



## COMPARATIVE STUDY ON REACTION TIME OF MALE SOCCER PLAYERS WITH RESPECT TO THEIR PLAYING POSITIONS

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**Abstract:-** The present study was conducted to compare the reaction time of inter college male Soccer Players with respect to their playing positions. These players belong to Maharishi Markandashwer University, Mullana. The study was carried out on 50 male players, 25 offensive and 25 defensive players. The offensive players include forwards and the defensive players include midfielder, full backs and goal keeper. The data was collected by the use of electronic chronoscope. Electronic chronoscope is used to measure the visual and audio reaction time. The data was analyzed and compared with the help of statistical procedures in which, arithmetic mean, standard deviation, standard error deviation, and t-test were employed.

**Keywords:**Reaction time, Audio, Visual, Defensive, Offensive .

### INTRODUCTION

Soccer is a very popular game worldwide. As it is true in any other game, specific factors make some players better than others. For evaluating beginners, initial reaction time can also be a valuable tool. Reaction time is involved in many areas of life. It is a factor in driving a car and in many factory jobs; workers with good reaction time are more productive. A football training program could conceivably help to improve driving skills, increase worker production and even prevent dangerous accidents by improving reaction time.

The reaction time is often overlooked and usually underestimated element in the selection of athletes for different sports. In sports and games, in which movements of a participant are conditioned by signals, by movements of opponents, or by motion of the ball, reaction time is of great importance. A sprinter who can start faster than other contestants; a baseball catcher who can react faster to the change in the direction of the motion of the ball; a ping pong player who is always in the right place at the right time- all have a definite advantage over slower reacting players.

Sports have both psychological and social dimensions, besides physical, physiology and technical aspects. The people of all societies of the world have interest in sports. Most of the nations share a common interest in sports competitions, especially during the Olympic games, where people from all nations focus their attention on that drama of competition. But the quality of the participation of the athletes and sportsmen is determined by their psychological factors (Atwell, 1948).

In the present era of competition, the psychological preparation of a team is much important because different skills of a game are taught based on the scientific lines. The teams are prepared to win the games not only to play the games. For winning the games; it is not the proficiency in the skills which bring victory but more important is the spirit of the players with which they play and perform their best in the competition. In these days, the application of psychological principles has received greater attention to the improvement of performance in sports. There are certain accepted psychological principals which have to be applied, so that the athletes and players are able to show their best in their performances (Burley, 1944).

Physical educationists, coaches and sports scientists have always expressed a great need to know more about those psychological principles, which are helpful in improving the motor skills of the players. It is important to know about the role of reaction times, movement time and emotional phenomena like competitive anxiety of the

players during training as well as competitive situations (Barbara, 1961).

Speed of reaction and speed of movement is very vital factors in sports on many occasions. In general, fast reactions are characteristics of great athletes in the sports performance at the higher competitive level (Bellis, 1993).

The results of sports competitions have revealed that the champion sprinters win races and set world records by small fractions of seconds. In a contest, where races and events are won by a fraction of seconds, the role of reaction time becomes very significant (Burpee, 1936).

### **OBJECTIVES OF THE STUDY**

1. To find out the audio reaction time of male Soccer players with respect to their playing positions.
2. To find out the visual reaction time of male Soccer players with respect to their playing positions.

### **HYPOTHESIS OF THE STUDY**

1. It was hypothesized that there will be no significant difference between offensive and defensive male Soccer players with respect to audio reaction time.
2. It was hypothesized that there will be no significant difference between offensive and defensive male Soccer players with respect to visual reaction time.

### **PROCEDURE AND METHODOLOGY**

#### **Sampling**

The present study was carried out on 50 Maharishi Markandeshwar University, Mullana inter-college Soccer male players whose age between 18-25 years. All these players were divided into two groups of their playing positions.

- i) Offensive players includes forwards.
- ii) Defensive players includes midfielder, full backs & goal keeper

#### **Apparatus used**

The measurement of visual and auditory reaction time, electronic chronoscope was used. It is a specially designed apparatus which measures both audio and visual reaction time of the players. It consists of four different types of light for visual reaction time and four different types of sounds for auditory reaction time.

#### **Procedure**

For measuring the reaction time, first of all the instructions were given in a group of ten players during competition at Maharishi Markandeshwar University, Mullana, at once in a day. When it was ensured that the subject has understood the whole procedure, ten trials for both audio and visual reaction time were given randomly; firstly audio and then visual. The time as recorded on the digital timer was noted down for each trial.

#### **Statistical Techniques Used**

The data was analyzed and compared through t-ratio to find out the significance difference. For testing the hypothesis the level of significance chosen was 0.05.

### **RESULTS AND DISCUSSION**

Classifications of male Soccer players with respect to their playing positions are computed in table 1.

**Table 1: Classification of male Soccer players with respect to their playing positions**

Playing position	Number of Soccer Players
Offensive player ( Forwards)	25
Defensive players ( Goal Keeper, full back & midfielder)	25
Total	50

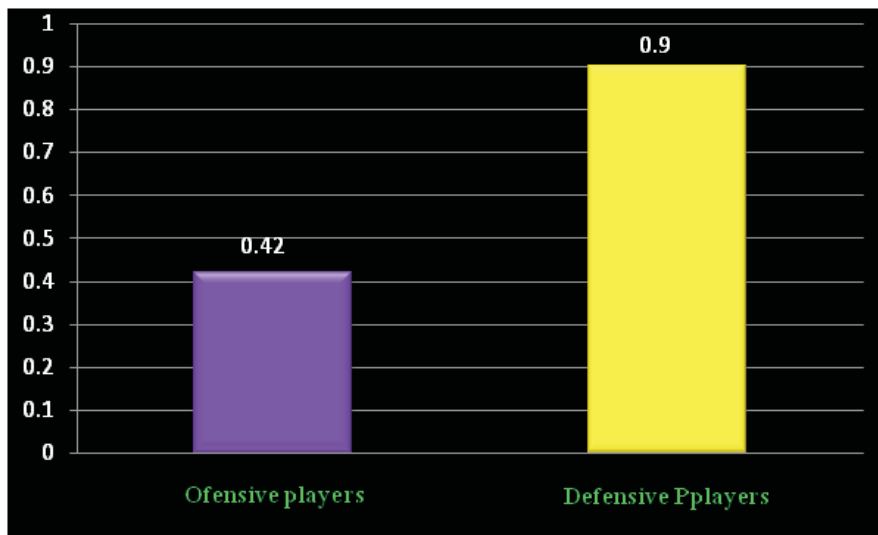
Table 1 shown that the offensive players which includes only the forwards ( left out, left in, centre forward, right in & right out) while the defensive players includes: Goal keeper, left back, right back, left half, centre half & right of all the players.

**Table 2: Audio reaction time of male Soccer players**

Playing Positions	Number of Players	Mean	SD	SED	df	T-ratio
Offensive	25	0.42	0.51	0.21	48	2.28*
Defensive	25	0.90	0.96			

\*Significant at 0.05 levels  
 Table F0.05 (2, 48) = 2.02  
 Obtained T value = 2.28

Table 2 revealed that the mean of audio reaction time of offensive players is less than defensive players. It proves that audio reaction time of offensive players is better as that of defensive players and the value of t-ratio is 2.28 which is greater than the tabulated value 2.01. So there was significant difference regarding audio reaction time among offensive and defensive soccer players. Therefore Null hypothesis is rejected.



**Fig.1 Shows Mean comparision of audio rection time of players.**

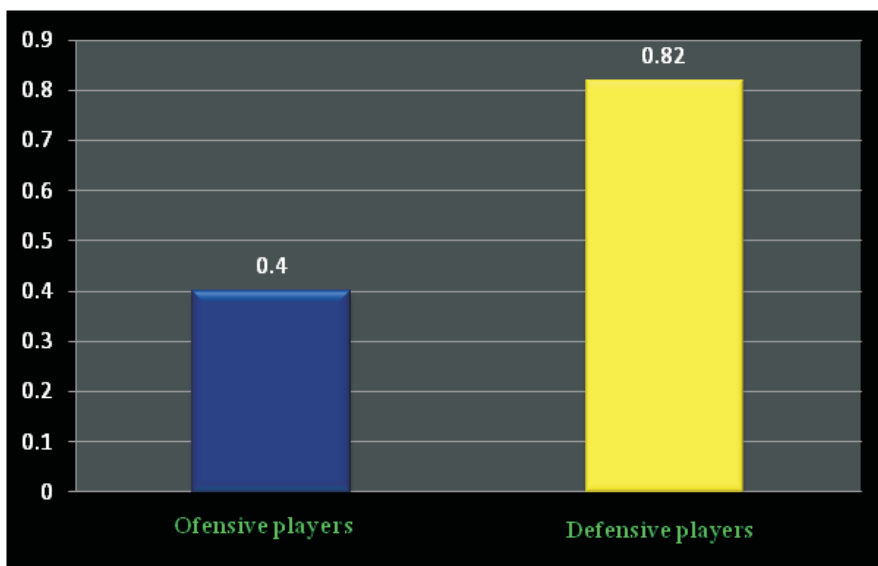
This is further supported by the graphical depiction of means value of audio rection time for offensive and defensive players from Maharishi Markandeshwar University, Mullana in figure No. 1, in this figure the histograms drawn are of different height. It shows that the offensive male players take less audio rection time then defensive players. So audio reaction time of offensive male players was better than defensive players

**Table 3: Visual reaction time of male Soccer players**

Playing Positions	Number of Players	Mean	SD	SED	df	T-ratio
Offensive	25	0.40	0.50	0.20	48	2.10*
Defensive	25	0.82	0.88			

\*Significant at 0.05 levels  
 Table F0.05 (2, 48) = 2.01  
 Obtained T value = 2.10

Table 3. Shows that the mean of visual reaction time of offensive players less than the means of defensive players. It proves that the visual reaction time of offensive players is better than the defensive players and the value of t-ratio is 2.10 which is greater than the tabulated value 2.01. So there was significant difference regarding audio reaction time among offensive and defensive soccer players. Therefore Null hypothesis is rejected.



**Fig.2 Shows mean comparison of visual reaction time of players.**

This fact is further supported by the graphical depiction of means value of visual reaction time for offensive and defensive players from Maharishi Markandeshwar University, Mullana in figure No. 2, in this figure the histograms drawn are of different height. It shows that the offensive male players take less visual reaction time than defensive players. So visual reaction time of offensive male players was better than defensive players

Hence from above results this study, “comparative study on reaction time of male soccer players with respect to their playing positions” is undertaken which will scientifically contribute to the field of reaction time and will be the foundation for future studies in this regard.

**CONCLUSIONS**

Under the circumstances and within the limitation of this study the following conclusions were drawn:

1. Offensive male Soccer players are superior than defensive players in case of audio reaction time.
2. Offensive male Soccer players are superior than defensive players in case of visual reaction time.

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