



## COMPARATIVE STUDY OF FITNESS COMPONENTS BETWEEN VOLLEYBALL AND BASKETBALL FEMALE PLAYERS OF INDORE DIVISION

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### Abstract

Physical Fitness refers to maximize serviceable capacity of all constructions of the body. The purpose of the study was to compare the physical fitness components of Volleyball and Basketball players (Female) of Indore Division. The subjects selected for this study were 20 female Volleyball players from Indore Division and 20 female Basketball players from Indore division. The age of the subjects was range between 15 to 25 years. The physical components like Endurance, Speed, Strength (leg strength), Agility and Flexibility for Volleyball and Basketball female players of Indore Division was measured through modified Aapher Youth Fitness Test Battery. The score from each item in the Modified Aapher Fitness Test consisting of score of the subjects of Volleyball and Basketball female players of Indore Division were analyzed by calculating the data applied to Descriptive Statistics Mean and Standard Deviation and Independent t-test in order to find out the significance difference to compare between Physical Fitness Components of Volleyball and Basketball (Female) players of Indore Division. The results have shown that there is No Significance Difference between Volleyball and Basketball (Female) Players of Indore Division in Physical Fitness Components through Modified Aapher Youth Fitness Test Battery namely Endurance, Speed, Agility, Strength (leg strength) and Flexibility. The selected level of significance as set at .05 levels. After applying the independent t-test it was observed that there was No Significance difference in Physical Fitness Components.

**Keywords:** Basketball, Volleyball, Fitness.

### INTRODUCTION

Physical fitness involves the performance of the heart and lungs and the muscles of the body. The performance of a sports person in several sports also depends on his/her physical fitness. Circumstance or the physical fitness is the total of five motor abilities namely cardiovascular endurance, power, agility, speed, and muscular strength. For that reason, the sports performance in all sports depends to great extent on these abilities. Enhancement and preservation of physical fitness is the most important mean of sports training (Uppal, 1980). Often referred to as explosive power, Muscular power is a combination of speed and strength which is important in vigorous performance since it determines how hard a person can hit, jump and push, etc. Suppleness is the Quickness to adjust the direction of body or its 2 parts rapidly which is dependent relative on potency, rejoinder time, speed of movement, and muscular coordination. Speedy start and stops and

speedy changes in course are elementary for good performance in athletics. Running speed is not just an athletic occasion itself, but it is a significant factor in almost all track and field games it can result the disparity in whether a performer is able to gain an advantage over his/her challenger. Man's subsistence and efficiency depends upon his physical fitness. Smooth now, physical fitness actually implies more than the ability to do a work without many efforts. Physical fitness affects one's life's performance not only the physical well-being, and mental effectiveness but also the personal and social adjustment.

### COMPONENTS OF PHYSICAL FITNESS

Sportspersons are those who can perform any type of physical activity or participate in sports. Sportspersons are known to be physically fit and health-conscious. In order to succeed in this

extremely competitive world of sports, they must be physically fit. Sportspersons place a high value on fitness, and their workout regimens are believed to last for many hours each day. They devote a significant amount of time to prepare their bodies to handle the pressures and energy necessary to accomplish outcomes. Generally, every athlete will focus on becoming the fittest initially, and only after achieving a specific level of fitness would he focus on his specialization. Sportspersons are accompanied by fitness trainers who analyse an athlete's fitness levels and assist him in not just maintaining but also improving his fitness via training and activity.

**Major Components of Physical Fitness are:**

1. **Strength:** Strength applies to the quality or property of person or thing that makes possible the exertion of force or the withstanding of the strain, pressure or attack.
2. **Endurance:** Endurance is ability to do sports movements, with desired quality and speed, under condition of fatigue.
3. **Flexibility:** The capacity of our joints and muscles to move freely across their functional range of motion without discomfort or limitation.
4. **Speed:** Speed is the ability to perform a movement quickly. It is the time takes us to respond to a stimulus.
5. **Agility:** The ability to perform a series of explosive power movements in rapid succession in opposing directions.

**METHODOLOGY**

20 female Volleyball players of Indore Division and 20 female Basketball Players of Indore Division were considered for the study. The age of the subjects will be range from 15 to 25 years. The selected fitness components were Endurance, Speed, Agility, Strength (leg strength) and Flexibility. The criterion measures were used to collect the data in a systematic way to record in a correct unit and style for each test item.

1. Endurance was measured by 600-meter Run.
2. Speed was measured by 50-meter Dash.
3. Strength (leg strength) was measured by Broad Jump.
4. Agility was measured by Shuttle Run.
5. Flexibility as measured by Sit and Reach Test.

**FINDINGS**

**Table – 1**

**Descriptive statistics Mean and Standard Deviation between 600m, Shuttle run, 50m Dash, Standing Broad Jump and Sit**

**Table-3**

**Independent t-test of Physical Fitness Components between Volleyball and Basketball Female Players of Indore Division.**

S.NO	Variable	Group	Mean	SD	Mean Deference	Calculated t-ratio
1	600 m	Basketball	132.0575	11.44412	-17.1635	-4.768*
		Volleyball	149.221	11.32019		
2	Shuttle Run	Basketball	9.5815	0.42669	0.0015	0.011
		Volleyball	9.58	0.44273		
3	Broad Jump	Basketball	2.0505	0.23419	0.0075	0.087
		Volleyball	2.043	0.30581		
4	50m Dash	Basketball	6.607	0.48129	-0.3215	-2.172*
		Volleyball	6.9285	0.45467		

**and Reach Test of Basketball Female Players of Indore Division.**

S.NO	Variable	N	Mean	SD
1	Endurance	20	132.0575	11.44412
2	Agility	20	9.5815	0.42669
3	Leg Strength	20	2.0505	0.23419
4	Speed	20	6.6070	0.48129
5	Flexibility	20	10.3000	6.18232

Table – 1 reveals the mean and standard deviations of Female Basketball Players of Indore Division.

The variable Endurance in Female Basketball Players of Indore Division have the mean 132.0575 and standard deviation 11.44412. The variable Agility have the mean 9.5215 and standard deviation 0.42669. The variable Leg Strength have the mean 2.0505 and standard deviation 0.23419. The variable Speed have the mean 6.6070 and standard deviation 0.48129. The variable Flexibility have the mean 10.3000 and standard deviation 6.18232.

**Table- 2**

**Descriptive statistics Mean and Standard Deviation between 600m, Shuttle run, 50m Dash, Standing Broad Jump and Sit and Reach Test of Volleyball Female Players of Indore Division.**

S.NO	Variable	N	Mean	SD
1	Endurance	20	149.2210	11.32019
2	Agility	20	9.5800	0.44273
3	Leg Strength	20	2.0430	0.30581
4	Speed	20	6.9285	0.45467
5	Flexibility	20	10.0500	4.81746

Table – 2 reveals the mean and standard deviations of Female Volleyball Players of Indore Division.

The variable Endurance in Female Basketball Players of Indore Division have the mean 149.2210 and standard deviation 11.32019. The variable Agility have the mean 9.5800 and standard deviation 0.44273. The variable Leg Strength have the mean 2.0430 and standard deviation 0.30581. The variable Speed have the mean 6.9285 and standard deviation 0.45467. The variable Flexibility have the mean 10.0500 and standard deviation 4.81746.

5	Sit and Reach Test	Basketball	10.3	6.18232	0.25	0.143
		Volleyball	10.05	4.81746		

\*Significance at .05 level.

Tabulated “t” at .05 level with df 38 for two tailed test= 2.02

#### Discussion of Findings

The result obtained in the present study were discussed in the light of the findings and reports of the area of work. The results were also discussed on the basis of knowledge, understanding and experience of the researcher himself. According to the study analysis part had been into two parts as game wise all the selected 5 items were analysed game wise and then fitness test was examined. There after comparison was done on the basis of their performance. The finding indicates that there was a slight difference between 600-meter test and 50-meter test hence, study indicates that there is NO Significance difference between both Volleyball and Basketball female Payers of Indore Division.

## REFERENCES

### BOOKS AND JOURNALS

1. Clarke, David H. 1979. The Components of Physical Fitness. New York: Ams Press Inc.
2. SanasamChaoba Singh, 2022. Comparative study on Physical Fitness Components among Volleyball, Basketball and Football Players of Delhi Public School in North East India.
3. MISCELLANEOUS
4. [www.shodganga.com](http://www.shodganga.com)
5. [https://www.google.com/search?q=physical+fitness&rlz=1C1CHBF\\_enIN925IN925&oq=&aqs=chrome.0.69i59j450l8.11313j0j7&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=physical+fitness&rlz=1C1CHBF_enIN925IN925&oq=&aqs=chrome.0.69i59j450l8.11313j0j7&sourceid=chrome&ie=UTF-8)
6. [https://www.physio-pedia.com/Physical\\_Fitness\\_and\\_Its\\_Components](https://www.physio-pedia.com/Physical_Fitness_and_Its_Components)