

Comparison of Peak Flow Rate and Vital Capacity between District Level and State Level FOOTBALL Players

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Abstract

The purpose of present study was to compare the peak flow rate and vital capacity between district level and state level FOOTBALL players. The subjects consist of 30 (District level:15 and State level:15) randomly selected male FOOTBALL players, between the age group of 18 to 28 years, studying at different colleges affiliated to Guru Nanak Dev University, Amritsar, Punjab, India. Peak flow rate was measured with a peak flow meter whereas vital capacity was measured by spirometer. The between-group differences were assessed by using t-test. The level of $p < 0.05$ was considered significant.

The t-test revealed that there was no significant difference in peak flow rate between district level and state level FOOTBALL players. The state level FOOTBALL players had significantly higher vital capacity ($p < 0.05$) than district level FOOTBALL players. Further investigations are needed on the above studied variables along with motor fitness variables to assess relationships among them and with performances in FOOTBALL.

Keywords: FOOTBALL Players, Peak flow Rate, Vital Capacity.

INTRODUCTION

FOOTBALL is physically demanding sport comprised of several specialized skills and types of fitness. Human physiology is the bird in the house of the mechanical, physical, and biochemical functions of humans in good health, their organs, and the cells of which they are composed. The principal level of focus of physiology is at the level of organs and systems (Lawrence et al.1971).

The physiological factors limiting one's performance in sports are also well known. It is the understanding of interaction of all these factors that can help us in designing the way for selecting the children for appropriate game and training. Physiological testing is commonly used to assess the overall fitness level of the athletes and to set guidelines for individualized training. Among all the factors, the physiological characteristics play an important role for the attainment of high level sports performance. Among the various physiological parameters, cardiovascular efficiency forms the basis to undertake sports efforts successfully. The game of FOOTBALL entail throwing, kicking ,running dodging. The FOOTBALL is mostly played by the males in the western countries, brazil, Japan, Korea etc. In India, both male and female players play FOOTBALL at school, college, university and national levels. A plethora of research work is available on the physical and physiological characteristics of FOOTBALL players belonging to

different nations (Lee et al, 1998; Escamilla et al, 2001; Fleisig et al, 1999; Murata, 2001). However, the purpose of the present study was to compare peak flow rate and vital capacity between district level and state level FOOTBALL players.

MATERIAL AND METHODS

Subjects:

The subjects consist of 30 (District level: 15 and State level: 15) randomly selected male FOOTBALL players, between the age group of 18 to 25 years, studying at different colleges affiliated to Guru Nanak Dev University, Amritsar, Punjab, India. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study.

Selection of variables:

Sr. No	Variables
1	Peak Flow rate
2	Vital Capacity

Selection of Tools:

Sr. No	Variables	Tools of Measurement
1	Peak Flow rate	Peak Flow Meter
2	Vital Capacity	Spiro Meter

Methodology

1. Peak Flow Rate:

Peak flow rate was measured with a peak flow meter. Peak expiratory flow measures how fast you breathe out when you try your hardest. It tells you how well your lungs are working. The

subject was asked if you can breathe out quickly and with ease, you will have a higher number (higher peak flow rate). If you can only breathe out slowly and with difficulty, you will have a lower number (lower peak flow rate). Three recordings were taken at one-minute intervals and the average of readings was noted.(Ghai ,2007)

2. Vital capacity:

Vital capacity was measured by Spiro meter. The subject was asked to take a deep breath and then to blow hard into the mouthpiece of the Spiro meter with a sharp blast. Three recordings were taken at one-minute intervals and the average of the three highest readings was noted. Subjects asked to follow a maximum inspiration, all the air possible was forcibly exhaled through the mouthpiece.(Ghai ,2007)

Statistical Analysis:

Values are presented as mean values and SD. The 't' test was used. A significance level of P<0.05 was considered significantly different. Data was analyzed using SPSS Version 16.0 (Statistical Package for the Social Sciences, version 16.0, SPSS Inc, and Chicago, IL, USA).

RESULTS

Table-1. Mean Values (±SD), Standard Error of the Mean and Test Statistic t of Peak flow rate in District level (N = 15) and State level FOOTBALL Player (N = 15).

Variables	Mean		SD		SEM		t-value
	District	State	District	State	District	State	
Peak Flow Rate	617	625.20	54.10	88.86	13.97	22.94	0.46

Table-1 indicates that the mean of district players and state players was 617.00 and 625.20 respectively, whereas the standard deviation (SD) of district players and state players was 54.10 and 88.86 respectively. The computed value of 't' between district players and state players in peak flow rate was (=0.46) . Thus it may be concluded that the peak flow rate found to be statistically insignificant. The graphical representation of responses has been exhibited in (Fig. 1).

Figure-1. Mean Values (±SD), Standard Error of the Mean and Test Statistic t of Peak flow rate in District Level Players (N = 15) and State Level Players (N = 15).

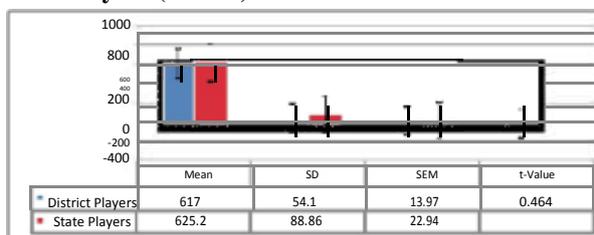


Table-2. Mean Values (±SD), Standard Error of the Mean and Test Statistic t of Vital capacity in District level (N = 15) and State level FOOTBALL Player (N = 15).

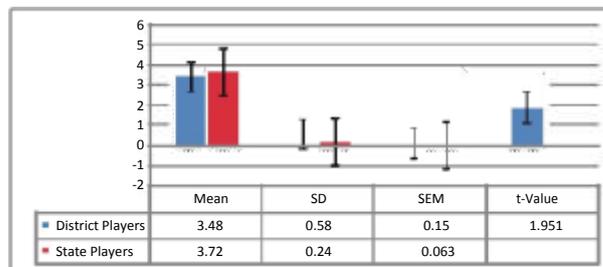
Variables	Mean		SD		SEM		t-value
	District	State	District	State	District	State	
Vital Capacity	3.48	3.72	0.58	0.24	0.15	0.063	1.95*

Significant at .05 level of significance.

Table-2 indicates that the mean of district players and state players was 3.48 and 3.72 respectively, whereas the standard deviation (SD) of district

players and state players was 0.58 and 0.24 respectively. The computed value of t between district players and state players in vital capacity was (1.95*). Thus it may be concluded that the vital capacity found to be statistically significant. The graphical representation of responses has been exhibited in (Fig. 2).

Figure-2. Mean Values (±SD), Standard Error of the Mean and Test Statistic T of Vital Capacity in District Level Players (N = 15) and State Level Players (N = 15).



DISCUSSION:

The results of physiological variables (i.e., peak flow rate and vital capacity) between FOOTBALL players at different level of competition are presented in table-1 & 2. In case of physiological variables significant between-group differences were found for vital capacity (1.95*) whereas no significant between-group differences were found for peak flow rate (t=0.46). It is evident from the above findings that significant differences were observed between district level and state level FOOTBALL players on the parameter of vital capacity. While comparing the mean values of groups it shows that state level FOOTBALL players have significantly greater with regard to vital capacity. This might be due to the higher level of the competition of the state level FOOTBALL players. The findings on the variable of vital capacity of this study are supported by the study of Dureja (2011). He undertook a study of assessment of physiological parameters among different level of FOOTBALL players. It was concluded that on the parameter of vital capacity among senior national, inter-varsity and senior state FOOTBALL players was statistically found significant.

CONCLUSION

In conclusion, the present study revealed that the state level FOOTBALL players had significantly greater vital capacity than district level FOOTBALL players. The subject-pool of this study involved healthy, college-aged males. Whether the observed study patterns apply to other population groups such as the elderly, impaired, or specially others games trained athletes remains a question for future study.

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