

Comparative analysis of Physical and Anthropometric Variables of basket ball and football players in Muraina district of Madhya Pradesh

Bhartendu Singh Tomar
Physical Education and Sports
Govt. Collage, Chinore, Gwalior (MP)

Abstract

A high level performance in basketball not only requires certain physical qualities like speed, endurance, explosive power, agility etc. but also a good physical structure. Under modern conditions especially related to training for sports and games with a focus on superior performance, adequate importance is given to the physique and body build of each athlete there for it is evident that the body build popularly known as "Physiognomy" gets primary attention at the time of the selection of players for games and sports where superior competition is involved.

Keywords: strength, anthropometric measurements, Physical variables

I. Introduction

In modern sports the anthropometric measurements and their relationship with various motor traits are an important guide for the coaches and athletes themselves for making training schedules and for classification of students in to different groups according to their age ability etc.

Several factors such as age, experience, height and weight influence the selection of players for a national basketball team. Extensive research studies on the physical build of basketball players have been conducted in different parts of the world. Genetic and anthropological studies have been conducted on Olympic basketball players and useful findings have been recorded several countries give weight, age to these findings while selecting their national teams for international competition.

Scientist and physiologists have been of the view, that anthropometric measurement and physical components of an athlete have a lot to do with his performance. More than the technique and tactics of a player or a team, physical and physiological characteristics help him for better performance. The research findings show that a high level of techniques perfection alone has nothing to do with the competitive sports. Most of the games demand a higher level of speed, strength, endurance, flexibility, coordination and optimum fitness of the organism.

Along with physiological characteristics the structural requirement and equally essential for the players who expect to be good rebounder or shooter in basketball, standing height and height plus reach make the

Now the question arises as to which of the components of general motor ability such as speed, agility, strength and anthropometric measurements such as height, weight, leg length, arm length and trunk length are prerequisites for a particular sports in other words are these components cause to the effect of effect of the cause but to certain extent they can be both cause and effect at the same time for example a basketball player should have fair amount of agility and at the same time the agility can be further developed through continuous participation in the game.

Statement of the Problem

The purpose of this study was to find out relationship of selected physical and anthropometrical variables with the various sports playing ability.

Delimitations

1. The study is be delimited to 30 male basketball and foot ball players of inter-university level only.
2. Selected physical and anthropometrical variables are:
 - **Physical variables:** Leg strength, arm strength, shoulder strength, grip strength.
 - **Anthropometrical variables:** Standing height, sitting height, leg length, arm length and hand length

Limitations

1. The study was conducted in controlled conditions not during the competitive situation, which may affect on the technique for the set shot.
2. No attempt was made to motivate the subjects.

Hypothesis

It was hypothesized that there may not be significant relationship between selected physical and anthropometrical variables with the sports playing ability.

Definition and Explanation of Terms

Anthropometric Measurements

Anthropometric measurements refers to those measurements of human body such as height, leg length, arm length, weight etc taken at specific sites.

Significance of the Study

The results of the study will be significant to physical education teachers and coaches in the following ways:

1. The results may indicate the variables, which might be considered as factors affecting the performance of basketball players.
2. Results will be helpful in preparation of training schedules for basketball players more effectively.
3. The results may provide a model for the technique of fundamental skills for analyzing the performance of players.

Reliability of the Data

The reliability of the data was ensured by establishing the instrument reliability and the tester competency.

Instrument Reliability

All instruments were calibrated and tested prior to collection of data thus these were considered accurate enough for the purpose of this study.

Tester's Competency

The scholar followed a standard procedure for taking the anthropometric measurements and collection of data on the different physical variables under the direct supervision of expert in the field. The scholar was also assisted by M. Phil scholars. Thus the data collected for the purpose of this study was considered reliable.

Collection of Data

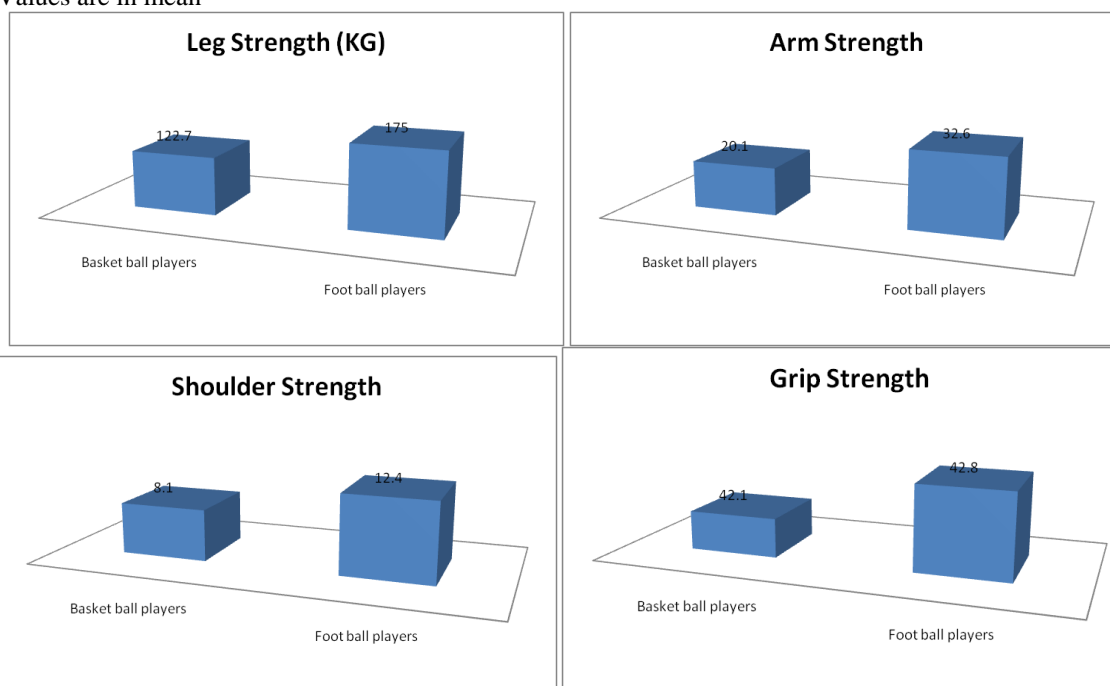
After establishing the reliability of the data it was collected by using the different criterion measures for anthropometric measurements and standard procedure for different physical variables.

Result and analysis

Physical variables

S no	Variables	Basket ball players	Foot ball players
1	Leg Strength (KG)	122.7	175
2	Arm Strength	20.1	32.6
3	Shoulder Strength	8.1	12.4
4	Grip Strength	42.1	42.8

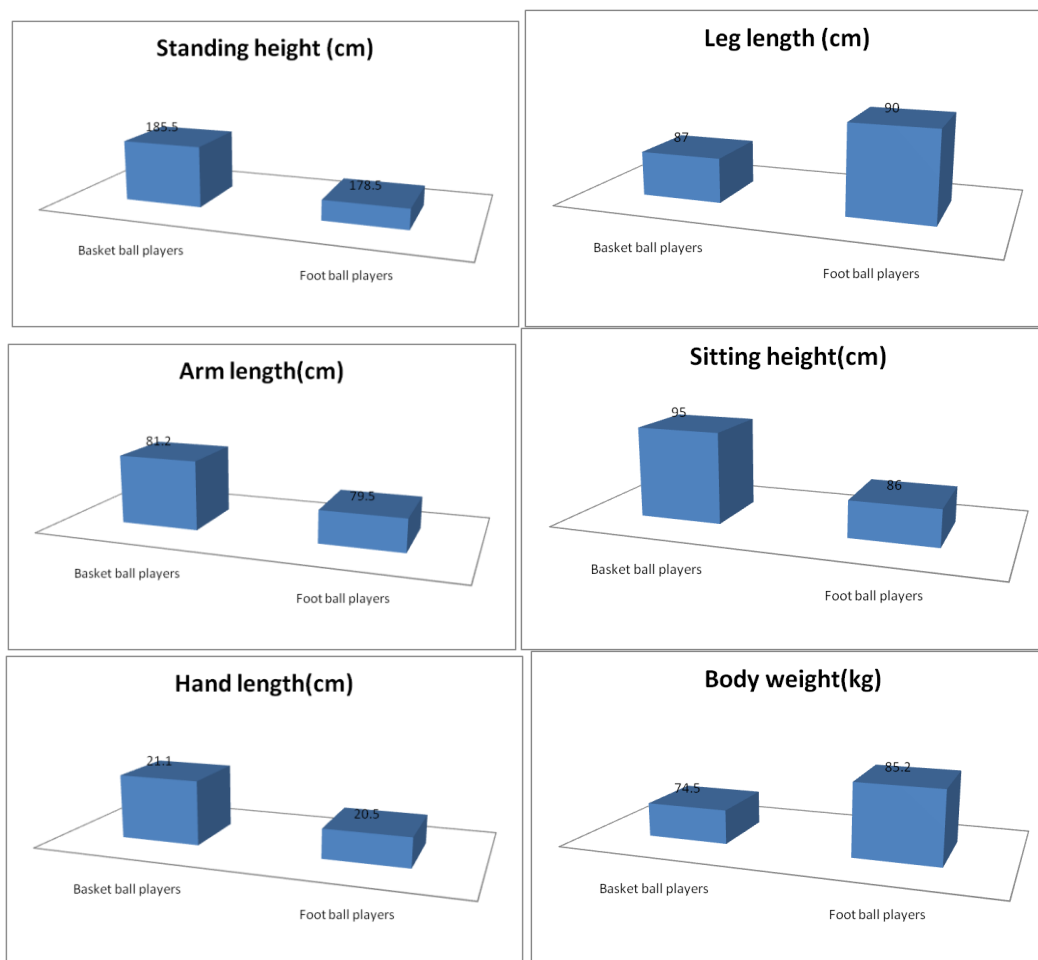
** Values are in mean



Anthropometric Measurements

S no	Variables	Basket ball players	Foot ball players
1	Standing height (cm)	185.5	178.5
2	Leg length (cm)	87	90
3	Arm length(cm)	81.2	79.5
4	Sitting height(cm)	95	86
5	Hand length(cm)	21.1	20.5
6	Body weight(kg)	74.5	85.2

** Values are in mean



II. Conclusion

It was hypothesized that there may not be significant relationship between selected physical and anthropometric variables with basketball playing ability but study exhibited the insignificant relationship of anthropometric measurements with basketball playing ability hence the hypothesis is accepted at this juncture, but present study shows the significant relationship between physical variables and basketball playing ability hence the hypothesis is rejected at this level.

References:

- [1]. Ellen, Eason Jullia "The Relationship of Height and Weight to the Performance of College Women and Selected Basketball skill Test," Completed Research in Health, Physical Education and Recreation 19 (1963): 100.
- [2]. Grewal R. and Sidhu, L.S. Abstract: International Congress of Sports Science (Patiala: Netaji Subhas National Institute of Sports, November 1982), 9. 14.
- [3]. Gooden, Keith "The Relationship of Selected Anthropometric Measurements of the Leg and Foot to Speed and Vertical Jump of Male Collegiate Track and Fields," Completed Research in Health, Physical Education and Recreation 21 (1979): 306.

- [4]. Holland, Kenneth A "The Predictive Value of Selected variables in Determining the ability to Play Basketball in Small High School," Completed Research in Health, Physical Education and Recreation 7 (1965): 37.
- [5]. Battles, Judy "Prediction Equation for Selection of women Inter-collegiate Basketball Teams Members," Abstracts Research Paper AAHPERD Convention (1980): 65.
- [6]. Baacke, Le Verne W. "Relationship of Selected Anthropometric and Physical Performance Measures to Performance in the Running Hop, Step and Jump," Research Quarterly 35 (May 1964); 107.
- [7]. Dahl, Donald F. "The Relationship of Jump Shooting Ability in Basketball to Selected Measurable Traits," Completed Research in Health, Physical Education and Recreation 15 (1973): 124.
- [8]. Clarke, David H. and Clarke, H. Harrison Research Process in Physical Education 2nd ed. (Englewood Cliffs, N.J.: Prentice Hall Inc., 1984).
- [9]. Clarke, H. Harrison and Clarke, David H. Application of Measurement to Physical Education,
- [10]. Johnson, L. Barty and Nelson, K. Jack Practical Measurement for Evaluation in Physical Education (Delhi: Surjeet Publication, 3rd ed. 1982).