THE RELIABILITY OF A NOVEL FAST BOWLING TEST IN CRICKET
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1. Introduction
Fast bowling comprises many performance indicators such as:
- Bowling speed, bowling accuracy, consistency of bowling speed, consistency of bowling accuracy

The reliability of these variables has not been measured before (1). A knowledge of the reliability is useful as:
- Genuine changes in performance can be distinguished from ‘noise’ (2), and training interventions can be evaluated

The purpose of this study was to examine the reliability of the above performance indicators in a novel fast bowling test

2. Methods
- 15 experienced male community-level pace bowlers participated
  - bodyweight: 79.4 ± 11.2 kg
  - height: 181.2 ± 6.4 cm
  - age: 22.5 ± 5.3 years
  - pace bowling experience: 7.6 ± 4.1 seasons
  - injury free for at least 6 months
- 4 familiarisation sessions (2 weeks) of general bowling were conducted
- Participants were in their off-season
- Bowlers completed two fast bowling tests, separated by 5-7 days
- After a general and specific warm-up, bowlers completed the fast bowling test
  - Instructed to bowl at ‘match intensity’
  - Full run-up was utilised (25 m maximum)
  - Bowlers delivered at either normal, maximal, or slower speed depending on instruction provided
  - Set target structure, and was consistent for both tests
  - Bowlers aimed at 5 different targets
- Bowling speed was measured by a radar gun positioned behind the popping crease, and angled towards ball release (Figure 1)
- Bowling accuracy was measured by a high speed camera operating at 250 frames per second, positioned in front of the radar gun at the bowling crease (Figure 1)
- Accuracy was calculated through Dartfish Connect (Version 6) by estimating the distance from the intended target to the first frame of ball strike with the target sheet

3. Results

<table>
<thead>
<tr>
<th>Test</th>
<th>Mean ± SD</th>
<th>TE</th>
<th>CV %</th>
<th>ICC</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowling Speed (km.hr⁻¹)</td>
<td>100.7 ± 7.4</td>
<td>1.5</td>
<td>1.5</td>
<td>0.97</td>
<td>0.274</td>
</tr>
<tr>
<td>Bowling Accuracy (km.hr⁻¹)</td>
<td>5.05 ± 0.8</td>
<td>0.8</td>
<td>20.2</td>
<td>0.47</td>
<td>0.977</td>
</tr>
<tr>
<td>Bowling Speed (mm)</td>
<td>438.9 ± 67.9</td>
<td>13.6</td>
<td>0.48</td>
<td>0.336</td>
<td></td>
</tr>
<tr>
<td>Bowling Accuracy (AU)</td>
<td>405.3 ± 68.5</td>
<td>16.2</td>
<td>0.39</td>
<td>0.107</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Reliability statistics for the fast bowling test. SD; standard deviation, P Value; determined from the paired samples t-test, AU; arbitrary units.

4. Discussion / Conclusions
- Mean bowling speed was the only reliable variable, which can be used for the evaluation of future training interventions
- Familiarisation trials that mimic the bowling test may have resulted in more reliable performance measures
- The variability in performance between tests could be attributed to the playing level of the pace bowlers; elite fast bowlers might be more consistent in performance than community-level pace bowlers
- The frequent change of delivery target and speed may have resulted in greater variability in bowling accuracy between tests

5. References