Dr. S Ravi Kumar
Director of Physical Education,
A.M. Jain College,
Meenambakkam, Chennai, India

Analysis of basketball playing ability of elite inter university men players in relation to anthropometric variables among guard players

Dr. S Ravi Kumar

Abstract
This study mainly aims to find out whether there is any relationship between Basketball playing ability and anthropometric variables such as Height, Weight, Arm Length, Arm Span, Upper Arm Girth, Hand Span, Standing Reach, Sitting Height, Leg Length, Thigh girth, Fore arm girth, Shoulder width among elite Inter University men guard players. Fifteen University Basketball players (Guards) from the teams which secured first four places in the South Zone Inter - University Basketball Tournament conducted by Sathyabama University, Chennai during January 2012 were selected as subjects. They were between the age group of 18 to 25 years. Three coaches who are experts in the coaching field assessed the playing abilty of the players. The guidelines for assessment was provided by the investigator. During the league matches, each coach rated the playing ability of the players for 100 marks. The scores given by all the three coaches were added and divided by 3 to make the individual score of the subjects. All the anthropometric variables were measured using standardised equipments. To analyse the relationship between basketball playing ability and anthropometric variables, Pearson's Product Moment Correlation was used. It was inferred that no significant relationship exists between basketball playing ability and anthropometric variables. Hence the hypothesis that there would be significant relationship between basketball playing ability and Anthropometric variables among Guards was rejected.

Keywords: Basketball, Elite players, Guard, Anthropometry

Introduction
The positions in Basketball are important part of an overall strategy of the game. There are 5 traditional positions that most teams have in their offensive and defensive schemes. They are point guard, shooting guard, small forward, power forward and centre.

Guards
Guards are usually the fastest player in the team. They organize the team's offense by controlling the ball, makes sure that it gets to the right player at the right time and creates a high volume of shots on offense. They defend the opponents best perimeter player on defense.
The point guard is the team leader on the floor, calling out plays and controls the tempo of the game. He is the shortest and fastest player in the team. They are often the best at dribbling and therefore called upon to bring the ball up the court on offense while the rest of the players get into their positions.
The shooting guard in basketball has the main responsibility of making long outside shots including the three point shot. The shooting guard should be a good passer and able to help the point guard with the ball handling. Shooting guards are usually taller than the point guard. In this study both point guard and shooting guard are considered as guard players.

Anthropometrical Effect
Anthropometry is the science that defines physical measures of a person's size, form and functional capabilities. Anthropometric measurements have been a part of physical education research and evaluation since its inception. Since the early times there has been continued use of anthropometric measurements to determine its relationship with performance in different games and sports. The game of Basketball has evolved to have a high priority on body size.

Correspondence
Dr. S Ravi Kumar
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A player's size has a positive influence on the position in the team and all the body segment lengths and in turn athletic performance. Successful competition in sports has been associated with specific anthropometric characteristics, body composition and somato type. For example often tall stature is the first criteria for selection of youth in basketball. Anthropometric dimensions of basketball players have been linked with playing position and individual player's success. One aspect of scientific approach which is receiving greater attention is that of the structural measures, lengths, breadths and girths of body and body composition to achieve optimum playing ability.

Statement of the Problem
This study was conducted to measure the degree of relationship between basketball playing ability and Height, Weight, Arm Length, Arm Span, Upper Arm Girth, Hand Span, Standing Reach, Sitting Height, Leg Length, Thigh girth, Fore arm girth, Shoulder width (Anthropometric variables) of elite South Zone Inter University men basketball players.

Hypothesis
It was hypothesized that there would be significant relationship between playing ability and anthropometric variables among Guards.

Significance of the Study
The investigation will contribute significantly to know the anthropometric characteristics of University level basketball players.

Selection of subjects
The study was conducted on University Basketball men players who secured first four places in the South Zone Inter - University Basketball Tournament conducted by Sathyabama University at Chennai during January 2012.Among them fifteen guard players were selected as subjects. They belonged to the age group of 18 to 25 years.

Experimental Variables
Based on the available scientific literature and in consultation with experts, the following variables were selected.

Dependent Variable
Basketball playing ability was considered as the criterion variable.

Independent Variables (Anthropometric Variables)
a. Height (cm)
b. Weight (kg)
c. Arm Length (cm)
d. Arm Span (cm)
e. Upper Arm Girth (cm)
f. Hand Span (cm)
g. Standing Reach (cm)
h. Sitting Height (cm)
i. Leg Length (cm)
j. Thigh girth (cm)
k. Fore arm girth (cm)
l. Shoulder width (cm)

Administration of Tests
The investigator explained to the subjects the purpose of the research. The data were collected during the South Zone Inter University Basketball matches conducted by Sathyabama University at Chennai.

Basketball Playing Ability
Three experts who serves as Basketball coaches in Sports Authority of India (SAI) and Sports Development of Tamil Nadu (SDAT) for more than 20 years, assessed the playing ability of the guard players. The guidelines for assessment were provided by the investigator. The matches were conducted by Sathyabama University at Chennai during January 2012. Among the 74 University teams which took part in the tournament, 4 teams entered semi-finals. Fifteen guard players of these 4 teams were taken as subjects for the present study. Each team played 3 matches on league basis. During these league matches, each coach rated the playing ability of the players for 100 marks. The scores given by all the three coaches were added and divided by 3 to make the individual score of the subjects.

Anthropometric Variables
All the anthropometric variables were measured using standardised equipments.

Hypothesis
There would be significant relationship between basketball playing ability and Anthropometric variables among Guards.

Inferential Analysis
To analyse the relationship between basketball playing ability and anthropometric variables, Pearson's Product Moment Correlation was used.

Table 1: Pearson's Product Moment Correlation between Playing ability and Anthropometric Variables among Guards.

S. No.	Variables	'r' Value	Level of significance
1.	Height	.102	.718
2.	Weight	-.075	.790
3.	Arm Length	.306	.267
4.	Arm Span	.209	.454
5.	Upper Arm Girth	-.059	.834
6.	Hand Span	.264	.342
7.	Standing Reach	.154	.584
8.	Leg Length	.355	.194
9.	Thigh Girth	.013	.963
10.	Sitting Height	-.340	.215
11.	Fore arm Girth	.185	.510
12.	Shoulder Width	-.233	.403

From table I, it was inferred that no significant relationship exists between basketball playing ability and anthropometric variables. Hence the hypothesis that there would be significant relationship between basketball playing ability and Anthropometric variables among Guards was rejected.

Discussion on findings
In this study some of the short players excelled the taller ones due to various reasons like speed, agility, stealing capacity, experience, long range shots and penetration capacity. This resulted in insignificant relationship of the anthropometric variables among Guards with their playing ability.

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