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A Vinayagamoorthi
Ph.D., Scholar, Department of
Physical Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Dr. G Kumaresan
Assistant Professor,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

Comparative study on physical fitness components of kabaddi and handball female players in school level

A Vinayagamoorthi and Dr. G Kumaresan

Abstract

The comparison of sport is essential, especially in team sports, to understand and to be able to compare player performances and fitness levels. Generally coaches would want to play the fittest and the higher performing team members. Obviously an experienced coach will have “the eye” as to the abilities, fitness and performances levels of their athletes.

The purpose of the study was to compare the physical fitness components of Kabaddi and Handball players. Only female players were selected randomly from the kabaddi and handball who had participated in Coimbatore district level school meet. The age of players ranged between 14 to 15 years. Speed, Agility, leg explosive power were selected as a variable for investigation of present study. A series of measurements was carried out on each participant. Physical fitness components were measured by the following tests. Speed assessed by 50-meter dash, Agility assessed by Illinois agility test and Leg explosive power assessed by Standing broad jump. All test using by scientifically approved equipment's. The results revealed that an Inter-relationship exists significantly between the physical fitness components between kabaddi and handball players. The analysis of data was done by using statistical technique ‘t’- test for finding the significance difference of speed, agility and Leg explosive power of kabaddi and handball players and the level of significance was set at 0.05 levels ($p < 0.05$).

Keywords: Physical fitness, speed, agility, leg explosive power

Introduction

Kabaddi is the ancient game played in India. It is the high intensity intermittent type of sport which requires a well built physique in order to complete the 45 minutes of competitive game and to achieve success. It requires a tremendous amount of stamina, speed and quickness with neuromuscular coordination as well as presence of mind to attack, or defend from the competitive players. To improve or to maintain the physical athlete performance ‘training’ is necessary (Robson M *et al.* 1978) [2]. The player's must be aware of the different types of fitness to develop an effective training program that centre on weak or important areas. Physical fitness, refers to how the player's can perform at own and sport and games, and involving the skills of agility, coordination, balance, power, and reaction time. So these five components of physical fitness are required to compete at high levels competitions, which is why the concept is seen as an essential part of any Sports person's training program. Physical fitness, also use the term motor ability, refers to individual performance as influence by the speed, agility, power, coordination and balance. The improvement of these abilities is very accommodating and essential in sports training and different kinds of training are required to achieve these motor abilities (Harrison Clark H. 1997) [1].

Methodology

Selection of subjects

Initially, 36 Kabaddi and 36 Handball and players were selected from School level girls. The designated delimitations for the present study were kept in mind for the selections of the subjects those have participated in school inter zone level competition. It was also taken into consideration that all the selected subjects were ranged from 14 to 15 years of age and who were involved in regular practice for their respective games of Kabaddi and Handball to remain physically and mentally fit. Finally, total 36 players were selected from kabaddi and 36 players were selected from game of Handball.

Correspondence
Dr. G Kumaresan
Assistant Professor,
Department of Physical
Education, Bharathiar
University, Coimbatore,
Tamil Nadu, India

It was also kept in mind that all the subjects should participate voluntarily for purpose of data collection during present study.

Selection of variables and tests

A series of anthropometrical measurements was carried out on

each participant. The data were collected by following standard testing protocol. Physical fitness components were measured by the following tests. Speed assessed by 50 mts, Agility assessed by Illinois agility test and Leg explosive power assessed by Standing broad jump.

Table 1: Computation of the Mean, Standard Deviation and ‘T’ Ratio Values on Speed of Kabaddi and Handball Players.

| Variable | Game | N | Mean | Standard deviation | Standard error of difference | t-ratio |
|----------|----------|----|-------|--------------------|------------------------------|---------|
| Speed | Kabaddi | 36 | 11.09 | 1.70 | 0.57 | 3.04* |
| | Handball | 36 | 9.34 | 1.59 | | |

* Significant at 0.05 level for the degrees of freedom 1 and 14, 2.145

Table: 1 showed that mean values of school level Kabaddi and Handball players on Speed were 11.09 and 9.34 respectively. The obtained’ ratio value of 3.04 was higher than required table value 2.145 for significance at 0.05 level

of confidence with DF 1, 35. The result of the study showed that there was a significant difference between school level Kabaddi and Handball players on Speed.

Table 2: Computation of the Mean, Standard Deviation and ‘T’ Ratio Values on Agility of Kabaddi and Handball Players.

| Variable | Game | N | Mean | Standard deviation | Standard error of difference | t-ratio |
|----------|----------|----|-------|--------------------|------------------------------|---------|
| Agility | Kabaddi | 36 | 19.10 | 0.99 | 0.07 | 4.54* |
| | Handball | 36 | 18.20 | 1.06 | | |

* Significant at 0.05 level for the degrees of freedom 1 and 14, 2.145

Table: 2 showed that mean values of school level Kabaddi and Handball players on Agility were 19.10 and 18.20 respectively. The obtained’ ratio value of 4.54 was higher than required table value 2.145 for significance at 0.05 level

of confidence with df 1, 35. The result of the study showed that there was a significant difference between school level Kabaddi and Handball players on Agility.

Table 3: Computation of the Mean, Standard Deviation and ‘T’ Ratio Values on Leg Explosive Power of Kabaddi and Handball Players.

| Variable | Game | N | Mean | Standard deviation | Standard error of difference | t-ratio |
|---------------------|----------|----|------|--------------------|------------------------------|---------|
| Leg explosive power | Kabaddi | 36 | 1.44 | 0.25 | 0.140 | 9.93* |
| | Handball | 36 | 1.58 | 0.24 | | |

* Significant at 0.05 level for the degrees of freedom 1 and 14, 2.145

Table: 3 showed that mean values of school level Kabaddi and Handball players on Leg explosive power were 1.44 and 1.58 respectively. The obtained’ ratio value of 9.93 was higher than required table value 2.145 for significance at 0.05 level of confidence with df 1, 35. The result of the study showed that there was a significant difference between school level Kabaddi and Handball players on Leg explosive power.

analysis from ‘t’-ratio. The ‘t’ ratio showed significant differences between Kabaddi and Handball players on speed, agility and leg explosive power. The mean score of Kabaddi and Handball players on speed (11.09, 9.34), Agility (19.10, 18.20) Leg explosive power (1.44, 1.58) respectively. Hence, Handball players better than Kabaddi players on speed, agility and leg explosive power.

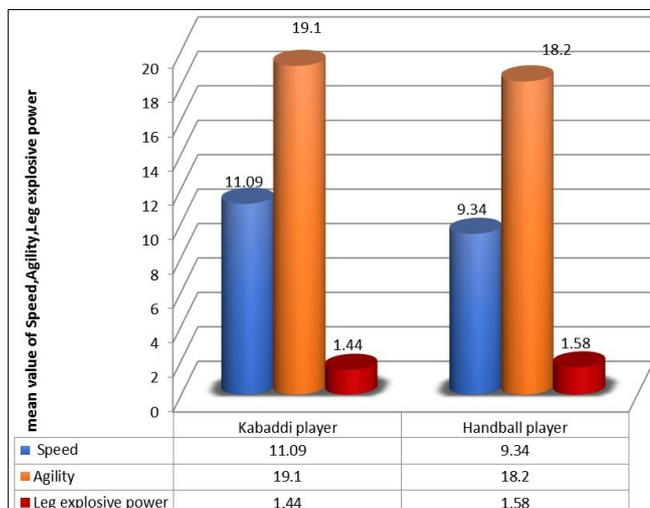


Fig 1: The mean value of Kabaddi and Handball Players on speed, agility and explosive power.

Discussion on Findings

The findings based on the results of the study and statistical

Conclusion

Based on the findings of this study it was concludes that Handball players have shown significant different in speed, agility and leg explosive powers. This is because of the nature of the game. This clearly shows each game needs its own characteristics.

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