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The relationship of selected motor ability variables to performance of sub-junior national male Kabaddi players

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Abstract

Introduction: Kabaddi is a traditional game played with minor variations in all regions of India. It requires tremendous physical stamina, agility, individual proficiency, neuromuscular coordination, lung capacity, quick reflexes, intelligence and presence of mind on the part of both attackers and defenders. To meet the criteria for any level performance, Motor abilities demands on Kabaddi are continuously increased. No prediction study of Kabaddi playing ability in Motor ability variables among sub junior National Kabaddi players was conducted. The purpose of the study was to predict the performance of Kabaddi players from selected Motor ability variables.

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

Methodology: To achieve this purpose, 60 sub junior Kabaddi players who have participated in the Sub-Junior National Championship representing their respective States such as Andhra Pradesh, Karnataka, Kerala, Pondicherry and Tamil Nadu were selected randomly. The age of the subjects ranged from 15-16 years. In the present study motor ability variables Muscular Endurance of Arm, Abdominal Muscular Endurance, Explosive Power of Arms, Explosive Power of Legs, Running Speed, Cardio-Respiratory Endurance, Stretch Ability of Legs, Extent-Flexibility of Trunk, Agility and Dynamic Balance 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 and regression equation to develop the prediction equations for assessing the performance of Kabaddi players.

Results: Among Motor Ability variables Muscular Endurance, Abdominal Muscular Endurance, Explosive Power of Arms, Explosive Power of Legs, Stretch Ability of Legs, Extent Flexibility of Trunk and Dynamic Balance variables were positively and significantly related to performance. Only four Motor Ability variables-Dynamic Balance, Flexibility of Trunk, Stretch Ability of Legs and Muscular Endurance of Arms were found to be the best predictors of game performance. The researcher also found the significant differences in the selected variables among Kabaddi players with different state players.

Keywords: Relationship, motor ability, performance, Kabaddi players.

1. Introduction

Kabaddi is a traditional game played with minor variations in all regions of India. It requires tremendous physical stamina, agility, individual proficiency, neuromuscular coordination, lung capacity, quick reflexes, intelligence and presence of mind on the part of both attackers and defenders. To meet the criteria for any level performance, Motor abilities demands on Kabaddi are continuously increased. No prediction study of Kabaddi playing ability in Motor ability variables among sub junior National Kabaddi players was conducted. The purpose of the study was to predict the performance of Kabaddi players from selected Motor ability variables.

Objectives

1. To assess the relationship between selected Motor ability variables and performance among Kabaddi players.
2. To know which Motor ability variables majorly predict game performance among Kabaddi players.

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Hypothesis

H1: There will be significant relationship between selected Motor ability variables and Game Performance among Kabaddi players.

H2: Only few Motor ability variables majorly predict Game Performance among Kabaddi players.

Methodology

To achieve this purpose, 60 sub junior Kabaddi players who have participated in the Sub-Junior National Championship representing their respective States such as Andhra Pradesh, Karnataka, Kerala, Pondicherry and Tamil Nadu were

selected randomly. The age of the subjects ranged from 15-16 years. In the present study motor ability variables Muscular Endurance of Arm, Abdominal Muscular Endurance, Explosive Power of Arms, Explosive Power of Legs, Running Speed, Cardio-Respiratory Endurance, Stretch Ability of Legs, Extent-Flexibility of Trunk, Agility and Dynamic Balance were selected.

The data collected has been tabulated and analyzed with the help of statistical techniques viz., mean, standard deviation, and coefficient of correlation, multiple correlation and regression equation to develop the prediction equations for assessing the performance of Kabaddi players.

Table 1: Relationship of selected Motor Ability Variables with Game Performance of Sub-Junior National Male Kabaddi players.

Sl. No.	Variable 1	Variable 2	Coefficient correlation 'r' value	Sig. Level
1.	Muscular Endurance of Arms	Performance	0.515**	Sig. at 0.01 level
2.	Abdominal Muscular Endurance	Performance	0.530**	Sig. at 0.01 level
3.	Explosive Power of Arms	Performance	0.391**	Sig. at 0.01 level
4.	Explosive Power of Legs	Performance	0.517**	Sig. at 0.01 level
5.	Running Speed	Performance	-0.577**	Sig. at 0.01 level
6.	Stretch Ability of Legs	Performance	0.421**	Sig. at 0.01 level
7.	Extent Flexibility of Trunk	Performance	0.612**	Sig. at 0.01 level
8.	Agility	Performance	-0.464**	Sig. at 0.01 level
9.	Dynamic Balance	Performance	0.684**	Sig. at 0.01 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 time.

Results

Among Motor Ability variables Muscular Endurance, Abdominal Muscular Endurance, Explosive Power of Arms,

Explosive Power of Legs, Stretch Ability of Legs, Extent Flexibility of Trunk and Dynamic Balance variables were positively and significantly related to performance.

Table 2: Variables entered in stepwise multiple regression taking Game Performance as dependent variables and Motor Ability variables as Independent variables.

Model	Variables entered	Variables removed	R	R Square	Adjusted R Square
1	Dynamic balance		.684	.468	.459
2	Extent Flexibility of Trunk		.770	.593	.579
3	Stretch ability of legs		.803	.645	.626
4	Muscular Endurance of Arms		.823	.677	.654

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

Results

Only four Motor Ability variables-Dynamic Balance, Flexibility of Trunk, Stretch Ability of Legs and Muscular Endurance of Arms were found to be the best predictors of game performance. The researcher also found the significant differences in the selected variables among Kabaddi players with different state players.

Discussion

H1: There will be significant relationship between selected Motor Abilities and Game Performance among Kabaddi players.

Hypothesis formulated for Motor abilities and Game Performance is accepted as the analysis revealed that, among Motor Ability variables Muscular Endurance, Abdominal Muscular Endurance, Explosive Power of Arms, Explosive Power of Legs, Stretch Ability of Legs, Extent Flexibility of Trunk and Dynamic Balance variables were positively and significantly related to performance. Running Speed and Agility were negatively related to performance.

A study conducted by Singh; Kannan and Singh (2014) [1] revealed that, there were high correlations existing between playing ability against Agility, Explosive leg Power,

Muscular strength and Moderate correlations exist between playing ability versus Muscular endurance, Flexibility and low correlations exist between playing ability versus Grip Strength.

A study conducted by Jeyaraj and Gopinathan (2014) [6] reveals that the physical fitness variables of speed, agility, explosive power, shoulder strength, endurance and flexibility were significant relationship with Kababdi playing ability.

The result of the present study was in accordance with the findings of previous studies. Many studies have revealed that Kabaddi game requires many essential motor ability components such as strength, power, aerobic-anaerobic capacity, neuro-muscular coordination and muscular endurance. Kabaddi is an intermittent type of sports and it demands all motor qualities specially strength, agility, flexibility and endurance to “Cant holding”. So the present study result is in agree with the above said facts.

H2: Only few Motor Ability variables majorly predict Game Performance among Kabaddi players

Hypothesis formulated for Motor abilities and Game Performance is partially accepted as the analysis revealed that, only four Motor Ability variables-Dynamic Balance,

Flexibility of Trunk, Stretch Ability of Legs and Muscular Endurance of Arms were found to be the best predictors of game performance.

A study conducted by Devaraju and Needhiraja (2013) ^[3] revealed that there was a correlation exists between the playing ability versus leg length, arm length, speed, Leg Explosive strength, Breath holding time, Muscular endurance and Muscular Power. 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.

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

The result of the present study was in corroborated with the findings of previous studies. It's because in Kabaddi fine flexibility and agility is developed as one needs to move faster in a small court. Here more than speed acceleration is paramount. Strong leg muscle gives more punch to the player. So these qualities become the common characteristics which can predict the playing ability in Kabaddi players.

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