Agreement between Medical Student Self-Assessment and Faculty Rating of a Simulated Suturing Task

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INTRODUCTION

- Suturing is a fundamental skill for medical students but there is a gap between desired and perceived proficiency.1,2
- Self-directed learning is a skill required of doctors throughout their profession and it is imperative that medical students learn strategies to teach themselves.3,4
- It is unknown in what ways student self-assessment might be biased relative to assessment by a physician.
- Aim: to obtain an estimate of skill.

RESULTS

- N=71, most had no prior suturing instruction or experience with surgical instruments, and a plurality of students completed 0-9 sutures during the eight-week period.
- Three faculty raters exhibited strong agreement with an inter-class correlation coefficient of 0.91.
- Total scores for student self-rating (25±6) exhibited no bias relative to the mean faculty ratings (26±6, p=0.353), but correlation between faculty and student ratings was low (Pearson’s r=0.26, Table 1).
- The Bland-Altman plot (Figure 1) illustrates limited agreement between student and faculty data.

Table 1: Student and Physician Rating Comparison (n=71)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean Difference (Paired Test P-Value)</th>
<th>Pearson Coefficient (p-value)</th>
<th>Lin’s Rho C (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect for Tissue</td>
<td>-1 (0.034)</td>
<td>0.19 (0.119)</td>
<td>0.16 (0.111)</td>
</tr>
<tr>
<td>Time and Motion</td>
<td>0 (&lt;0.001)</td>
<td>0.28 (0.020)</td>
<td>0.24 (0.016)</td>
</tr>
<tr>
<td>Instrument Handling</td>
<td>0 (0.021)</td>
<td>0.16 (0.182)</td>
<td>0.15 (0.174)</td>
</tr>
<tr>
<td>Suture Handling</td>
<td>0 (0.738)</td>
<td>0.16 (0.182)</td>
<td>0.16 (0.172)</td>
</tr>
<tr>
<td>Flow of Operation</td>
<td>1 (0.158)</td>
<td>0.21 (0.079)</td>
<td>0.20 (0.069)</td>
</tr>
<tr>
<td>Knowledge of Procedure</td>
<td>1 (0.002)</td>
<td>0.12 (0.312)</td>
<td>0.11 (0.307)</td>
</tr>
<tr>
<td>Overall Appearance</td>
<td>0 (0.395)</td>
<td>0.15 (0.202)</td>
<td>0.15 (0.192)</td>
</tr>
<tr>
<td>Overall Performance</td>
<td>0 (0.009)</td>
<td>0.30 (0.012)</td>
<td>0.28 (0.008)</td>
</tr>
<tr>
<td>Total Score</td>
<td>-1 (0.353)</td>
<td>0.26 (0.029)</td>
<td>0.26 (0.021)</td>
</tr>
</tbody>
</table>

CONCLUSION & DISCUSSION

- Ratings were weakly correlated but not systematically biased suggesting under- and over-estimation of skill.
- Students were unable to accurately assess their own performance without direct faculty instruction.
- Faculty instruction is a financial and logistical burden and self-directed learning must be optimized for students to learn suturing skills.7,8

REFERENCES

5. Healing a broken clerkship grading system Justin Bullock, MD, MPH; Karen E. Hauer, MD, PhD February 20, 2020 AAMC