



## YARDSTICK OF GOAL SPEED OF MALE BASKETBALL PLAYERS

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### ABSTRACT

The main purpose of the present study was to investigate relationship of selected motor fitness components to field goal speed of male university basketball players. For this purpose the researcher selected 20 male basketball players from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) and age ranged from 17-28 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 and field goal speed was measured by applying the Johnson field goal speed test and recorded in counts. Descriptive statistics and 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 analysed 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) and field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.).

**KEYWORDS: FIELD GOAL SPEED, AGILITY, REACTION TIME (FINGER AND FOOT) AND 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).

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).

The purpose of present study was to correlate the selected motor fitness components and field goal speed ability of basketball players of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.)

### 2. METHODOLOGY

#### 2.1 SELECTION OF SUBJECTS

For this study researcher randomly selected 20 male basketball players were selected from Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.) and their age ranged between 17-28 years.

#### 2.2 SELECTION OF VARIABLES:

1. Independent Variables: Agility, Reaction Time (Finger), Reaction Time (Foot), and Speed.
2. Dependent Variable: Field Goal Speed

#### 2.3 CRITERION MEASURES:

S. NO.	VARIABLES	TEST ITEMS	MEASURING UNITS
1	AGILITY	10 X 4 YARD SHUTTLE RUN TEST	IN SECONDS
2	REACTION TIME (FINGER)	NELSON FINGER REACTION TEST	IN SECONDS
3	REACTION TIME (FOOT)	NELSON FOOT REACTION TEST	IN SECONDS
4	SPEED	50 YARD DASH RUN TEST	IN SECONDS
5	FIELD GOAL SPEED	JOHNSON FIELD GOAL SPEED TEST	IN COUNTS

**2.4 ADMINISTRATION OF TEST:**

**2.4.1. Field Goal Speed (Johnson Field Goal Speed Test)**

The subject was asked to take the any position under the basket and is required to make maximum number of baskets in 30 seconds. The total number of successful baskets in 30 seconds provides the score of an individual.

**2.4.2. Agility (10 x 4 Yard Shuttle Run Test)**

Ten yards apart two parallel lines were marked on the ground. Two wooden blocks were placed behind one of the lines. The subject was asked to start from behind the other line. On command read go, timer starts the watch and the subjects runs towards the blocks, picks-up one block, run back to the starting line, places the block behind the starting line, runs back and picks-up the second block to be carried back across the starting line. As soon as the second block was placed on the ground, the timer stops the watch and records the time. Two trails were allowed to each subject. Scoring : The time of the better of the two trials was recorded to the nearest 10<sup>th</sup> of a second as the score of the subject.

**2.4 3. Reaction Time (Nelson Finger Reaction Test)**

The tester asked a subject to sit in the chair with his fore arm and hand resting on the table in such a way that the tips of thumb and index finger are held in a ready to pinch position, about 3 or 4 inch beyond the edge of the table. The subjects were instructed to catch the stick by pinching together his thumb and index finger as soon as the stick timer was released by the tester. Each subject was given twenty trials. Scoring: Out of twenty trials, results of five fastest and five slowest trials, were discarded and the average of the middle 10 trials gives the score of an individuals. **2.4.4. Reaction Time (Nelson Foot Reaction Test)**

The subject was asked to sit on a table which is about one inch away from the wall with his shoe off. The subject positions his foot so that her ball of the foot was held about one inch from the wall with the heel resting on the table top about two inches from the table edge. The subjects were instructed to react as soon as the timer is dropped, by pressing the timer stick against the wall with the ball of the subject's big toe. Twentytrials were given to each subject. Scoring: Out of twenty trials, results of five fastest and five slowest trials, were discarded and the average of the middle 10 trials gives the score of a subject.

**2.4 5. Speed (50 Yard Dash Run Test)**

All subjects asked to take the position behind the starting line and wait for signal. The tester gives commands ready, steady, go. At the command go, the timers start their respective stopwatches. All subjects start running as fast as possible till you reach the finish line. As soon as the subject crosses the finish line, the respective timer switches stop the stopwatch and records the time accurate up to 0.01 second. Only one correct trial is permitted. Scoring :As soon as the subject crosses the finish line, the timer switches stop the stopwatch and recorded the time up to hundredth of a second.

**STATISTICAL ANALYSIS**

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

**RESULTS**

The data were obtained by applying the 10 x 4 yard shuttle run test for agility, nelson finger and foot reaction tests for reaction time, 50 yard dash run test for speed and basketball playing ability data were obtained by applying the Johnson Field Goal Speed Test. All the individuals' score was used to correlate the level of field goal speed of male university basketball players.

**TABLE - I  
DESCRIPTIVE TABLE OF SELECTED MOTOR FITNESS COMPONENTS AND FIELD GOAL SPEED OF BASKETBALL PLAYERS**

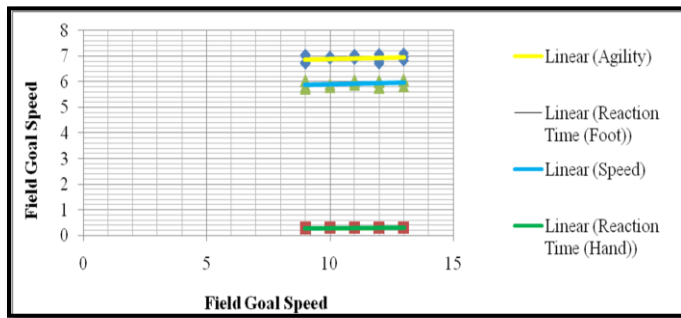
VARIABLES	MEAN	STD. DEVIATION	N
FIELD GOAL SPEED	10.8500	1.38697	20
AGILITY	6.9165	0.12811	20
REACTION TIME (FINGER)	0.296045	0.0146417	20
REACTION TIME (FOOT)	0.296310	0.0080987	20
SPEED	5.9215	0.11481	20

**TABLE - II  
COEFFICIENTS OF CORRELATION OF FIELD GOAL SPEED WITH MOTOR FITNESS COMPONENTSOF BASKETBALL PLAYERS**

VARIABLE	'R' VALUE	SIG. (2-TAILED)
FIELD GOAL SPEED	AGILITY	.444*
	REACTION TIME (FINGER)	.244
	REACTION TIME (FOOT)	.452*
	SPEED	.510*

\*level of significant set at  $r_{0.05}(2, 18) = 0.444$

Table - II shows that the calculated 'r' value of agility (r = .444), reaction time (finger) (r = .244), Reaction Time (Foot) (r = .452) and speed (r = .510) were correlates maximum with the field goal speed except then reaction time (finger) were found insignificant correlation of basketball players. These variables (agility, reaction time foot and speed) have significant relationship with field goal speed at 0.05 level of significance.



**FIGURE – 1 GRAPHICAL REPRESENTATION OF SCORES OF SELECTED MOTOR FITNESS COMPONENTS AND FIELD GOAL SPEED OF BASKETBALL 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 Savarirajan, R. (2016) 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) indicated that the significant differences found between interuniversity and inter-college male cricketers on reaction time, speed agility. Hodgkins, J. (1963) concluded that male 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 –

- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to agility ( $r = .444, p < 0.05$ ).
- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to reaction time (finger) ( $r = .244, p > 0.05$ ).
- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to reaction time (foot) ( $r = .452, p < 0.05$ ).
- Significant relationship found in field goal speed ability of Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G) in relation to speed ( $r = .510, p < 0.05$ ).

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