Teaching Pediatric Procedural Pain and Anxiety Management to Residents: Early Outcomes of a Newly Developed Curriculum

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Background
Poorly managed pain has negative long-term outcomes, including needle phobia, increased pain and anxiety with subsequent procedures, and healthcare avoidance. Evidence-based interventions to reduce procedural pain and anxiety are vastly underutilized.

Objective
To measure residents’ learning outcomes (knowledge, attitudes, perceived competence, and practice change) and satisfaction with a newly developed procedural pain and anxiety curriculum.

Methods
• We developed a multi-media-based lecture with PowerPoint, utilizing results from a focus group interview with 7 pediatric residents.
• Pediatric residents were invited to complete the curriculum online during their emergency medicine rotation.
• Data was collected between July 2019 and June 2020 (pre- and post-tests and a follow-up survey 3-12 months later).

Results
• 75% of residents planned to utilize knowledge from the course in the next few weeks (Table).
• In the follow-up survey, the majority of residents reported that knowledge learned improved their practice and/or led to changes in their practice.

Figure 1: Pre- and Post-Test Scores

Table: Course Evaluation

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>During this course I learned new skills that I will utilize in the next 4 weeks.</td>
<td>0.0%</td>
<td>3.6%</td>
<td>21.4%</td>
<td>46.4%</td>
<td>28.6%</td>
</tr>
<tr>
<td>I am stimulated to learn more on this topic.</td>
<td>0.0%</td>
<td>3.6%</td>
<td>39.3%</td>
<td>39.3%</td>
<td>17.9%</td>
</tr>
<tr>
<td>I would recommend this course to a colleague.</td>
<td>0.0%</td>
<td>3.6%</td>
<td>21.4%</td>
<td>35.7%</td>
<td>39.3%</td>
</tr>
<tr>
<td>This educational activity was worth my time.</td>
<td>3.6%</td>
<td>3.6%</td>
<td>17.9%</td>
<td>53.6%</td>
<td>21.4%</td>
</tr>
</tbody>
</table>

Figure 2: Perceived Competence

Figure 3: Reported Change in Medical Practice

Conclusions
Early outcomes show significant knowledge increase. These results provide the foundation for evaluation of an online game-based version of curriculum.