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COMPARATIVE STUDY OF PHYSIOLOGICAL PARAMETER AND MOTOR FITNESS OF FOOTBALL AND HANDBALL PLAYERS

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Abstract: *The purpose of this study is to investigate the Comparative Study of the Physiological Parameters and Motor Fitness of Football and Handball Players. The age group of selected subjects were ranging from 18 to 25 years A group of male players was randomly assigned to either a motor fitness group or a control group. In the present study, it was hypothesized that there significant difference in motor fitness components and between some physiological parameters of Football and Handball players. The result of the study revealed that there is insignificant difference in some of the selected physiological parameters and motor fitness components by applying the t- test. The findings revels that there was significant difference in vital capacity in Football players which show that Handball player have a dominant vital capacity than Football players as shown in in table. There was significant difference in vital capacity in Football players as is obtained 't' value is grater than required 't' at 0.05 level of confidence 2.021. Finding shown that Football players have high vertical jump, explosive leg strength and arm strength, vital capacity, agility, speed ,cardiovascular endurance and diastolic blood pressure then Handball players.*

Keywords: Physiological, Motor Fitness, Football, Handball

Introduction

In the field of physical education one of the objectives of testing and measuring is to place a proper person into a proper activity and thus to avoid misfit as for as possible. For all sorts of activities Physical fitness is very essential. It is repeated to the ability to meet the demands of the environment specifically to preserve withstand stress resist fatigue and possess the energy for an abundant life.

Every human being has a fundamental right to access physical activities and sports which are essential for the full development of his personality. The freedom to develop physical, intellectual, and moral power through physical education and sports must be guaranteed both within the educational system and in other aspects of social life.

Desirable traits of character are developed through sports, such as sportsmanship, discipline, observance of the rules of the games, self-control, and a spirit of fair play. Team playing encourages cooperation, leadership, fellowship, and team spirit, participation in sports, individually or as a member of a team help in preparation for life. The athletes prepared for a contest by training and conditioning

just as we prepare ourselves for a profession or a trade. Actually, sports means such activities where the pattern of movements does not change as in athletics where a runner goes on running in some body movements.[1]

Sports are generally individualistic game or team activities where the movement of the body change from one activity to another as in the care of games like football, handball etc.

Motor fitness came into being during World War II. "Motor fitness has been defined as a reading art preparedness for performance with special regard for big muscle activity without undue fatigue." It includes the capacity of the individual to move efficiently and with strength and force over a reasonable length of time.[5]

The motor fitness of football and handball players the gauged by performance and the performance is based on many motor factor the most common motor fitness factor are agility, speed, power, strength balance flexibility and endurance some of these factors are make dominant in same games than in other games therefore it is essential to known these essential factors closely related to respective game[6]

The qualities which are considered motor performance qualities and which make up the majority of the test item for motor performance test batteries include speed, power, and agility. Reaction time, hand and eye coordination, and balance. Some time strength and endurance are also included although they more properly belong in to the physical fitness factors. [7]

Actually, motor fitness is a limited phase of general ability, with emphasis placed on the underline elements of vigorous physical activity but does not include the primary elements, coordination, and skill. It is also a more general.fitness designation than physical fitness. The basic physical elements of muscular strength, muscular endurance, muscular power, agility, speed, flexibility, and circulatory endurance are added to compare motor fitness. [8] All the term the motor fitness is most often used synonymously with physical fitness by the coaches but it is very important for the physical education students to understand the basic difference between physical fitness and motor fitness. It is used denote only the five fitness components were as motor fitness is more comprehensive term which includes all the ten components including additional five motor performance components.[10]

The ten components of motor fitness are as under.

1) Muscular strength 2) Muscular endurance 3) Cardio vascular endurance 4) Flexibility 5) Muscular power 6) Speed 7) Agility 8) Balance 9) Reaction time 10) Freedom from obesity

Statement of the problem : Present study himself is a football player .Football and Handball both games are Endurance games .so researcher keenly want to know the difference in motor fitness of both the game players . Hence the problem is stated as ***"comparative study of Physiological parameter and motor fitness of football and handball players"***

Purpose of the Study : The purpose of the present study was to compare Physiological

parameter and motor fitness components of football and handball players.

Significance :1) The study would be significant in showing the Physiological parameter and motor fitness of football and handball players. 2) The study would be also significant in suggesting which team would be better incase of Physiological parameter and motor fitness

3) Present study would help to enlighten the coaches about the selection of team of football and handball.4) The study would also be helpful to give new knowledge towards the achievement of performance of the football and handball players.

Objectives :1.To find out the some selected physiological parameters of football and handball players.2. To find out the motor fitness components of football and handball players.3.To find out the significant difference in motor fitness components of two game players.4.To compare the significant difference in some selected physiological parameters of two game players.

Hypothesis : It was hypothesized that there might be no significant difference in Physiological parameter and motor fitness components of football and handball players.

Scopes & limitation: 1) The study was delimited to compare football and handball game only2) The study was conducted on the male subjects only.3) The age group of selected subject were ranging from 18 to 25 years.4) Philips J.C.R. test was selected to assess the motor fitness level of two game players.5) Stethoscope and Dry spiyro meter was used to measure vital capacity, blood pressure of the selected subjects.

Limitations :1)Environmental factors were not under the control of researcher.2) Training schedule of the players was not under the control of researcher.3)No motivational techniques were used to collect the data which may affect the result.4)Dietary habits of players were not under the control of researcher.

Design of the Study

In this chapter the procedure for the source of data, selection of subject, selection of test and collection of data would be described below :-

Source of data : The data was collected from college level players of football and handball from selected institutions of Yavatmal City.

Sampling Procedure : The subject was selected by using simple random sampling method. The researcher selected 20 subjects from Football and 20 from Handball game respectively.

Methodology : Selection of Test:-

A) **Philips JCR- For motor fitness,**

1) Vertical jump 2) Chinning (Pull- ups) 3) Shuttle run

B) **Physiological Parameters**,

1) Dry-spiyrometer - Vital capacity

2)Sphygmomanometer - Blood Pressure.

3) Stethoscope -Pulse Rate

Collection of Data : Physiological parameters and motor fitness of the selected subjects were tested according to the administration of the test items chosen for the study .the score of each subject for each test items of both groups i.e. football and handball players of yavatmal city was recorded and data was further put for tabulation and analysis as show.

Analysis and interpretation : In this,analysis of data and interpretation has been present under following

1. Level of significance 2. Analysis of data 3. Findings 4. Testing hypothesis

1. **Level of significance :** To test for the hypothesis the level of significance at 0.05 level of confidence was considered adequate for the purpose of this study, while using the 't' test a value of 't'=2.021was needed for being significant at 0.05 level of confidence for degree of freedom(38).

2. **Analysis of data :** Main objective of the study was to find out the motor fitness and physiological parameters of respective two game players and to compare by (t-test) was computed in order to

determine the difference in motor fitness and physiological parameters of two games viz Football and Handball players. The data collected from 40 subjects 20 from each Football and Handball. Motor fitness components and physiological parameters were computed by using t-test for statistical analysis.

Table I :Table showing the comparison in test of two game players, Football and Handball.

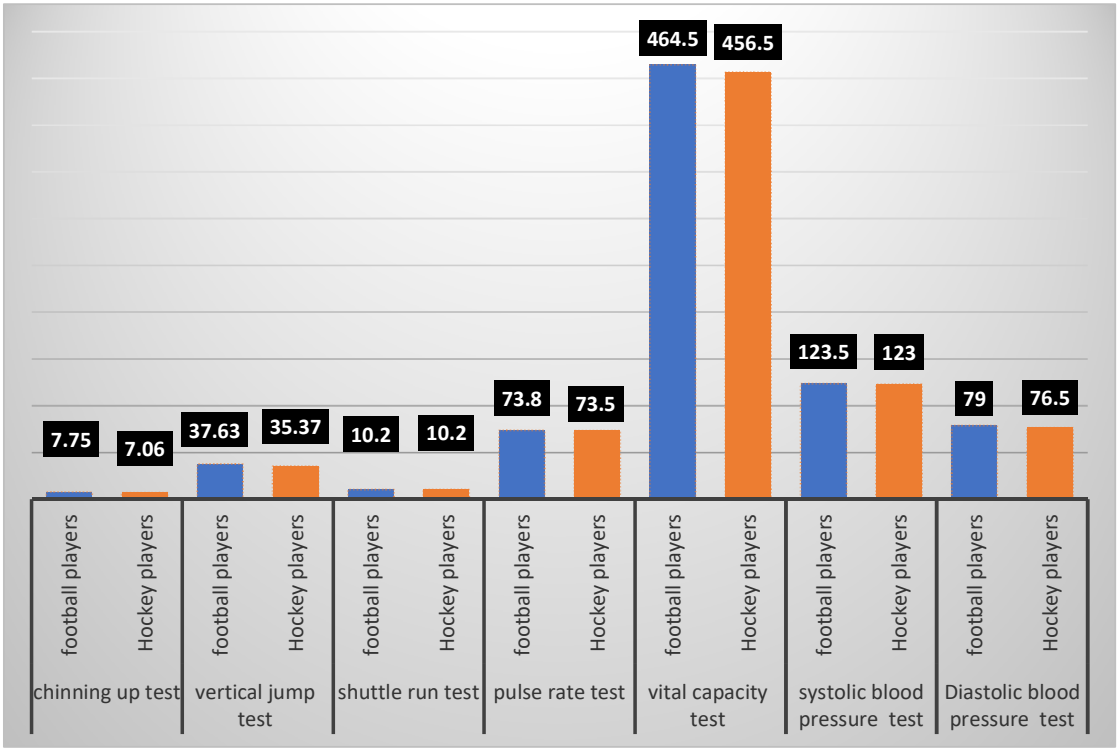
Variables		M	SD	SEM	't' calculation	't' table
Football and Handball	**chinning up test**	7.75	0.62	0.13	**0.57**@	2.021
		7.06	0.61	0.13		
	vertical jump test	37.63	1.371	0.306	**3.587***	2.021
		35.37	1.329	0.297		
	shuttle run test	10.2	0.718	0.160	**0.376**@	2.021
		10.20	0.714	0.159		
	pulse rate test	73.8	1.920	0.429	**0.350**@	2.021
		73.5	1.917	0.428		
	vital capacity test	464.5	4.819	1.078	**3.727***	2.021
		456.5	4.777	1.068		
	systolic blood pressure test	123.5	2.484	0.555	**0.450**@	2.021
		123	2.479	0.554		
	Diastolic blood pressure test	79	1.98	0.44	**0.350**@	2.021
		76.5	1.95	0.43		

@ = insignificant at 38 of at 0.05 level of significance.

The above table reveals that obtained value of 't' 0.057 was less than the table value of 't' i.e. 2.021 which means that significant difference was not found in chining up test of two games players viz Football and Handball. Further it can also be revealed that mean value of both the game players was found almost same, which may be reason for insignificant difference found in particular test

The above table reveals that obtained value of 't' 3.587 was grater than the table value of 't' i.e. 2.021 which means that significance difference was found in vertical jump test of two game players viz Football and Handball. Further it can also be revealed that Mean value of Football players was higher than the Handball players which show that Footballer shown superior in vertical jump than Handball players which can be clearly shown in figure. The above table reveals that obtained value of 't' 0.376 was less than the table value of 't' i.e. 2.021which means that insignificance difference was found in shuttle run test of two games players viz Football and Handball. Further it can also be revealed that Mean value of Football players was almost same it may be due to the need or requirement of agility in the both game is higher for performance of skill. The above table reveals that obtained value of 't' 0.350 was less than the table value of 't' i.e. 2.021 which was found insignificant at 0.05 level of significance which means that significant difference found in pulse rate test of two games viz Football and Handball players.Further it can also be revealed that mean value of both the game players was almost same which may be the reason for insignificance difference found in particular test. The above table reveals that obtained value of 't' 3.727 was grater than the table value of 't' i.e. 2.021 with means that significance difference was found in vital capacity test of two games players viz Football and Handball. Further it can also be revealed that mean value of Football players was high than the Handball players which show that Footballer shown superior in vital capacity than Handball players which can be clearly shown in figure.

The above table reveals that obtained value of 't' 0.450 was less than the table value of 't' i.e. 2.021 which is found insignificant at 0.05 level of significance which means that insignificant difference was found in systolic blood pressure test of two games viz Football and Handball players. Further it can also be revealed that mean value of both the game players was almost same which may be the reason for insignificance difference found in particular test .The above table reveals that obtained value of 't' 2.87 was less than the table value of 't' i.e. 2.021 which was found significant at 0.05 level of significance which Means that significant difference was found in Diastolic blood pressure test of two games viz Football and Handball players. Further it can also be revealed that mean value of Football players was higher than Handball players which shows that Footballers shown superior in diastolic blood pressure than Handball players.



3.**Discussion on findings :** The findings of this study shows that there was significant difference among two game players of Football and Handball.As the difference in motor fitness components of two game players at 0.05 level shown.Finding shows insignificant difference in the chinning up and shuttle run of two game players while testing motor fitness components, obtained value was less then required 't' at 0.05 level of confidence of 2.021 as shown in table I.The findings also revealed that there was significant difference in vertical jump of respective two games players. The Football players have more speed ,agility and cardiovascular endurance then Handball players. Football players shown highest then Handball players due to nature of activity. The findings also revealed that there was high significant difference in physiological parameters, vital capacity, Diastolic and among the two game player's .Football player's shows highest vital capacity and diastolic blood pressure as compared to Handball players. This was due to need of more endurance and explosive power that the players should acquired and possess.The findings reveals that there is significant difference in diastolic blood pressure in Handball players .which shown that Handball players have dominant Diastolic blood pressure then Football players. There was insignificant difference in systolic blood pressure in Handball players as it obtained 't' value was less then required 't' at 0.05 level of confidence 2.021 as shown in table.

There was insignificant difference shown by two game players in pulse rate as the obtained't' value was less then required 't' at 0.05 level of confidence of 2.021 as shown in table.

The findings revels that there was significant difference in vital capacity in Football players which show that Handball player have a dominant vital capacity than Football players as shown in in table. There was significant difference in vital capacity in Football players as is obtained 't' value is grater than required 't' at 0.05 level of confidence 2.021.

Finding shown that Football players have high vertical jump, explosive leg strength and arm strength, vital capacity, agility, speed ,cardiovascular endurance and diastolic blood pressure then Handball players.

4.**Testing Hypothesis :**In the present study, it was hypothesized that there significant difference in motor fitness components and between some physiological parameters of Football and Handball players .The result of the study revealed that there is insignificant difference in some of the selected physiological parameters and motor fitness components by applying the t- test. Hence the hypothesis accepted that there was difference among the Football and Handball players. The significant difference was found in vertical jump ,vital capacity and diastolic blood pressure. Were as no significant difference of Football and Handball players was found in chinning up, shuttle run, pulse rate and systolic blood pressure.

Conclusion : On the basis of finding and with in the limitation of the present study following conclusion were drawn. It was seen table I that there was no significance difference in motor fitness components of shoulder strength, 't' level with 38 degree of freedom. Was 2.021 were as tabulated't' was found 0.57 because both games need endurance and explosive power for better performance. It also shown by table that there was significant difference in motor fitness component of leg power, 't' value to be significant at 0.05 level with 38 degree of freedom was 2.021 were as tabulated 't' was found 3.587 because both games need endurance and explosive power of legs for better performance. It was seen in table that there was no significant difference in motor fitness components of explosive leg strength 't' value to be significant at 0.05 level with 38 degree of freedom was 2.021 were as tabulated 't' was found 0.376 because both games need lag strength and endurance . Table show that there is no significant difference and physiological parameter of pulse rate as 't' value to be significant at 0.05 level with 38 degree of freedom was 2.021 where as tabulated 't' was found 0.350.It seen into table that there was significant difference in physiological parameters of lungs capacity 't' value to be significant at 0.05 level with 38 degree of freedom was 2.021 were as tabulated 't' was found 3.727 because both games need endurance and strength. It was also revealed by the table that there was insignificant

difference in systolic blood pressure and table show that there was significant difference in diastolic blood pressure among two groups as calculated't' value is 2.87 greater than 't' value at 0.05 level of confidence 2.021.

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