



ISSN: 2456-0057
IJPNE 2017; 2(1): 139-141
© 2017 IJPESH
www.journalofsports.com
Received: 22-11-2016
Accepted: 23-12-2016

Dr. Ashish Phulkar
Assistant Professor,
LNIPE, Gwalior,
Madhya Pradesh, India

Effect of circuit resistance training and aerobic circuit resistance training on leg explosive power of male football players

Dr. Ashish Phulkar

Abstract

The study was designed to investigate the effect of circuit resistance training and aerobic circuit resistance training on leg explosive power of male football players. 45 football players were selected randomly from affiliated colleges of Thiruvalluvar University, Vellore as subjects. They were divided into two equal groups namely Experimental Group I, II and control group. In a week 5 days the Group - I underwent circuit resistance training, Group - II underwent Aerobic circuit resistance training. Group III acted as control that did not participate in any special training programme apart from their regular activities. Leg explosive power was assessed by vertical jump test before and after the training period of 12 weeks. Study revealed that leg explosive power significantly improved due to the influence of circuit resistance training and aerobic circuit resistance training on male football players.

Keywords: Leg explosive power, aerobic circuit resistance training, ANCOVA

1. Introduction

Circuit resistance training usually consists of several circuits of resistance training with a minimal amount of rest between the exercise stations (15-20sec). Alternatively, instead of rest, one can have the subjects perform 1 to 3 min of aerobic exercise between each station. The aerobic stations may include activities such as stationary cycling, jogging in place, rope skipping, stair climbing bench stepping, and rowing. This modification of the circuit is known as aerobic circuit resistance training. In this study an attempt is made to find out the effect of circuit resistance training and aerobic circuit resistance training on leg explosive power of male football players.

2. Methodology

45 football players were selected randomly from Affiliated College of Savitribai Phule Pune university, Pune as subjects. Their age ranged from 18 to 21 years. Criterion variable chosen was Leg explosive power. During the training period, the experimental groups underwent their respective training programme. Experimental groups namely, Experimental group - I circuit resistance training, experimental group - II, aerobic circuit resistance training and group - III acted as a control group, underwent their respective training programme three alternative days per week for 12 weeks. The subjects of group - I and II underwent their respective training programme as per schedules under the supervision of qualified football coaches (SDAT) along with researcher who provided motivation, advice and encouragement to the players. Each day the training schedule was conducted only in the morning session that lasted for 60 minutes. Prior and after every training session players of experimental groups had 15 min. of warm-up and 15 min. of warm down exercises involving jogging, mobility and stretching exercises.

Correspondence
Dr. Ashish Phulkar
Assistant Professor,
LNIPE, Gwalior,
Madhya Pradesh, India

3. Results and Discussion

Table 1: Computation of analysis of covariance of pre-test post test and adjusted post test on explosive power of experimental group i.e. experimental group ii and control group (scores in centimeters)

test	Exp. Group I	Exp. Group II	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	F Value
Pretest μ	26.60	26.80	26.73	Between	0.3111	2	0.1556	0.18
S.D.	0.95	0.75	1.00	Within	36.9333	42	0.4294	
Post test μ	26.73	25.80	23.80	Between	67.3778	2	33.6889	47.59*
S.D.	0.77	0.75	0.91	Within	29.7333	42	0.7079	
Adjusted Post test Mean	26.82	25.73	23.78	Between	71.0242	2	35.5143	271.40*
				Within	5.3651	41	0.1309	

* Significant at .05 level table values required at .05 level for 2 and 42 and 2 and 41 are 3.22 and 3.23.

Table I shows that Explosive power. The pre-test means of explosive power were 26.60 for experimental group I, 26.80 for experimental group II and 26.73 for control group. the obtained ‘‘F’’ ratio of 0.18 was lesser than the table F-ratio 3.22. Hence the pre-test was not significant at 0.05 level for the degrees of freedom 2 and 42. The post-test means of explosive power were 26.73 for experimental group I, 25.80 for experimental group II and 23.80 for control group. the obtained ‘‘F’’ ratio of 47.59 was higher than the table F-ratio 3.22. Hence the post-test was significant at 0.05 level for the

degrees of freedom 2 and 42. The adjusted post-test means of Explosive power were 26.82 for experimental group I, 25.73 for and experimental group II and 23.78 for control group. the obtained ‘‘F’’ ratio of 271.40 was higher than the table F-ratio 3.23. Hence the adjusted post-test was significant at 0.05 level of confidence for the degrees of freedom 2 and 41. Since the obtained ‘‘F’’ ratio for adjusted post test means was found to be significant, the Scheffe’s test was used to find the paired mean differences and is presented in Table I (a).

Table 1(a): Ordered Scheffe’s post hoc test mean differences on explosive power among groups (cm.)

Experimental Group I	Experimental Group II	Control Group	Mean Differences	Confidence Interval Value
26.82	25.73	-	1.09*	0.338
26.82	-	23.78	3.04*	0.338
-	25.73	23.78	1.95*	0.338

Significant at .05 level of confidence

Table - I (a) shows the scheffe’s post-hoc test results. The ordered adjusted final mean difference for explosive power of experimental groups I, II and control group were tested for significance at 0.05 level of confidence against confidential interval value. The mean differences between experimental

group I and experimental group II, experimental group I and control group and experimental group II and control group were 1.09, 3.04 and 1.95 respectively and it was seen to be greater than the confidential interval value of 0.338. Hence the above comparisons were significant.

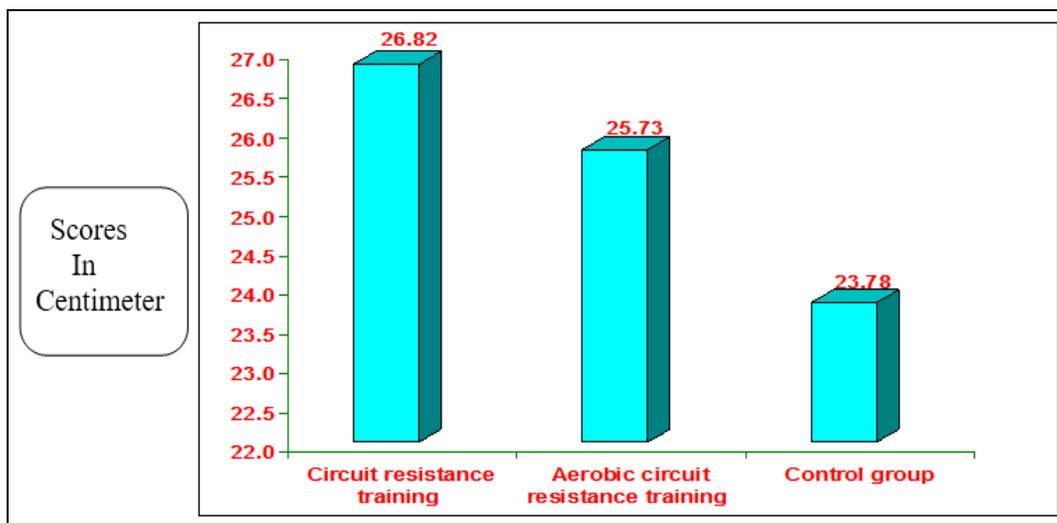


Fig: Adjusted post test mean values of circuit resistance training, aerobic circuit resistance training and control group on explosive power

4. Conclusions: Circuit resistance training and aerobic circuit resistance training produced significant improvement on leg explosive power greater than control group of college male football players. Explosive power highly favored to circuit resistance training greater than aerobic circuit resistance training and control group of college male football players to that of team games.

5. References

- Jullien Hugues, Bisch Cécile, Largouët Nasser, Manouvrier Christophe, Carling Christopher J, Amiard Valérie. Does A Short Period of Lower Limb Strength Training Improve Performance in Field-Based Tests of Running and Agility in Young Professional Soccer Players? Journal of Strength & Conditioning Research.

2008; 22(2):404 -411.

2. Wong Pui-lam, Chamari Karim, Wisløff Ulrik. Effect of 12-Week On-Field Combined Strength and Power Training on Physical Performance Among U-14 Young Soccer Players Journal of Strength & Conditioning Research 2010; 24(3):644-652.
3. Hermassi Souhail, Chelly Mohamed Souhail, Tabka Zouhair, Shephard Roy J, Chamari Karim. 2011.
4. Taskin Halil. Effect of Circuit Training on the Sprint-Agility and Anaerobic Endurance. Journal of Strength & Conditioning Research. 2009; 23(6):1803-1810.