THE MEDICAL STUDENT SAFETY ATTITUDES & PROFESSIONALISM SURVEY (MSSAPS): GRADING PATIENT SAFETY PROGRESS THROUGH MEDICAL STUDENT EXPERIENCES

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BACKGROUND

• Since To Err is Human and Crossing the Quality Chasm, patient safety and quality improvement have become national focus areas.

• Most national, institutional, and specialty-specific safety initiatives have targeted physicians, administrators, and other healthcare professionals; less attention has been paid to medical students, a population crucial in carrying the patient safety agenda into the future.

• Despite efforts to teach patient safety to medical students through formal didactic curricula, little is known regarding how clinical rotations affect students’ perceptions about patient safety.

AIM

To develop a reliable and valid survey to measure medical students’ perceptions of safety culture, teamwork, error disclosure, and experiences with professionalism.

METHODS

We anonymously surveyed 228 graduating fourth year medical students from three U.S. allopathic medical schools. We assessed survey:

1. Reliability
2. Construct validity
3. Predictive validity
4. Percent positive scores

We started by identifying survey items that could measure four constructs important to patient safety: Safety Culture, Teamwork Culture, Error Disclosure Culture, and Professionalism.

We hypothesized that students with higher scores for Safety Culture, Teamwork Culture, Error Disclosure Culture and Professionalism would also express intent to behave in ways consistent with providing safe care.

Similarly, we hypothesized that students who perceived their clinical environments as having good safety practices and cultures would have more positive ratings of the safety of patient care they observed in those clinical areas.

We also included demographic information (age, gender, and anticipated residency specialty).

We administered the MSSAPS to consenting students as part of their fourth year capstone courses focusing on a “transition to residency” curriculum. At all three study sites, students were introduced to the questionnaire during patient safety sessions included in the capstone courses focusing on a “transition to residency” curriculum. At all three study sites, students were allowed to complete the survey during patient safety sessions included in the capstone courses focusing on a “transition to residency” curriculum.

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RESULTS

Table 1: Percentage of Students with Positive Perceptions

<table>
<thead>
<tr>
<th>Scale</th>
<th>School A</th>
<th>School B</th>
<th>School C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error Disclosure Culture</td>
<td>27% (10% - 35%)</td>
<td>10% (5% - 20%)</td>
<td>15% (5% - 38%)</td>
</tr>
<tr>
<td>Experiences With Professionalism</td>
<td>23% (10% - 30%)</td>
<td>7% (0% - 15%)</td>
<td>20% (5% - 50%)</td>
</tr>
<tr>
<td>Comfort Expressing Professional Concerns</td>
<td>34% (10% - 43%)</td>
<td>17% (5% - 25%)</td>
<td>18% (8% - 65%)</td>
</tr>
<tr>
<td>Safety Culture*</td>
<td>57% (40% - 66%)</td>
<td>28% (1% - 43%)</td>
<td>64% (50% - 98%)</td>
</tr>
<tr>
<td>Teamwork Culture*</td>
<td>74% (66% - 81%)</td>
<td>47% (2% - 62%)</td>
<td>71% (44% - 95%)</td>
</tr>
</tbody>
</table>

Note: denominators differed for each scale in each institution due to missing data

* indicates significant difference via chi-square test p < .05

Table 2: Confirmatory Factor Analysis Results

<table>
<thead>
<tr>
<th>Construct</th>
<th>Type of Model</th>
<th># of Items</th>
<th># of Factors</th>
<th>χ²</th>
<th>df</th>
<th>χ²/df</th>
<th>CFI</th>
<th>RMSEA</th>
<th>p-value of χ²</th>
<th>p-value of RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error Disclosure Culture</td>
<td>Omitted</td>
<td>6</td>
<td>1</td>
<td>79.1</td>
<td>9</td>
<td>8.8</td>
<td></td>
<td></td>
<td>0.011</td>
<td>0.00</td>
</tr>
<tr>
<td>Error Disclosure Culture</td>
<td>Final</td>
<td>6</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td>.45</td>
<td>0.01</td>
<td></td>
<td>0.001</td>
<td>0.01</td>
</tr>
<tr>
<td>Professionalism*</td>
<td>Final</td>
<td>10</td>
<td>1</td>
<td>119.4</td>
<td>33</td>
<td>3.6</td>
<td>0.07</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Safety Culture*</td>
<td>Final</td>
<td>8</td>
<td>1</td>
<td>60.8</td>
<td>19</td>
<td>3.2</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Teamwork Culture*</td>
<td>Final</td>
<td>8</td>
<td>1</td>
<td>100.4</td>
<td>19</td>
<td>5.3</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Note: * indicates that this model (missed) fit the data better than the initial model. † indicates that error terms for items 2 and 3 as well as 6 and 7 were allowed to covary with each other given similar content in those item pairs. ‡ indicates that error terms for items 1 and 2 as well as 5 and 6 were allowed to covary with each other given similar content in those item pairs.

DISCUSSION

• Medical schools around the world are implementing patient safety curricula, but students’ clinical experiences also have a powerful influence on their safety attitudes and behaviors.

• Our study demonstrates that clinical experiences may heavily influence students’ safety attitudes and behaviors.

• Because negative experiences can potentially “undo” or negate lessons taught in formal curricula, the MSSAPS serve as an important instrument for measuring these aspects of clinical experiences and targeting areas of need in both student/trainee education and faculty development.

• Within or across academic institutions, the MSSAPS could identify the best safety-related clinical experiences (specific clerkships, hospitals, or clinics), from which best practices and effective methods can be drawn and shared.

CONCLUSION

• To the best of our knowledge, our study introduces the first tool to comprehensively assess student perceptions and experiences that are critical to providing safe care.

• The MSSAPS is a reliable and valid survey that can be used to determine if students are having clinical experiences that exemplify positive patient safety environments.

• By targeting areas that extend beyond safety knowledge – safety culture, teamwork culture, error disclosure culture, and professionalism – our survey adds important information that can contextualize the likelihood of turning safety knowledge into action, assist in effective curricular and institutional reform, and ultimately improve patient care.

References: