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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 study physiological and motor fitness variables among volleyball, handball and kabaddi players A total of 60 intercollegiate levels consist of volleyball, handball and Kabaddi players were randomly selected. Their age ranged from 18 to 25 years. The criterion variables Physiological Variables i) Blood Pressure, ii)Heart Rate, Motor Fitness Variables: i) Speed ii) Endurance The obtained data was statistically examined by analysis of variance (ANOVA) using SPSS 16.0 statistical software. The following conclusions were drawn. i) The Volley ballplayers and Hand ballplayers have similar vital capacity, diastolic blood pressure, 50 meters speed and similar endurance of 1000 meters; ii) The Volley ballplayers have a higher vital capacity as compared to Kabaddi players; iii) The Volley ballplayers and Kabaddi players have similar diastolic blood pressure and similar endurance of 1000 meters.. iv) The Hand ball players and Kabaddi players have the similar vital capacity, diastolic blood pressure, 50 meters speed and similar endurance of 1000 meters.

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Introduction

Physical Education today faces the unique opportunity of potentially contributing to the quality of life. No other field enjoys such a dynamic future. On the other hand, it faces so many unique tasks, because the competition is very intense.

Volley Ball

Volley ball is a typical American game. It was invented by "William, G. Morgan' Physical Director of Holyoake YMCA Mass, the U.S.A. in the year 1895. he wanted to introduce a game to the members of his YMCA to provide a suitable recreational game less strenuous than that of Basket Ball. There was at the time, a game called "Minton" in which at worsted yarn ball was batted back and forth over a 7 foot net with help of a racket. Morgan modified this game by eliminating the rocket and worsted yarn ball and experimented with an inflected basketball bladder, which was batted with the hands-on over the net. He introduced this game in his gymnasium and he called this game 'Mintonette'. Since the basketball bladder was not conducive for proper play, a new ball was devised with the help of a sports company. Dr. A. T. Haisteds of spring field college gave the application of "Volley Ball" to this game since the idea of the play was to volley the ball to and for over the net.

Hand Ball

Hand ball is a popular team game, an exciting game with many dramatic single combats, a competitive sport that 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 timber floor. It is where players are encouraged to be athletic be flamboyant ad inventive and above all work together as a team.

It is one of the most popular sports in the world. It is played on all 5 habitable continents and around 150 nations play the game. At least 15 million people from all over the world and all works of life play the game. It helps you keep fit and healthy. Its rule promotes and encourages diversity of principles and philosophies.

Kabaddi

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

Selection of Subjects

A total of 60 intercollegiate levels consist of volley ball, hand ball and Kabaddi players were randomly selected.

Selection of Variables

The research scholar reviewed the available scientific literature, books, journals, periodicals, and magazine and research papers about the study. Taking into the confederation of the importance of these variables and the feasibility criteria for these following variables were selected for the investigator.

Physiological Variables

1. Blood Pressure
2. Heart Rate

Motor Fitness Variables

1. Speed
2. Endurance

Reliability of Data

The reliability of data was ensured by establishing the instrument reliability and subject reliability.

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.

Collection of Data

The administration of the test and the method of the collection of data were explained while collecting the data.

Physiological Variables

Blood Pressure

Heart Rate

Blood Pressure and Heart Rate were measured by using Standard Instrument.

Motor Variables

Speed and Endurance was measured in Track

50 Meters Dash (Speed)

Purpose

To measure speed and acceleration.

Equipment

Stopwatch, (one per timekeeper) whistle, wooden clapper, finishing posts, woolen thread. Accuracy measure 50 meters straight.

Test description

Fifty meters dash was used to test the speed of each subject. They were allowed to warm up on their own before the actual performance. They were instructed to do their best. To get the best performance an element of competition was introduced as the subjects ran in groups of four each.

On the signal "on your marks", subjects stood with the front foot behind the starting line (the crouch start was not allowed) when ready (and still). The starting signal was given and subjects sprinted the distance avoiding any tendency, to declared in anticipation of the finish.

Scoring

Time to the nearest tenth of a second on the better of two attempts was noted and recorded.

1000 Miters Run: (Endurance)

Purpose

Test to measure cardiovascular endurance.

Equipments

Stopwatch wooden clapper, whistle, score sheet.

Test Description

The 1000 mts. the run test was conducted on the 400 meters track during the evening. The subjects were assembled and were instructed. Subjects were made to run in four batches of twenty each. They used standing, start, and the race started on the sound of the clapper. The subjects ran 1000 mts and at the end, time is considered for the data.

Vital Capacity

Vital capacity was measured with the help of Drg Spirometer

Analysis of the data and result of the study

Hypothesis-1

There is no significant difference between Volley ball players, Hand ball players and Kabaddi players concerning their vital capacity

To achieve this hypothesis, the t-test was applied and the results are presented in the following table.

Table- 1: Results of t-test between Volley ball players, Hand ball players and Kabaddi players concerning 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,

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

Hypothesis-2

There is no significant difference between Volley ball players, Hand ball players and Kabaddi players concerning diastolic blood pressure

To achieve this hypothesis, the t-test was applied and the results are presented in the following table.

Table-.2: Results of t-test between Volley ball players, Hand ball players and Kabaddi players concerning 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 significantly concerning their diastolic blood pressure ($t=0.7162$, $p>0.05$) at a 5% level of significance. Hence, the null hypothesis is accepted and the alternative hypothesis is rejected. It means that the Hand ball players and Kabaddi players have similar diastolic blood pressure.

Hypothesis-3

There is no significant difference between Volley ball players, Hand ball players and Kabaddi players concerning 50 meters speed

To achieve this hypothesis, the t-test was applied and the results are presented in the following table.

Table-3: Results of t-test between Volley ball players, Hand ball players and Kabaddi players concerning 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,

1 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.

2 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.

3 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. It means that, the Hand ball players and Kabaddi players have similar 50 meters speeds.

Hypothesis-4

There is no significant difference between Volley ball players, Hand ball players and Kabaddi players concerning the endurance of 1000 meters

To achieve this hypothesis, the t test was applied and the results are presented in the following table.

Table-.4: Results of t-test between Volley ball players, Hand ball players and Kabaddi players with respect to the 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.

Conclusion

Based on the results of the study following conclusions were drawn; The Volley ball players and Hand ball players have similar vital capacity, diastolic blood pressure, 50 meters speed and similar endurance 1000 meters. The Volley ball players have higher vital capacity as compared to Kabaddi players. The Volley ball players and Kabaddi players have similar diastolic blood pressure and similar endurance of 1000 meters. The Hand ball players and Kabaddi players have similar vital capacity, diastolic blood pressure, 50 meters speed and similar endurance of 1000 meters.

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