RELATIONSHIP OF SPEED AND ANTHROPOMETRIC CHARACTERISTICS OF UNIVERSITY PLAYERS

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ABSTRACT

The purpose of the study was to find out the relationship of speed and anthropometric characteristics. The subjects for the present study were selected from the B.H.U .The total number of subjects for the present study were 20 male batsman who participated in inter university cricket tournament. The data was collected with the help of taken during the morning sessions of B.H.U university cricket camp 2013-14 was introduced for the collection of data. The level of significance chosen was 0.05. There was insignificant relation male inter university batsman in cricket have anthropometry characteristics and have insignificant relationship with, Speed.

KEY WORDS*: Speed, anthropometry, characteristics, cricket, batsman*

INTRODUCTION

At present competitions are highly competitive and challenging. Human beings by nature are competitive and ambitious for their excellence. Thus this can only be possible and achieved through scientific, systematic and planned sports training as well as channelling them into appropriate games and sports by finding out their potentialities. Physical fitness components and anthropometric characteristic of an athlete plays a vital role in channelling them into their specialized fields. These elements help out to find the potentials of the players as well as help in exploring their hidden reserves.

Anthropometric measurement consists of objective measurement of structure and functions of the body. The measurement of the structure includes items such as weight, total height and width, the dept, the circumference of the chest etc. The measurement of functions includes such as items as pulse rate arterial and venous, blood pressure, muscles strength, basal metabolic rate, estimation from cardio-vascular posture and breathing capacity etc. Physical fitness is the sum of five motor ability namely speed, strength, flexibility, endurance, and agility. These fitness components are the basic pre-requisites of human performance depend to greater extent on these

abilities. Physical fitness is the capacity to carry out our various reasonable well forms of physical activities in the present scenario the game of cricket gets totally commercialized. Today lot of money, different types of playing format, conditions, and tournaments are introduced in the game of cricket. Now cricketers play more no. of matches and face a high risk of injury. Achieving and maintain the high standards and fulfilling the spectator demand became difficult. So it is very much required that the players achieve high level of physical fitness and should be trained according to their anthropometric characteristics without being unduly tired.

METHODOLOGY

The subjects for the present study were selected from the B.H.U the total number of subjects for the present study were 20 male batsman who participated in inter university cricket tournament were selected as the subjects of the study.

CRITERIAN MEASURES
FOR ANTHROPOMETRIC
CHARACTERISTICS

All the anthropometric characteristics were measured by anthropometric kit.

Body Weight- Weighing Machine
Standing Height-Steel Tape
Arm Length-Steel Tape
Biacromial Diameter-Anthropometric Compass
Elbow Diameter- Calliper
Knee Diameter- Calliper
Upper Arm Circumference-Steel Tape
Calf Circumference-Steel Tape

FOR PHYSICAL FITNESS

Speed- It was measured by 50 yard dash.

ADMINISTRATION OF
ANTHROPOMETRIC
CHARACTERISTICS

BODY WEIGHT: The subjects were allowed to wear 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.

STANDING HEIGHT: Subjects were made to stand erect without shoes against a marked scale on the wall. The heels, buttock, and back are touching the wall. The subjects were instructed to keep the heel together, head straight, and hold a full breath in while measurement is 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 readings indicated by the hardboard were recorded. This was repeated twice to ensure accurate measurement and heights were recorded to the nearest half a cm.

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 were taken from the acromin process, the point just above the shoulder joint to the tip of the middle finger. The arm lengths were recorded to nearest half cm.

BIACROMIAL DIAMETER: The subjects were asked to stand erect with shoulder dropping a little forward. The investigator marked the acromial points with a skin marking pencil. While standing at the back of the subjects the tip of two crossbars of anthropometric compass made contract to acromial points. The distance between both the points of compass was measured by the steel tape.

ELBOW DIAMETER: Either in the sitting position or in the standing position the subjects were asked to bend their arms at an angle of 90 degree. The forearms and upper arms made right angle while upper arms was in horizontal directions and forearms in the vertical direction. The tester stands opposite the subject and applied the two points of calliper to the outer edge points at the lower end of the humorous. The calliper made an angle of 45 degree to the axis of upper arm and forearm.

KNEE DIAMETER: The subject was asked to sit down on a horizontal surface with their lower leg hanging and having clothing on knees. The arms of sliding calliper of the anthropometric compass applied on the outer points of the condoyle of femur.

UPPER ARM CIRCUMFERENCE:
Subjects were instructed to stand erect with arms hung loosely by the side of the body. Arms girth was taken with the help of flexible steel tape at the level of half way between the tip of the acromial process, a point just on the top of the shoulder and the elbow joint. These levels were marked on the skin first then the tape was placed around the arms so that it remains in light contact with the skin all around. The measurements were being recorded to the nearest half cm.

CALF CIRCUMFERENCE: Subjects were asked to place the foot on the stool with thigh parallel to the ground and calf girth will be 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 remained quite relaxed. Calf girth was recorded to the nearest half cm.

ADMINSTRATION OF PHYSICAL
VARIABLES

SPEED-- 50 yards dash
2 subjects ran at the same time both started from standing position. The commands "are you ready" and 'go' were given at the command go the starter dropped their arms so that the timer at the finish line started the timing. The subjects had to run as fast as possible across the line marked at the finish line.

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The statistical analysis of data has been presented in this chapter. The anthropometric characteristics as well as physical fitness present in relation to the University cricket players namely, the anthropometric characteristics a Body Weight, standing height, Total arm length, biacromial diameter, Elbow diameter, and the following physical fitness components Speed were collected on 20 male batsmen of inter university level Cricket players with age ranging from 19 to 28.

Table – 1: Correlation of speed and Selected Anthropometry characteristics of male batsmen university cricket players

Selected Psychological Variables	Correlation Coefficient	Sig.
Body Weight	-.048	.421
Standing Height	-.080	.368
Total Arm Length	.281	.115
Bi acromial Diameter	.025	.458
Elbow Diameter	.160	.250
Knee Diameter	-.041	.431
Upper Arm Circumference	-.130	.292
Calf Circumference	-262	.132

$**p < .01$ & $* p < .05$

Table -1 revealed that the data was found between Speed and Body Weight (r = -.048, p>.05) Speed and Standing height (r = -.080, p>.05) Speed and Total arm length(r = .281,p>.05), Speed and Biaromial Diameter(r = .025, p>.05), Speed and Elbow Diameter(r = .160, p> .05), Speed and Knee Diameter (r = -.041, p>.05), Speed and Upper arm circumference (r = -.130, p>.05), Speed and Calf circumference(r = -.262, p>.05), an insignificant relationship was found as the value of coefficient of correlation was insignificant at 0.05 level.

Graphical Representation of Correlation Coefficient and Sig. in relation to Speed with Anthropometrics characteristics of Inter University cricket players
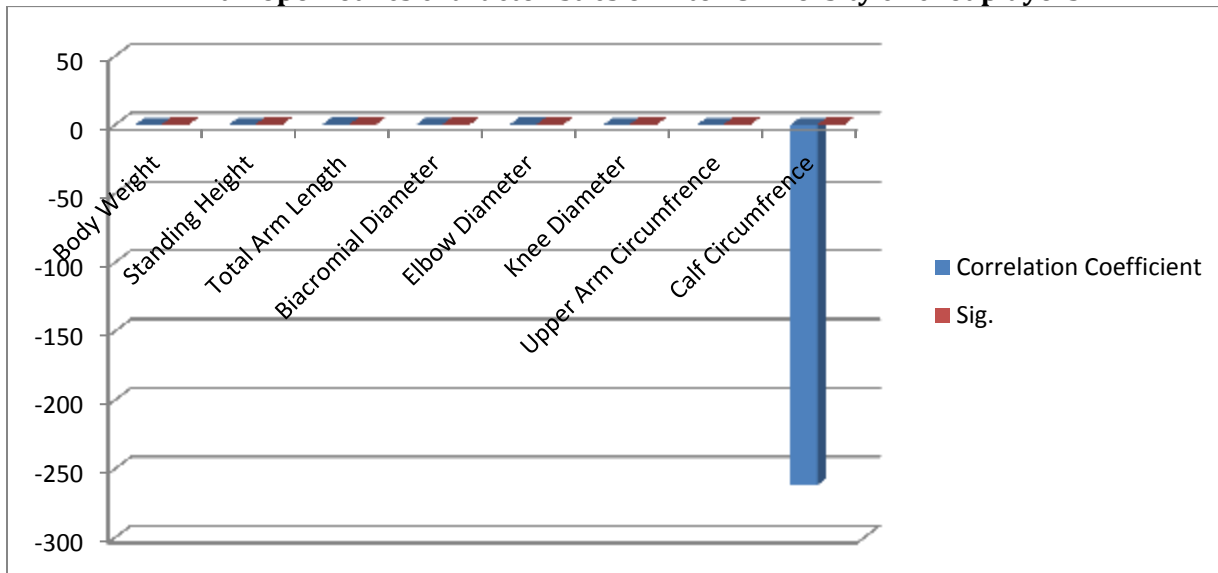
DISCUSSION OF FINDINGS

Anthropometric measurement is a means of studying the bodies shape, size and composition. Anthropometric can be a very vital factor in determine the performance of an athlete. Different Anthropometrical requirements are for different games. As far as cricket is concerned specific Anthropometrical characteristics are required for different department of the game. That is batting, bowling and fielding. Today cricket has become a very athletic activity, specifically by the introduction of one day and Twenty-Twenty cricket.

Batting is one of the important departments of the game rather the most important. A batsman requires perfect eye hand coordination, eye leg coordination and great reflexes. These coordinative abilities are also dependent on Anthropometrical measurement of the batsmen body to some extent. Batting not only requires coordination and reflexes but also a high level of endurance especially during the running between the wickets and here also comes the role of the anthropometry of the body.

The findings of the present study clearly indicate that there is a significant relationship of flexibility with the Anthropometric characteristics. This may be attributed to the fact that flexibility of anybody is highly dependent on anthropometric characteristics of a person and hence a significant relationship was clearly evident in cases of the batsmen in the cases of strength endurance, speed, agility. There was no significant relationship found in the batsmen. This may be due to the fact that the batsmen chosen for the present studies were of University level and might have gone through similar kind of training that is required for batsmen of this level.

SUMMARY

At present competitions are highly competitive and challenging. Human beings by nature are competitive and ambitious for their excellence. Thus this can only be possible and achieved through scientific, systematic and planned sports training as well as channelling them into appropriate games and sports by finding out their potentialities. Physical fitness components and anthropometric characteristic of an athlete plays a vital role in channelling them into their specialized fields. These elements help out to find the potentials of the players as well as help in exploring their hidden reserves. Anthropometric measurement consists of objective measurement of structure and functions of the body. The measurement of the structure includes items such as weight, total height and width, the dept, the circumference of the chest etc. The measurement of functions includes such as items as pulse rate arterial and venous, blood pressure, muscles strength, basal metabolic rate, estimation from cardio-vascular posture and breathing capacity etc. Physical fitness is the sum of five motor ability namely speed, strength, flexibility, endurance, and agility. These fitness components are the basic pre-requisites of human performance depend to greater extent on these abilities. Physical fitness is the capacity to carry out our various reasonable well forms of physical activities without being unduly tired.

In the present scenario the game of cricket gets totally commercialized. Today lot of money, different types of playing format, conditions, and tournaments are introduced in the game of cricket. Now cricketers play more no. of matches and face a high risk of injury. Achieving and maintain the high standards and fulfilling the spectator demand became difficult. So it is very much required that the players achieve high level of physical fitness and should be trained according to their anthropometric characteristics. Cricket is a bat and ball game played between two teams of 11 players on a field at the centre of which is a rectangular 22 yards long pitch. Each team takes it in turn to bat, attempting to score run, while the others team fields. Each turn is known as an innings. The bowler delivers the ball to the batsman who attempts to hit the ball with his bat far enough for him to run to the other end of the pitch and score a run. Each batsman continues batting until he is out. The batting team continues batting until ten batsmen are out, at which point the teams switch roles and the fielding team comes into bat. Batsmen are out, or a specified number of over's of six balls have been bowled, at which point the teams switch roles and the fielding team comes in to bat. In professional cricket the length of a game ranges from 20over's per side to Test cricket played over five days. The Laws of Cricket are maintained by the International Cricket Council (ICC) and the Marylebone Cricket Club (MCC) with additional Standard Playing Conditions for Test matches and One Day Internationals. Cricket was first played in southern England in or before the 16th century. By the end of the 18th century, it had developed to be the national sport of England. The expansion of the British Empire led to cricket being played overseas and by the mid-19th century the first international match was held. ICC, the game's governing body, has 10 full members.[5]The game is most popular in Australasia, England, the Indian subcontinent, the West Indies and Southern Africa

Physical fitness are the most important contribution factors for the better performance in all sport and game so is in cricket the game of cricket require considerable amount of physical fitness and mastery of skill. A cricket player ought to process specific speed strength power agility endurance in abundance so as to term and master the technique of the game. To find out relationship between selected physical fitness and anthropometric characteristics of university cricket players 20 male Inter university cricket players with their age ranging from 19 to 28 years were selected from Varanasi and nearby areas.

The study was taken on the basic of available literature on anthropometric characteristic, physical and their test finding of the related research studies kipping in the mind about specific purpose of the study of cricket players and Body weight, Standing height, Total arm length, Biacromial diameter, Elbow diameter, Knee Diameter, Upper arm circumference, Calf circumference were selected in anthropometric

and physical characteristic. All the anthropometric characteristics were measured by anthropometric kit and physical characteristics were measured by different specific test. The Correlation 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. The data were collected at B.H.U University camp at B.H.U Varanasi and Regional Sports Stadium sigra at Varanasi. Necessary instructions were given to the subjects before administration of the test. For analyzing data gather descriptive statistic as well as correlation was used for achieving the objectives of the study. The level of significance was set at 5%.

Revealed that the data was found between Speed and Body Weight ($r = -.048$, $p > .05$) Speed and Standing height ($r = -.080$, $p > .05$) Speed and Total arm length($r = .281$, $p > .05$), Speed and Biaromial Diameter($r = .025$, $p > .05$), Speed and Elbow Diameter($r = .160$, $p > .05$), Speed and Knee Diameter ($r = -.041$, $p > .05$), Speed and Upper arm circumference ($r = -.130$, $p > .05$), Speed and Calf circumference($r = -.262$, $p > .05$), an insignificant relationship was found as the value of coefficient of correlation was insignificant at 0.05 level.

CONCLUSION
Based on the findings and within the limitation of the study, it is concluded that the male inter university batsman in cricket have good anthropometry characteristics and have insignificant relationship with Speed.

Recommendations:-
It is recommends that:
- ☆ A study may be conducted with the subjects belonging all over India.
- ☆ Similar study may be conducted with the application of more variables.
- ☆ A similar Study may be conducted to include other variables which can be found out by both intensive and extensive research study.
- ☆ Similar type of study may be repeated by selecting larger sample with larger geographical area.
- ☆ Study may also be conducted by selecting variables, which have been not covered in the present study.
- ☆ Biomechanical Research in needed to investigate how this anthropometric characteristic occurs so that appropriate interventions can be developed.
- ☆ Continued research is required to provide scientific evidence for batting workload guidelines.
- ☆ Further study is required to determine the reason why players who play cricket infrequently suffer more injuries.

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