

## Assessment of Minimum Muscular Strength of Cricketers: an Evaluation

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### Abstract

The paper is highlighting the Evaluation of minimum muscular strength of a Cricket group. A minimum of muscular strength is very essential for the game of cricket. Cricket is a very skillful game. However, now a days the cricket has become advanced sport and strength is very essential to hit those huge sixes and bowl fiery bouncers to get the advantage over the opponent. So it is very essential to have a minimum of muscular strength for playing and surviving in the game of cricket. In my study there were total of 23 students in which 9 were girls and remaining 14 were boys. The main aim of this test is to assess whether the cricket specialization group students possess minimum muscular strength or not. After the test we found that 73.91% students were able to pass the minimum muscular strength test, and rest 26.08 % students failed to pass the minimum muscular strength test. Most of the students failing in the flexibility test (item number 6). For this reason of failure, it is important to promote research and to develop timely these specific fitness components to develop the cricketers of college level. I majorly endeavored to highlight the minimum muscular strength role in Sports performance of Cricketers in the present days.

**KEYWORDS:** muscular strength, skill, kraus-weber test.

### INTRODUCTION

Fitness plays a small though significant part in the success of a cricketer. There are several components of fitness that are important for success for all players. A player's balance and coordination is seen as one of the most important aspects of cricket fitness.

In addition to the high level of skill required to play Cricket, a successful player needs good balance and core strength, speed for running between the wickets and in the field, and fast bowlers particularly need very good speed and power.

Most Important Factors for Success in Order of Importance

1. Speed / Quickness, Balance & Coordination
2. Motivation & Self Confidence, Skill and Technique
3. Strength & Power, Reaction Time
4. Coping with Pressure Situations
5. Analytic & Tactical Ability
6. Flexibility, Agility
7. Body Size and Composition, Aerobic Endurance.

All these factors are very essential; strength is the most important fitness component for cricket, to maintain their stability during the execution of various complicated motor actions.

Cricket is a team sport played using a bat and ball on an oval-shaped outdoor arena. During the course of a cricket game you'll experience long rest intervals with short bursts of high intensity. As a result, specific components of fitness are essential for a high-level of cricket performance.

Strength is your ability to apply force using a single muscle or combination of muscle groups. In cricket your strength plays an important role in preventing chronic and acute injuries and in increasing your performance. Building your strength can be achieved with traditional weight lifting and exercises such as squats, lunges, presses and Olympic lifts.

Fitness is a very important aspect of cricket performance with physically prepared cricketers proven to perform better, more consistently and with fewer injuries. The physical attributes of strength, speed and endurance enables a cricketer to bat with power over long periods of time, bowl faster and with greater accuracy, and to field athletically. Every cricketer has a different role, position, action or technique and fitness training should recognize these differences and be programmed accordingly. A well-structured training program for a cricketer must consider the individuals training history, injury history, training age, positional requirements, technical execution and training objectives.

Core strength training differs from many traditional weight training routines by working both the lower back and abdominals in unison. The same is true for the upper and lower body. All athletic movements incorporate the core in some way. Very few muscle groups are isolated. Instead the whole body works as a unit and core strength training endeavors to replicate this.

Benefits of core strength training to the athlete

- Greater efficiency of movement
- Improved body control and balance
- Increased power output from both the core musculature and peripheral muscles such as the shoulders, arms and legs
- Reduced risk of injury (the core muscles act as shock absorbers for jumps and rebounds etc.)
- Improved balance and stability
- Improved athletic performance!

Strength is one of the most important physical fitness components in sports because all movements in sports are caused by muscle contraction. A level of strength and flexibility of particular key muscular groups is necessary for the function of the body.

Muscular strength refers to the amount of force of a muscle can produce with a single maximal effort. Muscle strength is measured during muscular contraction. The size of your muscle fibers and the ability of nerves to activate muscle fibers are related to muscle strength.

## **PURPOSE OF THE STUDY**

The purpose of the study was carried out to assess muscular fitness in cricket specialization group of HNB Garhwal University using Kraus-Weber Test.

## METHODOLOGY

Total 23 subjects were selected for the study. The study was conducted on 14 male and 9 female players of cricket specialization group of HNB Garhwal University. The subjects were selected by purposive sample selection. Their age ranged between 17-25 years.

### Selective Motor Fitness Variables

Kraus and Hirschland prepared a battery of 6 muscular strength tests after 18 years of clinical experience. These Kraus-Weber Tests can be easily administered anywhere to anybody (without much pre-procedure preparation) by anyone (with a little training) with no apparent cost. They do not require any special equipment and the subject do not have to undergo a long and painful or deal as in other more sophisticated tests like Electromyogram. Each of these tests is a pass or fail test with a 'fail' in any of the 6 test items constituting a whole test failure.

There were six variables to measure minimum muscular strength, which were used as a criterion measures for this study.

- Test 1 (A + P) is a test of the strength of Abdominal and Psoas muscles.

Strength of Abdominal and Psoas Muscles

- Test 2 (A - P) is a further test of Abdominal muscles without Psoas.

Strength of Abdominal Minus Psoas Muscles

- Test 3 (P) is a test for the strength of Psoas and Lower Abdominal muscles.

Strength of Psoas and Lower Abdominal Muscles

- Test 4 (UB) is for the strength of the Upper Back muscles.

Strength of Upper Back Muscles

- Test 5 (LB) is the test for the strength of the Lower Back muscles.

Strength of Lower Back Muscles

- Test 6 (B +H) tests the length of Back and Hamstring muscles and is a test of flexibility.

Floor Touch Test

The minimum muscular strength which may be belonging to playing ability of cricketers has been measured. The test was administered to measure minimum muscular strength of the selective players.

The aim and nature of test was properly explained to the students before conducting the test. Kraus Weber test were performed on the participating players after proper explanation and alleviating their anxiety. Tests were carried out in well lighted and ventilated room. The subjects were shown how to do each test item correctly and then

they were asked to perform the same. Observations were recorded after taking due care to reduce instrument and observer errors to a minimum. Only if a player could perform all the above test items successfully then only they were declared as having passed the Kraus-Weber Tests. Failure in even one test item was deemed as failure in the Kraus-Weber Tests. The scores of the subjects of all the tests were arranged systematically.

For the measure of central tendency Mean was calculated basically for the analysis of the data.

**ANALYSIS OF THE DATA**

**TABLE – I**

**SHOWING SUCCESS AND FAILURE IN INDIVIDUAL ITEMS OF KRAUS WEBER TESTS**

ITEM 1		ITEM 2		ITEM 3		ITEM 4		ITEM 5		ITEM 6	
(A+P)%		(A-P)%		(L A)%		(UB)%		(LB)%		(FTT)%	
S	F	S	F	S	F	S	F	S	F	S	F
95.66	4.34	95.66	4.34	100	0	100	0	95.66	4.34	82.61	17.39

The above table shows the success and failure rate of minimum muscular strength of Cricketers, which is considerable for the basic level players but non-considerable for the specialized group of cricketers of a University. According to the table which shows the Upper back Strength was 100% presented on players but other minimum muscular strength must be dominantly in core muscles like abdomen and lower back.

Overall failure percentage in the present study was observed to be 26.08% (subjects out of 23). Out of this 21.73% plaers were single test item failure, 4.34% players were double test item failure. Maximum failure percentage 17.39% were found in the flexibility test followed up by abdominal and psoas muscle, abdominal minus psoas muscle 4.34% and lower back muscle 4.34%.

**TABLE – II**

**OVERALL RESULT OF THE STUDY**

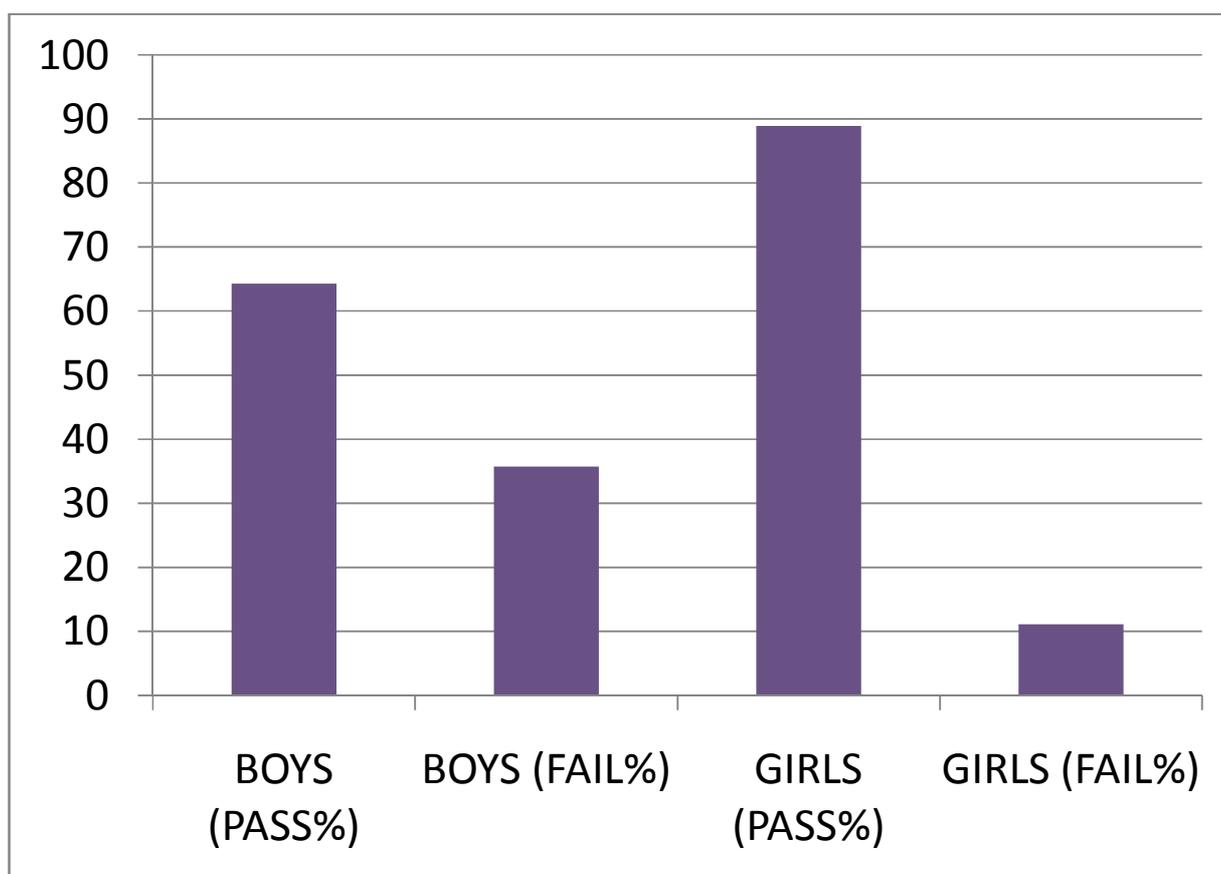


Table-II showed that the girls have more minimum muscular strength comparatively to boys. The success rate of the girls is greater than boys. However the aggregate success rate of the test was 73.91%. On that the girl's success rate was better than boy's cricketer. In this study we can see the maximum failure of boys in the flexibility test. We can see the failure in girls in abdominal strength.

## DISCUSSION AND FINDINGS

The result of the study clearly disclosed that minimum muscular strength of the cricketers group of HNB Garhwal University had non-considerable success rate. In the overall study of assessment of minimum muscular strength of cricket specialization players was observed that most of the players possessed minimum muscular strength. In this study we found that girls pass ratio is better than boys. The result contradicted with the earlier research, which have showed the significant result of these variables. The other fact might be that if the minimum muscular strength was scored during the first phase of the day, that time the players may be got more scores comparatively to the considered scores which are actually influencing the various factors i.e. Fatigue, Psychological pressure, etc. therefore it could be possible that somewhere the difference in scoring of all individual performance. The present study shows that the minimum muscular strength of the cricket players of the specialization group of a university was good level but the failure rate of around 23% is not a significant result because minimum strength should be there in cricketers of this level, there was some limitations which was beyond the control

of the researcher The factors like socio-economic condition, diet, rest, daily routine, life style, habits etc., the effect of weather condition during collection of data could influence the results and was accepted as limitation of the study. So it could be another reason for this insignificant result. The study may be useful for the physical education teachers and coaches to evaluate the knowledge of their students and to improve their training program according to the result of the study.

## **CONCLUSION**

On the basis of results and associated discussion it may be concluded that minimum muscular strength of cricketers is good level. However according to the earlier researches, literatures and the prior experiences the minimum muscular strength must be significant in Cricketers, It could be better result according to the level of the players. It may be because of many influencing factors which are elaborated in the previously discussion in findings. So lastly it is concluded that the minimum muscular strength of the cricket specialization group of the HNB Garhwal University, Srinagar Garhwal had non-considerable instead of the 73% success result.

## **REFERENCE**

<http://www.topendsports.com/sport/cricket/testing.htm>

<http://www.topendsports.com/sport/cricket/fitness-components.htm>

<http://www.livestrong.com/article/357561-how-to-hold-a-cricket-bat/>

<http://www.cricketspecificfitness.com/cricket-fitness>

<http://www.sport-fitness-advisor.com/core-strength-training.html>

<http://www.sport-fitness-advisor.com/core-strength-training.html>