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**Dr. Praveen Kumar**  
Assistant Professor  
Physical Education,  
Department of Physical  
Education, CCS University  
Meerut, Uttar Pradesh,  
India

## Distinct Indian kabaddi players connected with psychological, physiological and physical variables

**Dr. Praveen Kumar**

### Abstract

The purpose of the study was to compare Distinct Indian Kabaddi players connected with physiological variables: Resting Pulse Rate, vital capacity, resting respiratory rate and breath holding capacity". The research hypothesis of the study was that there would be no significant difference in selected physiological variables among Kabaddi players in relation to different performance levels, When the data was analyzed with the help of mean, Standard Deviation, Analysis of Variance and LSD Test, it was found out that The means and standard deviations for the physiological variables of the subjects of the state/intercollegiate level in case of Resting Pulse Rate, vital capacity, resting respiratory rate and breath holding capacity the score of the subjects was on the lower side and the standard deviation indicated that scores were more or less similar. In case of cardio vascular efficiency the score of the subjects was on the better side and the standard deviation indicated that scores differed drastically. In case of Resting Pulse Rate, Vital Capacity, Resting Respiratory Rate, Cardio Vascular Efficiency and Breath Holding Capacity the groups differed significantly and least significant test was applied and the score of national/inter university group was found to be highest. In case of all the selected physiological variables (Resting Pulse Rate, Vital Capacity) the observed sequence of selected three groups were: Inter University/ National > State / Inter Collegiate > District/ College. Hence the hypothesis stated earlier was rejected at 0.05 Level of Significance.

**Keywords:** Kabaddi, physiological, Resting Pulse Rate, vital capacity, resting respiratory rate

### Introduction

By nature human being are competitive and aspire for excellence in all athletic performance, not only every man but every nation want to show their supremacy. By challenge the other nation this challenge stimulates, Inspires and motivates all the nations to sweat and strive to run faster, Jump higher throw further and exhibited greater strength, endurance and skill in the present competitive world. This is only possible by channel sing them into appropriate game and sports according to their potentialities and throw scientific, systematic and planned sports training development of all world of human life has surpassed the progress of thousand of years and sports is also a part of life technology cover every aspect of life and sports in no exceptions sports science have enabled modern youth to develop physical capacities beyond anything imagined, sports science have become highly competitive and record are being broken with greater rapidity.

Fitness status of a child is greatly influenced by the social-economic-status of his family because all other things being equal, it is the economic factor ..... Into the social structure that has a role to play. Life styles of people are reflected in the physical abilities depending upon the type of job one has to do. A child with poor health child. Nutrition may be one factor to affect physical performance structural variables is other important influencing factor because body type has a positive relationship to physical performance.

The heart rate, respiratory rate remain in the normal range. This indicates no strain on the cardio-respiratory mechanism. These asana give full scope for free natural movements of all the joints of the body including those of vertebral column. The blood circulation around the joints is increased the action of the particular posture in the asana is centered on the vertebral column, visceral organs and the nerve roots in the region. The circulation is increased and the nerves are toned up as they get fresh refreshment. The increased visceral circulation and the alternate pressure changes brought about in the viscera promotes and preserves the health of

### Correspondence

**Dr. Praveen Kumar**  
Assistant Professor  
Physical Education,  
Department of Physical  
Education, CCS University  
Meerut, Uttar Pradesh,  
India

the endocrine glands in the abdominal and pelvic region and thus provides a proper background for the nervous activity.

In topsy-turvy posture due to upside down position of the body, the cardio-vascular reflex mechanisms are stimulated. How the venous return becomes very easy, as it is not working against gravity. Brain gets easy supply of blood thus refreshing the nervous tissues. In order to prevent heavy blood flow with great force towards the brain, the new pattern of reflex mechanism is set for the circulation in the upper extremity. This helps in keeping the blood pressure at the optimum level during the day activities of the body.

Kabaddi is an Indian game which requires both power and skill for its play. It was known by various names in various places. For example, chedugudu OR HU-TU-TU in Southern parts of India, Hadudu (Men), CHU KIT-KIT (Women) in Eastern India and KABADDI in Northern India. It is a simple and inexpensive game and doesn't require a big playing area or any playing equipment. Regular Kabaddi tournaments are held throughout the country.

Pearcey conducted a study on the correlates of leg power, leg strength, leg speed and certain anthropometric measurements. Measurements were obtained on 114 college men to determine the relationship between power and strength of the thigh and leg muscles and the extent to which this relationship was affected by limb length, Pearson's Product Moment and partial correlation were positive but low (.20-30) between jump and reach scores speed in extending the leg as measured by a 100 seconds chronoscope. There were not appreciable changes in this correlation when thigh and lower leg measurements were held constant.

High levels of achievement and excellence in any area do not come easily. There are numerous obstacles to overcome and barriers to push a side. The greatest barriers which use confront in our pursuit of excellence are psychological barriers which use improve upon us sometimes unknowingly.

As the physiological make-up does not change rapidly, the psychological knowledge to what is possible can make the difference in one's performance. As mans beliefs about limits change, limits themselves change. Kabaddi game depends upon the various aspects such as psychological, physiological, sociological aspect depends upon highly intellectual, perceptual and functional abilities of the sports man. It also helps as a motivation as well as it works as a feedback. It can affect the performance of an individual and of the whole team.

**Statement of the Problem**

The problem of the study was precisely stated as under: "Distinct Indian Kabaddi players connected with psychological, physiological and physical variables".

**Objectives of the Study**

The objectives of the study were: To compare the different group in different physiological variables.

**Hypothesis of the Study**

There is no significant difference in selected physiological variables among Kabaddi players in relation to different performance levels.

**Comparison of Different Groups in Relation to Selected Physiological Variables**

The subjects of different groups namely District/College Level, State/ Inter Collegiate and National/Inter University Level were compared in relation to selected physiological variables and the results of one way Analysis of Variance (ANOVA) and least significant difference (L.S.D.) if any among three groups are presented in tables below.

**Table 1:** Analysis of variance of the mean difference of the three groups for resting pulse rate

Source of Variance	df	Sum of Square	Mean Sum of Square	F-Ratio
Between Groups	2	2652.11	1326.06	27.34*
Within Groups	267	12950.09	48.50	

\*Significant at .05 level of confidence.  
F.<sub>.05</sub> (2,267) = 2.36

It is evident from Table – 1 that variability exists among the three groups with respect to criterion variable namely resting pulse rate. As each player has his own level of resting pulse rate as the every playing position has different level and aspect of fitness so the difference must have been there.

Since there was significant difference in the result of one way analysis of variance (ANOVA), therefore post hoc (L.S.D.) test was applied to find out which of the mean difference amongst the group were statistically significant. The data relating to this is presented in Table -1.

**Table 2:** Least significant difference post hoc test for mean of the three groups for resting pulse rate

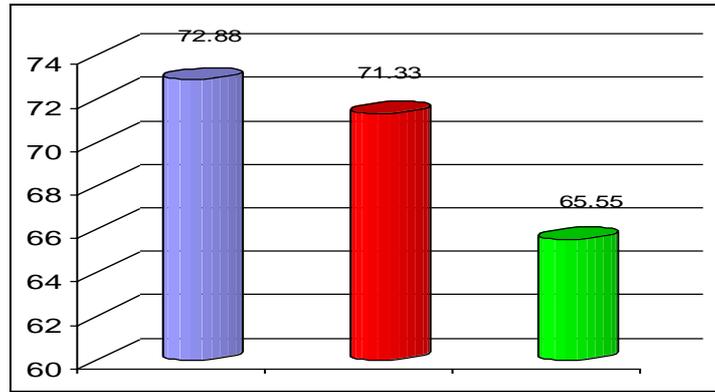
District/College Level	State/Inter Collegiate Level	National/ Inter University Level	M. D.	C. D.
72.80	71.33	-	1.47*	0.205
72.80	-	65.55	7.25*	
-	71.33	65.55	5.78*	

\*Significant at .05 level.

The above table shows that there was significant difference between the means of District/College and National/Inter University Level players in which as per the means, National/Inter University Level players were found to be superior as the mean of the Inter University Players was the lowest and the lower the pulse rate better is the overall fitness of the individual.

Significant difference was also found between the means of District/College Level and State/Inter Collegiate Level in

which as per the means, State/Inter Collegiate Level was found to be superior. Significant difference was also found between the means of State/Inter Collegiate Level and National/Inter University Level in which as per the means, National/Inter University Level players were found to be superior Inter University Players was the lowest and the lower the pulse rate better is the overall fitness of the individual Difference between the means of three groups is shown in Fig. 1.



**Fig 1:** Graphical Representation of Means of Three Groups with regard to Resting Pulse Rate

District/ College	State/ Inter Collegiate	National/ Inter University.
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**Table 3:** Analysis of variance of the mean difference of the three groups for vital capacity

Source of Variance	df	Sum of Square	Mean Sum of Square	F-Ratio
Between Groups	2	308.82	154.41	26.34*
Within Groups	267	1563.98	5.86	

\*Significant at .05 level of confidence.  
 $F_{.05}(2,267) = 2.36$

It is evident from Table – 3 that variability exists among the three groups with respect to criterion variable namely vital capacity. As each player has his own level of vital capacity so the difference must have been there. Since there was significant difference in the result of one way

analysis of variance (ANOVA), therefore post hoc (L.S.D.) test was applied to find out which of the mean difference amongst the groups were statistically significant. The data relating to this is presented in Table – 4.

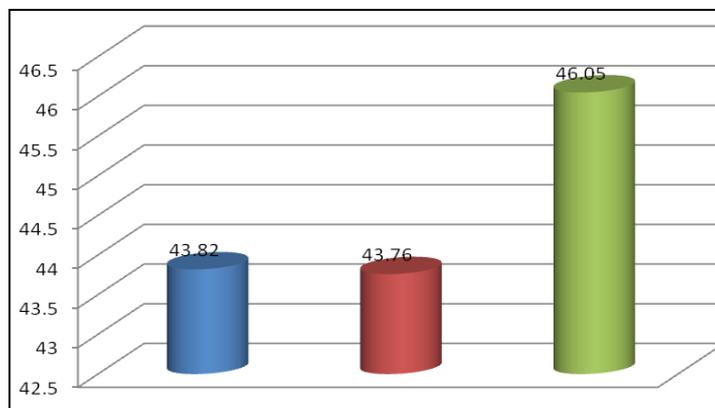
**Table 4:** Least significant difference post hoc test for mean of the three groups for vital capacity

District/College Level	State/Inter Collegiate Level	National/ Inter University Level	M. D.	C. D.
43.82	43.76	-	0.06*	0.360
43.82	-	46.05	2.23*	
-	43.76	46.05	2.29*	

\*Significant at .05 level.

The above table shows that there was significant difference between the means of District/College and National/Inter University Level players in which as per the means, National/Inter University Level players were found to be superior. Significant difference was also found between the means of District/College Level and State/Inter Collegiate Level in

which as per the level of means State/Inter Collegiate Level players were found to be superior. Significant difference was also found between the means of State/Inter Collegiate Level and National/Inter University Level in which as per the means, National/Inter University Level players were found to be superior. Difference between the means of three groups is shown in Fig. –2.



**Fig 2:** Graphical Representation of Means of Three Groups with regard to Vital Capacity

District/ College	State/ Inter Collegiate	National/ Inter University.
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**Table 5:** Analysis of variance of the mean difference of the three groups for resting respiratory rate

Source of Variance	DF	Sum of Square	Mean Sum of Square	F-Ratio
Between Groups	2	200.56	100.28	36.46*
Within Groups	267	735.10	2.75	

\*Significant at .05 level of confidence.  
 $F_{.05}(2,267) = 2.36$

It is evident from Table – 5 that variability exists among the three groups with respect to criterion variable namely resting respiratory rate. As each player has his own level of resting respiratory rate so the difference must have been there. Since there was significant difference in the result of one way

analysis of variance (ANOVA), therefore post hoc (L.S.D.) test was applied to find out which of the mean difference amongst the groups were statistically significant. The data relating to this is presented in Table – 6.

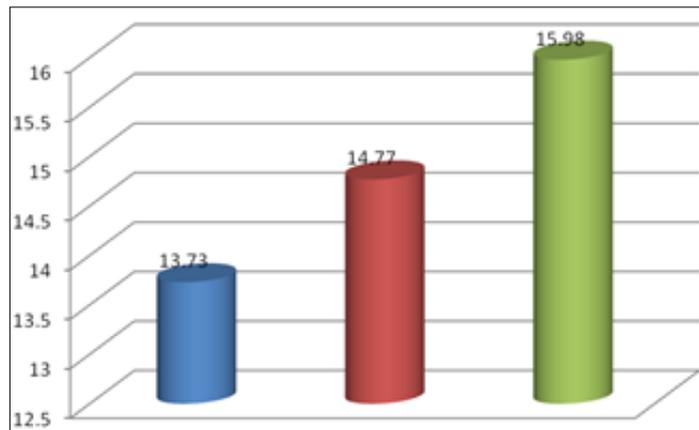
**Table 6:** Least significant difference post hoc test for mean of the three groups for resting respiratory rate.

District/College Level	State/Inter Collegiate Level	National/ Inter University Level	M. D.	C. D.
13.73	14.77	-	1.04*	0.247
13.73	-	15.98	2.25*	
-	14.77	15.98	1.21*	

\*Significant at .05 level.

The above table shows that there was significant difference between the means of District/College and National/Inter University Level players in which as per the means, National/Inter University Level players were found to be superior. Significant difference was also found between the means of District/College and State/Inter Collegiate Level players in

which as per the means, State/Inter Collegiate Level players were found to be superior. Significant difference was also found between the means of State/Inter Collegiate and National/Inter University Level players in which as per the means, National/Inter University Level players were found to be superior. Difference between the means of three groups is shown in Fig. –3.



**Fig 3:** Graphical Representation of Means of Three Groups with regard to Resting Respiratory Rate

District/ College	State/ Inter Collegiate	National/ Inter University.
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**Table 7:** Analysis of variance of the mean difference of the three groups for cardio vascular efficiency

Source of Variance	DF	Sum of Square	Mean Sum of Square	F-Ratio
Between Groups	2	5874.98	2937.49	74.85*
Within Groups	267	10477.16	39.24	

\*Significant at .05 level of confidence.  
 $F_{.05}(2,267) = 2.36$

It is evident from Table – 7 that variability exists among the three groups with respect to criterion variable namely cardio vascular efficiency. As each player has his own level of cardio vascular efficiency as each player has his own level of fitness as already discussed previously so the difference must have been there.

Since there was significant difference in the result of one way analysis of variance (Anova), therefore post hoc (LS.D.) test was applied to find out which of the mean difference amongst the group were statistically significant. The data relating to this is presented in Table -8.

**Table 8:** Least significant difference post hoc test for mean of the threegrups for cardio vascular efficiency

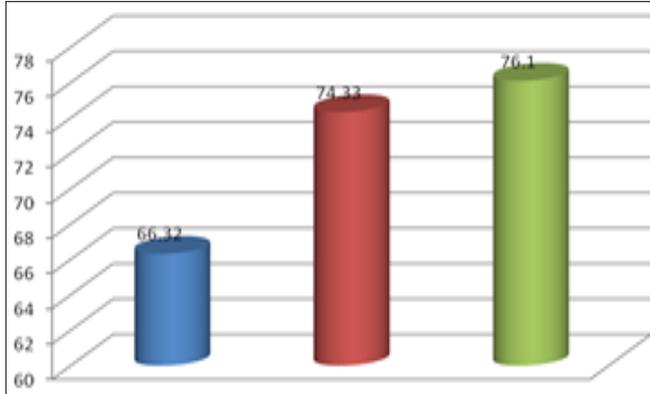
College	Inter College	Inter University	M. D.	C. D.
66.32	74.37	-	-8.90*	0.93
66.32	-	76.10	-10.65*	
-	74.37	76.10	1.75*	

\*Significant at .05 level.

The above table shows that there was significant difference between the means of College and Inter University Teams in which as per the terms of means Inter University team was

found to be superior.

Significant difference was also found between the means of College and Inter College Teams in which as per the terms of means Inter College team was found to be superior. Significant difference was also found between the means of Inter College and Inter University Teams in which as per the terms of means Inter University team was found to be superior. Difference between the means of three groups is shown in Fig. 4.



**Fig 4:** Bar Diagram Representing Means for Physiological Variables for Three Teams namely Cardio Vascular Efficiency

District/ College	State/ Inter Collegiate	National/ Inter University.
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## Conclusions

1. The means and standard deviations for the physiological variables of the subjects of the state/intercollegiate level incase of Resting Pulse Rate, vital capacity, resting respiratory rate and breath holding capacity the score of the subjects was on the lower side and the standard deviation indicated that scores were more or less similar. Incase of cardio vascular efficiency the score of the subjects was on the better side and the standard deviation indicated that scores differed drastically.
2. Incase of Resting Pulse Rate, Vital Capacity, Resting Respiratory Rate, Cardio Vascular Efficiency and Breath Holding Capacity the groups differed significantly and least significant test was applied and the score of national/inter university group was found to be highest.
3. Incase of all the selected physiological variables (Resting Pulse Rate, Vital Capacity) the observed sequence of selected three groups were: Inter University/ National > State / Inter Collegiate > District/ College.

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