



TWIST

Journal homepage: www.twistjournal.net

The Comparison of Speed and Agility among Elite Level Male Cricketers in Bangladesh

Md. Eman AliDepartment of Physical Education and Sports Science,
Jashore University of Science and Technology, Jashore-7408, Bangladesh**Md. Zillur Rahman**[1] – Department of Physical Education and Sports Science,
Jashore University of Science and Technology, Jashore-7408, Bangladesh[2] – Department of Physical education and Sports Coaching,
Beijing Sport University, Beijing, China**Ujan Bhadra**Department of Physical Education and Sports Science,
Jashore University of Science and Technology, Jashore-7408, Bangladesh**Md. Zafiroul Islam***Department of Physical Education and Sports Science,
Jashore University of Science and Technology, Jashore-7408, Bangladesh
[Corresponding author*]

Abstract

In recent years cricket has become very popular game. In this game speed and agility are very important for batters and bowlers. This study aimed to compare speed and agility performance between elite-level male batters and bowlers in Bangladeshi cricket. A total of 120 professional players (60 batters and 60 bowlers) participated. Speed was measured using the 50-meter sprint test, while agility was measured using the 4×10-meter shuttle run test. The Results indicated that batters demonstrated significantly higher speed (6.93 ± 0.32 s) than bowlers (7.11 ± 0.35 s), with the difference being statistically significant ($p < 0.05$). Although batters also recorded slightly better agility (9.71 ± 0.49 s) than bowlers (9.85 ± 0.41 s), the difference was not statistically significant ($p > 0.05$). These findings suggest role-specific differences in physical performance, with batters displaying superior sprinting ability, likely due to game demands such as running between wickets. However, agility levels were relatively similar across both roles, indicating that it is a universally emphasized component in elite cricket training. This study highlights the importance of position-specific conditioning to enhance overall performance in cricket.

Keywords

Cricket performance, Speed and agility, Batters vs. Bowlers, Elite cricket training, Position specific conditioning, Bangladeshi cricket

INTRODUCTION

Speed and agility in team sports represent complex psychomotor skills (Verchoshansky, 1996). They involve moving the body as rapidly as possible, but agility has the added dimension of changing direction. Speed is classically defined as the shortest time required for an object to move along a fixed distance, which is the same as velocity, but without specifying the direction (Harman & Garhammer, 2008). In practical terms, it refers to the ability to move the body as quickly as possible over a set distance. However, in reality, the issue is slightly more complex because speed is not constant over the entire distance a can therefore be divided into several phases: acceleration, maintenance of maximum speed and

deceleration (Plisk, 2008). Agility is most often defined as the ability to change direction rapidly (Altug et al., 1987). Physical fitness refers to a group of physical qualities that allow the body to respond to and adjust to the demands and stress of physical exercise (Wuest & Bucher, 1995). A player's level of fitness determines how much speed, endurance, strength, and physical strain he can withstand (Barth et al., 2007). A player's ability to engage in a game without being overly exhausted, as well as their capability to leap far and high, run swiftly in all directions, change directions quickly, and completely stretch their joints, are examples of physical fitness in sports (Haskell et al., 2007). Physical fitness qualities is the most important factor contributing to successful performance (Marques et al., 2009). Cricket is an intermittent game, with intervals of high-intensity movements like bowling and batting interspersed with extended stretches of low-intensity activity (Jeffreys & Moody, 2021; Noakes & Durandt, 2000; Sholto-Douglas et al., 2020; Stretch et al., 2000). Physical fitness is crucial in all forms of cricket, but the demands on players can vary depending on the format of the game. Like test cricketers need to have a high level of aerobic fitness, as they may need to bat or bowl for extended periods of time. Likewise, the ODI format emphasizes explosive power and speed, as players need to score runs quickly and take wickets at regular intervals. Players need to have good anaerobic fitness, as they may need to sprint and perform explosive movements, such as diving and throwing, throughout the match (C. Petersen et al., 2009; C. J. Petersen et al., 2010, 2011; Sholto-Douglas et al., 2020). In contrast to T20 format cricket, T20 cricket is the shortest format of the game, lasting just 20 overs per side. This format requires players to have exceptional explosive power and agility, as they need to score runs quickly and field effectively. Players need to have good anaerobic fitness, as they may need to sprint, dive, and change direction frequently throughout the match (C. J. Petersen et al., 2010). The performance of physically fit cricket players has been found to be better, more reliable, and less injury-prone (Smita Wagh et al., 2022). Aerobic endurance fitness is critical for cricket players as it helps them maintain their energy levels throughout a game that can last for several hours (Raja, 2019). Cricket involves a combination of short bursts of high-intensity activity, such as sprinting between wickets, and longer periods of low-intensity activity, such as standing in the field (Weldon et al., 2021). Having good aerobic endurance fitness allows players to recover quickly between these bouts of activity and perform at a high level for the entire game (Ahamad et al., 2015; Orchard et al., 2005; Panwar & Chandel, 2019). It also helps to reduce the risk of injury and improves overall physical health (Paoli et al., 2013). In addition to improving performance on the field, aerobic endurance fitness can also have long-term health benefits for cricket players (Vickery et al., 2018).

METHODOLOGY

Subjects

A total of one hundred and twenty (120) among sixty (60) Batters and sixty (60) Bowlers from different teams of National, Divisional, Premier Division Cricket League volunteered as subject for the present study. The subjects were active players with regular practice under the supervision of qualified coaches. The mean age, height, weight, experienced in professional of the Batters was age mean and $\pm$ sd 25.78 $\pm$ 3.98 years, height mean and $\pm$ sd 171.27 $\pm$ 5.18 cm, weight mean and $\pm$ sd 69.27 $\pm$ 7.41 kg experienced in professional mean and $\pm$ sd 8.02 $\pm$ 3.96 years. The mean age, height, weight, experienced in professional of the Bowlers was age mean and $\pm$ sd 27.88 $\pm$ 3.90 years, height mean and $\pm$ sd 173.31 $\pm$ 4.60 cm, weight mean and $\pm$ sd 72.07 $\pm$ 7.41 kg experience in professional mean and $\pm$ sd 9.82 $\pm$ 4.25 years.

Criterion Measure

- Speed and Agility of the subjects were the main criterion.
- The speed was analyzed by measuring 50m run test.
- The agility was analyzed by measuring 4*10m shuttle run test.

Equipment and Tool Used

Following equipment and tools were used for collecting data in present study:

- (i) Stadiometer for measuring body height;
- (ii) Weighing machine for measuring body weight;
- (iii) Whistle;
- (iv) Digital stop watch;
- (v) Measuring tape;
- (vi) Wooden block;
- (vii) Gymnastics Chalk (i.e., carbonate of magnesium)

Procedure for Collecting Data

1. Measurement of 50m Run

The data were collected by conducting 50m sprinting run test in the following way:

- i. At first, the total length of 50m was measured.
- ii. Time-keeper was posted with digital stop watch for recording time.
- iii. The starter signaled the time-keeper along with the athlete on start of the race.
- iv. One by one subject started the race of 50m with the usual command of the starter.
- v. With starting whistle the subject started running and the time keeper started watch.

- vi. When the subject touched the finished line the time keeper stopped his respective stop watch.
- vii. After finishing 50m run the time of the watch was recorded.

The time for the 50m run was recorded as the main data point.

2. Measurement of 4*10m Shuttle Run

The data were collected by conducting 4*10m shuttle run test in the following way:

- i. Create a straight course that is 10 meters long.
- ii. Set up two cones at the endpoints of the 10-meter distance.
- iii. Repeat this process four times in a row, with each 10-meter section being a shuttle.
- iv. The shuttle run involves four 10-meter runs (4 * 10 meter = 40 meter total), with participants running back and forth between the markers.
- v. Stopwatch is used to measure how long it takes for the participant to complete the shuttle run.
- vi. The time begun when the participant started running and ended when they return to the starting point after the fourth shuttle.
- vii. Recorded the total time.

The total time for the 4 * 10m shuttle run was recorded as the main data point.

Analytical Procedure

The collected data were analyzed using statistical procedure. Mean was calculated as the measure of central tendency and the standard deviation as the measure of variability.

The formula was used for calculating mean (M):

$$\text{Mean (M)} = (\sum X \setminus N)$$

The formula was used for calculating standard deviation (SD):

$$SD = \sqrt{\{(X-M)^2 \setminus N\}}$$

The formula was used for calculating T-test (T)

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

PRESENTATION OF DATA, RESULT AND DISCUSSION

Data

The comparison of speed and agility among elite level male cricketers in Bangladesh was the main task of the present study. Here, total distance for speed was 50m sprint run and for agility was 4*10m shuttle run. After whistle, when the subject started to run, the time-keeper started the watch for recording time for speed and agility respectively. When the subject crossed the finish line the respective time-keeper stopped the watch to record the time for speed and agility. Here, the distance and time taken for speed and agility were considered as data.

Presentation of Data

The collected data for 50m Dash test and 4× 10m shuttle run test of Batters and Bowlers in Cricket have been presented in the following sections. Table 1 represents the performance score of Cricketers in 50m Dash.

Table 1 Mean and Standard Deviation values of 50m sprint test for Cricket players

Group	Mean & Standard Deviation values for 50m sprint test (s)
Batters	6.93 ± 0.32
Bowlers	7.11 ± 0.35

From this table it is seen that the mean time of 50m sprint test for Batters and Bowlers were 6.93 ± 0.32 second, 7.11 ± 0.35 second respectively. From Table-1, it is understood that the mean values of speed performance for each group of subjects were exactly not same as it was higher for Bowlers and lower for Batters. The mean values of the two groups have been presented in Fig-1.

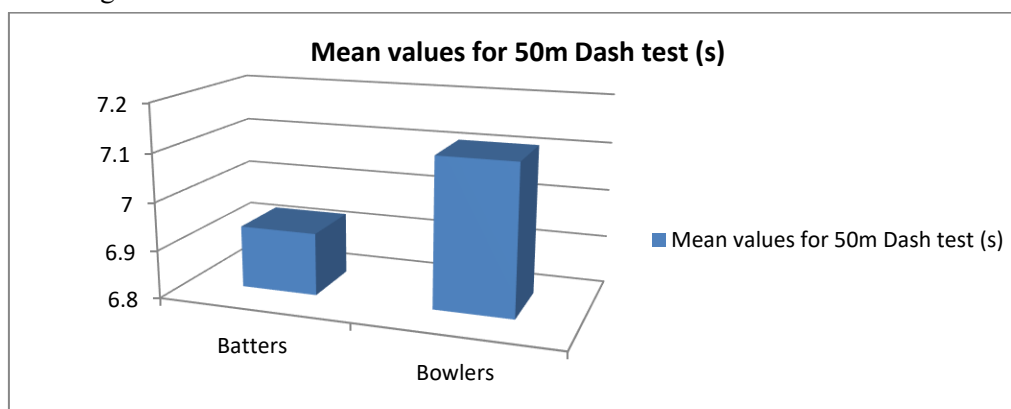


Fig. 1 Mean values of Batters and Bowlers in Cricket for 50m Sprint

It is seen from above diagram that more mean value of time taken by bowler to cover 50m sprint and batters took less time to cover the same distance. So, the batters were apparently superior in speed. In order to understand whether this difference was statistically significant or not, 't' test was administered. Table-2 shows the results.

Table 2 Testing significance of mean difference in 50Y Dash for Batters and Bowlers

Variable	Mean value	T value	Remarks
Batters	6.93 ± 0.32	0.0039	significant
Bowlers	7.11 ± 0.35		

It is seen from the Table-2 that the Batters was significantly faster than Bowlers. Again, it is also seen that there was statistically significant difference between Batters and Bowlers.

Table 3 Mean and Standard Deviation values of 4×10m shuttle run test for Batters and Bowlers

Group	Mean & Standard Deviation values for 4×10m shuttle run test (s)
Batters	9.71 ± 0.49
Bowlers	9.85 ± 0.41

From this table it has been seen that the mean time of 4×10m shuttle run test for Batters and Bowlers were 9.71 ± 0.49 and 9.85 ± 0.41 second respectively. From Table-3, it is understood that the mean values of agility performance for batters and bowlers were exactly not same as it was higher for Batters and lower for Bowlers. The mean values of the two groups have been presented in Fig-2.

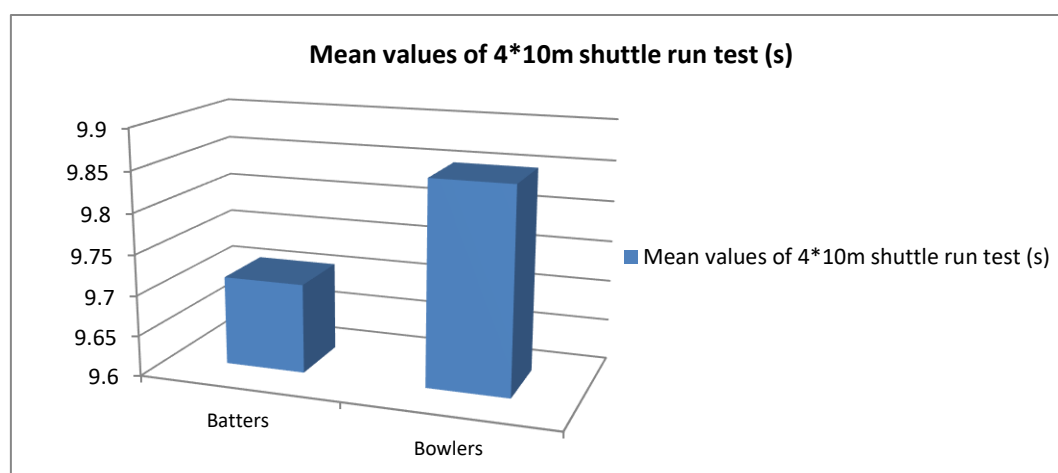


Fig. 2 Mean values of 4×10m shuttle run test for Batters and Bowlers

It is seen from above diagram that more mean value of time was taken Bowlers to cover 4×10m shuttle run and Batters group of subjects took less time to cover the same distance. So, the Batters were apparently superior in agility. In order to understand whether this difference was statistically significant or not, 't' test was administered.

Table 4 Testing significance of mean difference in 4*10m shuttle run test for Batters and Bowlers

Variable	Mean value	T value	Remarks
Batters	9.71 ± 0.49	0.0923	Not significant
Bowlers	9.85 ± 0.41		

It is seen from the Table 2 that the Batters was faster than that of a Bowler. But it is seen that there was statistically not significant difference between Batters and Bowlers of subjects for 4*10m shuttle run test.

RESULT AND DISCUSSION

Results

This study aim was to compare the speed and agility of elite-level male cricketers in Bangladesh, specifically between batters and bowlers. Two tests were used as criterion measures: the 50m Dash for speed and the 4×10m Shuttle Run for agility.

50m Dash (Speed Performance)

Batters: 6.93 ± 0.32 seconds

Bowlers: 7.11 ± 0.35 seconds

T-value: 0.0039 (Statistically Significant)

The results from Table-1 and Table-2 show that batters completed the 50m dash significantly faster than bowlers. This difference was confirmed to be statistically significant, suggesting that batters have superior sprinting ability over short distances compared to bowlers.

4×10m Shuttle Run (Agility Performance)

Batters: 9.71 ± 0.49 seconds

Bowlers: 9.85 ± 0.41 seconds

T-value: 0.0923 (Not Statistically Significant)

As shown in Table-3 and Table-4, batters also performed better in agility (as measured by the 4×10m shuttle run) compared to bowlers. However, the difference was not statistically significant, indicating that while batters showed better average agility, the variation within each group means we cannot confidently conclude that batters are more agile than bowlers.

Discussion

The result suggests a clear difference in **speed** between batters and bowlers, with batters outperforming bowlers in the 50m dash test. This could be attributed to the nature of the roles played by batters in cricket, which often demand quick sprints between wickets and explosive starts to runs, requiring higher levels of acceleration and linear speed. These physiological demands may explain the training emphasis on sprinting drills and explosive power in batters' conditioning programs.

On the other hand, although batters showed slightly better performance in **agility**, the difference was not statistically significant. This may suggest that agility, which involves rapid changes in direction and body control, is equally emphasized or developed in both batters and bowlers. Bowlers, particularly fast bowlers, also require high agility levels to field, deliver the ball under dynamic conditions, and react to batted balls.

The non-significant agility difference could also reflect similar physical training routines across both groups, given that all participants were elite-level athletes regularly trained under professional coaches. Additionally, agility may be influenced by other neuromuscular and cognitive factors that are not as heavily role-dependent as linear speed.

These findings align with existing literature that highlights speed as a differentiating factor in athletic roles within cricket, while agility remains a more universal trait among players (Petersen et al., 2009; Jeffreys & Moody, 2021).

CONCLUSION

The present study aimed to compare the speed and agility performance between elite-level male batters and bowlers in Bangladesh cricket. The analysis was based on performance outcomes from two physical tests: the 50-meter sprint test for speed and the 4×10-meter shuttle run test for agility.

The key findings of the study are:

Batters demonstrated significantly higher speed performance than bowlers, as evidenced by faster 50m sprint times. The statistical analysis confirmed this difference to be significant ($p < 0.05$).

Agility performance, measured via the 4×10m shuttle run, was also slightly better among batters compared to bowlers. However, this difference was **not statistically significant**, indicating relatively similar agility levels between the two groups.

These results suggest that, while both groups maintain high levels of physical fitness, batters generally possess superior sprinting ability. This is likely due to the specific physiological and game-role demands that emphasize rapid acceleration and quick sprinting between wickets. On the other hand, agility training appears to be equally emphasized for both batters and bowlers, resulting in no significant performance difference in this component.

The study supports the idea of role-specific physical development in cricket and underlines the importance of tailored training programs to optimize performance for different positions on the field.

ACKNOWLEDGEMENTS

I am thankful to Almighty Allah for giving me the strength to complete this research. I express my sincere gratitude and also thank to all the participants, especially cricket players, for their cooperation. Finally, I am grateful to my family and friends for their continuous encouragement.

FUNDING INFORMATION

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

DECLARATION OF CONFLICT

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

REFERENCES

1. Ahamad, G., Naqvi, S. K., Beg, M. M. S., & Ahmed, T. (2015). A Web based System for Cricket Talent Identification, Enhancement and Selection (C-TIES). *Procedia Computer Science*, 62, 134-142.
<https://doi.org/10.1016/j.procs.2015.08.426>
2. Barth, K., Linkerhand, A., & Barth, K. (2007). *Training Volleyball* (1st ed.). Meyer & Meyer Sport.

3. Castagna, C., Abt, G., & D'Ottavio, S. (2005). Competitive-level differences in Yo-Yo intermittent recovery and twelve minute run test performance in soccer referees. *Journal of Strength and Conditioning Research*, 19(4), 805-809. <https://doi.org/10.1519/R-14473.1>
4. Deprez, D., Coutts, A. J., Lenoir, M., Franssen, J., Pion, J., Philippaerts, R., & Vaeyens, R. (2014). Reliability and validity of the Yo-Yo intermittent recovery test level 1 in young soccer players. *Journal of Sports Sciences*, 32(10), 903-910. <https://doi.org/10.1080/02640414.2013.876088>
5. Haskell, W. L., Lee, I.-M., Pate, R. R., Powell, K. E., Blair, S. N., Franklin, B. A., Macera, C. A., Heath, G. W., Thompson, P. D., & Bauman, A. (2007). Physical Activity and Public Health: Updated Recommendation for Adults from the American College of Sports Medicine and the American Heart Association. *Medicine & Science in Sports & Exercise*, 39(8), 1423-1434. <https://doi.org/10.1249/mss.0b013e3180616b27>
6. Jeffreys, I., & Moody, J. (2021). *Strength and conditioning for sports performance* (2nd Edition). Routledge. <https://doi.org/10.4324/9780429330988>
7. Karakoç, B., Akalan, C., Alemdaroğlu, U., & Arslan, E. (2012). The Relationship between the Yo-Yo Tests, Anaerobic Performance and Aerobic Performance in Young Soccer Players. *Journal of Human Kinetics*, 35(1), 81-88. <https://doi.org/10.2478/v10078-012-0081-x>
8. Krstrup, P., Mohr, M., Amstrup, T., Rysgaard, T., Johansen, J., Steensberg, A., Pedersen, P. K., & Bangsbo, J. (2003). The yo-yo intermittent recovery test: Physiological response, reliability, and validity. *Medicine and Science in Sports and Exercise*, 35(4), 697-705. <https://doi.org/10.1249/01.MSS.0000058441.94520.32>
9. Marques, M. C., van den Tillaar, R., Gabbett, T. J., Reis, V. M., & González-Badillo, J. J. (2009). Physical fitness qualities of professional volleyball players: Determination of positional differences. *Journal of Strength and Conditioning Research*, 23(4), 1106-1111. <https://doi.org/10.1519/JSC.0b013e31819b78c4>
10. Noakes, T. D., & Durandt, J. J. (2000). Physiological requirements of cricket. *Journal of Sports Sciences*, 18(12), 919-929. <https://doi.org/10.1080/026404100446739>
11. Orchard, J., Newman, D., Stretch, R., Frost, W., Mansingh, A., & Leipus, A. (2005). Methods for injury surveillance in international cricket. *Journal of Science and Medicine in Sport*, 8(1), 1-14. [https://doi.org/10.1016/S1440-2440\(05\)80019-2](https://doi.org/10.1016/S1440-2440(05)80019-2)
12. Panwar, handrabhan S., & Chandel, S. (2019). Construction of Specific Physical Fitness Test for Cricket Players. *Journal of Advances and Scholarly Researches in Allied Education*, 16(5), 1518-1520 (3).
13. Paoli, A., Pacelli, Q. F., Moro, T., Marcolin, G., Neri, M., Battaglia, G., Sergi, G., Bolzetta, F., & Bianco, A. (2013). Effects of high-intensity circuit training, low-intensity circuit training and endurance training on blood pressure and lipoproteins in middle-aged overweight men. *Lipids in Health and Disease*, 12(1), 131. <https://doi.org/10.1186/1476-511X-12-131>
14. Petersen, C. J., Pyne, D. B., Portus, M. R., & Dawson, B. T. (2011). Comparison of player movement patterns between 1-day and test cricket. *Journal of Strength and Conditioning Research*, 25(5), 1368-1373. <https://doi.org/10.1519/JSC.0b013e3181da7899>
15. Petersen, C. J., Pyne, D., Dawson, B., Portus, M., & Kellett, A. (2010). Movement patterns in cricket vary by both position and game format. *Journal of Sports Sciences*, 28(1), 45-52. <https://doi.org/10.1080/02640410903348665>
16. Petersen, C., Pyne, D. B., Portus, M. R., & Dawson, B. (2009). Quantifying positional movement patterns in Twenty20 cricket. *International Journal of Performance Analysis in Sport*, 9(2), 165-170. <https://doi.org/10.1080/24748668.2009.11868474>
17. Raja, W. (2019). Measuring Aerobic Capacity of Cricket Players Off and on the Altitude Astrand-Ryhming Sub Maximal Aerobic Test. *Journal of Physical Education Research*, 6(3), 46-49.
18. Sandhu, R. S., & Singh, N. (2018). A Study of Yo-Yo Intermittent Recovery Test Level 1 (YYIRTLL1) between Indian and Bangladesh Women Cricketers. *European Journal of Physical Education and Sport Science*, 4(1), 235-240. <https://zenodo.org/record/1169600>
19. Sholto-Douglas, R., Cook, R., Wilkie, M., & Christie, C. J.-A. (2020). Movement Demands of an Elite Cricket Team during the Big Bash League in Australia. *Journal of Sports Science & Medicine*, 19(1), 59-64.
20. Smita Wagh, Yatin Wagh, & Kamini D Nikam. (2022). Assessment of role of physical fitness of cricket players in response to the various tests. *Asian Journal of Medical Sciences*, 13(7), 223-227. <https://doi.org/10.3126/ajms.v13i7.44498>
21. Souhail, H., Castagna, C., Mohamed, H. Y., Younes, H., & Chamari, K. (2010). Direct validity of the yo-yo intermittent recovery test in young team handball players. *Journal of Strength and Conditioning Research*, 24(2), 465-470. <https://doi.org/10.1519/JSC.0b013e3181c06827>
22. Stretch, R. A., Bartlett, R., & Davids, K. (2000). A review of batting in men's cricket. *Journal of Sports Sciences*, 18(12), 931-949. <https://doi.org/10.1080/026404100446748>
23. Thomas, A., Dawson, B., & Goodman, C. (2006). The yo-yo test: Reliability and association with a 20-m shuttle run and VO2max. *International Journal of Sports Physiology and Performance*, 1(2), 137-149. <https://doi.org/10.1123/ijsp.1.2.137>

24. Vickery, W., Dascombe, B. J., & Scanlan, A. T. (2018). A review of the physical and physiological demands associated with cricket fast and spin bowlers. *International Journal of Sports Science & Coaching*, 13(2), 290-301. <https://doi.org/10.1177/1747954117731051>
25. Weldon, A., Clarke, N., Pote, L., & Bishop, C. (2021). Physical profiling of international cricket players: An investigation between bowlers and batters. *Biology of Sport*, 38(4), 507-515. <https://doi.org/10.5114/biolsport.2021.100148>
26. Wuest, D. A., & Bucher, C. A. (1995). *Foundations of physical education and sport* (12th ed). Mosby.
27. Verkhoshansky, Y.V. (1996). Quickness and Velocity in Sports Movements. *New Studies in Athletics*, 11(2-3), pp.29-37.
28. Harman, E., & Garhammer, J. (2008). Administration, Scoring, and Interpretation of Selected Tests. In: *Essentials of Strength Training and Conditioning*, 3rd ed., Edited by T.R.Beachle, and R.W. Earle, pp.250-292. Champaign, IL: Human Kinetics.
29. Altug, Z., Altug, T., & Altug, A. (1987). A test selection guide for assessing and evaluating athletes. *National Strength and Conditioning Association Journal*, 9(3), pp.62-66.
30. Plisk, S. (2008). Speed, Agility, and Speed-Endurance Development. In: *Essentials of Strength Training and Conditioning*, 3rd ed., Edited by T.R.Beachle, and R.W. Earle, 458-485. Champaign, IL: Human Kinetics.
31. Horička, Pavol | Hianik, Ján | Šimonek, Jaromír. (2014). The relationship between speed factors and agility in sport games. *Journal of Human Sport and Exercise*. 2014, 9(1): 49-58. doi:10.4100/jhse.2014.91.06

