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Effect of Complex Training on Blood Pressure among Physical Education Students

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Abstract

The purpose of the study was to investigate the effect of complex training on blood pressure among physical education students. In this study, 30 students from Sri Sarada College of Physical Education for Women, Salem were selected as the subjects for this study. They were divided into two groups of fifteen each and assigned as control and experimental group. Experimental treatment was applied only to the experimental group for a period of six weeks. The control group was not given experimental treatment. The complex training was given thrice a week. After six weeks the final performance of both the control and experimental groups were taken. The significant differences between the means of experimental group and control group for the pre-test and post-test scores were determined by ANCOVA. The level of significance was fixed at 0.05 level of confidence for the degree of freedom 1 and 14. It was observed that the experimental group showed significant reduction in blood pressure.

Keywords: Complex training, Blood pressure.

Introduction

Complex training, one of the most advanced forms of sports training, integrates strength training, plyometrics, and sport-specific movement. It consists of an intense strength exercise followed by a plyometric exercise. Complex training activates and works the nervous system and fast twitch muscle fibers simultaneously. The strength exercise activates the fast twitch muscle fibers (responsible for explosive power). The plyometric movement stresses those muscle fibers that have been activated by the strength training movement. During this activated state, the muscles have a tremendous ability to adapt. This form of intense training can teach slow twitch muscle fibers to perform like fast twitch fibers. Complex training as alternating biomechanically comparable high-load weight training and plyometric exercises in the same workout. Complex training as various sets of groups/complexes of exercises performed in a manner in which several sets of a heavy resistance exercise are followed by sets of a lighter resistance exercise. These authors also mention the term contrast loading and define this as "the use of exercises of contrasting loads that is, alternating heavy and light exercises set for set". Complex training as the execution of a resistance-training exercise using a heavy load (1-5RM) followed relatively quickly by the execution of a biomechanically similar plyometric exercise (Jenson & Ebben, 2003).

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Methodology

The purpose of the study was to investigate the effect of complex training on blood pressure among physical education students. In this study, 30 students from Sri Sarada College of Physical Education for Women, Salem were selected as the subjects for this study. They were divided into two groups of fifteen each and assigned as control and experimental group. Experimental treatment was applied only to the experimental group for a period of six weeks. The control group was not given experimental treatment. The complex training was given thrice a week. After six weeks the final performance of both the control and experimental groups were taken. The significant differences between the means of experimental group and control group for the pre-test and post-test scores were determined by ANCOVA. The level of significance was fixed at 0.05 level of confidence for the degree of freedom 1 and 14.

Results

TABLE – I
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE ON SYSTOLIC BLOOD PRESSURE OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	122.20	121.66	BG	2.13	1	2.13	0.31
			WG	187.73	28	6.70	
Post Test Mean	118.46	121.33	BG	61.63	1	61.63	17.42*
			WG	99.06	28	3.53	
Adjusted Post Mean	118.34	121.45	BG	71.93	1	71.93	33.20*
			WG	58.50	27	2.16	

* Significant at 0.05 level
Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value of systolic blood pressure of experimental and control groups were 118.34 and 121.45 respectively. The obtained F-ratio of 33.20 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on systolic blood pressure. The above table also indicates that both pre and post test means of experimental and control groups also differ significantly.

FIGURE - I
SHOWS THE MEAN VALUES ON SYSTOLIC BLOOD PRESSURE OF COMPLEX TRAINING AND CONTROL GROUPS

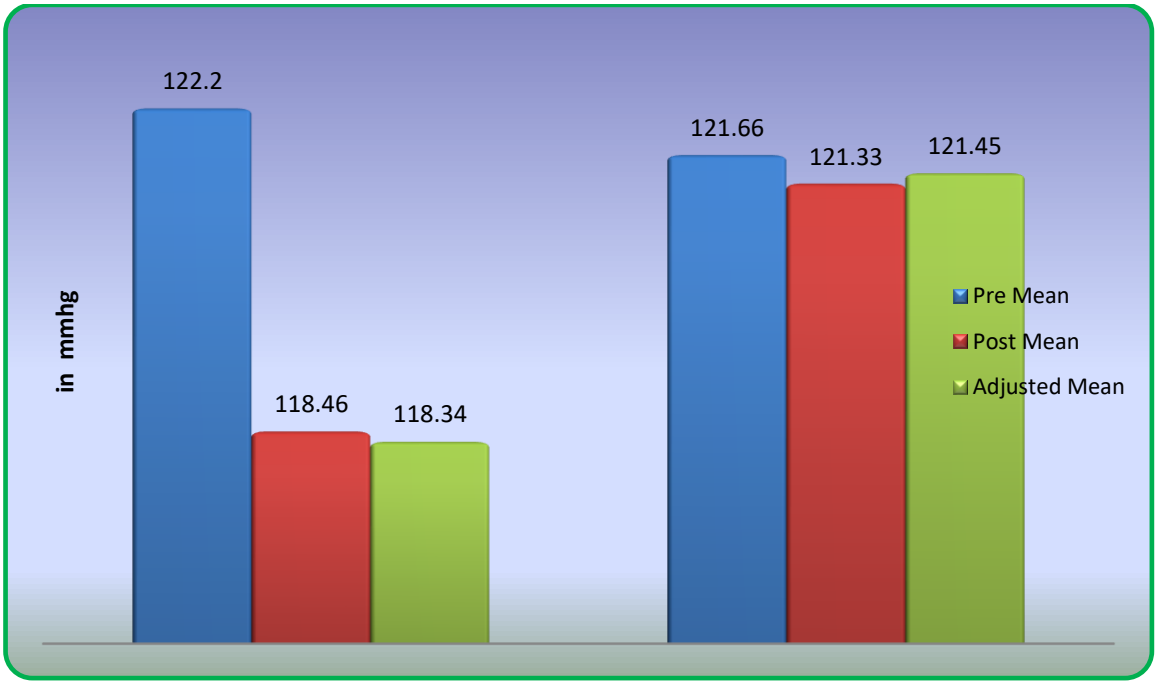


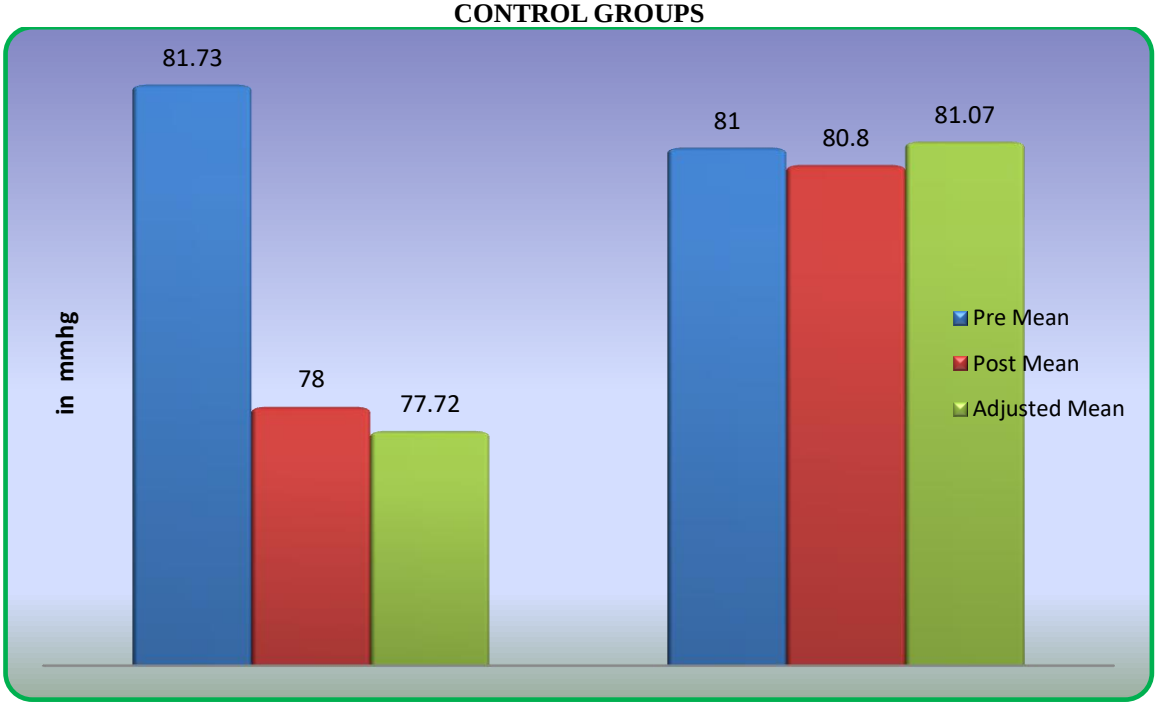
TABLE – II
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE ON DIASTOLIC BLOOD PRESSURE OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	81.73	81.00	BG	4.03	1	4.03	2.40
			WG	46.93	28	1.67	
Post Test Mean	78.00	80.80	BG	58.80	1	58.80	29.19*
			WG	56.40	28	2.01	
Adjusted Post Mean	77.72	81.07	BG	77.36	1	77.36	68.94*
			WG	30.29	27	1.12	

* Significant at 0.05 level
Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value of diastolic blood pressure of experimental and control groups were 77.72 and 81.07 respectively. The obtained F-ratio of 68.94 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on diastolic blood pressure. The above table also indicates that both pre and post test means of experimental and control groups also differ significantly.

FIGURE - II
SHOW THE MEAN VALUES ON DIASTOLIC BLOOD PRESSURE OF COMPLEX TRAINING AND CONTROL GROUPS



Conclusion

1. It was observed that the experimental group showed significant reduction in blood pressure.

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