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## Comparison of selected physiological variables among football and volleyball players

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### Abstract

The maximum level of performance is required in the field of sports. Each individual as well as sports are different. There are so many factors like physical, physiological, biomechanical or psychological are responsible to increase or decrease in sports performance. So it is necessary to find out the basic and most important factors or reason responsible for the players to increase performance in particular sports. The ball game like football and volleyball was very much popular around the World. Various types of research work are needed to understand deeply about the advantage, disadvantage and different factors related to increase performance in the particular games. Researcher had selected some physiological variables to find out the difference if any between football and volleyball male players of different Universities. The purpose of the study was to compare the selected physiological variables among football and volleyball players. Total 100 men players (50 football and 50 volleyball players) were selected as a subject for the present study from West Bengal State University, Barasat, North 24 Pargana, W.B, Visva Bharati, Santiniketan, Birbhum, W.B, Kalyani University, Kalyani, W.B. All the subjects were selected randomly. The age of the subject chosen for the study was 17-23 years. Only three physiological variables of expiratory peak flow rate which was measured by JSB peak flow meter, systolic blood pressure and diastolic blood pressure was measured by automatic OMRON blood pressure monitor was selected for the study. 't' test was used to analyze the data. In the result it was found that there was no significant difference between expiratory peak flow rate, systolic and diastolic pressure between three different Universities of West Bengal State University, Visva Bharati and Kalyani University of football and volleyball men players. This study gives relevant information about the physiological condition of three different Universities of football and volleyball male players.

**Keywords:** physiological variables and football and volleyball players

### Introduction

Sports performance is a complex mixture of biomechanical function, physical abilities, physiological functions, emotional factors, and training techniques. Each sportsman requires a specific type of these qualities which helps to achieve high level performance in games and sports. Hence it is recommended to select the sportsman for various sports and games as per the requirement of their various qualities. For instance the football players should have greater cardiovascular or endurance qualities than the volleyball players. As we know football players have to play the games by running around the ground for several minutes of time. It is a game which needs many physical and mental qualities in a player. It needs endurance, speed, agility and motor ability of a player. But in the game of volleyball, services and passing are the primary skills. These skills may be used in a playing situation (or) in setting the ball up for a spike. It is a game requiring quick sudden movement and fast reaction on many occasions. This game also demands a high degree of physical fitness, skill, self-confidence and alertness. Further the information stated that improved physical capacity of players influence technical ability, namely increased pass rates in football or in volleyball and therefore it might indirectly improve performance indicators. It is our general concept to understand that this physical ability which was not similar among each individual may also directly depends on the physiological functioning of the human body. Physiological systems contain many physiological parameters, on which our body depends most.

Resting pulse rate (heart rate), cardio respiratory endurance and anaerobic power are some of the physiological variables to be considered for selecting and training the basketball, football

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and volleyball players and these physiological variables should be developed to increase the performance of those players. In the present study only three variables of peak flow rate, systolic and diastolic blood pressure was used.

Further the reason for the selection of this topic is to find out whether there is any difference between physiological factors with the university men Football and Volleyball players and further to establish whether it would be helpful to the coaches, trainers and players.

### Statement of the problem

The purpose of the present study was to compare the selected physiological variables among football and volleyball players of three different Universities.

### Hypothesis

There will be no significant difference of selected physiological variables between football and volleyball of three different Universities.

### Methodology

All the data was collected randomly for the present study. The selected physiological data of total 100 football and volleyball (50 football and 50 volleyball players) University men players who had participated in University tournament were selected for the present study. The data has been collected only from the West Bengal State University, North 24 parganas, Visva bharti, Santiniketan, Bolpur, and Kalyani University, Nadia. The age of the subjects chosen for this study were ranging from 17-23 years.

### Tools

Expiratory peak flow rate was measured by peak flow meter. Systolic and diastolic blood pressure was measured by OMRON electronic automatic BP monitor.

### Statistical procedure

For testing the statistical significance difference between the players, student 't' test, was used to analyze the data and for testing the hypothesis, the level of significance was set at 0.05.

### Result

The values of each selected physiological variables are presented in the following table.

**Table 1:** Minimum, maximum, mean and standard deviation value of selected physiological variables of football players

Serial No.	Variable	Minimum	Maximum	Mean	Standard deviation
1	Expiratory peak flow rate	440.00	700.00	552.4000	67.99040
2	Systolic blood pressure	98.00	151.00	124.3600	11.45846
3	Diastolic blood pressure	57.00	78.00	69.3200	6.47267

Table No.1 shows the minimum maximum mean and standard deviation of selected physiological variables among football male players. The mean and standard deviation of expiratory peak flow rate is 552.4 and 67.99 respectively, systolic pressure is 124.36 and 11.46, diastolic pressure 69.3200 and 6.47. The minimum and maximum mean value of expiratory peak flow rate is 440.00 and 700.00, systolic blood pressure is 98.00 and 151.00 diastolic pressure is 57.00 and 78.00

respectively.

**Table 2:** Minimum, maximum, mean and standard deviation value of selected physiological variables of volleyball players

Serial No.	Variable	Minimum	Maximum	Mean	Standard deviation
1	Expiratory peak flow rate	430.00	770.00	570.2000	80.19084
2	Systolic blood pressure	104.00	145.00	121.0600	8.92922
3	Diastolic blood pressure	58.00	82.00	70.4800	6.35430

Table No.2 shows the mean and standard deviation of selected physiological variables among volleyball University man players. The mean and standard deviation of expiratory peak flow rate is 570.20 and 80.19, systolic blood pressure is 121.06 and 8.92, and diastolic pressure is 70.48 and 6.35 respectively. The minimum and maximum mean value of expiratory peak flow rate is 430.00 and 145.00, systolic blood pressure is 104.00 and 145.00, and diastolic blood pressure is 58.00 and 82.00 respectively.

**Table 3:** 't' value of selected physiological variables of university football and volleyball male players

Sl. No.	Variables	University Players	Sample size	t value	p value
1	Expiratory peak flow rate	Football	50	1.197	0.234
		Volleyball	50		
2	Systolic pressure	Football	50	1.606	0.111
		Volleyball	50		
3	Diastolic pressure	Football	50	.904	0.368
		Volleyball	50		

### Significant at .05 levels

From the above table it reveals that that there was no significant difference between University football and volleyball players in response to expiratory peak flow rate. It also shows that there was no significant difference between University football and volleyball players in response to systolic pressure. No significant difference was also found between University football and volleyball players in response to diastolic pressure.

### Discussion on findings

The finding of the study reveals that there was no significant difference observes in expiratory peak flow rate between three different University level football and volleyball male players. The result also reveals that there was no significant difference found in systolic and diastolic pressure between football and volleyball three University male players. So the hypothesis was accepted in all the three cases that there would be no significant difference of selected physiological variables between football and volleyball male players of three different Universities.

### Conclusion

The result shows that there was no such difference exist in expiratory peak flow rate, systolic and diastolic pressure between football and volleyball players of three different Universities which was believe to be normal so it can be said that peak flow rate of football and volleyball male players of three different Universities are almost same. This study gives relevant information about the physiological condition of three different Universities of football and volleyball male players.

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