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Effect of plyometric training on reaction time of male footballers

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Abstract

The purpose of the present study was to determine Efficacy of plyometric training on reaction time of male Footballers. The subjects were 10 male footballers of 18 to 27 years of age group from Akal College of Physical Education, Mastuana Sahib. The subjects were randomly selected and were assigned to the one experimental group (Plyometric training). The training was given for a period of 6 weeks. The experimental groups were trained thrice a week. The performances of reaction time of the subjects were taken by the Nelson foot reaction test. The Pre and Post- test were conducted to collect the data. After the collection of data, the t- test was used to identify any significant differences between the before and after training. The level of significance was 0.05.

Keywords: Plyometric training, reaction time experiment group, and footballs players

Introduction

Success in many sports depends heavily upon the athlete's explosive leg power and muscular strength. In jumping, throwing, track and field events and other activities, the athlete must be able to use strength as quickly and forcefully as possible. This display comes in the form of speed-strength or power (Yessis, & Hatfield 1986). Power represents the amount of work a muscle can produce per unit of time. An increase in power gives the athlete the possibility of improved performance in sports in which the improvement of the speed-strength relationship is sought.

Training is not a recent discovery. In ancient times, people systematically trained for military and Olympic endeavors. Today athletes prepare themselves for a goal through training.

It was not until the 1970's that plyometric exercises or "jump training began to gain popularity in the games. Up until then, jump training was used primarily in eastern European countries by the top athletes in sports like track and field, weightlifting, and gymnastics. A coach by the name of Veroshanski was among one of the first to publish a series of jumping drills. Originally the word "plyometric" comes from two Greek words, "plio" means "more" and "metric" meaning "to measure", or more accurately "measurable increase." The term plyometric was coined in 1975 by one of America's great track coaches, Fred Wilt.

Plyometric training is a type of exercise designed to increase muscle power. Athletes, basketball players, footballers and sometimes boxers incorporate plyometric training into their training schedule, with the aim of adding additional explosive power to their game. Athletes can gain huge advantage using plyometric training, so long as the exercises are done safely. Muscles move because of contractions and athletes have noticed that when the muscle is contracting while being stretched, the contraction is much more powerful. Other things these results in athletes running faster, boxers punching harder and basketball players jumping higher. The main objective of a plyometric training program is to shorten the time between muscle stretching and contraction. Plyometric training includes high intensity drills such as jumps hops and bounds which results in explosive bursts of power and speed. To sum the plyometric training stretches muscles while they contract. When properly done, these workouts will increase speed, power and vertical jump. Basketball plyometric are a form of lower-body training exercises that can help basketball players to improve their jumping ability as well as their ability to move explosively.

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Procedure and Methodology

The present study was entitled to determine Effect of plyometric training on reaction time of Footballers. The subjects were 10 male footballers of 18 to 27 years of age group from Akal College of Physical Education, Mastuana Sahib. Following plyometric exercises were selected for the purpose of the study.

Table 1: Plyometric Training Programme

Upper body	Lower body
Overhead throw	Jump To Box
Squat Throw	Depth Jump
Plyometric-Push-up	Squat Jump
Overhead Back Toss	Tuck Jump

The subjects were randomly selected and were assigned to the one experimental group. The training was given for a period of 6 weeks. The experimental groups were trained thrice a week. The performances of reaction time of the subjects were taken by the Nelson foot reaction test. The Pre and Post-test were conducted to collect the data. After the collection of data, the t- test was used to identify any significant

differences between the before and after training. The level of significance was 0.05.

Results of the Study

Table 2: Mean and Standard Deviation Plyometric Training on Reaction Time of Male Footballers.

Group	Number	Mean	S.D.	't' Value
Experimental (Pre-test)	10	0.22	0.021	6.25
Experimental (Post-test)	10	0.21	0.01	

$t_{.05} (9) = 2.14$

The means of reaction time of pre-test and post-test scores of experiment group were 0.22 and 0.21 respectively. The calculated 't' was 6.259. The calculated t value was more than the table t value at 0.05 level of significance. $Cal. t (=6.25) > tab t_{.05} (9) (= 2.14)$, Hence it may be concluded that six week Plyometric training programme had significant improvement in reaction time. On the basis of the result it was accomplished that Plyometric training had significant impact in increasing the Reaction time of the experimental group. Therefore the hypothesis was rejected. Since there was significant effect of Plyometric training on reaction time of footballers.

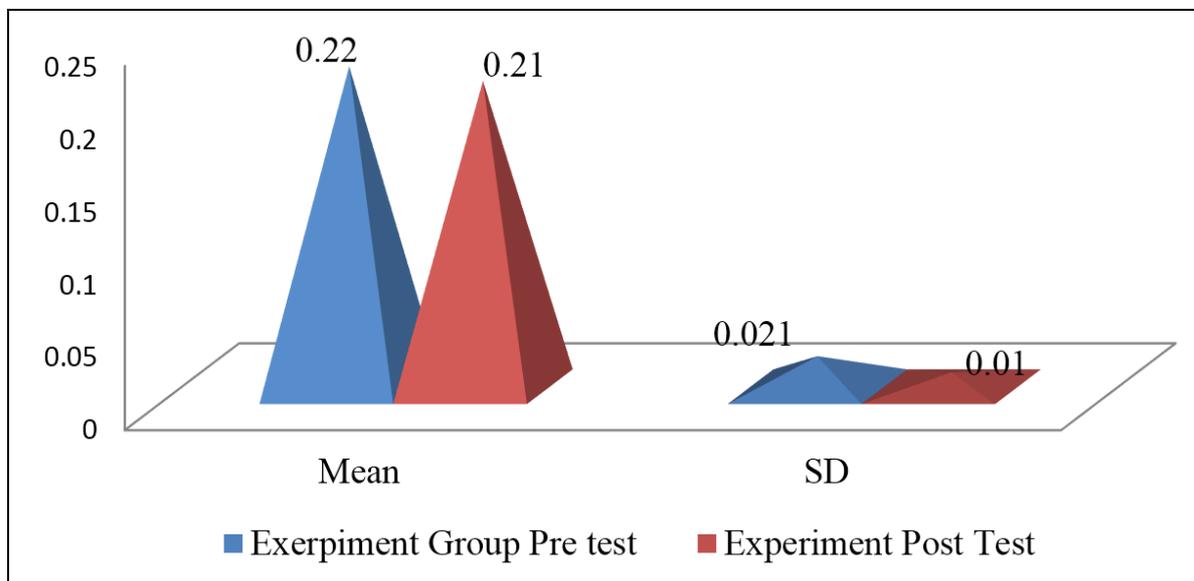


Fig. 1: Mean and standard deviation plyometric training on reaction time of footballers.

Conclusion

The study and their implication in training of male footballers. In this study, purpose sees the effect of plyometric training on Reaction time of footballers. After the six weeks plyometric training compares the pretest with posttest. The results show that plyometric training is more effective. The plyometric training of six week training duration leads to a significant effect on the reaction time of male footballers. So, in case of reaction time, plyometric training was found to effective.

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