



EFFECT OF COMPLEX TRAINING ON BLOOD PRESSURE AMONG COLLEGE WOMEN VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to determine the effect of complex training on blood pressure among college women volleyball players. In order to achieve the purpose of this study the researcher has selected 30 women volleyball players from Sri Sarada College of Physical Education for Women, Salem, Tamilnadu India at random and their age ranged from 18 to 25 years. The subjects were divided into two equal groups. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=30) were randomly assigned to two equal groups of fifteen players each. The groups were assigned as experimental group and control group in an equivalent manner. Experimental group participated the complex training for a period of twelve weeks and the post-tests were conducted. Systolic and diastolic blood pressure was assessed by bio-monitor. The significant differences between the means of experimental group and control group for the pre-test and post-test scores were determined by Analysis of co-variance. The level of significance was fixed at 0.05 level of confidence. Systolic and diastolic blood pressure of experimental group showed significant difference when compared to control group.

KEYWORDS: Complex training, Blood Pressure, Volleyball.

INTRODUCTION

Complex training describes a power developing workout that mixes weights and plyometric exercises. About 10 years ago, these workouts were greeted with great acclaim as research indicated that they might significantly enhance fast-twitch muscle cell power and, therefore, dynamic sports performance. However, newer research has highlighted variety of questions on complex training also as some new potential benefits. The key physiological vindication for these workouts is that the 'potentiation' effect – i.e. the enhancing effect one training mode can wear another. Initially, research focused on the potentiation of the plyometric exercises by the weights exercises. More recently, though, researchers have turned their attention as to if weightlifting power might be enhanced by the prior performance of a plyometric exercise. Complex training activates and works the systema nervosum and fast twitch muscle fibers simultaneously. The strength exercise activates the fast twitch muscle fibers. Fast-twitch muscle cell holds the key to increased dynamic sports performance, since these fibers can contract 2-3 times faster than their slow twitch counterparts. Type IIB fast-twitch fibers are the turbochargers of the facility athlete's engine. But these turbochargers are notoriously difficult to activate fully, since there are often as many as 1,000 of those fibers to each one efferent neuron in their muscle motor unit. The plyometric movement stresses those muscle fibers that are activated by the strength

training movement. During this activated state, the muscles have an incredible ability to adapt. This type of intense training can teach slow twitch muscle fibers to perform like fast twitch fibers (Comyns et al. 2006).

METHODOLOGY

The purpose of the study was to determine the effect of complex training on blood pressure among college women volleyball players. In order to achieve the purpose of this study the researcher has selected 30 women volleyball players from Sri Sarada College of Physical Education for Women, Salem, Tamilnadu India at random and their age ranged from 18 to 25 years. The subjects were divided into two equal groups. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=30) were randomly assigned to two equal groups of fifteen players each. The groups were assigned as experimental group and control group in an equivalent manner. Experimental group participated the complex training for a period of twelve weeks and the post-tests were conducted. Systolic and diastolic blood pressure was assessed by bio-monitor. The significant differences between the means of experimental group and control group for the pre-test and post-test scores were determined by Analysis of co-variance. The level of significance was fixed at 0.05 level of confidence.

RESULTS

TABLE I
ANALYSIS OF CO-VARIANCE FOR THE PRE, POST AND ADJUSTED POST TEST MEAN VALUES FOR COMPLEX TRAINING GROUP AND CONTROL GROUPS ON SYSTOLIC BLOOD PRESSURE

Test	Experimental Group	Control Group	Source of Variance	Sum of square	df	Mean Square	F Ratio
Pre Test Mean	127.20	124.93	Between	0.533	1	0.533	0.17
			With in	87.33	28	3.119	
Post Test Mean	123.27	125.00	Between	22.533	1	22.533	6.51*
			With in	96.933	28	3.462	
Adjusted Post Test Mean	123.20	125.10	Between	25.850	1	25.850	9.12*
			With in	76.542	27	2.835	

*Significant at 0.05 level of confidence.

The table I showed that the pre-test mean values on systolic blood pressure of complex training group and control group are 127.20 and 124.93 respectively. The obtained 'F' ratio 0.17 for pre-test mean was less than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on systolic blood pressure. The post-test mean values on systolic blood pressure of complex training group and control group are 123.27 and 125.00 respectively. The obtained 'F' ratio 6.51 for

post-test mean was greater than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on systolic blood pressure. The adjusted post-test means of complex training group and control group are 123.2 and 125.1 respectively. The obtained 'F' ratio 9.12 for adjusted post-test mean was greater than the table value 4.21 for df 1 and 27 required for significance at 0.05 level of confidence on systolic blood pressure.

FIGURE I
BAR DIAGRAM SHOWING THE PRE, POST AND ADJUSTED POST MEAN VALUES OF COMPLEX TRAINING GROUP AND CONTROL GROUP ON SYSTOLIC BLOOD PRESSURE

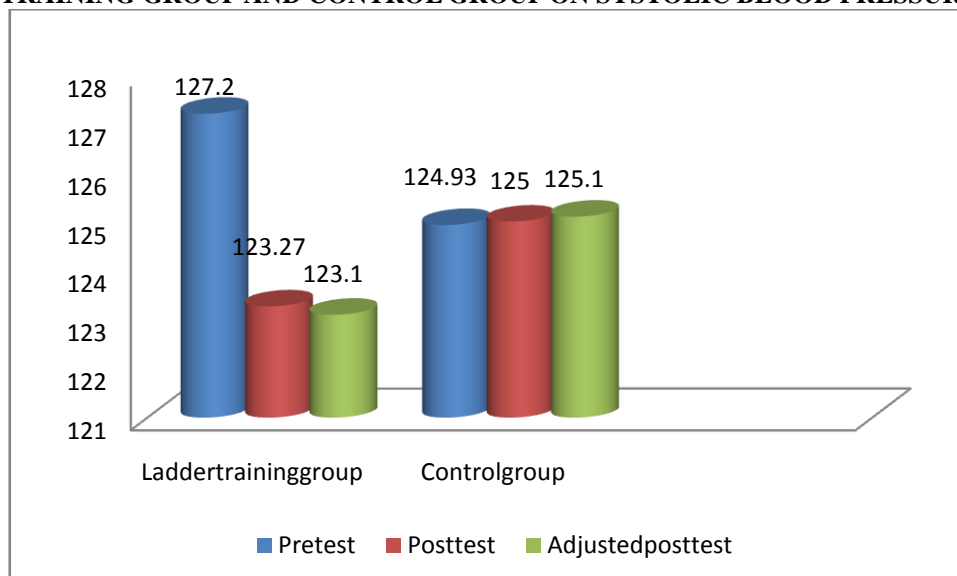


TABLE II
ANALYSIS OF CO-VARIANCE FOR THE PRE, POST AND ADJUSTED POST TEST MEAN VALUES FOR
COMPLEX TRAINING GROUP AND CONTROL GROUPS ON DIASTOLIC BLOOD PRESSURE

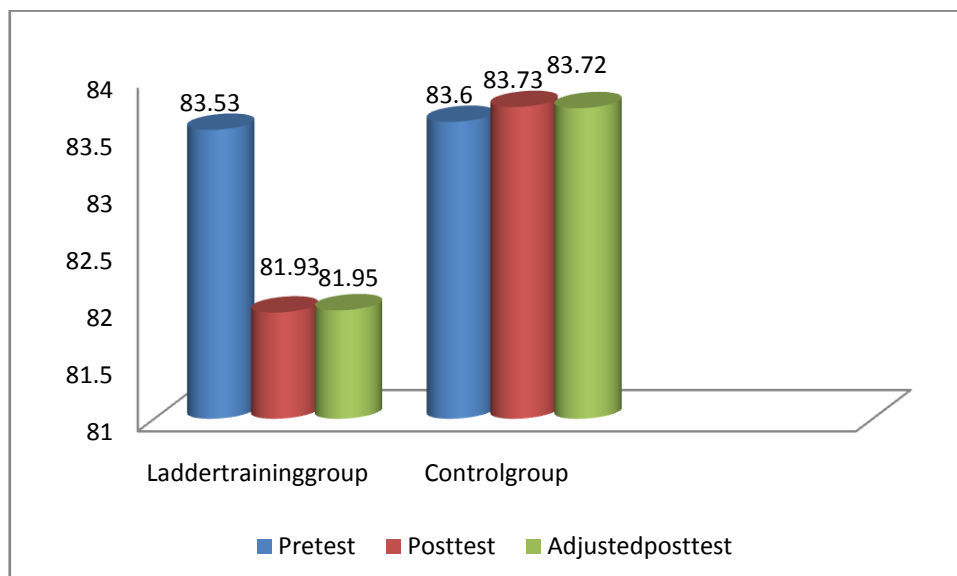
Test	Experimental Group	Control Group	Source of Variance	Sum of square	df	Mean Square	F Ratio
Pre Test Mean	83.53	83.60	Between	0.033	1	0.33	0.009
			With in	105.33	28	3.762	
Post Test Mean	81.93	83.73	Between	24.300	1	24.300	7.74*
			With in	87.867	28	3.138	
Adjusted Post Test Mean	81.95	83.72	Between	23.581	1	23.581	8.95*
			With in	71.173	27	2.636	

*Significant at 0.05 level of confidence.

The table II showed that the pre-test mean values on diastolic blood pressure of complex training group and control group are 83.53 and 83.60 respectively. The obtained 'F' ratio 0.009 for pre-test mean was less than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on diastolic blood pressure. The post-test mean values on diastolic blood pressure of complex training group and control group are 81.93 and 83.73 respectively. The

obtained 'F' ratio 7.74 for post-test mean was greater than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on diastolic blood pressure. The adjusted post-test means of complex training group and control group are 81.95 and 83.72 respectively. The obtained 'F' ratio 8.95 for adjusted post-test mean was greater than the table value 4.21 for df 1 and 27 required for significance at 0.05 level of confidence on diastolic blood pressure.

FIGURE II
BAR DIAGRAM SHOWING THE PRE, POST AND ADJUSTED POST MEAN VALUES OF COMPLEX
TRAINING GROUP AND CONTROL GROUP ON DIASTOLIC BLOOD PRESSURE



CONCLUSION

1. Systolic and diastolic blood pressure of experimental group showed significant difference when compared to control group.

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