



ISSN: 2456-0057
IJPNPE 2018; 3(2): 123-125
© 2018 IJPNPE
www.journalofsports.com
Received: 24-05-2018
Accepted: 26-06-2018

Megha Chaurasiya
Research Scholar, School of
Physical Education, Davv,
Indore, Madhya Pradesh, India

Dr. Deepak Mehta
Professor, School of Physical
Education Davv, Indore,
Madhya Pradesh, India

A comparative analysis on selected strength variables among female bowler and female batsman in cricket

Megha Chaurasiya and Dr. Deepak Mehta

Abstract

The aim of the study was to compare the selected strength variables among female bowler and female batsman in cricket. For the purpose of the study 20(N=20) participants (10 players were bowler and 10 players were batsman) of age 18-24 years were selected from well experienced with their game and they have played up to national level competitions. The researcher had selected 7 strength variables to compare among female bowler and batsman. The strength variables were as shoulder strength, arm strength, abdominal strength, left hand grip strength, right hand grip strength, back strength and leg strength. The analysis of data by analyzing descriptive (Mean and Standard deviation) and 't' test for independent samples for comparison of means. The level of significance was set at 0.05 levels. The results suggested that the female cricket bowler is having more shoulder strength compared to the female batsman. That may be because of the nature of their game position during game play. Bowler need to bowling to the batsman continuously and for that they practice very hard to improve their shoulder muscle which will ultimately help them to throw the ball fast. Whereas the batsman concentrates on batting and this may be the reason that there is significant differences between the two groups. The batsman group is having higher right grip strength. As all the batsman were right handed batsman it was very obvious that they will have significantly higher grip strength compared to the bowler. Because they practice more by holding the bat. On the other hand except back strength all other variables have shown no significant differences.

Keywords: female bowler, female batsman, cricket

Introduction

The nature of the game cricket is very versatile. The task of a batsman or a bowler or a fielder is not similar at all. All have different purposes and hence they need different specific development. For example the specific game position of a bowler is to ball towards the batsman whereas the game position of batsman is to hit the ball, and the fielders try to stop the ball before it reaches the boundary. Therefore the strength level of the different players is not at all similar. Strength is the ability of an individual to exert maximum force. The specific strength requirement of a bowler is different to a batsman. Therefore the researcher intends to compare selected strength variables among female bowler and female batsman in cricket.

Methods

For the purpose of the study 20 (N=20) female cricket players were purposively selected out of which 10 players were bowler and 10 players were batsman. Both the groups were well experienced with their game and they have played up to national level competitions.

The researcher had selected 7 strength variables to compare among female bowler and batsman. The strength variables were as follows:

1. Abdominal Strength
2. Shoulder Strength
3. Arm Strength
4. Right Hand Grip Strength
5. Left Hand Grip Strength
6. Leg Strength
7. Back Strength and

To measure the test scores of the selected strength variables the researcher had applied the

Correspondence
Megha Chaurasiya
Research Scholar, School of
Physical Education, Davv,
Indore, Madhya Pradesh, India

following tests:

Abdominal Strength

Bend knee sit ups: Bend knee sit ups test is used to measure the muscular strength and endurance of abdominal muscles. Participants flex their knees and lie down on their back while their hands were kept on their thighs. The participants were required to perform sit ups continuously and the maximum number of sit ups performance is recorded as the score for abdominal strength.

Shoulder Strength

Push ups test: In this test the participants hold a modified push ups position in which every movement are same as general push up but the knees are in contact with the mat with feet raised. The participants were required to execute push ups continuously as much as they can and the total number of push ups was recorded as the score of shoulder strength.

Arm Strength

Pull ups test: To test the arm strength of the female cricket players pull ups test was used in which a horizontal bar was adjusted at a height of three and half feet from the floor. Before start counting the pull ups the participants were required to hang holding the bar using their hands, in which their arms were fully extended and knees were bent without touching the floor. The participants were required to pull their body up until their chest touches the bar. The maximum

number of repetitions of pull ups is recorded as the arm strength of the participants.

Left and Right Hand Grip Strength

Grip Strength Test: Grip dynamometer was used to measure the left and right hand grip strength of the participants. Standard procedure was followed and out of three trials the best trial was recorded as the score for grip strength. Separate tests were conducted for both the hands.

Leg Strength

Leg Strength Test: Leg dynamometer was used to measure the leg strength of the players. Out of three chances the best result was recorded as the final score of leg strength.

Back Strength

Back Strength Test: Back dynamometer was used to measure the back strength of the participants. Standard procedure was followed and out of three trials the best trail was considered for the final score for back strength. To analyse the data, the researcher applied “Independent t test”. The level of significant was set at 0.05. SPSS version 20 was used to statistically analyse the data.

Results and Discussion

The following table indicates the descriptive statistics of the data.

Table 1: Descriptive Statistics of Data

	Group	N	Mean	Std. Deviation	Std. Error Mean
Abdominal Strength	Bowler	10	31.3000	2.11082	.66750
	Batsman	10	34.2000	4.44222	1.40475
Shoulder Strength	Bowler	10	38.0000	3.01846	.95452
	Batsman	10	32.8000	2.74064	.86667
Arm Strength	Bowler	10	6.7000	1.33749	.42295
	Batsman	10	5.8000	1.31656	.41633
Right Hand Grip Strength	Bowler	10	19.1200	1.17360	.37112
	Batsman	10	20.6900	1.96551	.62155
Left Hand Grip Strength	Bowler	10	13.6800	2.74866	.86920
	Batsman	10	15.5000	3.02765	.95743
Leg Strength	Bowler	10	41.9400	4.52970	1.43242
	Batsman	10	42.3400	4.33338	1.37034
Back Strength	Bowler	10	37.5500	4.17300	1.31962
	Batsman	10	44.3500	5.64235	1.78427

At first glance from the above data the general differences can be seen but the significant statistical difference may be

different from it. The results of the descriptive statistics can be further used for analysis purpose.

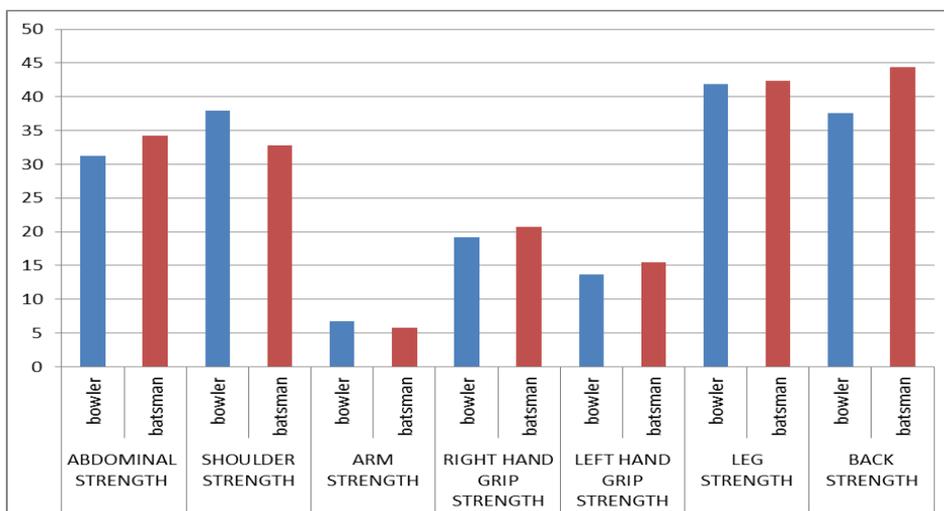


Fig 1: Mean differences of the variables between the two groups

The figure 1 describes the mean differences of the variables among the two groups. The visual differences can be seen in most of the variables among the two groups.

The following table describes the independent t test result which describes the differences between the two groups.

Table 2: Independent t test result

	t-test for Equality of Means			
	t	Sig. (2-tailed)(p value)	Mean Difference	Std. Error Difference
Abdominal Strength	1.865	0.079	-2.9	1.555
Shoulder Strength	4.033	0.001	5.2	1.289
Arm Strength	1.516	0.147	0.9	0.593
Right Hand Grip Strengt	2.169	0.044	-1.57	0.723
Left Hand Grip Strength	1.407	0.176	-1.82	1.293
Leg Strength	0.202	0.842	-0.4	1.982
Back Strength	3.064	0.007	-6.8	2.219

From the table 1 and 2 the following interpretation can be drawn:

- The mean abdominal strength of the bowler is lower than the batsman but the difference between the groups is not significant as the t value for bend knee sit ups is significant ($p > 0.05$)
- From table 1 it can be clearly seen that the mean shoulder strength of the bowler is higher than the batsman. On the other hand the result from the table 2 shows that the t value for the push ups is significant as the p value is less than the level of significant 0.05.
- The table 1 shows little difference between the two groups on the other hand the table 2 also shows no statistically significant difference between the two groups as the p value ($p = 0.147$) is greater than 0.05.
- In case of right grip strength the batsman groups shows significantly higher mean value compared to the bowler group.
- But there is no any significant difference between the groups for the variable left hand grip strength.
- For the variable leg strength also there is no significant difference is found. Though there was little difference shown in table 1, the table 2 shows no significant difference as the p value is greater than 0.05.
- It is found that batsman group is having significantly higher back strength compared to the bowler group.

Conclusion

The following conclusions can be drawn from the above discussion:

- The female cricket bowler is having more shoulder strength compared to the female batsman. That may be because of the nature of their game position during game play. Bowler need to bowling to the batsman continuously and for that they practice very hard to improve their shoulder muscle which will ultimately help them to throw the ball fast. Whereas the batsman concentrates on batting and this may be the reason that there is significant differences between the two groups.
- The batsman group is having higher right grip strength. As all the batsman were right handed batsman it was very obvious that they will have significantly higher grip strength compared to the bowler. Because they practice more by holding the bat.
- On the other hand except back strength all other variables have shown no significant differences.

References

1. Baechle TR, Earle RW, Wathen D. 'Resistance training', in *Essentials of Strength Training and Conditioning* (2nd

- edn), T.R. Baechle and R.W. Earle (eds), Champaign, IL: Human Kinetics, 2000, 395-425.
2. Bahr R, Krosshaug T. 'Understanding Injury Mechanisms: A Key Component of Preventing Injuries in Sport', *British Journal of Sports Medicine*. 2005; 39:324-329.
3. Gogoi H, Rajpoot YS. Effect of six weeks training on selected linear kinematic variables for the development of smash ability among novice badminton players. *Indian Journal of Physical Education, Sports Medicine & Exercise Science*. 2016; 16(1, 2):22-25.
4. Gogoi H, Rajpoot YS. Kinematic comparison of overhead clear skill between beginner and advance level badminton player. *Indian Journal of Physical Education, Sports Medicine & Exercise Science*. 2017; 17(1, 2),62(i)-62(iv).
5. Knopf K. *Core Strength for 50+*. United State: Ulysses Press, 2012.
6. McGill S. Core training: Evidence translating to better performance and injury prevention. *Strength and conditioning journal*. 2010; 32(3):33-46.
7. Mihata LC, Beutler AI, Boden BP. 'Comparing the Incidence of Anterior Cruciate Ligament Injury in Collegiate Lacrosse, Soccer and Basketball Players: Implications for Anterior Cruciate Ligament Mechanism and Prevention', *American Journal of Sports Medicine*. 2006; 34(6):899-904.
8. Pankajbhai GA, Shantilal GP. Effect of core stability training on speed of Running in female cricket players (Bachelor's thesis). School of physiotherapy, Rajkot, 2015.
9. Paterson J. *Teaching Pilates for Postural Faults, Illness & Injury A Practical Guide*. China: Elsevier, 2009.