



# PICU Nurses' Pain Assessments and Intervention Choices for Virtual Human and Written Vignettes

Cynthia M. LaFond PhD, RN, CCRN<sup>a,\*</sup>,<sup>1</sup>, Catherine Van Hulle Vincent PhD, RN<sup>a</sup>, Colleen Corte PhD, RN<sup>a</sup>, Patricia E. Hershberger PhD, MSN, APRN, FNP-BC<sup>a</sup>, Andrew Johnson PhD<sup>b</sup>, Chang G. Park PhD<sup>a</sup>, Diana J. Wilkie PhD, RN, FAAN<sup>a</sup>

<sup>a</sup>University of Illinois at Chicago College of Nursing, Chicago, IL

<sup>b</sup>University of Illinois at Chicago, Electronic Visualization Laboratory Department of Computer Science, Chicago, IL

Received 25 September 2014; revised 11 January 2015; accepted 14 January 2015

## Key words:

Acute pain;  
Hospitalized child;  
Pediatric nurse;  
Pediatric intensive care;  
Patient simulation;  
Knowledge use in pain care

The purpose of this concurrent mixed-methods study was to 1) examine the factors pediatric intensive care unit nurses consider when assessing and intervening for children who report severe pain and to 2) determine the effect of child behavior and diagnosis on the nurses' pain ratings and intervention choices for written and virtual human vignettes. Quantitative and qualitative results substantiated that despite recommendations to use self-report, many PICU nurses use behavior as the primary indicator to assess and treat pain, even when a child is old enough to articulate pain intensity and there is sufficient cause for pain to be present.

© 2015 Elsevier Inc. All rights reserved.

CHILDREN IN PEDIATRIC intensive care units (PICUs) continue to experience pain that is moderate to severe in intensity (Agarwal et al., 2010; Grant, Scoppettuolo, Wypij, Curley, & Team, 2012; Groenewald, Rabbitts, Schroeder, & Harrison, 2012; Larsen, Donaldson, Parker, & Grant, 2007), even though many (82.2%) pain events of this severity have been deemed preventable (Agarwal et al., 2010). Nurses play an important role in identifying and treating pain in children who are critically ill. Yet, PICU nurses are challenged to manage pain in a complex population of children with varying ages, cognitive abilities, levels of acuity, and diagnoses (Riley, Poss, & Wheeler, 2013; Turner, 2005). For this reason, interventions to improve the management of children's pain likely cannot be a "one-size fits all". An understanding of nurses' assessment

and treatment considerations for different PICU populations is needed to guide interventions that will improve the management of pain in children who are critically ill.

## PICU Nurses' Pain Management

Though over a decade of research indicates that PICU nurses rely heavily on behavioral and physiological factors to assess and manage pain (Coffman et al., 1997; Curley et al., 1992; Mattsson, Forsner, & Arman, 2011; Pederson & Bjerke, 1999; Ramelet, 1999; Staveski et al., 2014), little research specifically addresses nurses' considerations for children able to self-report pain or how nurses' choices may vary for children with differing diagnoses. Pederson and Bjerke identified a need for PICU nurses to focus more on patients' self-report when assessing and treating pain and noted high variability in the use of self-report to guide analgesic administration. Nurses in one study used medical diagnosis as a cue for pain in critically-ill children (Ramelet, 1999) and in another, identified more pain indicators for children admitted for trauma or surgery than

\* Corresponding author: Cynthia M. LaFond, PhD.  
E-mail addresses: [cynthia-lafond@uiowa.edu](mailto:cynthia-lafond@uiowa.edu).

children of other diagnoses (Coffman et al., 1997). Whether diagnosis influences PICU nurses' choices for pain interventions has not been previously studied.

PICU nurses' have most frequently reported using vital signs to assess and choose interventions for pain (Coffman et al., 1997; Curley et al., 1992; Ramelet, 1999). However, recommendations for the assessment of pain give little weight to the use of physiologic measures (American Academy of Pediatrics, Committee on Psychosocial Aspects of C., Family, H., and Task Force on Pain in Infants, C., & Adolescents, 2001; Herr, Coyne, McCaffery, Manworren, & Merkel, 2011). Vital sign changes are not specific to pain in critically ill children (may result from medications or other sources of physiologic or psychological distress) (Carnevale & Razack, 2002; Curley et al., 1992) and have demonstrated weak and highly variable associations with other measures of pain in children including behavior and self-report. It is speculated that PICU nurses rely on vital signs due to their care of children who are continuously monitored, mechanically ventilated, and sedated (Pederson & Bjerke, 1999; Pederson, Matthies, & McDonald, 1997). However, as few as 30% of PICU patients are reported to be intubated and mechanically ventilated (Khemani, Markovitz, & Curley, 2009); only 3 of the 25 children in Coffman et al.'s (1997) study were intubated and 68% were preschool age or older; yet nurses identified the child's verbalization of pain as an indicator to administer analgesics in just one third of observations. Because a number of children in PICUs may be able to verbalize pain, further evaluation of nurses' pain assessment and intervention choices for this population is warranted. Additionally, to improve unrelieved pain, understanding nurses' choices to withhold analgesics may be equally as important as understanding indicators to intervene.

## Purpose/Aims

The purpose of this concurrent mixed-methods study was to examine PICU nurses' assessment and intervention choices for children who report severe pain. Of specific interest was the effect of behavior and diagnosis on the nurses' choices. A surgical diagnosis and a diagnosis of sickle-cell vaso-occlusive crisis were chosen for use in this study because both of these pediatric populations are noted to experience moderate to severe pain in the hospital (Beyer, 2000; Groenewald et al., 2012; Jacob & Mueller, 2008; Jacob et al., 2007; Kozlowski et al., 2014; Zempsky et al., 2008). This study was innovative in the use of both written and virtual human (VH) vignettes (computer-generated patient scenarios) to elicit nurses' responses. Therefore a secondary purpose was to determine the effect of vignette type (VH and written) on the nurses' choices.

The aims of this study were to:

1. Identify the factors PICU nurses consider when they assess and choose interventions for children reporting severe pain.
2. Determine the effect of child behavior (smiling, grimacing) and diagnosis (post-operative, sickle cell vaso-occlusive crisis) on PICU nurses' pain ratings and pain intervention choices for written and VH vignettes.
3. Compare the factors considered by nurses with opposing choices (those who agreed with the child's pain rating/chose an increased analgesic dose versus those who disagreed with the child's pain rating/chose no analgesic dose).

## Theoretical Framework

The theoretical framework used for this study is the Knowledge Use in Pain Care (KUPC) conceptual model (Latimer, Ritchie, & Johnston, 2010). The KUPC addresses nurses' delayed use of pediatric pain management research results in clinical practice. The KUPC authors describe the main theoretical concepts as *child*, *nurse*, *organizational*, and *sociopolitical* factors (Table 1). These factors are proposed to influence nurses' knowledge use and ultimately the *pain care outcomes* of pain assessment, management, and documentation (Latimer et al., 2010). Because the KUPC incorporates individual nurse characteristics within the context of the environment in which the nurse practices, it allows for a more comprehensive understanding of pain assessment and intervention choices. Components of the KUPC model specifically addressed in this study include: nurse (education, experience, and critical thinking), child (age and acuity/diagnosis), and pain care outcomes (nurses' pain ratings and intervention choices for children in vignettes).

## Methods Design

A concurrent mixed-methods design was used to capture the complexities of nurses' pain beliefs and their pain assessment and intervention choices. Qualitative content analysis of interviews allowed for contextualization of quantitative findings (Ostlund, Kidd, Wengstrom, & Rowa-Dewar, 2011).

## Sample

PICU nurses were recruited from two urban Midwest hospitals. Inclusion criteria consisted of registered nurses working at least 20 hours a week for the past year in the PICU. A sample size of 34 was determined by an a priori power analysis to achieve sufficient power for the originally planned statistical analysis, paired samples t-test (alpha 0.05, two-tailed) to detect the calculated effect of 0.5 to 0.87 of behavior (smile and grimace) for nurses' pain ratings and morphine dose administration (Vincent, Wilkie, & Wang, 2010) and a medium (0.5) effect of diagnosis and vignette type. Additionally, the sample size was sufficient to obtain information-rich data from the interviews for qualitative content analysis (Patton, 2002) and to allow for maximal variation in nurse attributes such as years of experience or nursing degree (Neergaard, Olesen, Andersen, & Sondergaard, 2009; Sandelowski, 2000).

## Instruments

PICU nurses responded to 3 instruments: a demographic form, the PBPQ, and 4 VH vignettes. The instruments are described below.

Download English Version:

<https://daneshyari.com/en/article/2666776>

Download Persian Version:

<https://daneshyari.com/article/2666776>

[Daneshyari.com](https://daneshyari.com)