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Combined effects of aerobic and anaerobic training with game specific drills on skill performance of field hockey players

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Abstract

The purpose of the present study was to find out the effect of combination of aerobic and anaerobic (high frequency aerobic and low frequency anaerobic) training with game specific drills (Combination-HALAN) on skill performance of field hockey players. To achieve the purpose of the study, 32 intercollegiate male field hockey players were randomly selected. Their age ranged from 18 to 23 years. They were divided into two groups consisting of sixteen each (N = 16). The experimental group was treated with high aerobic and low anaerobic trainings with game specific drills (Combination-HALAN), and control group (CG) not exposed to any treatment. The experimental groups under gone their respective training for 3 days (2 days aerobic and 1 day anaerobic training with game specific drills) per week for a period of 12 weeks. The present study was concluded that twelve weeks of Combination-HALAN training programme produced significant improvement on skill performance of field hockey players.

Keywords: Aerobic, Anaerobic, Game specific drills, Field hockey

Introduction

Hockey is one among many team sports, the team consist of 11 players each side. During the play two teams competing one another by putting the ball into opponent's goal with the sticks. The name field hockey used to differentiate hockey to any other games ice hockey, rink hockey, etc., innovation of new equipments like playing surface, stick, ball are changed the mode of the game. At the present field hockey game demands high level of physical, physiological and skill performance. Field hockey game played on relatively similar in size and number of players to soccer game (Abdullah *et al.*, 2016) [1]. The game was played by 4×15 minutes with 2 minutes break between two quarters and 10 minutes of rest interval between two half (FIH, 2015). The assessment of training and competition load of field hockey players, the players perform relatively lower training intensity than competition (Gabbett, 2010) [7]. The field hockey players execute walking, jogging, slow running, repeated sprints, acceleration and deceleration like various movements during the competition. These movements executed by the players either with or without ball and during attack or defense. For that hockey players need both aerobic as well as anaerobic capacity (Hinrichs *et al.*, 2010, Bloomfield *et al.*, 2007 and Elferink-Gemser *et al.*, 2006) [9, 2, 5]. Hence, training aerobic and anaerobic system improves performance of the game. Some research showed that game specific training improved physical fitness (Ucan, 2015) [14], physiological parameters (Manna *et al.*, 2010) [13] and skill performance of players. This study was aim to find the effect of combination of aerobic and anaerobic training with game specific drills on skill performance of field hockey players.

Methods

Selection of subjects

To achieve the purpose of the study, 32 intercollegiate male field hockey players were randomly selected from RKMV Vivekananda Educational and Research Institute and SRKV Arts College, Coimbatore, Tamil Nadu. Their age ranged from 18 to 23 years. They were divided into two groups consisting of sixteen each (N = 16). The experimental group was

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treated with high aerobic and low anaerobic trainings with game specific drills (Combination-

Criterion measure

To achieve the purpose of the study following variable was selected:

Skill performance- Slalom Speed and Dribble Test (Lemmink *et al.*, 2004)

Statistical technique

In order to find the pre to post test mean gains on selected variables Descriptive statistics and paired 't' test was employed in this study. To test the significant different level of confidence fixed at 0.05. The data were analysed by using of SPSS for window.

Results

The collected data analysed by using of software and the results were given below table.

Table 1: computation of 't' test between pre and post test on skill performance of combination-halan and control groups

Groups	Mean	SD	MD	SEM	t	p
Combination-HALAN	22.73	0.20	0.12	0.03	3.80*	0.01
	22.61	0.15				
CG	22.74	0.21	0.01	0.02	0.84	0.41
	22.73	0.18				

*Significant at 0.05 level

Table-1 shows that the 't' ratio's on skill performance of combination- HALAN and control groups. The pre and post tests means and standard deviation of combination- HALAN were 22.73±0.20 and 22.61±0.15 respectively. The obtained 't' value was 3.80 significant at 0.01 level. Since, the 'p' values was lesser than the 0.05 level of confidence. Further, the pre and post tests means and standard deviation of control group were 22.74±0.21 and 22.73±0.18 respectively. The obtained 't' value was 0.84 not significant at 0.05 and the 'p' was greater than the fixed confidence level. From the results, it was inferred that, Combination-HALAN produced a significant improvement in skill performance of field hockey players.

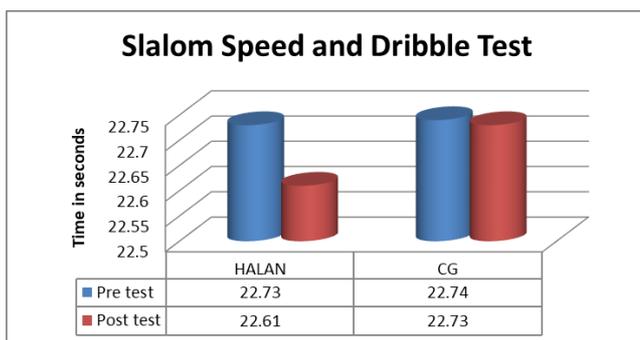


Fig 1: Bar diagram shows that the pre and post tests means of combination-halan and control groups on skill performance

Discussion on findings

In this present study was attempted to find the effect of combination of aerobic and anaerobic training with game specific drill (combination-HALAN) on skill performance of field hockey players. The result, it was confirmed that combination-HALAN produced improvement in skill performance of field hockey players. The findings of the present study also associate with Broadbent *et al.*, 2015^[3] and

Cheong *et al.*, 2016^[4]. Aerobic capacity enhanced performance of soccer players (Helgerud *et al.*, 2001)^[8]. Short term high intensity training produced improvement in hockey performance (Jakeman *et al.*, 2016)^[11]. Game based training produced better improvement in skill performance (Gabbett *et al.*, 2009)^[6].

Conclusion

The present study was concluded that twelve weeks of Combination-HALAN training programme produced significant improvement on skill performance (slalom speed and dribble test) of field hockey players.

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