Pediatric Emergence Delirium Assessment: Current Practice and Perceived Barriers

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PEDIATRIC EMERGENCE DELIRIUM ASSESSMENT: CURRENT PRACTICE AND PERCEIVED BARRIERS

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ABSTRACT

Background: Current literature addresses the complexity of identifying pediatric emergence delirium (PED), but does not address barriers to PED assessment and documentation. By identifying these barriers, further research can be conducted regarding prevention and treatment of PED.

Objectives: This study aimed to: 1) describe the current PED assessment and documentation practices among post anesthesia care unit (PACU) registered nurses and anesthesia providers at UIHHSS; 2) describe the perceived barriers to PED assessment and documentation; and 3) develop an evidence-based educational program to aid in the implementation of a validated PED assessment tool.

Method: A descriptive, cross-sectional online survey design was used to survey a convenience sample of 133 perioperative care providers consisting of anesthesia providers (anesthesiology attendings, anesthesiology residents, and certified registered nurse anesthetists) and PACU registered nurses at UIHHSS. Questions associated with perceived barriers to PED assessment and documentation practices were answered using a 5-point Likert-type response scale, with 1= strongly disagree; 2= disagree; 3= neutral; 4= agree; 5= strongly agree.

Results: The study received 40 responses during the data collection period for a response rate of 30.0%. Study results revealed current PED assessment and documentation practices at UIHHSS to be inconsistent and varied. Of statistical significance (p=0.036), was the perceived barrier of “limited time” in statistical significance. Participants preferred learning methods varied, however a majority of participants (n=10) preferred a multimodal approach.

Conclusions: The results of this study revealed the barriers to PED assessment and documentation at UIHHSS, as well as the preferred learning methods of the participants. These results will help facilitate the creation of an evidence-based, three-phase educational approach to change to PED assessment at UIHHSS.

BACKGROUND

Pediatric emergence delirium: “A disturbance in a child’s awareness of and response to his or her environment with disorientation and perceptual alterations including hypersensitivity to stimuli and hyperactive motor behavior in the immediate postoperative period” (Dierdorf, Isom, O’Connor, & Hogue, 2009, p. 210).

Risk factors:
- School aged children
- Use of inhalation anesthetic sevoflurane
- Preoperative anxiety and/or behavior problems
- Head and neck procedures
- Incidence: 20-80%
- Consequences:
- Increased risk of injury to caretakers
- Increased risk of injury to self
- Parental dissatisfaction
- Increased postoperative nursing requirements
- Nursing requirements
- Longer recovery times in the PACU
- Longer hospital stays

Pediatric Anesthesia Emergence Delirium Scale (PAED), developed by Sikich and Lerman, is the only validated scale for use in pediatrics (Sikich, 2017). The PAED scale (0-8) is the only validated scale for use in pediatrics (Sikich, 2017). The PAED scale is the only validated scale for use in pediatrics (Sikich, 2017). The PAED scale is the only validated scale for use in pediatrics (Sikich, 2017).

PROCEDURE

- Design: descriptive, cross-sectional online survey
- Setting: University of Illinois Hospital and Health Science System (UIHHSS)
- Participants (n=133): PACU registered nurses (n=26), anesthesia attending (n=42), anesthesia residents (n=58), certified registered nurse anesthetists (CRNA) (n=7)
- Survey: developed based on department needs and pilot tested
  - Four sections: demographic information, current assessment and documentation practice, perceived barriers, future PED assessment and documentation practice

RESULTS

Data imported into Integrated Business Solutions (IBM) SPSS Statistics version 23.0 and analyzed using descriptive and non parametric statistics.

40 responses of the 130 available participants

Demographics:
- Male: 40.0% PACU registered nurses (n=16), 27.5% anesthesia attendings (n=11), 22.5% anesthesia residents (n=9), and 10.0% CRNAs (n=4)
- Years practiced: 25.0% of participants practiced 0-5 years (n=21), 22.5% of participants practiced 6-10 years (n=19), 12.5% of participants practiced 11-20 years (n=5), and 12.5% of participants practiced greater than 20 years (n=5)
- Experience caring for pediatric patients: 40.0% reported rarely caring for pediatric patients (n=16), 35.0% reported regularly caring for pediatric patients (n=14), and 25.0% reported occasionally caring for pediatric patients (n=10)

Current PED Assessment and Documentation Practice:
- 21 participants stated they report PED while 19 did not
- Majority (n=36) report PED with a subjective scale
- Mixed responses when asked their reporting and documentation practice of PED

Perceived Barriers:
- Non parametric test results not used because data heavily skewed to the left
- Therefore, median was the best method of analysis for data

Shown in the table below, limited knowledge and lack of an available assessment tool were perceived as barriers to PED assessment and documentation

<table>
<thead>
<tr>
<th>Perceived Barriers</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited time</td>
<td>3.80</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Limited knowledge</td>
<td>3.45</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Lack of an available assessment tool</td>
<td>3.45</td>
<td>4.00</td>
<td></td>
</tr>
</tbody>
</table>

Future PED Assessment and Documentation Practice

- Majority of participants (n=31) thought that PED should be documented in the PACU record (n=26), 25.0% in the anesthesia record (n=10) and the remaining participants chose other methods
- Results from the educational preference (shown below) helped facilitate in creation of an educational plan to implement the PAED scale

Descriptive Statistics for Educational Preferences

<table>
<thead>
<tr>
<th>How would you like to be educated on a pediatric emergence delirium assessment scale?</th>
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</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Handout</td>
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<tr>
<td>Handout, online learning module, and in-service</td>
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<tr>
<td>Online learning module, and in-service</td>
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<tr>
<td>Online learning module</td>
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<tr>
<td>Online learning module and handout</td>
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</tbody>
</table>

CONCLUSION

- Preoperative care providers found lack of an available assessment scale, limited knowledge, and limited time to be barriers to PED assessment and documentation
- Results support the need for implementation and standardized use of a validated PED assessment scale at UIHHSS

ONGOING RESEARCH

- Evaluate compliance using PAED scale
- Incorporate the PAED scale into the EMR
- Chart auditing to facilitate future research projects looking at the use of Desmedetomidine in the prevention of PED

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REFERENCES