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Effect of Jump Circuit Core Strength Training and On Court Volleyball Conditioning on Elastic Power and Anaerobic Power among Women Players

K.Anantha Kumar[1] & Dr.M.Rajashekaran[2]

[1]*Ph.D., Research Scholar, Department of Physical Education, Bharathiar University, Coimbatore, Tamilnadu, India.*
[2]*Professor, Department of Physical Education & Sports Sciences, Annamalai University, Chidambaram, Tamilnadu, India.*

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Abstract

The purpose of the study was to find out the effect of jump circuit core strength training and on court volleyball conditioning on anaerobic power and elastic power among women players. It was hypothesized that there would be significant differences on anaerobic power and elastic power due to the effect of jump circuit core strength training and on court volleyball conditioning among women players. For the present study the thirty women players who participated in the Inter-collegiate Tournaments were selected at random and their age ranged from 18 to 22 years. Anaerobic power was tested by Margaria Kalamen power test and elastic power was tested by Bunny Hop test. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen players each and named as Group 'A' and Group 'B'. Group 'A' underwent jump circuit core strength training and on court volleyball conditioning and Group 'B' has not undergone any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying dependent 't test. The level of significance was set at 0.05. The jump circuit core strength training and on court volleyball conditioning had shown significant improvement in anaerobic power and elastic power among women players.

Keywords: Jump circuit core strength training, court volleyball conditioning, Anaerobic power, Elastic power, Women.

Introduction

The circuit training exercises below are useful for designing a classic circuit training routine i.e. the one that develops short-term muscular endurance. Traditional core exercises are often done in a prone or supine position to focus on engaging and isolating the abdominals or the lower back. Training for volleyball, as in most sports is basically of two kinds-technical and physical. The kind of specific physical presentation is dictated by the two extremes at which a volleyball player is required to work. At one extreme is smashing and blocking at the net, both of which require players to jump as high as they can. Therefore part of each player's physical preparation should be training to improve his vertical jump, and by doing so increase his effective reach above the net. Like any other game, Volleyball too involves various factors for the success and high level performance.

Volleyball is a worldwide popular game and ranks third as a recreational team sport. It is one of the few popular games that originated from the United States. The object of the game is to keep the ball in flight, going back and forth over the net without it touching the floor. Volleyball has been described as an 'interval' sport with both anaerobic and aerobic components. Volleyball conditioning methods allows skill development and fitness. This type of conditioning is technique specific and could have complex game like drills with more efficient type of conditioning combining physical development along with technical and mental skills.

Correspondence
K.Anantha Kumar
E-mail: ananthakumar444@gmail.com, Ph. +9182485 78316

Methodology

The purpose of the study was to find out the effect of jump circuit core strength training and on court volleyball conditioning on anaerobic power and elastic power among women players. It was hypothesized that there would be significant differences on anaerobic power and elastic power due to the effect of jump circuit core strength training and on court volleyball conditioning among women players. For the present study the thirty women players who participated in the Inter-collegiate Tournaments were selected at random and their age ranged from 18 to 22 years. Anaerobic power was tested by Margaria Kalamen power test and elastic power was tested by Bunny Hop test. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen players each and named as Group 'A' and Group 'B'. Group 'A' underwent jump circuit

core strength training and on court volleyball conditioning and Group 'B' has not undergone any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying dependent 't test. The level of significance was set at 0.05.

Results

Table 1

ANCOVA between Experimental Group and Control Group on Anaerobic power of women players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	91.78	91.45	BG	0.14	1	0.14	0.01
			WG	233.06	28	8.32	
Post Test Mean	96.54	91.85	BG	2116.70	1	2116.70	180.33*
			WG	328.66	28	11.73	
Adjusted Post Mean	96.55	91.84	BG	2112.46	1	2112.46	175.02*
			WG	325.87	27	12.06	

*** Significant at 0.05 level.** **df: 1/27= 4.21**

Table1 revealed that the obtained 'F' value of 175.02 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of anaerobic power of women players between experimental group and control group. The graphical representation of data has been presented in figure I.

Figure I

Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Anaerobic power

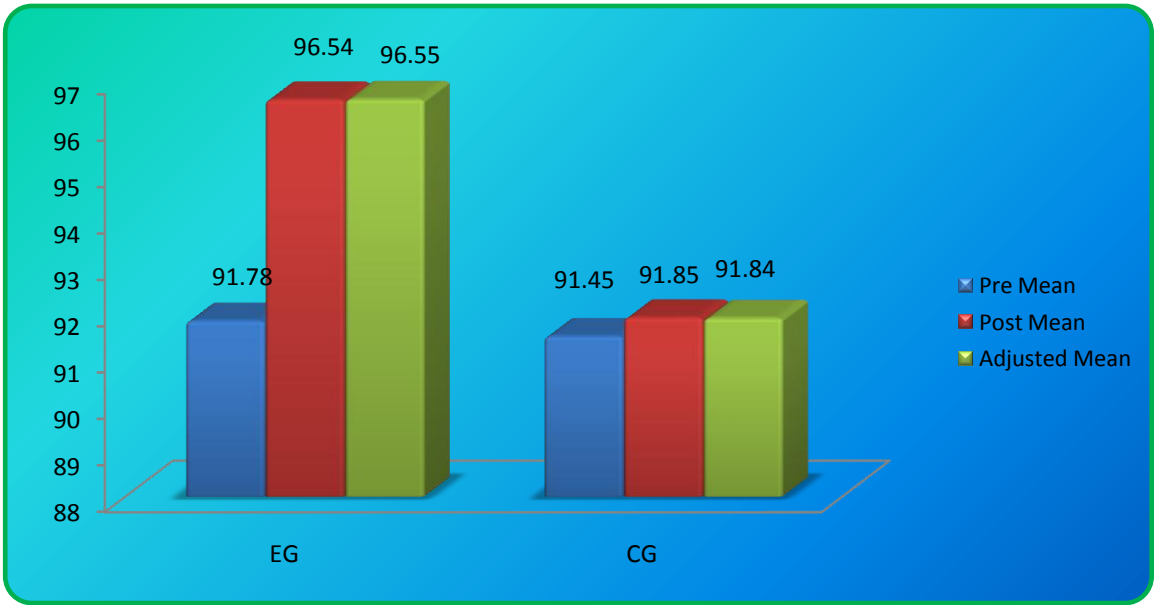


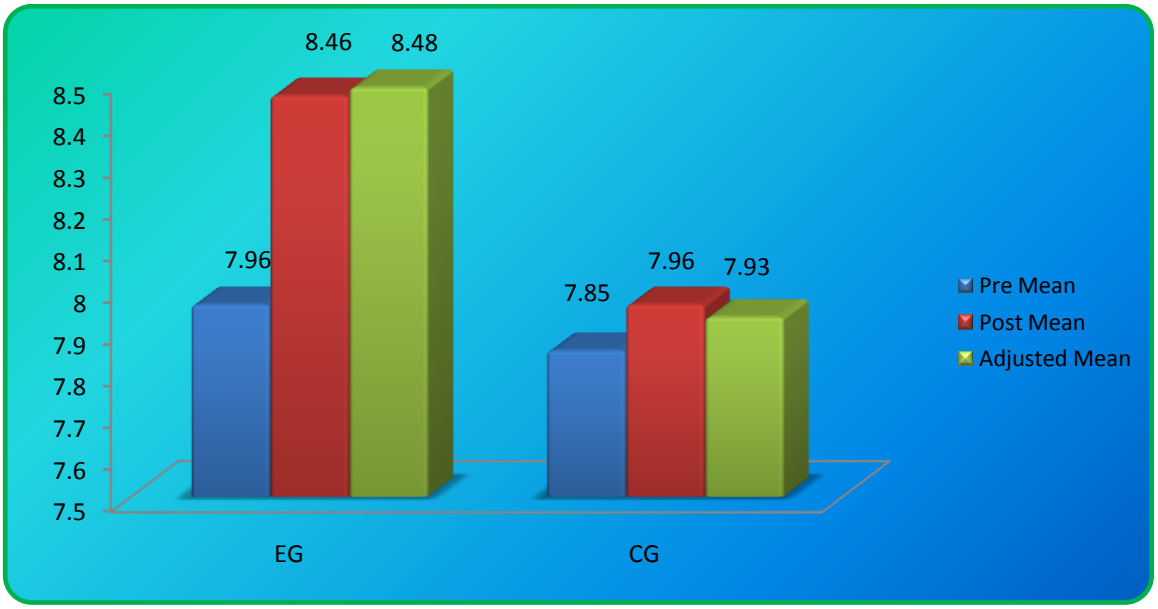
Table 2
ANCOVA between Experimental Group and Control Group on Elastic power of women players for Pre, Post and Adjusted Test

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	7.96	7.85	BG	2.54	1	2.54	1.30
			WG	54.40	28	1.94	
Post Test Mean	8.46	7.96	BG	65.70	1	65.70	38.11*
			WG	48.26	28	1.72	
Adjusted Post Mean	8.48	7.93	BG	63.12	1	63.12	35.87*
			WG	47.50	27	1.75	

*** Significant at 0.05 level.** **df: 1/27= 4.21**

Table 2 revealed that the obtained 'F' value of 35.87 was found to be significant at 0.05 level with df 1, 27 as the tabulated value of 4.21 required to be significant at 0.05 level. The same table indicated that there was a significant difference in adjusted means of elastic power of women players between experimental group and control group. The graphical representation of data has been presented in figure II.

Figure II
Comparisons of Pre – Test Means Post – Test Means and Adjusted Post – Test Means for Control group and Experimental Group in relation to Elastic power



Conclusion

1. The jump circuit core strength training and on court volleyball conditioning had shown significant improvement in anaerobic power among women players.
2. The jump circuit core strength training and on court volleyball conditioning had shown significant improvement in elastic power among women players.

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