

ISSN: 2456-4419

Impact Factor: (RJIF): 5.18

Yoga 2018; 3(1): 34-36

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www.theyogicjournal.com

Received: 12-03-2018

Accepted: 14-04-2018

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Effect of plyometric training on agility among college men

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Abstract

The main latitude of this training is to increase participant work and skill competences and to develop strong motor qualities. This study was designed to find out the influence of plyometric training on agility among college men. For this purpose, twenty four (n=24) male students from the affiliated colleges of Bangalore University, Bengaluru during the year 2016-17 were selected as subjects at random and the selected subjects were divided randomly into two groups namely experimental and control groups of twelve (n=12) participants each. The age of the selected subjects ranged from 18 to 25 years. The training period was limited to twelve weeks and for three days per week. The plyometric training was selected as independent variable and agility was selected as dependent variable. All the participants were tested two days before and immediately after the experimental period on the selected dependent variable. The obtained data from the experimental and control groups before and after the experimental period were statistically analyzed with dependent 't'-test and analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 level for all the cases to test the hypothesis. The results of the study indicated that there was significant difference between experimental and control groups on the development of agility. Hence, the plyometric training had influence on agility among college men.

Keywords: Plyometric training, agility and college men

Introduction

Now the sports-man have been able to give outstanding performance because of involvement of new scientifically substantiated training methods and means of execution of sports exercise such as sports techniques and tactics, improvement of sports pasture, and equipment, as well as other components and condition of the system of sports training (Singh, 1991) [8].

Training is a systematic process of repetitive progressive exercise of work involving learning and acclimatization. Training is the net summation of adaptations induced by regular exercise. Students on the exercises with reference to fitness state that it enables to tolerate more effectively, subsequently stresses of similar nature. The process of stressing the sportsman and his adaptation to this stress is called sports training and it is the means by which sports performance is improved. Training programme needs to also include periods of regeneration and recovery between training lessons, which is a necessary factor to ensure continuous improvement in the athlete's performance (Dick, 1992) [2].

Agility or nimbleness is the ability to change the body's position efficiently, and requires the integration of isolated movement skills using a combination of balance, coordination, speed, reflexes, strength, endurance and stamina. In sports, agility is often defined in terms of an individual sport, due to it being an integration of many components each used differently (specific to all of sorts of different sports). Sheppard and Young (2006) [7] defined agility as "a rapid whole body movement with change of velocity or direction in response to a stimulus".

Methods

Subjects

The purpose of the study was to investigate the Influence of plyometric training on agility among college men. To achieve the purpose of the study, twenty four (n=24) male students were selected randomly from the affiliated colleges of Bangalore University, Bengaluru during the year 2016-17 as subjects. The age of the subjects was ranged from 18 to 25 years.

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The selected subjects were divided into two groups such as group-I underwent plyometric training and group-II acted as control group.

Variables

Training is not a recent discovery in ancient times, people systematically trained for military and Olympic endeavours. Today athletes prepare themselves for a goal through training. Competitive games and sports have expected great importance in India and there is increasing demand that a specific plyometric training for various sports should be constructed for all levels. Hence, the plyometric training three day per week for twelve weeks was selected as independent and one of the motor quality agility was selected as dependent variables for this study. The agility was measured by shuttle run and unit of measurement in seconds.

Training Programme

Before constructing the training programme, a pilot study was conducted to find out the initial capacity of the subjects in order to fix the training intensity.

The group-I performed plyometric training and group-II acted as control and did not participate any organized training other than their regular routine work. The duration of the training programme was three alternate days in a week for twelve weeks.

The plyometric training programme comprised with six exercises for two sets. The initial training volume (Foot contacts) for the experimental group was 80 (Foot contacts) and it was progressively increased by 20 (Foot contacts) once in three weeks for twelve weeks. The experimental groups performed their respective training programme under the strict supervision of the investigator. The subjects were tested on criterion variable before and after the training programme.

Statistical Procedure

The obtained data from the experimental and control group before and after the experimental period were statistically analyzed with dependent ‘t’-test and analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 level for all the cases to test the significance.

Results

The Analysis of Data

The analysis of dependent ‘t’-test on the data obtained for agility of the pre-test and post-test means of plyometric training and control groups have been analyzed and presented in table-I

Table 1: Mean and dependent ‘t’ test for pre and post tests on agility of experimental and control groups (in seconds)

	Experimental Group		Control Group	
	Mean	SD	Mean	SD
Pre-test	12.10	0.33	12.18	0.41
Post-test	11.52	0.25	12.09	0.37
T ² test	10.34*		1.28	

*Significant at 0.05 level of confidence.

Table value required for significance at 0.05 level for ‘t’ test with df 11 is 2.201).

From the table above, the dependent ‘t’-test values between the pre and post-tests means of experimental group and control groups were 10.34 and 1.28 respectively. Since, the obtained ‘t’-test value of experimental group was greater than the table value 2.201 with df 11 at 0.05 level of confidence, hence the experimental group had significant improvement in agility.

The analysis of covariance on agility of experimental and control groups have been analyzed and presented in table-II.

Table 2: Analysis of Covariance for Experimental and Control Groups on Agility

Adjusted Post Test Mean		So V	Sum of Square	df	Mean Square	F-ratio
Experimental Group	Control Group					
11.49	12.13	B:	1.88	1	1.88	94.00*
		W:	0.39	21	0.02	

*Significant at .05 level of confidence.

The table value required for significance at 0.05 level with df 1 and 21 is 4.32.

From the table-II, the adjusted post-test mean values of agility for experimental and control groups are 11.49 and 12.13 respectively. The obtained F-ratio of 94.00 for adjusted post-test means is greater than the table value of 4.32 for df 1 and 21 required for significance at 0.05 level of confidence. Therefore, the results of the study indicated that there was

significant difference between the adjusted post-test means of experimental and control groups on the development of agility after the training programme.

The adjusted post-test mean values of experimental and control groups on agility are graphically represented in the figure-I.

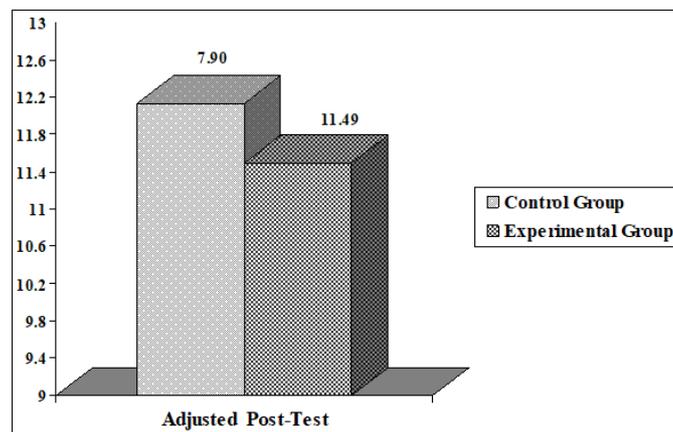


Fig 1: The Adjusted Post-Test Mean Values of Control and Experimental Groups on Agility

Findings

This study provides some interesting facts regarding, initial insights into potential benefits of plyometric exercise. The twelve week training improved agility of college men. Finding of this study supported by the following literatures. The improvement in the agility of the students participated in this study was in line with the following literatures. Miller *et al.*, (2006)^[4] conforming that plyometric training for 6 weeks improve athletes agility. The 6-week in-season plyometric training program has positive effects for improving power and agility performance in young male basketball players (Arazi *et al.*, 2012)^[1]. Campillo *et al.*, (2015)^[5] observed that the plyometric training showed improvement in agility (change of direction speed) of both male and female. The in-season short-term plyometric training influenced basketball player's agility and jumping performance (Sadi, 2013)^[6]. Michael *et al.*, (2006)^[3] stated that plyometric training can be an effective training technique to improve an athlete's agility. Thomas *et al.*, (2009)^[9] expressed that plyometric training is associated with the improvement of agility.

Conclusions

The result of the study revealed that the training group has significant improvement in agility among college men after the plyometric training protocol. It was also concluded that the plyometric training is one of the best training methods for improving the agility.

References

1. Arazi H, Coetzee B, Asadi A. Comparative effect of land and aquatic based plyometric training on the jumping ability and agility of young basketball players. South African Journal for Research in Sport, Physical Education and Recreation. 2012; 34(2):1-14.
2. Dick Frank W. Sports Training Principles. Great Britain: University Press Cambridge, 1992.
3. Michael Miller G, Jeremy Herniman J, Mark Ricard D, Christopher Cheatham C, Timothy Michael J. The effects of a 6-week plyometric training program on agility. J Sports Science & Medicine. 2006; 5(3):459-465.
4. Miller MG, Herniman TJ, Ricard MD *et al.* The effects of a 6-week plyometric training program on agility. J Sport Sci Med. 2006; 5:459-465.
5. Rodrigo Ramírez-Campillo, Marcelo Vergara-Pedrerros, Carlos Henríquez-Olguín, Cristian Martínez-Salazar, Cristian Alvarez, Fábio Yuzo Nakamura *et al.* Effects of plyometric training on maximal-intensity exercise and endurance in male and female soccer players. Journal of Sports Sciences. 2015; 34(8):687-693.
6. Sadi A. Effects of in-season short-term plyometric training on jumping and agility performance of basketball players. Sport Sci. Health. 2013; 9(3):133-137.
7. Sheppard JM, Young WB. Agility literature review' Classifications, training and testing. Journal of Sports Sciences, 2006; 24:919-932.
8. Singh Hardayal. Science of Sports Training. New Delhi: D.V.S. Publications, 1991.
9. Thomas K, French D, Hayes PR. The effect of two plyometric training techniques on muscular power and agility in youth soccer players. J Strength Cond. Res. 2009; 23(1):332-5.