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Effect of plyometric training and plyometric training with protein supplementation on explosive power

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Abstract

The purpose of the study was to find out the effect of plyometric training and plyometric training with protein supplementation on explosive power. To achieve the purpose of this study, forty five intercollegiate players were selected from Manonmaniam Sundaranar University, Tamilnadu, India. The age, height and weight of the subjects ranged from 18 to 22 years, 160 to 172 centimetres and 60 to 72 kilograms respectively. They were divided into three groups; each group consisted of fifteen subjects. Group-I underwent plyometric training, group-II underwent plyometric training with protein supplementation and group-III acted as control who does not participate in any training programme. The data collected from the three groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). The experimental group had significant improvement on explosive power when comparing to the control group.

Keywords: Plyometric training, protein and explosive power.

Introduction

Sport coaching may be a systematic method extended over a protracted time. For the simplest results the system of coaching has got to be based mostly and performed on scientific facts and contours wherever it's impracticable to try to carry out, the coaching that has got to be supported the results thriving follow that has withstood the take a look at of your time sport. The word "plyometrics" was invented by Fred Wilt when observance Soviet sportsperson inure their events in track and field; he sensed this was an input to their victory (Wilt and Yessis, 1984) [3]. It's a deprived word to explain what take place, however it's since been recognized and is currently well recognized. Once Wilt educated of the work life form ended by Michael Yessis on Soviet (Russia) coaching ways, they hastily work together to assist circularize data on plyometrics.

Methodology

The purpose of the study was to find out the effect of plyometric training and plyometric training with protein supplementation on explosive power. To achieve the purpose of this study, forty five intercollegiate players were selected from Manonmaniam Sundaranar University, Tamilnadu, India. The age, height and weight of the subjects ranged from 18 to 22 years, 160 to 172 centimetres and 60 to 72 kilograms respectively. They were divided into three groups; each group consisted of fifteen subjects. Group-I underwent plyometric training, group-II underwent plyometric training with protein supplementation and group-III acted as control who does not participate in any training programme. The explosive power was assessed by vertical jump test. The data collected from the three groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA).

Training Programme

The group-I & II involved on plyometric training, Intensity starting from low to high @ 60 foot contact to @ 110 foot contact with 10 to 14 repetition and 2 to 3 sets followed from first week to twelve weeks. Additionally group – II had protein supplementation. The protein powder was supplied at 0.8 grams per kg of the body weight of subjects on the training days.

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Results

Table 1: Analysis of Covariance on Explosive Power of Experimental and Control Groups

	Plyometric Training	Plyometric Training with Protein Supplements	Control Group	SOV	Sum of Squares	df	Mean squares	'F' ratio
Pre-test Mean SD	37.26	37.40	37.53	B	0.53	2	0.26	0.25
	1.03	0.98	1.06	W	44.26	42	1.05	
Post-test Mean SD	41.60	42.60	37.46	B	222.17	2	111.08	62.26*
	0.98	1.80	1.06	W	74.93	42	1.78	
Adjusted Post-test Mean	41.66	42.60	37.40	B	228.62	2	114.31	72.42*
				W	64.71	41	1.57	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 2 and 42 is 3.23 and degree of freedom 2 and 41 is 3.23) *Significant at .05 level of confidence

The adjusted post-test means on explosive power of plyometric training, plyometric training with protein supplementation groups and control groups are 41.66, 42.60 and 37.40 respectively. The obtained 'F' ratio value of 72.42 on explosive power were greater than the required table value of 3.23 for the degrees of freedom 2 and 42 at 0.05 level of confidence. It is observed from this finding that significant differences exist among the adjusted post-test means of experimental and control groups on explosive power.

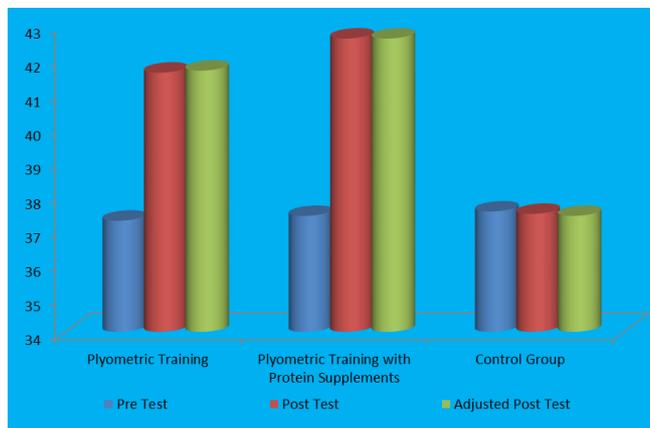


Fig 1: Cylinder Diagram Showing the Mean Value on Explosive Power of Experimental and Control Groups

Discussion and Findings

The result of the study showed that significant differences exist among the experimental and control groups on explosive power. Hence among the experimental group the plyometric training with protein supplementation group had high improvements on explosive power. The following studies are supporting my finding of the study.

Fabian, *et al.*, (2017) ^[1] investigated the effects of a plyometric training program, with or without beta-alanine supplementation, on maximal-intensity and endurance performance in female soccer players during an in-season training period. Result showed that plyometric training groups improved in explosive jumping. Ramirez, *et al.*, (2015) ^[2] examined the effects of plyometric training and creatine supplementation on maximal intensity exercise and endurance in female soccer players. Results showed that plyometric training groups improved jumps.

References

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