



EFFECT OF PLYOMETRIC TRAINING AND INTERMITTENT TRAINING PROGRAMMES ON SPEED PERFORMANCE AMONG ANNAMALAI UNIVERSITY MEN HOCKEY PLAYERS

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Abstract

The purpose of this study was to find out an impact of Plyometric Training and Intermittent training programmes on speed performance among Annamalai university men Hockey players. The study was conducted on sixty men Hockey players who were participated Annamalai University Inter collegiate Hockey tournament during the year 2013--2014 were randomly selected as subjects. They were randomly assigned equally into three groups, Group –I underwent Plyometric Training (n = 20), Group-II underwent Intermittent Training (n=20) and Group-III acted as control Group (n=20). Speed was selected as creation variables and it was assessed through 50 meters run test. The pre and post test data was collected from the experimental and control groups and it were statically examined with Analysis of covariance (ANCOVA). To determine the paired means difference the Scheffe's test post hoc test was applied. Speed showed significant difference among the groups.

Keywords: Continuous running, intermittent training, Speed.

INTRODUCTION

Plyometric training comes from the Greek word plyometrics which means more "length". This length refers to the body's muscle for enhanced performance and powerful movements. Plyometric training includes the movements which aim to strengthen the muscles and thereafter contracting it in rapid progression. Plyometric training is the key to develop maximal explosive power and speed movement which in turn are the elements in sports too. By doing various exercises one can increase the performance level greatly (Yessis, 1986).

Plyometric training is a specific work for the enhancement of explosive power. It is a training method to be used in conjunction with other power development methods in a complete training programme to improve the relationship between maximal strength and explosive power. Plyometrics refers to the exercises that enable a muscle to reach maximal strength in as short a time as possible (Baechle, 1994). Intermittent exercise is a phrase used to describe a variety of different physical training types. The terms "intermittent," which means to stop and start at intervals, and "interval," as in interval training, is used somewhat interchangeably. In most circumstances, interval training will be conducted as a high intensity exercise activity.

Interval training has been the basis for athletic training for several years. The first form of interval training, called "Fartlek" involved alternating short, fast bursts of intensive exercise with slow, easy activity. Fartlek was casual, unstructured training that

perfectly fitted its English translation: "speed play." Intermittent exercises of various types are best known where they have been employed as components to endurance sports. Disciplines such as distance running, road cycling racing, and mountain biking require the body to produce the energy necessary for physical performance through the aerobic energy system, which primarily utilizes stores of carbohydrate products, in the form of glycogen, reduced as energy is required, to the sugar glucose. To generate energy, the body—through the cardiovascular system—transports oxygen and other nutrients essential to muscle function. The greater the ability of the heart to power blood volume to the muscles, the likely more efficient the production of energy and the removal of wastes such as carbon dioxide will be (Burgomaster, et al., 2006).

METHODOLOGY

The study was conducted on sixty men Hockey players who were participated Annamalai University Inter collegiate Hockey tournament during the year 2013-2014 were randomly selected as subjects. They were randomly assigned equally into three groups, Group –I underwent Plyometric Training (n = 20), Group II underwent Intermittent Training (n=20) and Group-III acted as control Group (n=20). Speed was selected as creation variables and it was assessed through 50 meters run test.

RESULTS AND DISCUSSION

The data collected from the Experimental group

and Control group prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. The level of significance was fixed at .05 level of confidence to test

the 'f' ratio obtained by analysis of covariance.

The Analysis of covariance (ANCOVA) on Speed of Plyometric Training group, Intermittent Training Group and Control Group, have been analyzed and presented in Table -I.

TABLE – I
ANALYSIS OF COVARIANCE ON SPEED OF PLYOMETRIC TRAININGGROUP, INTERMITTENT TRAINING GROUP AND CONTROL GROUP

Adjusted Post-test Means			Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
Plyometric Training Group	Intermittent Training Group	Control Group					
7.27	6.62	7.49	Between	6.02	2	3.01	60.20*
			With in	2.84	56	0.05	

** Significant at .05 level of confidence (Speed Scores in Seconds)*

(The table value required for Significance at .05 level with df 2 and 56 is 3.16)

Table I shows that the adjusted post test mean value of Speed for Plyometric Training group, Intermittent Training Group and Control Group are 7.27, 6.62 and 7.49 respectively. The obtained F-ratio of 60.20 for adjusted post test mean is more than the table value of 3.16 for df 2 and 56 required for significant at .05 level of confidence. The results of the study indicate that

there are significant differences among the adjusted post test means of Plyometric Training group, Intermittent Training Group and Control Group on the development of Speed. To determine which of the paired means had a significant difference, the Scheffe's test was applied as Post hoc test and the results are presented in Table II.

TABLE – II
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN THE ADJUSTED POST TEST PAIRED MEANS ON SPEED

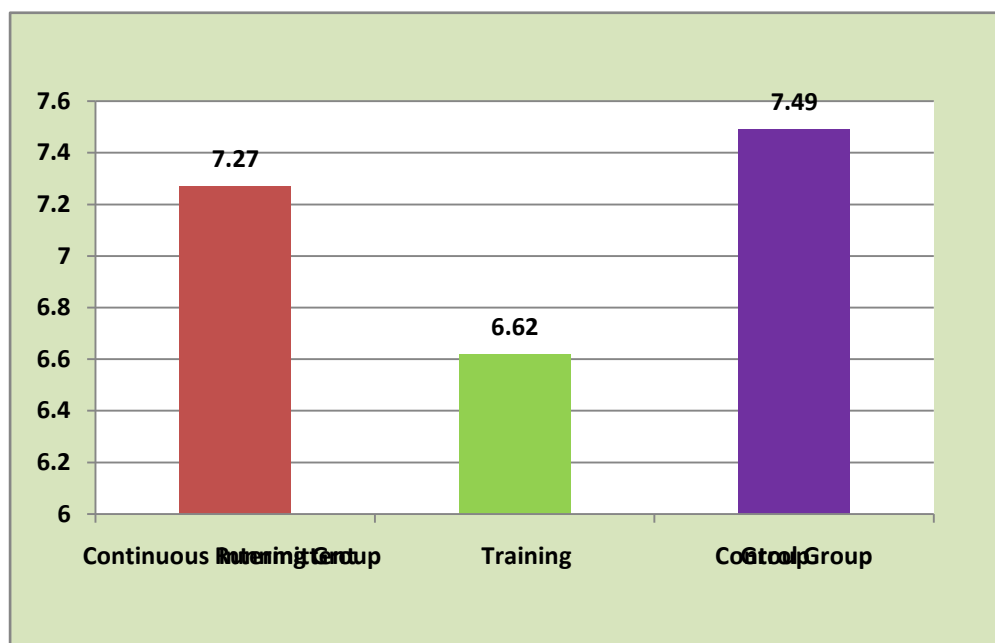
Adjusted Post-test means			Mean Difference	Confidence Interval
Plyometric Training Group	Intermittent Training Group	Control Group		
7.27	6.62		0.65*	0.12
7.27		7.49	0.22*	0.12
	6.62	7.49	0.87*	0.12

** Significant at .05 level of confidence*

Table-II shows that the adjusted post test mean difference on Plyometric Training group and Intermittent Training Group, Plyometric Training group and Control Group, Intermittent Training Group and control groups are 0.65, 0.22 and 0.87 respectively. The values are greater than the confidence interval value 0.12, which shows significant differences at .05 level of confidence. It may be concluded from the results of the study that there is a significant difference in Explosive power between the adjusted post test means of Plyometric

Training group and Intermittent Training Group, Plyometric Training group and Control Group, Intermittent Training Group and control groups. However, the improvements of speed were significantly higher for Intermittent Training Group than Plyometric Training group and Control Group. The adjusted post test means values of experimental groups and control group on Speed are graphically represented in the Figure -I.

FIGURE –I
BAR DIAGRAM ON ORDERED ADJUSTED MEANS OF
SPEED (IN SECONDS)



CONCLUSIONS

1. The results of the study showed that there is a significant difference among the groups.
2. It may be concluded that Intermittent Training Group is better than Plyometric Training Group and Control Group in improving Speed.

REFERENCES

1. Baechle Thomas R. Ed(1994), Essentials of strength training and conditioning. Champion Illions human kinetic, 325.
2. Burgomaster KA, Heigenhauser GJ, Gibala MJ(2006), "Effect of short-term sprint interval training on human skeletal muscle carbohydrate metabolism during exercise and time-trial performance", *Journal of Applied Physiology*, Jun; 100(6):2041-7.
3. Yessis M, Hatfield F(1986), Plyometric Training, Achieving Explosive power in Sports. Canoga Park, A: Fitness Systems.