RELATIONSHIP BETWEEN SELECTED ANTHROPOMETRIC MEASUREMENT AND PERFORMANCE OF MEN HANDBALL PLAYERS

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ABSTRACT

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The purpose of the study is to seek relationship between selected anthropometric measurement and performance of men handball players. It was hypothesized that greater Anthropometric measurement will have higher correlation with handball playing ability. 30 male handball players were the subject, the average age of subject were 21 years old. To find out the relationship the Pearson's Product Moment of Coefficient was employed to analyses the data. It was hypothesized that greater correlationship was found between performance and selected Anthropometric variable, hence the hypothesis is partially accepted.

Keywords: Anthropometric, measurement, performance

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INTRODUCTION:

Anthropometric studies consider the human body which performs certain tasks because it has certain basic material available to it, namely the muscles, skeleton, tissue, axes and nervous outlook. The relationship between body size and an athlete's performance has been summarized intelligibly and concisely by Astrand and Rodhal (1970), according to whom, body size is an important factor in all type of sports performance which involves an athlete's acceleration the body, moving it over a distance, lifting it, turning it, exerting maximum force and throwing it over. Taller person are reported to have greater strength in proportion to their size, so also possess greater respiratory capacities, thus having an advantage in jumping events due to the higher placement of the center of gravity.

Scientists and physiologists have held the view that anthropometric measurements and physical component of an athlete has a lot to do with his performance. More than the technique and tactics of player or a team, physical and physiological characteristics help him for better performance. The research finding shows that a high level of technique perfection alone cannot produce success in competitivesports. Most of the game demands a higher level of speed, strength, endurance, flexibility, coordination and optimum fitness of the organism.

The study may be significance to the physical education teachers, sports scientists, researcher and coaches in spotting talents prerequisite for the handball game. The findings of the present study may

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also provide information to the coaches and physical education teachers to enable them to understand the scientific basic of talent hunt. The result of this study may produce scientific and objective knowledge, which may be of great significance. The present study will be both for filling the gap in the existing knowledge and for practical utility for sports excellence in handball.

DATA ANDPROCEDURE:

The total number of thirty (30) male Handball players studying in different college of Delhi University, New Delhi, participated in the inter-collegiate championship were randomly selected to act as subjects for the present study. The age of subjects were ranging from 17 to 25 years of old. The average age of subjects was 21 years of old.

Selection of Variable: Handball is a sport that demands a lot of skills and a good physical shape, including sufficient aerobic and anaerobic physiological capacities. Joint stability, muscles flexibility and stretch ability of tendon are also important for good performance and a reduction of the injury-rate.

Anthropometric Variables: Height, sitting height, weight, Upper Arm Length, Lower Leg Length, Arm Length, Upper Leg length, Lower Leg Length, Leg Length.

Criterion Measure : (a)weight was measured by the weight scale to the nearest 100 gms.(b) Height was measured to the nearest 1/10 of a centimeter.(c) sitting height was measured to the vertical distance from the point vertex to sitting height to the nearest 1/10th of a centimeter.(d) Arm length was measured to the nearest 1/10th of the centimeter.(e) The leg length was measured and recorded to the nearest 1/10th of the centimeter between the grestertrochante and the standing surface.

Tool Used : The following tools were used to measure the anthropometric characteristics of the handball players: (a) for measuring the height anthropometric rod was used.(b) Length was measured with the help of anthropometric rod.(c) Weight of the body was measured with the help of portable weighing machine.(d) Sitting table, to measure the sitting height of the subjects.

RESULT OF THE STUDY &FINDING:

To find out the relationship between the performance and selected anthropometric variable the Pearson's Product Moment Correlation was computed.

Table no-1

Pearson's product moment correlation between performance and selected anthropometric variable

Variable	performance
Height	.642
Sitting height	.702
Weight	.750
Upper arm length	.712
Lower arm length	.976
Arm length	.941
Upper leg length	.946
Lower leg length	.90
Leg length	.401

*Significant at .05 level

'r' $.05^{(28)}$ =0.36

It is evident form the table-1 that there is significant correlation between the performance and selected anthropometric and selected anthropometric variable. The correlation value between performance and height was found to be .642 which is higher than the required tabulated value of ('r' $.05^{(28)}$ =0.361) to be significant. Similarly the relationship between performance and sitting height was found significant as the calculated value was .702 which is than the tabulated 'r' value of 'r' $.05^{(28)}$= 0.361 needed to be significant. Table further shows that the relationship between the performance and weight, performance and upper arm length, performance and lower arm length, performance and arm length were found to be .750, .712, .976, .941, respectively were significantly higher than the required 'r' value of .361. Table further demonstrate that the higher correlationship exists between the performance and upper leg length as the calculated value was found to be .946 against the tabulated value of .361 required to be significant. Tablefurther shows the significant relationship exists between the performance andlower leg length. The correlation value was found to be .90 against the tabulated 'r' value of .361. Similarly the significant correlationship was also found between the performance and leg length as the calculated 'r' value was found to be .0401 against the required 'r' value of .361 at .05 level of significant.

DISCUSSION OF FINDING

Analysis of data revealed that the performance was significantly related with selected anthropometric variable. Higher correlation value were found between performance with lower arm length, arm length,

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upper leg length, lower leg length as the correlation value were .976, .941, .946 and .90 respectively. The higher correlation may be attributed to the fact that Handball is the game which involves different skills, namely, dribbling, throwing which in turn involve arms and legs extensively and probably the person with longer arm length is in its advantage side where his performance was very much affected by the length of the extremities. Similarly, other selected anthropometric variable such as, upper arm length, weight, sitting height and height were also found to be significantly correlated with the performance. The significant relationship between this selected variable with performance could be attributed to the fact that all these variables are important contributing factors to the performance. The findings of the study are inconsonant with findings of the Bajpai (1989), Malhotra (1990).

It was hypothesized that the greater correlationship was found between performance and selected anthropometric variable, hence the hypothesis is partially accepted.

The sub hypothesis stated that there will be lower correlation between the performance and weight. However the finding shows that there is high correlation between performance and weight hence it is partially rejected.

In the light of the limitations drawn the following conclusions were made:

(1) Performance is significantly correlated with the height among male handball players.
(2) The sitting height is highly correlated with performance among male handball players.
(3) The weight of the subjects was found highly correlated with performance variable.
(4) Significant higher correlation was observed between the upper arm length and performance among male handball players.
(5) Performance is significantly correlated with the lower arm length among male handball players.
(6) The arm length was highly correlated with performance among male handball players.
(7) Significantly higher correlation was observed between the upper leg length and performance among handball players.
(8) The lower leg length of the subject was found to be highly correlated with the performance variable.
(9) Significant higher correlation was observed between the leg length and performance among male handball players.

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