



Does Education on Multimodal Pain Relief Empower Nurses to Utilize Best Practice on Neonatal Circumcision?

Katherine Bednarek, BSN, Diane Bigos, BSN, Kelly Dougherty, BSN, Stephanie Perini, BSN, Nancy Retter, BSN, Vanessa Swanson, ADN, Phuong Tran, BSN,

Background There are observed inconsistencies in administration of multimodal pain relief during neonatal circumcision. Additionally, RN's reported a feeling of lack of empowerment when confronting physicians regarding administration of pain relief.

Purpose The purpose of this project was to educate nurses on multiple methods of pain relief during circumcision so they would feel more empowered to intervene if necessary.

Methods

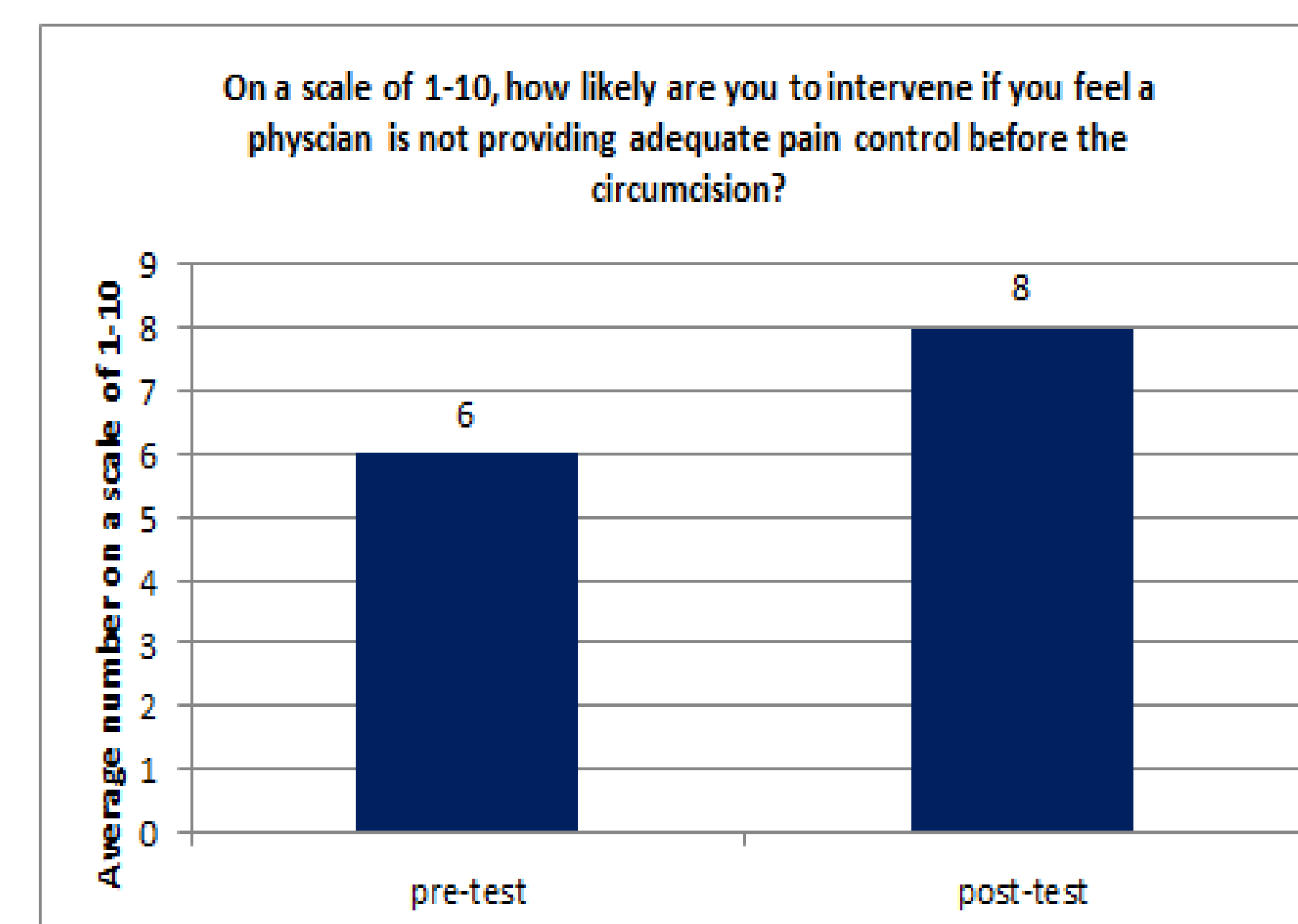
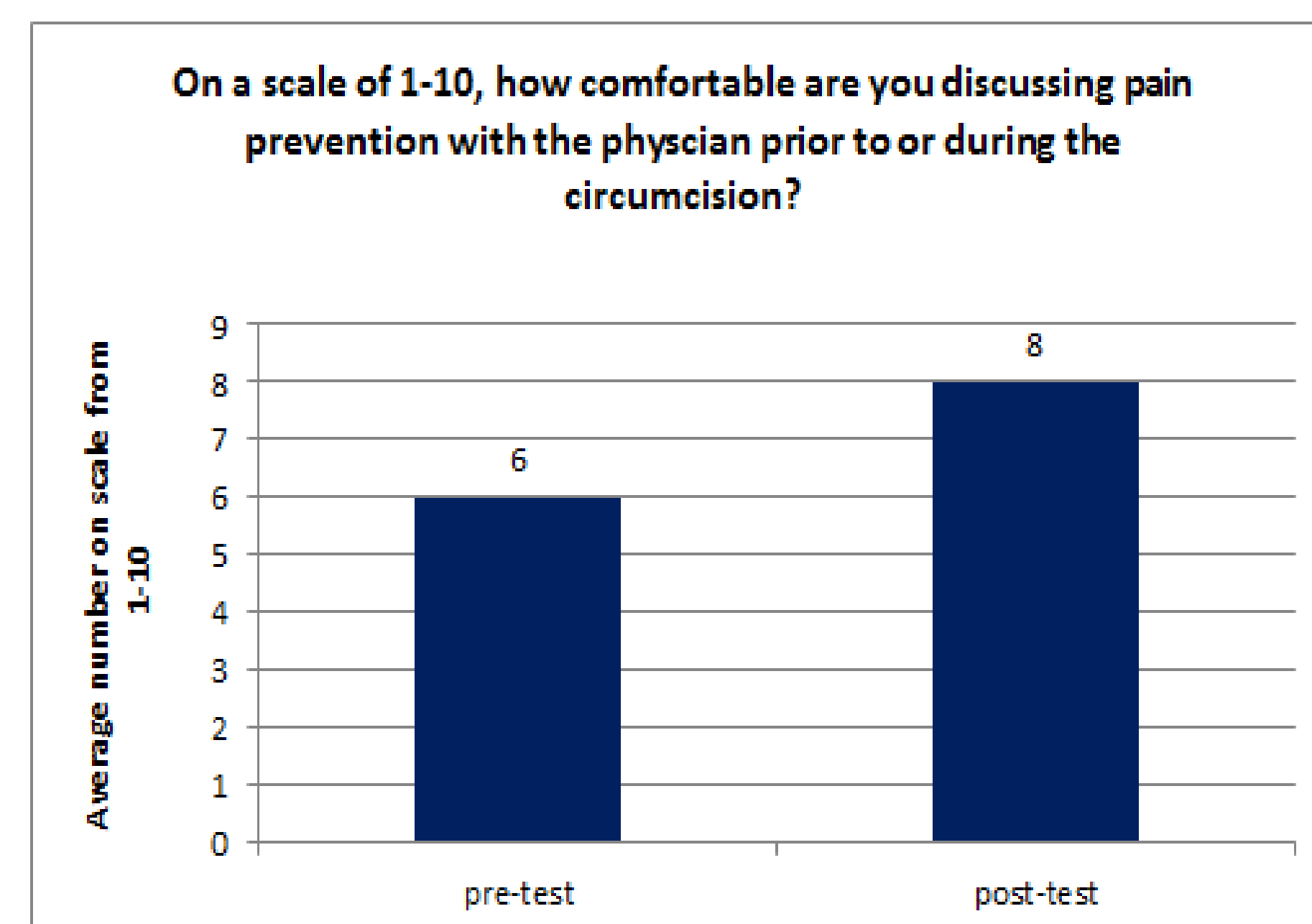
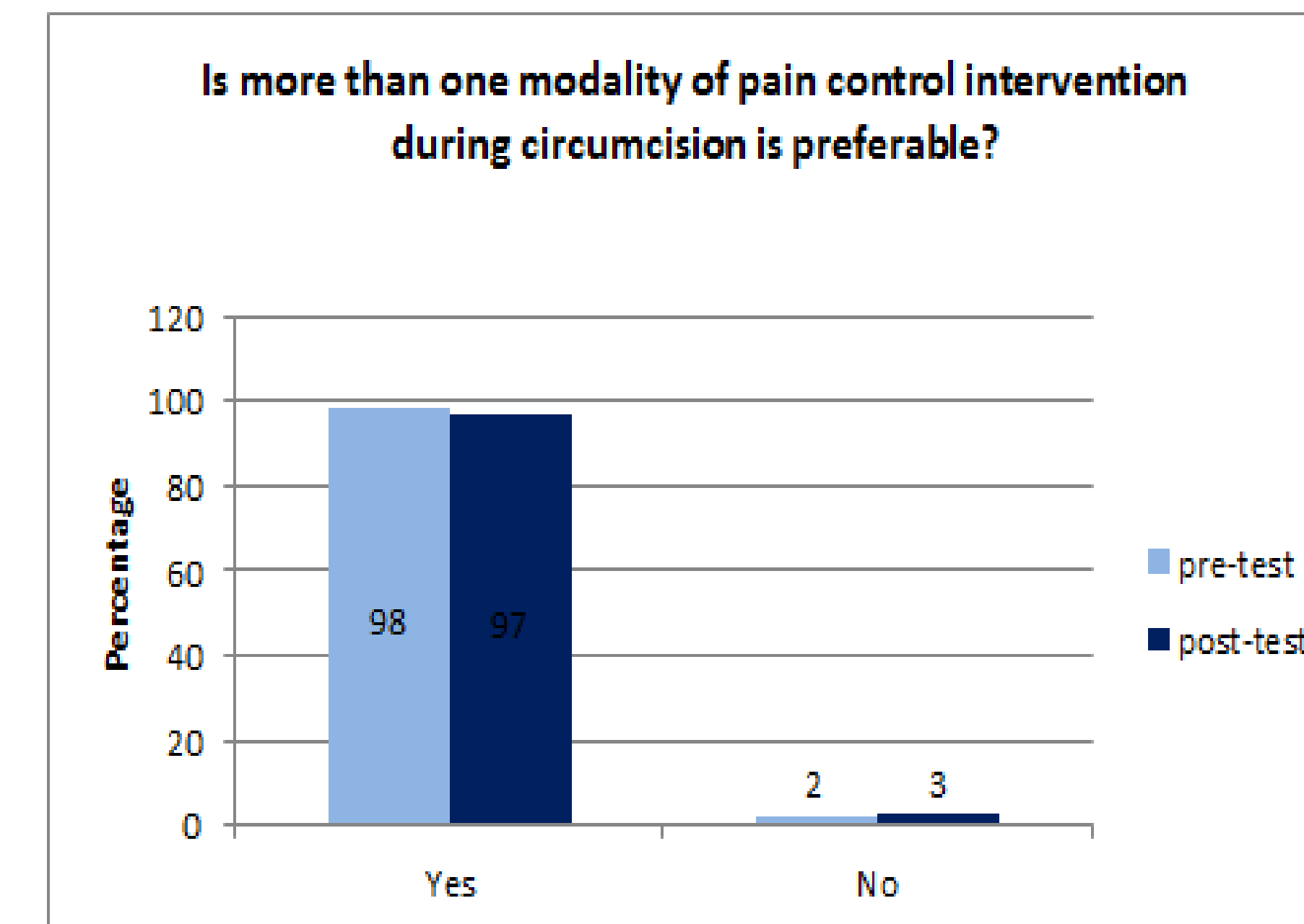
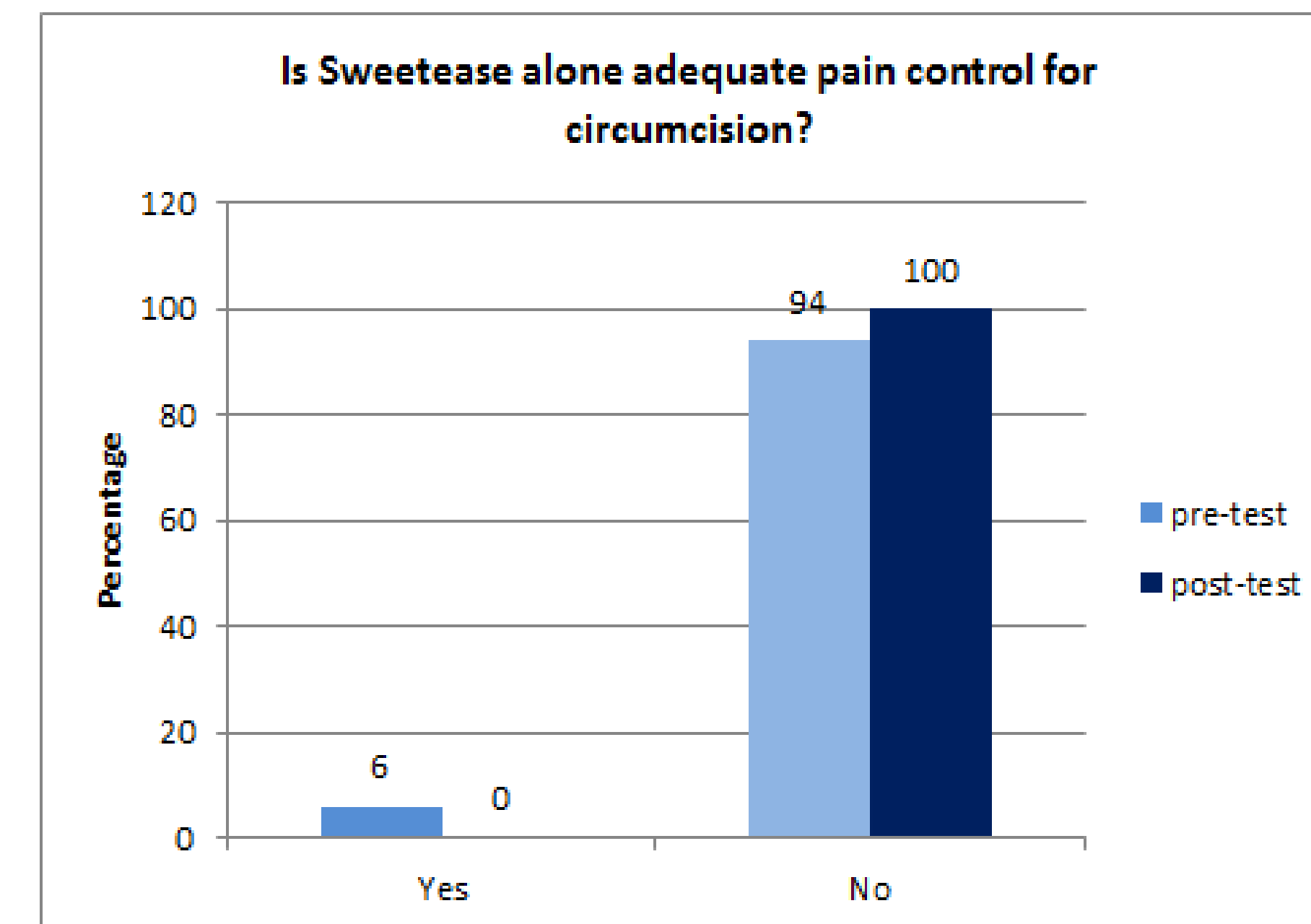
A total of eight research articles were reviewed. They included research on different forms of neonatal circumcision pain relief. The evidence evaluated that a combination of pharmacological and nonpharmacological interventions provides better pain relief during and after neonatal circumcision. It was also found that education on multimodal pain relief increases the nurses self-efficacy when advocating for patient pain relief.

We used a pre-implementation survey to assess the nurses knowledge and comfort level regarding circumcision pain and intervening when adequate pain relief is not being offered. We created an education board that was implemented on the unit to outline appropriate pain relief methods for circumcision. A post-education survey was provided to our nurses after completing the education board to assess their perceived self-efficacy.

-Article titled "Ring block of the penis" shows that multimodal pain relief, consisting of EMLA cream, Sucrose and a ring block, enhance the effectiveness in providing pain relief to the newborn during circumcision.

-Article titled "Circumcision 6 "S" comfort care" describes how nursing interventions during circumcision (swaddle, shade, pacifier, sucrose) decrease newborn's pain when combined with medical interventions (anesthesia and waiting for it to take effect)

-Article titled "Combination analgesia for neonatal circumcision: a randomized controlled trial" illustrates how the use of combined analgesia, including ring block, oral sucrose, and EMLA cream, provides the most effective form of pain relief for neonates during circumcision.



The graphs above depict knowledge of pain control and the nurses comfort with discussing pain prevention and also intervening if a doctor is not using adequate pain prevention. This was measured by giving out a pre-test to the nurses. Then, an education board was set up on the unit that nurses were required to complete. After the education board was completed, the nurses were required to complete a post test. A total of ninety-eight responses were received, as results are presented in the bar graphs above.

Limitations to this study include a relatively small sample size, as only the nurses on Family Centered Care were tested and did not include other units that may practice neonatal circumcision. It was also limited by the amount of nurses that participated in the study, as not all nurses on the Family Centered Care unit participated.

Findings

The data acquired during this project indicates that providing education regarding multimodal pain relief does empower nurses to utilize best practice during neonatal circumcision, as evidenced by the pre and post tests that were administered on FCC. These findings are integral to the implementation of appropriate professional nursing education on postpartum units. Providing nurses with proper education allows them to maintain a working knowledge of best practice, as well as empowering them to advocate effectively for their patients.

Implications for Practice

The researchers of this project propose that education be routinely provided to all postpartum nurses regarding current best practices for pain relief during neonatal circumcision. Additionally, all nurses should be encouraged and empowered to advocate for their patients, through innovative professional development.

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Project Contact

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Background

Background: The neurological patient population is at high risk of falls and for removing indwelling medical equipment (peripheral IVs, Foley catheters, central lines) necessary for their treatment while in the hospital due to impulsivity, confusion, or lack of awareness.

Purpose: The purpose of this project is to examine the evidence that remote video monitoring alarm systems prevent falls and the removal of indwelling patient equipment.

Methods

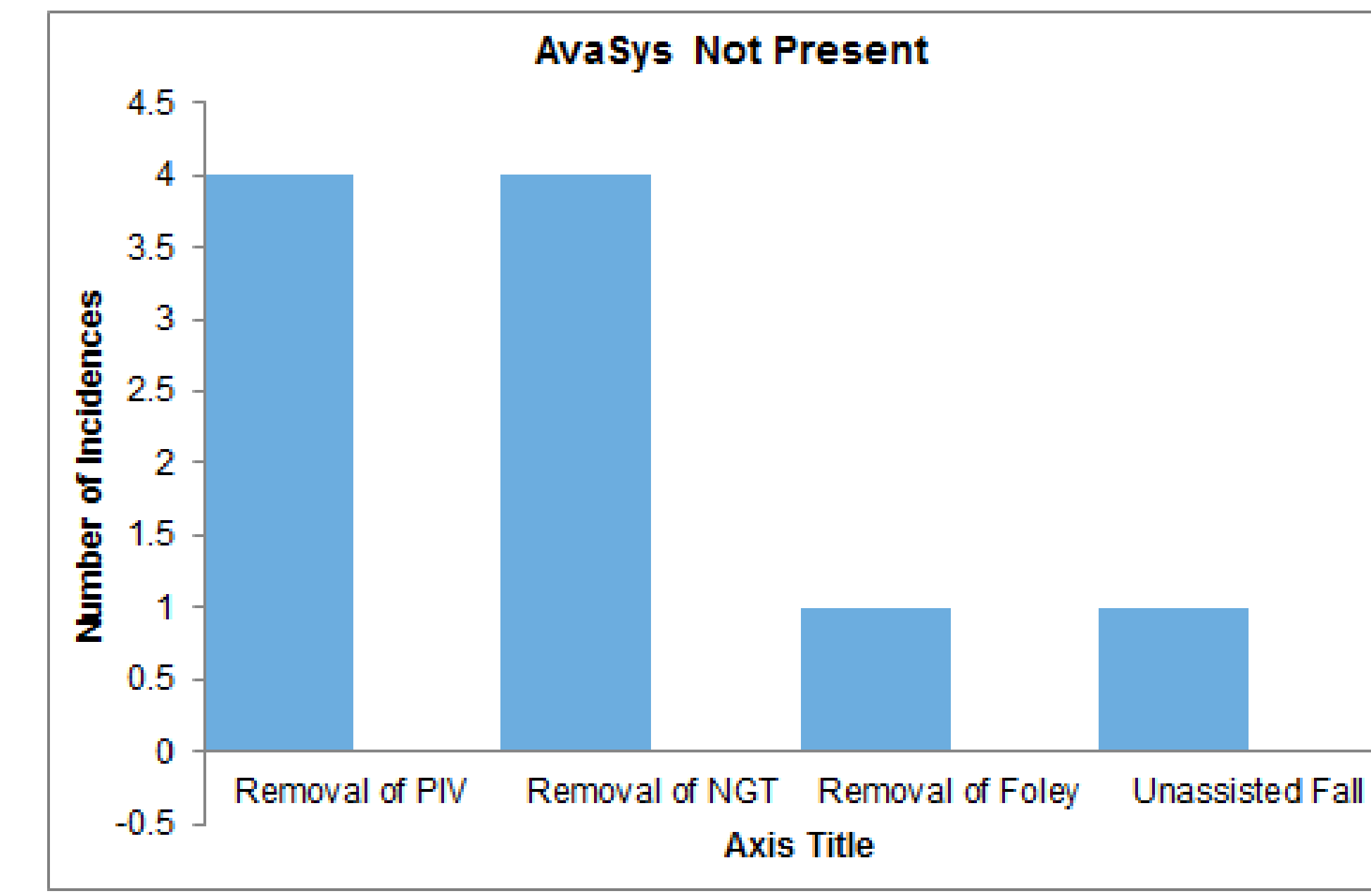
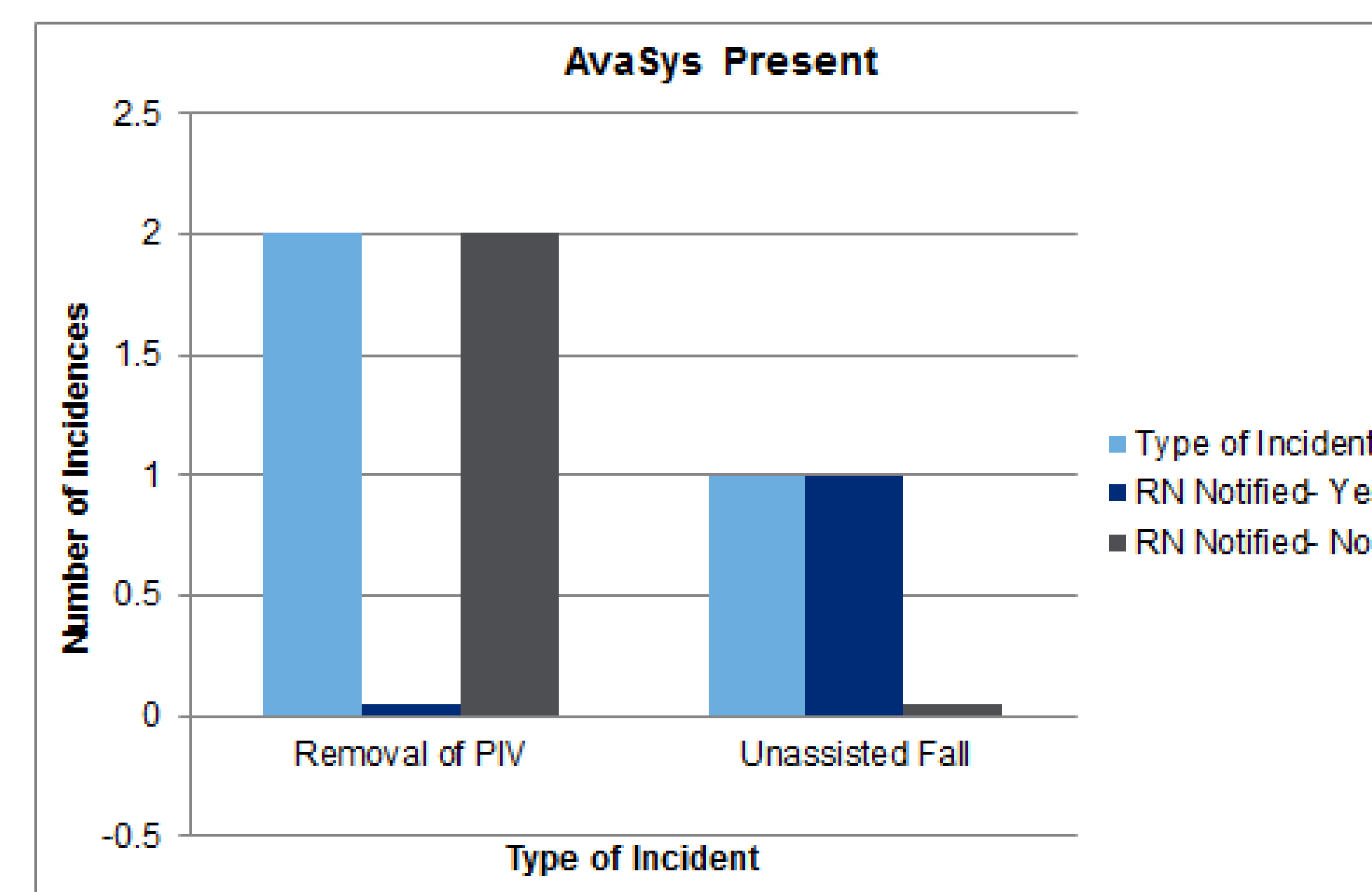
A total of eight research articles of video monitoring systems and patient safety were reviewed. With close to a million falls reported in hospitals throughout the country, about 30% of these falls result in patient harm (Dašić, Dašić, & Crvenković, 2017). The cost for each fall that results in harm is estimated at \$17,500 (Votruba, Graham, Wisinski, & Syed, 2016). By having a video monitor in place, falls were reduced by 28.5%, thus reducing hospital expense as well (Sand-Jecklin, Johnson, & Tylka, 2016).

The neuroscience population is at high risk for falls and therefore uses a remote video monitoring system. To affirm our experiences were aligned with the evidence a written survey was created to document any unassisted fall or removal of indwelling equipment and if there was a remote video monitor in place during the event. The survey was available on the Neuroscience and Stroke units for registered nurses to complete if their patient had an unassisted fall or removed an indwelling line. Surveys were collected over a three week time period.

Data

Unassisted Falls/Removal of Indwelling Lines New Grad Fellowship Survey

Unassisted Fall?	Y	N	N/A
Removal of IV or Central Line? Specify which line if applicable:	Y	N	N/A
Removal of NG Tube?	Y	N	N/A
Removal of Foley?	Y	N	N/A
AvaSys Present?	Y	N	N/A
If AvaSys Present, Did it notify the nurse?	Y	N	N/A



Avasys Monitor



Findings

According to the data collected on the Neuroscience and Stroke units, it was affirmed that having the AvaSys (remote video monitoring in use) in place resulted in less incidences of the removal of indwelling lines. Although there were the same amount of unassisted falls, the AvaSys was able to alert the RN with the alarm. AvaSys was not effective in communicating the self removal of PIVs, as the RNs filling out the survey mentioned that they were the ones to discover the pulled out PIVs.

Implications for Practice

A reduction in falls and the removal of indwelling lines by using AvaSys is beneficial to the patient and the hospital. It improves patient safety and the quality of care that the patient is receiving. A recommendation of improvement in this new technology would be to have a better notification system. AvaSys is capable of sounding an alarm. However, the alarm can be muffled by environmental noise and the staff may utilize time in determining which room the alarm is sounding in. Also, monitor technicians may also call the registered nurse directly. This may not be as effective if the nurse is on another call, in an isolation room, or in the process of administering medication. A more effective measure of communication would be to incorporate the AvaSys alarm into Responder Five (unit's call light system). This would signal the light outside of the patient's door and send a notification to the nurse's spectra link, allowing for a more efficient response time. Monitor technicians could also send test pages in the beginning of each shift to ensure the system is working appropriately.

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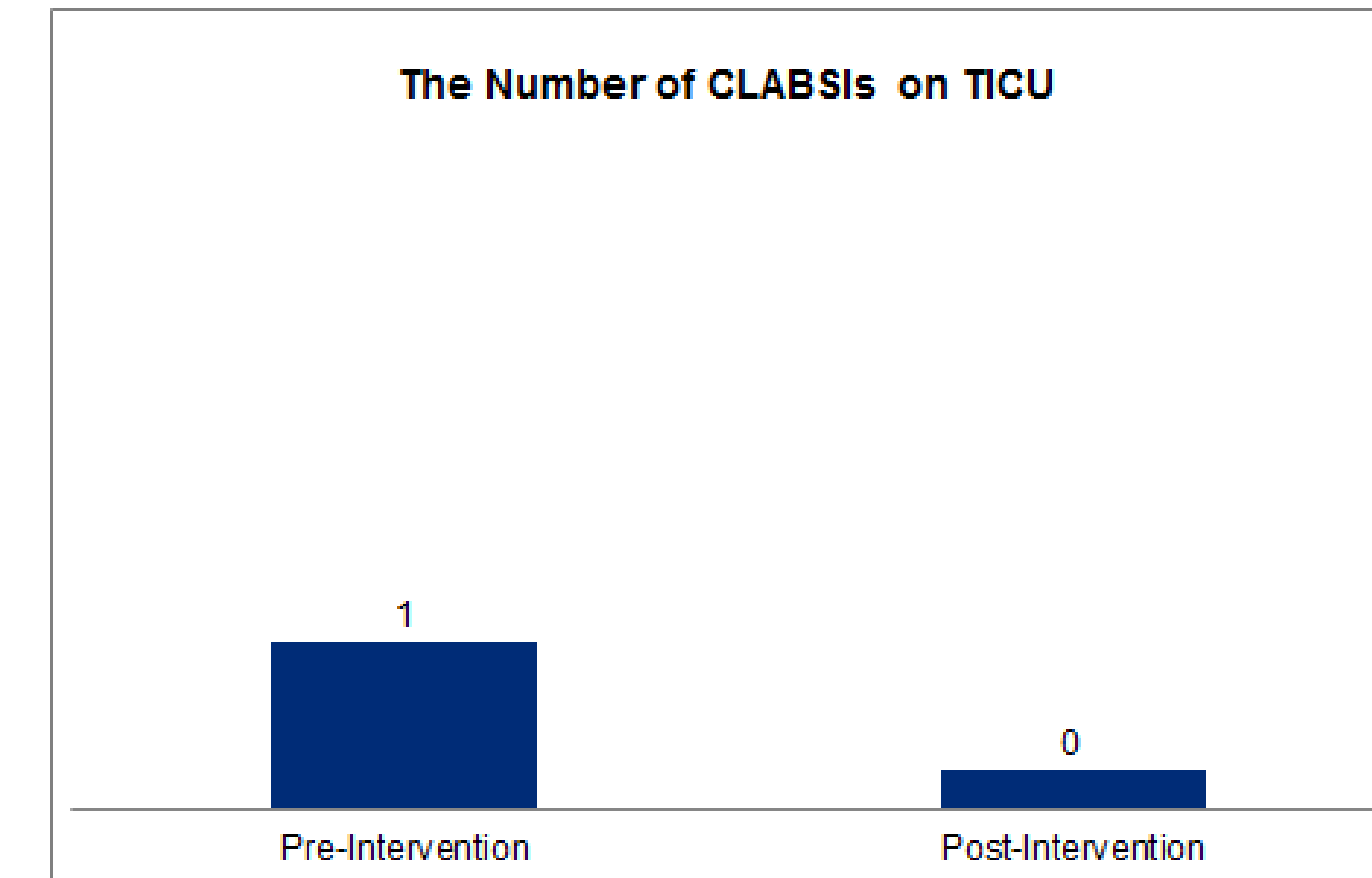
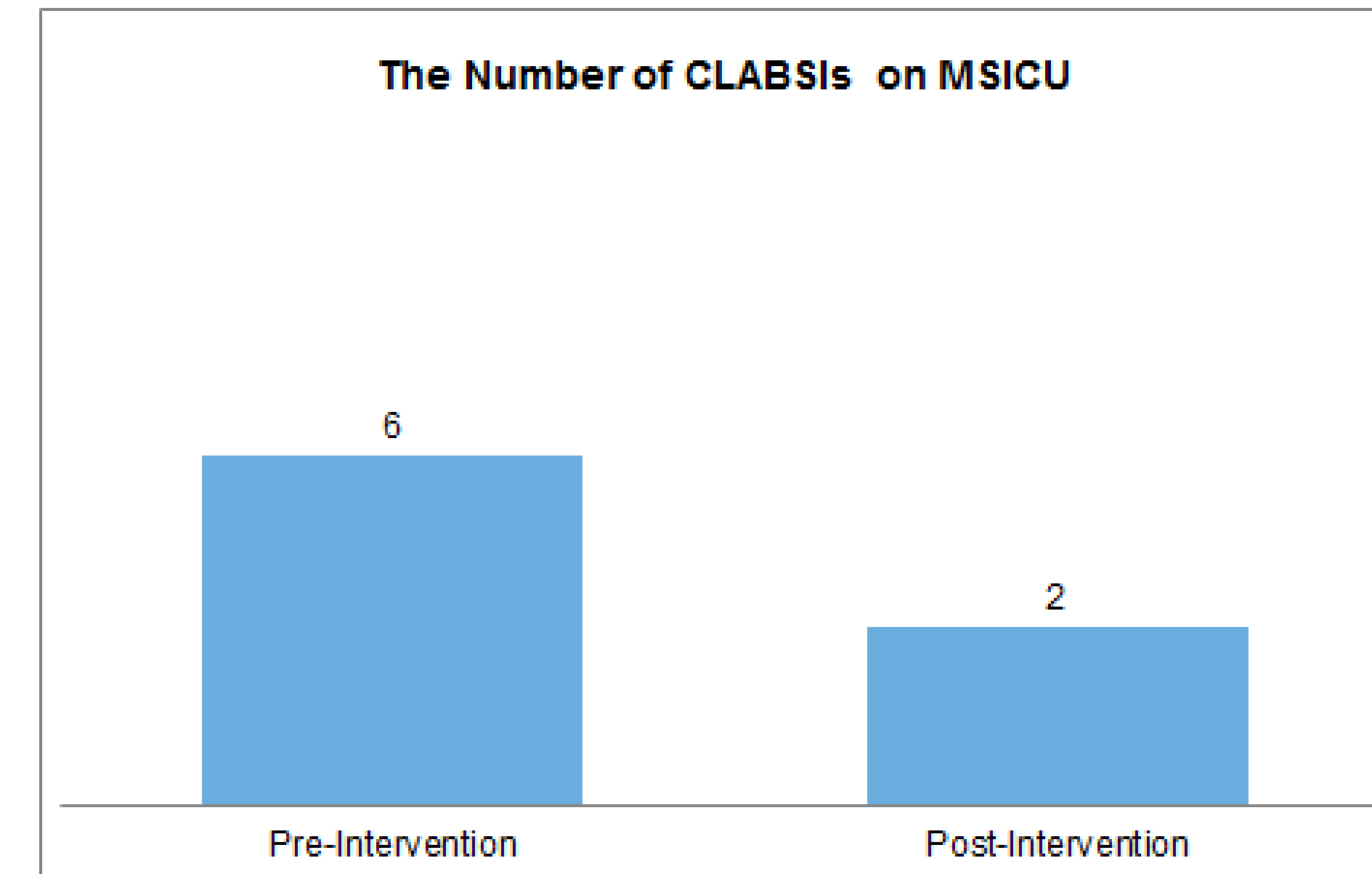
Background

Background In 2016, there was 1 documented CLABSI in the Medical-Surgical ICU. In 2017, there were 6 instances of CLABSI's on MSICU. The number of infections had increased across IFMC when compared to bloodstream infection (CLABSI) to the previous five years. This is a concern as Inova is dedicated to “do-no-harm”. CLABSI's are also not reimbursed from insurance agencies or Medicaid due to being acquired from the hospital. Trauma ICU on the other hand, was once the leading units for CLABSI rates in all of the tower. In 2016 TICU had 1 documented CLABSI. The rate decreased upon implementation of two RN verification for all central line dressing changes,

Purpose The purpose of this project is to identify further interventions that can reduce the number of CLABSI's in the intensive care setting.

Methods

- Five peer-reviewed articles were appraised and deemed suitable for use
- Each article listed interventions that demonstrated a reduction in the number of CLABSI's. Including:
 1. **Dressing change team:** Appointed nurses that would be re-trained on dressing changes and be designated as the second-assist for all femoral, subclavian, arterial, and jugular catheters. Articles favored this method as opposed to any staff member being able to change said dressings. Designated staff would include MSICU Charge RNs and TICU Unit Supervisors.
 2. **Multidisciplinary approach:** Research indicated re-evaluating the patient's need for a central line every 12 hours would result in quicker removal and less likely to develop infection from the line
 3. **Central-line dressing checklist:** Multiple articles used this method to ensure each staff member was in accordance with protocol
- A central-line dressing team was implemented in June 2018 by the nurse residents and MSICU charge nurses. The entire unit is now trained on the sterile technique in accordance with Inova's Central line dressing checklist.



Steps to implementing a dressing change team:

Step 1: Experienced MSICU charge RNs and TICU Unit Supervisors were identified to serve as trainers for central-line dressing auditing. After each MSICU/TICU new graduate resident RN was trained, they also served as educators for the change being implemented on the critical care units. Charge RNs enforced the use of the central line dressing checklist as listed on InovaNet. A new CHG impregnated dressing was purchased and stocked in clean holding by Inova and an in-service was held by the manufacturer to train staff on the proper use. The new dressing does not require a Biopatch to be used.

Step 2: Unit Registered Nurses were re-educated on the proper dressing change method including: sterile process, CHG scrub timing, new CHG impregnated dressing use, and how to actively use the dressing checklist to verify each step was performed.

Step 3: Registered Nurses were reminded that the central line caps must be changed every 92 hours and the dressing must be changed:

- Within 48 hours if there is a gauze-pressure seal in place
- As soon as possible if dressing is visibly soiled, if the dressing is not covering insertion side, if the insertion site is saturated in blood
- Within seven days, if the dressing is clean, dry, and intact

The following information should be documented and/or assessed every shift, if applicable:

1. **The patient specific indication for the central-line.** If no indication is present, the nurse must notify the attending physician for an order to remove the line. The TICU team addressed each patient room during shift rounding using a dry erase board outside the individual room indicating what type of invasive line the patient has, how many days the line has been present and indication for use. Each line is readdressed and updated each shift to ensure timely removal of unnecessary invasive lines.
2. **Labeling the Dressing.** The dressing label must include: When the dressing was last changed, the insertion date and the date of the last dressing change as well as the initials of the RN who change the dressing ate must be clearly labeled on top of the dressing.
3. **Port Use and IV Tubing:** The tubing infusing through each catheter port must be labelled with the date, time, and RN's initial. If there is a port not being used for an infusion, there must be a green Curoscap attached to the port hub.
4. **Bedside Handoff:** During bedside hand-off, the oncoming and receiving RNs will verify the above information.

Findings

When a central-line dressing change team was implemented and trained by experienced nurses using Inova Policy checklist, it reduced the number of MSICU CLABSI's in 2018 to two (as of July 2018). After interventions, TICU CLABSI's reduced to zero in 2018. In addition, a multidisciplinary approach to evaluating the patient's need for the central catheter and the catheter's readiness to be removed reduces the number of CLABSI's.

Implications for Practice

To better serve our patient population, new and experienced nurses should be trained on central-line dressings at a minimum of annually. Sterile technique in accordance with Inova Policy should be followed and two RNs must verify the policy was executed during each dressing change. Appropriate dressing and IV tubing documentation should follow.

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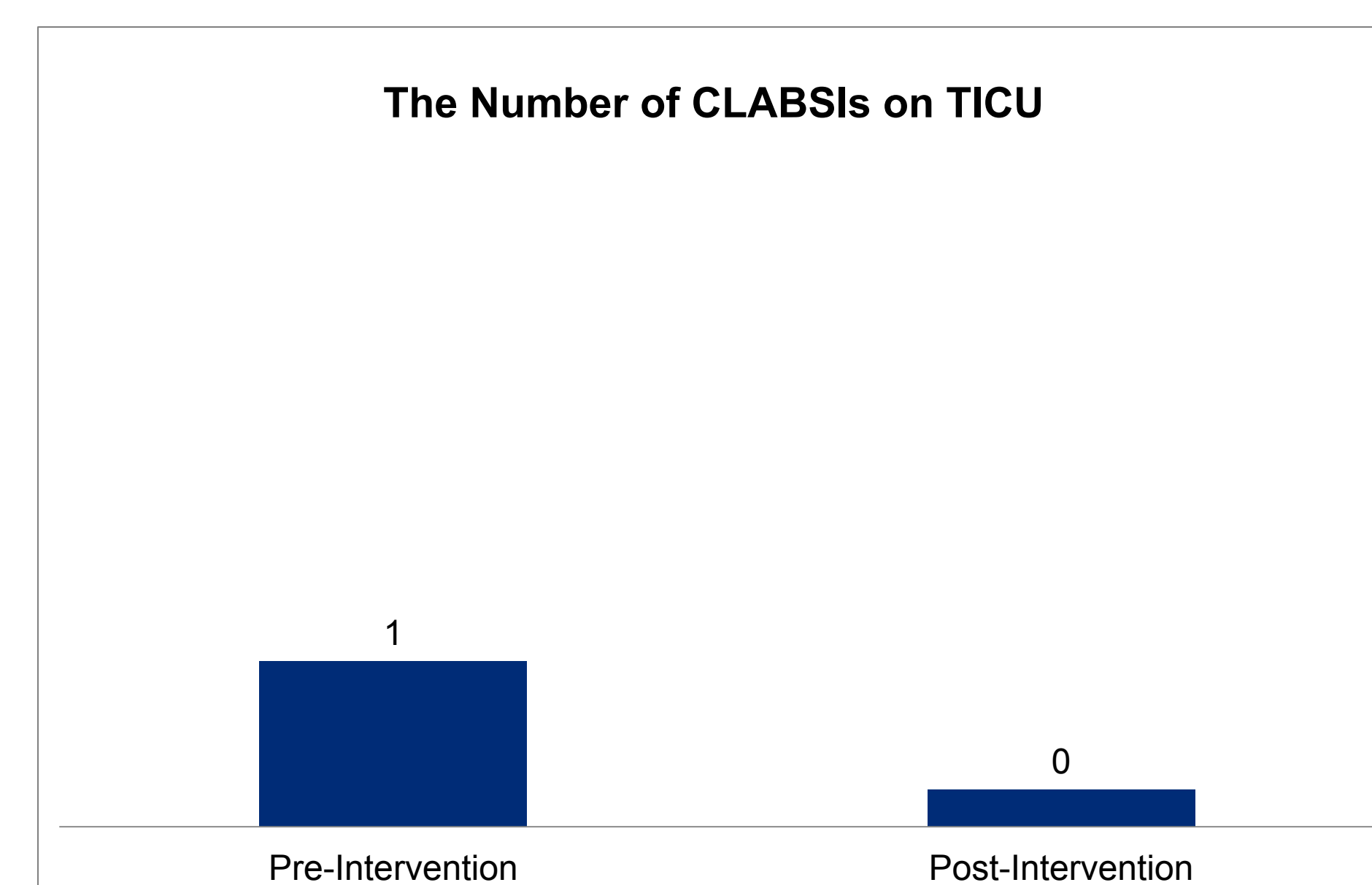
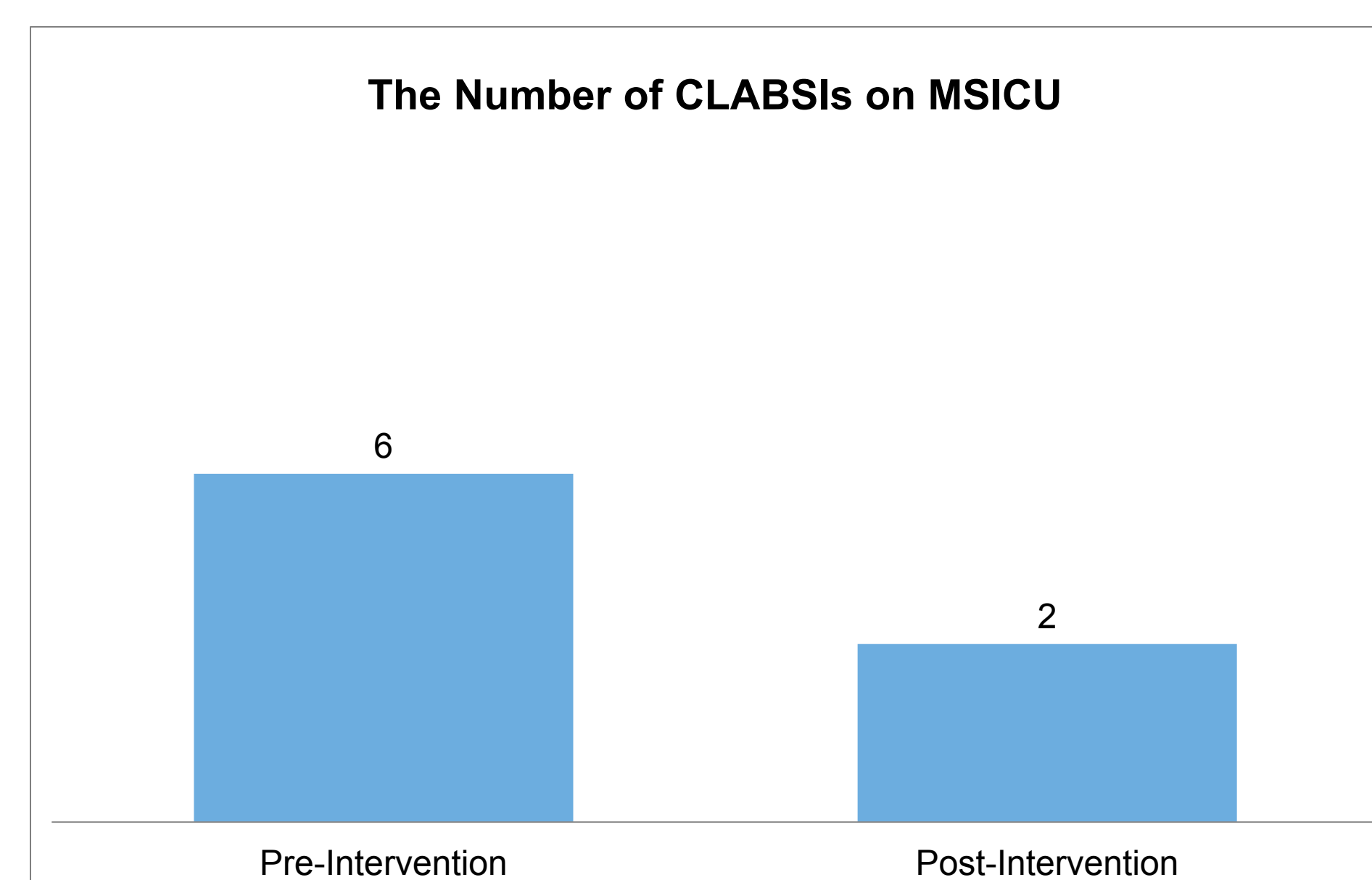
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In the Pediatric Intensive Care Unit, is a nurse-driven sedation protocol more effective than sedation ordered by physicians on a patient specific basis?

Alyssa Fiore, RN, BSN; Amanda Gatti, RN, BSN; Emma Gonzalez, RN, BSN; Madison McKenzie, RN, BSN; Katherine Rossbach, RN, BSN

Background

Prior to the implementation of the EPIC charting system, a nurse-driven sedation protocol was used in the Pediatric Intensive Care Unit at INOVA Fairfax Medical Campus. However, since the system change, the protocol was discontinued and sedation is ordered by physicians on a patient-specific basis.

Purpose

The purpose of this project is to examine the research to determine if a nurse-driven sedation protocol should be implemented in the Pediatric ICU.

Methods

Articles were appraised and reviewed for this research. Inclusion criteria for the incorporated articles is a pediatric intensive care unit population, populations that were mechanically ventilated, and a nurse-driven sedation protocol. Exclusion criteria included the adult patient populations.

For the purpose of this project no interventions were implemented into the Pediatric Intensive Care Unit. Research was reviewed and the findings were presented to leaders on the Pediatric ICU on September 3, 2018.

Literature Review and Education for Leaders and Staff

Deeter (2011) and Yaghmai (2016) discussed the use of a sedation protocol in a Pediatric ICU at Seattle Children's Hospital. Deeter describes that the initial implementation of a sedation protocol led to a decreased amount of time on morphine infusions, lorazepam infusions, and overall patient sedation. However, in a follow up study, Yaghmai found that post-intervention these numbers eventually returned to pre-intervention rates. Total number of sedation days and length of mechanical ventilation was increased, as noted in Table 1 below, from the immediate post-intervention results. Post-intervention patients were 58% more likely to be sedated and 34% more likely to be in the PICU.

Variable	Intervention	Post-Intervention
Total sedation days	5 (3-17)	10 (6-22)
Opiate infusion days	5 (3-9)	6 (4-9)
Benzo Infusion days	0 (0-2)	0 (0-0)
Mechanical ventilation days	5 (3-7)	6 (4-8)
ICU length of stay	8.5 (5-14)	10 (7-15)

Table 1. Chart of Pre and Post-Intervention Variables. Adapted from "A pediatric sedation protocol for mechanically ventilated patients requires sustenance beyond implementation" by Yaghmai, B.F. et al., 2006, *Pediatric Critical Care Medicine*. Copyright date

Other researchers found insufficient evidence to support nurse-driven sedation. Curley (2015) found that with a nurse-driven sedation protocol length of mechanical ventilation did not change. Furthermore there was no change in pain management, withdrawal, extubation failure, ventilator associated pneumonia, or central line associated blood stream infections. A study by Poh (2014) also found that there was no noteworthy change in the amount of sedation boluses given to patients before or after the initiation of a nurse-driven sedation protocol.

Overall studies did not have enough evidence in strong support of a nurse-driven sedation protocol. The study by Poh (2014) explains that at this time there are not enough research studies that point to a nurse-driven sedation protocol being beneficial or harmful. According to Poh "more robust studies are urgently needed for this important aspect of PICU care" (2014).

Findings

Based on the findings from the literature, nurse-driven sedation protocols are "feasible and safe" (Giallard-Le Roux, 2016); however, the results are not overwhelmingly significant enough to surmount the training time, educational needs, and concern for over-sedation of pediatric patients. With a unit that faces a high level of RN turnover, new grad hires, and travelers, the protocol education would be impractical. The number of articles researching nurse-driven sedation in PICUs is minimal, and researchers request for more studies to be performed in order for greater conclusions to be made.

Implications for Practice

Based on these inconclusive findings, INOVA Fairfax PICU should continue current practice of physician ordered sedation on a patient-specific basis.

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Background

Kangaroo care in the NICU is a vital part of the premature infants development and stability. Currently rather than using a standing transfer technique, our nurses use a traditional nurse transfer technique that evidence has shown to be disorganizing and stressful on infants.

Purpose

The purpose of our project is to identify the transfer method that provides the infant with the most physiologic stability so that we can educate staff on the best transfer method, and increase overall incidence of skin to skin care for our littlest patients.

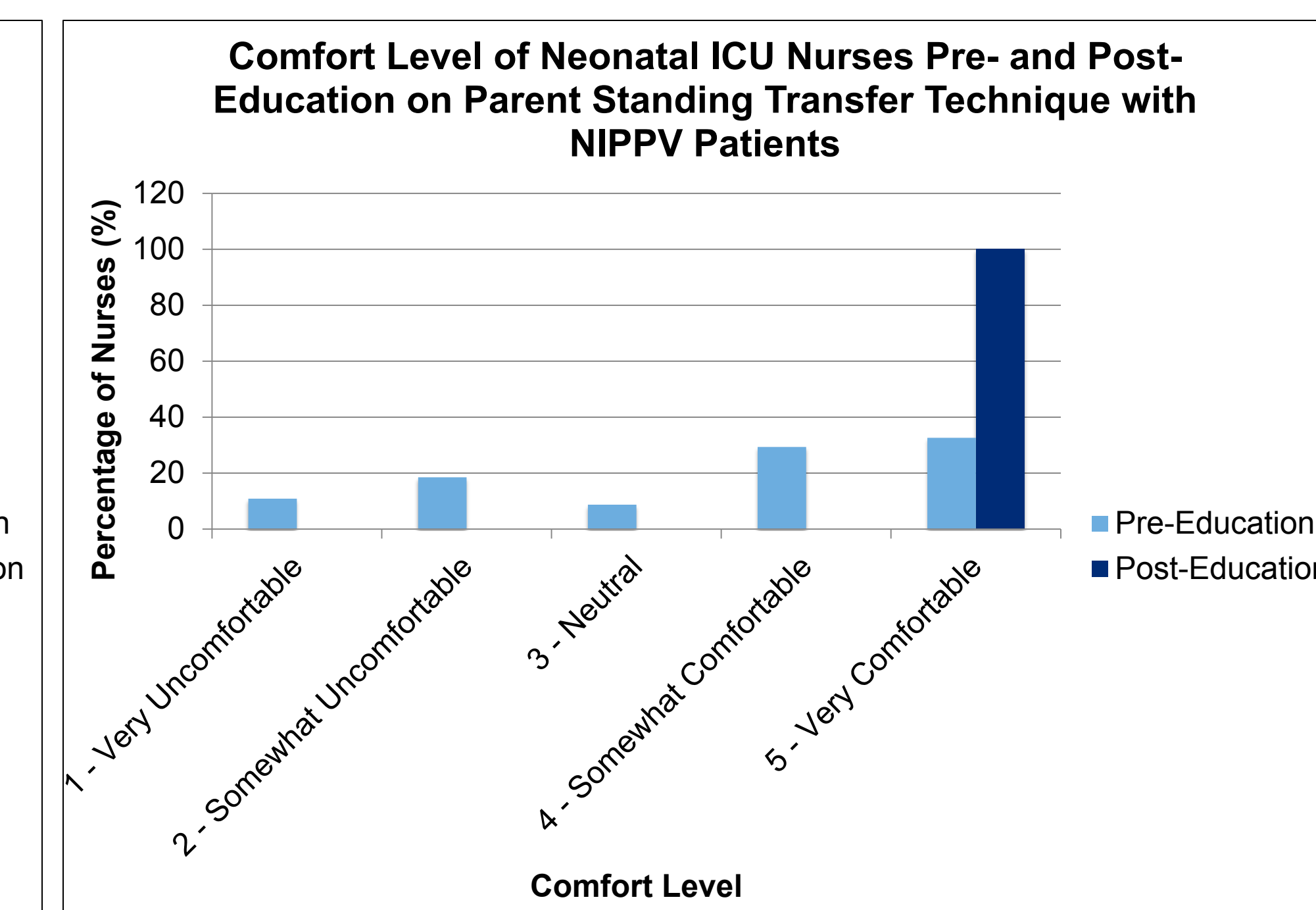
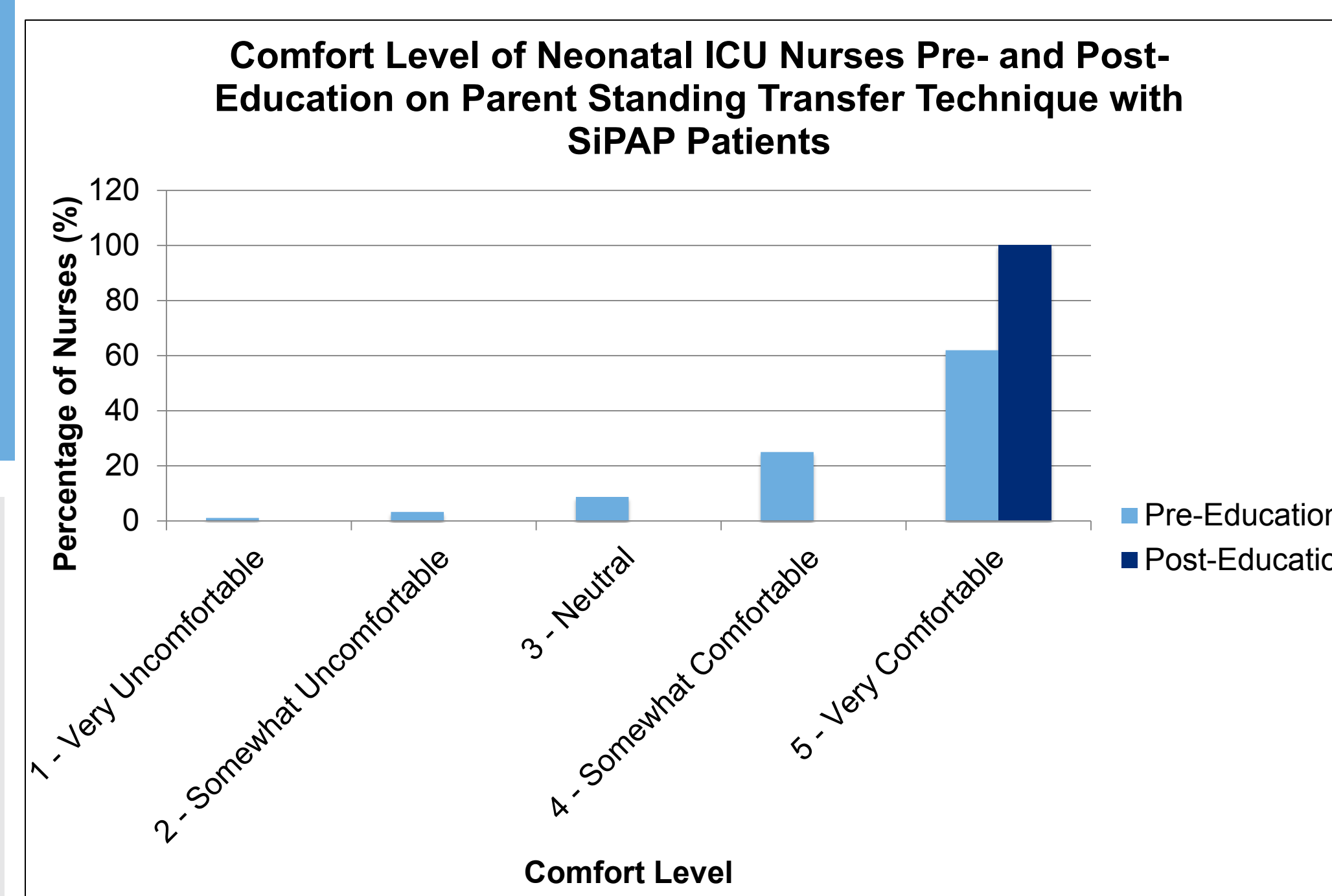
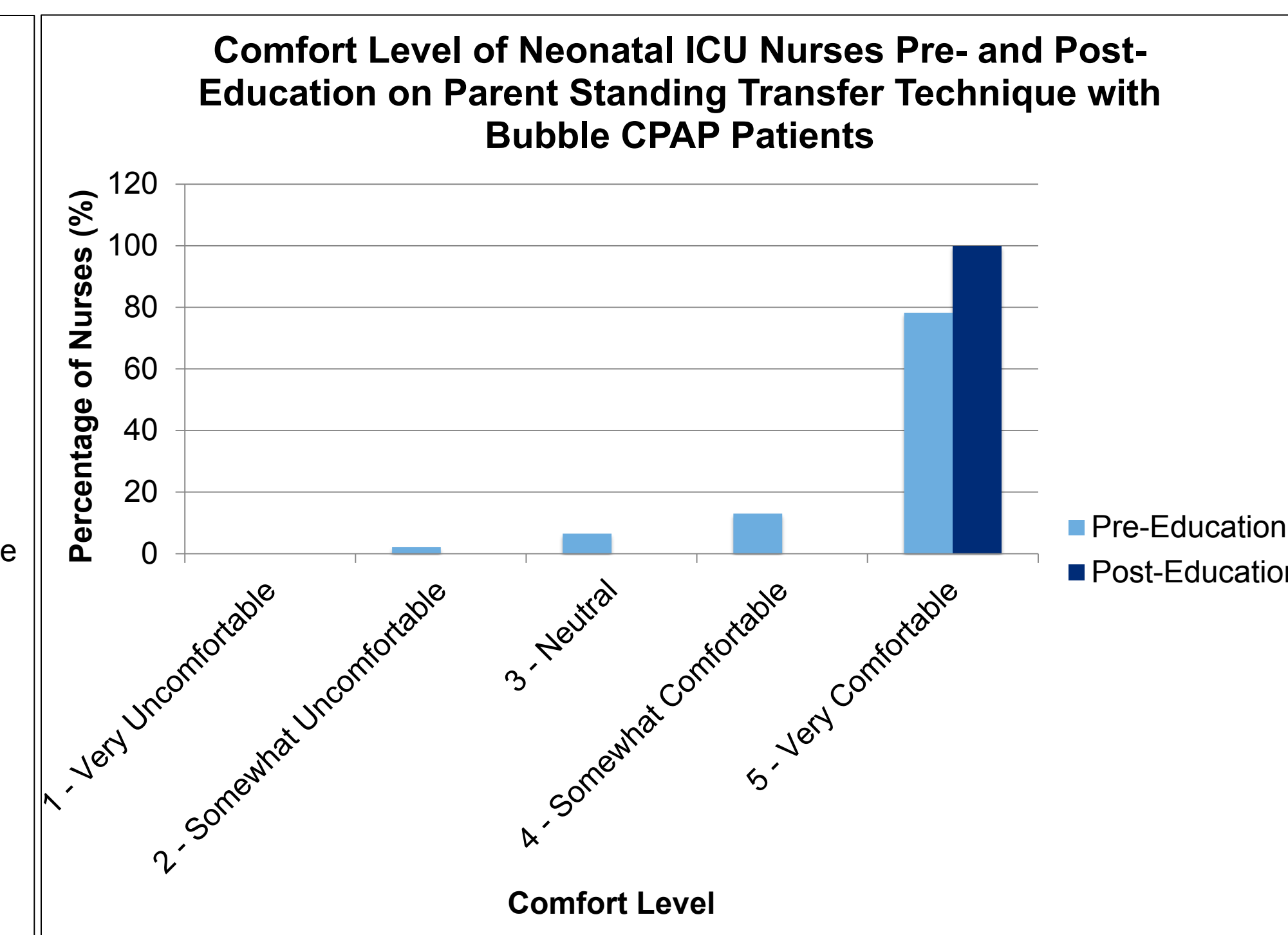
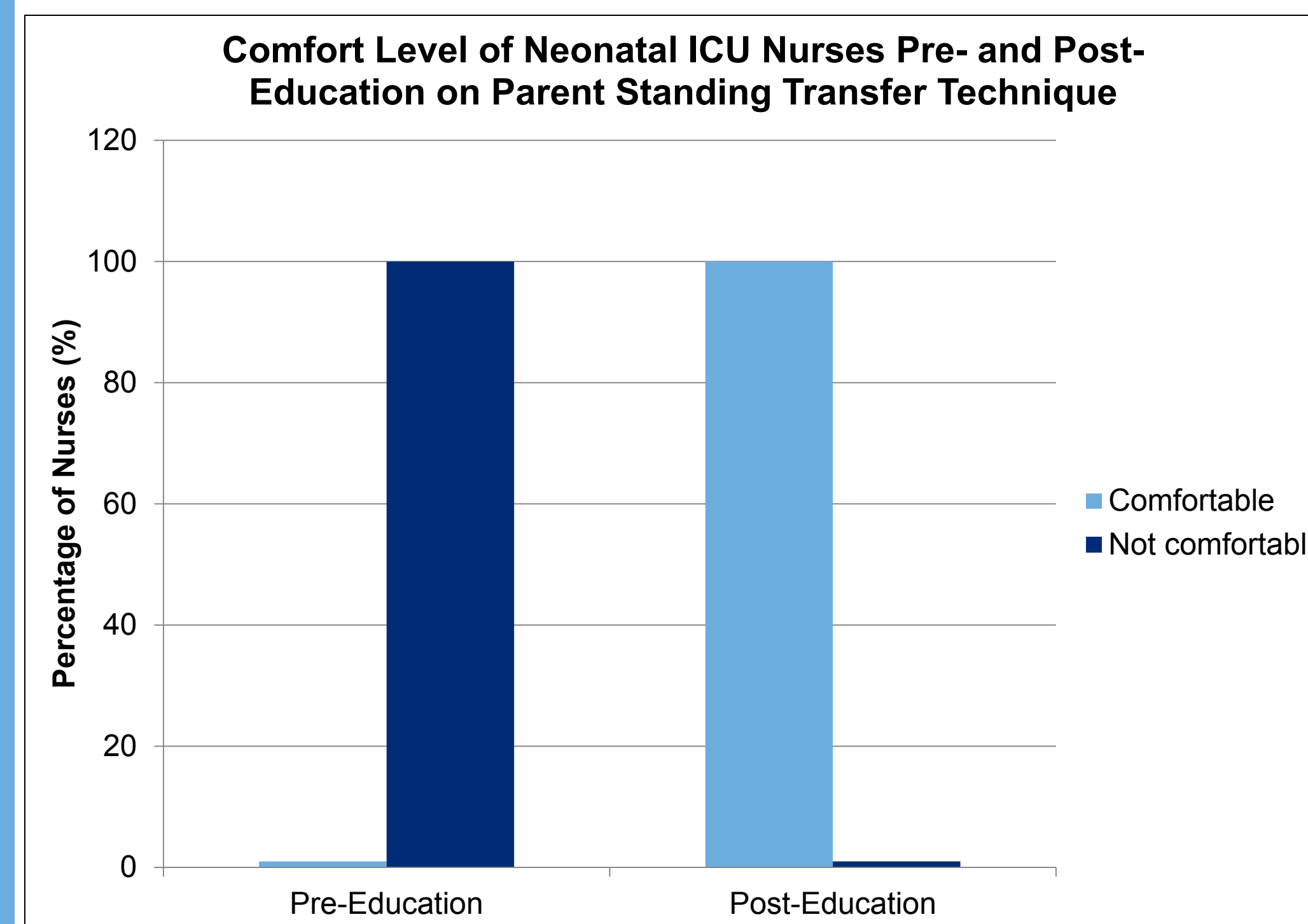
Methods

In preparation for this project we reviewed seven articles supporting the use of parent transfer technique. Our literature review provided evidence that the standing transfer resulted in improved vital sign stability throughout the transfer and during kangaroo care. Since this method is significantly less stressful for infants, fewer desaturations and bradycardic events occur. The infant's temperature is also shown to remain more stable. The standing transfer allows for more parental involvement in the infant's care leading to an improved bonding experience.

We used a pre-implementation survey to assess the comfort levels and barriers to current kangaroo care with the possibility of implementing a new technique. We created a protocol handout and posted it in two neighborhoods, allowing nurses to learn how to perform the parent standing transfer. A follow-up survey was conducted to review post-implementation results.

Acknowledgements

Thank you to the Fairfax NICU director and educator's for helping us share our new kangaroo care technique with the entirety of the NICU staff. Also, thank you to the nurses willing to implement this into their practice.



The above graphs depict NICU nurses comfort level's, based on patient's level of respiratory support, before and after being educated on the parent standing transfer during kangaroo care. It was determined that no matter the respiratory support of the patient, nurses felt more comfortable after being educated on the standing transfer method. Through the implication of this technique in two neighborhoods within our NICU, we found that this transfer method results in less desaturations and bradycardic events during transfer, while also improving vital sign stabilization throughout the entire process of kangaroo care.

Limits to our project include our relatively small sample size and the fact that only the opinion of nurses who were willing to implement this technique at the bedside were evaluated in the study.

Findings

Our literature review supported the standing transfer as a method for improving vital sign stability during patient transfer. Through our initial survey, we found that NICU nurses are more uncomfortable with kangaroo care transferring when infant's are requiring more respiratory support (i.e. Ventilators/Non-Invasive positive pressure ventilation). Barriers to the parent standing transfer included infant instability, a lack of knowledge, and fear of falls/dislodgements of tubes and lines. After implementation of education, our post-survey resulted in a far more comfortable staff when it comes to transferring infants to mom. Nurses felt that the standing transfer technique was a more stable transfer and led to fewer desaturation and bradycardic episodes.

Implications for Practice

Kangaroo care is extremely important in a premature infant's development and is something that should be done every day if possible. Making the process easier, safer, and more stable for the infant, through the application of the standing transfer method, allows NICU nurses to feel more comfortable with patient transfer, which may lead to an increased incidence of kangaroo care.

We recommend continued evaluation to determine if the application of the standing transfer technique leads to an increased incidence of kangaroo care in our unit.

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