

A Comparative Study of Auditory Reaction Time on Inter-University Level of Basketball and Volleyball Women Players

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Abstract: *The study's goal was to examine the Auditory Reaction Time of basketball and volleyball players at the intercollegiate level players. Only Female Players were selected randomly from the basketball and volleyball, who have been participated in Inter University championship. The age of Players was between 18-25 year. Auditory Reaction Time was selected as a variable. To measure the Auditory Reaction Time of Inter University Basketball and Volleyball female Players by Audio Visual Reaction Time Machine by Medi system. Independent t-test was used at level of significance was set at 0.05 to verify difference between basketball and volleyball female players. Finding of the study revealed that Volleyball female Players have better Audio Reaction Time as compare to Basketball female players.*

Keywords: Reaction time, Auditory Reaction Time, Volleyball, Basketball

1. Introduction

Physical fitness is vital for all sports and activities. It has to do with one's ability to meet the demands of the environment, specifically to preserve, to withstand stress, to resist fatigue, and to have the energy to live a full life. Physical condition is one's most valuable asset, but it cannot survive acquisition, and it must be earned from beginning to end on a daily schedule of physical work out. Strength is defined as the ability to carry out daily activities (work or otherwise participate) without becoming exhausted, as well as having sufficient power reserves for an emergency circumstance.

Sports performance is not a result of a single element or factor. Sports performance requires mastery on motor components and coordinative abilities. Previously it was seen that the major motor component like strength, speed, endurance, and flexibility are mainly focused on during training programs. Recently a lot of enhancement in sports performance is observed that coordinative abilities like agility, power, balance, and reaction time are becoming important factors during training. Through this minute ability, performance can differ and be enhanced.

Reaction time is the amount of time that passes between the presentation of a sensory input and the resulting behavioral response (RT). Simple response time refers to the amount of time it takes for an observer to detect the presence of a stimulus. It's a physical skill that has a lot to do with human performance. It is the degree to which the body decodes visual or aural inputs that travel via afferent pathways and reach the brain as sensory impulses through a range of physical, chemical, and mechanical processes.

Simple reaction time can be determined when an individual is asked to press a button as soon as a light or sound appears. According to Pain and Hibbs' research, basic auditory reaction time is the fastest for any given stimuli.

The reaction time to stimuli is influenced by a number of factors. Factors like as the stimulus's strength and duration, the participant's age and gender, and the effect of practice can all influence an individual's reaction time to a certain stimulus.

Basketball is a sport consist with 12 players with 5 players play at a time and compete, against each other opponent team on a rectangular court, usually indoors. Each side attempts to score by hurling the ball into the opponent's basket, which is an elevated horizontal hoop and net.

Volleyball is a sport consist with 12 players with 6 players play at a time use their hands to hit a ball back and forth over a high net, attempting to get the ball to touch the court within the opponent's playing area before it can be returned.

2. Methodology

Method

For the present study descriptive statistic method was used to compare between Basketball and Volleyball female player at age ranged 18 to 25 year. It was used to access the Auditory Reaction Time (ART) of team game players and to compare between Basketball and Volleyball female players.

Sampling Technique

For the present study the researcher used convenience sampling method has applied for the selection of participants and collection of data. The participants for the study will be taken from Basketball and Volleyball game. Who participated in Inter University level Tournament.

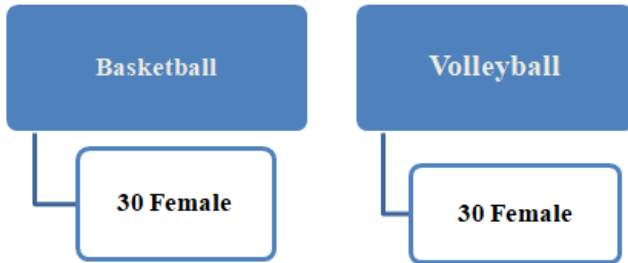
Populations

All the players that have represented Inter University and who fall in the age group of 18 to 25 years.

Sample

60 Female subjects were selected randomly from the Basketball (30 female) and Volleyball (30 female) players who had participated in Inter University championship. The age of players ranged between 18-25 years.

Distribution of sample



Tool used for Data collection

The Audio Visual Reaction Time Machine (By Medi system) was used to evaluate the audio reaction time of the subjects. The data will be taken individually of every single participant by making them perform the test. A total of 60 participants will be there, 30 from basketball players (Female) and 30 from volleyball players (Female).

Procedure

The test is conducted by Audio Visual Reaction Time Machine by Medi system in the Psychology lab, Department of Physical Education, Banaras Hindu University Varanasi. There are 3 switches & 3 numbers of lights on both sides. The switches in operator’s side are responsible to glow the lights while the switches in trainer’s side are to turn off the lights. Glow any light quite a sudden & ask the trainer to react to the action & turn off the light immediately from its side. The time taken by the trainer is called reaction time & which is noted down in the timer. Five trials will be given to each player in the audio reaction time.



Statistical Tools

To analyze the data and to find out the significant difference between basketball and volleyball female players the descriptive statistics and the “Independent

sample t-test” was applied to find out the significant difference between basketball (female) and volleyball (female) players, To test the hypothesis, the level of significance was set at 0.05.

3.Results & Discussion

Table 1: Descriptive Statistics of Auditory Reaction Time of Basketball and Volleyball Female Players

Variable	Group	N	Mean	S. D.	t-value
Audio Reaction Time	Basketball	30	0.4671	±0.1559	0.4704
	Volleyball	30	0.4838	±0.1162	

Level of significance-0.05 (2, 58) (2.11)

Table 1 shows that the mean of Audio Reaction Time of Basketball Players (M=0.46, SD=0.15) was significantly than those of Volleyball Players (M=0.48, SD=0.11) as the obtained t-ratio (t=0.47; d=58) was significant beyond 0.05 level of confidence. It shows that the mean score of the Audio Reaction Time of Basketball and Volleyball players were significantly different.

Graph-1

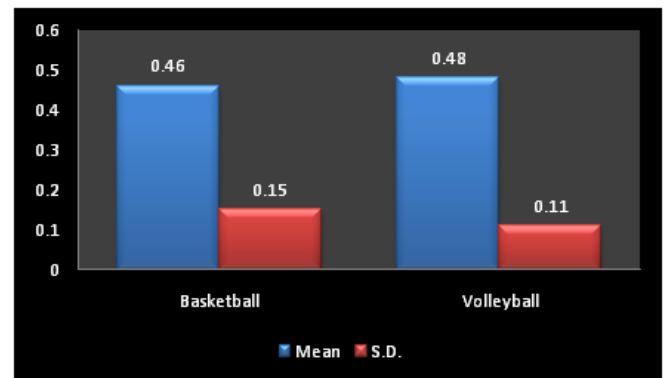


Fig: Graphical representation for Auditory Reaction Time of Basketball (Female) and Volleyball (Female) Players.

Table 2: Comparison of Auditory Reaction Time between Basketball and Volleyball Female Players

	t	df	p-Value
Auditory Reaction Time	0.470	58	0.640

*significant at 0.05 level

In the above mentioned table it is found that there is no significant difference between basketball and volleyball players in context to auditory reaction time as p-value is more than 0.05 (p>0.05).

4.Conclusion

The finding of this study was observed that the Volleyball Female Players were having better Auditory Reaction Time than the Basketball Female Players. On the basis of result it may be concluded that the Volleyball female Players were have better auditory reaction time as compare to Basketball Female Players. It has been noticed that there have been a keen interest of taking further

research in which, the null hypotheses has been rejected. Similarly, here in this study the researcher started with hypothesis which stated a significant difference among the (ART) of players. Further it helps in deducing the fact that in a game like volleyball requires a continuous focus on ball and less fainting and fake skill movement are seen as compared to basketball which makes the volleyball players more concentrated at times, thus improving their other responsive functions such as the audio reaction time. Volleyball players have tendency of getting distracted with voices and noises around them as they have an ability to overcome the action which comes after the stimulus of sound.

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References

- [1] Rahman Md. Hamidur, Islam Muhammad Shahida (2021), "Investigation of Audio-Visual Simple Reaction Time of University Athletes and Non-Athletes" *Journal of Advances in Sports and Physical Education*, ISSN 2616-8642 (Print) /ISSN 2617-3905 (online).
- [2] Bernards J, Light T, Flynn A, Keck S, Powell L, (2016) "Simple reaction time characteristics among male and female college athletes" [http://www.sportscienceed.com/11th Annual coaches and Sports Science College](http://www.sportscienceed.com/11th%20Annual%20coaches%20and%20Sports%20Science%20College), December 2016.
- [3] Atan, Tiilin, and Pelin Akyol (2013) "Reaction Time of Different branch athletes and correlation between reaction time parameters" *Procedia-Socio and Behavioral Science* 116 (2014): 2886-2889.
- [4] Prasad, B. K. (2013) "Effect of Music on Visual and Auditory Reaction Time: A Comparative Study, Research and Reviews" *Journal of Medical and Health Science* 3 (2013): 121-125.
- [5] Reza M. N., Chanda S. (2019) "Comparative Study of Simple Choice Auditory Reaction Time of University Sports and Sedentary Female Students" *American Journal of Sports Science*.
- [6] Khatri zoya, Ganvir suvarna (2019) "Comparison of Visual and Auditory Reaction Time in Physically Active and Inactive male and female Adolescents: An Observational study." *Journal of Novel Physiotherapies an open access journal* ISSN: 2165-7025
- [7] HS Deepa, Sirdesai Nivedita, (2016) "A comparative study of auditory & visual reaction time in table tennis players and age matched healthy controls" *Indian Journal of Clinical Anatomy and Physiology*, October-December 2016; 3 (4); 408-411
- [8] Dr. Upadhyay Vivekanand, Dr. Singh Nidhi, Dr. Raj5 Shradha et. al. (2018) "Masters Versus Mediocre: A cross sectional study of comparison of visual and auditory reaction time between elite adult male athletes and healthy, recreationally active adult males" *European Journal of Pharmaceutical and Medical Research*, ejpmr, 2018, 5 (9), 333-337, ISSN 2394-3211
- [9] Akhani Pratik N., Gosai Harshida, endpara Samir M, Harsoda J. M. (2015) "Mental Chronometry in Table Tennis Players and Football Players: Who Have Faster Reaction Time?" *International Journal of*