

# EFFECT OF WEIGHT TRAINING ON SHOULDER STRENGTH, ARM STRENGTH, FLEXIBILITY AND THEIR IMPACTS ON SHOT-PUT PERFORMANCE

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**Abstract:** The main purpose of the study would be the find out the effect of weight training on shoulder strength, arm strength, flexibility and then impacts on spot put performance. Only 40 shot-putters, 20 male and 20 females were selected randomly. The age limit of the subject ranging between 18 to 25 years the subject was selected from colleges which affiliated to RashtraSant Tukadoji Maharaj Nagpur University, Nagpur.

**Keyword:** Weight Training ,Arm Strength , Flexibility , Methodology.

## INTRODUCTION

Man is always striving for perfection in every area of knowledge and practice. Human is unique product to nature's creation and evaluation. It is because of his highly developed muscular and nervous system, which enables him to think, express and search whatever the wants.

Physical fitness has been acclaimed as one of the essential requirements of personality development. It is a quality of men and women athletes in all spheres of life. Throughout the world physical fitness movement has grown in size and it gives special importance to youth, increasingly the medical profession generally agrees that proper exercise is highly desirable as an integral part of maintaining health is far more enjoyable than trying to regain it.

Weight training exercises are a type of strength training exercises in which you use the force of gravity to build muscle strength, often through the use of fitness equipment such as dumbbells, barbell, bars or gym equipment.

## METHODOLOGY:

The main purpose of the present study would be to find out the effect of weight training on shoulder strength, arm strength, flexibility and their impact on shot put performance. The study would be significant in helping the coaches or players to know the effects of weight training and its contribution to the shoulder strength, flexibility and indirectly helpful for shot put performance. To devise specific weight training programme to the sports trainers specially dealing with the game of shot put.

The scope of the present study was delimited to the following aspects:

Only 40 shot putters (20 males and 20 females) were selected for the study.

The age limit of the subject ranging between 18-28 years.

The subjects were selected from colleges which are affiliated to Rashtra sant Tukadoji Maharaj Nagpur University, Nagpur.

The players was selected randomly design researcher divided 40 subjects into two homogeneous group i.e. 10 in group 'A' as experimental group and 10 in group 'B' as control group. Both groups consist of 10 males and females.

## SELECTION OF TESTS AND CRITERION MEASURES:

**The selected test items were administrated:**

- 1.Shoulder strength-pull-ups for boys and flexed arm hang for girls.
- 2.Arm strength- push ups
- 3.Flexibility- sit and reach test
- 4.Shot put performance.

To determine the significant difference in the means of shoulder strength, arm strength, flexibility and their impacts on shot-put performance of shot putter between the male groups and between the female group as well as between the pre test and post test means of experimental and control group 't' test was employed. To find out the significance difference, level of significance was set at 0.05 level of confidence.

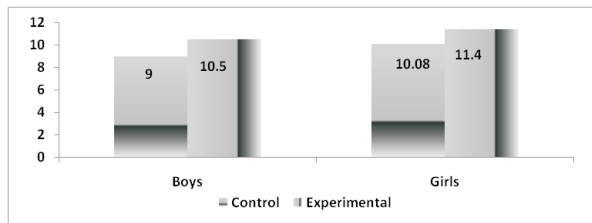
**Table-1- Pull ups (Boys) and flex arm hang (girls) between the means of post tests of control and experimental groups.**

|       | Group        | Mean  | SD   | Mean Difference | Standard Error | 't' ratio |
|-------|--------------|-------|------|-----------------|----------------|-----------|
| Boys  | Control      | 9.00  | 1.49 | 1.500           | 0.587          | 2.556*    |
|       | Experiment   | 10.50 | 1.71 |                 |                |           |
| Girls | Control      | 10.08 | 1.70 | 1.328           | 0.575          | 2.311*    |
|       | Experimental | 11.40 | 1.43 |                 |                |           |

The above table 1 show that, pull ups for boys mean difference between the post test of control and experimental group is significant, because the calculated 't' value of 2.556 is greater than the tabulated 't' value of 2.100 at 0.05 level of confidence of 18 degree of freedom.

Also table1 reveals that flex arm hang for girls mean difference between the post test of control and experimental group is significant, because the calculated 't' value of 2.311 is greater than the tabulated 't' value of 2.100 at 0.05 level of confidence of 18 degree of freedom.

Pull ups for boys and flex arm hand for girls means between the pre and post test of experimental group was graphically shown.



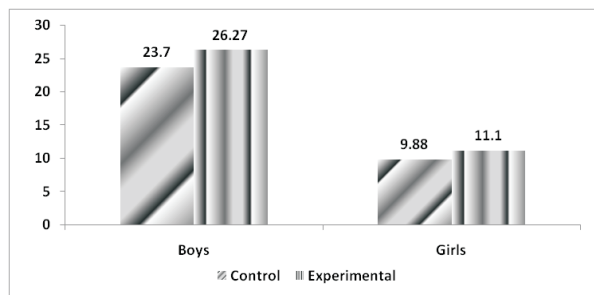
**Table-2- Shot put performance between the means of post tests of control and experimental group.**

|       | Group        | Mean  | SD   | Mean Difference | Standard Error | 't' ratio |
|-------|--------------|-------|------|-----------------|----------------|-----------|
| Boys  | Control      | 23.70 | 3.13 | 2.570           | 1.114          | 2.307*    |
|       | Experiment   | 26.27 | 2.96 |                 |                |           |
| Girls | Control      | 9.88  | 1.22 | 1.220           | 0.570          | 2.140*    |
|       | Experimental | 11.10 | 1.80 |                 |                |           |

The above table 2 show that shot put performance for boys mean difference between the pre test of control and experimental group is significant because the calculated 't' value 2.307 is greater than the tabulated 't' value of 0.05 level of confidence of 18 degree freedom.

Also table 2 reveal that shot put performance for girls mean difference between the pre test of control group and experimental group is significant, because the calculate the 't' value of 2.140 is greater than the tabulated 't' value of 2.100 at 0.05 level of confidence of 18 degree of freedom.

Shot put performance boys and girls means between the pre and post test of experimental group was graphically shown.



**CONCLUSIONS:**

On the basis of findings following conclusions are drawn:

1. Significant difference found in shoulder strength i.e. in pull-ups for boys and in flexed arm hang for girls because of weight training.
2. Significant difference found in boys and girls in arm

strength (push ups)

3. Significant difference found in boys and girls in flexibility (sit and reach test)

4. Significant difference found in boys and girls in all the variables hence that effect also observed in shot put performance.

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