



---

## Relationship Of Anthropometric Variables Of College Level Batsman To Their Cricket Performance

**Dr. Shailesh Kumar Singh**, Assistant Professor, LNIPE, NERC, Tepesia Sports Complex, Sonapur, Guwahati, Assam, India.

**Mr. Kushagra Bairagi**, (12208790) M.P.Ed Student, Department of Physical Education, Lovely Professional University, Phagwara, Punjab, India.

**Mr. Sunil Kumar**, Assistant Professor, Dept. of Physical Education, Lovely Professional University, Phagwara, Punjab, India.

---

### ABSTRACT

The purpose of this study was to determine the relationship between anthropometric variables and batting performance in cricket. The subjects selected for the present study were those who have played cricket game as batsmen during the session 2019-20. For the present study 200 batsmen of inter collegiate level were selected. The age of the subjects ranged from 18-25 years. Anthropometric rod and portable lever actuated weighing machine were used for measuring height and weight. To measure the circumferences a flexible steel tape was used. Vernier caliper and anthropometric compass was used for Diameters. The results showed linear measurements i.e. age, weight, height, foot length, forearm length, hand length have positive and important correlation whereas foot width, leg length, total arm length have negative and significant correlations with performance of batsmen. Also the results showed that girth measurements i.e. Chest, Calf, thigh and shoulder have positive and noteworthy association whereas hip has negative and significant correlation with performance of batsmen.

**Keywords:** Anthropometry, Cricket, Physical Fitness.

### INTRODUCTION

Human being is unique creation of the nature. In contrast to the other entire animal, life of human is more highly developed. Nervous system has enabled him to develop sounds and symbols that make communication, reasoning, observations, experiences and ideas possible. During the progression sequence of the human being various aspects of personality domains development should be considered for regard to the all-round development of wholesome personality. The wholesome personality refers to physical

mental, intellectual, emotional and social well-being.

### **PHYSICAL FITNESS**

With the rising mindfulness in the cutthroat games and actual wellness from one side of the planet to the other, the undertaking of every country is to achieve the most significant level of execution. Much significance is set down today on Physical wellness. The proactive tasks are believed to be extremely critical for the inside and out improvement of people. To advance in some field he ought to be solid and in great shape. 'Our cutting edge mechanized and inactive ways of life quicker unsuitableness.

Actual wellness is of most extreme significance determinant of extraordinary execution in sports. Be that as it may, significance of different parts of wellness fluctuates from sports to sports. As per Harare (1979) for elevated degree of execution actual wellness is fundamental. Thusly, actual wellness is viewed as rudimentary measure for fostering an effective arrangement of choice methodology.

### **ANTHROPOMETRY**

"The component of construction and extent of the body is called anthropometry." It incorporates elucidating data like level, weight and surface region, while aspect of body extents portrays the connection somewhere in the range of level and weight and among lengths, widths and circuits of different body parts. It has been observed that top competitors in sports will generally have those extents that bio-precisely help the specific presentation required. It additionally involves characterizations, forecast of development examples and expectation of progress in engine exercises as well as evaluation of weight. Different variables which can surmise the engine execution are the body organization which is the extent of the fit weight and stored fats. Young men with the more elevated level of actual execution show a more prominent expansion in fit weight as well as change in body fabricate (E. F. Zeigler **1982**).

### **ORIGIN AND DEVELOPMENT OF "CRICKET"**

Cricket is essentially an international game; cricket is nobody's invention. It evolved, overcoming with reasoned thought and some luck the occasional crisis that endangered its very existence. It seems safe to assume that the sport owes its origin to an informal game played by shepherd boys on the downs of southeast England, where the meadows evenly cropped by grazing flock of sheep were ideally suited to the earliest form of bowling rolled along the ground. Two upright and stout sticks, a few inches apart with a bar across the top, had for centuries served as a gate to the pens, and this gate or wicket became a natural target for the bowler. The ball was probably made of matted wool bound by hide, and while the bat may conceivably have been the shepherd's crook, it was soon replaced by a piece of

wood curved at the end like a hockey stick. Some surviving pictorial and written evidences reveal clues.

The principal recorded cricket match was played in Bombay five years after the Calcutta Cricket club appeared. In Calcutta in 1804, the 'old Elonians' met the 'Noble men of Calcutta; which was featured by hundred years by Robert Visitant Playing for the old Estonians the first 100 years to bescored in Quite a while.

However Indian Cricket took first roots in Calcutta, the game was bound solely to Englishmen. The neighborhood individuals just showed inactive interest until the game was presented in certain schools by the English instructors who put together clubs and matches for their understudies. The primary Indian cricket club in Calcutta was the Presidency school cricket club, which was begun by an Indian Professor in 1878.

### **OBJECTIVES OF THE STUDY**

The motive of the study was formulated as under:

To establish the relevance between anthropometric variables and batting in cricket.

### **HYPOTHESES**

1. There may be a significant relationship between batting and anthropometric variables.

### **METHODOLOGY**

#### **SAMPLING**

The subjects selected for the present study were those who have played cricket game as batsmen in inter-college tournaments. For the present study 200 batsmen were selected. The age of the subjects ranged from 18-25 years. The sampling was done on the basis of purposive sampling as all the subjects of the study were batsmen of their respective cricket teams in the Inter-collegiate competitions. The data was collected by the investigator from M.D.U Rohtak cricket inter- collegiate tournament.

#### **SELECTION OF VARIABLES**

Selection of variables was done in consultation with the experts of the field, reviewing the literature and bearing in mind the viability especially from the point of view of accessibility of equipment's and time factor, the following anthropometric variables and physical fitness variables which seemed to be related to batting in cricket were selected for the study and to judge the batting performance of a batsmen a self-made judge's rating scale was made in which every batting aspect was covered.

## INDEPENDENT VARIABLES

1. Age 2. Body Weight and 3. Linear Measurements

### Height

- Leg length
- Thigh length
- Lower leg length
- Trunk length
- Total arm length
- Upper arm length
- Forearm length
- Hand length
- Hand breadth
- Foot length
- Foot breadth

### Body Circumferences (Girths)

- Chest
- Thigh
- Abdomen
- Calf
- Forearm
- Shoulder

## ANALYSIS AND INTERPRETATION

The relationship between anthropometric variables with batting performance is presented in following tables.

### Co-efficient of Correlations of Age, weight and linear anthropometric variables with batting performance

Sl No	Variable correlated with batting performance	Coefficient of correlation( r)
-------	----------------------------------------------	--------------------------------

1	age	.292**
2	weight	.19*
3	height	.297**
4	leg length	.328**
5	thigh length	-0.26
6	lower leg length	-0.032
7	foot length	0.167*
8	foot width	.153*
9	total arm length	.146*
10	upper arm length	-0.036
11	forearm length	.164*
12	hand length	.178*
13	hand width	-0.061
14	trunk length	-0.072

N=200                      \*\*Significant at  
0.01=.181df=198      \*significant at  
0.05=.138

Table reveals that age, weight, height, foot length, fore arm length, hand length, leg length, foot width, total arm length have positive correlation with the batting performance. Age, height, leg length, significant at 0.01 level and weight, foot length, foot width, total Arm length, forearm length, Hand-length significant at 0.05 level. Where as thigh length, lower leg length, upper armlength, Hand width and Trunk length measurements were correlated but not significant at any level.

**Coefficient of correlation between body girth measurements and batting performance**

S. No.	Variable correlated with batting performance	Coefficient of correlation ( r )
1	Chest	.236**
2	abdomen	-0.066
3	thigh	.196**
4	calf	.298**

5	hip	- 0.166*
6	forearm	-0.002
7	shoulder	.255**

N=200                      \*\*Significant at  
0.01=.181df=198      \*significant at  
0.05=.138

Table depicts that thigh, chest, calf, shoulder girths have positive correlation but hip girth have negative correlations with batting performance. Chest, thigh, calf and shoulder girths were significant at 0.01 level and hip girth significant at 0.05 level. Whereas abdomen and forearm girths were correlated but not significant at any level.

### **DISCUSSION OF RESULTS**

From the above it was clear that Age, height, leg length has positive significant correlation at 0.01 level. Whereas weight, foot length, foot width, total Arm length, forearm length and hand length have positive and major correlation at 0.05 level with batting performance. It means that these variables contribute towards batting performance. Batting depends on proper grip, stance, back lift, proper footwork, ball sense and such other factors. Leg length helps to reach nearer to the ball. Optimum arm length, fore arm length, hand length helps in proper leverage at the time of impact. Foot length and foot breadth provides a stable base from which a batsmen can play the ball properly. Body weight which is positively and significantly correlated facilitates the generation of force required for batting performance. Age is also significantly correlated to batting performance which means that with increase in age, batting performance improves. Hence these significantly correlated variables contribute towards batting performance.

Also result indicates that chest, thigh, calf and shoulder girths have positive and significant correlation at 0.01 level where as hip girth have negative and significant correlation at 0.05 level with performance of batsmen. Girths improve strength, which generate optimum amount of force for in various sorts in batting. So, above mentioned significant correlated girth contributes towards batting.

### **WORDS CITED**

Barrett, H. "Health Education Guide: A design for teaching." Philadelphia: Lea and Febiger, (1974).

Bhandari D.R. and SETHI R.R. "Studies in Plato and Aristotle" New Delhi S.chand Co. Ltd.(1984).

Bhola G. "Prediction of playing abilities of North India Junior basketball Players in relation to their motor fitness and selected kin anthropometric measurements." Unpublished Ph.D. Thesis, 2004, K.U.K.

Brock, J.D. Cox. W.A and Penhock, E.W. "Motor Fitness" Research Quarterly, 1941, P. 403-415.

Chauhan, M. S. "Correlation between selected Anthropometric variables and middle distance running performance." Journal of sports and sports sciences. July 2003, Vol. 26, No. 3.

Chauhan, M.S. "Prediction of Performance of University throwers in relation to their Anthropometric measurement". Journal of sports and sports science". July 2004, vol. 27, No. 3. P.26-36.

Chauhan, M.S. "Prediction of spiriting ability of secondary school boys of Haryana in relation to their Anthropometric measurements." Journal of sports and sports science, vol. 26. No. 1, January 2003, 5-12.

Chauhan, M.S. (2005) Assessment of explosive leg strength of college volleyball players as related to their anthropometric variables. penalty corner.

Chauhan, M. S. "Correlation between selected Anthropometric variables and middle distance running performance." Journal of sports and sports sciences. (July 2003), Vol. 26, No. 3.

Chauhan, M.S. "Prediction of Performance of University throwers in relation to their Anthropometric measurement". Journal of sports and sports science". (July 2004), vol.27, No. 3. P.26-36.

Chauhan, M.S. "Prediction of spiriting ability of secondary school boys of Haryana in relation to their Anthropometric measurements." Journal of sports and sports science, vol. 26. No. 1, (January 2003), 5-12.

CLARKE, H.H. "Relationship of strength and Anthropometric measures to Physical performance involving trunk and legs." Research Quarterly 28 (1957), 223.

Cureton I.K. "Physical fitness appraisal and guidance" St. Louis C.V. Mosby Co.(1947)

DAVID B. Pynel, Grant M. Durhiel, Philo U. Saunder I, Carl A, Petersen I and Marc R. Protus Anthropometric and Strength Correlates of Fast bowling speed in junior and Senior Cricketer, TheJournal of strength and conditioning research volume 20, Issue 3 (August 2006) pp. 620-626.

ESPENSCHADE "Motor performance in adolescence monograph of the society for research in child development" (Serial No. 24) Research Quarterly 31: 351. 1940.

FERENC THASY, LEE CHEE PHENG "An anthropometric and Physiological characteristics of normal, fat and obese children in Primary school of Gyor". Research Bi-annual for movement. Vol. 19, No. 2 April 2003 P. 16-29.

GOPINATHAN, P. and HELINA, G. "Correlation of Selected Anthropometric and Physical Fitness Variables to Handball Performance" Journal of Sports and Sports Sciences, NSNIS, Patiala, (2009); Vol.32(1)

H. S. Sodhi and Sidhu "Physique and selection of sportsman", P. 47-52. (1984).

HOODA, B.S. Singh, S. and Nagarkoti, N.S. "A Study of Selected Basketball Skills in Relation to Stature and Physical Fitness of Indian Junior Basketball Male Players." Journal of Sports and Sports Sciences, NSNIS., Patiala, (2008); Vol.31(1).