



Effect of Plyometric Training on Selected Physical Fitness Variables Among College Men Students

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Abstract

The purpose of the study was designed to examine the effect of plyometric training on explosive power and elastic power of college men students. For the purpose of the study, thirty men students from the colleges in Karur district were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Plyometric training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables namely explosive power and elastic power were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using vertical jump and bunny hops respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study showed that there was a significant difference between Plyometric training group and control group on explosive power and elastic power. And also it was found that there was a significant improvement on explosive power and elastic power due to twelve weeks of Plyometric training.

Keywords: Plyometric training, explosive power, elastic power, college men students.

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Introduction

Plyometric training can take many forms, including jump training for the lower extremities and medicine ball exercises for the upper extremities. Each jump training exercises were classified according to the relative demands they placed on the athlete. All the exercises are progressive in nature, with a range of low to high intensity in each type of exercise. The classifications of exercises are jumps in place; standing jumps; multiple hops and jumps, bounding, box drills and depth jumps. In plyometrics, the type of exercises performed controls intensity. It ranges from simple tasks (low intensity) to highly complex (high intensity) stressful exercise. The intensity of plyometric exercises can be increased by raising the platform height for depth jumps, or simply by aiming at covering a greater distance in longitudinal jumps.

Methodology

The purpose of the study was designed to examine the effect of Plyometric training on explosive power and elastic power of college men students. For the

purpose of the study, thirty men students from the colleges in Karur district were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Plyometric training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables namely explosive power and elastic power were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using vertical jump and bunny hops respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate.

Analysis of the Data

Explosive power

The analysis of covariance on explosive power of the pre and post test scores of plyometric training group and control group have been analyzed and presented in Table 1.

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Table 1. Analysis of covariance of the data on explosive power of pre and post tests scores of plyometric training and control groups

Test	Plyometric Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	40.47	40.13	Between	0.83	1	0.83	0.03
S.D.	5.41	5.56	Within	837.47	28	29.91	
Post Test							
Mean	46.53	40.27	Between	294.53	1	294.53	7.04*
S.D.	5.15	5.25	Within	1171.20	28	41.83	
Adjusted Post Test							
Mean	46.37	40.43	Between	263.94	1	263.94	146.51*
			Within	48.64	27	1.80	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 1 shows that the adjusted post-test means of Plyometric training group and control group are 46.37 and 40.43 respectively on explosive power. The obtained “F” ratio of 146.51 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on explosive power. The results of the study indicated that there was a significant difference between the adjusted

post-test means of Plyometric training group and control group on explosive power.

Elastic power

The analysis of covariance on elastic power of the pre and post test scores of Plyometric training group and control group have been analyzed and presented in Table 2.

Table 2. Analysis of covariance of the data on elastic power of pre and post tests scores of plyometric training and control groups

Test	Plyometric Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	4.16	4.14	Between	0.0041	1	0.004	0.20
S.D.	0.13	0.11	Within	0.5849	28	0.021	
Post Test							
Mean	4.41	4.16	Between	0.4763	1	0.476	14.38*
S.D.	0.14	0.13	Within	0.9276	28	0.033	
Adjusted Post Test							
Mean	4.41	4.17	Between	0.4181	1	0.418	54.34*
			Within	0.2078	27	0.008	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 2 shows that the adjusted post-test means of Plyometric training group and control group are 4.41 and 4.17 respectively on elastic power. The obtained “F” ratio of 54.34 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on elastic power. The results of the study indicated that there was a significant difference between the adjusted post-test

means of Plyometric training group and control group on elastic power.

Conclusions

1. There was a significant difference between Plyometric training group and control group on explosive power and elastic power.

2. And also it was found that there was a significant improvement on selected criterion variables such as explosive power and elastic power due to Plyometric training.

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