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Relationship of selected anthropometric and physical variables with the performance of batting skill in cricket

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Abstract

The present study seeks to investigate the relationship of batting abilities with the selected anthropometric and physical variables among Cricketers. To achieve this purpose thirteen male [N=13] university level Cricket players were selected purposively as subjects. The present study mainly concerned with the anthropometric variables namely – Weight measurement-body weight; Length measurements – height, arm length, leg length; Skinfold measurement – biceps, triceps. Physical variables namely – speed, agility, flexibility, muscular endurance and maximum strength. The playing ability which was taken as the performance factor was subjectively assessed by three qualified Cricket coaches. The inter-relationship among the selected anthropometric and physical variables with batting skill ability were computed by using Pearson product-moment correlation coefficients. Based on the analysis the study showed that all the selected physical variables did not show any significant relationship with the batting performance of cover drive in cricket and all the selected anthropometric variables also did not show any significant relationship with the batting performance of cover drive in cricket.

Keywords: cricket, physical fitness, anthropometric, batting skill

Introduction

From recent years, attention has been focused on the identification of various anthropometry and physical variables that distinguish between elite athletes from different sports. The results of these researches suggest that each sport is characterized by athletes with particular physical and physical attributes favouring performance in their given sport.

There are numerous factors which are responsible for the performance of a sportsman. With the innumerable variety of human physique, it has become a generalized consideration that some sport events are more suitable to individuals with specific physique than others. It has been well established that specific physical fitness indicates whether the player would be suitable for the competition at the highest level in a specific sport.

Physical fitness leads to better athletic performance and persistent training will usually develop physical fitness. Detailed analyses of the anatomic and physiological characteristics of famous athletes show that it is possible to make fairly reliable predictions of athletic performance. The physical preparation of team sport, athletes should reflect the degree to which each component of fitness is relied upon in competition.

Cricket is popularised and started since the british period. Cricket is a bat-and-ball game played between two teams of eleven players each on a cricket field, at the centre of which is a rectangular 22-yard-long pitch with a target called the wicket (a set of three wooden stumps topped by two bails) at each end. Each phase of play is called an innings during which one team bats, attempting to score as many runs as possible, whilst their opponents field. Depending on the type of match, the teams have one or two innings apiece and, when the first innings ends, the teams swap roles for the next innings. Except in matches which result in a draw, the winning team is the one that scores the most runs, including any extras gained. The purpose of the study was to analysis the relationship of selected anthropometric and physical performance variables to the technique in cover drive batting skill in cricket.

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Methodology

Selection of subjects: The goal of the study was to find inter-relationship factors in assessing batting talents among cricketers using specified anthropometric and physical variables. Thirteen male university level cricket players, ranging in age from 18 to 25 years, were purposefully picked as subjects from the LNIPE, NERC Guwahati centre. Cricket players who have played for the institute teams were selected as subjects. The participants had at least three years of cricket playing experience and free from acute injuries.

Procedure: For the purpose of the present study, the subjects (Batsman) were assembled and the instructions was delivered by the researcher regarding procedure and administration of test. To identified the physical fitness of the subjects, the selected parameters i.e. speed assessed by 50 meters dash (in seconds), muscular endurance assessed by modified situps (in counts), maximum strength assessed by 1 RM test (in kg), flexibility assessed by sit and reach test (in cm.) and agility assessed by 10x4 meters shuttle run (in seconds) test were selected as a variables for the present study. To identify the anthropometric measurement of the subjects, the selected parameters i.e. height was measured by stadiometer (in cm), weight was measured by electronic weighing machine (in kg), arm length was measured by anthropometric rod (in cm), leg length was measured by anthropometric rod (in cm), biceps and triceps was measured by skinfold calliper (in mm). Proper warming up was given to the subjects to procure them from the injury. Testers were assigned for each test station with required equipment. The total two trials were given to the subjects for the tests and best trial was considered as final performance for the present study. Motivation factor was considered while administer the test to create interest among the subject.

At the end of the administration of test, the proper explanation of the nature and the objective of the study was given to the cricketers who had a curiosity to know for their acknowledgement and invited to ask questions if they wished.

Statistical technique: Mean and Standard deviations were calculated for each of the selected variables. The inter-relationship among the selected anthropometric, physical variables and Cricket Batting ability, were computed by using Pearson' product moment correlation coefficients.

Results

Table 1: Relationship of selected physical variables with the batting performance

S No.	Variables	correlation	Sig.
1.	Speed	.181	.553
2.	Agility	.264	.384
3.	Flexibility	.327	.275
4.	Strength	-.187	.540
5.	Endurance	.503	.080

*. Correlation is significant at the 0.05 level (2-tailed).

The findings of table 5 also showed insignificant relationship of all the variables with the performance of cover drive in cricket. Because the value of coefficient correlation (r) in case of all the variables, the p value was more than 0.05 level of significance in case of all selected variables. So the null hypothesis is failed to reject in case of all selected physical variables.

Table 2: Relationship of anthropometric variables with the batting performance

S No.	Variables	Correlation	Sig.
1.	Body weight	-.088	.774
2.	Height	.230	.449
3.	Arm length	.335	.264
4.	Leg length	.273	.367
5.	Biceps	.001	.997
6.	Triceps	.040	.897

*. Correlation is significant at the 0.05 level (2-tailed).

The findings of table 6 also showed insignificant relationship of all the variables with the performance of cover drive in cricket. Because the value of coefficient correlation (r) in case of all the variables, the p value was more than 0.05 level of significance in case of all selected variables. So the null hypothesis is failed to reject in case of all selected anthropometrical variables

Discussion of Findings

The finding showed, the physical and anthropometric variables showed insignificant relationship in case of all the variables with batting performance of cricketer. The similar types of studies were undertaken by other research scholars also and mostly the relationships of selected physical variables and anthropometric variables with the dependent variables were showed insignificant in their area of specialization. The main reason of insignificant results in their sports was that the performance of any games and sports depending upon the multidimensional factors such as physical factors, physiological factors, psychological factors and so many other factors. Only due the slight association in the selected physical and anthropometric variables, the performance of the athlete cannot vary directly. However, the contradicted results were also been reported by some other others researchers in their studies where they showed the significant relationship of selected anthropometric with the batting performance (Pradhan *et al.*, 2018; Singh & Singh, 2017) [5, 6].

Small sample size, level of performance of cricketer and unavailability of sophisticated equipment may also be one of the reasons of indicating insignificant relationship of selected physical and anthropometric variables with performance in cricket.

Conclusions

Based on the analysis and within the limitation of present study following conclusion were drawn:

- 1) All the selected physical variables did not show any significant relationship with the batting performance of cover drive in cricket.
- 2) All the selected anthropometric variables also did not show any significant relationship with the batting performance of cover drive in cricket.

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