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## A comparative study of speed and endurance level between handball and basketball male players

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### Abstract

The purpose of the study was to compare speed and endurance level among handball and basketball male players. A total 60 subjects [30 from each game] were selected. In this study 50 yards dash run and 600 yards run and walk test were used to measure the speed and endurance level of the players. The study had been analyzed with help of mean, SD and comparison between groups was done with the help of 't' test for equality of means. The study revealed that on the basis of the finding, players of both game were possessing same degree of speed and endurance level.

**Keywords:** Speed, endurance, handball, basketball

### Introduction

Physical fitness has been considered as one of the most important aspects of human existence a sound body and an active mind are inter-related. No education is completed without sound physical education. No education is completed without sound physical health as it makes a person efficient and fit to work in any area of human endeavour. Physical fitness is the state of body in which a person can carry his daily duties and responsibilities efficiently and with the energy left he can enjoy hobbies and other recreational activities. In other words physical fitness can be defined as that state of bodies in which a person can do work for a longer duration without undue fatigue.

"Fitness is the state which characterizes the degree to which a person is able to function efficiently. Implies the ability of each person to live most effectively with his potentialities. Ability to function depends upon the physical, mental, emotional, moral and components of fitness; all of which are related to another and are mutually inter-dependent" [AAHPER]

Sports performance solely depends on the different fitness parameters like In the sports world, physical fitness is the primary necessity for men and women to entertain e strength, endurance, speed, flexibility and coordinative abilities. Above the performance limited fitness parameters, aerobic and anaerobic efficiency is to be considering among of the most important factors to give an optimum performance by the players. By the nature and structure of handball and basketball games, similar or comparable type of physical and physiological fitness efficiencies might be existed. These two games require the high qualities of speed, muscular strength, muscular endurance, cardio-respiratory endurance, flexibility, explosive strength, speed, agility, kinaesthetic ability, reaction time etc. In the training of handball and basketball, these factors are emphasized to improve as well as to achieve the high skill performance too. Even though, it is predicted by the structure and nature of the games that there may be similarities or significant differences in terms of physical and physiological fitness among these games. The aerobic efficiency (VO<sub>2</sub>max), which is the maximum amount of oxygen consumed during maximal exercise during activities that use the large muscle groups, highly required in the handball and basketball games to maintain the high tempo of performance throughout the game duration. The anaerobic efficiency (max. power) is also indispensable to produce high intensive agile movements, jumps, turns, explosive burst running etc., which are used the total quantum of energy that combined amount of output from the ATP (adenosine-tri-phosphate), PC (phospho-creatine) and lactic acid systems. Under such conditions, both the aerobic and anaerobic efficiencies are required for maximum output.

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Therefore, the aerobic and anaerobic capacities contribute the critical values as the dominant performance factor between handball and basketball games.

**Objective of study:** To assess the significance difference in speed and endurance between handball and basketball male players.

Definition and Explanation of the terms

**Speed**

Speed is the ability or capacity of an individual to perform successive movements of the same pattern at a fast rate or even one single movements. Speed is the related to strength as an increasing strength may be accompanied by some increase in speed. According to white [1972] speed is defined as the ratio of change in position. Data of change of position is the ratio of the distance travelled and the elapsed time. As the equation is:

$$\text{Speed} = \text{change in position} / \text{elapsed time}$$

**Endurance**

Endurance is the ability to continue with an unpleasant or difficult situation, experience, or activity over a long period of time. Training for endurance can reduce the ability to exert endurance strength unless an individual also undertakes resistance training to counteract this effect.

"Endurance is the ability to do sports movement with the desired quality and speed, under condition of fatigue"

**Hypothesis**

Null hypothesis - there is not a significant difference in speed and endurance level between handball and basketball male players.

**Procedure and method**

Sampling- 60 subjects [30 from each group] of this study were selected with the cluster sampling technique from three teams of each game which were participated in inter-college

level in Punjabi University Patiala i.e Khalsa College Patiala, Public College Samana, P.G.S. Govt. College of Physical Education Patiala.

**Method**

All participants were informed of the procedure and purpose the experiment and were criteria of availability, reliability and validity the following tools were used to collect the data. The selected physical fitness components - speed and endurance were measured by different means and methods. cardio - vascular endurance was measured by 600 yards run and walk test , speed was measured by 50 yards dash dash test.

Analysis of Data- In the present study analysis and interpretation of the data and result obtained through the application of statistics. The part is devoted to the comparative result of handball and basketball players of selected physical fitness components. The result has been discussed in below. The study had been analyzed with help of mean, SD and comparison between groups was done with the help of 't' test for equality of means.

Statistical Description of mean, SD and 't' test value of the tests of handball and basketball male players

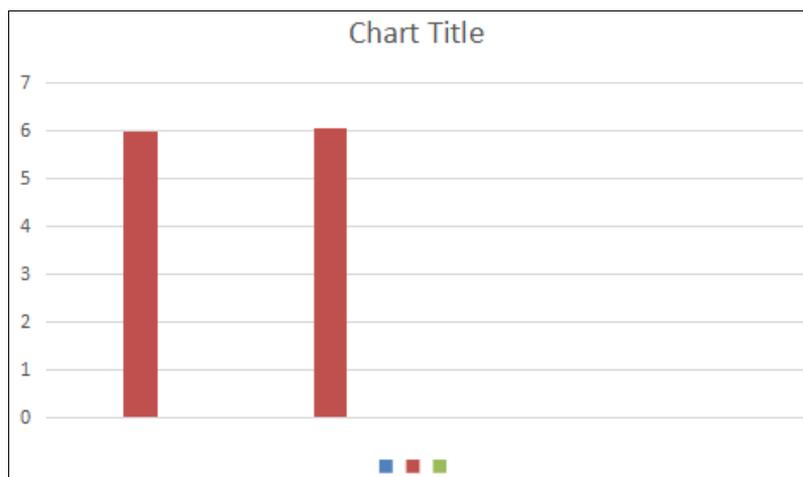
**Table 1:** 50 yard dash run score:-

Teams	Mean	Sd	't' ratio
Handball	6.015	0.0566	-2.1284
Basketball	6.0607	0.103	

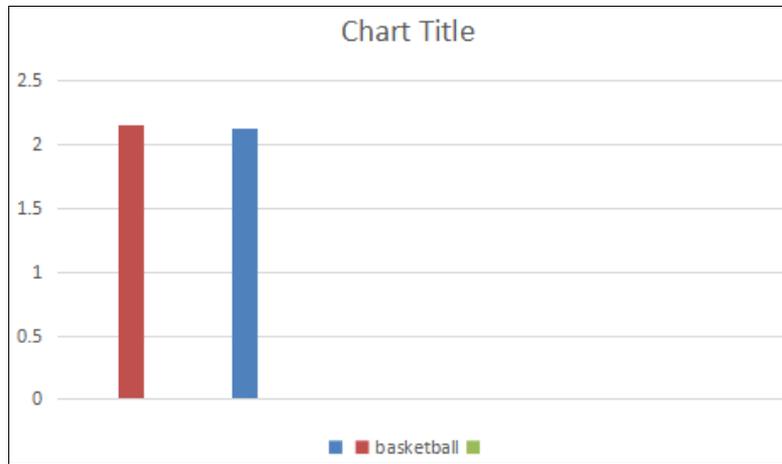
**Table 2:** 600 yards run and walk score:-

Teams	Mean	Sd	't' ratio
Handball	2.128	0.0447	-1,7431
Basketball	2.149	0.05	

The first table shows the mean, SD and 't' test value of 50 yards dash run among handball and basketball players. However, the second table shows the data related 600 yard run and walk among handball and basketball players.



**Fig 1:** Graphical presentation of Mean and SD of 50 yards dash run among handball and basketball players.



**Fig 2:** Graphical presentation of Mean and SD of 600 yards run and walk among handball and basketball players.

Finding- ‘t’ test for equality for Means employed to find out the significance difference. The significance level was set at 0.5 levels.

1. There was not a statistical difference on 600 yards run and walk among handball and basketball players. Therefore, null hypothesis is accepted.
2. There was not a statistical difference on 50 yards dash run among handball and basketball players. Therefore, null hypothesis is accepted.

**Conclusion**

The finding of the study can be concluded as under:

1. The players of both games possessing same degree of speed and endurance level.
2. The players of both games do not differ significantly in these components when statistical compared with each other.

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