

EFFECT OF MINI HURDLES TRAINING WITH AND WITHOUT AEROBIC TRAINING ON EXPLOSIVE POWER OF FIELD HOCKEY PLAYERS**SHAMSHAD BEGAM¹ & Dr. Ch. V.S.T. SAIKUMAR²****ABSTRACT**

The purpose of the study was to find out the effect of mini hurdles training with and without aerobic training on explosive power of field hockey players. To achieve the purpose of the present study, forty five women field hockey players from IIIT 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 explosive power among field hockey players after undergoing the training for a period of twelve weeks than other groups.

KEY WORDS: Mini Hurdles, Aerobic, Explosive power, Hockey.

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INTRODUCTION

Hurdles force the legs to utilize correct running form and adapt to faster stride patterns. The 12" Hurdles are best for enforcing the correct biomechanics of linear running. They "teach" in a way words can't. One will learn the important technique of driving the knee up, while keeping the toe close to the opposite knee and the heel close to the hamstring in the recovery phase. Performance Hurdles also train one to fire the foreleg down in a wheeling (like riding a bike) motion and to stay in a "hips tall" running position (Ferley et al. 2013). Aerobics is a good way to decrease our percentage of body fat and to attain the other metabolic benefits of fitness. Aerobics is also a very good way to develop musculo skeletal fitness while building strength, flexibility and coordination (Burgess et al. 2006).

METHODOLOGY

The purpose of the study was to find out the effect of mini hurdles training with and without aerobic training on explosive power of field hockey players. To achieve the purpose of the present study, forty five women field hockey players from IIIT 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 EXPLOSIVE POWER VERTICAL**

	MHTWATG	MHTWOATG	CG	Source of Variance	Sum of Squares	df	Mean Square	'F' ratio
Pre - Test Mean	0.19	0.19	0.19	Between Sets	0.0001	2	0.0001	0.030
				Within Sets	0.012	42	0.0001	
Post - Test Mean	0.25	0.22	0.20	Between Sets	0.022	2	0.011	30.069*
				Within Sets	0.015	42	0.0001	
Adjusted Post - Test Mean	0.25	0.22	0.20	Between Sets	0.022	2	0.011	29.907*
				Within Sets	0.015	41	0.0001	

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 0.19, 0.19 and 0.19 respectively. The 'F'- value observed for the pre-test was 0.030. 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 explosive power vertical 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 0.25, 0.22 and 0.20 respectively. The 'F'- value observed for the pre-test was 30.069. 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 explosive power vertical 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 0.25, 0.22 and 0.20 respectively. The 'F'- value observed for the pre-test was 29.907. 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 explosive power vertical 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.

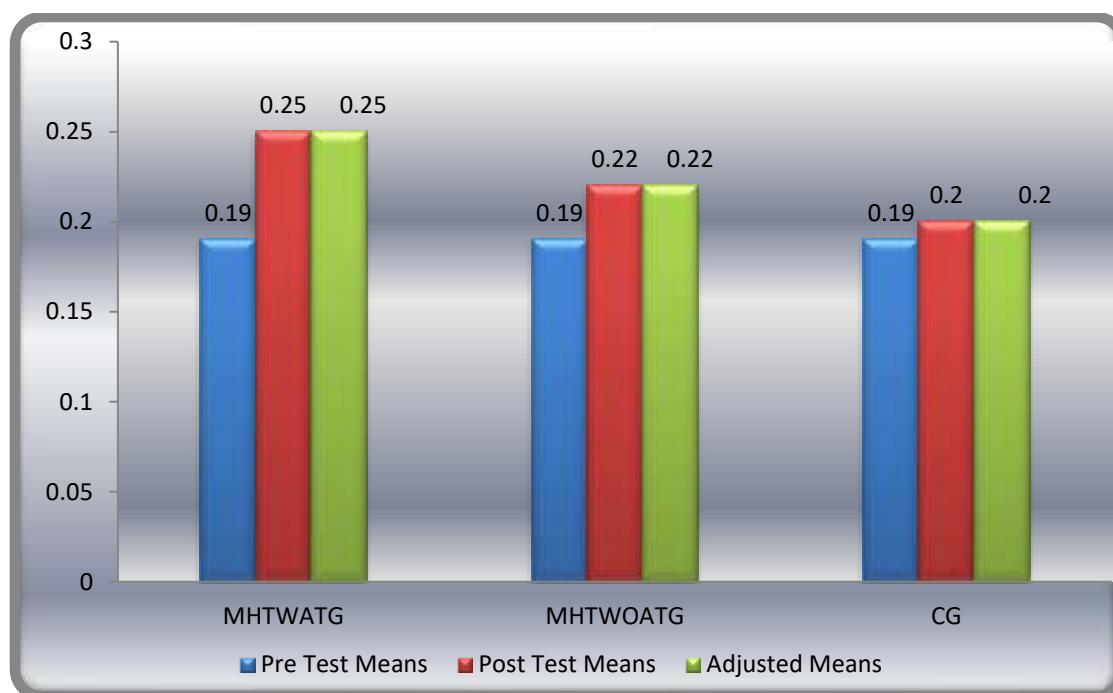
TABLE - II
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN
THE ADJUSTED POST TEST PAIRED
MEANS ON EXPLOSIVE POWER VERTICAL

Adjusted Post-test means			Mean Difference	Required CI
MHTWATG	MHTWOATG	Control Group		
0.25	0.22	---	0.03*	0.01
0.25	---	0.20	0.05*	
---	0.22	0.20	0.02*	

** 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 EXPLOSIVE POWER VERTICAL



CONCLUSION

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

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