breath Holding Time	BG	133.65	1	133.65	12.16*
		WG	296.75	27	10.99	
5	Vital Capacity	BG	0.61	1	0.61	10.23*
		WG	1.61	27	0.06	

* Significant at 0.05 level *F 0.05 (1,27) = 4.21

In table-III the results of analysis of covariance on systolic blood pressure, diastolic blood pressure, resting heart rate, breath holding time and vital capacity were 27.79, 7.27, 254.78, 12.16 and 10.23 was greater than the required value 4.21 at 0.05 level of confidence. Since the observed 'F' value was greater then the table value on all selected physiological variables, there exists significant difference between the groups.

Figure I: Showing the mean values of complex training on selected physiological variables among women sports participants.

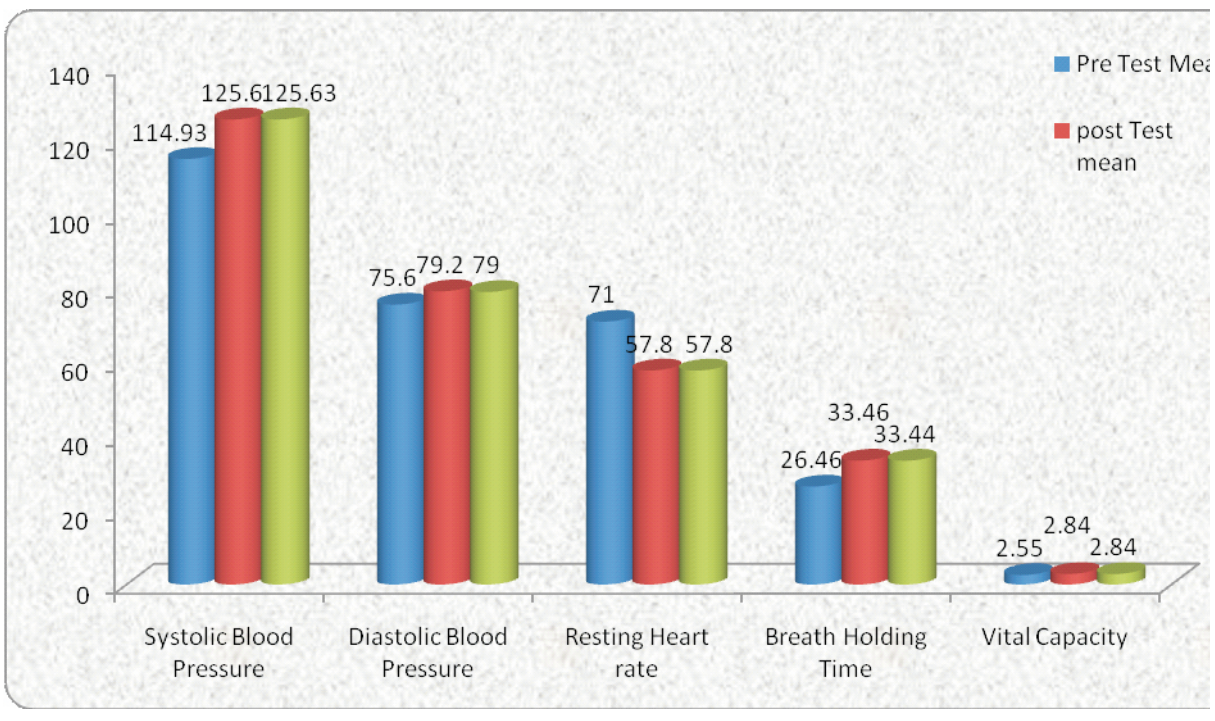
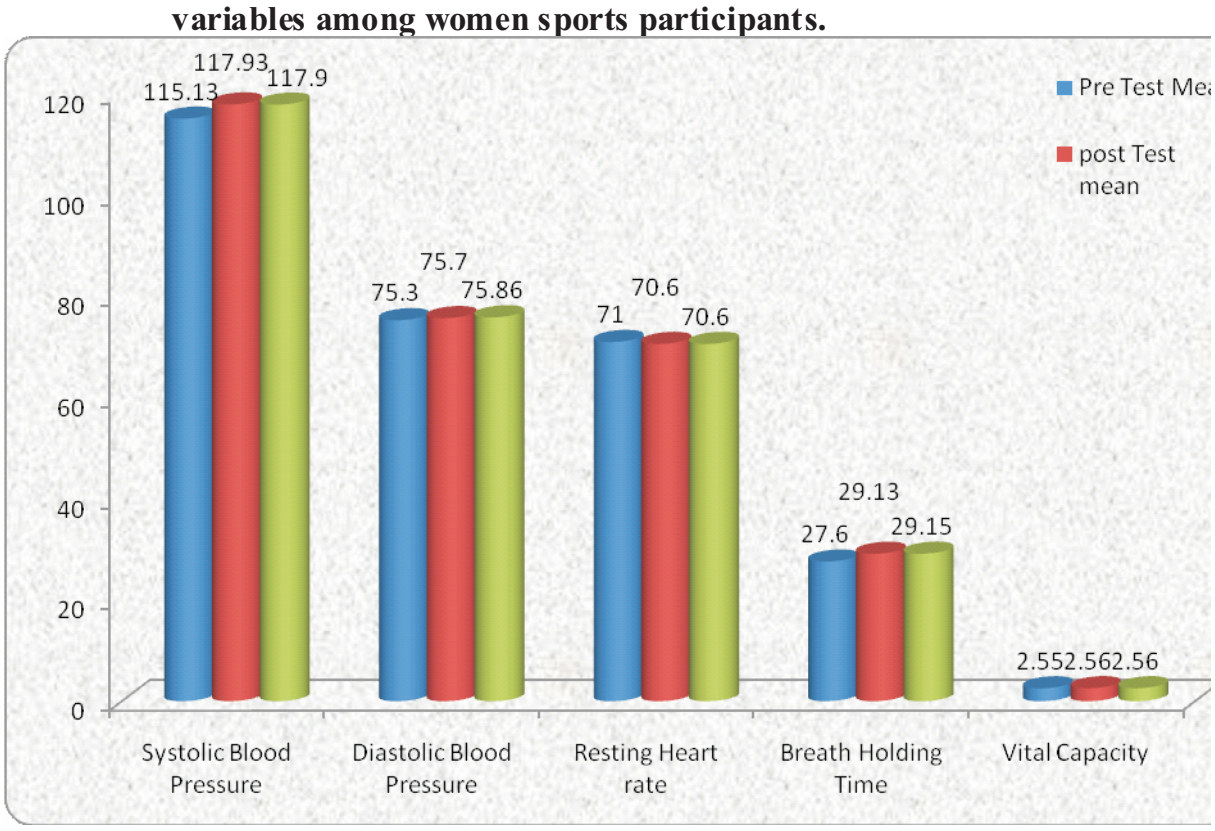


Figure II: Showing the mean values of control group on selected physiological variables among women sports participants.



CONCLUSIONS

From the results of the study the following conclusions were drawn,

1. It was found that the complex training group showed significant improvement on all selected variables among women sports participants.
2. It was also found that the experimental group shown significant improvement on all the selected variables than the control group.

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