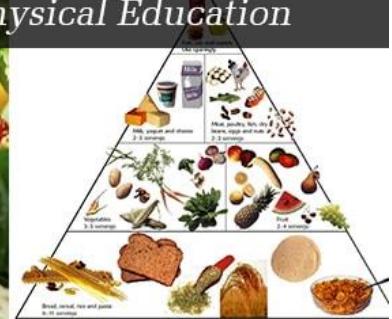


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To study the impact of anthropometrical variables on the performance of Karnataka state inter university male kabaddi players

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Abstract

The present investigation it to find out the relationship with performance ability of kabaddi players of selected Anthropometrical variables among 180 male university Kabaddi players of Karnataka state the present were measured for Anthropometrical variables were (a) height (b) weight (c) arm length (d) leg length and (e) trunk length were measured by using the standardized tests and measurement. The performance ability was measured by using subjects rating of 10-point rating scale. The data were analyzed through multiple version analysis the following conclusion were drawn.

Keywords: Anthropometrical variables, kabaddi players

Introduction

Nature of Game

The origin of Kabaddi game lies in remote antiquity. In the pre independent India it was familiar in different regions. Never the less, different formats prevailed and were also called by different names such as Du-Du, Chadu Gudu, Kaun-Bada, Hututu etc. Amar, Gemini and Sanjeevini were the popular formats, and the latter version was accepted by vast majority of people in India by consensus. The game which was mostly popular in mofusil areas soon spread to urban areas too and become a part of curriculum in Physical Education colleges and is a scheduled competitions item in inter-school, inter-collegiate, inter-university, inter-district and inter-state competitions. In order to promote, control and regulate the game Kabaddi Federation of India was constituted. Since Kabaddi was familiar in India's neighbouring countries, Asian Kabaddi Federation was formed. Innumerable State and National level Kabaddi Tournaments are conducted each year, besides continental and sub-continental level tournaments. Kabaddi game was included in the official competition events of Asian games at Beijing in 1990. India has been reigning supreme in the Asian games Kabaddi competition. This game is getting popular in Japan, Thailand, Singapore, Malaysia, China, Maldives, Bhutan, Srilanka, Pakistan, Nepal, Korea, and in the distant England and France. In India it has a mass following.

To the naive on lookers, the game looks as if it demands brutal strength. To the contrary, the game demands speedy movements, feinting, dodging, agility, arm-foot-eye coordination, cardiovascular endurance, flexibility and power besides characteristics body build and mental abilities. The Kabaddi game encompasses attacking (Raiding) and defensive (Catching) skills. Attacking skills, (Raider skills) include touching the anti raiders with hand with leg thrusts, and kicking, the defensive skills (skills of anti raider) include ankle hold, knee hold, thigh hold, waist hold, wrist hold and a host of chain holds.

Kabaddi is a combative team game, played with absolutely no equipment, on a rectangular court, either out-doors or indoors with seven players on the ground in each side. Each side takes alternate chances at offence and defense. The aim of the game is to score points by raiding in the opponents court and touching as many defense players as possible without getting caught on a single breath. During play, the players on the defensive side are called "Anties" while the player of the offence is called the "Raider". The attack in Kabaddi is known as a "Raid".

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The anties touched by the raider during the attack are declared 'out' if they do not succeed in catching the raider before he returns to home court. These players can resume play only when their side scores points against the opposite side during their raiding turn or if the remaining players succeed in catching the opponent's raider. It requires skills, agility, and good lung capacity, muscular co-ordination, presence of mind, and quick responses, courage etcetera. For a single player to take on seven opponent is no mean task. It requires courage as well as ability to concentrate and anticipate the opponent's moves. In order to facilitate further growth of Kabaddi game, valid assessment procedures to comprehensively estimate the players physical, physiological and psychological abilities are needed.

Statement of the Problem

The purpose of the present investigation is to find the relationship of selected Anthropometrical variables, with Performance in Kabaddi.

Objective of the Study

1. To estimate the performance ability of Kabaddi players from the study variables.
2. To find the dominant predictors of performance ability of kabaddi players among the study variables.
3. To estimate the performance ability of kabaddi players from the selected anthropometrical variables height, trunk length, weight, arm length and leg length.

Methodology

in the South-zone inter university Kabaddi championship held at to establish the nature of relationship between the performance in Kabaddi and the study variables, the following methodology was used.

Selection of the Subjects: - The Subjects for the present study were male Kabaddi players of universities who had received regular training and participated in competitive Kabaddi game. The subjects were regular participants in the collegiate and university level Kabaddi championships. They were drawn from different universities of Karnataka State who were rated as the best players by a panel of three expert coaches. The subjects were participants Kuvempu University, Shimoga (Karnataka) during the year 2015-16.

Sample size of the Study: The sample of the present study consisted of hundred (180) male Kabaddi players in the age group of 18 to 28 years.

Selection of the variables for the Study: After a thorough review of literature relevant to the game of Kabaddi found in books, journals, periodicals, and research articles besides detailed discussion with the experts and keeping in view feasibility of the study in terms of availability of equipment and the relevance of the variables to the present study, the following variables were selected.

Total performance of the selected subjects was rated by three experts subjectively on a ten point rating scale. This was the

dependent variable for this study.

Independent Variables: The various independent variables selected for the present study are listed below:

Anthropometrical Variables

1. Height
2. Weight
3. Arm length
4. leg length
5. Trunk length

Collection of Data: The data pertaining to the performance ability of University Male Kabaddi players who were the subjects for the present study (criterion measures) were gathered by adopting rating method. A panel of three expert coaches rated the subjects in various factors like skill, technique, and application of skill in the game situation. In the aspect of playing ability of players, competitive performances and the information available on their performance together with a view of other factors such as positional play, use of skills like toe touch ability, kicking ability, hand touch ability, supporting ability, catching ability etc., were assessed on ten point rating scale. The rating was subjective evaluation to predict the performance ability among kabaddi players. The selected physical variables, anthropometrical variables, psychological variables and Physiological variables were measured and different test items selected for the study were administered as per the procedure and instructions in the literature available. The data for the present study were collected in numerical form from the coaches ratings. The unit of measurement in every test item had been explained below.

Table 1: Anthropometrical Variables

Anthropometrical variables	Equipment used to Measure	Unit of Measurement
Height	Stadiometer	Centimeters
Weight	Weighing machine	In kilograms
Arm Length	Measuring tape	Centimeters
Leg length	Measuring tape	Centimeters
Trunk Length	Measuring Tape	Centimeters

Analysis

Objectives

- To study the relationship between Performance of Kabaddi players and study Anthropometrical variables
- To study the impact of study Anthropometrical variables on Performance of Kabaddi players

Statistical hypotheses

H1: There was no correlation between Performance of Kabaddi players and the Anthropometrical variables

H2: There was no impact of the study Anthropometrical variables on Performance of Kabaddi players

To test H1, correlation analysis was used and the computations made were tabulated in Table 2

Table 2: Correlations

		Performance	Height	Weight	Arm	Leg	Trunk
Performance	Pearson Correlation	1	.204*	.253**	.220*	-.014	.212*
	Sig. (2-tailed)		.025	.005	.016	.877	.020
	N	120	120	120	120	120	120
Height	Pearson Correlation	.204*	1	.396**	.723**	.442**	.734**

	Sig. (2-tailed)	.025		.000	.000	.000	.000
	N	120	120	120	120	120	120
Weight	Pearson Correlation	.253**	.396**	1	.245**	.136	.462**
	Sig. (2-tailed)	.005	.000		.007	.138	.000
Arm	N	120	120	120	120	120	120
	Pearson Correlation	.220*	.723**	.245**	1	.486**	.650**
Leg	Sig. (2-tailed)	.016	.000	.007		.000	.000
	N	120	120	120	120	120	120
Trunk	Pearson Correlation	-.014	.442**	.136	.486**	1	.434**
	Sig. (2-tailed)	.877	.000	.138	.000		.000
	N	120	120	120	120	120	120
	Pearson Correlation	.212*	.734**	.462**	.650**	.434**	1
	Sig. (2-tailed)	.020	.000	.000	.000	.000	
	N	120	120	120	120	120	120

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

From the above table following inferences were made

- The correlation between Performance and Height was positive $r = 0.204$ and $P = 0.025 < 0.05$, the test was significant at 5% levels. That is, there exists significant correlation between the Performance and the Height of the Kabaddi players at 5% levels.
- The correlation between Performance and Weight was positive $r = 0.253$ and $P = 0.005 < 0.05$, the test was significant at 5% levels. That is, there exists significant correlation between the Performance and the Weight of the Kabaddi players at 5% levels.
- The correlation between Performance and Arm length was positive $r = 0.220$ and $P = 0.016 < 0.05$, the test was significant at 5% levels. That is, there exists significant correlation between the Performance and the Arm length of the Kabaddi players at 5% levels.
- The correlation between Performance and Leg length was negative $r = -0.014$ and $P = 0.877 > 0.05$, the test was not significant at 5% levels. That is, there was no significant correlation between the Performance and the Leg length of the Kabaddi players at 5% levels.
- The correlation between Performance and Endurance was positive $r = 0.212$ and $P = 0.02 < 0.05$, the test was significant at 5% levels. That is, there exists significant correlation between the Performance and the Endurance of

the Kabaddi players at 5% levels.

To test H2, regression analysis were used and the computations made were tabulated in table 3 to table 6

Table 3: Variables Entered/Removeda

Model	Variables Entered	Variables Removed	Method
1	Trunk, Weight, Arm, Height ^b	.	Enter

a. Dependent Variable: Performance

b. All requested variables entered.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.302 ^a	.091	.059	7.5425

a. Predictors: (Constant), Trunk, Weight, Arm, Height

Table 5: ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	654.648	4	163.662	2.877	.026 ^b
Residual	6542.344	115	56.890		
Total	7196.992	119			

a. Dependent Variable: Performance

b. Predictors: (Constant), Trunk, Weight, Arm, Height

Table 6: Coefficients

Model	Unstandardized Coefficients		Beta	t	Sig.
	B	Std. Error			
1	(Constant)	-2.333	19.658	-.119	.906
	Height	-.013	.192	-.070	.945
	Weight	.231	.112	.210	.041
	Arm	.360	.289	.168	.215
	Trunk	.039	.421	.013	.926

a. Dependent Variable: Performance

The estimated regression equation of Performance on the Physical variables was given by

$$\text{Performance} = -2.333 - .013(\text{Height}) + 0.231(\text{Weight}) + 0.360(\text{Arm length}) + 0.039(\text{Trunk length})$$

And the above regression equation was significant as indicated in ANOVA table with $P = 0.00 < 0.05$ at 5% level of significance.

Hence

- One unit change in Height indicates 0.013 unit change in Performance.
- One unit change in Weight indicates 0.231 unit change in Performance.
- One unit change in Arm length indicates 0.360 unit

change in Performance.

- One unit change in Trunk length indicates 0.039 unit change in Performance.

Findings

- There exists significant correlation between the Performance and the Height of the Kabaddi players
- There exists significant correlation between the Performance and the Weight of the Kabaddi players
- There exists significant correlation between the Performance and the Arm length of the Kabaddi players
- There was no significant correlation between the Performance and the Leg length of the Kabaddi players
- There exists significant correlation between the

- Performance and the Endurance of the Kabaddi players
- The regression equation of Performance and the Anthropometrical variables were statistically significant with One unit change in Height indicates 0.013 unit change in Performance; One unit change in Weight indicates 0.231 unit change in Performance; One unit change in Arm length indicates 0.360 unit change in Performance and One unit change in Trunk length indicates 0.039 unit change in Performance.

Conclusion

In the Anthropometrical variables only height, weight, arm length, leg length and trunk length were selected among the five Anthropometrical variables only height weight and trunk length act on a dominate predator variables for the performance in kabaddi

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