



## Prediction of Playing Ability in Kabaddi from Selected Physical Variables among College Level Players

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### Abstract

*The purpose of the study was to predict the playing ability in Kabaddi from selected Physical variables among College level Players. One hundred and twenty six male inter collegiate Kabaddi players were randomly selected from various colleges in Tamilnadu state, India and their age ranged between 18 and 28 years. The subjects had past playing experience of at least three years in Kabaddi and only those who represented their respective college teams were taken as subjects. Physical fitness components were measured by the following tests. Speed were assessed by 50 meter dash, Flexibility assessed by Sit and reach test, Leg explosive strength assessed by Standing broad jump, Muscular power assessed by Modified sit – ups and Muscular endurance assessed by 2.4 km run. The playing ability which was taken as the performance factor was subjectively assessed by three qualified Kabaddi coaches. The results revealed that an Inter-relationship exists significantly between the physical variables among male inter-collegiate Kabaddi players. The results also revealed that Leg explosive strength, Speed, Muscular endurance and Muscular power become the common characteristics which can predict the playing ability in Kabaddi players.*

**Keywords:** Prediction, Regression, Physical, Kabaddi.

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### Introduction

Kabaddi is an ancient backyard and homegrown game. Kabaddi requires tremendous physical stamina, agility, individual proficiency, neuromuscular coordination. Since kabaddi is an intermittent type of sport, it requires both aerobic, anaerobic endurance with a well built physique. These findings are in accordance with the Dey (2012). No prediction study of Kabaddi playing ability in anthropometrical, physical and performance variables among male inter-collegiate Kabaddi players. The purpose of the study was to predict the playing ability in Kabaddi from selected Physical variables among College level Players. Kabaddi favors body development with a muscular strength stamina and endurance; because of its special feature “Cant holding” enriches cardiovascular endurance and resistance. Fine flexibility and agility is developed as one needs to move faster in such a small area of 20'--30'[10-12mts]. Player's eyes and body movement become quicker. On the other hand in physical skills speed, power [strength], endurance, flexibility, swift action, and proper coordination between hand eyes and limbs. If your body is flexible then only you can kick, swirl grapple with ankle legs and things. Here more than speed acceleration is paramount; strong leg muscles

give more punch to the player. Agility and stamina are also very essential. These findings are in accordance with the Jadhav (2011).

### Methodology

The purpose of the study was to predict the playing ability in Kabaddi from selected Physical variables among College level Players. One hundred and twenty six male inter collegiate Kabaddi players were randomly selected from various colleges in Tamilnadu state, India and their age ranged between 18 and 28 years. The subjects had past playing experience of at least three years in Kabaddi and only those who represented their respective college teams were taken as subjects. Physical fitness components were measured by the following tests. Speed were assessed by 50 meter dash, Flexibility assessed by Sit and reach test, Leg explosive strength assessed by Standing broad jump, Muscular power assessed by Modified sit – ups and Muscular endurance assessed by 2.4 km run. The criterion variable, playing ability of the selected Kabaddi players were assessed by three qualified Kabaddi coaches which was taken as the performance factor. The guidelines for assessment were provided by the investigator. Each coach will rate the playing ability of the selected players in 10 points scale for each subject. The ratings given by the coaches on each subject will be added and will be divided by three to make the individual score of the subject. The correlation between

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the coaches on performance ratings was highly correlated ( $r = 0.87$ ). Model has been calculated, as well as correlation of all variables in the system, finally, the interpretation of the results has been done. All testing was done two day before inter - collegiate competition by using scientifically approved equipments. Mean and Standard deviations were calculated for each of the selected variables. The inter-relationship among the

selected physical variables and Kabaddi playing ability, were computed by using Pearson' product-moment correlation coefficients. All selected physical variables that statistically correlated with performance were used to form respective linear predictive models (step-wise argument selection).

## Results

**Table I.** Descriptive Statistics of College level Players

S.No	Variables	Mean (N=126)	SD
1	Playing ability	7.9206	$\pm .96003$
2	Speed	6.3746	$\pm 0.44108$
3	Flexibility	17.9365	$\pm 2.93052$
4	Leg Explosive strength	1.8732	$\pm 0.23607$
5	Muscular Power	10.6252	$\pm 0.65064$
6	Muscular Endurance	50.3571	$\pm 7.02050$

Table II showed the descriptive statistics – Mean and Standard deviation of Physical fitness component & playing ability of College level Kabaddi Players. The present study attempted to link the coaches

rating as measure of playing ability with the Physical fitness component of college level Kabaddi Players, correlation analysis was made.

**Table II.** Inter-Correlation of Selected Physical Variables with the Playing Ability of college level Kabaddi Players

Variables	Speed	Flexibility	Leg Explosive Strength	Muscular Power	Muscular Endurance
<b>C.R</b>	.46*	.17	.60*	.35*	.56*
<b>Speed</b>	--	.07	.34*	.30*	.12
<b>Flexibility</b>		--	.28*	.10	.06
<b>Leg Explosive Strength</b>			--	.16	.01
<b>Muscular Power</b>				--	.02
<b>Muscular Endurance</b>					--

Table II shows that there was a correlation exists between the playing ability versus speed ( $r = 0.46$ ), Leg Explosive strength ( $r = 0.60$ ), Muscular endurance ( $r = 0.56$ ), Muscular Power ( $r = 0.35$ ) showed correlation with the playing ability. Rest of other all characteristics shows low correlation with the playing ability of college level Kabaddi players. Next, by means of stepwise selection, the best models of linear

regression for predicting the playing ability of college level Kabaddi players was analysed. In each model, only the variable that achieved significance with the cut-off criteria set at probability of  $F < \text{equal to or less than } 0.001, 0.01 \text{ and } 0.05$  level was listed. The predictor variables and their importance in predicting the playing ability of Kabaddi players are presented in the table III.

**Table III.** Regression Analysis of Predictive Equation in college level Kabaddi Players

Model	Variables	R	R Square	Unstandardized Coefficients		Standardized Coefficients
		R Square Change	F Change	B	Std. Error	Beta
1	(Constant)			3.311	.549	
	Leg Explosive strength	.605(a)	.366	2.461	.291	.605

2	(Constant)			7.922	1.299	
	Leg Explosive strength			2.070	.293	.509
	Speed	.660(b)	.435	-.609	.157	-.280
3	(Constant)			8.279	1.258	
	Leg Explosive strength			2.245	.288	.552
	Speed			-.585	.152	-.269
	Muscular endurance	.722(d)	.521	-.320	.098	-.217
4	(Constant)			9.554	1.530	
	Leg Explosive strength			2.215	.272	.545
	Speed			-.407	.149	-.187
	Muscular endurance			-.322	.095	-.218
	Muscular power	.739(e)	.546	.022	.008	.160

(n=126) : ( $R^2 = .605$  for step 1:  $\Delta R^2 = .546$  for final step) Significant at \*  $p < 0.5$ .

$$\text{Playing ability} = 3.311 + 2.215 (\text{LEP}) - .407 (\text{S}) - .322 (\text{ME}) + .022 (\text{MP})$$

Table III shows the Regression Analysis of Predictive Equation in college level Kabaddi Players in the samples. Among the physical variables, Leg Explosive strength scores accounted for 60% in the first model of the performance ability. Speed, Muscular endurance, Muscular power subsequently added significantly (0.01 and 0.05 levels) to the prediction of the playing ability in college level Kabaddi Players up to the final model. The  $R^2$  value for the combination of Leg explosive strength, Speed, Muscular endurance, Muscular power on playing ability was .739 (74 %) with the  $R^2$  change ( $\Delta R^2$ ) .546 for the final model.

This study has provided the most comprehensive predictions of physical fitness components of college level Kabaddi players. The present study indicated that a relationship exists between playing ability versus speed, Leg Explosive strength, Muscular endurance, Muscular Power. Kabaddi requires many essential components such as strength, power, aerobic-anaerobic capacity, neuromuscular coordination and muscular endurance. Strength is one of the most important components of this game. These findings are in accordance with the Dey, (2012). Every sport demands motor abilities at various levels above the average. Specific fitness is achieved when a player acquires the required motor ability at the intensified level for the particular sport. For example, specific fitness in kabaddi is with reference to strength, speed and co-ordination. These findings are in accordance with the Verma (2011).

## Conclusions

From the analysis of data,

1. The results revealed that there was a correlation exists between the playing ability versus speed, Leg Explosive strength, Muscular endurance, Muscular Power.
2. The results also revealed that Leg explosive strength, Speed, Muscular endurance and Muscular power become the common characteristics which can predict the playing ability in Kabaddi players.

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