

Relationship of Selected Physical and Physiological Variables with the Performance of Kabaddi Players



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Abstract

Aim: The purpose of this study was to determine the relationship of selected physical Physiological variables with the performance of kabaddi players. **Method:** Ten male Kabaddi players of PPN collage, Kanpur were selected as subject. For the establishment of relationship of dependent and independent variables the following tests were employed. Standing height, sitting height, weight, standing broad jump, 50 yard dash, shuttle run. Product movement correlation was used to compute coefficient of correlation. **Result:** Standing Height, Sitting Height, Weight, Chest Girth, Arm Girth & Leg Length as the correlation co-efficient values were found lower than the tabulated value and Arm Length as the correlation coefficient values were found higher than the tabulated value in case of Physiological variables. Others physical variables Speed, Strength and agility as the correlation co-efficient values were found lower than the tabulated value.

Key words: Speed, Strength and agility

Introduction

Sports are as old as human society and it has achieved a universal following in the modern times. It now enjoys popularity with other form of social activity. It has become an integral part of the educational process. Millions of men follows different sports event all over the world with an enthusiasm boarding on directions many participate in the activity for the man of it or for health, strength and fitness. To other it is a profession with ample financial benefits linked with a high degree of popularity. Sport has become a mass movement and a social phenomenon of great magnitude (1).

Competitive sports make tremendous changes on the physical condition, vitality, endurance and mental powers of the participant. Only athletes in the finest condition on withstand the wear and tear of a competitive season; only the fitness can play to the best of their ability (2).

In the last few decades sports have gained tremendous popularity all over the globe. The popularity of sports is still increasing at a fast race and this happy trend is likely to continue in the future also. When one look at the history of the modern Olympic Games is sees that the number of sports for which competitions are held at Olympic Games has increased steadily. In addition to Olympic Sports indigenous sports have also become popular in each country. Several new sports like sky-diving, skating, motor racing have also come into existence and are quite popular with the masses (3).

Kho-kho ranks as one of the most popular traditional sports in India. The origin of kho-kho is difficult to trace, but many historians believe, that it is a modified form of 'Run Chase',

which in its simplest form involves chasing and touching a person. With its origins in Maharashtra, Kho- Kho in ancient times, was played on 'raths' or chariots, and was known as RATHERA.

Like all Indian games, it is simple, inexpensive and enjoyable. It does, however, demand physical fitness, strength, speed and stamina, and a certain amount of ability. Dodging, feinting and bursts of controlled speed make this game quite thrilling. To catch by pursuit - to chase, rather than just run - is the capstone of Kho-Kho. The game develops qualities such as obedience, discipline, sportsmanship, and loyalty between team members. The rules of the game were framed in the beginning of the 20th century.

Statement of the Problem

The purpose of this study is to find out the Relationship of Selected Physical and Physiological variables with the Performance of Kabaddi Players.

Methods

Ten male Kabaddi players who have represented in Intercollegiate team of PPN College, Kanpur who came for regular match practice were randomly selected and oriented to the tests.

Physical variables as well as Physiological variables were selected as the criterion for the present study. (A) Standing broad jump measured in centimeters. (B). 50 yard dash and shuttle run (4x10) to the nearest 1/10 of a second.(C) Sit and rich test measured in centimeters. (D) Weight was recorded in kilograms and grams. (E) Standing Height, Sitting Height, Leg length, Arm length, Arm girth, Chest girth to the nearest centimeter.

It is hypothesized that there would be a significant relationship of selected physical and Physiological variables to the performance of of Kabaddi Players.

Person’s product moment correlation method was adopted to study the relationship between Physiological variables of Kabaddi Players.

Results

Table -1: **Descriptive Analysis of Physiological Variables in Kabaddi Players**



Table-5 reveals the descriptive analysis of Selected Physiological Variables in Kho-Kho. In this the standing height shows value of mean and standard deviation (163.9 ± 7.82) respectively. The maximum value is 178 and minimum value is 155 of the standing height. In this the sitting height shows value of mean and standard deviation (82.8 ± 4.02) respectively. The maximum value is 88 and minimum value is 75 of the sitting height. In this weight shows value of mean and standard deviation (55.55 ± 7.13) respectively. The maximum value is 65.5 and minimum value is 46 of weight. In this chest girth shows value of mean and standard deviation (81.1 ± 4.48) respectively. The maximum value is 87 and minimum value is 74 of chest girth. In this Arm girth shows value of mean and standard deviation (27 ± 2.86) respectively. The maximum value is 32 and minimum value is 24 of Arm girth. In this Arm length shows value of mean and standard deviation (70.9 ± 3.31) respectively. The maximum value is 76 and minimum value is 64 of Arm length. In this Leg length shows value of mean and standard deviation (96.3 ± 5.81) respectively. The maximum value is 76 and minimum value is 64 of Leg length.

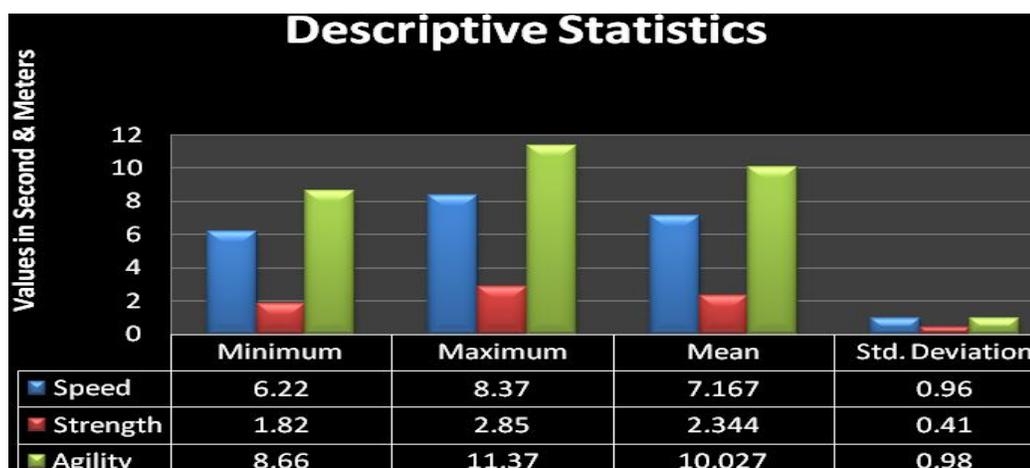
Table -2: The Relationship of Selected Physiological Variables with Performance of Kho- Kho Players.

S.No.	Variable	Coefficient of Correlation
1-	Heart Rate	.580
2-	Respiratory Rate	.241
3-	Vital capacity	.484
4-	Peak flow rate	.210

Table - 2 clearly indicates that there exists a significant relationship between *performance of Kho – Kho players and Arm Length* as the correlation coefficient values were found higher than the tabulated value at .05 level of significance.

On the other hand, there exists an insignificant relationship between *Kho – Kho players performance and Standing Height, Sitting Height, Weight, Chest Girth, Arm Girth & Leg Length* as the correlation co-efficient values were found lower than the tabulated value at .05 level of significance.

Table -3: Descriptive Analysis of Physical Variables in Kho-Kho Players



In this Speed shows value of mean and standard deviation (7.167 ± 0.966) respectively. The maximum value is 8.37 and minimum value is 6.22 of Speed. In this Strength shows value of mean and standard deviation (2.344 ± 0.41) respectively. The maximum value is 2.85 and minimum value is 1.82 of Speed. In this Agility shows value of mean and standard deviation (10.027 ± 0.98) respectively. The maximum value is 11.37 and minimum value is 8.66 of Speed.

Table -4: The Relationship of Selected Physical Variables with Performance of Kho- Kho Players

<i>S.No.</i>	<i>Variables</i>	<i>Coefficient of Correlation</i>
1-	Speed	-0.129
2-	Strength	0.126
3-	agility	-0.156

Table - 4 clearly indicates that there exists an insignificant relationship between kho-kho performance and Speed, Strength and agility as the correlation co-efficient values were found lower than the tabulated value at .05 level of significance.

Discussion of Findings

In the case of relationship between the Physiological variables and the performance of Kho- kho Players there was insignificant correlation in all the variables with performance namely; standing height (0.580), sitting height (0.241), weight (0.484), chest girth (0.210), arm girth (0.314) & leg length (0.210), Their result is evident to show that there was insignificant relationship between the performance of Kho- kho Players. And variables of Physiological. In case of Arm Length a significant correlation was obtained (0.651). The reason could be attributed to the fact that in running events probably reaction time speed of movement and frequency of the stride are much more important than the bodily measurements. A runner has to react quickly to the stimulus i.e. gun or clapper and also has to have quick frequency stride to initially start the movement and there after complete the event. Hence the hypothesis stated earlier that there will be a significant relationship among between the anthropometric variables and the performance of Kho- kho Players is rejected excepted in the case of arm length.

As far as the relationship between physical variables and performance of Kho- kho Players is concerned. There was insignificant relationship between speed, strength and agility and performance as the obtained results (-0.129), (0.126) and (-0.156) had a lower significant relationship with the performance. The reason could be attributed the fact that in the running event one has to have greater speed to cover the required distance and on the other hand has to have greater agility in changing position from stationary (sitting) to the moving position (acceleration). Therefore the hypothesis stated earlier that there will be significant relationship between the physical variables and performance is rejected at .05 level. The reason of not having the positive relationship could be attributed to the fact that to a greater extent strength does not play a vital and significant role as far as the kho-kho game is concerned. In fact in the kho-kho game is reaction time, speed of movement, agility, acceleration dominate as compared to strength.

Conclusion

With in the limitations of the study the following conclusions were drawn:-

1. There was significant relationship between the Arm lengths to the performance of Kabaddi players.
2. There were no significant relationships between explosive strength, weight, sitting height, standing height, chest girth, arm girth and leg length to the performance of Kabaddi players.
3. The physical variables such as speed, strength and agility were insignificant relationship between the performances in Kabaddi players.

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