THINK INDIA JOURNAL

ISSN:0971-1260
Vol-22- Issue-14-December-2019

Effect Of Plyometric Training ONS Elected Biomoter Abilities Among College Athletes

Dr. P. KUMARAVELU

Assistant Professor, Department of Physical Education, Tamilnadu Physical Education and Sports University, Chennai, Tamilnadu, India.

ABSTRACT

The purpose of the study was to find out the effect of plyometric training on bio-motor abilities such as speed and leg strength among college athletes. To achieve this, thirty male athletes studying in the Bharath Niketan College of Engineering, Andipatti, Tamilnadu, in the age group of 18 to 25 years were selected as subjects at random with their consent. The selected subjects were divided into two equal groups of fifteen subjects each namely plyometric training group and control group. The selected criterion variables were assessed using standards tests and procedures, before and after training regimen. Speed and leg strength were tested before [pre] and after [post] the training program for both experimental and control group by using 50 meters dash and leg llft with dynamometer respectively. The selected subjects had undergone the plyometric training for eight weeks, with three days per week in alternate days..after 10 to 15 minutes of warm-up the subjects underwent their respective plyometric training programmed and the subjects performed 6to 12 repetitions of plyometric exercises namely hopping, hurdles exercises, depth jumps, medicine ball throws, with a recovery distance of 20 to 40 meters or one to three minutes between repetitions. The control group did not participate in any specialized training during the period of study. The result of the study indicates that the plyometric training group had significantly improved the selected dependent variables namely speed and leg strength.

KEYWORDS: Plyometric Training, Bio-motor, Athletes.

INTRODUCTION

Sports training aims at improving performance necessary for excellence in sports. Therefore the training methods should include all required performance factors for achieving higher results. Coach and the players should be aware of the physical fitness that is to be developed through training for the optimum possible performance.

Plyometric training provides a mechanism and method to train for the optimum relationship between speed and strength. Improving playing speed depends on a complete approach to conditioning including strength training, plyometric drills and improving technique and form. For athletes to perform at their best, speed strength and endurance need to be develop to optimal levels. The results of these researches, new techniques are being adopted for training high-level sportsman.

In establishing the aim of plyometric training we must proceed from the definition of the general concept of training. We have stated that plyometric training is a means of achieving higher standard performance in athletics. From the foregoing it may be seen that the aim of plyometric training is to raise the special conditions: techniques, tactics and physical condition as well as the spiritual attributes indispensable in effectively participating in sports to the highest possible level.

ISSN:0971-1260
Vol-22- Issue-14-December-2019

METHODOLOGY

The purpose of the study was to find out the effect of plyometric training on bio-motor abilities such as speed and leg strength among college athletes. To achieve this, thirty male athletes studying in the Bharath Niketan College of Engineering, Andipatti, Tamilnadu, in the age group of 18 to 25 years were selected as subjects at random with their consent. The selected subjects were divided into two equal groups of fifteen subjects each namely plyometric training group and control group. The selected criterion variables were assessed using standards tests and procedures, before and after training regimen. Speed and leg strength were tested before [pre] and after [post] the training program for both experimental and control group by using 50 meters dash and leg llft with dynamometer respectively. The selected subjects had undergone the plyometric training for eight weeks, with three days per week in alternate days..after 10 to 15 minutes of warm-up the subjects underwent their respective plyometric training programmed and the subjects performed 6to 12 repetitions of plyometric exercises namely hopping, hurdles exercises, depth jumps, medicine ball throws, with a recovery distance of 20 to 40 meters or one to three minutes between repetitions. The control group did not participate in any specialized training during the period of study.

EXPERIMENTAL DESIGN AND STATISTICAL PROCEDURE

The experimental design used for the present investigation was random group design involving 30 subjects for training effect. Analysis of covariance [ANCOVA] was used as a statistical technique to determine the significant difference if any, existing between pretest and posttest data on selected depend variables separately and presented in table-I.

TABLE I
ANCOVA OF SPEED AND LEG STRENGTH

Variables	Test	Plyometric Training group	Control group	Source of variance	SS	df	Mean square	"f" Ratio
Speed	Pre test mean SD	7.24 0.26	7.17 0.28	Between Within	0.0374 2.017	1 28	0.0374 0.0720	0.520
	Post test mean SD	6.69 0.22	7.12 0.39	Between Within	1.391 2.821	1 28	1.391 0.101	13.807
	Adjusted posttest mean	6.65	7.15	Between Within	1.823 1.014	1 27	1.823 0.0375	48.517
Leg Strength	Pre test mean SD	88.8 3.39	86.26 4.06	Between Within	48.133 391.33	1 28	48.133 13.976	3.44
	Post test mean SD	93.23 2.97	86.73 4.33	Between Within	307.2 386.67	1 28	307.2 13.81	22.25
	Adjusted		86.73	Between	119.04	1	119.04	

ISSN:0971-1260
Vol-22- Issue-14-December-2019

	posttest mean	**93.13**		**Within**	**97.374**	**27**	**3.606**	**33.007**
				within	**0.446**	**27**	**0.0165**	

RESULTS

The pretest mean of plyometric training group and control group on speed [7.24+0.26Vs 7.17+ 0.28] resulted in a 'F' ratio of 0.52. the posttest mean of plyometric training group and control group [6.69+ 0.22 Vs 7.12+0.39] resulted in a 'F' ratio of 13.807. the adjusted posttest mean of plyometric training group and control group [6.65 Vs 7.15] resulted in a 'F' ratio of 48.517. the results of the study indicate that there was a significant difference between plyometric training group and control group on speed.

The pretest mean of plyometric training group and control group on leg strength [88.8+3.39 Vs 86.26+4.06] resulted in a 'F' ratio of 3.44. the posttest mean of plyometric training group and control group on leg strength [93.13+2.97 Vs 86.73+4.33] resulted in a 'F' ratio of 22,25. The adjusted posttest mean of plyometric training group and control group on leg strength [93.13 Vs 86.73] resulted in a' F' ratio of 33,007. The results of the study indicate that there was a significant difference between plyometric training group and control group on leg strength.

DISCUSSION

The result of the study indicates that the plyometric training group had significantly improved the selected dependent variables namely speed and leg strength. However , control group did not show any improvement on the selected variables as it was not involved in any of the specific training means. The result of the study in consonance with the findings of plyometric training has produced significant improvement on speed and leg strength [john M. copper, 1959]. The plyometric training involving countermovement and loaded jump-squat training may be more effective for enhancing sports speed in elite athletes [Cronin, J.B and harness L.T.,2005], the findings of plyometric as one of the training method to improve motor fitness variables for the athletes [Walter Winter's Bottom, 1954]. It is inferred from the results of the present study that all the dependent variablwere significantly improved due to the influence of plyometric training programmed.

REFERENCE

1. Cronin, J.B Hanse, K.T, Strength and power predictors of sport speed.J.strength cond. Res., 19(2)(2005) ,pp-349-57.
2. Fredrick haffield c. and Michael yesses, plyometric training achieving power and explosiveness in sports [fitness system],1986.
3. Hohn w. bunn, scientific principles of coaching, [2nd ed., Englewood cliffs, new jersey: prentice hall, inc.,, 1972].p.125.
4. John m. cooper, track and field for coach and athletes, [Englewood cliffs:N.J.prentice hall, Inc., 1959],pp162-163.
5. Prothema's and Burkard, 'the effects of plyometric training drills on the physical strength gains of collegiate football player's. national strength and conditioning association journal, 2, [1990],pp.13-15.
6. Suresh, Kumar M. (2019). Comparative Analysis of Core Strength among Football Hockey and Kabaddi Players. *Think India Journal, 22,14, 1261-1264.*
7. Walter winter bottom, soccer coaching, [2nd de. London: the naldrett press, 1954], pp.54-67.

