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Effect of game specific plyometric training on selected physical fitness variables among inter university basketball players

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Abstract

The purpose of present study was to find out the effect of game specific plyometric training on selected physical fitness variables among inter university basketball players. To achieve this purpose, thirty basketball players, studying in various colleges and departments from Dhanalakshmi srinivasan educational institutions, Perambalur, Tamil Nadu, India in the age group of 18 - 25 years were selected as subjects. The selected 30 subjects were divided into two equal groups, in which, group - I (n = 15) underwent game specific plyometric training, group - II (n = 15) acted as control which did not participate in any special training. The training programme was carried three days per week for twelve weeks (alternative days). Prior to and after the training period the subjects were tested for, speed and agility. Speed was measured by 50 meters dash agility measured by shuttle run. The statistical tool used for the present study is 't' ratio. The result of the study was a significant improvement on speed and agility after twelve weeks of game specific plyometric training. However the improvement was favour of experimental group. There was a significant difference was occurred between game specific plyometric training group and control group after twelve weeks of game specific plyometric training.

Keywords: Game specific plyometric training, basketball, speed and agility

Introduction

Plyometric training is a form of training in which the individual reacts to the ground surface in such a way that they develop larger than normal ground forces that can then be used to project the body with a greater velocity or speed of movement. It is also known as reactive training. Game specific training is simply fitness and performance training designed specifically for performance enhancement. Training programs for performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction. It is the ability of the players to execute the various techniques of the fundamental basketball skills efficiently and accurately, according to the game situation.

Statement of the Problem

The purpose of present study was to find out the effect of game specific plyometric training on selected physical fitness variables among inter university basketball players.

Methodology

To achieve this purpose, thirty basketball players, studying in various colleges and departments from Dhanalakshmi Srinivasan educational institutions, Perambalur, Tamil Nadu, India in the age group of 18 - 25 years were selected as subjects. The selected 30 subjects were divided into two equal groups, in which, group - I (n = 15) underwent game specific plyometric training, group - II (n = 15) acted as control which did not participate in any special training. The training programme was carried three days per week for twelve weeks (alternative days). Prior to and after the training period the subjects were tested for, speed and agility.

Table 1: Selection of Tests

S. No.	Variables	Test Items	Unit of Measurement
1	Speed	50 mts dash	Seconds
2	Agility	Shuttlerun	Seconds

Analysis of Data

The data collected prior to and after the experimental periods on speed and agility on game specific plyometric training and control group were analyzed and presented in the following table – 2

Table 2: Analysis of covariance of game specific plyometric training and control groups

Variable Name	Group Name	Control Group	Game specific plyometric training Group	F ratio
Speed	Pre-test Mean \pm S.D	7.59 \pm 0.89	7.58 \pm 0.78	0.058
	Post-test Mean \pm S.D.	7.57 \pm 0.91	7.16 \pm 0.86	7.27*
	Adj.Post-test Mean \pm S.D.	7.61	7.24	62.24
Agility	Pre-test Mean \pm S.D	10.193 \pm 0.163	10.178 \pm 0.211	0.25
	Post-test Mean \pm S.D.	10.153 \pm 0.117	9.943 \pm 0.125	8.44*
	Adj.Post-test Mean \pm S.D.	10.173	9.947	79.05

Significant at .05 level of confidence

* (The required table value for significance at 0.05 level of confidence with degrees of freedom 1 and 27 is 4.21 and degree of freedom 1 and 28 is 4.20.)

Results

The adjusted post-test means on speed of game specific plyometric training and control groups are 7.61 and 7.24 respectively. The obtained 'F' ratio value is 7.27 of speed was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of game specific plyometric training the speed of the subjects was significantly improved.

The adjusted post-test means on agility of game specific plyometric training and control groups are 10.173 and 9.947 respectively. The obtained 'F' ratio value is 8.44 of agility was greater than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. Hence it was concluded that due to the effect of twelve weeks of game specific plyometric training the agility of the subjects was significantly improved.

Conclusion

Based on the results of this study the following conclusions were drawn by the investigator.

It was concluded that the selected criterion variables such as speed and agility were significant difference between game specific plyometric training group and control group of inter university basketball players.

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