Research Paper

Physical Education



An Impact of Isolated and Combined Aerobic And Anaerobic Training Packages on Hockey Dribbling Performance of Senior Level School Hockey Players

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ABSTRACT

Aim of this study was to find out the impact of isolated and combined aerobic and anaerobic training packages on Hockey Dribbling performance of senior school Hockey players. The study was conducted on eighty(N=80) school senior Hockey Players who were participated at zonal and state level Hockey tournaments during the year 2011-2013 were randomly selected as subjects. Subjects were randomly assigned equally into four groups of twenty each (n=20), Group –I underwent aerobic training, Group –II underwent anaerobic training, Group-III underwent Combined Aerobic and Anaerobic training and Group --IV acted as Control Group. Among various Hockey Skills only Dribbling was selected as dependent variable and assessed by standard hockey field test prescribed by Sodhi. To make adjustments for difference in the initial means and test the adjusted post test means for significant differences, the analysis of covariance (ANCOVA) was used. Since four groups were involved whenever the 'F' ratio was found to be significant for adjusted post means, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. The level of confidence was fixed at 0.05 level to test the significant differences, if found any. The results revealed that dribbling performance of Hockey showed significant difference among the selected groups.

Keywords : Hockey Dribbling, Aerobic training, anaerobic training, Combined Aerobic and Anaerobic training

INTRODUCTION

"Sports training, based on scientific knowledge, is a pedagogical process of sports perfection through systematic effect on psycho-physical performance ability and performance readiness aims at leading the sportsman to high and the highest performance. Through active and conscious interaction with the given demands in sports training, the sportsman's personality develops according to the norms and standards of socialist society".

Fundamental skills are the key to success. It is the elegance and beauty of the skill that is the center point in the pursuit of sport. In any sports discipline the mastery over the fundamental skill is essential to the eventual success. This means the correct technique for each stroke, grip, body position and basic movement patterns should be learnt practiced and mastered which ultimately enables one to achieve success. The mastery of skills is not only the consolidation of the essential techniques but also the ability to improvise so as to be flexible to meet the demands of the occasion. The highly skilled persons in any sports discipline are noted for their consistency and stability in the execution of the skills. The individual style of execution arises from the manner in which the task is executed in a unique way. A player will have a feeling of confidence when he masters over the skill.

There are number of fundamental skills in the game of hockey such as, Dribbling, Hitting, pushing, tapping, scooping, flicking, tackling and dodging. Skill of the game plays a very vital role in the success of modern hockey. Each skill is having its own Importance and application to different situations. A hockey player must master over skills to prove her proficiency. The perfection of these skills has a direct impact on the total performance of the game.

"To proceed forward within time, having full control over the ball and to move according to the aim to be achieved". Dribbling is a essential factor in man-to-man marking in attack and in defense in hockey. Effective use of dribbling is actually the fine expression of individuality. The significant of dribbling becomes clear when the attacker beats an opponent and takes a shot at goal. Dribbling can be realized positively and is emphasized in the process of technique training as a strongest weapon in the principles of penetration.

Dribbling is one of the most important skills in the game of hockey. It is an art, which will draw the attention of the spectators. During the game, when the defender is in dangerous zone, completely cover by the opponents, the defender has to clear the situation, dribbling is so useful. It helps the forward at the time of scoring when there is no chance to give straight hit and thus dribbling is most useful for the forwards (Arunkumar,2012).

METHODOLOGY

To achieve the purpose of the study, eighty (N=80) school senior Hockey Players who were participated at state level Hockey tournaments during the year 2011-2013 were randomly selected as subjects and assigned equally into four groups of twenty each (n=20), Group-I underwent aerobic training, Group-II underwent anaerobic training, Group-III underwent Combined Aerobic and Anaerobic training and Group --IV acted as control Group. Dribbling in Hockey was selected as dependent variable and it was assessed by standardized Hockey field test prescribed by Sodhi et al(1995). All the groups were tested on the selected criterion variables prior to and immediately after the training periods. To make adjustments for difference in the initial means and test the adjusted post test means for significant differences, the analysis of covariance (ANCOVA) was used. Since three groups were involved whenever the 'F' ratio was found to be significant for adjusted post means, Scheffe's test was followed as a post hoc test to determine which of the paired means difference was significant. The level of significance was fixed at 0.05 level of confidence for all the cases.

RESULTS AND DISCUSSION

The Analysis of covariance (ANCOVA) on Dribbling of aerobic training group, anaerobic training group, combined aerobic and anaerobic training group and the control group have been analysed and presented in Table -I.

TABLE – I

ANALYSIS OF COVARIANCE ON DRIBBLING OF AERO-BIC TRAINING GROUP, ANAEROBIC TRAINING GROUP, COMBINED AEROBIC AND ANAEROBIC TRAINING GROUP AND CONTROL GROUP

Adjusted Post test Means							
Aerobic Training Group – (I) Anaerobic Training	Combined Aerobic and Anaerobic Training Group – (III)	Control Group – (IV)	Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
7.54 8.10	9.10	6.52	Between With in	69.01 22.88	3 75	22.00 0.31	75.41*

* Significant at.05 level of confidence (Dribbling Scores in Points)

(The table value required for Significance at 0 .05 level with df 3 and 75 is 2.73)

Table -I shows that the adjusted post test mean value of Dribbling for aerobic training group, anaerobic training group, combined aerobic and anaerobic training group and the control group are 7.54, 8.10, 9.10 and 6.52 respectively. The obtained 'F'ratio of 75.41 for the adjusted post test mean is more than the table value of 2.73 for df 3 and 75 required for significance at .05 level of confidence.

The result of the study indicates that there is a significant difference among the adjusted post test means of experimental groups on the improvement of Dribbling performance.

To determine which of the paired means had a significant difference, 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 BE-TWEEN THE ADJUSTED POST TESTS PAIRED MEANS ON DRIBBLING

Adjusted	Post test I							
Aerobic Training Group – (I)	Anaerobic Training Group – (II)	Combined Aerobic and Anaerobic Training Group – (III)	Control Group – (IV)	Mean Difference	Confidence Interval			
7.54	8.10			0.56*	0.50			
7.54		9.10		1.56*	0.50			
7.54			6.52	1.02*	0.50			
	8.10	9.10		1.00*	0.50			
	8.10		6.52	1.58*	0.50			
		9.10	6.52	2.58*	0.50			
* Significant at.05 level of confidence								

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Table II shows that the adjusted post test mean differences on Aerobic training group and Anaerobic training group, Aerobic training group and Combined aerobic and anaerobic training group, Aerobic training group and Control group, Anaerobic training group and combined aerobic and anaerobic training group, Anaerobic training group and Control group and Combined aerobic and anaerobic training group and control group are 0.56, 1.56, 1.02, 1.00, 1.58 and 2.58 respectively and found greater than the confidence interval value 0.50, which shows significant differences at 0.05 level of confidence.

The results of the study further revealed that there is a significant difference an Dribbling performance between the adjusted post test means of Aerobic training group and Anaerobic training group, Aerobic training group and Combined aerobic and anaerobic training group, Aerobic training group and Control group, Anaerobic training group and combined aerobic and anaerobic training group, Anaerobic training group and Control group and Combined aerobic training group and Control group and Combined aerobic and anaerobic training group.

However, the improvement in Dribbling performance was significantly higher for combined aerobic and anaerobic training group than the other Experimental Groups and control group.

It may be concluded that the combined aerobic and anaerobic training group exhibited better performance on Dribbling performance than the other experimental groups and control group.

It is possibly inferred from the results that of exercise are appropriate method is developing fitness and other related factors than single training.

The mean values of experimental groups on Dribbling are graphically represented in the Figure -I.



FIGURE-I: THE MEAN VALUES OF EXPERIMENTAL GROUPS ON DRIBBLING



FIGURE-II: THE ADJUSTED POST TEST MEAN VALUES OF EXPERIMENTAL GROUPS ON DRIBBLING

The adjusted post test mean values of experimental groups on Dribbling are graphically represented in the Figure -II.

CONCLUSION

From the analysis of the data, the following conclusions were drawn.

The Experimental group had registered significant improve-

ment on the selected criterion variable namely Dribbling performance.

It may be concluded that the combined aerobic and anaerobic training group is found to be better than aerobic training group, anaerobic training group and control group in improving Dribbling.

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