



Relationship of selected motor fitness components to field goal speed of intercollegiate basketball male players

Dr. Sudhakara G

Physical Education Teacher, Sri Prabulingaswamy High School, Hiremagalore, Chikkamagalore, Karnataka, India

Abstract

Back ground of the study: The main purpose of the present study was to investigate relationship of selected motor fitness components to field goal speed of inter-collegiate basketball male players. For this purpose the researcher selected 20 basketball male players from Shri Devi group of educational institutions. Tumkur (Karnataka) and those players who represented this institution at inter collegiate tournament and age ranged from 18-25 years. The selected motor fitness: agility was measured by applying the 10x4 yard shuttle run test and recorded in seconds; Reaction time for finger and foot was measured by applying the nelson finger and foot reaction time test and recorded in seconds; Speed was measured by applying the 50 yard dash run test and recorded in seconds, Arm and shoulder strength measured by with the help of push up test recorded in counts, Flexibility (hip and trunk) measured by with the help of modified sit and reach test recorded in centimeters. Explosive power (leg power) measured by with the help of vertical jump test recorded centimeters. And field goal speed was measured by applying the Johnson field goal speed test and recorded in counts. The data collected was tested with Pearson Product Moment Coefficient of correlation with the significant level at 0.05 was used to investigate the correlations between selected motor fitness components to field goal speed. The all statistical analyzed was using MS Excel and SPSS 16.0 version. The results of the study indicates that there was significant relationship found in agility, reaction time (foot) and speed in correlation between field goal speed ability and there was insignificant correlation found between reaction time (finger), arm and shoulder strength, flexibility (hip and trunk), vertical jump (leg power) and field goal speed ability of Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.

Keywords: agility, reaction time, strength, flexibility, vertical jump, field goal speed

1. Introduction

The motor fitness is an important factor of performance in basketball playing and it has been focus point for the researcher. Motor fitness components are qualities that athletes must develop to physically prepares for sports competition. Motor fitness is one of the major components of such as speed, endurance, agility, flexibility, co-ordination etc.

According to Johnson and Nelson – “Motor fitness is one’s ability to perform efficiency bases motor skills involving such elements as power, agility, speed, endurance and strength.” Performance in competitive sports depends mainly on the physical ability of the sportsman as well his psychological and intellectual ability and technical and tactical capacity. The physical ability or in other words, physical fitness is expressed through strength, speed, endurance, flexibility, co-ordination, reaction time etc. of a sportsman. Kaibarta, L. N. (2016) [6].

Response time is the ability to react rapidly with accurate position and be in command of to a stimulus such as sound or sight. Reaction time is the interval between the onset of a signal (stimulus) and the initiation of a movement response (Magill 1998) [7].

The purpose of present study was to correlate the selected motor fitness components and field goal speed ability of basketball male players of Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.

2. Methodology

2.1 Selection of Subjects

For this study researcher randomly selected 20 basketball male players were selected from Shri Devi group of educational institutions. Tumkur (Karnataka).and their age ranged between 18-25 years.

2.2 Selection of Variables

1. Independent Variables: Agility, Reaction Time (Finger), Reaction Time (Foot), Speed, Arm and shoulder strength, flexibility (hip and trunk), and vertical jump (leg power).

2. Dependent Variable: Field Goal Speed.

2.3 Administration of Test

Agility was measured by applying the 10x4 yard shuttle run test and recorded in seconds; Reaction time for finger and foot was measured by applying the nelson finger and foot reaction time test and recorded in seconds; Speed was measured by applying the 50 yard dash run test and recorded in seconds, Arm and shoulder strength measured by with the help of push up test recorded in counts, Flexibility (hip and trunk) measured by with the help of modified sit and reach test recorded in centimeters. Explosive power (leg power) measured by with the help of vertical jump test recorded centimeters. And field goal speed was measured by applying the Johnson field goal speed test and recorded in counts.

2.4 Statistical Analysis

To find out the significance correlation between the selected motor fitness components and field goal speed of intercollegiate basketball male players. The data were analyzed by Pearson Product Moment Coefficient test. The level of significance was set at 0.05.

3. Results

The data were obtained by applying the agility was measured by applying the 10x4 yard shuttle run test and recorded in seconds; Reaction time for finger and foot was measured by applying the nelson finger and foot reaction time test and recorded in seconds; Speed was measured by applying the 50 yard dash run test and recorded in seconds, Arm and shoulder strength measured by with the help of push up test recorded in counts, Flexibility (hip and trunk) measured by with the help of modified sit and reach test recorded in centimeters. Explosive power (leg power) measured by with the help of vertical jump test recorded centimeters. And field goal speed was measured by applying the Johnson field goal speed test and recorded in counts. All the individuals' score was used to correlate the level of field goal speed of intercollegiate basketball male players.

To establish the correlation between the selected motor fitness components and field goal speed of inter collegiate basketball male players Pearson moment correlation (r) was computed and data pertaining to this, has been presented in table-1.

Table 1: Correlation between the Selected Motor Fitness Components and Field Goal Speed of Inter Collegiate Basketball Male Players

S. No	Variables	'r' value
1	Field Goal Speed and agility	.448*
2	Field Goal Speed and Reaction time (finger)	.246
3	Field Goal Speed and Reaction time(foot)	.458*
4	Field Goal Speed and Speed	.520*
5	Field Goal Speed and Arm and shoulder strength	.246
6	Field Goal Speed and Flexibility	.253
7	Field Goal Speed and Explosive power	.238

*Correlation is significant at the 0.05 level.

Above the table shows that the calculated 'r' value of agility ($r = .448$), Reaction Time (Foot) ($r = .458$) and speed ($r = .520$) were correlates maximum with the field goal speed except then reaction time (finger), arm and shoulder strength, flexibility and explosive power were found insignificant correlation of basketball male players.

4. Discussion

The finding of the study shows that the agility, reaction time (foot) and speed were significantly correlates to the field goal speed ability and there was insignificant correlate to the field goal speed ability. It was also supported by sushil kumar, (2017) had conduct a study on Relationship of Physical Fitness Variables with Basketball Playing Ability of UAE Based Indian Basketball Players and the findings shows that Explosive strength component and endurance component got insignificant relationship with basketball throw for accuracy. The results of the study are partially supported by Fukashina (1981) [2], he reported that in all the components of motor

fitness i.e. the strength, speed, flexibility, endurance and balance, the most important single component is strength, which is required for high performance in sports activities. The results of the study was supported by Gordon (1979) [3] predicted basketball playing ability from cardio-vascular capacity, leg power, upper body strength and endurance, body composition and body height. Data were analyzed through step-wise multiple regression program and best prediction equation was found. Savarirajan, R. (2016) [10] had conducted a study on analysis of physical fitness components and playing ability of Tamilnadu badminton junior ranking players and the finding shows that the clear skill was positively correlated with speed and agility. Dhaliwal, G. S., Gill, A. S., & Sandhu, R. S. (2016) [1] indicated that the significant differences found between interuniversity and inter-college male cricketers on reaction time, speed agility. Hodgkins, J. (1963) [5] concluded those males were faster in relation to reaction time and speed than females and found relation existed between speed of movement and speed of reaction.

5. Conclusions

On the basis of findings following conclusions have been made –

1. Significant relationship found in field goal speed ability of in relation to agility ($r = .448$, $p < 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.
2. Significant relationship found in field goal speed ability of in relation to reaction time (finger) ($r = .246$, $p > 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.
3. Significant relationship found in field goal speed ability of in relation to reaction time (foot) ($r = .458$, $p < 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.
4. Significant relationship found in field goal speed ability of in relation to speed ($r = .520$, $p < 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.
5. Significant relationship found in field goal speed ability of in relation to arm and shoulder strength ($r = .246$, $p > 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.
6. Significant relationship found in field goal speed ability of in relation to flexibility ($r = .253$, $p > 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.
7. Significant relationship found in field goal speed ability of in relation to vertical jump ($r = .238$, $p > 0.05$). Shri Devi group of educational institutions. Tumkur (Karnataka) inter collegiate basketball male players.

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