

Research Paper

## Relationship Between Various Anthropometric Variables and Accuracy Test of 15 To 19 Years State Level Basketball Players of Haryana



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### ABSTRACT

*Since physique and body composition provides a suitable raw material or the specific games and sports. The present study was attempted to provide guidelines about the relationship of selected anthropometric variables and Basket Ball performance 200 school Basket Ball players from HARYANA age ranging from 15 to 19years having state as minimum participation. The data was collected at the evening and morning session before the state level campus. For physical fitness of the subject, the AAPHER youth physical fitness test was used. The collected data was analyzed by computing descriptive statistics followed by Pearson's Product moment correlation. The results revealed that leg strength, height, thigh length, total arm, upper arm length and hand length have correlated positively with scores of accuracy test, also arm girth, knee girth and calf girth showed a significant relationship with performance score. In skin fold measurements only sub scapula skin fold and calf skin fold were found to be significantly correlated with score of accuracy test. In correlations of motor fitness components 50m dash, shuttle run, softball throws for distance were found to be correlated with accuracy test and at last the multiple correlations of the selected anthropometric and physical fitness variable with performance score were significant.*

### Introduction

Basketball is an oldest sport played with a ball since similar game reportedly played in the Egyptian and Greek cultures as early as the eleventh century BC. Amateur Basketball federation of India (A.N.F.I.) introduced the basketball game in 1972 in India for men, women, girls, and boys. Performance in any sports depends upon certain factors i.e. physique and body composition, physiological and psychological etc. out of these physique and body composition are most important. Similarly, many researches have been conducted in basketball showed that it dependent upon physiques, general physical fitness, specific physical fitness, skill involved in the game, tactical jollities and competitive abilities etc. of players (Milvi 2007). From these studies it is concluded that physique, body composition and physical fitness are essential ingredients for excellence performance at different levels of participation in basketball. Since physique and body composition provide a suitable raw material for specific game and sports, without proper parameters of size, shape and body composition, it is useless to spend lot of money and time on such type of Basketball players for their conditioning and training programs who are not suitable for this game.

The selection and training can be done better with adequate knowledge of Kinanthropometric measurements of the successful Basketball players. The present study was attempted to provide guidelines about the relationship of selected Kinanthropometric variables and Basketball performance and physical education teachers and coaches can be benefited to inform their trainees about the specific qualities that

should possess for each Basketball player.

### Methodology

For the present study were consisted of 200 School basketball players from Haryana age ranging from 15 to 19 years having minimum level is State participation or position holders in the basketball competitions have been selected. The random sampling technique has been utilized to collect the required data of the subject at the evening and morning session before the state level camps, and popular centers from the Haryana.

In conclusion with the experts of the field, reviewing the literature and considering the feasibility especially from the point of view of availability of equipment and time factor the various Kinanthropometric variables which seemed to be related to the performance of School Basketball players were selected are Height, Sitting height, Trunk Length, Leg Length, Thigh Length, Lower leg Length, Total Arm Length, Upper Arm Length, Fore-Arm Length, Hand Length, Foot Length, various bony diameters, girth circumferences and skinfold measurements. All the measurements were taken acc. To Weiner and Lourie (1969). For physical fitness of the school Basketball players, the AAPHER YOUTH PHYSICAL FITNESS TEST (1976) was used.

Test battery of H. CRONISH (1949) was conducted for accuracy of basketball players Thirty-second Volley test (Accuracy) Before administering the test validity and reliability of tests was checked.

### Statistical Analysis

The relationship between selected Kinanthropometric variables and physical fitness components (independent) performance in Basketball test

**Table 1** Correlations of Kin anthropometric variables with the performance in Thirty second volley Accuracy Test of basketball players

Sr. No.	Variables Correlated	Coefficient of correlation
1.	Height and Accuracy test	.174**
2.	Sitting Height and Accuracy test	-.056
3.	Trunk Length and Accuracy test	-.052
4.	Leg Length and Accuracy test	.181**
5.	Thigh Length and Accuracy test	.141*
6.	Lower Leg Length and Accuracy test	.084
7.	Total Arm Length and Accuracy test	.173*
8.	Upper Arm Length and Accuracy test	.173*
9.	Fore Arm Length and Accuracy test	.094
10.	Hand Length and Accuracy test	.176*
11.	Foot Length and Accuracy test	.106

N= 200                      \*\* Significant at 1%    r        = .181  
 df= 198                     \* Significant at 5%    r        = .138

**Table 2** Correlations of Body Girth Measurements with performance in Thirty second volley Accuracy test of basketball players. df=198

Sr. No.	Variables Correlated	Coefficient of correlation (r)
12.	Arm Girth and Accuracy test	.184**
13.	Chest Girth and Accuracy test	.091
14.	Abdomen Girth and Accuracy test	-.078
15.	Hip Girth and Accuracy test	.051
16.	Thigh Girth and Accuracy test	-.152
17.	Knee Girth and Accuracy test	.101*
18.	Calf Girth and Accuracy test	-.135*

N= 200                      \*\* Significant at 1%    r        = .181  
 df= 198                     \* Significant at 5%    r        = .138

**Table 3** Correlations of Body Diameter measurements with performance in Thirty second volley Accuracy test of Basketball Players df=198

Sr. No.	Variables Correlated	Coefficient of correlation (r)
19	Shoulder Diameter and Accuracy test	-.103
20.	Elbow Diameter and Accuracy test	.182**
21.	Wrist Diameter and Accuracy test	.186**
22.	Hip Diameter and Accuracy test	-.065
23	Knee Diameter. and Accuracy test	.032
24	An Ankle Diameter and Accuracy test	-.141*

N = 200                      \*\* Significant at 1%    r        = .181  
 df = 198                     \* Significant at 5%    r        = .138

(dependent variables) were established, for each event, by computing Pearson's product moment coefficient of correlation. Multiple correlations and corresponding multiple Regression Equations were computed using Wherry-Doolittle Methos to find out the combined effect of independent variables, (Clarke, H.H. and Clarke, D.H. 1972).

**Results and Discussion**

The results of the present study are discussed as follows Relationship between selected Kin anthropometric and motor fitness variables with Accuracy performance, combined contribution of selected Kin anthro-

pometric and motor fitness variables with basketball performance and other statistics denoting their relationships are presented in a set of six tables each.

Table 1 indicates that Leg length, height, thigh length, total arm, upper arm length, and hand length have correlated positively significant and with score of Accuracy test at 1% and 5% level respectively. It implies that with the increase of height, leg length, thigh length, total arm, upper arm and hand length improved the performance of Thirty second volley Accuracy of basketball players.



second volley Accuracy performance of basketball players.

**See Table 3**

It is evident from table - 3 that Elbow and wrist diameters have positive and significant correlations with the performance in Accuracy test at 1% level. Whereas ankle diameter has negative and significant correlation at 5% level. Others variables have no significant correlations with the performance in Accuracy test. It shows that with the increase in Elbow and wrist diameter improved the performance score of Thirty second volley Accuracy test.

**See Table 4**

Table 4 clearly indicates that sub scapula & calf skin folds has negative correlation but significant at 5% level. Biceps has negative and significant correlation at 1% level. Other variables of the Skinfold measurement have no significant correlations with the Thirty second volley Accuracy test of school basketball

players.

**See Table 5**

Table 5 reveals that basketball throws have significant and positive correlations at 1% level. It further shows 50-meter run, and shuttle run have significant and negative correlations at 5% level respectively with the performance of Thirty second volley Accuracy test.

**See Table 6**

Table 6 clearly indicates that combined effect of Height, , Leg length, Total arm length , hand length, calf girth, wrist diameter biceps skinfold, 50-meter run , softball throw and accuracy test (set-1) taken together are correlated significantly with the performance of Accuracy test. The computed value  $R = (.6220677728)$  is more than the tabulated value of  $R = (.3180)$  at 1% level. So the multiple correlations of selected Kin anthropometric and physical fitness variables with performance in Thirty second volley Accuracy test is significant.

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## **REFERENCE**

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