

# Nurses Journey of Postoperative Pediatric Pain Care: A Qualitative Study Using Participation Observation in Indonesia

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## Abstract

**Background:** Unrelieved post-operative pain in children continues to be a major clinical problem, despite advances in pain management in Indonesia. The significance of the study is to address the gap in nurses' knowledge of pain management may be having. The study aim was to examine nurses post-operative pain care in an Indonesian Hospital.

**Methods:** A naturalistic, observational qualitative approach was undertaken to observe 16 participating nurses who cared for 16 children post-surgery. Each participant was observed continuously during three to four shifts of 5 h each over a 2-month period. Content analysis was performed to interpret the results.

**Results:** We found that, in general, the nurses did not routinely and comprehensively assess the extent to which the children were in pain post-surgery and that they rarely used non-pharmacological interventions. Such these interventions were often conducted by parents. However, the nurses readily provided analgesic drugs as needed to the children, especially during the first 48 h post-operative period. Our findings support those of previous studies that found the role of nurses in pain management is primarily administration of analgesic drugs. Moreover, such pain care did not conform to recommendations based on current evidence.

**Conclusions:** Post-operative pain care by nurses in a pediatric surgical ward were still un-optimal. These findings increase our knowledge and understanding about the complexities of postoperative pain care of children in Indonesia. Post-operative pain management in pediatric patients could be improved by increasing cooperation among healthcare professionals and parents. Post-operative pain management should be always put as a priority

**Keywords:** children's pain, nurses, post-operative pain care, observational study

## 1. Introduction

Ineffective pain management, in children in general, is an important issue for healthcare professionals worldwide. The proliferation of pain research, advances in the treatment of pain, and improved methods to alleviate pain in children have only brought about a minimal change in pain management practice; many children continue to suffer unnecessarily (IASP, 2010; Taddio et al., 2009; Twycross & Collins, 2013). This phenomenon is not specific to Indonesia; around the world, effective pain management continues to be a health care problem, especially for children (IASP, 2010; Taddio et al., 2009; Twycross & Collins, 2013). Specifically, the pain experienced by pediatric patients is routinely undertreated as children are not usually effectively medicated, and the pain levels that pediatric patients experience during hospitalization is often not adequately assessed and managed by nurses and hospital management (Kortesluoma, Nikkonen, & Serlo, 2008; Mathews, 2011; Twycross & Collins, 2013). Pediatric pain-management practices continue to fall short of the ideal (Shrestha-Ranjit & Manias, 2010; Twycross, Finley, & Latimer, 2013), with hospitalized children experiencing moderate to severe unrelieved pain post-operatively (Fortier, Chou, Maurer, & Kain, 2011; Shrestha-Ranjit & Manias, 2010; Taylor, Boyer, & Campbell, 2008). Pediatric patients with having postoperative pain are usually to experience difficulty coughing, deep breathing and mobilitation, thereby uncontrolled postoperative pain in children may increase postoperative complications, hospital stays and costs (Payakkaraung et al., 2010; Taddio et al., 2009; Twycross, 2009).

In many Indonesian hospitals, effective pediatric pain management has not been instituted (Mediani, Duggan, Chapman, Hutton, & Shields, 2017). There are some reasons for inadequate pain assessment and pain management practices in children have been identified in the literature. These include insufficient basic training programs for

nurses, lack of knowledge regarding pain management, difficulty of health care providers in making decisions about pain management, and nurses' fear or misconceptions regarding the use of opioid analgesics (Mediani, 2014; Shrestha-Ranjit, & Manias, 2010). These matters may contribute to the problem of under-treatment of children in pain (Mediani et al., 2017; Smyth, Toombs, & Usher, 2011; Shrestha-Ranjit, & Manias, 2010). A second reason may be a consequence of inadequate education and training of nurses with respect to treating pain (Mediani et al., 2017). In addition, Indonesia has a serious deficit of qualified pediatric nurses [~50 nurses per 1,000,000 Indonesians] (Hennessy, Hicks, & Kawonol, 2006). The aforementioned findings demonstrate that nurses are not adequately prioritizing pain in hospitalized children after surgery, which may, therefore, have a considerable impact on patient outcomes (Mediani, 2014; Twycross, 2009). The findings of these studies are alarming. However, the real reasons behind sub-optimal treatment of pain in children in Indonesia are still unknown.

Several earlier studies have focused on how children's pain is managed in developed countries (Shrestha-Ranjit & Manias, 2010; Simons & Moseley, 2009; Smyth, Toombs, & Usher, 2011; Vincent & Gaddy, 2009). However, these studies often focused on only one element of care, such as pain assessment (Simons & Moseley, 2009), the administration of analgesics (Simons & Moseley, 2009; Smyth et al., 2011; Vincent & Gaddy, 2009), or non-pharmacological approaches (He et al., 2010), which indicates that a complete picture of pain-management practices has yet to be described. Moreover, although these studies explored pain management by pediatric nurses, many relied on data collected through questionnaires and retrospective chart audits (Shrestha-Ranjit & Manias, 2010; Simons & Moseley, 2009), meaning that only documented, not observational, data were collected. Two earlier studies conducted in Indonesia (Mediani, 2002, 2014) focused on the perceptions and experiences of nurses for the management of children's pain with the use of qualitative interviews of individual nurses. Therefore, the findings of these studies provided an inadequate picture of the day-to-day clinical practices by nurses who deal with children in pain. The quality of pain management found by these studies has been questioned, and the reports of how nurses manage pain may not accurately reflect what happens in the hospital. Therefore, pain management by nurses should be further explored to ascertain the practical aspects of pain management, particularly in Indonesian pediatric hospital settings. An observational, qualitative study concerning pediatric pain management has not been conducted in Indonesia. The study aimed to examine nurses' post-operative pain care in an Indonesian hospital in order to gain insight and to extend the understanding on how nurses in the pediatric surgical unit of a hospital, in Indonesia provided post-operative pain care in children.

## **2. Method**

### *2.1 Study Design*

An exploratory, naturalistic, observational, qualitative approach was used to obtain an in-depth representation of their post-operative pediatric patients' pain care. Qualitative research using observation methodology has been proven to be a valuable research tool for studying human behavior, and it offers a unique opportunity for researchers to engage the situation that they are studying by allowing them to directly observe events, capture the context in which people interact and understanding the context is essential to the holistic perspective (Burns & Grove, 2009; Patton, 2010; Polit & Beck, 2012). Observation method has been proven is useful in generating a comprehensive description of processes in clinical practice (Carlson & Morrison, 2009). The role of the participant as observer was adopted. This approach also allowed us to familiarize ourselves with the day-to-day operations on the ward and to allow the nurses to interact with us. A guide for the observational assessment of post-operative pain care by the nurses (Table 1) was designed and was used by the nurses to record their pain-management practices. This guide consisted of a list of post-operative pain-management practices compiled according to the current best guidelines and a literature review (Lee, Yamada, Kyololo, Shorkey, & Stevens, 2014).

Table 1. Guide for the observational post-operative pain care

Action
Pain history?
<ul style="list-style-type: none"> <li>Identify the pediatric patient's previous experiences with pain?</li> <li>Identify the parents' or family's experiences with pain?</li> </ul>
Pain-assessment tools?
<ul style="list-style-type: none"> <li>Use appropriate and validated pain-assessment tools?</li> <li>Take into account behavioral indicators of pain?</li> <li>Take into account physiological indicators of pain?</li> <li>Take the child's self-reported pain assessment as the gold standard?</li> <li>Communicate with the parents about the child's pain?</li> <li>Reassess the child's pain at regular intervals?</li> </ul>
Administer appropriate analgesics at the appropriate dose(s) at the appropriate time(s)?
Use non-pharmacological interventions to alleviate the child's pain?
Documentation?
<ul style="list-style-type: none"> <li>Document the child's pain score?</li> <li>Document pain-relieving interventions?</li> <li>Document the effectiveness of non-pharmacological pain-relieving Interventions?</li> </ul>
Discharge planning?

## 2.2 Setting and Sampling

The study was conducted at a 38 –bed unit of a pediatric surgical ward in a Hospital in Bandung Indonesia. The population of nurses on the ward were 26 nurses, they were asked to take part in the study. Purposive sampling was applied in this study. In total, 16 nurses who had more than three years work experience and were working full time in the ward were asked to and agreed to participate in our study. The nurses all signed a consent form. Demographic details of the nurses are shown in Table 2. A total of 16 pediatric patients who had undergone surgery that required them to remain as in-patients for at least 48 h post-operatively were asked to participate in the study. For pediatric patients less than 5 years old, each set of parents gave permission for their child to participate.

## 2.3 Data Collection

Data were collected during a 2-month period between August and October 2017. To minimize any effect of our presence on the ward, we took the following actions. First, we conducted a meeting to discuss the project with all the nurses in the ward. The principal researcher explained that we were carrying out this study and needed to spend time observing how the nurses managed their patients' post-operative pain. Letters and consent forms were distributed to all participating nurses. The demographic data concerning the nurses (Table 2) were collected before the start of the study. The 16 participating nurses were observed and shadowed by two researchers for three to four shifts of 5 h each during the two-month period, which was considered a sufficient length of time to obtain an accurate assessment of how the nurses cared for the children who were experiencing post-operative pain. More than 160 h of observation were acquired during 32 shifts. To avoid retrospective bias in the observational data, field notes were recorded at the end of each shift and included the age and weight of each child and the dose, frequency, and administered route of an analgesic. We recorded field notes throughout the study, which added and maintained a qualitative dimension to the study and included our interpretations of events and contextual information (Burns & Grove, 2009). The field notes were used to more clearly assess how the nurses managed their patients' post-operative pain as compared with what would have been obtained if only structured observational data had been collected. In addition, in the field notes, we recorded our observations of interactions among the nurses, doctors, and the patients and their parents. The field notes also included the information collected from notes written by the nurses and from the patient charts.

#### 2.4 Data Analysis

Content analysis was used in this study. Data in the field notes were analyzed using the five-step content approach adopted by Creswell (2013). The five steps are:

1. Create and organize data files.
2. Read through the text and assign code numbers to the data
3. Describe the social setting and people and events involved.
4. Analyze the data to identify themes.
5. Interpret the data to understand the findings.

Once the data in the field notes had been coded, we could identify themes and provide an overall depiction of the post-operative pain care that the nurses practiced. To reduce researcher bias, the field notes were coded by the principal researcher and reviewed by all researchers. For the presentation of the findings in this paper, the themes of the qualitative analysis were arranged under several headings. Themes were developed from the observational data.

#### 2.5 Trustworthiness of the Study Findings

To enhance credibility and the accuracy of our findings, we reviewed the field-note transcripts and the data-analysis process so that the descriptions were provided in detail.

#### 2.6 Ethical Considerations

The study was approved by the Health Research Ethic Committee of the Faculty of Medicine Universitas Padjadjaran, Bandung. Ethical approval number is LB.04.01/A05/EC/132/IV/2017. Permission to conduct the study was obtained from the director of research and education of the Dr Hasan Sadikin Hospital Bandung. The researcher gave the study's participants oral and written explanation that stated the intent of the study, that participation in, and discontinuation of the study were voluntary, that they could withdraw from the study at any time without penalty. Confidentiality was ensured by restricting access to the names of the participants, and demographic details were separated from other data to further ensure that participants could not be identified. Only the researchers had access to the raw data.

### 3. Results

Individual characteristics of the participating nurses are presented in Table 2.

Table 2. Demographic details concerning the participating nurses (n = 16)

Participant characteristics	Number of nurses	Percentage of nurses (%)
<b>Age (range in years)</b>		
21–30	7	44.00
31–40	7	44.00
41–50	2	12.00
<b>Gender</b>		
Male	4	25.00
Female	12	75.00
<b>Educational level</b>		
SPK (is the equivalent of a high-school)	1	6.00
Diploma 3 of Nursing	10	62.00
Bachelor of nursing (Ners)	5	31.00
<b>Years working as a nurse (range in years)</b>		
1–10	12	75.00
1–20	3	19.00
21–30	1	6.00

<b>Years working in a pediatric surgical ward (range in years)</b>		
1–5	4	25.00
6–10	9	56.00
11–15	1	6.00
16–20	2	12.00
<b>Pain-management training</b>		
None	16	100.00

The demographic data for the 16 participating pediatric patients who were cared for by the participating nurses are summarized in Table 3.

Table 3. Demographic details concerning the participating pediatric patients (n = 16)

<b>Participant characteristics</b>	<b>Number of patients</b>	<b>Percentage of patients (%)</b>
<b>Age (range in years)</b>		
<1 (Infant)	1	6.00
1–3 (Toddler)	6	37.00
4–6 (Pre-school age)	1	6.00
7–12 (School age)	5	31.00
13–18 (Adolescence)	3	19.00
<b>Gender</b>		
Male	9	56.00
Female	7	44.00
<b>Post-operative observation day</b>		
1	8	50.00
2	6	37.00
3	2	12.00
<b>Pain score</b>		
0 (no pain)	1	6.00
1–3 (mild pain)	15	94.00
4–6 (moderate pain)	0	0
7–10 (severe pain)	0	0
<b>Pharmacological intervention</b>		
Yes	16	100.00
<b>Non-pharmacological intervention</b>		
Yes	1	6.00
No	15	94.00
<b>Pain experience</b>		
Yes	15	94.00
No	1	6.00

By analyzing the observational data, we identified several themes related to how pain care as practiced by the participating nurses when caring of postsurgical pediatric patients.

**Theme one: Lack of comprehensive taking pain history**

We found that, upon first admission to the ward, the nurses did not usually ask the patients or their parents about previous pain experience. The nurses also never asked about what types of medication the patients normally took when in pain. According to a field note:

*Nurses did not take a pain history, including what type of pain medication was normally taken when the patient experienced pain, from the pediatric patients and their parents when the patients were admitted to the ward. (Field note, day 30)*

**Theme two: Lack of routine conduct pain assessment and using pain scales**

The keystone of effective pain management is regular measurement and assessment of an individual's pain experience including for children. However, based on field note:

*Results of data observation for 16 nurses when caring for pediatric patient post-surgery revealed that nurses did not conduct pain assessment regularly. The nurses assessed the pain of pediatric patients most often immediately postoperatively. That is, 2–4 h postoperatively when the patients were in the ward. Meanwhile, in the afternoon and night shift nurses were rarely assessed patients' pain" (Field note, day 30)*

Despite many of existing tools for pain assessment in children including self-report and observational measure of pain such as the Facial analog scale, the Numeric Scale (0-10), the Oucher Scale, and FLACC Scale to examine the pain levels of the children's pain. These scales have been shown to be accurate and reliable when assessing the pain of children (von Baeyer, et al., 2009; Tomlinson, et al., 2010). We found that some nurses did not directly assess the patient's pain by using pain assessment tools. According to a field note:

*Some nurses did not use the pain assessment tool when assessing children post-surgery, they evaluated the children's pain by asking the parents whether their child complained of pain or whether their child was able to sleep" (Field note, day 7)*

The participating nurses relied mostly on the Faces rating Pain Scale and the Numeric-rating Pain Scale, and we noted some interesting findings when the nurses assessed pain in the children. According to a field note:

*When some nurses assessed pediatric patients using the numeric-rating scale, the nurses asked the patients or their parents what was the pain intensity, but the nurses did not ask the children to choose the pain score in the numeric-rating scale or face-rating scale. However, the nurses recorded the children's pain in patient notes. For example, the pain score was 7. (field note, day 5)*

The results of this study indicated that the nurses did not routinely assess the pain levels of the patients even though hospital policy and hospital accreditation standards stated that the nurses must record whether a patient was in pain hourly for the first 24 h and thereafter every 2 h. The rationale for using the pain-assessment scale may not have been understood by some of the participating nurses. Moreover, pain assessment was based on the judgments and perceptions of the nurses. We also found that formal pain-assessment tools for infants and pre-verbal children did not exist on the ward. Therefore, unsystematic pain assessments were practiced.

**Theme three: Accounting for the behavioral and physiological indicators of pain in the patients**

Nurses were observed how they respond to behavioral manifestations of pain and physiological indicators of pain. We found no behavioral tool is available to assess pain. The nurses generally interpreted the pain level of the children based on their behavior, such as crying, especially for the young children. According to field notes:

*The results of observation indicated that the children's behaviors, such as crying, fussing, and screaming, were an important consideration for the nurses when they were assessing pain in the children. Some of nurses believed that when a child screamed or cried a lot it meant that the child was in severe pain with the pain score around 8 to 9. (Field note, day 15).*

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Behavioral cues, such as crying and facial expressions, of the children were clearly used as indicators of pain by the nurses—especially for children under the age of five years. Crying was the most commonly used cue for pain in infants and toddlers. Regarding physiological indicators of pain such heart rates, we did not see the nurses use such indicators for assessing pain or doing pain intervention. Perhaps the nurses did not know about the physiological signals that indicate when a child experiences pain.

#### **Theme four: Administering pain medication**

Throughout the observation, we found in most cases, nurses administered analgesic drugs to the patients as ordered by the doctors, especially during the first 24 to 48 h after surgery but not thereafter. According to field notes:

*Nurse participants always administered analgesics routinely as prescribed by doctors to the patients especially in the first 24–48-hour post-surgery. They appeared to not administer pain medication regularly 48 h post-surgery to the patients, but nurses gave analgesics when the patients complained of pain or when crying loudly. Interestingly, few nurses seemed reluctant to administer opioid analgesics although it was a PRN written by a doctor. Nurses preferred to wait and see the child's condition first. When the child was crying and said that he or she was in pain then the nurses administered opioids (tramadol) to the patient. (Field note, day 23)*

The field notes of the observers documented that the administration of analgesics, especially non-opioids, was the most frequent way that the nurses managed their patients' pain.

#### **Theme five: Applying non-pharmacological interventions**

During observation, we found that not all the nurses conducted non-pharmacological interventions when they knew a child was in pain, especially in night shift. Some of the nurses used distraction and relaxation technique such as deep breathing exercise.

*Nurses usually asked pediatric patients with school age children to do deep breathing when nurses did wound care in morning shift. However, when nurses were facing heavy workloads or in night shift nurses did not provide non-pharmacological approaches (Field note, day 12)*

Interestingly, mostly nurses asked the parent to apply non-pharmacological pain management approaches. According to field notes:

*When the pediatric patients were experiencing pain during the first 48 h post-surgery, nurses asked parents to hold their child (for infants) and for older children nurses asked parents to distract their child's pain by watching the cartoon movies or playing a game on the parent's mobile phone. Meanwhile for school age children, nurses usually asked patients to deep breathing exercise (Field note, day 15)*

The researchers indicated that, in most cases, even simple methods such as breathing deeply or distraction techniques were hardly ever used by the nurses in busy time or when nurses facing heavy workloads. Non-pharmacological approaches to alleviate pain seem to be conducted mostly by the parents as those approaches were seen as the parent's role.

#### **Theme six: Documentation of pain**

During observation nurses were observed how they documented the pain levels in the patients and how pain was alleviated were also observed. The level of pain was often documented by the nurses even though they did not use the available pain-assessment tool[s]. According to a field note:

*Some of the nurses recorded a pain score of a patient's pain although they did not assess the patient's pain by using pain-assessment tools. The nurses asked parents whether their child was in pain or not. When parents said their child was in moderate pain and difficult to sleep. The nurses wrote the patient's score was 7. However, some of nurses did not record in patients' chart result of pain assessment (Field note, day 15)*

In general, the nurses noted in the patient charts the administration of analgesics. Based on the field note:

*Nurses noted the administration of analgesic drugs to the patients as the doctor's order in each patient's record. Such as Tramadol, many were given at 2 pm as the doctor's order. (Field note, day 10)*

Regarding non-pharmacological interventions, we noted that these interventions were never documented in the patient charts.

*So far, all nurses never documented the non-pharmacological interventions used to alleviate patients' pain, although the interventions were applied by parents or nurses. (Field note, day 26). 4.*

## **4. Discussion**

This observational study provides a general assessment of a portrait of nursing practices concerning their post-

operative pain care of pediatric patients. In general, the results indicate that alleviation of patient pain by the nurses was un-optimal. As reported previously (Ellis et al., 2007; Mediani, 2014; Payakkaraung et al., 2010; Twycross, 2007), the nurses did not regularly record previous incidences of a child's pain upon admission to the ward. The participating nurses also did not prospectively consider possible pain-relieving interventions when the children were admitted. Moreover, the nurses did not regularly assess their patients' pain using the available pain-assessment tools or use physiological indicators to evaluate pain. Some of the nurses recorded pain scores for their patients even though they did not use the available pain-assessment tools. As reported previously (Payakkaraung et al., 2010; Taylor Boyer & Campbell, 2008; Twycross et al., 2013), we found that nurses did not consistently conduct pain assessments, nor did consistently conduct formal reassessments. In fact, pain assessment should be a routine practice that is integral to nursing care as pain is considered the "fifth vital sign" (Morone & Weiner, 2013; Mularski et al., 2006) and is required for standardization and validation of effective pain management in hospitalized children (Kaasalainen et al., 2007; Mediani et al., 2017; Twycross & Collins, 2013).

Many of our participating nurses regularly administered pain medication as prescribed, especially during the first 48 h after the children had surgery. Following that period, however, some of the nurses did not administer the drugs regularly but rather waited until they perceived the patients to be experiencing pain or until the patients or their parents complained. Our findings are of interest because, although pain management is considered synonymous with administering pain medication as suggested previously (Smyth et al., 2011; Twycross et al., 2013), certain of the participating nurses were reluctant to give pain medication as ordered by the doctors after the first 48 h post-operative period. It seems that the nurses took it upon themselves to determine the pain level in the children before administering analgesics. Conversely, during the first 48 h post-surgery, the participating nurses tended to administer analgesics as prescribed by the doctor. Our observations differ from those of other studies that found that taken-as-needed medications were not given as often as they should have been (Shrestha-Ranjit & Manias, 2010; Smyth et al., 2011; Taylor Boyer & Campbell, 2008).

Despite the availability of many types of non-pharmacological interventions, such as distraction and relaxation techniques, which have been shown to relieve pain, such methods were not regularly used by the participating nurses. Instead, such interventions tended to be used by the parents. The nurses applied when they have more free time. This situation happened may due to no guidelines were available in clinical practice to be implemented by nurses. Similarly, previous studies found that the use of non-pharmacological methods by nurses was infrequently (Payakkaraung et al., 2010; Twycross, 2007; Twycross et al., 2013). We therefore propose that, when considering non-pharmacological methods, the inclusion of parents would be an effective means of involving the parents in the treatment of their child's postoperative pain.

The findings of this study found that interaction between nurses and parents has an effect on the outcome of postoperative pain care in hospitalised children. This finding is concurrent with some previous studies (Cartier, McArthur, & Cunliffe, 2002; Payyakaung et al., 2010), wherein parents were found to play an important role in monitoring their child's pain and providing non pharmacological intervention such as holding, playing the game, and watching video with their child.

Written documentation of pain-management methods was not optimally conducted by the participating nurses. Pain assessment and its management were not always recorded, and the corresponding documentation tended to focus on the administered pain medications. Non-pharmacological interventions conducted by the nurses or parents were never recorded in the patient notes. Our findings were similar to those of previous studies that indicated that nurses did not optimally document how they managed the post-operative pain of children (Johnston et al., 2007; Shrestha-Ranjit & Manias, 2010; Simon & Moseley, 2009; Twycross, 2007; Twycross, Finley, & Latimer, 2013). Lack of documentation may affect inadequate pain management.

The results of this research provide a portrait and information regarding postoperative pain care in pediatric patients in an Indonesian hospital. Our findings support those of Mediani and colleagues (Mediani, 2002; Mediani, 2014; Mediani et al., 2017), which indicated that effective pain management for hospitalized children remains an elusive goal in Indonesia. Such results indicate that nurses are not adequately prioritizing treatment of the postoperative pain of children in surgical wards. A literature search indicated that, although a substantial increase in our understanding of the treatment of children's pain has occurred and new guidelines for effective pain relief have been published, the management of children's pain remains inadequate worldwide (Buscemi, Vandermeer, & Curtis, 2008; Mediani et al., 2017; Twycross, Forgeron, & Williams, 2015). Consequently, pediatric patients continue to suffer pain needlessly (Mediani et al., 2017).

Previous study conducted in Indonesia by Mediani et al. (2017) found that several factors have prevented the implementation of optimal pain management in hospitalized children in Indonesia, including organizational,



structural, and cultural factors, such as heavy workloads, imbalance in the nurse- to -patient ratio, and lack of sufficient education and/or training. Moreover, our observations suggest that current knowledge about pain and its management are not being used to guide the pain-management practices of nurses. Ideally, nurses should provide evidence-based care and integrate available research into their clinical practice. There is a need, therefore, to apply current evidence and to change the practice of pain management by nurses (Mediani, 2014; Twycross, Finley, & Latimer, 2013). Additional strategies should be explored to assist and facilitate the abilities of nurses to translate research on pain assessment and management to their practice. The development of educational programs such workshops and training for nurses that focus on pain assessment and management (pharmacological and non-pharmacological interventions) should be conducted regularly to facilitate effective pain management of hospitalized children in Indonesia. Moreover, management of post-operative pain in hospitalized children could be improved by increasing cooperation among healthcare professionals and parents.

## 5. Conclusion

Our study provides an overview of how nurses actually manage the post-operative pain in children at a pediatric ward in Indonesia. Our analysis of the data revealed that the postoperative pain care in hospitalized children did not conform to current guidelines and need to be improved. The need to provide optimal postoperative pain care cannot be overstated. Nurses have obligations to their patients, including effective pain management to ensure the personal well-being and quality of life of hospitalized children. Post-operative pain management should be always put as a priority especially for children to minimize the short term and long term impacts that may come along with it. Our observations can be used to assist the development of initiatives and strategies to improve the performances and capabilities of clinical nurses in providing postoperative pain management to hospitalized children. Our findings have the potential to influence changes in the Indonesian nursing profession in the areas of clinical initiatives, education, and research.

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## Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

## References

- Burns, N., & Grove, S. K. (2009). *The Practice of Nursing Research: Appraisal, Synthesis and Generation of Evidence*. Maryland Heights, Missouri: Saunders Elsevier.
- Buscemi, N., Vandermeer, B., & Curtis, S. (2008). The Cochrane Library and procedural pain in children: An overview of review. *Evidence Based Child Health, 3*(2), 260-279. <https://doi.org/10.1002/ebch.225>
- Carlson, M. D., & Morrison, R. S. (2009). Study design, precision, and validity in observational studies. *Journal of palliative medicine, 12*(1), 77-82. <https://doi.org/10.1089/jpm.2008.9690>
- Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). Los Angeles: Sage.
- Ellis, J. A., McCleary, L., Blouin, R., Dube, K., Rowley, B., MacNeill, M., & Cook, C. (2007). Implementing best practice pain management in a paediatric hospital. *Journal for Specialists in Pediatric Nursing, 12*(4), 264-277. <https://doi.org/10.1111/j.1744-6155.2007.00121.x>
- Fortier, M. A., Chou, J., Maurer, E. L., & Kain, Z. N. (2011). Acute to chronic postoperative pain in children: preliminary findings. *Journal of Pediatric Surgery, 46*(1), 1700-1705. <https://doi.org/10.1016/j.jpedsurg.2011.03.074>
- Hennessy, D., Hicks, C., & Kawonal, Y. (2006). The training and development needs of nurses in Indonesia, paper 3 of 3. *Human Resources for Health, 4*(10), 1-12. <https://doi.org/10.1186/1478-4491-4-10>
- He H.-G., Jahja, R., Lee, T. L., Ang, E. N. K., Sinnappan, R., Vehviläinen-Julkunen, K., & Chan, M. F. (2010). Nurses' use of non-pharmacological methods in children's postoperative pain management: Educational intervention study. *Journal of Advanced Nursing, 66*(11), 2398-2409. <https://doi.org/10.1111/j.1365-2648.2010.05402.x>

- International Association for the Study of Pain (IASP). (2010). *Chapter 30: continuous peripheral nerve blocks for treating acute pain in the hospital and the ambulatory environment*. Retrieved from [www.iasp-pain.org](http://www.iasp-pain.org)
- Kortesluoma, R. L., Nikkonen, M., & Serlo, W. (2008). 'You just have to make the pain go away'– Children's experiences of pain management. *Pain Management Nursing*, 9(4), 143-149. <https://doi.org/10.1016/j.pmn.2008.07.002>
- Lee, G. Y., Yamada, J., Kyololo, O., Shorkey, & Stevens, A. B. (2014). Pediatric Clinical Practice Guidelines for Acute Procedural Pain: A Systematic Review. *Pediatrics*, 133(3).
- Mathews, L. (2011). Pain in children: neglected, unaddressed and mismanaged. *Indian journal of palliative care*, 17(Suppl), S70-3. <https://doi.org/10.4103/0973-1075.76247>
- Mediani, H. S. (2014). *Indonesian nurses' management of pain in children: A grounded theory study*. Doctoral thesis, Curtin University. Retrieved from <http://tinyurl.com/mpelq6k>.
- Mediani, H. S., Duggan, R., Chapman, R., Hutton, A., & Shields, L. (2017). An exploration of Indonesian nurses' perceptions of barriers to paediatric pain management. *Journal of child health care: for professionals working with children in the hospital and community*, 21(3), 273-282. <https://doi.org/10.1177/1367493517715146>
- Morone, N. E., & Weiner, D. K. (2013). Pain as the fifth vital sign: exposing the vital need for pain education. *Clinical therapeutics*, 35(11), 1728-32. <https://doi.org/10.1016/j.clinthera.2013.10.001>
- Mularski, R. A., White-Chu, F., Overbay, D., Miller, L., Asch, S. M., & Ganzini, L. (2006). Measuring Pain as the 5th Vital Sign Does Not Improve Quality of Pain Management. *Journal of General Internal Medicine*, 21(6), 607-612. <https://doi.org/10.1111/j.1525-1497.2006.00415.x>
- Payyakkaraung, S., Wittayasoporn, J., Thampanichawat, W., & Suraseraniwongse, S. (2010). Nurses' management of Thai children's postoperative pain: a holistic case study. *Pacific Rim Int Journal of Nursing Research*, 14(4), 330-345.
- Patton, M. Q. (2010). *Qualitative Research & Evaluation Methods* (5th ed.). London. New Delhi: Sage Publications, Thousand Oaks.
- Polit, D. F., & Beck, C. T. (2012). *Nursing Research: Generating and assessing evidence for nursing practice* (9th ed.). Wolters Kluwer: Lippincott, Williams and Wilkins, Philadelphia, P.A.
- Shrestha-Ranjit, J. M., & Manias, E. (2010). Pain assessment and management practices in children following surgery of the lower limb. *Journal of Clinical Nursing*, 19(1-2), 118-128. <https://doi.org/10.1111/j.1365-2702.2009.03068.x>
- Simons, J., & Moseley, L. (2009). Influences on nurses' scoring of children's post-operative pain. *Journal of Child Health Care*, 13(2), 101-115. <https://doi.org/10.1177/1367493509102468>
- Smyth, W., Toombs, J., & Usher, K. (2011). Children's postoperative pro re nata (PRN). analgesia: Nurses'administration practices. *Contemporary Nurse*, 37(2), 10-172.
- Taddio, A., Chambers, C. T., Halperin, S.A., Ipp, M., Lockett, D., Rieder, M., et al. (2009). Inadequate pain management during routine childhood immunizations: The nerve of it. *Clinical Therapeutics*, 31(2), S152–S167. <https://doi.org/10.1016/j.clinthera.2009.07.022>
- Taylor, E. M., Boyer, K., & Campbell, F. A. (2008). Pain in hospitalized children: A prospective cross-sectional survey of pain prevalence, intensity, assessment and management in a Canadian pediatric teaching hospital. *Pain Research Management*, 13(1), 25-32. <https://doi.org/10.1155/2008/478102>
- Tomlinson, D., von Baeyer, C. L., Stinson, J. N., & Sung, L. (2010). A systematic review of faces scales for the self-report of pain intensity in children. *Pediatrics*, 126(5), e1168-e1198. <https://doi.org/10.1542/peds.2010-1609>
- Twycross, A., Forgeron, P., & Williams, A. (2015). Paediatric nurses' postoperative pain management practices in hospital based non-critical care settings: A narrative review. *International Journal of Nursing Studies*, 52(4), 836-863. <https://doi.org/10.1016/j.ijnurstu.2015.01.009>
- Twycross, A., & Collis, S. (2013). Nurses' views about the barriers and facilitators to effective management of paediatric pain. *Pain Management Nursing*, 14(4), 164-172. <https://doi.org/10.1016/j.pmn.2011.10.007>
- Twycross, A., Finley, G. A., & Latimer, M. (2013). Pediatric nurses' postoperative pain management practices: An observational study. *Journal for Specialists in Pediatric Nursing*, 18(3), 189-201. <https://doi.org/10.1111/jspn.12026>

- Twycross, A. (2007). Children's nurses' post-operative pain management practice: An observational study. *International Journal of Nursing Studies*, 44(6), 869-881. <https://doi.org/10.1016/j.ijnurstu.2006.03.010>
- Twycross, A. (2009). Why managing pain in children matters. In Twycross, A., Dowden, S., & Bruce, E. (2009), *Managing pain in children*, 1-15. United Kingdom: Blackwell Publishing. <https://doi.org/10.1002/9781444322743.ch1>
- Vincent, C. V. H., & Gaddy, E. J. (2009). Pediatric nurses' thinking in response to vignettes on administering analgesic. *Research in Nursing & Health*, 32, 530-539. <https://doi.org/10.1177/1367493509102468>
- von Baeyer, C. L., Spagrud, L. J., McCormick, J. C., Choo, E., Neville, K., & Connelly, M. A. (2009). Three new datasets supporting the use of the Numerical Rating Scale (NRS-11) for children's self-reports of pain intensity. *Pain*, 143, 223-227. <https://doi.org/10.1016/j.pain.2009.03.002>

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