

A STUDY ON PHYSIOLOGICAL AND MOTOR FITNESS VARIABLES AMONG VOLLEYBALL, HANDBALL AND KABADDI PLAYERS

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Abstract: The purpose of the study was to find out the physical and motor fitness among volley ball, hand ball and kabaddi players. A total of 60 inter collegiate level consist of volley ball , hand ball and Kabaddi players were randomly selected. Physiological Variables are Blood Pressure, Heart Rate, Motor Fitness Variables are Speed , Endurance. The data was Statistically analyzed by using 't' test and Karl Perason's correlation coefficient were used. The results of the study found that; The Volley ball players and Hand ball players have similar vital capacity. The Volley ball players have higher vital capacity as compared to Kabaddi players. The Hand ball players and Kabaddi players have similar vital capacity. The Volley ball players and Hand ball players have similar diastolic blood pressure. The Hand ball players and Kabaddi players have similar diastolic blood pressure. The Volley ball players and Hand ball players have similar speed.

Keywords: Physiological and Motor Fitness.

Introduction: Motor fitness is regarded as the preparedness for performance with special regard for big muscles activity, in a more general phase of physical fitness. Fundamental and success of all games and sports is higher level of physical and motor fitness.

Hand ball is a popular team game, an exciting game with many dramatic single combats, a competitive sport which requires technical and tactical versatility of the players, a splendid fight between the goal getter and the goal-keeper. A team game played in the whole world. It is a sport where you can play indoors or outdoors on grass or timbered floor. It is where players are encouraged to be athletic be flamboyant and inventive and above all work together as team. Kabaddi is an indigenous and national game that is now catching the imagination of youngsters at all levels. The game Kabaddi essentially needs little equipment and expenditure. So far as the ground and the apparatus of the participants. But the participants must fully be equipped with the basic skills and techniques of the game. It can safely be concluded to have originated sheer biological, human tendency to chase. Since, this tendency is observed to be more in the early teenagers, they have to be guided cautiously towards this non expensive game of Kabaddi. Full Indian culture has been included in Kabaddi.

Methodology: A total of 60 inter collegiate level volley ball , hand ball and Kabaddi players were randomly selected. Taking into confederation of the importance of these variables and the feasibility criteria for these following variables were selected for the investigator. Physiological Variables, Blood Pressure, Heart Rate, Motor Fitness Variables Speed , Endurance, The reliability of data was ensured by establishing the instrument reliability and subject reliability. As the same subjects were used to measure for self-confidence and achievement motivation of ability with questionnaires by the same investigator were considered reliable. The administration of the test and the method of the collection data were explained while collecting the data. The data that were collected from the subjects were treated statistically. To find out the significance difference among the volley ball, hand ball and kabaddi players for the main purpose of the study was " A study on physical and motor fitness among volley ball, hand ball and kabaddi players." Then the data were analysed with reference to the objectives and hypotheses by using student unpaired 't' test and Karl Perason's correlation coefficient by using SPSS 11.0 statistical software and results were obtained there by have been interpreted.

Analysis of Data and Results of the Study:**Table-I:** Results of t Test Between Volley Ball Players, Hand Ball Players And Kabaddi Players With Respect To Their Vital Capacity

Players	Mean	SD	t-value	p-value	Signi.
Volley Ball	2340.0000	687.7882	0.9214	0.3627	NS
Hand ball	2150.0000	614.3032			
Volley Ball	2340.0000	687.7882	2.1948	0.0344	S
Kabaddi	1925.0000	491.9082			
Hand ball	2150.0000	614.3032	1.2786	0.2088	NS
Kabaddi	1925.0000	491.9082			

From the results of the above table, we had seen that,

- The Volley ball players and Hand ball players do not differ statistically significant with respect to their vital capacity ($t=0.9214$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Hand ball players have similar vital capacity.
- The Volley ball players and Kabaddi players differ statistically significant with respect to their vital capacity ($t=2.1948$, $p<0.05$) at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the Volley ball players have higher vital capacity as compared to Kabaddi players.
- The Hand ball players and Kabaddi players do not differ statistically significant with respect to their vital capacity ($t=1.2786$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Hand ball players and Kabaddi players have similar vital capacity.

Table-II: Results of t test between Volley Ball Players, Hand Ball Players and Kabaddi Players with respect to Diastolic Blood Pressure

Players	Mean	SD	t-value	p-value	Signi.
Volley Ball	82.8000	7.7092	-0.1757	0.8615	NS
Hand ball	83.2500	8.4721			
Volley Ball	82.8000	7.7092	0.5619	0.5775	NS
Kabaddi	81.5000	6.9016			
Hand ball	83.2500	8.4721	0.7162	0.4782	NS
Kabaddi	81.5000	6.9016			

From the results of the above table, we had seen that,

- The Volley ball players and Hand ball players do not differ statistically significant with respect to their diastolic blood pressure ($t=-0.1757$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Hand ball players have similar diastolic blood pressure.
- The Volley ball players and Kabaddi players do not differ statistically significant with respect to their diastolic blood pressure ($t=0.5619$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Kabaddi players have similar diastolic blood pressure.
- The Hand ball players and Kabaddi players do not differ statistically significant with respect to their diastolic blood pressure ($t=0.7162$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Hand ball players and Kabaddi players have similar diastolic blood pressure.

Table-III: Results of t test between Volley Ball Players, Hand Ball Players and Kabaddi Players with Respect to 50 Meters Speed

Players	Mean	SD	t-value	p-value	Signi.
Volley Ball	6.7580	0.7245	0.7086	0.4829	NS
Hand ball	6.5840	0.8253			
Volley Ball	6.7580	0.7245	0.3796	0.7064	NS
Kabaddi	6.6865	0.4297			
Hand ball	6.5840	0.8253	-0.4927	0.6251	NS
Kabaddi	6.6865	0.4297			

From the results of the above table, we had seen that,

- The Volley ball players and Hand ball players do not differ statistically significant with respect to their 50 meters speed ($t=0.7086$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Hand ball players have similar 50 meters speed.
- The Volley ball players and Kabaddi players do not differ statistically significant with respect to their 50 meters speed ($t=0.3796$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Kabaddi players have similar 50 meters speed.
- The Hand ball players and Kabaddi players do not differ statistically significant with respect to their 50 meters speed ($t=-0.4927$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.

Table-IV: Results of t test between Volley Ball Players, Hand Ball Players and Kabaddi Players with Respect to Endurance of 1000 Meters

Players	Mean	SD	t-value	p-value	Signi.
Volley Ball	3.8350	0.4229	0.9805	0.3330	NS
Hand ball	3.7000	0.4476			
Volley Ball	3.8350	0.4229	1.5182	0.1372	NS
Kabaddi	3.6405	0.3866			
Hand ball	3.7000	0.4476	0.4499	0.6553	NS
Kabaddi	3.6405	0.3866			

From the results of the above table, we had seen that,

- The Volley ball players and Hand ball players do not differ statistically significant with respect to their endurance of 1000 meters ($t=0.9805$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Hand ball players have similar endurance of 1000 meters.
- The Volley ball players and Kabaddi players do not differ statistically significant with respect to their endurance of 1000 meters ($t=1.5182$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Volley ball players and Kabaddi players have similar endurance of 1000 meters.
- The Hand ball players and Kabaddi players do not differ statistically significant with respect to their endurance of 1000 meters ($t=0.4499$, $p>0.05$) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Hand ball players and Kabaddi players have similar endurance of 1000 meters.

Table-V: Results of Correlation Coefficient Between Vital Capacity, Diastolic Blood Pressure, Speed 50 Meters and Endurance 1000 Meters of Volley Ball Players

Variables	Vital capacity	Diastolic blood pressure	50 meters speed	Endurance of 1000 meters
Vital capacity	1.0000			
Diastolic blood pressure	0.2081	1.0000		
50 meters Speed	-0.0041	0.0029	1.0000	
Endurance of 1000 meters	-0.2597	-0.0812	0.3244	1.0000

From the results of the above table, we seen that,

- The relationship between vital capacity and diastolic blood pressure of Volley ball players ($r=0.2081$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between vital capacity and 50 meters speed of Volley ball players ($r=-0.0041$, $p>0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between vital capacity and endurance 1000 meters of Volley ball players ($r=-0.2597$, $p>0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and 50 meters speed of Volley ball players ($r=0.0029$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and endurance 1000 meters of Volley ball players ($r=-0.0812$, $p>0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between 50 meters speed and endurance 1000 meters of Volley ball players ($r=0.3244$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.

Table-VI: Results of Correlation Coefficient between Vital Capacity, Diastolic Blood Pressure, Speed 50 Meters and Endurance 1000 Meters of Hand Ball Players

Variables	Vital capacity	Diastolic blood pressure	50 meters speed	Endurance of 1000 meters
Vital capacity	1.0000			
Diastolic blood pressure	0.5132*	1.0000		
50 meters Speed	0.1622	-0.1540	1.0000	
Endurance of 1000 meters	0.3765	-0.0118	0.1571	1.0000

*Significant at 5% level of significance ($p<0.05$)

From the results of the above table, we seen that,

- The relationship between vital capacity and diastolic blood pressure of Hand ball players ($r=0.5132$, $p<0.05$) is found to positive and statistically significant at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, vital capacity increases with increase in diastolic blood pressure of Hand ball players
- The relationship between vital capacity and 50 meters speed of Hand ball players ($r=0.1622$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.

- The relationship between vital capacity and endurance 1000 meters of Hand ball players ($r=0.3765$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and 50 meters speed of Hand ball players ($r=-0.1540$, $p>0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and endurance 1000 meters of Hand ball players ($r=-0.0118$, $p>0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between 50 meters speed and endurance 1000 meters of Hand ball players ($r=0.1571$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.

Table-VII: Results of Correlation Coefficient between Vital Capacity, Diastolic Blood Pressure, Speed 50 Meters and Endurance 1000 Meters Of Kabaddi Players

Variables	Vital capacity	Diastolic blood pressure	50 meters speed	Endurance of 1000 meters
Vital capacity	1.0000			
Diastolic blood pressure	-0.0814	1.0000		
50 meters Speed	0.3010	0.0533	1.0000	
Endurance of 1000 meters	0.0976	0.0559	0.0776	1.0000

From the results of the above table, we seen that,

- The relationship between vital capacity and diastolic blood pressure of Kabaddi players ($r=-0.0814$, $p>0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between vital capacity and 50 meters speed of Kabaddi players ($r=0.3010$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between vital capacity and endurance 1000 meters of Kabaddi players ($r=0.0976$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and 50 meters speed of Kabaddi players ($r=0.0533$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and endurance 1000 meters of Kabaddi players ($r=0.0559$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between 50 meters speed and endurance 1000 meters of Kabaddi players ($r=0.0776$, $p>0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.

Table-4.8: Results of Correlation Coefficient Between Vital Capacity, Diastolic Blood Pressure, Speed 50 Meters And Endurance 1000 Meters Of All Three Types Of Players

Variables	Vital capacity	Diastolic blood pressure	50 meters speed	Endurance of 1000 meters
Vital capacity	1.0000			
Diastolic blood pressure	0.2596*	1.0000		
50 meters Speed	0.1223	-0.0602	1.0000	
Endurance of 1000 meters	0.1099	-0.0057	0.2062	1.0000

*Significant at 5% level of significance $p < 0.05$

From the results of the above table, we seen that,

- The relationship between vital capacity and diastolic blood pressure of All players (Volley ball, Hand ball, Kabaddi) players ($r=0.2596$, $p < 0.05$) is found to positive and statistically significant at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, vital capacity increases with increase in diastolic blood pressure of All players (Volley ball, Hand ball, Kabaddi) players
- The relationship between vital capacity and 50 meters speed of All players (Volley ball, Hand ball, Kabaddi) players ($r=0.1223$, $p > 0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between vital capacity and endurance 1000 meters of All players (Volley ball, Hand ball, Kabaddi) players ($r=0.1099$, $p > 0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and 50 meters speed of All players (Volley ball, Hand ball, Kabaddi) players ($r=-0.0602$, $p > 0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between diastolic blood pressure and endurance 1000 meters of All players (Volley ball, Hand ball, Kabaddi) players ($r=-0.0057$, $p > 0.05$) is found to negative and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.
- The relationship between 50 meters speed and endurance 1000 meters of All players (Volley ball, Hand ball, Kabaddi) players ($r=0.2062$, $p > 0.05$) is found to positive and statistically not significant at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected.

Conclusion:

- The Volley ball players and Hand ball players have similar vital capacity.
- The Volley ball players have higher vital capacity as compared to Kabaddi players.
- The Hand ball players and Kabaddi players have similar vital capacity.
- The Volley ball players and Hand ball players have similar diastolic blood pressure.
- The Volley ball players and Kabaddi players have similar diastolic blood pressure.
- The Hand ball players and Kabaddi players have similar diastolic blood pressure.
- The Volley ball players and Hand ball players have similar speed.
- The Volley ball players and Kabaddi players have similar speed.
- The Hand ball players and Kabaddi players have similar speed.
- The Volley ball players and Hand ball players have similar endurance.
- The Volley ball players and Kabaddi players have similar endurance.
- The Hand ball players and Kabaddi players have similar endurance.
- Vital capacity increases with increase in diastolic blood pressure of Hand ball players
- Vital capacity increases with increase in diastolic blood pressure of All players (Volley ball, Hand ball, Kabaddi) players

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