Relationship between Selected Anthropometric Measurements and Body Composition Variables in the Performance of College Level Female Basketball Players

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The purpose of the study was to determine the relationship of selected anthropometric measurements and body composition variables in the performance of college level female Basketball players. Thirty female Basketball players aged between 21-27 years of age, studying in various colleges from Ernakulam District were selected as subjects. The players were selected as purposive sampling. Subject's performances in the AAHPERD Basketball skill test were recorded as the Basketball performance. Pearson's product moment correlation and Simple Regression Analysis was used to find out the relationship between anthropometric and body composition variables to the performance in Basketball .The results of the study showed significant relationship between lean body weight and Basketball performance.

Keywords: Anthropometric measurements, Physiognomy, Skinfold measurements, Body composition

INTRODUCTION

The human body is similar to a machine. If mistreated and not properly maintained, the machine will malfunction and cease to run efficiently. Under modern circumstances especially in training for sports and games or any events with focus on superior performances, emphasis is given for physical structure and body build of each individual participant, for each sports and games. Therefore, it is evident that the body builds popularly known as physiognomy gets primarily emphasis at the time of selection of a player for particular sports were superior competition is involved.

To produce good sportsmen in India selected individuals are given training according to their growth and development and body type. These days every nation wants to produce good sportsmen and women to participate in international competitions. To discover the talented players at an early age, one of the examinations that have been followed by many universities is that of making anthropometric measurements. Today anthropometric measurements play a vital role in shaping youth's personality and physical development and also in bringing about an improvement in skills.

Hence the trend is the field of games, sports and physical education is to assess the related components as part of the total body build and size of each player and also to interpret how far these components are helpful to perform in games and sports under competitive conditions.

METHODOLOGY

Thirty female Basketball players were selected as a purposive sampling. The players' ages were between twenty one and twenty seven years. The subjects were from various colleges of Ernakulam District. They were above average players. Their anthropometric measurement - thigh length was measured. Sub scapular was the site forskinfold measurement. Subject's performances in the AAHPERD Basketball skill test were recorded as the Basketball performance. Spot shooting and Chest pass of (AAHPERD) Basketball skill test battery was correlated with arm length and scapular skinfold measurement.

ANALYSIS OF DATA AND RESULTS OF STUDY

To find out the relationship of selected anthropometric measurements and body composition variables to the Basketball performance, Pearson's product moment correlation was applied in order to determine the relationship between selected predictor variable in the basketball performance Correlation and Simple Regression Analysis was used Table-I

TEST RETEST RELIABILITY CO-EFFICIENT OF CORRELATION

No	Variables	Coefficient of Correlation
1	Scapular Skinfold	0.690
2	Arm Length	0.675

Table-ll

CORRELATION BETWEEN DIFFERENT INDEPENDENT VARIABLES-SCAPULARSKINFOLD, ARM LENGTH AND DEPENDENT VARIABLES (BASKETBALL PERFORMANCE) – CHEST PASS (C.P.), SPEED SPOT SHOT (S.S.S.).

CHEST PASS	SPEED SPOT SHOT
0.7687	0.7239
P=.001	P=.001
0.7021	0.6976
P=.308	P=.161
). []. [].	7687 =.001 7021 =.308

Correlation between Scapular Skinfold (S.S.) and Basketball Performance

Analysis of data in Table II reveals that there was significant relationship between scapular skinfold and chest pass & scapular skinfold and speed spot shot. The obtained value of co-efficient of correlation between these two tests and scapular skinfold is 0.7687 and 0.7239 respectively, which was found to be significant at 0.05 level of confidence. So the null hypothesis is rejected.

Correlation between Arm length (A.L) and Basketball Performance

Analysis of data in Table I reveals that there was significant relationship between arm length and chest pass & arm length and speed spot shot. The obtained value of co-efficient of correlation between these two tests and scapular skinfold is 0.7021 and 0.6976 respectively, which was found to be significant at 0.05 level of confidence. So the null hypothesis is rejected.

Fig.1: Relationship between Chest Pass and Scapular Skinfold



Fig.2: Relationship between Chest Pass and Arm Length



Relationship between Speed Spot Shot and Scapular Skinfold



Fig.3: Relationship between Speed spot and Scapular Skinfold



Fig.4: Relationship between Speed spot and Arm Length

The results of the study showed significant relationship between (lean body weight and arm length) and Basketball performance. There is significant positive relationship between lean body weight (scapular skinfold) and chest pass, lean body weight (scapular skinfold) and speed spot shot, arm length and chest pass, arm length and speed spot shot. As it consumes more time it diversely affects the performance. It shows that if there is an increase in fat level from the normal level according to the proportion of the body, there will be decrease in performance. The Basketball players with more fat in the body from the normal level were able to score less. Thus the fat level adversely affects the performance level. The lean body weight (scapular skinfold) and arm length is having more significance in overcoming the defense of the opponents and for conversion of the basket.

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