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Research Paper - Physical Education

Relationship Between Various Anthropometric Variables And Power Test of 15 To 19 Years State Level Basket Ball Players of Haryana

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A B S T R A C T

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

Basket Ball 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. Many researches have been conducted in Basket Ball 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). 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 Basket Ball 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 Basket Ball players. The present study was attempeted to provide guidelines about the relationship of selected Kinanthropometric variables and Basket Ball performance and physical education teachers and coaches can be benefited to inform their trainees about the specific qualities that should possess for each Basket Ball player.

Methedology

For the present study were consisted of 200 School Basket Ball players from HARYANA age ranging from 15 to 19 years having minimum level is State participation or position holders in the Basket Ball 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 Kin anthropometric variables which seemed to be related to the performance of School BASKET BALL players were selected are Height, Sitting height,Trunk Length,Leg Length,Thigh Length,Lower leg Length,Total Arm Length,UpperArm Length, Fore-Arm Length, Hand Length, Foot Length, various bony diameters, girth circumferences and skinfold measurements. All the measurements were taken acc. To Winner and Lourie (1969). For physical fitness of the school Basket Ball players, the AAPHER YOUTH PHYSICAL FITNESS TEST (1976) was used.

Test battery of H.CRONISH (1949) was con-

Table 1 Correlations of Kinanthropometric variables with the performance in Service Placement Power Test of Basket Ball players df =198

Sr. No.	Variables Correlated	Coefficient of correlation
1.	Height and Power test	.175**
2.	Sitting Height and Power test	- .067
3.	Leg Length and Power test	.162*
4.	Thigh Length and Power test	.187**
5.	Lower Leg Length and Power test	.054
6.	Trunk Length and Power test	- .106
7.	Total Arm Length and Power test	.168*
8.	Upper Arm Length and Power test	.191**
9.	Fore Arm Length and Power test	.039
10.	Hand Length and Power test	.087
11.	Foot Length and Power test	.006

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

Table 2 Correlations of Body Girth Measurements with performance in Service Placement Power test of Basket Ball players. df=198

Sr. No.	Variables Correlated	Coefficient of correlation (r)
12.	Arm Girth and Power test	.185**
13.	Chest Girth and Power test	.141*
14.	Abdomen Girth and Power test	- .066
15.	Hip Girth and Power test	.082
16.	Thigh Girth and Power test	- .161*
17.	Calf Girth and Power test	- .172*
18.	Knee Girth and Power test	.109

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

Table 3 Correlations of Body Diameter measurements with performance in Service Placement Power test of Basket Ball Players df=198

Sr. No.	Variables Correlated	Coefficient of correlation (r)
19.	Elbow Diameter and Power test	-.108
20.	Wrist Diameter and Power test	.148*
21	Shoulder Diameter and Power test	.141*
22.	Hip Diameter and Power test	- .086
23	Knee Diameter. and Power test	.153*
24	An Ankle Diameter and Power test	- . 079

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

ducted for accuracy of Basket Ball players Thirty-second Volley test (Accuracy). Before administering the test validity and reliability of tests was checked.

Statistical Analysis

The relationship between selected Kin anthropometric variables and physical fitness components (independent) performance in Basket Ball test (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 Methods 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 anthropometric and motor fitness variables with BASKET BALL performance and other statistics denoting their relationships are presented in a set of six tables each.

Table 1 indicates that height, thigh length, and upper arm length, have correlated positively significant and with score of Power test at 1% whereas leg length, total arm have correlated positively significant and with score of Power test at 5% level respectively. It implies that with the increase of height, leg length, thigh length, total arm,

Table 4 Correlations of Skinfold measurements with performance in Service Placement Power test of BASKET BALL players df=198

Sr. No.	Variables Correlated	Coefficient of correlation (r)
25	Biceps skinfold and Power test	- .185**
26.	Triceps skinfold and Power test	- .141*
27	Sub scapula skinfold and Power test	.098
28	Suprailliac skinfold and Power test	.076
29.	Chest skinfold and Power test	.092
30.	Mid Axillary's skinfold and Power test	- .069
31	Thigh skinfold and Power test	- .174*
32	Calf skinfold and Power test	- .088

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

Table 5 Correlations of Motor fitness components with performance in Service Placement Power test of BASKET BALL players df=198

Sr. No.	Variables Correlated	Coefficient of correlation (r)
33.	50-meter-run and Power test	- .103
34	Standing broad jump and Power test	.174*
35.	Straight knee sit-ups and Power test	.045
36.	Pull ups and Power test	.141*
37	Shuttle Run and Power test	- .077
38	Softball throws for distance and Power test	.182**
39	600 meter Run and Power test	- .124

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

Table 6 Combined contribution of selected Kinanthropometric and physical fitness variables with Service Placement Power performance of BASKET BALL players.

Dependent (Criterion) Variables (Y'c)	Independent Variables (X's)	Selected Independent Variables for multiple Correlation (X's)	Coefficient of multiple correlation (R)
Performance in (Set First) Power test	- Height (X1) - Leg length (X3) - Thigh length (X - Total arm length (X7) - Upper arm length (X8)- Arm girth (X12) - Arm girth (X12) - Chest girth (X13) - Wrist Diameter (X20) - Thigh girth (X16) - Knee Diameter (X23) - Calf girth (X17) - Thigh Skinfold (X31) - Wrist Diameter (X20) - Shoulder Diameter (X21) - Knee Diameter (X23) - Biceps skinfold (X25) - Triceps skinfold (X26) - Thigh skinfold (X31) - S.B.Jump (X34) - Pull-Ups (X36) - Soft ball throw (X38)	- Height (X1) - Leg length (X3) - Thigh length (X4) - Total arm length (X7) - Calf girth (X17)	.6561727679

N = 200 df = 198 ** Significant at 1% R = .2820

upper arm and improved the performance of Service Placement Power of Basket Ball players.

Table 2 clearly shows that Arm girth, and chest girth have positive and significant correlations at 1% and 5% level whereas thigh girths and calf girths has negative and significant correlation at 5% with the performance score of Power test. Other variables have no significant correlations with performance in Power test. It implies that, the increase of Arm, and chest girths improve the Power performance and decrease in thigh and calf girths increases the Service Placement Power performance of Basket Ball players.

Table - 3 shows that wrist, shoulder and knee di-

ameters have positive and significant correlations with the performance in Power test at 1% level. Whereas shoulder diameter has negative and significant correlation at 5% level. Others variables have no significant correlations with the performance in Power test. It shows that with the increase in wrist shoulder, and knee diameter improved the performance score of Service Placement Power test.

Table 4 clearly indicates that biceps, has negative correlation but significant at 1% level. While triceps and thigh skin folds has negative and significant correlation at 5% level. It implies that decrease in these skinfolds increase the power performance. Other variables of the skinfold measurement have no significant correlations with the Service Placement Power test of school BASKET BALL players.

Table 5 reveals that softball throws have significant and positive correlations at 1% level. It further shows S.B Jump and pull ups have significant and positive correlations at 5% level respectively with the performance of Power test.** It implies that increase in these physical abilities increase the power performance. Other variables have no significant correlations with the Service Placement Power test of school BASKET BALL players.

Table 6 clearly indicates that combined effect of Height, Leg length, Thigh length , Total arm length, Arm girth, Calf girth, wrist diameter, Knee diameter, Thigh skinfold, and Power test (set-1) taken together are correlated significantly with the performance of Power test. The computed value R = (.6561727679) is more than the tabulated value of R = (.2820) at 1% level. So the multiple correlations of selected Kinanthropometric and physical fitness variables with performance in Service Placement Power test are significant.

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