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Comparison between female bowlers and batsmen on physical fitness variable agility: A cross sectional study

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Abstract
Primary objective: To compare physical agility between female batsmen and bowlers cricket players.
Secondary objective: To help sports physiotherapist, fitness trainers and players themselves to appropriately train and improve performance by introducing modification in practice sessions.
Methods: 50 female players who had played cricket for a minimum of six months between the ages of 18-24 years were included in the study. Twenty-five players were batsmen and 25layers were bowlers. All participants provided informed consent and completed self-administrated questionnaires. The IAT was carried out for all the 50 players. Independent t-test was used to compare female batsmen and bowler players.
Results: Significant difference was found between batswomen and bowlers for Illinois Agility Test with p =0.000 ($p < 0.05$).
Conclusion: This study concluded that agility was better in bowler player's then batsmen players in female cricketers.

Keywords: women, agility, cricket player

Introduction
Cricket is one of the oldest organized sport. International cricket is undergoing a phase of rapid changes as it competes to attract more global audience. As a result, modern international cricketers are now exposed to greater physical demands [2]. The performance in most of sports is thought to be determined by such factors as: physical fitness.

- Physique.
- body composition.
- psychological traits.
- technique [3].

"Physical fitness" is general term used to describe the ability to perform physical work. Performing physical work requires cardio-respiratory functioning, muscular strength and endurance, and musculoskeletal flexibility that pertain more to athletic ability [4]. The physical fitness was the sum of five motor abilities namely, speed, strength, flexibility, endurance and coordinative abilities and their complex form like strength, endurance, maximum strength, explosive strength, maximum speed and agility were the basic prerequisites of human motor action. Therefore, the sports performances depend to a greater extent on these abilities. The improvement and maintenance of specific physical fitness or condition was the main aim of sports training. Each sport requires different types of fitness training requiring for different sports. Some sports like running requires a very high level of endurance and low level of other motor abilities. Sports like shooting and archery did not require high level of physical fitness [5].

Agility
Agility is the ability to change the direction of the body rapidly and accurately.

One of the most important factors influencing movement is agility. This factor is revealed by the ability of the body or parts of the body to change directions rapidly and accurately. It is connected with the motor qualities in a different way. Each simple motor action demands agility. The sportsperson requires it when action is to be combined or when movement has to be performed by changed and unaccustomed conditions. Certainly, agility plays an important role in sports specially cricket. It is required to a great extent in cricket involving efficient footwork and quick changes in body position [6]. Universal agility components (modified from Young *et al*., 2002) [7].

Need for Study
Agility is an important component of many team sports. The need of the study is to test the Illinois agility test in group of cricketers between female bowlers and batsman.

Aims and Objectives
To compare physical agility in female cricket players (batswomen and bowler).

Research question
Is there any difference between agility of female batsmen and bowler cricketer players?

Objectives
Primary objective
To compare physical agility between female batsmen and bowler cricket players

Secondary objective
To help sports physiotherapist, fitness trainer and players themselves to appropriately train and improve performance by introducing modification in practice sessions.

Hypothesis

Null Hypothesis (Ho)

There is no significant difference of agility test in group of female batsmen and bowler cricket players.

Alternative Hypothesis (H1)

There is significant difference of agility test in group of female bowler and batsman in cricketers.

Materials and Methods

Study Population

Cricketers on the basis of inclusion and exclusion criteria.

Source of Data

Lala bhai contractor stadium.

Study Design

Cross-sectional study.

Sample size

The sample size is 50. (approx.)

Sampling Method

Convenient sampling.

INCLUSION CRITERIA	EXCLUSION CRITERIA
• Age between 15 to 21 years.	individual with any,
• Female.	• Undergone any surgical procedure.
• Bowler and batsman.	• poor balance, function strength and flexibility, impaired ROM and muscle power.
• Cricketers with 1 year experience.	• pathology condition of spine, hip, knee and pelvis.
• Physical activity practice volume is approximately 16hour per week.	• Cardiovascular disease.

Fig 1

Materials

marking cones, stopwatch, timing gates (optional), flat non-slip surface. chowk powder. Pen and paper.

Procedure

- Tests were performed in cricket playground.
- Illnois agility Test
- Preliminary measurement and demographic data will be taken prior to the study which includes age, sex, practice hour duration. the procedure will include 1 players in one session. it will allow to players to do 5 minutes warm up. Illinois agility test:
- The Illinois agility test is used to determine the ability to decelerate, accelerate, turn in different direction, and run at different angle. This test was selected based upon established criteria data for males and females and because of their reported validity and reproductivity of the test.
- The length of the course is 10 meters and the width (distance between the start and finish point) is 5 meters. Four cones are used to mark the start, finish and two turning point. Another four cones are placed down the center an equal distance apart. Each cone in the center is spaced 3.3 meters apart. Subject should lie on their front (head to the star line) and heads by their shoulders. On the command "go" the stopwatch is started, and the athlete gets up as quickly as possible runs around the course in the direction indicated, without knocking the cones over, to the finish line, at which the timing is stopped. Scoring: time shown in the stopwatch was recorded in second. After completion of documentation of my data collected of a participant, other data were collected in the respective manner.

Fig 2

- **Outcome measures**

  The study mainly focused on the subject agility the test used to measure the outcomes are reliable and valid.

Data Analysis

All statistical analysis was performed using SPSS version 16. The independent t -test was used for comparing means between two groups. Result were considered to be significant at $p<0.05$ and confidential interval was set at 95%.

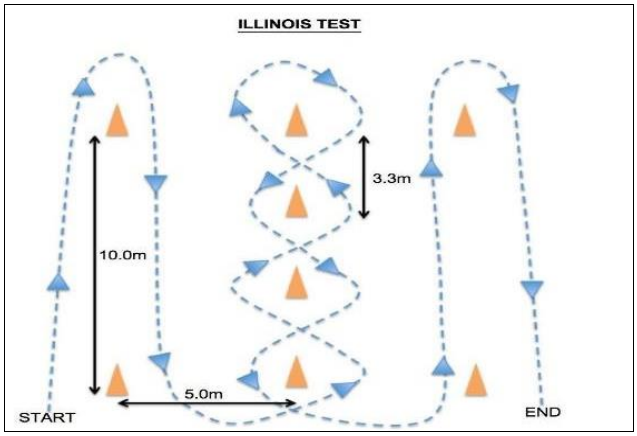

Fig 2

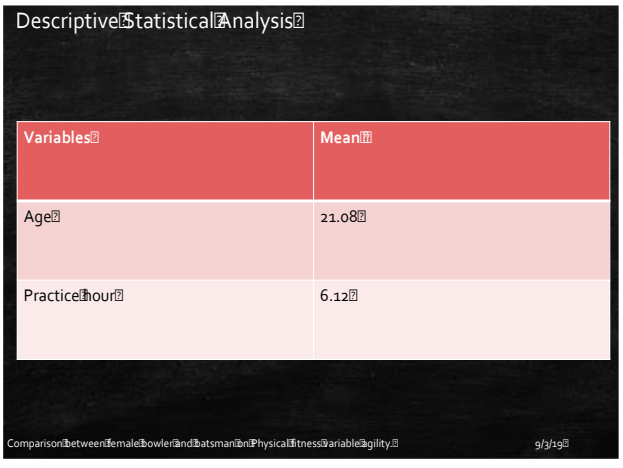

Fig 3

Result

There was significance difference found between batsmen and bowler players.it concluded that agility was better in bowler players according to graph.

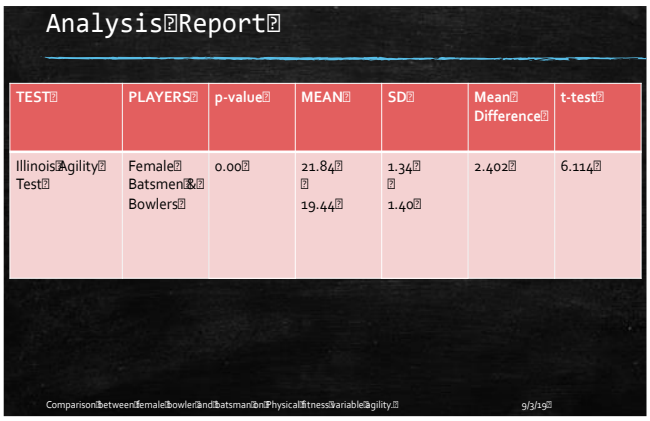

Fig 4

Discussion

The aim of the study is to compare agility between batsmen and bowler in female cricket players. The sample size was 50. Illinois agility was used to check the agility. and the significance is to help sports physiotherapist, coach, fitness trainers and players themselves to approximately train and improve performance by introducing modification in practice sessions the result of the study showed that, the COD IAGT seems to be a reliable and valid test, whose performance is significantly related to speed rather than to acceleration and leg power. so, in present study as Illinois agility test is more reliable and valid, it is easy to perform and less time consuming for any athlete therefore this test is used in this study. Boora, (2016) [6] conducted a cross sectional study on 40 subjects (20 batsmen & 20 bowlers) to compare their physical fitness variable agility & concluded that batsmen were found to be better than bowlers on this physical variable. but in present study it is concluded that agility is better in bowler then batsmen. The previous study was based on the male players in contrast to present study that includes female players. In Summary, we need more of such kind of study with randomized trials for better evidence-based perspective.

Clinical implication

To help sports physiotherapist, fitness trainer and players themselves to appropriately train and improve performance by introducing modification in practice sessions.

Limitations

- Sample size was small.
- The study was done on only female players.
- Only one component of physical fitness were selected, that is agility only.

Conclusion

There was a significant difference found in IAG between batsmen and bowler players. In IAG batsmen took more time then bowler players to complete the test. It showed that agility was better in bowler players.

Further scope

- Larger sample size can be taken.
- The study can include male players.
- Other components of physical fitness can be measure.
- Other test can be included to get better result.

References

1. Davies R. nature and incidence of fast bowling injuries at an elite,juniour level and associated risk fectors, 2007.
2. Noakes TD. physiological requirement of cricket, 2000.
3. Carolyn Kisner. Therapeutic Exercise Foundations And Techniques. s.l. : Jaypee Brothers Medical Publishers (P) LTD.
4. Carl J. Caspersen, Physical Activity, Exercise, and Physical Fitness: Definitions and Distinctions for Health-Related Research. s.n., 1985.
5. Comparison selected physical fitness components of badminton and basketball players. 1012, 3.
6. Boora R. Comparison of Batsman and bowler on physical fitness variable agility. International journal of physical education, Sports and health, 2016.
7. Young WB. is muscle power related to running speed with changes of direction? Journal of Sports Medicine and Physical Fitness. 2002; 43:282-288.
8. Brackenridge C. Who Rules Sport? Gender Divisions in the Power Structure of British Sports Organisations from 1960. Int Rev Sociol Sport. 1985; 20(1-2):95-107.
9. Beena Negi. Acomparative study of physiological variables of female cricket players at different level of participation. 1, meghalaya : s.n., 2012, 2012, 1.
10. Elliot B. Back injury and the fast bowler in cricket.
11. IGWEBUIKE: An american journal of arts and humanites.. 22488-9210, 2017, 3.
12. Greydanys, value of sports pre-participation examination in health care for adolecente, 2004.
13. Kumar M. comparative analysis on physical fitness variable among batsman and wicketkeepers in cricket. 10.26524/1536, tamilnadu : s.n., 2015, international jpurnal of physical education, fitness and sports, 2015, 4.
14. Bishops C. Monitoring changes in power, speed, agility and endurance in elite cricketers during the off-season. 10.1519/jsc.0000000000002077, national stength and conditioning association.1017.
15. Dr.sachin.Anthropometric characteristics contributing to success at different level. international journal of physical education, sports and health, 2017.
16. Dr. gopal chandra.cmparative study of speed of and agility between univercity level cricket and football player. international journal of physiology, nutrition and physical education, 2017, 386-388.
17. Ojeda, Quantifying performance on an outdoor agility drill using foot-mounted inertial measurement units, 2017.
18. Newton RU, Mechanical Determinants of Faster Change of Direction and Agility Performance in Female Basketball Athletes, 2015.
19. Born DP. The Speed Court: Reliability, Usefulness, and Validity of a New Method to Determine Change-of-Direction Speed, 2014.
20. Johson. The influence of agility training on physiological and cognitive performance, 2013.
21. Vescovi JD,Relationships between sprinting,agility, and jump ability in female athletes, 2008.
22. Wallmen NW. stretching technique of the quadriceps

muscle on agility performance in female collegiate athlete, 2008.