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## Comparison of shoulder and leg strength between volleyball and handball players

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### Abstract

The main purpose of the study was comparison of shoulder and leg strength between volleyball and handball players. The present researcher was taken the male subjects for the study. The sources of data would be made from the Volleyball and Handball Players, those are participated in the intercollegiate tournament of Amravati district during the section of 2013-14. The researcher was selected 20 players from games of inter college Volleyball and Handball games. The 40 Subjects would be selected by simple random sampling method. Following equipments would be used for collection of data: 1) Shoulder strength was measured by pull-ups. 2) leg strength was measure by standing broad. The data for the study is to be collected and statistical analysis and interpretation of data will be done by using statistical technique 't' test because in the present study only two variables are taken into consideration i.e. shoulder and leg strength between volleyball and handball players. The level of significance is 0.05 for testing the hypothesis. Result there was a no significant difference in shoulder strength between the volleyball and Handball players. There was a significant difference in leg strength between the volleyball and Handball players.

**Keywords:** shoulder, leg strength, volleyball, handball

### Introduction

It is generally agreed that physical fitness is an important part of the normal growth and development of a child, a generic definition regarding the precise nature of physical fitness has not been universally accepted. Through research and scholarly inquiry, it is clear that the multi-dimensional characteristics of physical fitness can be divided into two areas: health related physical fitness and skill related physical fitness (Douglas and Alan, 1994) [4].

Physical fitness is probably the most popular and frequently used term in physical education. The most important objective of physical education is to develop physical fitness. According to Nixon and Cozens (1964), it was the desire to establish a scientific approach to the development of physical fitness which formed the basis of the first meeting of physical educators in 1885 when the profession of physical education originated. The United States President's Council on physical fitness and sports defined the terms "physical fitness as the ability to carry out daily task with vigor and alertness, without undue fatigue, with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies" (Clarke, 1971). General fitness implies the ability of a person to live most effectively with his and her potentials, which depend upon the physical, mental, emotional, social and spiritual components of fitness which are highly interrelated. The primary components of physical fitness identified by the president's council on physical fitness and sports were muscular strength, muscular endurance and cardio respiratory endurance. However, later on the president council also included some other motor performance components namely agility, speed, flexibility and balance in physical fitness. But keeping in view the general opinion of the majority of the researchers, the author has not included the components such as speed, agility, power and balance (which are more important for success in specified sports) as essential components of basic physical fitness. However, the author defines physical fitness by group of five components, namely muscular strength, muscular endurance, cardio respiratory endurance, flexibility and body composition (Kansal, 1996) [5].

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**Methodology**

**Sources of data**

In the present researcher was taken the male subjects for the study. The sources of data would be made from the Volleyball and Handball Players, those are participated in the intercollegiate tournament of Amravati district during the section of 2013-14.

**Selection of Subject**

The researcher was selected 20 players each from games of inter college Volleyball and Handball games.

**Sampling Method**

The 40 Subjects would be selected by simple random sampling method.

**Equipments used for collection of data**

Following equipments would be used for collection of data:

1. **Shoulder strength:** Shoulder strength was measured by pull-ups.
2. **Leg strength:** leg strength was measure by standing broad.

**Statistical analysis**

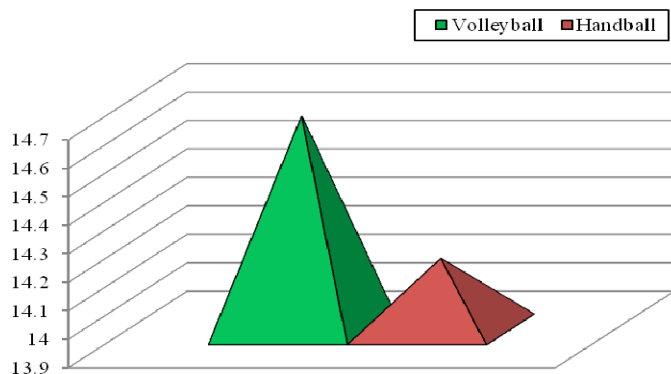
The data for the study is to be collected and statistical analysis and interpretation of data will be done by using statistical technique 't' test because in the present study only two variables are taken into consideration i.e. shoulder and leg strength between volleyball and handball players. The level of significance is 0.05 for testing the hypothesis.

**Table 1:** Comparison of shoulder strength between volleyball and handball players

Group	Mean	SD	SE	MD	Ot	df	Tt
Volleyball	14.65	3.100	0.939	0.500	0.532	38	2.02
Handball	14.15	2.834					

\*Level of Significance = 0.05, Tabulated 't' 0.05 (38) = 2.02

Table No.1 reveals that there is difference between means of volleyball and handball players because mean of volleyball players is 14.65 which is slightly greater than the mean of handball players which is 14.15 and therefore mean difference is 0.500 to check the significant difference between volleyball and handball players data is again analyzed by applying 't' test. Before applying' test, standard deviation is calculated between volleyball and handball players which is 3.100 and 2.834 respectively and then the calculated value of 't' is found as 0.532, is less than tabulated 't' which is 2.02 at 0.05 level of significance.



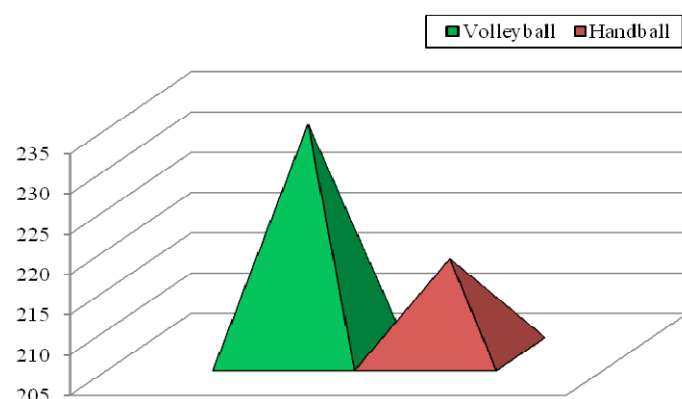
**Graph 1:** Graphical Representation of Mean difference in Shoulder Strength between Volleyball and Handball

**Table 2:** Comparison of leg strength between volleyball and handball players

Group	Mean	SD	SE	MD	Ot	df	Tt
Volleyball	233.55	21.847	7.75 2	16.700	2.154	38	2.02
Handball	216.85	26.918					

\*Level of Significance = 0.05, Tabulated 't' 0.05 (38) = 2.02

Table No.2 reveals that there is difference between means of volleyball and handball players because mean of volleyball players is 233.55 which is greater than the mean of handball players which is 216.85 and therefore mean difference is 16.700 to check the significant difference between volleyball and handball players data is again analyzed by applying 't' test. Before applying' test, standard deviation is calculated between volleyball and handball players which is 21.847 and 26.918 respectively and then the calculated value of 't' is found as 2.154, is greater than tabulated 't' which is 2.02 at 0.05 level of significance. This shows that volleyball players are having more leg strength than handball players.



**Graph 2:** Graphical Representation of Mean difference in Leg Strength between Volleyball and Handball

**Conclusion**

On the basis of finding and within the limitation of the presents study following.

It was seen in table – I there was a no significant difference in shoulder strength between the volleyball and Handball players. It was seen in table– II there was a significant difference in leg strength between the volleyball and Handball players.

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