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Nurses' Beliefs Regarding Pain in Critically Ill Children: A Mixed-Methods Study

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Purpose: The purpose of this study was to provide a current and comprehensive evaluation of nurses' beliefs regarding pain in critically ill children.

Design and Methods: A convergent parallel mixed-methods design was used. Nurse beliefs were captured via questionnaire and interview and then compared.

Results: Forty nurses participated. Most beliefs reported via questionnaire were consistent with effective pain management practices. Common inaccurate beliefs included the need to verify pain reports with physical indicators and the pharmacokinetics of intravenous opioids. Beliefs commonly shared during interviews concerned the need to verify pain reports with observed behavior, the accuracy of pain reports, the need to respond to pain, concerns regarding opioid analgesics, and the need to "start low" with interventions. Convergent beliefs between the questionnaire and interview included the use of physical indicators to verify pain, the need to take the child's word when pain is described, and concerns regarding negative effects of analgesics. Divergent and conflicting findings were most often regarding the legitimacy of a child's pain report.

Conclusions: Findings from this study regarding the accuracy of nurses' pain beliefs for critically ill children are consistent with past research. The presence of divergent and conflicting responses suggests that nurses' pain beliefs are not static and may vary with patient characteristics.

Practice Implications: While most nurses appreciate the risks of unrelieved pain in children, many are concerned about the potential adverse effects of opioid administration. Interventions are needed to guide nurses in minimizing both of these risks.

HEALTH CARE PROFESSIONALS' inaccurate beliefs regarding the assessment and management of children's pain are noted barriers to effective pain management (American Academy of Pediatrics [AAP], 2001). However, studies in which pediatric intensive care unit (PICU) nurses' pain beliefs are evaluated are few, and many are nearly 20 years old (Coffman et al., 1997; Curley et al., 1992; Manworren, 2000; Mattsson, Forsner, & Arman, 2011; Pederson & Bjerke, 1999; Pederson, Matthies, & McDonald, 1997). Since these earlier studies, there have been multiple guidelines, standards, and reviews of the literature published regarding the assessment and management of acute pain that may have influenced PICU nurses' pain beliefs. Additionally, in 2001 the Joint Commission on Accreditation of Healthcare Organizations started to score hospitals' compliance with pain management standards (Joint Commission on Accreditation of Healthcare Organizations, 2003). Thus, a more recent and comprehensive description of PICU nurses' beliefs regarding pain is needed to determine any gaps that may exist and to guide future interventions to improve nurses' management of critically ill children's pain.

The knowledge use in pain care (KUPC) conceptual model (Latimer, Ritchie, & Johnston, 2010) and the theory of

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planned behavior (Ajzen, 1991; Fishbein & Ajzen, 2010) were guiding theoretical frameworks for this study. The KUPC addresses pediatric nurses' acquisition and use of pain knowledge. One proposition of the KUPC is that characteristics of the individual nurse (e.g., knowledge, education, critical thinking disposition, and past experience) are associated with better pain management practices. Nurses' judgments regarding pain are suggested to be "formulated as a result of nurses' critical decision-making ability, their attitudes and beliefs about pain, and/or the barriers and facilitators at work that influence the pain management process" (Latimer et al., 2010, p. 277). Thus, knowledge, attitudes, and beliefs are proposed to act as a compass, orienting a nurse's approach while assessing and managing pain. Misconceptions or inaccurate beliefs held by the nurse may misguide the nurse's judgments, leading to ineffective pain control.

The questionnaire used for this study was based on the theory of planned behavior (Ajzen, 1991; Fishbein & Ajzen, 2010); a main proposition of the theory is that an individual's behavior follows from salient information or beliefs held about the behavior. Beliefs may originate from a variety of sources, such as personal experience, formal education, media, or interactions with others; consequently, beliefs may or may not be based on accurate information or knowledge (Fishbein & Ajzen, 2010). Attitudes are proposed to develop from beliefs and reflect the degree to which one responds positively or negatively toward the behavior. For this reason, attitudes can be explored by eliciting the beliefs of individuals (Ajzen, 1991; Fishbein & Ajzen, 2010). Therefore, for this study, we define pain beliefs to be tenets of pain assessment or management that a nurse accepts as true or probable, regardless of whether the tenets are supported with conclusive evidence. These beliefs reflect both the nurses' knowledge and attitudes regarding children's pain.

Review of Literature

In a review of literature spanning 15 years, Twycross (2010) concluded that knowledge deficits and inaccurate beliefs of nurses were contributing factors to poor pain management in hospitalized children. Gaps were noted in pediatric nurses' knowledge of assessment and pharmacological and non-pharmacological interventions for pain. Additionally, beliefs that pain is to be expected and is of lower priority were noted. Subsequent research with pediatric nurses demonstrated similar results (Stanley & Pollard, 2013; Vincent, Wilkie, & Wang, 2011).

In studies specific to pediatric critical care, investigators have identified both strengths and weaknesses in nurses' beliefs about pain. PICU nurses scored most accurately in response to items regarding pain interventions and drug actions (Pederson et al., 1997), the negative consequences of pain, children's ability to feel and remember pain, and the credibility of a parent's report of her or his child's pain (Pederson & Bjerke, 1999). Additionally, PICU nurses (along with nurses in hematology/oncology and the emergency department) scored significantly higher on a pain knowledge and attitudes questionnaire than pediatric nurses in other clinical areas (Manworren, 2000). However, inaccuracies in PICU nurses' beliefs regarding children's pain have also been noted. PICU nurses did not consistently identify children's self-report as the preferred method of pain assessment (Pederson & Bjerke, 1999; Pederson et al., 1997). They also scored poorly in knowledge assessments on items related to pain treatments, including the dosing and pharmacodynamics of analgesics, risks of addiction and respiratory depression with opioids, and use of non-pharmacologic interventions (Manworren, 2000; Pederson et al., 1997).

Yet the assessment of nurses' knowledge of pain facts is not enough. It is also important to evaluate how nurses interpret and apply their beliefs during patient care. It is likely that nurses' pain beliefs are not static and vary with differing patient situations. Past investigators have evaluated PICU nurses' pain beliefs quantitatively through knowledge assessments or questionnaires (Manworren, 2000; Pederson & Bjerke, 1999; Pederson et al., 1997) and qualitatively through participant interview (Mattsson et al., 2011). Additionally, investigators have used vignettes, or patient scenarios, in both quantitative and qualitative studies to elicit responses from nurses regarding children's pain (Manworren, 2000, 2001; Van Hulle Vincent, Wilkie, & Szalacha, 2010; Vincent & Gaddy, 2009; Vincent et al., 2011). However, no investigators have used all of these methods concurrently. By combining qualitative and quantitative data to triangulate findings, a more comprehensive evaluation of a phenomenon of interest can be achieved (Ostlund, Kidd, Wengstrom, & Rowa-Dewar, 2011).

Purpose/Aims

The purpose of this mixed-methods study was to provide a current and more comprehensive evaluation of PICU nurses' beliefs regarding the assessment and management of children's pain. The specific aims were to:

1. Describe PICU nurses' beliefs regarding the assessment and management of children's pain.
2. Compare PICU nurses' beliefs regarding children's pain as reported in a pain questionnaire to their beliefs expressed after viewing VH vignettes.

Methods

Methods for this study have been reported in prior publications, and additional details regarding the instruments as well as data collection and analysis can be obtained elsewhere (LaFond, Van Hulle Vincent, Corte, et al., 2015; LaFond, Van Hulle Vincent, Lee, et al., 2015).

Design/Sample

To accomplish the specific aims of the study, a convergent parallel mixed-methods design was applied (Creswell & Plano Clark, 2011). Quantitative and qualitative data were collected concurrently and analyzed in parallel; qualitative themes were then transformed (quantified) and