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## EFFECT OF SPECIFIC EXERCISE ON HURDLE CLEARANCE OF ATHLETES

Anita Mudliar

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### Abstract:

*The purpose of this study were to find out the effect of some exercises on hurdle trainer. 60 subjects were selected for this purpose. The collected data were analyzed by statistical method. The hypothesis were tested statistically and on the basis data the result were formed out.*

### KEY WORDS:

Specific Exercise , Hurdle Clearance , statistical method , scientific achievements .

### INTRODUCTION

The world of games and sports has crossed many milestones as a result of different types of researcher, and variety of scientific achievements in general and their application in the sports in particular. Scientific investigation of performances of sportsmen have been playing an increasingly important role in the training of athletes, in a scientific way to attain excellence in performance in sports.

If the human machine is to be kept in good working orders some regular exercises are necessary. Athletic participation is necessary in certain specific schedule of training programme for the improvement of their performance.

Regular physical exercise and participation in games and sports help to improve physical fitness which includes strength, speed, agility, flexibility and endurances. The researcher found that hurdle clearance plays and important role for better performance in hurdle event. In hurdling it is a well known fact that speed depends upon the quick clearance of the hurdle and the hurdlers stride length, these two factors are related to high performance.

Hurdle event were started by Egyptian. Historical physical education expert told that it were started in 1860. Total distance were 120 yards and height of the hurdle were 150 cms. In the year 1864 in Cambridge meet A. W. T. Danial had covered this distance in 17.4 seconds.

In 1866 some standard distance of hurdles took place. Keeping the weight of hurdles 6 lbs different type of hurdle were used but it were of special type. In 1900 it became the most popular event in the World. Distance in between two hurdles were 10 yards.

The bounds of the modern hurdle event were 'Henry Hillmen' from America. He was a mechanical engineer and also the chairman at 200 yards and 400 yards hurdles. In 1904 Olympic at Saint Luce he covered 200 yards hurdles distances in 24.6 second and 400 yards in 53 sec. In 1942 Henry Hillmen invented a new 'T' type of hurdle.

Geofeery, the performance of hurdle depends upon the skill techniques of clearances. In 1924 the hurdler Thomson used two arm broad clearances to maintain the balances.

For the good hurdling following techniques are essential if there will be slight change in hurdle centre of gravity, economy in hurdle clearance split over the hurdle properly, good splitting of the leg and co-ordination of the arm. Attaining the correct take off point depend upon the individual physical condition

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at athlete and speed. Height of athlete and in time speed on hurdle should be minimum.

### **METHODOLOGY :**

#### **Source of Data :**

The data were collected from the subjects who were studying in the B.P.Ed. Courses from various Colleges of Physical Education, Nagpur. The experiment were conducted on total 60 subjects all the subjects were the male students of B.P.Ed.

#### **Collection of Data :**

For the purpose of collection of data, the researcher conducted two tests consisting of time taken for hurdles clearance by the subjects. At the beginning of the study. The initial test were conducted to divide the subjects into two homogeneous groups. Performance of the test was recorded. The final test was conducted after 6 weeks of training programme.

#### **Administrations of Test :**

On track from the starting point of 100 meters. The hurdles would be arranged on particular official distance. First hurdle on 13 meters away from starting point and in between 8.50 mtr. distance and from last hurdle to finish line 10.50 meters. Total 10 hurdles were arranged up to finishing point.

#### **Experimental Design :**

First of all the 30 subjects were assembled, then they were divided into two homogeneous groups 'A' and 'B' by conducting then test and experiment were conducted. Again there were explanation and demonstration about the test, experiment, exercises and the subjects were motivated by the researcher with the help of two or three assistants, which were conducted by them before the test.

The Experiment of the study were for a period of 6 weeks.

Experimental group 'B' were given some selected exercise for the improvement, of hurdle clearance and group 'A' there were no specific training programme. The type of experiment and training given to the groups, were as tabulated below.

#### **Experimental Design**

Sr. No.	Group	Type of Group	Type of Training
1.	B	Experimental	Some Selected Exercises
2.	A	Control	Regular games practice

The following exercise were given to the experimental group 'B'.

1. Programme of 6 selected exercises were prepared for this group 'B'.
2. The exercise were selected for the improvement of speed, strength, flexibility endurance and coordination of those muscles and part of body, which are closely related to the hurdler's. The present researcher were concentrating on a few exercises, so the experimental group 'B' were trained with some selected exercises.

#### **Statistical Procedure to be used :**

For testing statistical significance on the effect of specific exercise on hurdle clearance of athletes are mean, standard deviation independent 'T' test was used to compare of results the probability level was found in 0.05 level of significance.

The researcher had conducted the initial test at the field of various College of Physical Education. For this research work all the necessary facilities were provided by various College of Physical Education, Nagpur.

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For this study, types of Exercises were employed –

- (1)Front and Back Eagle
- (2)Trial Leg
- (3)Hurdle Seat Change
- (4)Half Hurdling
- (5)Take of Sensation Drill
- (6)Leg Tapping

It were decided by the researcher to make to group for the conduct of the Experiment.

Group B were given selected exercises training.

Group A : As control group.

In the beginning, the initial test were conducted for both the groups, and their score were recorded.

### Initial Test :

First test were conducted for the group before the beginning of the training.

### Second Test :

Second and final test were conducted after the 6 weeks training to the experimental group 'B'.

Scores of all tests were recorded on score sheets and tabulated mean of all test were calculated and are given in the following table.

**Table No. – 1**  
**Mean of all the Tests of Experimental and Control Groups**

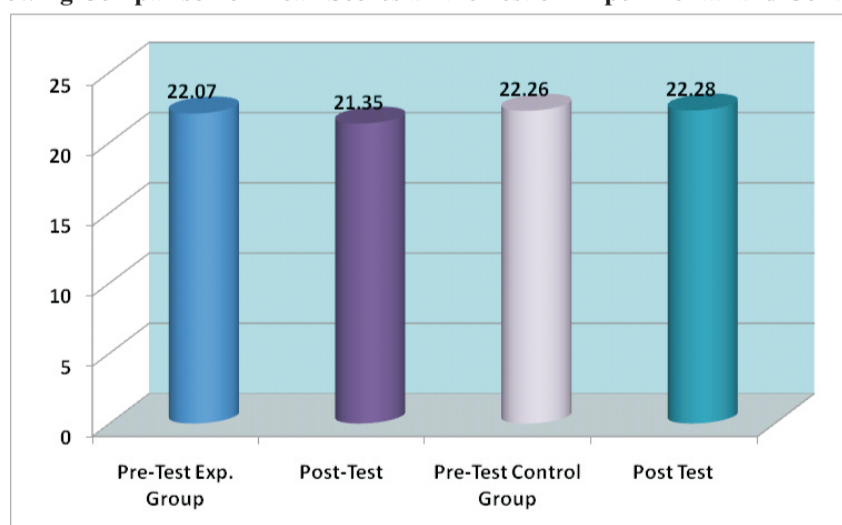
Sr. No.	Test	Experiment Group	Control Group
1.	Pre-Test	22.07	22.26
2.	Post-Test	21.35	22.28

Table No. 1 shows that the mean of experimental group had increased moderately as compared to that of control group which mean that performance of the experimental group had increased.

The mean score of experimental group were 22.07 Sec. in the initial test which had increased 21.35 in the final test whereas that of control group increased to 22.28 Sec. in the final test.

Results of the comparison between initial and final mean scores of the two groups are presented in the table.

**Graph No. – 1**  
**Graph Showing Comparison of Mean Scores all the Test of Experimental and Control Groups**

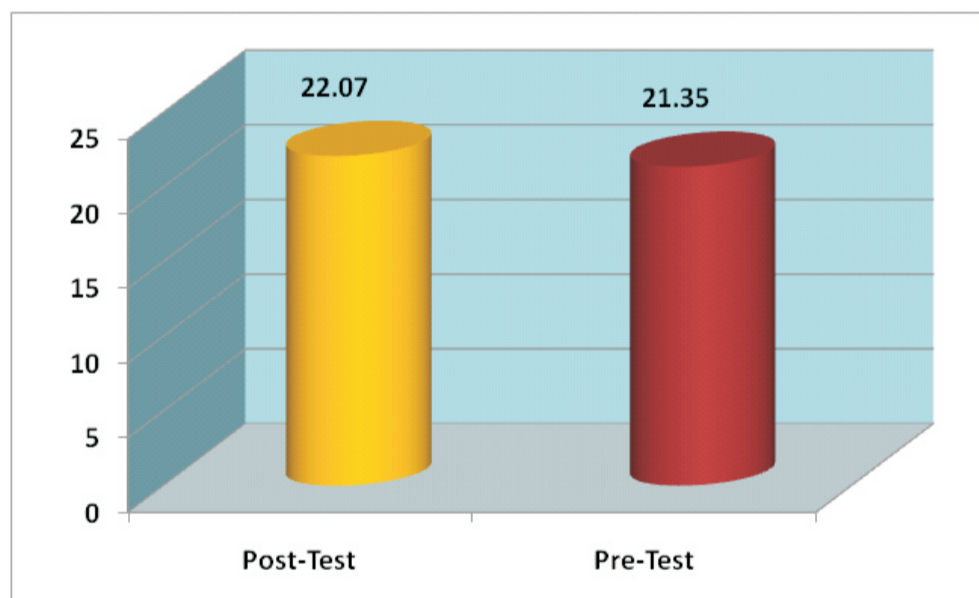


**Table No. – 2**  
**Comparison of the Mean Scores of Pre and Post-Test of Control Group**

	Control Group	
	Pre-Test	Post-Test
Mean	22.26	22.28
SD		
O 't'	-0.059	
Df	28.00	
't' test	1.98	
Rem	Not Significant	

The above tables shows that on comparing the mean scores of initial and final tests of control group no significant difference were found. This were confirmed on the application of 't test'; while comparing the mean scores of initial and final tests of experimental group significance were found at 0.05 level.

**Graph No. – 2**  
**Graph Showing Comparison of the Mean Scores of Pre and Post-Test of Control Group**





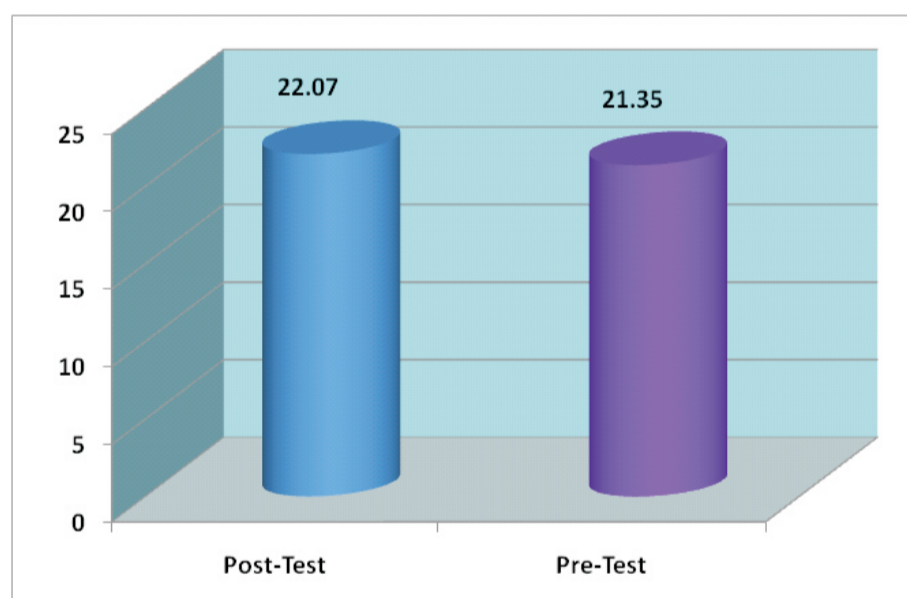
**Table No. – 3**  
**Comparison of the Mean Scores of Pre and Post-Test of**  
**Experimental Group**

	Experimental Group	
	Pre-Test	Post-Test
Mean	22.07	21.35
O 't'	2.26	
Df	28.00	
't' test	1.98	
Rem	Significant	

N = 15

Likewise the scores of the final test of control and experimental groups were tested to find out the level of confidence of difference as shown in table No. 3. On applying the 't' test were confirmed that there were a significance in difference between the performance of the two groups at 0.05 level of performance.

**Graph No. – 3**  
**Graph Showing Comparison of the Mean Scores of Pre and**  
**Post-Test of Experimental Group**



**CONCLUSION**

During the study, it were observed that some selected exercises had caused the positive effects on the performance of hurdle clearance and highly significant improvement also seen in hurdle clearance of experimental at group. The satisfied analysis disclosed that some selected exercises do improve the clearance of the hurdle.

Thus, it can be seen that present research has been accepted.

So, the present researcher has suggested that fitness improvement comes only as a result of regular exercises and his exercises for example, front eagle. Back eagle, trial leg, hurdle seat change, half hurdling, sensation drill and leg tapping were extremely benefited and very purposeful to the fitness and skills development of the athlete. So these selected exercises have always been purposeful, realistic and related to

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the given event, during 6 weeks training programme, the following exercises were administered. (1) Front & Back Eagle (2) Trial Leg (3) Hurdle Seat Change (4) Half Hurdling (5) Sensation Drill (6) Leg Tapping. Finally, the exercises, were had caused the fitness improvement of the hurdlers and helped their hurdle clearance, so, a weeks training programme on the experimental group were a successful one.

#### RECOMMENDATION :

On the basis of result of this study the researcher recommends the following points for the Hurdlers\* coaches and Physical Education.

- 1.The selected exercises are give more effect on hurdle clearance of hurdlers and their fitness. So these exercises must be given to hurdler's and coaches can conclude these in their training programmes.
- 2.Same type of exercises can be used for women hurdlers.
- 3.The same type of exercises can be adopted to other events or games and sports for the improvement of player's physical fitness and player's standard.

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