



Effect of Plyometric Training on Upper Body Muscular Strength among College Level Basketball Players

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Received 30th October 2014, Accepted 27th December 2014

Abstract

The purpose of this study to find out the effect of plyometric training on upper body muscular strength among college level basketball players. To achieve the purpose of this study, 30 basketball players (women) from Annamalai University, Chidambaram, Tamilnadu, India were selected. Their age will range from 18 to 25 years. The selected subjects will be divided into two groups and consisted of fifteen subjects. Group 1 will undertake plyometric training for three days per week for the period of six weeks. Group 2 will act as control who will not participate any special training apart from their regular physical activities in their day to day life. The experimental group participated for a period of six weeks and the post-tests were conducted. The subjects were tested prior to and after the experimentation on upper body muscular strength. The variable to be used in the present study was collected from all subjects before they have to treat with the respective treatments. It was assumed as pre-test. After completion of treatment they were tested again as it was in the pre-test on all variables used in the present study. This test was assumed as post-test. Analysis of covariance (ANCOVA) was used to test the treatment effect of the training programmes on all the variables used in the study. It was observed that the six weeks of plyometric training have significantly improved the upper body muscular strength among college level basketball players.

Keywords: Basketball, Muscular Strength, College, Plyometric.

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Introduction

Plyometric is the term now applied to exercise's that have their roots in Europe, where they were first known simply as "jump training". Interest in this jump training increased during the early 1970s as East European athletes emerged as powers on the world sport scene. As the Eastern bloc countries began to produce superior athletes in such sports as track and field, gymnastics, and weightlifting, the mystique of their success began to center on their training methods. The actual term plyometric was first coined in 1975 by Fred Wilt, one of America's more forward thinking track and field coaches. Based on Latin origins, plyo + metrics is interpreted to mean "measurable increases. "These seemingly exotic exercises were thought to be responsible for the rapid competitiveness and growing superiority of Eastern Europeans in track and field events. Plyometric rapidly became known to coaches and athletes as exercises or drills aimed at linking strength with speed of movement to produce power. Plyometric training became essential to athletes who jumped, lifted, or threw. The necessity for power development in sports

needs no debate. Strength and conditioning specialists dedicate a great deal of time researching muscular power development techniques and implementing only those that produce significant results on athletes. Recent studies suggest that plyometric and/or resistance training exercises can increase vertical jump height, explosive power, and sprint speed by improving the production of peak muscle force and power.

Methodology

The purpose of this study to find out the effect of plyometric training on upper body muscular strength among college level basketball players. To achieve the purpose of this study, 30 basketball players (women) from Annamalai University, Chidambaram, Tamilnadu, India were selected. Their age will range from 18 to 25 years. The selected subjects will be divided into two groups and consisted of fifteen subjects. Group 1 will undertake plyometric training for three days per week for the period of six weeks. Group 2 will act as control who will not participate any special training apart from their regular physical activities in their day to day life. The experimental group participated for a period of six weeks and the post-tests were conducted. The subjects were tested prior to and after the experimentation on upper body muscular strength. The variable to be used in the present study was collected from all subjects before they

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test. Analysis of covariance (ANCOVA) was used to test the treatment effect of the training programmes on all the variables used in the study.

Table I. Computation of mean and analysis of covariance on upper body muscular strength of experimental and control groups

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	3.53	3.40	BG	0.13	1	0.13	0.16
			WG	23.33	28	0.83	
Post Test Mean	5.20	3.53	BG	20.83	1	20.83	19.35*
			WG	30.13	28	1.07	
Adjusted Post Mean	5.19	3.53	BG	20.54	1	20.54	18.44*
			WG	30.07	27	1.11	

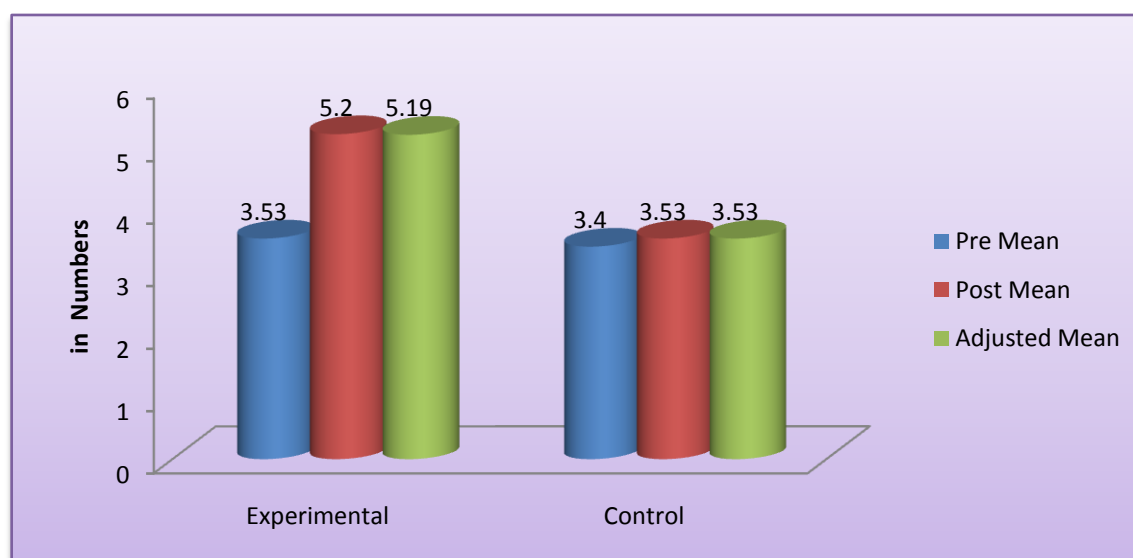
* Significant at 0.05 level

Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value on upper body muscular strength of experimental and control groups were 5.19 and 3.53 respectively. The obtained F-ratio of 18.44 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 upper body muscular strength. The above table also indicates that both pre and post test means of experimental and control groups differ significantly. The pre, post and adjusted mean values of upper body muscular strength of both experimental and control groups are graphically represented in the figure I.

Figure I. Show the mean values on upper body muscular strength of experimental and control groups



Conclusions

It was observed that the six weeks of plyometric training have significantly improved the upper body muscular strength among college level basketball players.

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