

EFFECT OF PLYOMETRIC TRAINING ON SELECTED PHYSICAL FITNESS VARIABLES AMONG CRICKET PLAYERS

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Abstract:

Physical fitness is one of the components of the total fitness of the individual, which also includes mutual, social and emotional fitness. It is one of the basic requirements of life broadly speaking it means the ability to carry out our daily tasks without under fatigue. Strength endurance is required in all sports movement, whether fast or slow, movements have to be done under lesser or higher conditions of fatigue. Agility is a combination of several athletic traits such as strength, reaction time, speed of movement, power and co-ordination. It's display becomes essential in such movements as dodging, zigzag running, stopping and starting and changing body positions quickly. Plyometric is a method of developing explosive power, an important component of the athletic performance as plyometric movements are performed in a wide spectrum of sports. In Cricket, it can be played more skillfully when players have the power that combines with strength and speed to develop explosive power for participating in various sports activities. The plyometric exercises improve significantly in developing physical fitness variables of Cricket players. The purpose of the study was to find out the effect of plyometric training on selected physical fitness variables among Cricket players. To achieve this purpose, thirty male Cricket players were selected as subjects, their aged between 18 to 25 years, they are studying in the Govt. Arts College, Coimbatore, Tamil Nadu. The selected subjects were divided into two equal groups of fifteen subjects each, namely plyometric training group and control group. The plyometric training group trained for three sets per exercise per session at 60 to 80% with a progressive increase in load with the number of weeks. Strength endurance and agility were selected as criterion variables and they were tested by using sit-ups and shuttle run respectively. ANCOVA was used to find out the significant difference if any between the groups. The results of the study showed that there was a significant difference on strength endurance and agility between plyometric training group and control group.

Key words: Plyometric training, Physical fitness, Strength Endurance, Agility.

Introduction:

Physical fitness is one of the components of the total fitness of the individual, which also includes mutual, social and emotional fitness. It is one of the basic requirements of life broadly speaking it means the ability to carry out our daily tasks without under fatigue. Strength endurance is required in all sports movement, whether fast or slow, movements have to be done under lesser or higher conditions of fatigue. Agility is a combination of several athletic traits such as strength, reaction time, speed of movement, power and co-ordination. It's display becomes essential in such movements as dodging, zigzag running, stopping and starting and changing body positions quickly. Plyometric is a method of developing explosive power, an important component of the athletic performance as plyometric movements are performed in a wide spectrum of sports. In Cricket, it can be played more skillfully when players have the power that combines with strength and speed to develop explosive power for participating in various sports activities. The plyometric exercises improve significantly in developing physical fitness variables of Cricket players.

Methodology:

The purpose of the study was to find out the effect of plyometric training on selected physical fitness variables such as strength endurance and agility among college men Cricket players. To achieve this, thirty male Cricket players are studying in the Govt. Arts College, Coimbatore, Tamilnadu in the age group of 18 to 25 years were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each namely plyometric training group and control group. The selected criterion variables such as strength endurance and agility were assessed using standard tests and procedures, before (pre test) and after (post test) training Regimen for both experimental and control groups by using sit-ups and shuttle run 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 programme and the subjects performed plyometric exercises. The control group did not participate in any specialized training during the period of study.

Result and Discussion

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 dependent variables separately and presented in Table-I.

TABLE – I

ANALYSIS OF COVARIANCE AMONG PLYOMETRIC TRAINING EXPERIMENTAL GROUP AND CONTROL GROUP ON STRENGTH ENDURANCE AND AGILITY

Variables	Test	Plyometric Training Group	Control Group	Source of Variance	SS	Df	Mean Square	'F' Ratio	
1. Strength Endurance	Pre test	Mean	47.00	47.27	Between	0.533	1	0.533	0.112
		S.D	1.93	2.40	Within	132.92	28	4.75	
	Post test	Mean	52.92	47.52	Between	218.700	1	218.7	48.344*
		S.D	2.16	2.10	Within	126.67	28	4.53	
	Adjusted Post test	Mean	52.94	47.52	Between	233.785	1	233.785	112.55*
					Within	56.081	27	2.077	
2. Agility	Pre test	Mean	10.93	10.99	Between	0.033	1	0.033	0.742
		S.D	0.252	0.162	Within	1.259	28	0.04495	
	Post test	Mean	10.73	10.96	Between	0.385	1	0.385	22.049*
		S.D	0.123	0.141	Within	0.489	28	0.0175	
	Adjusted Post test	Mean	10.73	10.96	Between	0.336	1	0.336	20.307*
					Within	0.446	27	0.01653	

Table I reveals the F-value for pre-test 0.112 and post-test 48.34 among the experimental groups plyometric training group and control group on strength endurance. To be significant at 0.05 level for degree of freedom 1, 28 the required critical value was 3.23. The F-ratio (0.112) obtained for pre-test was found to be not significant since it do not reach the required critical value 3.23. Regarding the F-ratio for post-test mean (48.34) it was found to statistically significant since it was higher than their required critical value 3.23. Based on F-ratio

it was inferred that experimental group and control group are equal in this performance of strength endurance before they were included into their respective treatment whereas, after completion of 8 week treatment period, experimental groups and control group were significantly different from one another in the performance of strength endurance.

Table II reveals the F-value for pre-test 0.742 and post-test 22.04 among the experimental groups plyometric training group and control group on agility. To be significant at 0.05 level for degree of freedom 1, 28 the required critical value was 3.23. The F-ratio (0.742) obtained for pre-test was found to be not significant since it do not reach the required critical value 3.23. Regarding the F-ratio for post-test mean (22.04) it was found to statistically significant since it was higher than their required critical value 3.23. Based on F-ratio it was inferred that experimental group and control group are equal in this performance of agility before they were included into their respective treatment whereas, after completion of 8 week treatment period, experimental groups and control group were significantly different from one another in the performance of agility.

FIGURE -I

BAR DIAGRAM FOR ADJUSTED MEAN VALUES OF EXPERIMENTAL GROUP AND CONTROL GROUP ON STRENGTH ENDURANCE

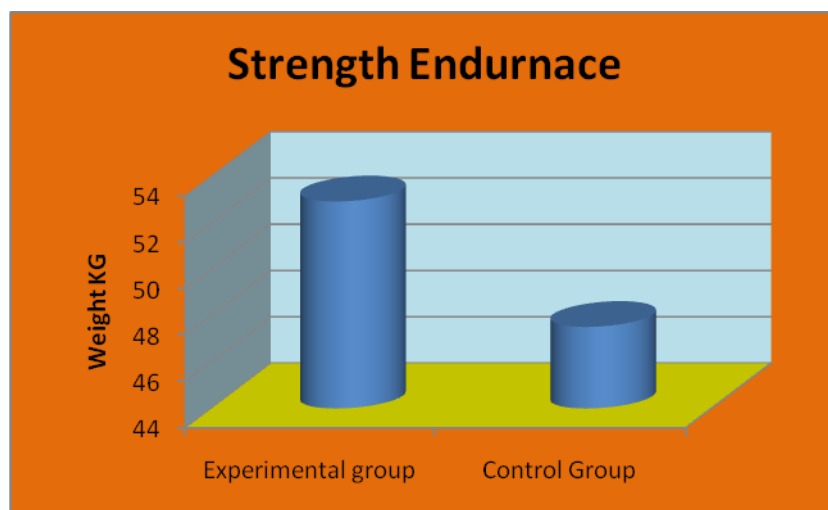
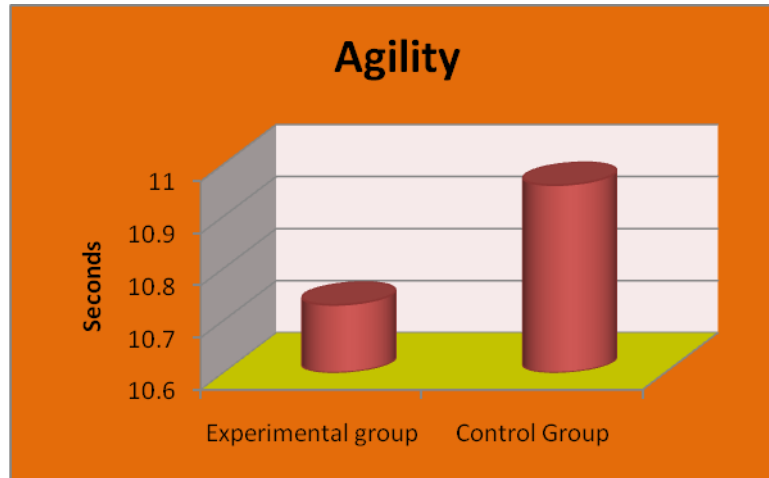


FIGURE -II

BAR DIAGRAM FOR ADJUSTED MEAN VALUES OF EXPERIMENTAL GROUP AND CONTROL GROUP ON AGILITY



Discussion of Findings

The pre-test before the related training showed that there was an insignificant and variation on strength endurance and agility among the groups. The post-test after the related training showed significant improvement strength endurance and agility. In the plyometric group and control group. Comparisons among these two groups resulted that the plyometric training group shows better improvement in all the selected variables than the control group. The result also revealed that the strength endurance and agility were comparative better in the control group after the related training.

Conclusion and Recommendations

Based on the results of the study, the following recommendations have been made.

In the framing of training while designing the training programme the effect of varied plyometric training programme is explained positively and physical fitness variables of cricket players. This is due to integrating the plyometric training which requires the players to perform the exercises in a fatigue stage, resulting in potentially increasing endurance.

Hence the cricket players can use this type of training as a module in order to achieve high level skill performance in the game of cricket . Based on the results of the study, it was concluded that the plyometric training program has resulted in significant increase in selected physical fitness variables such as strength endurance and agility.

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