

## Difference between batsman and fast bowlers in relation to grip strength, back strength, leg strength and flexibility in cricket

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### Abstract

**Purpose:** Purpose of the study was to compare grip strength, back strength, leg strength and flexibility between fast bowlers and Batsman.

**Methods:** For the present study total 20 (10 fast bowlers and 10 batsman from G.G.V. Bilaspur, (C.G.), were selected as subjects on the basis of purposive sampling method.

**Statistical Technique:** To know the difference between fast bowlers and batsman in comparison to grip strength, back strength, leg strength and flexibility descriptive statistics and independent t-test was used for the analysis of data with the help of SPSS (16.0 version) software and the level of significance was set at 0.05.

**Findings and conclusions:** The grip strength mean score of batsman 34.81 and mean score of fast bowlers 39.80 t-value is 5.590. The back strength mean score of batsman 128.69 and mean score of fast bowlers 135.86 t-value is 4.548. The leg strength mean score of batsman 125.55 and mean score of fast bowlers 133.10 t-value is 3.505. Flexibility mean score of batsman 29.82 and mean score of fast bowlers 35.22 t-value is 5.153. Level of significance set at 0.05. On the basis of these result this is clear that there is significance difference between fast bowlers and batsman in relation to grip strength, back strength, leg strength and flexibility.

**Keywords:** fast bowlers, batsman, grip strength, back strength, leg strength and flexibility.

### 1. Introduction

Cricket was mostly British past time evolved by the British and later educated by the many of the countries of the British Common Wealth and Empire. The majority of cricket played now-a-days is still limited to these same countries. Cricket is the most well-liked and richest game. There is no precise evidence obtainable which shows when and by whom the cricket was started in England. It is basically an English game. Old works shows that it is as old as thirteenth century. The game cricket has always been loved by the entire country. Whenever a tournament starts, the cricket enthusiasts forget their daily work and are glued to the television set. John W. loy<sup>[8]</sup>

Cricket was introduced to North America by the English colonies in the 17th century most likely before it had even reached the north of England. In the 18th century after that it started in other parts of the world. It was introduced to the West Indies by colonists (Bowen, 1970)<sup>[5]</sup>, and to India by British East India Company mariners in the first half of the century. It commenced in Australia approximately as soon as the colonization began in 1788. After wards, New Zealand and South Africa followed in the early 19th century (Altham, 1962).<sup>[1]</sup>

Bating and bowling are the most important area of cricket. Fast bowling in cricket is the projection of the ball with the maximum velocity in the opposite side of the wicket at the distance of twenty two yards. Bating is a skill uses with the bat to hit, edge, snick or guide the ball after it has been bowled usually for the purpose of scoring runs during a match or game.

Grip strength is the force applied by the hand to pull on or suspend from objects and is a specific part of hand strength. Optimum-sized objects permit the hand to wrap around a cylindrical shape with a diameter from one to three inches. Stair rails are an example of where shape and diameter are critical for proper grip in case of a fall. Other grip strengths that have been studied are the hammer and other hand tools. In applications of grip strength, the wrist must be in a neutral position to avoid developing cumulative trauma disorders.

Leg strength is the maximum strength of leg to overcome the resistance or act against resistance. Leg strength is very important for the better performance of a sports person. Leg strength is the performance related components of athlete so leg strength play very important role for the highest performance of Cricket players. Back strength is the ability of the lower back muscles to act against resistance. It is very necessary for the fast bowlers to perform bowling with maximum speed. Batsman also required good back strength bating skills longer time.

The range of motion around a joint as determined by the elasticity of the muscles, tendons and ligaments associated with the joint under consideration. Flexibility means the range of movements around the skeletal joints of the body. The flexibility is not a general body character but it is specific to each body region. If a person has highly flexible shoulder joint, it does not necessarily mean that he/she will have good knee flexibility or hip flexibility. Even it is possible that one shoulder joint is more flexible than the other. (D.K. Kansal)<sup>[10]</sup>

## Objectives

Objectives of the present study is to find out difference between batsman and fast bowlers in relation to grip strength, back strength, leg strength and flexibility.

## Hypothesis

It was hypothesized that there will be no significant difference between fast bowlers and batsman in relation to their grip strength, back strength, leg strength and flexibility.

## Methodology

### Selection of subjects

For the present study total 20 (10 fast bowlers and 10 batsman) were selected as subjects from G.G.V. Bilaspur, (C.G.). All the subjects were selected during the team selection for East Zone inter University tournament on the basis of purposive sampling. Age ranging from 18-28 Years.

### Selection of Variables

Keeping the feasibility criterion in mind, the researcher selected the following variables for the present study:

- Grip strength
- Back strength
- Leg strength
- Flexibility

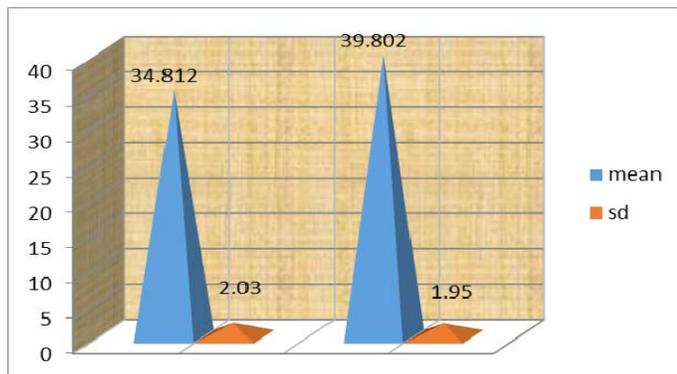
### Criterion Measures

- Grip strength was measured by hand grip dynamometer in kg.
- Leg and back strength was measured by leg and back strength dynamometer in kg.
- Flexibility was measured by the sit and reach scale in cm.

## Result and Findings

**Table 1:** Descriptive table of Grip strength between batsman and fast bowlers

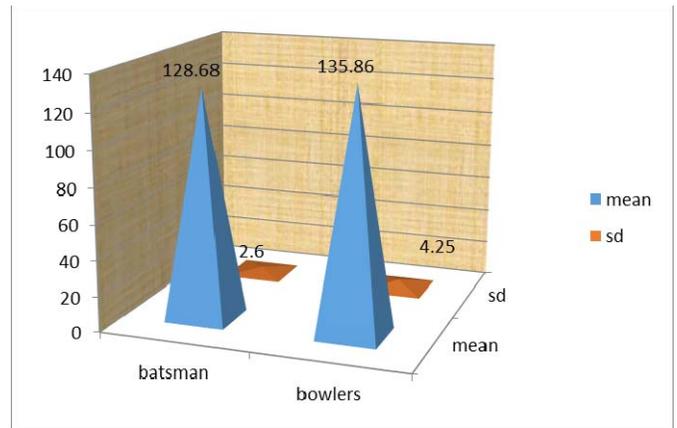
Group	Mean	SD	Std. Error Mean	p-value	t-value
Batsman	34.81	2.03	2.03	.000	5.590*
Fast bowlers	39.80	1.95	1.95		



**Fig 1:** Graphical representation of mean scores of grip strength of batsman and fast bowlers

**Table 2:** Descriptive table of Back strength between batsman and fast bowlers

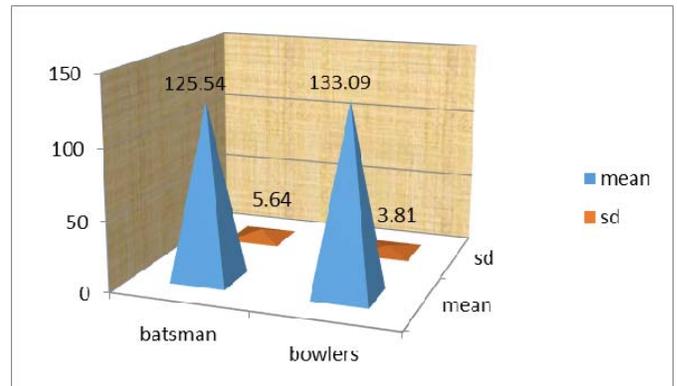
Group	Mean	SD	Std. Error Mean	p-value	t-value
Batsman	128.69	2.60	2.60	.000	4.548*
Fast bowlers	135.86	4.25	4.25		



**Fig 2:** Graphical representation of mean scores of back strength of batsman and fast bowlers

**Table 3:** Descriptive table of Leg strength between batsman and fast bowlers

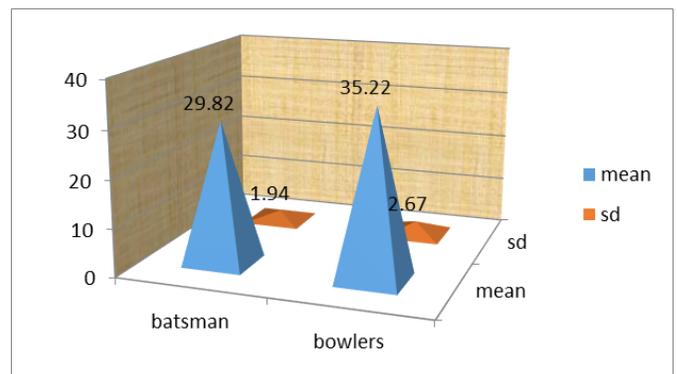
Group	Mean	SD	Std. Error Mean	p-value	t-value
Batsman	125.55	5.64	5.64	.003	3.505*
Fast bowlers	133.10	3.81	3.81		



**Fig 3:** Graphical representation of mean scores of leg strength of batsman and fast bowlers

**Table 4:** Descriptive table of comparison of flexibility between batsman and fast bowlers

Group	Mean	SD	Std. Error Mean	p-value	t-value
Batsman	29.82	1.94	1.94	.000	5.153*
Fast bowlers	35.22	2.67	2.67		



**Fig 4:** Graphical representation of mean scores of flexibility of batsman and fast bowlers

## Discussion of Findings

The grip strength mean score of batsman 34.81 and mean score of fast bowlers 39.80 t-value is 5.590. The back strength mean score of batsman 128.69 and mean score of fast bowlers 135.86 t-value is 4.548. The leg strength mean score of batsman 125.55 and mean score of fast bowlers 133.10 t-value is 3.505. Flexibility mean score of batsman 29.82 and mean score of fast bowlers 35.22 t-value is 5.153. Level of significance set at 0.05. On the basis of these result this is clear that there is significance difference between fast bowlers and batsman in relation to grip strength, back strength, leg strength and flexibility. Fast bowlers require enough amounts of grip strength, leg strength, back strength and flexibility to perform fast bowling with high speed and accuracy. So fast bowlers have greater grip strength, leg strength, back strength and flexibility comparison to batsman.

## Conclusions

Within the limitation of the present study and on the basis of findings the following conclusions have been drawn –

- Significant deference was observed between batsman and fast bowlers in comparison to grip strength. Fast bowlers have greater grip strength comparison to batsman.
- Significant deference was observed between batsman and fast bowlers in comparison to back strength. Fast bowlers have greater back strength comparison to batsman.
- Significant deference was observed between batsman and fast bowlers in comparison to leg strength. Fast bowlers have greater leg strength comparison to batsman.
- Significant deference was observed between batsman and fast bowlers in comparison to flexibility. Fast bowlers have greater flexibility comparison to batsman.

Initially it was hypothesized that there would be no significant difference between batsman and fast bowlers in comparison to grip strength, back strength, leg strength and flexibility in cricket, is not accepted at 0.05 level.

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