

**EFFECT OF MINI HURDLES TRAINING WITH AND WITHOUT AEROBIC TRAINING ON SPEED ENDURANCE OF FIELD HOCKEY PLAYERS****SHAMSHAD BEGAM<sup>1</sup> & Dr. Ch.V.S.T. SAIKUMAR<sup>2</sup>****ABSTRACT**

The purpose of the study was to find out the effect of mini hurdles training with and without aerobic training on speed endurance of field hockey players. To achieve the purpose of the present study, forty five women field hockey players from IIT RGUKT, Andhra Pradesh, India were selected as subjects at random and their ages ranged from 17 to 21 years. The subjects were divided into three equal groups of fifteen each. Group I acted as Experimental Group I (mini hurdles training with aerobic training ), Group II acted as Experimental Group II (mini hurdles training without aerobic training ) and Group III acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The duration of experimental period was 12 weeks. After the experimental treatment, all the subjects were tested on their parameters. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses. The mini hurdles with aerobic training had shown significant improvement in speed endurance among field hockey players after undergoing the training for a period of twelve weeks than other groups.

**KEY WORDS:** Mini Hurdles, Aerobic, Hockey.

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## INTRODUCTION

Mini hurdles are a great training tool for developing athletic speed. Mini-hurdle drills are one of the best tools for getting faster and more explosive. In sports one thing is certain i.e., speed skills. It can help to beat the opponent, win a race to a ball or cross the finish line first. Many different theories expound on improving speed, most centered on improving components of the stride. One method that's proven effective is performing mini hurdle drills. Using these small hurdles can improve the stride length and lower body power so one can increase acceleration and top speed. Perform the following three drills to reap the benefits of mini hurdle training (Cappa, & Behm, 2011). Aerobics is a form of physical activity that combines rhythmic aerobic exercise with stretching and strength training routines with the goal of improving all elements of fitness, flexibility, muscular strength, and cardiovascular fitness. It is usually performed to music and may be practiced in a group although it can be done solo and without musical equipment. Aerobic fitness helps to promote the cardio- respiratory system from disease and it promotes physical, mental, emotional and spiritual development. Aerobic program can be started at any age and the intensity of the program can also be suited to meet the larger needs of the individual (Aranga & Kulothungan, 2011).

## METHODOLOGY

The purpose of the study was to find out the effect of mini hurdles training with and without aerobic training on speed endurance of field hockey players. To achieve the purpose of the present study, forty five women field hockey players from IIT RGUKT, Andhra Pradesh, India were selected as subjects at random and their ages ranged from 17 to 21 years. The subjects were divided into three equal groups of fifteen each. Group I acted as Experimental Group I (mini hurdles training with aerobic training ), Group II acted as Experimental Group II (mini hurdles training without aerobic training ) and Group III acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The duration of experimental period was 12 weeks. After the experimental treatment, all the subjects were tested on their parameters. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant; Scheffe's post hoc test was used. In all cases 0.05 level of confidence was fixed to test hypotheses.

## RESULTS

TABLE - I

**COMPUTATION OF ANALYSIS OF COVARIANCE OF MEAN OF MINI HURDLES TRAINING WITH AND WITHOUT AEROBIC TRAINING AND CONTROL GROUPS ON SPEED ENDURANCE**

	MHTWATG	MHTWOATG	CG	Source of Variance	Sum of Squares	df	Mean Square	'F' ratio
Pre - Test Mean	26.07	26.14	25.93	Between Sets	0.345	2	0.173	0.676
				Within Sets	10.731	42	0.256	
Post - Test Mean	22.20	24.13	25.99	Between Sets	107.588	2	53.794	250.677*
				Within Sets	9.013	42	0.215	
Adjusted Post - Test Mean	22.21	24.13	25.98	Between Sets	105.802	2	52.901	241.967*
				Within Sets	8.964	41	0.219	

An examination of table – I indicated that the pre test means of mini hurdles training with aerobic training, mini hurdles training without aerobic training and control groups were 26.07, 26.14 and 25.93 respectively. The 'F'- value observed for the pre-test was 0.676. It failed to reach the critical ratio of 3.22 for the degree of freedom 2 and 42 at 0.05 level of confidence. Based on the results it was conformed that the mean differences among the groups of mini hurdles training with aerobic training, mini hurdles training without aerobic training and control groups on speed endurance before start of the respective treatments were found to be insignificant. Thus this analysis confirms that the random assignment of subjects into three groups were successful. The post-test means of the mini hurdles training with aerobic training, mini hurdles training without aerobic training and control groups were 22.20, 24.13 and 25.99 respectively. The 'F'- value observed for the pre-test was 250.677. It was greater than the critical ratio of 3.22 for the degree of freedom 2 and 42 at 0.05 level of confidence. Since the observed F-values on post test means among the groups on speed endurance was highly significant as the value was higher than the required critical value of 3.22. The adjusted post-test means of the mini hurdles training with aerobic training, mini hurdles training without aerobic training and control groups were 22.21, 24.13 and 25.98 respectively. The 'F'- value observed for the pre-test was 241.967. It was greater than the critical ratio of 3.22 for the degree of freedom 2 and 42 at 0.05 level of confidence. Since the observed F-values on adjusted post test means among the groups on speed endurance was highly significant as the value was higher than the required critical value of 3.22. Thus the results obtained proved that the interventions namely mini hurdles training with aerobic training, mini hurdles training without aerobic training and control groups produced significantly different improvements among the experimental groups.

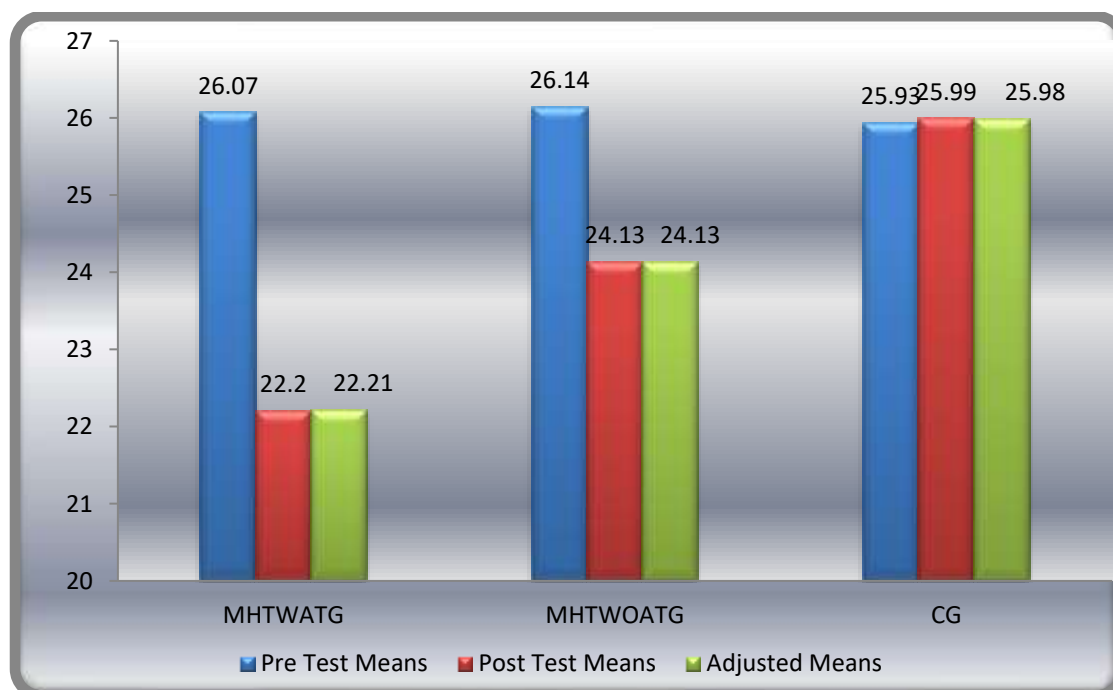
**TABLE - II**  
**THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN**  
**THE ADJUSTED POST TEST PAIRED**  
**MEANS ON SPEED ENDURANCE**

Adjusted Post-test means			Mean Difference	Required CI
MHTWATG	MHTWOATG	Control Group		
22.21	24.13	---	1.92*	0.42
22.21	---	25.98	3.77*	
---	24.13	25.98	1.85*	

\* *Significant at 0.05 level of confidence*

The multiple comparisons showed in table II proved that there existed significant mean differences between the adjusted means of mini hurdles training with aerobic training and mini hurdles training without aerobic training group (0.01), mini hurdles training with aerobic training and control group (7.90), mini hurdles training without aerobic training and control group (7.91) with the confidence interval value of 0.42.

**FIGURE - 1**  
**PRE POST AND ADJUSTED POST TEST DIFFERENCES OF THE MINI**  
**HURDLES TRAINING WITH AND WITHOUT AEROBIC TRAINING AND**  
**CONTROL GROUPS ON SPEED ENDURANCE**



## CONCLUSION

1. The mini hurdles with aerobic training had shown significant improvement in speed endurance among field hockey players after undergoing the training for a period of twelve weeks than other groups.

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