

## COMPARATIVE STUDY ON SELECTED PHYSICAL FITNESS VARIABLES OF HANDBALL AND VOLLEYBALL PLAYERS OF DR. BAM UNIVERSITY

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### Abstract

The aim of this investigation was to find out the Comparison on Selected Physical Fitness Variables of Handball and Volleyball Players of Dr. BAM University. In the current investigation, forty female players were selected at random by a purposive sampling technique from affiliated colleges of Dr. Babasaheb Ambedkar Marathwada University, CSN (M.S.). 20 female players were selected from Handball, and another 20 female players were selected from Volleyball during the academic year 2023-2024. The age group ranged from 18-25 years. The Physical Fitness variables selected for the research work like Arm Strength and Explosive Leg Strength. The data of Arm Strength was collected by Pull-Ups and Leg Strength was collected by the standing broad jump. After that collected data was put into Microsoft Excel to develop the Master Chart and then 't test was used for the statistical treatment. To test the hypothesis the level of significance was set at 0.05 level of confidence, after the statistical analysis of data related to the Selected Physical Fitness Variables of Handball and Volleyball Players, it is found that there is significant difference in Arm Strength and Explosive Leg Strength of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, CSN. Hence, the researcher's pre-assumed hypothesis is accepted.

### INTRODUCTION:

**Muscular Strength:** Maximal contraction power of the muscles is known as muscular strength. The muscular strength is usually measured with respect to different group of muscles acting together. Muscular strength is tested with the help of dynamometers and or densitometers which measure the amount of force exerted in a single effort by a particular group of muscles.

Muscle strength mentions to the amount of force a muscle can produce with a single highest effort. Size of muscle cells and the

capability of nerves to activate them are connected to muscle strength. Examples Building muscle strength helps with body position, makes performing daily actions easier, increases metabolism and relieves stress. You don't need to go to the gym to increase your muscle strength. Simple exercises can be done at home without equipment. Check out these workouts and resources to improve your muscle strength and boost your calorie burning potential.

**Strength:** Strength is the ability to overcome resistance or act against resistance. Strength should not be considered a creation of only muscular contraction. It is in fact a product of voluntary muscle contractions caused by the neuro-muscular system.

**Arm Strength:** Arm strength will be defined as the capacity of a person to exert muscular force of the arm.

S. No	Variables	Equipment's
01	Arm Strength	Pull-Ups
02	Leg Strength	Standing Broad Jump

**Leg Strength:** Leg strength will be defined as the capacity of a person to exert muscular force of the Leg.

**Objectives:**

The main purpose of this study was to find out the Comparison on Selected Physical Fitness Variables of Handball and Volleyball Players of Dr. BAM University.

**Hypothesis:**

On the basis of literature searched and the researcher's own perception it was hypothesized that there would be significant difference in Selected Physical Fitness Variables of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University.

**Methodology:**

**Source of Data:**

In the present study subjects were selected from affiliated colleges of Dr. Babasaheb Ambedkar Marathwada University, CSN, for the collection of data.

**Selection of Subjects:**

Forty female subjects (20) from Handball and (20) from Volleyball were selected for the collection of data. The age group was ranging from 18-25 years.

**Sampling Method:**

The subjects were being selected by using purposive sampling method.

**Collection of Data:**

For the collection of data, the subjects were given full administration of the tests which was used for the collection of data in the study. The data of arm strength was collected by Pull-Ups and the data of explosive leg

strength was collected by standing broad jump. After that collected data was put into Microsoft Excel to develop Master Chart and then 't' test was used for the statistical treatment.

**Criterion measures:**

Following are the criterion measures which were responsible for collection of data, to testing the hypothesis.

**Level of Significance:**

To test the hypothesis the level of significance was set at 0.05 level of confidence which was considered adequate and reliable for the purpose of this study.

**Analysis of the Data:**

After the collection of data from Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, Dr. BAM, the raw data were converted into standard one by using a statistical technique 't' test for testing of hypothesis.

**Table No. 1**  
**Comparison of Arm Strength between Handball and Volleyball Players**

Game	M	S.D.	S.E.	MD	Def	O. 't'	Tab 't'
H,ball	6.20	2.44	0.714	1.75	38	2..450*	2.021
V,ball	4.45	1.93					

**Table No. 1:** indicates that the mean of Handball players is 6.20 which is greater than the mean of Volleyball Players which is 4.45. So this mean difference is found as 1.75. The calculated value of 't' is found as 2.45 which is greater than tabulated 't' which is 2.02 at 0.05 level of significance. Hence the hypothesis which was given by the researcher is accepted.

**Graph-1**  
**Graphical Representation of the Mean Difference of Arm Strength between Handball and Volleyball Players**

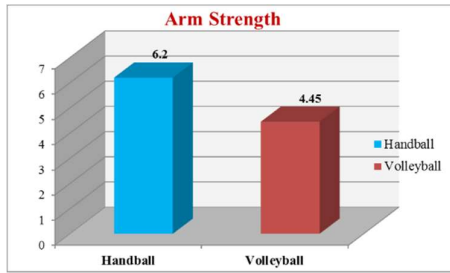


Table No. 2

Comparison of Leg Strength between Handball and Volleyball Players

Game	M	S. D.	S.E.	M D	De g of f.	O. 't'	Tab 't'
H,ball	2.13	0.16	0.052	0.14	38	2.718*	2.021
V,ball	2.27	0.15	0.052	0.14			

Table No. 2: indicates that the mean of Handball players is 2.13 which is less than the mean of Volleyball Players which is 2.27. So this

CONCLUSIONS:

In the beginning of this study it was hypothesized that there would be a significant difference in Selected Physical Fitness Variables of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, but after the statistical analysis of data related to the Arm Strength and Explosive Leg Strength of Handball and Volleyball Players, it is found that there is significant difference in Arm Strength and Explosive Leg Strength of Handball and Volleyball Players of Dr. Babasaheb Ambedkar Marathwada University, CSN. Hence, the researcher’s pre-assumed hypothesis is accepted.

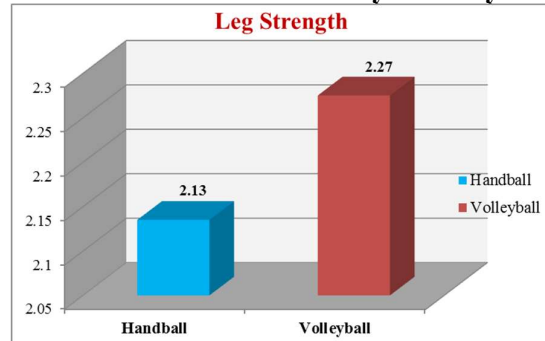
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mean the difference is found as 0.14. The calculated value of ‘t’ is found as 2.718 which is greater than tabulated ‘t’ which is 2.02 at 0.05 level of significance. Hence the hypothesis which was given by the researcher is accepted.

Graph-2

Graphical Representation of Mean difference of Leg Strength between Handball and Volleyball Players



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