International Journal of Applied Research

Dr. Satish Kanaujia
Assistant Professor,
Department of Physical
Education, IIT BHU
Gymkhana, Varanasi, Uttar
Pradesh, India

Relationship of inter university cricket All Rounder players performance and anthropometric measurement

Dr. Satish Kanaujia

Abstract
Objective: The objective of the study was to find out the relationship of Inter university cricket all-rounder players performance and anthropometric measurement.
Methods: For the purpose of the study 120 male Cricket players who participated in Inter-University Cricket Championship, were selected as the subjects for the study. Age of the subjects was ranging from 18 to 25 years. Selected anthropometric characteristics namely Standing Height, Body Weight, Arm Length, Fore Arm Length, Upper Arm Length, Upper Arm Girth, Hand Length, Leg Length, Thigh Length, Lower Leg Length, Thigh Girth, Calf Girth were selected. To find out the relationship of Inter university cricket all-rounder players performance and anthropometric measurement, Product Moment Method of Correlation was used. And the level of significance was set at 0.05.
Results: The findings of the study revealed that r.05 (28) = 0.374 an insignificant relationship between All Rounder's Performance and all selected Anthropometric characteristics (Height, Weight, Arm Length, Fore Arm Length, Upper Arm length, Upper Arm Girth, Hand Length, Leg Length, Thigh Length, Lower leg Length, Thigh Girth and Calf Girth).
Conclusions: It was concluded that there an insignificant relationship between Inter university cricket all-rounder players performance and anthropometric measurement.

Keywords: Anthropometric measurement, all-rounders performance, cricket

Introduction
Today cricket is essentially team games, and has developed into a fast and highly skillful one. Cricket is one of the team sports which demands high level technical and tactical abilities along with desired level of Fitness (Anspaugh, *et al*., 1994) [1]. The development of the game of cricket is accompanied by evolving of several new training methods. Coaches and physical education teachers have been constantly employing different training methods to improve the performance of sport. Under the change and to determine the superiority of one method over the other. Due to advancement of scientific methods of training, techniques and tactics every player requires certain specific physical physiological and psychological qualities to achieve higher standard in their respective game. Anthropometric measurement consists of objective measurements of structure and functions of the body. The measurement of the structure includes items such as weight, total height and width, the depth and the circumferences of the chest etc. The measurements of functions includes such items as pulse rate arterial and venous, blood pressure, muscles strength, basal metabolic rate, estimate from cardio-vascular posture and breathing capacity (Sundarajun, 1972) [7]. Measurement of the body size include such descriptive information as height, weight and surface area, while measures of body proportion describe the relationship between height and weight among length, width and circumferences of various body segments. It has been found that top athletes in some sports tend to have those proportions that biomechanical aid, the particular performance required (Timonthy, *et al*., 1998) [9]. Anthropometry comprises techniques that readily contribute to a more in-depth understanding of body composition & nutritional status, allowing the quantification of observations & the observation of changes with time Today cricket is essentially team games, and has developed into a fast and highly skillful one.

Correspondence
Dr. Satish Kanaujia
Assistant Professor,
Department of Physical
Education, IIT BHU
Gymkhana, Varanasi, Uttar
Pradesh, India

Cricket is no longer thought to be on easy game, a great deal of fitness and mastery over the skill is necessary to play their game effectively. The game has unique characteristics in the sense that each player has to play in every position.

Objective: The objective of the study was to find out relationship between Inter university cricket all-rounder players performance and anthropometric measurement.

Methodology
Subjects
For the purpose of the study 120 male Cricket players who participated in Inter-University Cricket Championship, were selected as the subjects for the study. Age of the subjects was ranging from 18 to 25 years. 30 subjects were selected i.e. all rounder.

Variables
Selected Anthropometric Characteristics were as fallows -:
1. Standing Height
2. Body Weight
3. Arm Length
4. Fore Arm Length
5. Upper Arm Length
6. Upper Arm Girth
7. Hand Length
8. Leg Length
9. Thigh Length
10. Lower Leg Length
11. Thigh Girth
12. Calf Girth

Criterion measures for anthropometric characteristics:
All the Anthropometric Characteristics was measured by anthropometric kit.

Selection of Subjects
For the purpose of the study 120 male Cricket players who participated in Inter-University Cricket Championship organized by Ravenshah University, Cuttack, Orissa in the session 2010-11, were selected as the subjects for the study. Age of the subjects was ranging from 18 to 25 years. 30 subjects were selected of cricket all round player.

Reliability of data
The reliability of data was ensured by establishing the instrumental reliability and tester's competency (Gay, 2000).

Instrumental reliability
The instruments, which were used in the study, were obtained from standard firms, which cater to the needs of various research laboratories in India and abroad and their calibration have been accepted as accurate enough for the purpose of this study.

Design of study
The Correlational design was used for the study. A single group of units of analysis was obtained preferably randomly; each individual was measured on all selected variables at more or less the same time.

Administration of anthropometric characteristics tests
Standing Height
Subjects were made to stand erect without shoes against a marked scale on the wall. The heals, buttocks and back were touching the wall. The subjects were instructed to keep the heals together, head straight and hold a full breath in while measurement was taken. A stiff hard board was held horizontally on the head and touching the scale marked on the wall. The subjects were asked to step out and the reading indicated by the hard board was recorded. This was repeated twice to ensure accurate measurement and height was recorded to the nearest half a centimeter.

Body weight
The subjects were allowed to wear short vest and were made to stand at the centre of the weighing machine. The weight was recorded from the indicator of dial to a nearest half of kilogram.

Arm Length
Arm Length was measured with the flexible steel tape. The subjects were made to stand erect, arm completely hung, relaxed by the side of the body and arm length was taken from the acromion process, the point just above the shoulder joint to the tip of the middle finger. The arm length was recorded to the nearest half centimeter.

Hand Length
Subjects were instructed to place the hand on the table with palm facing upward and fingers close with wrist extension and elbow flexion in relaxed position. The hand length was taken with steel tape from the base of the thumb to the tip of the middle finger.

Leg Length
Subjects were instructed to stand erect and leg length was taken with the flexible steel tape from the greater trochanter to the floor. Leg length was recorded to the nearest half centimeter.

Thigh Length
Subjects were made to stand erect and thigh length was taken with the flexible steel tape vertically from the most protuberant part of patella bulge to the upper edge of the greater trochanter. Thigh length was recorded to the nearest half centimeter.

Thigh Girth
Subjects were made to stand erect and thigh was taken with the flexible steel tape placed round the thigh horizontally with its top edge just under the fold of buttocks. During measurement, subjects were asked to stand with their weight equally distributed on both the feet. Thigh Girth was recorded to the nearest half centimeter.

Calf Girth
Subjects were asked to place the foot on the stool with thigh parallel to the ground and calf girth was measured with flexible steel tape at the maximum circumference of the calf in a plane at right angle to its long axis. In this position, the calf muscle was remaining quite relaxed. Calf Girth was recorded to the nearest half centimeter (Sodhi, *et al*., 1984).

Statistical technique for analysis of data
To find out the correlation between Cricket Performance and selected Anthropometric Characteristics in relation to specific categories in team, Product Moment Method of Correlation was used.

Findings

Table 1: Correlation between Dependent Variable (All Rounder's Performance) and Independent Variables (Selected Anthropometric Characteristics)

Independent Variables	Correlation coefficient
Height	0.083575*
Weight	-0.17332*
Arm Length	0.205171*
Fore Arm Length	-0.0672*
Upper Arm length	0.320597*
Upper Arm Girth	-0.07424*
Hand Length	-0.04536*
Leg Length	0.280502*
Thigh Length	-0.07796*
Lower leg Length	0.325793*
Thigh Girth	-0.00132*
Calf Girth	-0.25927*

* Insignificant at .05 level
r.05 (28) = 0.374

Table – 1 clearly indicates that there exists an insignificant relationship between All Rounder's Performance and all selected Anthropometric characteristics (Height, Weight, Arm Length, Fore Arm Length, Upper Arm length, Upper Arm Girth, Hand Length, Leg Length, Thigh Length, Lower leg Length, Thigh Girth and Calf Girth) as the correlation coefficient values were found lower than the tabulated value at .05 level of significance.
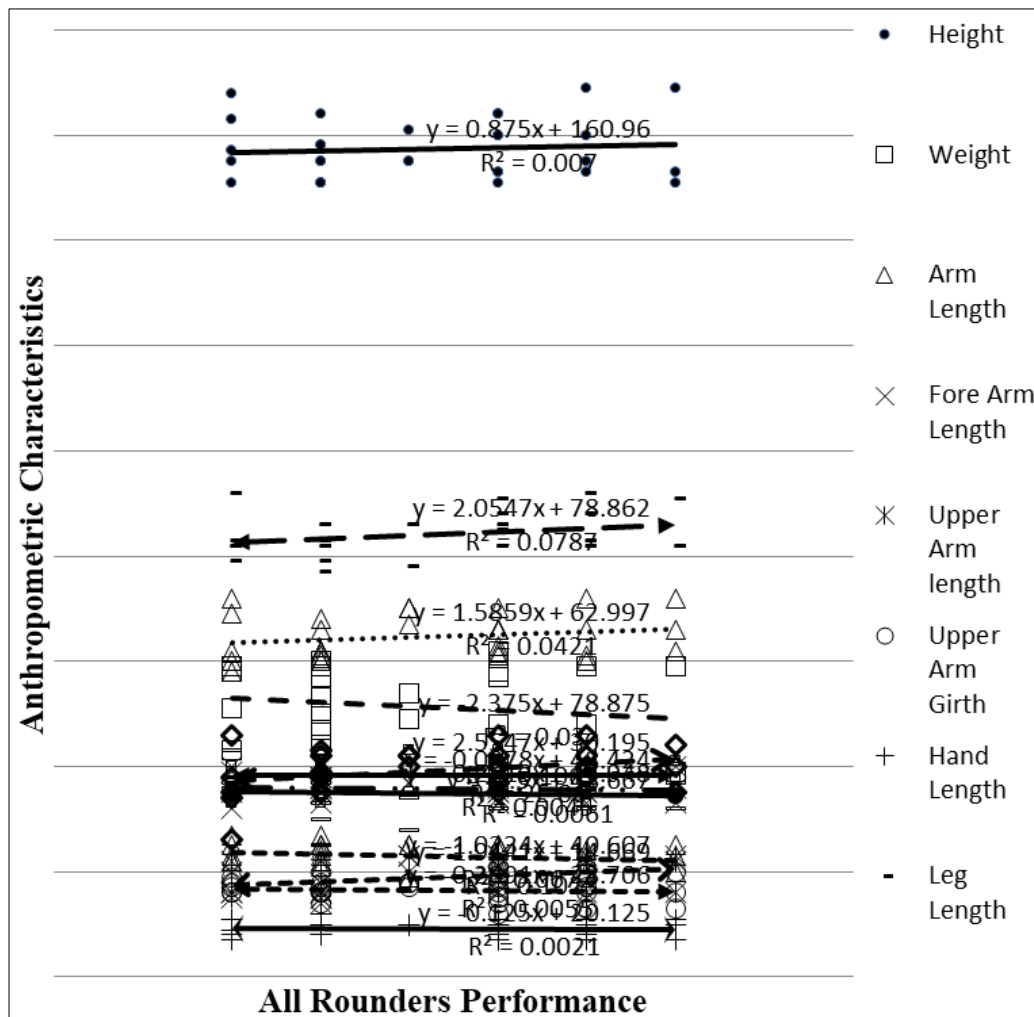

Fig 1: Correlation between Dependent Variable (All Rounders Performance) and Independent Variables (Selected Anthropometric Characteristics)

Conclusions

The findings of the study revealed that r.05 (28) = 0.374 an insignificant relationship between Inter university all-rounder players performance and all selected Anthropometric characteristics (Height, Weight, Arm Length, Fore Arm Length, Upper Arm Length, Upper Arm Girth, Hand Length, Leg Length, Lower Leg Length, Thigh Girth, Calf Girth).

References

1. Anspaugh, David J, Hamrick MH, Rasato FD. Wellness: concepts and applications. Mosby: Von Hoffmann Press, Inc 1994.
2. Di CA, Baldari C, Battaglia C, Guidetti L, Piazza M. Anthropometric characteristics evolution in elite rhythmic gymnasts. Ital Journal of Anat Embryol 2008;113(1):29-35.
3. Douda HT, Toubekis AG, Avloniti AA, Tokmakidis SP. Physiological and anthropometric determinants of rhythmic gymnastics performance. International Journal of Sports Physiology and Performance 2008;3(1):41-54.
4. Glazier PS, Paradisis GP, Cooper SM. Anthropometric and kinematic influences on release speed in men's fast-medium bowling. Journal of Sports Sciences 2000;12:1013.
5. Gabbett T, Kelly J, Ralph S, Driscoll D. Physiological and anthropometric characteristics of junior elite and sub-elite rugby league players, with special reference to starters and non-starters. Journal of science and medicine in sports 2009;12(1):215-222.
6. Gabbett TJ. Physiological and anthropometric characteristics of amateur rugby league players. British Journal of Sports Medicine 2000;34(4):303-307.
7. Sundarajun GS. Human growth and development. Madras: Roshan Publications 1972.
8. Strudwick A, Reilly T, Dora D. Anthropometric and fitness profiles of elite players in two football codes. Journal of Sports Medicine and Physical Fitness 2002;42(2):239-242.
9. Timonthy GL, Alex FR, Mortorrel R. Anthropometric standardization reference manual. Champaign, IL: Human Kinetics Books 1998.