Use of the Pasero Opioid-Induced Sedation Scale in Pediatric Patients

Emily Miller-Baldwin BSN
Andrea Smith BSN
Gayle Thear MSN
Ann Quinlan-Colwell PhD

Conflict of Interest Disclosure

• Authors Conflicts of Interest:
  – E. Miller-Baldwin, No Conflict of Interest
  – A. Smith, No Conflict of Interest
  – G. Thear, No Conflict of Interest
  – A. Quinlan-Colwell, Consultant & Speaker for
    Mallinckrodt Non-branded Education

NHRMC PEDIATRICS
Introduction

- The Pasero Opioid-Induced Sedation scale (POSS) is a valid and reliable tool that is used to assess sedation during opioid pain management.
- Although the POSS has been used in Pediatric patients at some hospitals it has never been formally evaluated in the pediatric population.

Pasero Opioid-Induced Sedation Scale (POSS)

Purpose

- This study was designed to compare the use of the POSS during opioid administration before and after implementation of a standardized POSS protocol in pediatric patients.
- In addition, a self reporting survey of the pediatric nurses caring for the subjects was used to determine ease of use and appropriateness.
Background

• Pediatric patients can be especially vulnerable to respiratory depression during the administration of opioids for analgesic purposes, thus these patients require close monitoring.

Background

• A tool such as the POSS, can be used to:
  • Assess sedation
  • Identify progressing sedation early
  • Improve communication
  • Recognition of trends
  • Confidence in treatment

METHOD

• IRB approval was obtained

• Consent obtained:
  – Intervention cohort
  – Nursing surveys

• Control cohort did not require consent
METHOD: Literature Search

- Databases used:
  - CINHAL, Pub Med, Google Scholar, Joanna Briggs

- Key words:
  - opioids, analgesic sedation, Pasero, POSS

- From these databases:
  - 14 articles were retained and used

METHOD: Setting

- Setting

- New Hanover Regional Medical Center
  - 23 bed pediatric unit
  - including a 6 bed ICU

- A convenience sample was used
METHOD: Sample

• Sample Size
• Intervention cohort:
  – 27 participants and 362 doses
• Control cohort:
  – 25 participants and 363 doses
• Nursing surveys:
  – 19 completed

METHOD: Sample

• Pediatric Intervention Cohort:
• 38 potential participants
  – Excluded 8
    • 1 meninges disorder, 1 malignant neoplasm (head), 2 head injuries, 1 trisomy 21, 1 stabbing, 2 received no opioid doses
  – Missed consents 2
    – Refusal 1
  – Consented and data collected 27
**METHOD: Sample**

**Pediatric Control Cohort:**

- Excel spreadsheet
- Data obtained from medical records that included criteria
  - 25 participants

**METHOD: Design**

- A quasi-experimental design
- Data collected from medical records of both cohorts to determine:
  - Incidence of respiratory depression
  - Comparison of RN documentation of sedation:
    - prior to implementation of standardized POSS assessment
    - after implementation of standardized POSS assessment

**METHOD: Design**

- Education provided to pediatric RN’s about the Pasero Opioid-Induced Sedation Scale prior to research being started.
- Team informed pediatric RN’s of the research being conducted.
- Evaluate RN’s impression on use of POSS
- Nursing survey was completed by pediatric RN’s if interested in participating in study
METHOD: Data Points

- Data points for both intervention and control cohort:
  - gender, age, opioid dose, pain score,
  - held dose, decrease/increase dose
  - level of alertness
  - respiratory rate
    - prior to dose
    - after each dose
- Additional data for the intervention cohort included POSS score

METHOD: Pediatric Intervention Cohort

- Daily monitoring of census
- Potential participants screened
- Consent was then obtained from parent/legal guardian

METHOD: Pediatric Intervention Cohort

- Participant number assigned
  - Sequential order
  - Separate master list
  - Secure spreadsheet on PI computer only
- Data collection initiated
  - Given to PI for transcribing to secure spreadsheet
  - Collected until:
    - targeted number of opioid doses reached
    - or 11 months of data collection
METHOD: Pediatric Control Cohort

• Medical records department sent PI data from past pediatric patients that fit inclusion criteria

• Restricted range of time for data collection:
  – 01/01/2013 to 12/31/2013

• Data obtained from medical record
  – given to the PI for transcription and secure storage

METHOD: Inclusion Criteria

• Intervention cohort:
  – Current pediatric patients receiving opioids for analgesic purposes
    – Diagnosis of at least one of the following:
      appendectomy  HSV
      migraine       appendicitis
      Fracture       herpangina
      hand foot and mouth disease

• Control cohort:
  – Former pediatric patients receiving opioids for analgesic purposes
    – Admitted from 01/01/2013 through 12/31/2013
    – With at least one diagnosis that met criteria
METHOD: Exclusion Criteria

- Intervention and control cohort:
  - Diagnosis of respiratory distress
  - Head injuries
- Additional control cohort exclusion:
  - Any patient in which POSS score was already documented

METHOD: Nursing Survey

- Evaluate the appropriateness an ease of use
- Consisted of 10 questions related to POSS
- Voluntary and implied the RN’s consent
  - 25 possible
  - 19 completed and returned
- Completed surveys were placed in sealed envelope and kept in a sealed box, ensuring anonymity.

Pediatric Play Room
• Control cohort data consisted of
  – 25 participants
  – 363 doses
• The data was extracted from medical records based on diagnosis and inclusion criteria.
• Intervention cohort data consisted of
  – 27 participants
  – 362 doses
• A total of 19 nursing surveys were obtained

DATA ANALYSIS
• Data was analyzed using JMP 11.0 software.
• Any p-value <0.05 was considered statistically significant
• Chi-Square was used to test differences between cohorts and
  – the p-value for differences was <0.0001
Gender Comparison of Subjects

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Standard</th>
<th>Foss</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>12 (48.0)</td>
<td>13 (48.2)</td>
<td>0.9915</td>
</tr>
<tr>
<td>Female</td>
<td>13 (52.0)</td>
<td>14 (51.8)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>8.0 [4.0-13.0]</td>
<td>12.0 [8.0-16.0]</td>
<td>0.0156</td>
</tr>
</tbody>
</table>

1. Significant more doses of Hydrocodone and Morphine were given in the standard care group (p<0.0001).
2. Significant more doses of Hydromorphone and Oxycodone were given in the intervention group (p<0.0001).
Percent of Time a Pain Score Assessment Documented

1. Percent of time pain score was documented in the intervention group was significantly higher than in the control group (p < .0001).

Percent of Time Alertness Documented Prior to and 30-60 Minutes after Opiate Dose

1. Alertness was documented significantly more often prior to opiate dose administration in the intervention group (p < .0001).
2. Alertness was documented significantly more often 30-60 minutes after opiate dose administration in the intervention group (p < .0001).

Percent of Time Respiratory Rate Documented Prior to and 30-60 Minutes after Opiate Dose

1. The respiratory rate was documented significantly more often prior to opiate dose administration in the intervention group (p < .0001).
2. The respiratory rate was documented significantly more often 30-60 minutes after opiate dose administration in the intervention group (p < .0001).
DATA ANALYSIS

• SURVEY RESULTS

RNs response to survey questions: supported the statistical finding from the data collected in the two cohorts

DATA ANALYSIS

Five Survey Questions Had the Strongest Correlations

Nursing Survey Demographics

• Question 1 – Years as a pediatric nurse
  – n= 19 nurses
  – Median = 4 years, Mean = 5.8 years
  – Range 0.16 to 25

• Question 2 - Used the POSS on one or more patients
  – Yes=17
  – No=1
  – Non-response= 1

• The two participants who answered no and non-response answered neutral for all the other questions
Survey Responses Questions 3&4

I feel confident I have used the POSS correctly

Every patient on opioids for analgesic purposes should be scored by the POSS.

Survey Responses Questions 5&6

Using the POSS to score pediatric patient sedation levels was easy.

I feel confident I have scored the pediatric patient’s sedation level correctly when using the POSS.

Survey Responses Questions 7&8

The POSS helped with continuity of the assessment and charting on my pediatric patient’s sedation level while on opioids for pain control.

The POSS helped me respond appropriately to the patient’s clinical changes.
I found the POSS to be an appropriate scale to use for pediatric patients receiving opioids for analgesic purposes.
The POSS helped to standardize a safe use of opioids when administered for pain.

**Survey Responses Questions 9 & 10**

**DATA ANALYSIS**

- **Question 9**
  - “POSS is an appropriate scale to use on pediatric patients”
- **Question 10**
  - “POSS helped to standardize the safe use of opioids”
  - (r=0.87, p<.05)
- Nurses who believed the POSS was an appropriate scale for pediatric patients were more likely to:
  - Agree the POSS helped standardize the safe use of opioids

**DATA ANALYSIS**

- **Question 3**
  - “Confident they used POSS correctly”
- **Question 7**
  - “POSS helped with continuity of assessment and charting”
  - (r=0.84, p<.05)
- Nurses who were confident they used POSS correctly were also more likely to:
  - Agree POSS helped with the continuity of assessment and charting sedation levels
DATA ANALYSIS

• **Question 5**
  – “The POSS was easy to use”

• **Question 6**
  – “Confident that the sedation level was correct using the POSS”
  – \( r = 0.81, p < .05 \)

• Nurses who felt the POSS was easy to use were also more likely to:
  – Feel confident they scored the patient sedation correctly

DATA ANALYSIS

• **Question 6**
  – “Confident that the sedation level was correct using POSS”

• **Question 10**
  – “POSS helped to standardize the safe use of opioids”
  – \( r = 0.78, p < .05 \)

• Nurses who believed they scored patient sedation correctly with POSS were also more likely to:
  – Agree the POSS helped standardize the safe use of opioids

**Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>1.000</th>
<th>0.1271</th>
<th>0.4014</th>
<th>0.5833</th>
<th>0.3492</th>
<th>0.6396</th>
<th>0.4358</th>
<th>0.2712</th>
<th>0.7790</th>
<th>1.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of years a pediatric nurse</td>
<td>0.8081</td>
<td>0.6396</td>
<td>0.5282</td>
<td>0.6689</td>
<td>0.7687</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using POSS was easy</td>
<td>0.2712</td>
<td>0.4014</td>
<td>0.318</td>
<td>0.8439</td>
<td>0.7346</td>
<td>0.4083</td>
<td>0.4187</td>
<td>0.8439</td>
<td>0.7790</td>
<td>1.000</td>
</tr>
<tr>
<td>Being confident</td>
<td>0.4449</td>
<td>0.5449</td>
<td>0.5833</td>
<td>0.7790</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using POSS was easy</td>
<td>0.8081</td>
<td>0.6396</td>
<td>0.5282</td>
<td>0.6689</td>
<td>0.7687</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Having continuity of</td>
<td>1.000</td>
<td>0.7790</td>
<td>0.6075</td>
<td>0.5369</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>0.4358</td>
<td>0.6318</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS is an appropriate</td>
<td>1.000</td>
<td>0.8662</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSS helped to</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DISCUSSION

General consensus from RN’s survey was that the POSS:
- was easy to use
- appropriate for pediatric patients
DISCUSSION
Data extracted from the medical records for the control cohorts revealed that prior to POSS, RNs annotated vague word descriptors to document alertness or sedation such as:

- crying,
- resting,
- awake, drowsy,
- sleeping, watching TV and
- resting with eyes closed.

POSS

Discussion

There was an improvement in documentation with the use of the POSS

- RNs were able to standardize the assessment of patients receiving opioids for analgesic purposes through the use of the POSS
- Using a scale like the POSS has standardized description and actions for each level of sedation
Discussion

POSS
is
Reliable
Valid Tool
In the Pediatric Population
over one year of age

Discussion

RNs confidence level
improved
with the use of the POSS

Discussion

Improving RN communication
regarding sedation
ultimately
improves patient safety
LIMITATIONS

• A relatively small sample size
• The sample was convenient and not randomized
• There were more opioid administrations in older subjects in the intervention group than the control group

LIMITATIONS

It was not a blind study therefore the potential for bias existed as the staff knew the data was being collected

IMPLICATIONS FOR PRACTICE AND RESEARCH

• Follow up plans to improve compliance with assessment and documentation of the POSS need to be implemented
• Nurses should be surveyed again to compare current perceptions with original survey perceptions
IMPLICATIONS FOR PRACTICE AND RESEARCH

• Tool for:
  – Improved communication with parents
  – Patient and family education (safe pain control)

IMPLICATIONS FOR PRACTICE AND RESEARCH

• The study should be replicated
  – Using a randomized control design
  – In a larger sample of pediatric patients

• As this study did not include any participants under 1 year of age, additional study of the use of POSS in infants younger than 1 year is also warranted

CONCLUSION

• The tool gives standardized information regarding how awake or sedated a pediatric patient is prior to and after administering an opioid

• This will optimize safe and effective analgesia to pediatric patients
Conclusion

• The POSS will also provide consistent language that facilitates communication about sedation among the healthcare providers

• The POSS is a reliable tool for opioid sedation assessment in pediatric patients between ages 1-17 years old.

Research to Practice

• This research project was an opportunity to take what began as a question posed by the pediatric practice council, through the research process, and into practice at the bedside.

We would like to acknowledge the participation of:

Lacy Aycock, RN, FNP
Hugh Crews, PhD
REFERENCES

REFERENCES

