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## The relation between physical, somatic and mental variables with performance in college level Kabaddi players

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### Abstract

Kabaddi is basically characterized as a power game. It involves the effective use of body weight, and weight in an effective force. Power depends upon the force applied. Even during struggle, one needs to exert a lot of force. The purpose of the study was to find out the best estimators of the performance ability of male Kabaddi players among the variables under consideration in the present study. To establish the relationship of selected physical variables, somatic variables and mental variables with performance in Kabaddi, the investigator had collected seventy-five observations of Kabaddi players who had participated in the Inter-Collegiate Kabaddi tournament held at Andhra University, Visakhapatnam for the year 2020-21.

**Keywords:** Power, performance, physical variables, somatic variables, mental variables

### Introduction

Physical fitness is the fundamental necessity for any sporting activity. Motor qualities such as speed, strength, endurance, and flexibility along with physical fitness are essential for excellence in sports. Sports trainers and coaches are emphasizing on improving the physical fitness and motor qualities of the players, which is also known as conditioning. A good conditioning program is the backbone of the over-all training of the sportsperson. Physical fitness is categorized into general and specific fitness. General fitness refers to the motor qualities required in any sportsperson irrespective of the sports discipline, such as speed, strength, flexibility, endurance and co-ordination. Each and every sport demands certain motor qualities above the ordinary. Specific fitness is the intensified level of motor qualities achieved by the sportsperson that is required by the specific sport.

Games and Sports appear to be universal features of human culture, both past and present. Archaeological investigations have uncovered numerous artifacts from game play in sites around the world. These include implements related to games of physical skill, such as balls and hoops, game boards, board game pieces, and playing cards for games of strategy, and dice, used in games of chance. Boards and pieces for games similar to draughts (checkers in North American English) have been found in the ancient city of Ur in modern day Iraq dating to approximately 3,000 BCE (Oxland 2004) and in Egypt dating to as early as 600 BCE (Masters 1997). Early athletic games, or sports, are well known from archaeological and narrative sources. A variety of art forms, including painting and sculpture, from around the world commonly depict play in games and sports.

The Greek historian Herodotus (5<sup>th</sup> century BCE) described games and other pastimes in Egypt and Lydia (western present-day Turkey) while the Roman historian Tacitus (55-120 CE) described dice games among Germanic tribes. The remains of the ancient Greek Olympic Games, often dated to 776 BCE, are well known and include both the site where games were held but also implements, such as javelins and discuses. In ancient Rome, a variety of sports, some transformed from Greek predecessors, were held, initially in gymnasia and palaestrae and later in large stadia, such as the Circus Maximus, and amphitheaters, such as the Colosseum. Popular sports included chariot racing, held in the Circus Maximus, and gladiatorial combats held in the Colosseum.

### History of Kabaddi

This game has its origin in the Indian subcontinent. It is a rural game and is very popular in rural parts of India as it has simple rules and does not require any equipment. Kabaddi attained national status in the year 1918, and Maharashtra was the pioneer state to bring the game to the national platform and give it further popularity. Standard rules and regulations were formulated in 1918 but were brought out in print in the year 1923, and in this very year, an All India Tournament was organized at Baroda with these rules. Kabaddi has not looked back since then, and numerous tournaments are organized all over the country throughout the year.

International Kabaddi Federation controls Kabaddi, established in the year 1952. In the year 1950, the kabaddi Federation of India was founded, and it compiled a standard set of rules. In India Kabaddi Federation of India regulates its regulations and development. Kabaddi was a demonstration game in the year 1982 Asian games in New Delhi. It was officially introduced in the Asian games in the year 1990. Though this is not an Olympic game efforts are going on to get its recognition in Olympics. India has the honor of winning all the gold medals in the Asian Games.

Tukaram's Abhang says Kabaddi was played by our beloved God" Krishna". But according to other legends, kabaddi originated in Tamil Nadu over 4000 years ago. A prince played earlier this sport was played by princes in order to display their strengths to the princess or their would-be brides. The sport has a long history dating back to pre-historic times. It was probably invented to ward off croup attacks by individuals and vice-versa. The game was very popular in the southern part of Asia and played in its different forms under different names. A dramatized version of the great Indian epic, the "Mahabharata". Has made an analogy of the game to a tight situation faced by Abhimaneu, the heir of ' the Pandava kings, when he is surrounded on all sides by the enemy. Buddhist literature speaks of the Gautama Buddha playing Kabaddi for recreation. History also reveals that the princes of yore played Kabaddi to display their strength and win their brides. People born in India before the 1980's would have indeed played kabaddi in their childhood days. This sport is not meant for entertainment but is a synonym for speed, fitness, thrill, etc. In the 1990s, Kabaddi became a part of the Beijing Asian Games.

### Modern Kabaddi

Kabaddi is called by various other names such as HA-DO-DO in Bangladesh and Eastern India, HU-TU-TU in Western India, Kaunbada in North India, and last but not least Chedugudu in South India. With the change in time, the game of Kabaddi kept evolving and getting better. Not only that but, it is also played in various other forms under different names. For example, In South India, it is known as Veera Vilayatu. After garnering popularity in India, kabaddi became a rage in over 65 countries worldwide. Currently, Kabaddi is the national sport of Bangladesh. But, it is highly popular among countries like India, Pakistan, Nepal, Japan, Malaysia, Thailand, Argentina, China, Iran, and Canada.

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into general and specific fitness. General fitness refers to the motor qualities required in any sportsperson irrespective of the sports discipline, such as speed, strength, flexibility, endurance and co-ordination. Each and every sport demands certain motor qualities above the ordinary. Specific fitness is the intensified level of motor qualities achieved by the sportsperson that is required by the specific sport. Games and Sports appear to be universal features of human culture, both past and present. Archaeological investigations have uncovered numerous artifacts from game play in sites around the world. These include implements related to games of physical skill, such as balls and hoops, game boards, board game pieces, and playing cards for games of strategy, and dice, used in games of chance.

Kabaddi is one of the popular team sports which require a high standard of preparation in order to complete 40 minutes of competitive play and to achieve success. In this game movement patterns are characterized as intermittent and change continuously in response to different offensive and defensive situations. Somatic factors and morphological characteristics can influence the effectiveness of such responses, as has been observed in other sports (Deng, Lin, Xia, Cheng, 1990). Therefore, somatic profiles may contribute to understanding the suitability of players for the sport of Kabaddi, particularly elite level.

In modern sports, successful performance is determined by number of factors. For optimum performance at elite level, variety of areas must be addressed. Further, Kabaddi is the game where size, shape and body composition play an important part in providing distinct advantage for specific playing positions. These include the skill level, flexibility, endurance and most importantly the specific use of somatic measurements which plays a vital role in complex team based games. Since success in the game depends among other things, on how the individual characteristics of some players fit into the whole, thus creating a coherent team. Kabaddi is one of the complex technical team based game and performance differences between players of varying ability levels are different.

Dr. Hanumanthayya, Pujari (2022) <sup>[7]</sup> the purpose of the study was to know the Relationship of selected physiological variables with kabaddi playing ability among secondary school female kabaddi players. Statistical Analysis-the collected data was tested with coefficient of correlation statistical technique to test the relationship of selected physiological variables with Kabaddi playing ability among secondary school female kabaddi players.

Bhavya (2021) Purpose of the present study was to identify the physical and mental variables who can best predict the performance of Kabaddi. For the purpose of study fifty female Kabaddi players was selected purposely from different schools of Mandya district. The age of subjects was 14 to 17 years. To find the playing ability, leg explosive strength, shoulder explosive strength, abdominal strength endurance, flexibility and agility were selected as physical variables while sports competition anxiety and self-confidence were selected as mental variables. To measure the selected variables standard test was used while playing ability was measured by panel of three experts on ten point rating scale.

Anita. M and Jyothi DM (2021) the purpose of the present study was to determine the impact of physical fitness variables and overall playing ability among the Kabaddi players. It is combination training to build speed and strength resulting in power. In Kabaddi, the goal is to produce a huge amount of power for short bursts. Kabaddi has many parallels

with the American football as both are contact-sports and need immense agility and power but at the same time; the difference being Kabaddi does not involve long-distance running during a game. Thus, being able to tap into explosive power is very important for a good Kabaddi player. Yellappa (2021) the present investigation it to find out the relationship with performance ability of kabaddi players of selected physical variables and Somatical variables among 180 male university Kabaddi players of Karnataka state.

### Data and Methodology

The purpose of the present study was to find out the relationship of selected physical, somatic and mental variables with performance ability of male Kabaddi players. To find out the best estimators of performance ability of male Kabaddi players among the variables under consideration in the present study. Here we collected the seventy five male Kabaddi players, who had participated in the Inter-Collegiate Kabaddi tournament held at Andhra University, Visakhapatnam for the year 2020-21.

The collected data were statistically analyzed through the computer package (S.P.S.S. windows Version 10.05). The minimum and maximum values, mean, standard deviation and the skewness of the collected data for the study variables are analysed. To establish the nature of relationship between the performance in Kabaddi and the study variables i.e. Physical Variables, Somatic variables and mental variables the multiple regression analysis were applied.

### Results and Discussions

Speed was correlated to performance in Kabaddi ( $r = -0.526$ ) and was found to be statistically significant. Agility was correlated to performance in Kabaddi ( $r = -0.587$ ) and was found to be statistically significant. Flexibility was correlated to performance in Kabaddi ( $r = 0.070$ ) and was found to be statistically not significant. Endurance was correlated to performance in Kabaddi ( $r = 0.006$ ) and was found to be statistically not significant. Leg explosive power was correlated to performance in Kabaddi was correlated to leg explosive power ( $r = 0.580$ ) and was found to be statistically significant. Arm strength endurance was correlated to performance in Kabaddi ( $r = 0.333$ ) and was found to be statistically significant. Trunk length was correlated the performance in Kabaddi ( $r = 0.108$ ) and was found to be statistically not significant. Height was correlated to performance in Kabaddi ( $r = 0.098$ ) and was found to be statistically not significant. Weight was correlated to performance in Kabaddi ( $r = 0.556$ ) and was found to be statistically significant. Arm length was correlated to performance in Kabaddi ( $r = 0.448$ ) and was found to be statistically significant. Leg length was correlated to performance in Kabaddi ( $r = 0.345$ ) and was found to be statistically significant. Aggression was correlated to performance in Kabaddi ( $r = 0.516$ ) and was found to be statistically significant. Anxiety was correlated to performance in Kabaddi ( $r = -0.082$ ) and was found to be statistically not significant. Self-confidence was correlated to performance in Kabaddi ( $r = -0.192$ ) and was found to be statistically not significant.

Considering the physical variables only as independent variables in the step wise regression analysis agility, leg explosive power, speed and cardio vascular endurance would act as predictors for performance in kabaddi. The other two variables flexibility and arm strength endurance were found to be not significantly associated with the performance in

Kabaddi. The Investigator found that, even though physical variable- endurance was statistically not significantly correlated to performance in kabaddi, it was entered as the fourth dominant predictor for the performance in Kabaddi indicating multicollinearity among the physical variables.

### Summary and Conclusions

Among the selected six physical variables only speed, agility, leg explosive power and arm strength endurance were found to be significant correlation with the performance in the Kabaddi and flexibility, cardiovascular endurance were found to be not significantly correlated with the performance in Kabaddi. Among the selected five somatic variables only weight, arm length and leg length were found to be significant correlated with the performance in the Kabaddi and trunk length, height were found to be not significantly correlated with the performance in Kabaddi. Among the selected three mental variables only aggression was found to be significant correlated with the performance in the Kabaddi and anxiety, self-confidence were found to be not significantly correlated with the performance in Kabaddi. The multiple correlations between the observed and estimated performance in Kabaddi based on the 14 study variables was  $R = 0.843$ . The adjusted  $R^2 = 0.712$  measure of determinants indicates the high value for justification of the multiple regression equation between the performance in Kabaddi and the study variables. Considering only the physical variables, agility, leg explosive power, speed, cardiovascular endurance were found to be dominant predictors for the performance in Kabaddi. Considering only the somatic variables, weight, and arm-length were found to be dominant predictors for the performance in Kabaddi. Considering only the mental variables, aggression was found to be dominant predictors for the performance in Kabaddi. Among the fourteen study variables, only five variables viz., Agility, Weight, Aggression, Speed and Arm length in the same order, act as dominant predictors for the performance in Kabaddi.

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