

Performance of male football players as influenced by physiological variables

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Abstract

Football is the game that requires skill and speed. Speed is the ability to perform a movement within a short period of time. Keeping in view the importance of football game, the present research was planned to study the performance of male football players as influenced by physiological variables viz. Blood pressure and vital capacity. The findings of the present study state that physiological variables i.e. Blood Pressure and Vital Capacity are significantly correlated to the performance of male football players. Among the total number of selected subjects, the mean score value of high performance players was more as compared to that of low performance players for vital capacity and equal for blood pressure. This further infers that high performance players performed better than the low performance players.

Key words: Male, football, performance, variables, vital capacity.

1. Introduction

It is now well recognized fact that modern sports are more than muscle strength. Apart from genetically endowed physical qualities, a psychological trait plays a significant role in making participants to give extraordinary performance in competitive sports (Kamlesh, 2011). In recent years, literature of physical education and sports indicates that physical performance in sports is a combined result of physical, psychological and environmental factors. Sports fitness is a present aptitude for physical skills, includes strength and co-ordination enriches today's Manpower in players performance. The game foot ball is played in Asian and Olympic games and has attained an impressive level of popularity at National and International level sports. The game also played in various countries as a professional game including Asia. In India it is one of the simple and popular games. The game began in England in the 12th century but Edward II banned it in 1389 and Henry in 1401. The Monarch could not stop the interest of peoples and football became popular. The football rules were first framed in 1862 and were revised in 1863. The same year football association of England was formed. Considering the popularity of the game, seven Nations met on 21st May 1904 to form the Federation International De Football Association (FIFA). FIFA organized world football championship in 2010. The game football combines skills from other games like handball, hockey etc. It involves skills like running, dribbling, passing, kicking, goal keeping etc. Its recreational values and enjoyment level keeps attention of male and females at professional as well as collegiate levels. This is the game of accuracy, agility, flexibility, endurance and perception. The theme of the game football requires players' athletic ability as well as good sports ability.

Vital Capacity:

It is the greatest volume of air that can be expelled from the lungs after taking the deepest possible breath. A person's vital capacity can be measured by a wet or regular spirometer. In combination with other physiological measurements, the vital capacity can help make a diagnosis of underlying lung disease. Furthermore, the vital capacity is used to determine the severity of respiratory muscle involvement in neuromuscular disease, and can guide treatment decisions in Guillain-Barré syndrome and myasthenic crisis. A normal adult has a vital capacity between 3 - 5 litres. A human's vital capacity depends on age, sex, height, mass and ethnicity. Lung

volumes and lung capacities refer to the volume of the air associated with different phases of the respiratory cycle. Lung volumes are directly measured, whereas lung capacities are inferred from volumes.

Blood Pressure:

It is the pressure exerted by the blood against the walls of the blood vessels, especially the arteries. It varies with the strength of the heartbeat, the elasticity of the arterial walls, the volume and viscosity of the blood, and a person's health, age and physical condition. It is usually measured at a person's upper arm. Blood pressure is usually expressed in terms of the systolic (maximum) pressure over diastolic (minimum) pressure and is measured in millimeters of mercury (mm Hg). It is one of the vital signs alongwith respiratory rate, heart rate, oxygen saturation and body temperature. Normal resting systolic (diastolic) blood pressure in an adult is approximately 120 mm Hg (80 mm Hg), abbreviated "120/80 mm Hg". Blood pressure varies depending on situation, activity, and disease states. It is regulated by the nervous and endocrine systems. Blood pressure that is low due to a disease state is called hypotension, and pressure that is consistently high is hypertension. Both have many causes which can range from mild to severe. Both may be of sudden onset or of long duration. Long term hypertension is a risk factor for many diseases, including kidney failure, heart disease and stroke. Long term hypertension is more common than long term hypotension in Western countries. Long term hypertension often goes undetected because of infrequent monitoring and the absence of symptoms.

Performance:

It is something very good and difficult that you have succeeded in doing any event e.g. whichever way you look at it and Olympic silver medal is remarkable performance for one so young (Cambridge Advanced Learner Dictionary).

2. Methodology

2.1 Selection of Samples

In the present study, those subjects were selected who have played football game at different level of performance, i.e., State level, Inter-college level, University and National level. For the present study 100 male football players (age: 17-23 years) from six universities of Haryana State viz. (Kurukshetra University, Kurukshetra; Maharishi Dayanand University, Rohtak; Chaudhary Devi Lal University, Sirsa; Guru Jambheshwar University of Science & Technology, Hisar; Chaudhary Ranbir Singh University, Jind and Ch. Bansilal University Bhiwani) were selected.

2.2 Selection of Variables

Based on literary evidence, correspondence with the experts and own understanding, the following variables were selected

- Vital capacity- Measured by Spirometer
- Blood pressure- Measured by Sphygmomanometer

2.3 Data Collection

Researchers were administered various tests for the chosen variables and data was collected. The Physiological variables i.e. blood pressure and vital capacity was conducted under the supervision of experts.

2.4 Analysis of Data

The comparative study of physiological variables of selected football players was analyzed by applying t-test Method.

3. RESULTS & DISCUSSION

It is now well recognized fact that modern sports are more than muscle strength. Apart from genetically endowed physical qualities, a psychological trait plays a significant role in making participants to give extraordinary performance in competitive sports (Kamlesh, 2011).

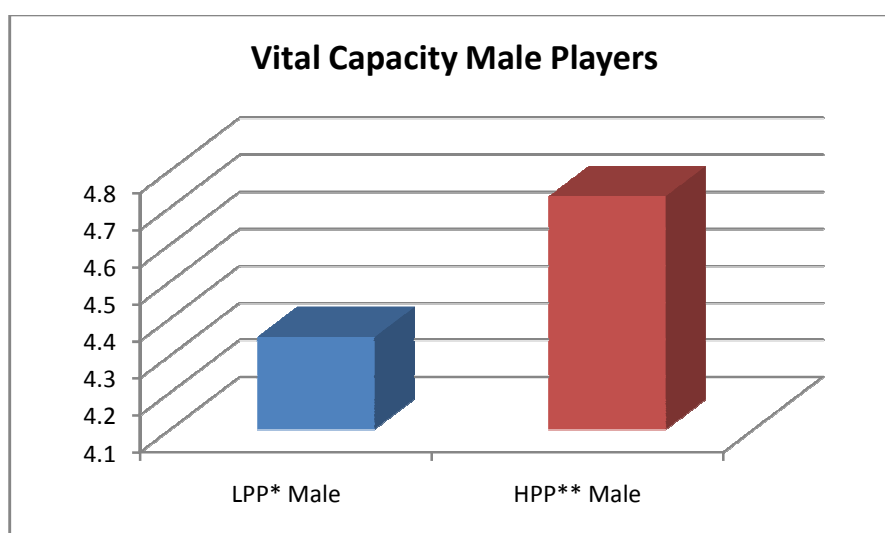
Table 1
Mean, S.D and t- ratio between Vital Capacity of High and Low Performance Male Football Players

Variable	Player Group	N	Mean	SD	S. Ed.	t-ratio	Level of Sign.
Vital Capacity	LPP* Male	50	4.35	0.458	0.071	5.421	0.001
	HPP** Male	50	4.73	0.203			

* Low Performance Male Players, ** High Performance Male Players

It is revealed from table 1 that the mean score on vital capacity of high and low performance male players are 4.73 and 4.35 with S.D.'s 0.203 and 0.458 respectively. The t-ratio came out to be 5.421, which is significant at 0.001 level of significance. That means there exists significant difference between vital capacity of high and low performance male players. The mean score of high performance male players are more than mean score of low performance male players. It indicates that the high performance male players were having more vital capacity during the performance as compared to the low performance male players. Therefore, there is significant difference between vital capacity of male high and low performance football players. The mean score on vital capacity of high and low performance male players are as shown in table 1 is depicted in figure 1.

Figure 1
Mean between Vital Capacity of High and Low Performance Male Football Players



* Low Performance Male Players, ** High Performance Male Players

Table -2
Mean, S.D and t- ratio between Blood Pressure of High and Low Performance Male Football Players

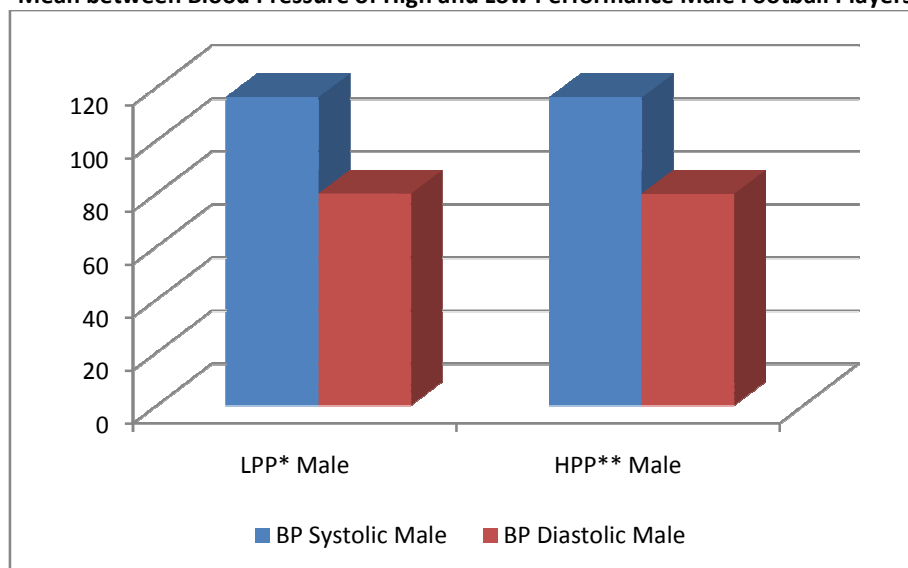
Variable	Player Group	N	Mean	SD	S. Ed.	t-Ratio	Level of Sign.
Blood Pressure Male	Lpp* Male	50	116/ 80	1.415/ 1.356	0.298/ 0.268	0.336/ 0.373	0.05
	Hpp** Male	50	116/ 80	1.561/ 1.314			

* Low Performance Male Players, ** High Performance Male Players

It is revealed from table 2 that the mean score on blood pressure of high and low performance players are equal that is 116/80 and the S.D.'s are 1.415/1.356 and 1.561/1.314 respectively. The t-ratio came out to be 0.336 & 0.373, which is not significant at 0.05 level of significance. That means there does not any exist any significant difference between blood pressures of high and low performance male players. The mean score of high performance male players are equal to mean score of low performance male players. It indicates that the high

performance male players and low performance male players were having almost equal blood pressures during the performance. Therefore, there is no significant difference between blood pressures of male high and low performance football players. The mean score on motivation of high and low performance male players are as shown in table 2 is depicted in figure 2.

Figure 2
Mean between Blood Pressure of High and Low Performance Male Football Players



* Low Performance Male Players, ** High Performance Male Players

4. Conclusion

It can be concluded from the present study that physiological variables i.e. Blood Pressure and Vital Capacity are significantly correlated to the performance of football players. Studies of the same nature can prove to be of significant importance in exploring the capabilities of sportsmen and can also be used to enhance one's abilities. The finding of the study will also have a great importance for further research in the field of sports for selecting sports person. Among the total no of selected subjects the mean score value of high performance players was more as compared to that of low performance players for vital capacity and equal for blood pressure. This further infers that high performance players performed better than the low performance players.

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