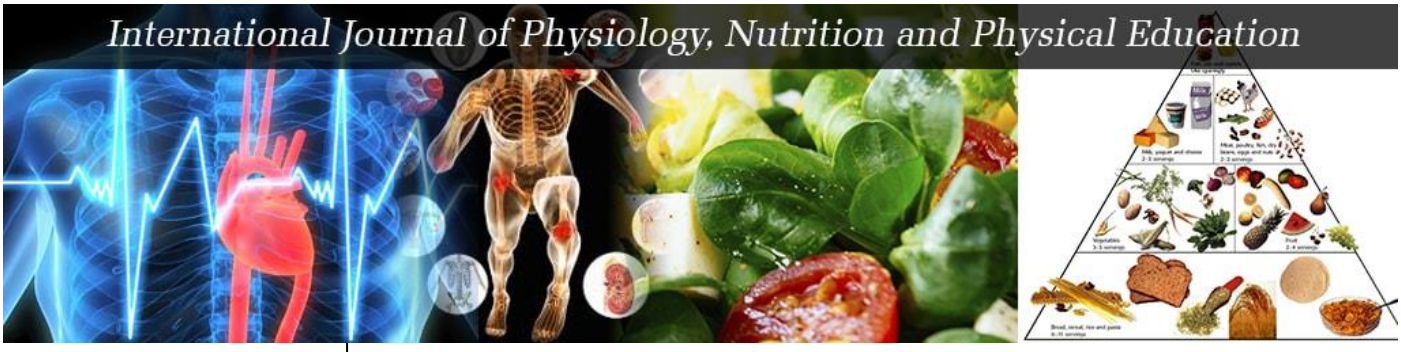

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Interrelationship of selected anthropometrical variables to performance of high school female kabaddi players in Nagpur district

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Abstract
The physical structure especially the height and leg length, arm length and the ideal weight have definite advantage in sports. To meet the criteria for any level performance, anthropometrical measurements demands on Kabaddi are continuously increased. No prediction study of Kabaddi performance in anthropometrical variables among High School Female Kabaddi Players in Nagpur District was conducted. The purpose of the study was to predict the performance of Kabaddi players from selected anthropometrical variables.

Objectives

a) To assess the relationship between selected anthropometrical variables and performance among Kabaddi players.
b) To know which anthropometrical variables majorly predict game performance among Kabaddi players.

Methodology: To achieve this purpose, 150 High School Female Kabaddi players who were participated in the inter district High school Kabaddi tournaments were selected randomly from different schools of Nagpur district. The age of the subjects ranged from 14-16 years. In the present study anthropometrical variables height, weight, arm length, trunk length, and leg length were selected. The data collected has been tabulated and analyzed with the help of statistical techniques viz., mean, standard deviation, coefficient of correlation, multiple correlation, regression equation and one-way ANOVA (Analysis of Variance) and Scheffe's Post Hoc Test.

Results: There is a significant relationship between standing height, body weight, trunk length, arm length, and leg length to performance of the kabaddi players. Of the 05 anthropometric variables entered into the equation, only one variable, i.e., Body weight majorly predicted the game performance of the kabaddi players.

Keywords: Anthropometrical variables, high school female, kabaddi

Introduction

Kabaddi is a contact team sport that originated in Tamil Nadu. It is the national sport of Bangladesh. It is also popular in South Asia and is the state game of the Indian states of Kerala, Andhra Pradesh, Bihar, Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu and Telangana.

Two teams compete, each occupying its own half of the court. They take turns sending a "raider" into the opposing team's half and earn points if the raider manages to touch opposing team members and return to the home half, all while chanting word "kabaddi". However, if the raider is tackled and prevented from returning, the opposing team gets the point. The game is known by its regional names in different parts of the subcontinent, such as Kabaddi or "Chedugudu" in Andhra Pradesh Kabaddi in Kerala and Telangana, hadudu in Bangladesh, Bhavatik in Maldives, Kauddi or kabaddi in the Punjab region, Hu-Tu-Tu in Western India and Hu-Do-Do in Eastern India and Chadakudu in south India.

In earlier versions, the raider had to continuously sing a song, which varied by region. This was later condensed to repeating the name of the game (Kabaddi, Sadugudu, etc).

Kabaddi received international exposure during the 1936 Berlin Olympics, demonstrated by India. The game was introduced in the Indian National Games at Calcutta in 1938. In 1950 the All India Kabaddi Federation (AIKF) came into existence and framed the rules.

Kabaddi is a 4,000 year old team sport originated in India and played by many South Asian nations. The name derives from a Tamil word meaning "holding of hand", which is the crucial aspect of play. It is a team sport, which requires both skill and power, and combines the characteristics of wrestling and rugby. It was originally meant to develop self defense, in addition to responses to attack, and reflexes of counter attack by individuals, and by groups or teams. It is a rather simple and inexpensive game, and neither requires a massive playing area, nor any expensive equipment.

Modern Kabaddi is a synthesis of the game played in various forms under different names. It was introduced by Vivek Samvedi from Mumbai. Samit Damad then introduced some new rules which are effective since 14th July 2011. The game has been played in its original form since Vedic times. Kabaddi received international exposure during the 1936 Berlin Olympics, demonstrated by Hanuman Vyayam Prasarak Mandal, Amaravati, Maharashtra.

The game was introduced in the Indian Olympic Games at Calcutta in 1938. In 1950 the All India Kabaddi Federation came into existence and compiled standard rules. In 1955, First Kabaddi Indian National Championship was held in Calcutta. It was here that women played competitively for the first time. Although this thigh slapping, full body contact sport doesn't seem to be very popular with the ladies, it is fancied by men worldwide, yet rarely seen on TV. The Amateur Kabaddi Federation of India (AKFI) was founded in 1973. It is the national game of Bangladesh and the state game of Tamil Nadu, Punjab and Andhra Pradesh in India. Kabaddi is the Only Game being played in all the 3 versions of Asian Games i.e. Asian Games, Asian Indoor Games and Asian Beach Games.

In the international team version of kabaddi, two teams of seven members each occupy opposite halves of a field of 10m × 13m in case of men and 8m × 11 m in case of women. Each has three supplementary players held in reserve. The game is played with 20 minute halves and a five minute halftime break during which the teams exchange sides. Two teams occupy opposite halves of a field and take turns sending a "raider" into the other half, in order to win points by tackling members of the opposing team; the raider then tries to return to his own half, holding his breath and chanting "kabaddi, kabaddi, kabaddi" during the whole raid. Meanwhile, defenders must form a chain, for example, by linking hands; if the chain is broken, a member of the defending team is sent off. The goal of the defenders is to stop the raider from returning to the home side before taking a breath.

The physical structure especially the height and leg length, arm length and the ideal weight have definite advantage in sports. Similarly segmental length of individual body parts and the length specifically are of considerable advantage in selected athletic events and certain games like Kabaddi, Volleyball, Basketball etc. To meet the criteria for any level performance, Anthropometrical measurements demands on Kabaddi are continuously increased. No prediction study of Kabaddi performance in Anthropometrical variables among High School Female Kabaddi Players in Nagpur District was conducted. The purpose of the study was to predict the performance of Kabaddi players from selected Anthropometrical variables.

Objectives

To assess the relationship between selected Anthropometrical variables and performance among Kabaddi players To know which Anthropometrical variables majorly predict game performance among Kabaddi players.

Methodology

To achieve this purpose, 150 High School Female Kabaddi players who were participated in the inter district High School Kabaddi Tournaments were selected randomly from different schools of Nagpur District. The age of the subjects ranged from 14-16 years. In the present study Anthropometrical variables Height, Weight, Arm length, Trunk length, and Leg length were selected.

The data collected has been tabulated and analyzed with the help of statistical techniques viz., mean, standard deviation, coefficient of correlation, multiple correlation, regression equation and One-Way ANOVA (Analysis of Variance) and scheffe's post hoc test.

Table 1: Relationship of Selected Anthropometric Variables with Kabaddi Game Performance of High School Female Kabaddi Players

Sl. No.	Variable 1	Variable 2	Coefficient correlation 'r' value	Sig. Level	Interpretation
1.	Standing Height	Performance	.087	.293	Non significant
2.	Body Weight	Performance	.469	.000	Sig at .001 level
3.	Trunk Length	Performance	.167	.041	Sig at .05 level
4.	Arm length	Performance	.190	.020	Sig at .05 level
5.	Leg Length	Performance	.235	.004	Sig at .05 level

*Significant at 0.01 level with df 58 is 0.174

Note: Negative significance is due to the fact that the variable correlated involved in percentage

Results

There is a significant relationship between standing height, Body Weight Trunk length Arm length and Leg length to performance of the kabaddi players.

Table 2: Variables entered in stepwise multiple regression taking game performance as dependent variable and Anthropometric variables as Independent variables

Model Variables entered	Variables removed	R	R Square	Adjusted R Square
Body weight	.	.469[a]	.220	.215

Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

Results

Of the 5 Anthropometric variables entered into the equation, only one variable, i.e., Body Weight majorly predicted the game performance of the kabaddi players.

Discussion

H1: There is a significant relationship between the Anthropometric variables with performance of High School Female Kabaddi Players.

Hypothesis formulated for Anthropometric variables and Performance is accepted as the result shows that, among anthropometric variables, standing height, Body Weight Trunk length Arm length and Leg length to performance of the kabaddi players.

A study conducted by Singh; Kannan and Singh (2014) [5] revealed that, there were moderate correlations exist between playing ability versus leg length, Weight, and very low correlation for Height with playing ability in Kabaddi.

A study conducted by Devaraju and Needhiraja (2013) [6] revealed that there was a correlation exists between the playing ability versus leg length and arm length.

The result of the present study was in corroborated with the findings of previous studies. Many studies have revealed that Kabaddi game requires many essential Anthropometric components. To touch an opponent a player need long arms and legs, and also need and to gain more force in raiding and escaping from holds Kabaddi players need weight and heavy girth bones. So the present study result is in agree with the above said facts.

H2: Only few anthropometrical variables best predict the performance of high school kabaddi players.

Hypothesis formulated for anthropometrical variables and Performance is rejected as the analysis revealed that, only one Anthropometrical variable- Body weight was best predictor of Performance.

A study conducted by Devaraju and Kalidasan (2012) revealed that an inter- relationship exists significantly between the Anthropometrical, physical and performance variables among female inter- collegiate Kabaddi players. The results also revealed that weight and flexibility become the common characteristics which can predict the playing ability in Kabaddi players.

The result of the present study is contradictory with the findings of previous studies. In the present study only body weight was emerged as best predictors of the game performance, and in previous study also only weight was the best predictor. The result of the both the studies may be accepted as weight was closely related to kabaddi game performance.

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