

# A Proportional Study on Shoulder Strength and Leg Strength of Kuvempu University Feminine Volleyball and Handball Players of Inter-Collegiate Level

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**Abstract:** *Introduction:* Sport plays a very prominent role in the modern society. It is important to individuals, a group, a nation and indeed the world. Human life is based upon the body he keeps. All the activities of life are done with help of the body. Today modernization has made human life easier, as the most the work is performed by the machines. The sedentary life style of man has reduced the efficiency of humans. According to the Centers for Disease Control and Prevention (CDC), physical fitness is defined as 'the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and respond to emergencies. Volleyball is an Olympic group activity in which two groups of 6 dynamic players are divided by a net. Handball is a team sport played by two male or female teams. The players are allowed to handle and throw the ball using their hands, but they must not touch the ball with their feet. The objective of the game is to score and avoid getting goals. *Purpose:* The purpose of the study was to a proportional study on shoulder strength and leg strength of kuvempu university feminine volleyball and handball players at inter-collegiate level. *Methodology:* The purpose of the present study was to a proportional study on shoulder strength and leg strength of kuvempu university feminine volleyball and handball players at inter-collegiate level of 30 female volleyball and 30 female handball players in the age group of 18 to 25 years, Standard tests will be selected for obtaining data from the selected subjects. The tests are, namely Vertical jump test, Standing broad jump test, Seated Medicine Ball throw test, Modified Push-Ups. *Hypothesis:* Hypothesis of this study there will be a significant difference in shoulder strength and leg strength between Female Volleyball and Handball players of Kuvempu University at inter collegiate level.

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

## 1. Introduction

“Physical fitness is the ability to carry out daily tasks with vigorous and alertness without undue fatigue, and with ample energy to engage in pursuits and to meet emergency situation” Clarke (1957). Volleyball is a team sport in which two teams of six players are separated by a net. Each team tries to score points by grounding a ball on the other team’s court under organized rules. It has been a part of the official program of the Summer Olympic Games since 1964. (Biswajit Malakar 2014). The famous Greek philosopher Aristotle stated “Every individual should be physically fit to enjoy the life fully. In intellectual as well as physical work, a sound heart and lungs, good digestion, well-developed physique, all are the great assets for living a happy and satisfying life.” (Sunil Sen, Kamlesh Sen and K. R. Bhagat 2014). Handball is a team sport played by two male or female teams. The players are allowed to handle and throw the ball using their hands, but they must not touch the ball with their feet. The objective of the game is to score and avoid getting goals. The team that scores more goals in a given period of time wins the match. The game is played at a very high speed and body contact is permitted. As a result, Fair Play has a central importance. Basic handball is either played in a sports hall or outdoors on a 40x20 meter court. All activities in handball are performed under specific

conditions, in the presence of players of the opposing team and while observing playing regulations.

## 2. Methodology

The purpose of the study was to compare the shoulder strength and leg strength of female Volleyball and Handball players of Kuvempu University. In order to achieve the purpose 30 Volleyball players and 30 Handball players of Kuvempu university were selected the data was gathered at inter collegiate tournaments during the year 2016-16. To know the Leg strength and Shoulder strength following criterion measures were considered: Vertical jump test, standing broad jump test, Seated Medicine Ball throw test, Modified Push-Ups.

## 3. Statistical Analysis

The data collected was subjected to statistical analysis and standard ‘t’ test was used to compare the means of two different groups.

## 4. The Analysis, Interpretation and Results of Study

Mean, standard deviation and ‘t’ test value of the Leg strength is presented in the following tables.

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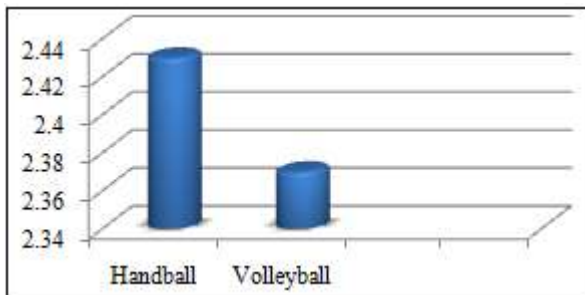
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**Table 1:** Mean, Standard Deviation and ‘T’ Score of the Vertical Jump of Handball and Volleyball Women Players

Sl. No.	Players	Sample size	Mean	Standard Deviation	‘t’ value
1	Handball	30	2.43	.09	2.04*
2	Volleyball	30	2.37	.12	

\*‘t’ value: 1.96 significant at 0.05 level.

The above table shows that the Mean value, Standard deviation and ‘t’ value of Handball and Volleyball Women players. In vertical jump the calculated ‘t’ value 2.04 which is lesser than the critical ‘t’ value 2.50. The leg explosive power between volleyball and handball players was significant. But when mean values are compared Handball women players have shown greater Mean value than Volleyball women players.



**Figure 1:** Graphical representation Vertical Jump Performance

**Table 2.** Mean, Standard Deviation and ‘T’ Score of the Standing Broad Jump of Handball and Volleyball Women Players

Sl. No.	Players	Sample size	Mean	Standard Deviation	‘t’ value
1	Handball	30	1.59	.24	1.10*
2	Volleyball	30	1.52	.17	

\*‘t’ value: 1.96 Significant at 0.05 level.

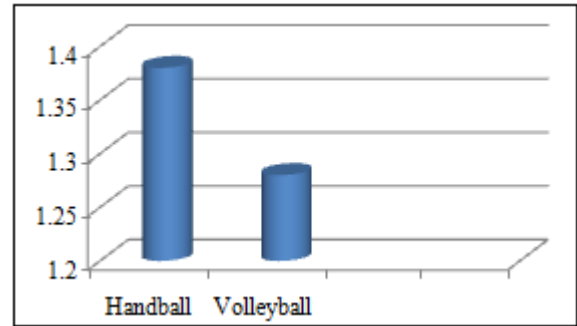
The above table shows the Mean value, Standard deviation and ‘t’ value of Handball and Volleyball Women players. In Standing broad jump the calculated ‘t’ value 1.10 which is lesser than the critical ‘t’ value 2.50. So it is not significant at 0.05 level of significance. But when mean values are compared Handball women players have shown greater Mean value than Volleyball women players.

**Table 3:** Mean, Standard Deviation and ‘T’ Score of the Medicine Ball Throw of Handball and Volleyball Women Players

Sl. No.	Players	Sample size	Mean	Standard Deviation	‘t’ value
1	Handball	30	1.38	.24	2.03*
2	Volleyball	30	1.28	.19	

\*‘t’ Value: 1.96 significant at 0.05 level.

The above table shows the Mean value, Standard deviation and ‘t’ value of Handball and Volleyball Women players. In Medicine Ball Throw the calculated ‘t’ value 2.03 which is lesser than the critical ‘t’ value 2.50. So it is significant at 0.05 level of significance. But when mean values are compared Handball women players have shown greater Mean value than Volleyball women players.



**Figure 3:** Graphical Representation of Medicine Ball Throw

## 5. Conclusion

On the basis of study and within the limitations of study the following conclusions were drawn:

- 1) There was significant difference in Leg explosive power and Shoulder strength between Handball and Volleyball players. Handball players were better in both variables.
- 2) There was no significant difference between handball and volleyball players in explosive leg strength and shoulder power.
- 3) The Volleyball players were superior in Modified push-ups, but Handball players better in Vertical jump, Standing broad jump and Medicine ball throw.

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