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## Comparative study of reaction time among football, handball and basketball players

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### Abstract

A component of timing, the ability to initiate movement and respond to a stimulus, is referred to as reaction time. It is important in many sports and day to day activities. The main purpose of the study was to compare in Reaction Time among Football, Handball and Basketball players. For the purpose of study Fifteen (15) male inter-college and state level players' age ranging from 18 to 25 years were selected from Manipur University on the basis of simple random sampling method. For the analysis of collected data independent F-test was employed where the level of significance was set at 0.05 level of confidence. It was concluded that Handball players are better in Reaction Time ability than the Football and Basketball players. Again Football players are better in Reaction Time ability than Basketball players.

**Keywords:** Football, handball, basketball, reaction time

### Introduction

Now a day sports become a part and parcel of life. It is a fact that apart from other factors, the performance of an individual in any game and sports mainly dependent upon physical, physiological and psychological factors. Individual differ in physical abilities, mental abilities, physiological capacities and personality traits. Sports mean pleasure as well as competition.

A component of timing, the ability to initiate movement and respond to a stimulus, is referred to as reaction time. It is important in many sports and day to day activities.

The game of football is one of the most popular and simple game in the world. Football refers to a number of sports that involve, to varying degrees, kicking a ball with the foot to score a goal. In simple words, physical build up creates chances to score goals.

Handball is a modern ball game which belongs to the family of team sports. It combines the best features of different branches of sport, that is, the advantages of physical abilities, technical skills and tactical knowledge.

Basketball is an extremely dynamic sport that requires movements in multiple planes of motion as well as rapid transitions from jogging to sprinting to jumping.

### Purpose of the study

The main purpose of the study was to compare the Reaction time among Football, Handball and Basketball players.

### Hypothesis

It was hypothesized that there would be significant difference in reaction time among football, handball, and basketball players.

### Methodology

#### Selection of subject

For the purpose of study 15 male players of each game were selected who had participated at minimum inter-college and state level competitions of Department of PESS and other Department of Manipur University were the subjects of this study. The age range subjects were from 18-25 years.

### Criterion Measures

i. **Foot reaction time:** To measure the speed of reaction time of the foot by using Nelson's foot reaction time test and the scores were recorded in second.

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ii. **Hands reaction time:** To measure the reaction time of hand movement by using Nelson’s Hand reaction time test and the scores were recorded in seconds.

**Analysis and interpretation of data**

The main purpose of this study was to Compared the reaction time among football, handball and basketball players. The score were collected from the football, handball and basketball players.

The statistically analyzed of the data were collected from 15 players of each games i.e. football, Handball, basketball players of department of PESS and other Department of Manipur university, Canchipur, Who have participated at the inter-college and state level competitions.

To analyzed of the collected data, the following statistical technique was used, Descriptive statistics mean and standard division was adopted and for testing the significant difference among the three games means, independent F-test was employed for the purpose of this study and the level of significance was set at 0.05.

**Level of significance**

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

**Findings**

The finding of the Reaction time i.e. Hand Reaction time and

Foot Reaction time of Football, Handball and basketball players are presented in Table – 1to 2.

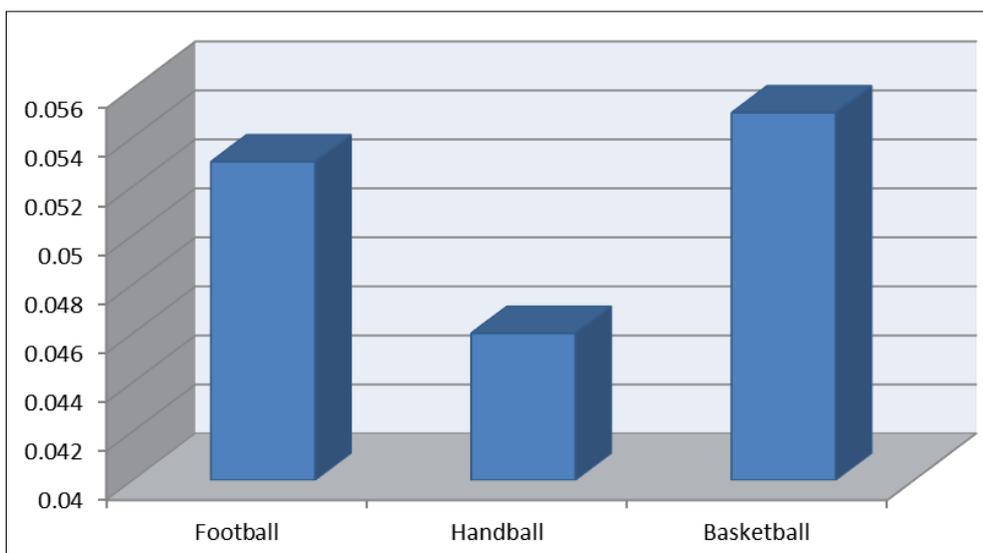
**Table 1:** Significance means difference on hand reaction time among football, handball and basketball players.

Variable	Groups	Mean	SD	‘F’ Value
Hand Reaction Time	Football	0.053	0.00542	9.12*
	Handball	0.046	0.00529	
	Basketball	0.055	0.0067	

\*significance at 0.05 level  $f_{0.05}(2, 42) = 3.22$

From the finding of above table, the mean value of Football player is 0.053 and SD Values is 0.00542. The mean value of Handball player is 0.046 and SD values 0.00529. The mean value of basketball player is 0.055 and SD value 0.0067 and finding f- ratio is 9.12 at 0.05 level of significance and the tabulated value is 3.22. So the finding value is greater than the tabulated value. So, It was concluded that, there was significant difference among football, Handball and basketball players on Hand reaction time. The Handball players have superior performance on hand reaction time ability than the Football and Basketball players because of nature of game movement and Football players have superior performance hand reaction ability than the basketball players because of nature of the game.

**The graphical representation of mean comparison for Hand Reaction time is shown at figure-1**



**Fig 1:** Significant mean difference of Hand Reaction time among Football, Handball and Football players.

**Table 2:** Significance means difference on foot reaction time among football, handball and basketball players.

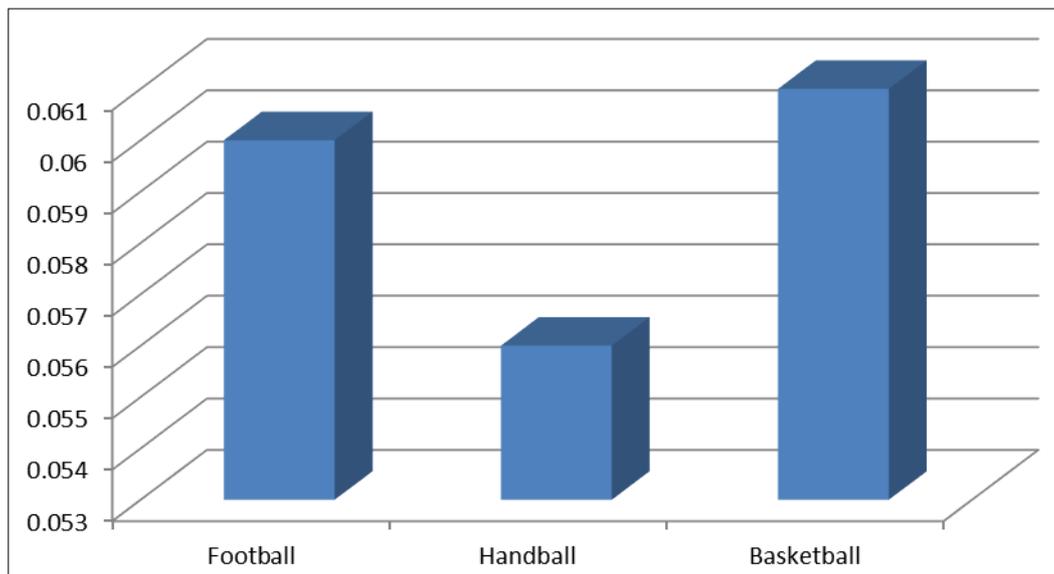
Variable	Groups	Mean	SD	‘F’ value
Foot Reaction Time	Football	0.060	0.00483	4.29*
	Handball	0.056	0.00358	
	Basketball	0.061	0.00509	

\*significance at 0.05 level  $f_{0.05}(2, 42) = 3.22$

From the finding of above table, the mean value of Football player is 0.060 and SD Values is 0.00483. The mean value of Handball player is 0.056 and SD Values is 0.00358. The mean value of basketball player is 0.061 and SD Values is 0.00509. And the finding ‘F’ ratio is 4.29 at 0.05 level of significance.

And the tabulated value is 3.22. So the finding value is greater than the tabulated value. It was concluded that, there was a significant difference among football, Handball and basketball players on foot reaction time. The Handball players have superior performance on foot reaction time ability than the Football players and Basketball players because of nature of game movement and Football players have superior performance foot reaction ability than the basketball players because nature of the game.

**The graphical representation of mean comparison for Foot Reaction time is shown at figure-2**



**Fig 2:** Significant mean difference of Foot Reaction time among Football, Handball and Basketball players.

### Discussion of Finding

It has been observed from the result of the study that there are significant differences in the Reaction time among Football, handball and basketball players of Manipur University.

The significant results are due to the nature of the game and the movement of the body almost same. Hence there was significant difference among football, handball and basketball players.

### Conclusions

It was found that by comparing the means of Hand reaction time and foot reaction time, there was a significant difference among Football players, Handball players and basketball players.

It was concluded that handball players are better than the football and basketball players.

On the basis of the findings it was concluded that participation in different sports cultivates physical fitness but at a very much varied context of such chosen sports.

It helps and guides the students to choose professional carrier in physical Education.

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