



# ANALYSIS OF SELECTED MOTOR FITNESS AND ANTHROPOMETRIC VARIABLES ON KABADDI PLAYING ABILITY OF JUNIOR BOYS AND GIRLS KABADDI PLAYERS

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## Abstract:

The purpose of the present study was to analyse the relationship between the selected motor fitness and anthropometric variables such as resting pulse rate, breath holding time, height, leg length, Speed, Agility and Explosive strength on Kabaddi playing ability of junior state Boys and Girls Kabaddi players. For this purpose 60 Boys and Girls Kabaddi players those who were represented for various Districts players and participating in Junior state Kabaddi tournaments held at Andhra Pradesh state during the year 2021 – 2022 were selected for the present study. The criterion variables such as, resting pulse rate, breath holding time, height and leg length were tested by counting the pulse at resting condition for one minute, holding the breath for maximum duration in seconds, Speed, Agility, Explosive strength, standiometer and measuring tape, and the Kabaddi playing ability was assessed with the help of coaches and kabaddi referee's ratings. Pearson Product Moment correlation was used to find out the relationship between the selected motor fitness and anthropometric variables such as resting pulse rate, breath holding time, height and leg length, Speed, Agility, Explosive strength and Kabaddi playing ability of various junior state Boys and Girls Kabaddi players. All the variables were measured using standard tests. Descriptive Statistics and independent t-test were used to calculate the data. The result of the study showed that there was significant difference between junior state Kabaddi playing ability in comparison to their Height, Weight, explosive strength.

**Key Words:** Kabaddi, Motor fitness, resting pulse rate, breath holding time, anthropometric, height, leg length, Speed, Agility, Explosive strength.

## INTRODUCTION:

'Sports' is a popular spectacle and a mass social movement of contemporary times. In the process of historical development sports has occupied a prominent place both in the moral culture of a society. Its social significance continues to soar. The term sports is sometimes extended to encompass all competitive activities in which offense and defense are played, regardless of the level of physical activity. Both games of skill and motor fitness exercise exhibit many of the characteristics of physical sports, such as skill, sportsmanship, and at the highest levels, even professional sponsorship associated with physical sports. With net points at either end in which two teams of 7 players each try to effensive and difensive skills into the other's by kicking, holding, or using any part of the body except the arms and hands. For the motor fitness systems of the body to be fit, they must function well enough to support the specific activity that the individual is performing. Motor fitness systems are highly adoptable of exercise. Each task has major motor fitness components and fitness for the task requires effective functioning of appropriate systems.

Anthropometric and Motor Fitness Ability are essential not only in terms of general health but also as a special physical requirement for competitive sports certain highly specialized and demanding occupation. It is universally accepted that success in various activities of games and sports mainly depends upon the Physical Fitness of its participants.

Anthropometric measurements are used to assess the size, shape and composition of the human body. To fully assess the status of the human body we need to utilize various anthropometric measurement, which includes systematic measurement of the size, shape and composition of the human body. This is a fairly easy term to recall if you remember that the prefix 'anthropo' refers to 'human' and 'metric' refers to 'measurement'. Anthropometric measurements are useful in many fields. For example, athletes understand that the body size and composition are important factors in sports performance. Sports coaches can also use these measurements to monitor an athlete's body to ensure they stay in peak physical shape. Health care professionals rely on body

measurements to evaluate a subject's overall health. For example, body mass index, ( BMI) is a measurement of a person's weight-to- height ratio. Health care providers, insurance companies and government agencies use BMI to determine if a person is underweight, overweight or obese.

The AAHPERED Youth Physical Fitness Test has tremendously gained in importance and has been recognized as one of the major Physical Fitness Test. Variables such as strength, endurance, speed, power, flexibility, cardio-vascular endurance seem to play an important role to determine success in sports. Physical fitness is the basic need for participation in games and sports. The fitness level of various physical fitness components is most important to choose the sports event. The purpose of the present study is to compare the Anthropometric and Motor fitness variables between Jr Boys and Girls state players and thereby have a conclusion on how those variables changes with age.

## Methodology

To achieve purpose of the present study, Sixty (60) level Boys and Girls kabaddi players were randomly selected from state junior Boys and Girls tournaments in Andhra Pradesh state. thirty (30) Jr Boys Kabaddi players and thirty (30) Jr Girls Kabaddi Playres.The age of the students ranged between 14-17( $\pm$ 1) years respectively.

As discussed earlier the main purpose of the study was to analysis the Motor fitness variables and Anthropometric variables of Jr Boys and Girls Kabaddi Players in Andhra Pradesh state Kabaddi tournaments Players. For this purpose players were tested with Motor fitness (Speed, Agility, Flexibility, and Strength) and Anthropometric variables (Height, Weight, Arm Length, and Leg Length). Selection of subject and procedure followed by the collection of data and analysis used in this study are described in the following sections Descriptive Statistics and independent t-test were used to calculate the data. The level of significance was set at 0.05.

### TEST ADMINISTRATION:

#### STANDARDIZED TESTS WERE USED TO MEASURE:

##### A) Motor Fitness Components are Described Below:

1. Speed: 30- Yard Dash Run test (sec)
2. Flexibility: Sit and reach test (cms)
3. Agility: 10\*4 meter Shuttle run test (sec).
4. Strength: Standing Broad Jump (meter)

##### B) Anthropometric variables are described below:

1. Height: cm
2. Weight: kg
3. Arm length: cm
4. Leg length: cm

### ANALYSIS AND INTERPRETATION OF DATA

Responses of the handball and football players to the motor fitness variables and anthropometric variables, constituted raw data for the present study. Data collected using the standard procedure in pursuance of the objectives of the study, as well as to test the research hypothesis set up; the data were subjected to organization, tabulation and statistical analysis. This chapter describes in detail the procedure followed to analysis of data. However valid, reliable and adequate the data may be, it does not serve any useful purpose unless it is carefully processed, systematically classified and tabulated, scientifically analyzed, intelligently interpreted and rationally concluded. After the data had been collected, it was processed an tabulated using Microsoft Excel - 2007 Software. The aim of the studyis to "Analysis Of Selected Motor Fitness And Anthropometric Variables On Kabaddi playing Ability Of Junior Boys And Girls Kabaddi Players ".Then the data were analyzed with reference to the objectives and hypotheses by using un-paired "t" test. The statistical significance was set at 5% level of significance ( $p < 0.05$ ) and the results obtained thereby have been interpreted.

Table 1: Results of 't' test Analysis of Boys and Girls Players with respect to Motor fitness tests ( Speed ,Agility, Flexibility and Strength).

	Group	N	Mean	SD	t-value	P-value
Speed	Boys	30	5.0212	0.4425	-0.8161	0.4186
	Girls	30	4.9092	0.5171		
Agility	Boys	30	11.8544	0.6888	-0.0632	0.9521
	Girls	30	11.8408	0.7723		
Flexibility	Boys	30	43.6456	7.9894	-0.0918	0.9273
	Girls	30	46.8333	6.6638		
strength	Boys	30	2.6528	0.328	-0.6492	0.4094
	Girls	30	2.4558	0.207		

From the results of the above table, the Junior Boys and Girls Kabaddi players do not differ significantly with respect to speed (in sec) ( $t=-0.8160, p>0.05$ ) at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Junior Boys and Girls Kabaddi players have boys performance high with girls in speed, agility and strength but analysis Have girls performance high with boys in Flexibility.

Figure :1 Analysis of Boys and Girls Players with respect to Motor fitness tests Mean chart ( Speed ,Agility, Flexibility and Strength).

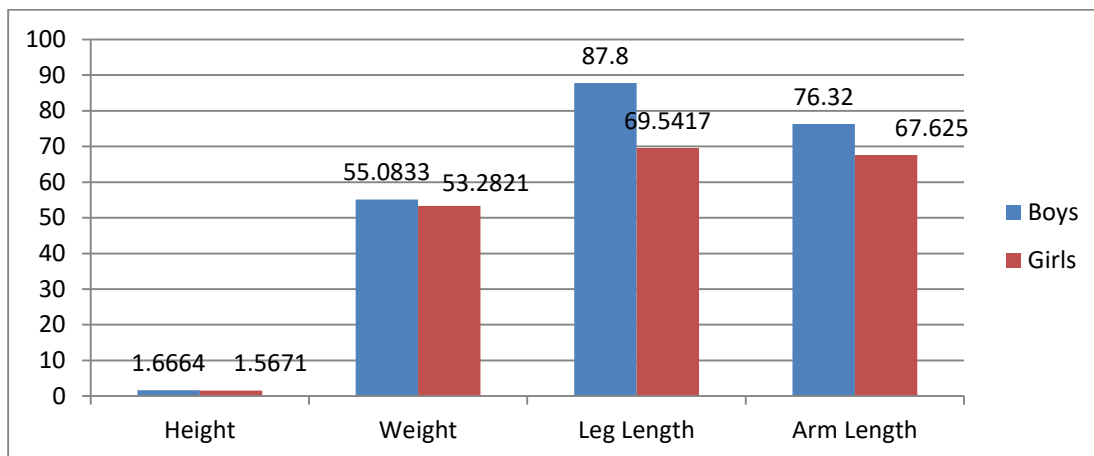
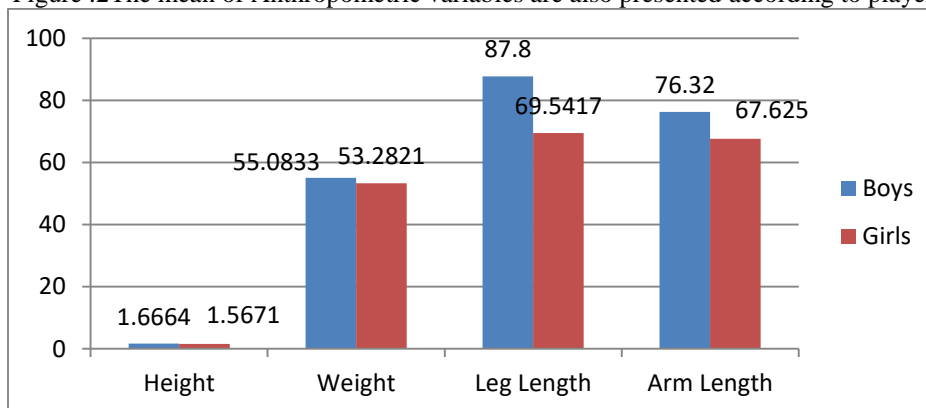


Table 2: : Results of ‘t’ test Analysis of Boys and Girls Players with respect to Anthropometric variables (Height,Weight,Leg Length,Arm Length).

	Group	N	Mean	SD	t-value	P-value
height	Boys	30	1.6664	0.0796	0.0917	0.3264
	Girls	30	1.5671	0.0686		
weight	Boys	30	55.0833	7.5002	0.3695	0.7134
	Girls	30	53.2821	6.8956		
leg length	Boys	30	87.8	16.5101	-4.063	0.0002
	Girls	30	69.5417	14.8616		
arm length	Boys	30	76.32	6.7868	-2.3288	0.0242*
	Girls	30	67.625	17.3426		

From the results of the above table, the Kabaddi Boys and Girls players do not differ significantly with respect to height, Weight, leg length, and Arm Length at 5% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the Kabaddi boys and girls players have similar height , Boys players have higher leg length as compared to Girls players, the boys players have higher arm length as compared to Girls players.

Figure :2The mean of Anthropometric variables are also presented according to players in the following figure.



### Conclusion

The present study under report studied the Motor fitness and anthropometric components such as Speed ,Agility, Flexibility ,Strength and Height,Weight,Leg Length,Arm Length of the individuals who regularly participate in Kabaddi Boys and Girls. A good physique depends upon certain amount of physical strength along with the mental strength while physical strength determine one's abilities and capacities the nuero muscular co-ordination of the individual. From the obtained results it is very clear that the individuals who participate in Kabaddi boys and Girls will develop better Kabaddi playing ability performance.

From the statistical analysis it is concluded that in the motor fitness and Anthropometric variables components use to Kabaddi playing ability performance for State Junior Boys Kabaddi Players are better than State Junior Girls Kabaddi players.

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