



INFLUENCE OF PLYOMETRIC TRAINING WITH VARIED INTENSITIES ON SPEED PERFORMANCES OF COLLEGE MEN ATHLETES

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ABSTRACT

Aim of this study was to find out the influence of Plyometric Training with varied intensities on speed performance of College men Athletes. The study was conducted on eighty College men athletes who were studying in G.K.M college OF Engineering at vandalur, Chennai, Tamilnadu, Subjects were randomly assigned equally into four groups, Group –I underwent Plyometric Training with 40% of Intensity Group(n=20), Group –II underwent Plyometric Training with 50% of Intensity Group(n=20), Group –III underwent Plyometric Training with 60% of Intensity Group(n=20) and Group II (n=15) acted as control Group. The data was collected from the Experimental and Control Groups were statically examined with Analysis of covariance (ANCOVA). If F-ratio was found significance Scheffe's post hoc test was applied to test the significant difference between paired means of the groups. Speed showed significant difference between the groups..

Keywords

Speed

Plyometric Training

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INTRODUCTION

Sports training are done for improving sports performance. The sports performance, as any other type of human performance, is not the product of one single system or aspect of human personality; on the contrary, it is the product of the total personality of sports persons.

Sport training is systematic process extending over a long period. For best results the system of training has to be based and conducted on scientific facts and lines (Singh, 1991).

Plyometric type exercises have been used successfully by many athletes as a method of training to enhance power. In order to realize the potential benefits of plyometric training the stretch-shortening cycle must be invoked. This requires careful attention to the technique used during the drill or exercise. The rate of stretch rather

than the magnitude of stretch is of primary importance in plyometric training. In addition, the coupling time or ground contact time must be as short as possible. The challenge to you as coach or athlete is to select or create an exercise that is specific to the event and involves the correct muscular action. As long as you remember specificity and to ensure there is a pre stretch first then the only limit is your imagination.

Plyometric training had a large effect on improving the ability to run and jump. Preliminary evidence suggests plyometric training also had a large effect on increasing kicking distance, balance, and agility. The current evidence suggests that a twice a week program for 8-10 weeks beginning at 50-60 jumps a session and increasing exercise load weekly results in the largest changes in running and jumping

performance. An alternative program for children who do not have the capability or tolerance for a twice a week program would be a low-intensity program for a longer duration. The research suggests that plyometric training is safe for children when parents provide consent, children agree to participate, and safety guidelines are built into the intervention. (Johnson et al, 2011)

Rubley et al (2011) measured the effects of low-frequency, low-impact plyometric training on vertical jump (VJ) and kicking distance in female adolescent soccer players. These results provide strength coaches with a safe and effective alternative to high-intensity plyometric training. Based on these findings, to increase lower-body power resulting in increased VJ and kicking distance, strength coaches should implement once-weekly, low-impact plyometric training programs with their adolescent athletes.

METHODOLOGY

The study was conducted on eighty College men athletes (N=80) who were studying G.K.M college OF Engineering at vandallour, Chennai, Tamilnadu, India. Subjects were

randomly assigned equally into four groups, Group –I underwent Plyometric Training with 40% of Intensity Group(n = 20), Group –II underwent Plyometric Training with 50% of Intensity Group(n = 20), Group –III underwent Plyometric Training with 60% of Intensity Group(n = 20)and Group II (n=15) acted as control Group. The training period was limited to 12 weeks. All the groups were tested on Speed prior to and immediately after the training programme. Speed was assessed 50 Meters Run Test.

RESULTS AND DISCUSSION

The data collected from the Experimental group and Control group prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. The level of significance was fixed at .05 level of confidence to test the 'f' ratio obtained by analysis of covariance.

TABLE-I
COMPUTATION OF ANALYSIS OF COVARIANCE OF SPEED
(Scores in Seconds)

	Plyometric Training with 40% of Intensity Group	Plyometric Training with 50% of Intensity Group	Plyometric Training with 60% of Intensity Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Pre Test Mean	7.99	7.96	7.93	7.82	Between	0.22	3	0.07	1.40
					Within	3.42	76	0.05	
Post Test Mean	7.88	7.65	7.44	7.86	Between	1.37	3	0.46	11.50*
					Within	3.29	76	0.04	
Adjusted Post Test Mean	7.81	7.63	7.59	7.97	Between	1.47	3	0.49	24.50*
					Within	1.73	75	0.02	
Mean Diff	-0.1	-0.31	-0.49	-0.04					

*Significant at 0.05 Level.

Table F-ratio at 0.05 level of confidence for 3 and 76 (df) =2.73, 3 and 75(df) =2.73 .

Table I shows that the pre test mean value of Explosive Power for Plyometric Training with 40% of Intensity Group, Plyometric Training with 50% of Intensity Group, Plyometric Training with 60% of Intensity Group and Control groups are 7.99, 7.96, 7.93 and 7.82 respectively. The obtained F-ratio of 1.40 is not significant at 0.05 level of confidence.

The differences between the post test means for Plyometric Training with 40% of Intensity Group, Plyometric Training with 50% of Intensity Group, Plyometric Training with 60% of Intensity Group and Control groups are 7.88, 7.65, 7.44 and 7.85 respectively. The obtained F-ratio of 11.50 is significant at 0.05 level of confidence.

The differences between the adjusted post test means for Plyometric Training with 40% of

Intensity Group, Plyometric Training with 50% of Intensity Group, Plyometric Training with 60% of Intensity Group and Control groups are 7.81, 7.63, 7.59 and 7.97 respectively. The obtained F-ratio of 24.50 is significant at 0.05 level of confidence.

Since significant improvements are recorded, the results are subjected to post hoc analysis using Scheffe's Confidence Interval test. The results are presented in Table II.

TABLE II
SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON SPEED

Plyometric Training with 40% of Intensity Group	Plyometric Training with 50% of Intensity Group	Plyometric Training with 60% of Intensity Group	Control Group	MD	C.I
7.81	7.63			0.18*	0.14
7.81		7.59		0.22*	0.14
7.81			7.97	0.16*	0.14
	7.63	7.59		0.04	0.14
	7.63		7.97	0.34*	0.14
		7.59	7.97	0.38*	0.14

*** Significant at 0.05 level.**

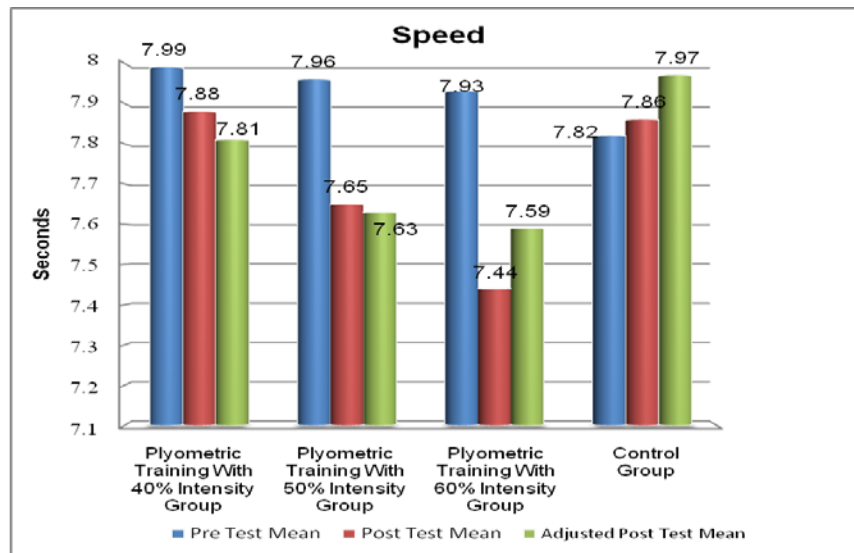
The Table II shows that the means difference between Plyometric training with 40% of Intensity Group values and Plyometric training with 50% of Intensity Group values, Plyometric training with 40% of Intensity Group values and Plyometric training with 60% of Intensity Group values, Plyometric training with 40% of Intensity Group values and Control Group values, Plyometric training with 50% of Intensity Group values and Control Group values, Plyometric training with 60% of Intensity Group values and Control Group values are 0.18, 0.22, 0.16, 0.34 and 0.38 respectively on Speed of Plyometric training with 60% of

Intensity Group, which are greater than the confidence interval value 0.14 at 05 level of confidence. The values of Plyometric training with 50% of Intensity Group and Plyometric training with 60% of Intensity Group showed insignificant.

The pre, post tests and adjusted mean values of Plyometric training with 40% of Intensity Group, Plyometric training with 50% of Intensity Group, Plyometric training with 60% of Intensity Group and Control Group on Speed were graphically represented in the Figure

Figure-1

The mean values of Experimental Groups and Control Group on Speed



CONCLUSION

From the analysis of the data, the following conclusions were drawn.

1. Three experimental groups namely Plyometric training with 40% of Intensity Group, Plyometric training with 50% of Intensity Group, Plyometric training with 60% of Intensity Group have achieved significant improvement on Speed.

2. The Plyometric training with 60% of Intensity Group improved significantly on Speed, when compared to the Plyometric training with 50% of Intensity Group, Plyometric training with 50% of Intensity Group and control group

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