INVESTIGATION OF SELECTED MOTOR FITNESS COMPONENTS BETWEEN BATSMEN AND BOWLER IN CRICKET: AN EXPLORATORY STUDY

Ranjeet Singh Sandhu[i],
Barinderpal Singh
Department of Physical Education,
Guru Nanak Dev University, Amritsar, India

Abstract:

The aim of this assessment is to discover the significant differences of motor fitness components between batsmen and bowler. A group of thirty (N=30) male subjects aged between 18-28 years were chosen for this appraisal from Guru Nanak Dev university, Amritsar (Punjab), India. The purposive sampling technique was utilized to accomplish the objectives of the appraisal. Every one of the subjects, in the wake of having been educated about objective and protocol of the study, gave their agreement and volunteered to take an interest in this appraisal. They were further partitioned into two group of 15 each (i.e., N1=15; batsmen and N2=15; bowler). Student's t-test for independent data was utilized to evaluate the between- group differences. The level of p≤0.05 was considered significant. Investigation of data uncovered that there were insignificant differences of speed (p = 0.20), strength (p = 0.096) agility (p = 0.06) and Cardiovascular Endurance (p = 0.21) amongst Batsmen and Bowler, the calculated value of t for all the variables i.e., speed (t=1.30), strength (1.72), agility (1.94) and Cardiovascular Endurance (1.41 is smaller than the tabulated value of t (=2.048) for 28 degree of freedom. In this way, it might be presumed that the group difference between Batsmen and Bowler with respect to speed, strength, agility and endurance observed to be statistically insignificant. Whereas significant differences of static Balance (p = **0.019)** between Batsmen and Bowler, since the calculated value of t for static Balance (t=2.50) is higher than the tabulated value of t (=2.048) for 28 degree of freedom. In this manner it might be inferred that the group difference between Batsmen and Bowler in regards to

[i] Correspondence: email tuffsandhu@gmail.com

speed, strength, agility and Cardiovascular Endurance observed to be statistically insignificant. Whereas significant differences of static Balance found.

Keywords: batsmen, bowler, speed, strength, agility, endurance, static balance

1. Introduction

Cricket is a game in which fitness is generally considered as very important. The achievement in the 1990s and 2000s of the world beating Australian team has been credited to their demonstrable skill, and to some extent to the way they tended to their fitness. The other test playing countries have legitimately put more accentuation on fitness as of late and are receiving the rewards. With the introduction of one day Cricket and all the more as of late Twenty20, the amusement has experienced significant changes and the physical requirements made on a cricketer's body have additionally increased drastically. Contingent upon the version of the game being played and the role of the player in the team, the significance of fitness will shift: the fitness necessities of a fast bowler will be more prominent and furthermore not the same as that of an opening batsman, and one-day cricket will be more requesting than a test match. Notwithstanding the high level state of skill required to play Cricket, an effective player needs great balance and core strength, speed for running between the wickets and in the field, and fast bowlers especially require great speed and power. High-impact Fitness is an imperative segment of fitness for cricket, with the goal that players can decrease the impact of fatigue amid long period of play, and from day to day in multi-day matches. Fitter players will adapt to the warmth worry of playing throughout the day in the sun. The flexibility tests ought to be particular to the actions of cricket. Being flexible empowers more prominent scope of development in the execution of strokes, and may lessen harm in the long term. Strength ought to likewise be done to decide introductory levels and to screen strength changes in conjunction with training programs. Core stability and abdominal function capacity is vital in the controlling of development and execution of strokes. Running speed, acceleration, and agility are critical in cricket for moving between the wickets and in fielding. Overabundance muscle to fat quotients would influence the cricketer's capacity to move around the field, and furthermore increment fatigue amid training and game play. Balance and coordination is important for the controlled movements in cricket. "A sound mind in a sound body" is a decent implies that has stood the best test of time. There have been various reviews tending to demonstrates that mind and body are indistinguishable. Antiquated scholars of Greek, Aristotle, consolidated moral intellectual and physical

excellence. At Athens an uneducated body was a much a disfavor as an untrained mind.

A success of any sports and games can be accredited to many variables; however training is the standout amongst the most vital component. Diverse training methods and techniques have been ordinarily used to enhance physical fitness and related standard of performance of competitors. Motor Fitness alludes to the ability of a competitor to perform adequately at their specific game. The parts of motor fitness are: agility, balance, co-ordination, power which involves speed and strength lastly response time. Motor fitness is a term that portrays a competitor's capacity to perform viably amid games or other physical action. A competitor's motor fitness is a blend of five unique segments, each of which is fundamental for high level of performance. Motor fitness, or motor physical fitness, alludes to how a competitor can perform at his or her game, and includes a blend agility, coordination, balance, power, and reaction time. Enhancing this type of fitness is a circuitous aftereffect of training in any of these characteristics. All five components of motor fitness are fundamental for contending at high level, which is the reason the idea is viewed as an essential part of any competitor's preparation regime. Motor fitness considers proficiency of essential developments and in this manner would include such components as power, agility, speed, balance; etc. Motor fitness is a limited phase of physical fitness and can be all the more solidly characterized as a status of readiness for execution with exceptional respect for huge muscle action without undue fatigue. It concerns the capacity to move the body efficiently with force over a reasonable length of time. Motor fitness, albeit these terms are difficult to define (Gallahue, 1982), motor fitness refers to the ability of an athlete to perform successfully at their sport. It is sometimes described as how fast an athlete is able to change direction while competing on the field or on the court It is sometimes described as how fast an athlete is able to change direction while competing on the field or on the court. Enhancing agility regularly includes sprinting between cones that are set at an assortment of edges. Coordination is more difficult to describe than agility because it cannot be observed directly. A competitor with a high level of coordination of coordination can consolidate all types of fitness, not only those that are a part of motor fitness — in an effective and controlled way. The more coordinated an athlete is, the more efficient he or she will be during competitive activities.

Power alludes to the competitor's capacity to get his or her muscles powerfully in a explosive movement. The vast majority have an instinctive feeling of what power is, and why it's essential for games. Powerful competitors are not simply solid; they can utilize that quality rapidly and productively. Balance and reaction time is two other imperative parts of motor fitness. Balance is a competitor's capacity to control his or her

body's movement, while reaction time is how quickly the athlete can respond to a changing situation. Enhancing all five parts of motor fitness is imperative for any competitor who needs to achieve his or her best. As indicated by Harre (1979) "*for high level of performance, physical fitness is most important and key criteria.*"

2. Material and Methods

Subjects: Thirty (N = 30) male cricketers aged between 18-28 years were selected for this study. The purposive sampling technique was used to attain the objectives of the study. All the subjects, after having been informed about the objective and protocol of the study, gave their consent and volunteered to participate in this study. They were further divided into two groups of 15 each (i.e., N_1=15; Batsmen and N_2=15; Bowler).

2.1 Design of the Study
The diagrammatic presentation was presented hereunder.
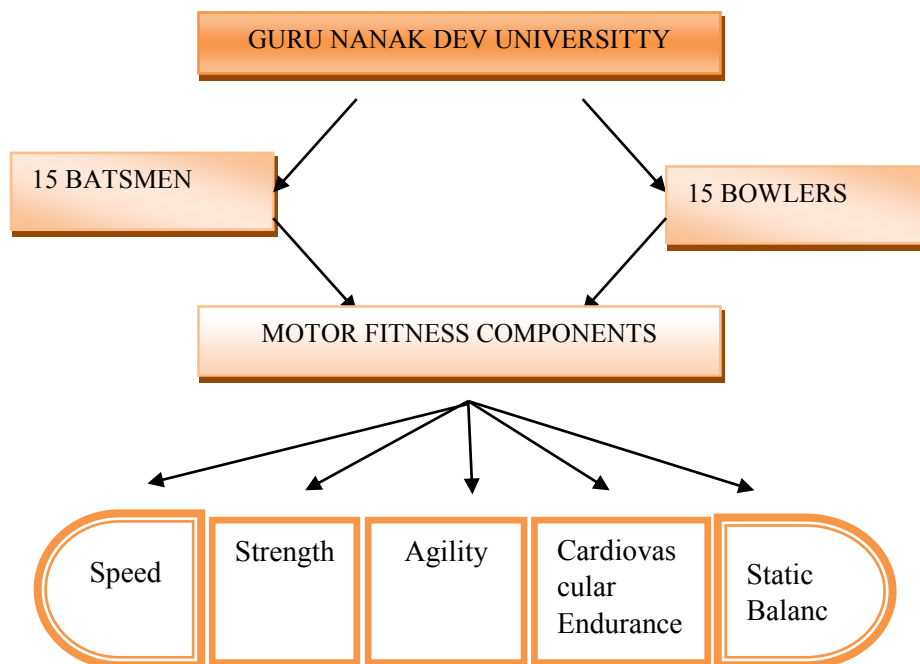
Table 1: Selection of variables

Variables	Tests	Criterion Measure
Speed	30 meter dash	Recorded to the nearest 1/100th Second
Strength	Standing long jump	Recorded to the nearest Centimetres
Agility	Illinois Agility Test	Recorded to the nearest 1/100th Second
Cardiovascular Endurance	800 meter run	Recorded to the nearest minutes /seconds
Static Balance	Stork Balance Stand Test	Recorded to the nearest 1/100th Second

2.2 Data Analysis

Student's t-test for independent data was used to assess the between-group differences. The level of p≤0.05 was considered significant.

3. Results

The results pertaining to significant difference, if any, between Batsmen and Bowler were assessed using the Student's t test and the results are presented in table 2:

Table 2: Mean Standard Deviation, Standard Error of the Mean,
t-value and p-value of Batsmen and Bowler

Variables	Mean		SD		SEM		t-value	p-value
	Bowler	Batsmen	Bowler	Batsmen	Bowler	Batsmen		
Speed	4.22	4.31	0.18	0.18	0.047	0.05	-1.30	**0.20**
Strength	263.33	257.93	9.67	7.36	2.49	1.90	1.72	**0.096**
Agility	15.7	15.4	0.59	0.43	0.15	0.12	1.94	**0.06**
Cardiovascular Endurance	2.98	3.09	0.26	0.18	0.09	0.05	1.41	**0.21**
Static Balance	22.3	25.4	1.80	4.40	0.46	1.14	-2.50	**0.019**

*Significant at 0.05 level

Table 1 revealed that there were insignificant differences of speed (p = **0.20**), strength (p = 0.**096)** agility (p = **0.06**) and Cardiovascular Endurance (p = **0.21)** between Batsmen and Bowler, since the calculated value of t for all the variables i.e., speed (t=1.30), strength (1.72), agility (1.94) and Cardiovascular Endurance (1.41) is smaller than the tabulated value of t (=2.048) for 28 degree of freedom. Thus, it may be concluded that the group difference between Batsmen and Bowler in regards to speed, strength, agility and endurance found to be statistically insignificant. Whereas significant differences of static Balance (p **= 0.019)** between Batsmen and Bowler, since the calculated value of t for static Balance (t=2.50) is higher than the tabulated value of t (=2.048) for 28 degree of freedom. As per the study, the above remark can be given at 95% probability level. The

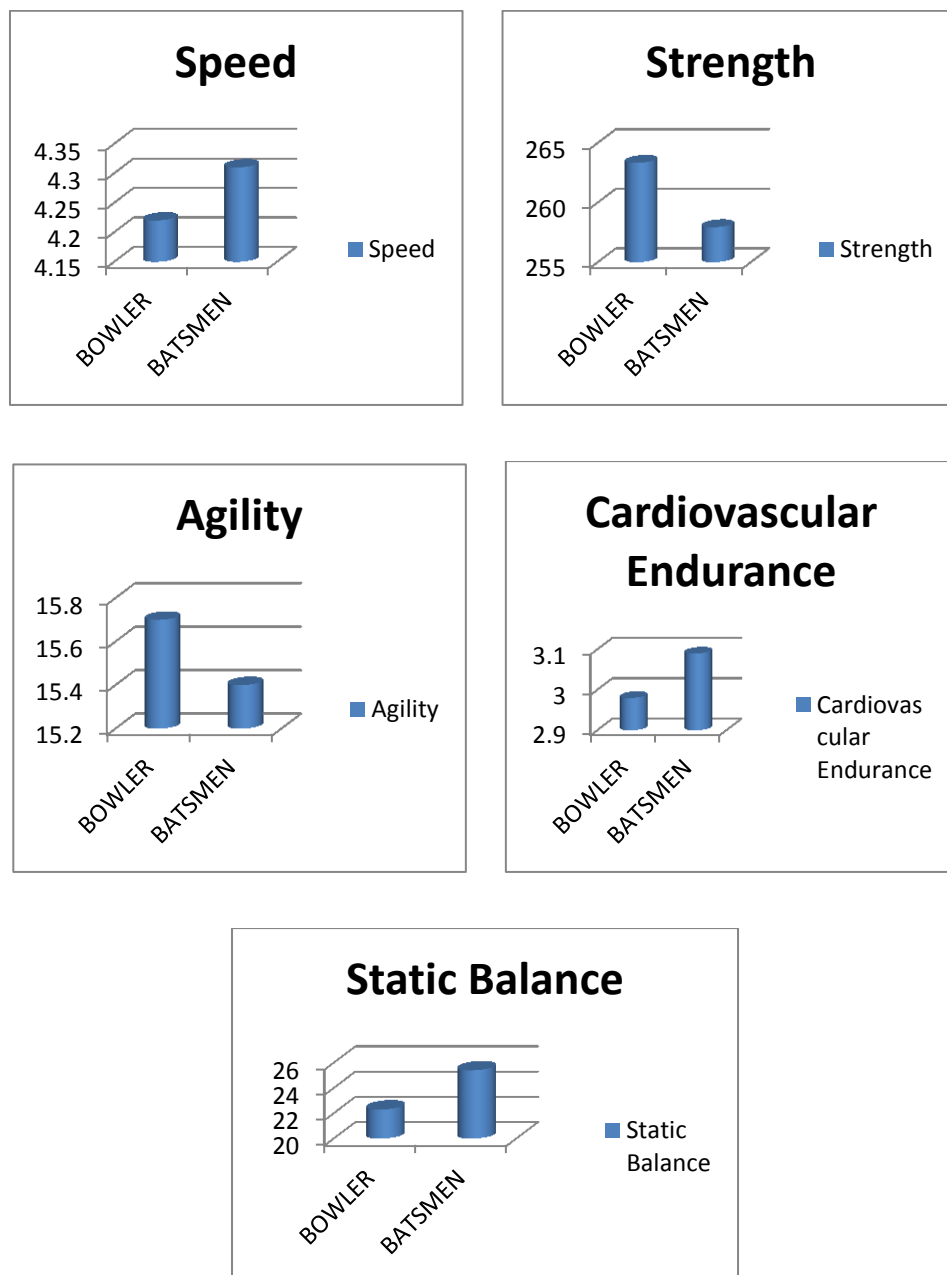comparison of mean scores of both the groups has been presented graphically in figure 1.

Figure 1: Graphical representation of mean scores of bowlers and batsmen's on the variables i.e. Speed, Strength, Agility, Cardio-Vascular Endurance and Static Balance

4. Conclusion

Based on the results of the present study the following conclusion is drawn:

There were exits a insignificant differences of speed (p = 0.20), strength (p = 0.096) agility (p = 0.06) and Cardiovascular Endurance (p = 0.21) amongst Batsmen and

Bowler, the calculated value of t for all the variables i.e., speed (t=1.30), strength (1.72), agility (1.94) and Cardiovascular Endurance (1.41 is smaller than the tabulated value of t (=2.048) for 28 degree of freedom. In this way, it might be presumed that the group difference between Batsmen and Bowler with respect to speed, strength, agility and endurance observed to be statistically insignificant. Whereas significant differences of static Balance (p = **0.019)** between Batsmen and Bowler, since the calculated value of t for static Balance (t=2.50) is higher than the tabulated value of t (=2.048) for 28 degree of freedom. In this manner, it might be inferred that the group difference between Batsmen and Bowler in regards to speed, strength, agility and Cardiovascular Endurance observed to be statistically insignificant. Whereas significant differences of static Balance found.

Acknowledgements

References

1. AAPHER (1965) AAPHER youth fitness test manual. Washington, DC. American Alliance   for Physical Education and Recreation.
2. Das P, Debnath P, Chatterjee P. (2007) Comparative Study of Physical Fitness Components of junior footballers and sprinters of Kolkata. J. Sports & Sports Sci. 30(4), 35-42.
3. Hopkins WG and Walker NP (1988) The meanings of physical fitness. Preventive Med. 17,764–773.
4. Jension CR and Hirst CC (1980) Measurement in physical education and athletic. Macmillan Publ. Inco.NY.
5. Chia M (2007) Fit to play: enabling play and physical activity in children. In: The power of movement enhancing children's cognitive, social & emotional and physical development through movement. Nonis K & Daswani S (eds) Pearson Education Asia, Singapore. pp:112-128.
6. Jan Percival, Lloyd Percival and Joe Taylor (1982) The complete guide to total fitness. A & C Black Publ. Ltd. pp: 224.

7. Johnson BL and Nelson JK (1988) Practical measurements for evaluation in physical education (3rd ed.). Surjeet Publ. pp:245-246.

8. Mal B (1982) Scoring ability in football. SNIPES J. p:22. 9. Jan Percival, Lioyd Percival and Joe Taylor (1982) The complete guide to total fitness. A & C Black Publ.Ltd. pp:224.

9. Saini R (1996) Comparative study of psychomotor components between the athletes of individual and team sports. Unpublished Master Thesis. P.U. Chandigarh.

10. Sidhu LS and Grewal R (1984) Effect of hard training on cardio-vascular system of Indian women hockey players. J. Sports Med. Phy. Fitness. 24(1), 34-40.

11. Singh A (1986) Normative study of physical fitness of Punjab University men students. Unpublished Doctoral Thesis, Punjab University, Chandigarh.

12. Sodhi HS and Sidhu LS (1984) Physique and selection of sportsmen – a Kinanthropometric study. Patiala Publ. House, Patiala.

13. Tanaka K, Nakamura Y and Sakai T (2004) Role of exercise science in maintaining overall quality of life in humans. Japan J. Phys. Educ. Hlth. Sport Sci. 49,209-229.

14. Uppal AK (1980) Effect of 10-weeks participation in physical education programme on selected strength variables in women. SNIPES. 3(3), 31-34