



P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 5.38  
IJPESH 2017; 4(3): 496-498  
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www.kheljournal.com  
Received: 21-03-2017  
Accepted: 22-04-2017

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## A comparative study on arm strength among the volley ball players and handball players

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### Abstract

The purpose of the study to compare arm strength among the players of volley ball and hand ball. The area of sport and games has becomes universal urge, because the strength and power dominates sports. The physical exercises and activities are such helps to gain physical fitness and strength. Player who has dominant sours of strength can able to perform well in sports and games. These physical activities promote speed, strength, endurance and agility of the individuals, strength is the capacity of muscle to resist longer against the fatigue. The weak player presents himself with poor performance, The maximum strength can be achieved by weight training and activities done against the gravitational force.

**Keywords:** Strength, power, physical fitness, exercise, training, sports

### Introduction

The main objective of introducing arm strength is to how far strength dominates the sports and games. Hence the physical activities or exercises are meant for everybody to get physical fitness. These strengthening activities promote speed, power, strength, endurances and agility to the sports player. Strength is the capacity of a muscle or group of muscles to excrete force. Strength often results in better performance. To improve muscle endurance strength is needed. Strength is the key to success in modern sports. Hence to promote an individual activities and strength is quite depends on their trainers and coaches. Among the various factors, strength of the body is one of the most vital factor, strength of the arm is involved to some extent in the activities of daily routine life. Aram strength plays an important role in playing games, such as volley ball, hand ball, basket ball, cricket and throwing events. In relation to volley ball and hand ball the arm strength is a key factor of win or lose.

### Materials and methods

The present study is an innovative attempt to compare the arm strength of volley ball players with the arm strength of hand ball players. To accomplish this purpose, the subjects were taken at randomly.

### Selection of the subject

Selected only 30 subjects from volley ball and 30 subjects from hand ball. The players were selected from HYDERABAD District. Here noted down their respective height in inches and weight in pounds. Then the Arm strength of each subject was found out using the Roger's formula as below.

### Sample of the study

S. No	Name of the subject	Number of the subjects
1	Volley Ball Players	30
2	Hand Ball Players	30

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**Tools used**

**Arm strength**

- Pull ups test
- Push ups test

Arm strength (Pull-ups+Push ups)-w/10+(H-60)

Where:

W = Weight

H= Height

In this formula, the (height-60) should be negligible when the height of the individual reaches beyond 60 inches.

**Administration of the test**

Subject were imparted the method of doing pull- ups and push- ups. Enough time was given for warm up. Immediately after the completion of demonstration and explanation. They are presented the sequence of test as a whole in the order of test items to maintain a neat coherence while conducting the test.

**Pull- ups test**

To administer the pull-ups test a standard horizontal bar with a mat underneath for protection was used. The subject s grasped the bar with his palms facing toward him. The subjects was asked to hang straightly, and from that still hang position to pull himself up by flexing his arms until his body to the starting position with his arms fully extended. This movement was repeated as many times as possible at one stretch.

**Push-up test**

To administer push-ups test a gymnastic mat was used. The subject was asked to lie down on his chest and keep his palms directly under the respective shoulder. He was asked to push-up his body until his elbows extended fully. From that position the subject was asked to take down his body until the chest goes closer to the floor. He was asked to repeat this movement continuously. The maximum number of push-ups done by the subject at one stretch was recorded as his score.

**Weight**

To measure the weight of the subject a standard and good conditioned weighing machine was used. The subject was asked to stand on the platform of the weighing machine. The investigator recorded the weight n pound accurately.

**Height**

Here used stadiometer to measure the height of the subject. The subject was asked to stand on stadiometer with arms straight and tightly placed against the body and the palms turned inward and held flat against thighs. A movable vertical bar was there which could be adjusted according to the height of the subjects. The measurement was taken in inches.

**Statistical analysis**

To estimate of the arm strength between volley ball players and hand ball players, the following statistical procedures were followed. To find out the significance of the difference between the means of two groups, the t ratio was calculated. The t- ratio is the ratio of the difference between means and the standard error of the difference between mean. The ration was calculated and tested at 0.01and 0.05 level of significance.

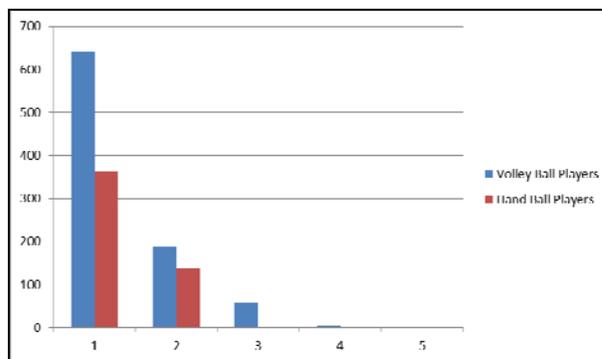
**Results and discussion**

This study was sought to determine the comparison of arm strength between volley ball players and hand ball players. To achieve this purpose, the data collected as per the procedure was treated statistically to find out the t-ratio, test of analysis for the significance of difference. The t-ratio of the analysis of significance at 0.01 and 00.05 levels off confidence. The obtained t-value and was compared with the ‘t’-value of the table given by Clarke and Clarke. The obtained t-value of 655 is found significance at 0.01 and d0.055 level of confidence.

**Table I:** showing the significant difference between the mean sd, df and t-value, P-value in relation to the arm strength (pull-ups).

S. No	Name off the Subjects	Mean	S.D	d.f	t-value	p-value
1	Volley Ball players	643	189.60	58	6.55	0.05
2	Hand Ball Players	363	137.25			

Showing the significant difference between Valley Ball players and Hand Ball players mean, SD, df, t-value, p-value in relation to arm strength (pull ups).



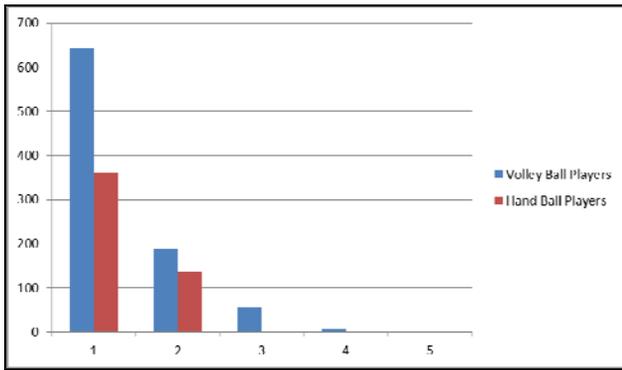
**Discussion**

The significant difference between Volley Ball players and Hand Ball Players in relative to arm strength pull ups the mean value 643, SD-189.60, Hand Ball players mean value 363, SD-137.25, df-58, t-value 6.55, p-value 0.05. hence the significant difference was found.

**Table II:** Showing the significant difference between the mean, SD, df, t-value, p-value in relation to the arm strength Push ups.

S. No	Name off the Subjects	Mean	S.D	d.f	t-value	p-value
1	Volley Ball players	643	189.60	58	6.55	0.05
2	Hand Ball Players	363	137.25			

Showing the significant difference between Valley Ball players and Hand Ball players mean, SD, df, t-value, p-value in relation to arm strength (pull ups).



### Discussion

The significant difference between Volley Ball players and Hand Ball Players in relative to arm strength pull ups the mean value 643, SD-189.60, Hand Ball players mean value 363, SD-137.25, df-558, t-value 6.55, p-value 0.05. hence the significant difference was found.

### Conclusion

The following conclusions were made from the results found by the study of the significant difference was shown between volley ball player and hand ball players in relation to arm strength. It is concluded that the volley ball player have greater arm strength by vigorous and regular practice activity to daily in the modern spender the Volley ball players must have a good arm strength to go in to the competitive world.

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