



Post-Operative Pain and Comfort in Children After Heart Surgery: A Comparison of Nurses and Families Pre-operative Expectations[☆]



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ABSTRACT

Purpose: Parents' and nurses' expectations about pain control and comfort in children after heart surgery were explored to contribute to evidence-based family-centered interventions.

Design and Methods: 20 nurses and 23 parents from a tertiary pediatric center in the Pacific Northwest, were interviewed about their expectations of children's pain control and comfort experience in the hospital after heart surgery. In this descriptive study, data were collected from semi-structured recall interviews and analyzed using content analysis.

Results: Most parents expected their child be medicated at a level of not feeling any pain. Many expected their child to remain in a heavily sedated state after the surgery. A few parents did not know what to expect. In contrast, nurses expected children to have controlled pain with intermittent discomfort, yet, tolerating recovery activities.

Conclusions: Although both parents and nurses expect to partner in the comfort care of the child, there is variation on the expectations around the nurse-parent relationship and the operational definition of pain management and comfort.

Practice Implications: Awareness of parents' expectations about pediatric post-operative comfort present an opportunity for the development of interventions aimed to enhance alignment of nurse and family strategies for children after heart surgery. Pre-operative preparation for families specific to post-operative recovery and pain management of children hospitalized for heart surgery is needed.

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Introduction

Each year, about 40,000 babies in the United States are born with congenital heart defects (Center for Disease Control and Prevention, 2018). The majority of these children will require at least one surgical procedure with hospitalization in the pediatric intensive care unit (PICU). Moreover, approximately 25% have a critical cardiac defect and will need heart surgery within the first year of life (Center for Disease Control and Prevention, 2018). Publicly available quality outcome reports from heart surgery centers in the U.S. demonstrate that advances in surgical correction and medical treatment of congenital

heart defects (CHDs) have greatly increased survival rates and shortened recovery time for these children (The Society of Thoracic Surgeons, 2017).

The use of newer approaches to recovery and pain management in recent years has changed the immediate post-operative experience for many children in this population. National guidelines for management of post-operative pain in adults and children include opioid-sparing strategies for all types of surgeries with an emphasis on multimodal regimens (Chou et al., 2016). For example, the use of neuraxial anesthesia (caudal block injections) with long acting narcotics in the operating room has become standard practice for some children recovering from heart surgery (Bigeleisen & Goehner, 2015). Pediatric cardiac surgery patients are now frequently extubated in the operating room or within hours after the surgical procedure (Alghamdi et al., 2010), so children are awake sooner after surgery. For some, treatment with continuous intravenous narcotic infusions and heavy sedation have been replaced

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with narcotic boluses and scheduled non-narcotic analgesia (Lucas et al., 2016). In addition, best practice in pediatrics is shifting away from maintaining immobility to engaging patients in early recovery activities soon after surgery (Wieczorek, Burke, Al-Harbi, & Kudchadkar, 2015).

Although the terms pain and discomfort are used interchangeably at times, pain is a component of the larger concept of discomfort. The word comfort can be defined as a noun, as in “the pleasant and satisfying feeling of being physically or mentally free from pain and suffering” (Cambridge dictionary, 2017) or as a verb, “to ease grief or trouble of” or “to give strength and hope to” (Merriam Webster dictionary, 2017). Previous studies suggest children recovering from surgery experience moderate to severe pain (Twycross & Finley, 2013). From a nursing perspective, the concept of pain like that of comfort, is multidimensional. For example, pain can have objective properties initiated by neurobiologic mechanisms with a physiologic impact, as well as subjective properties that manifest from sensory and emotional experiences with a psychological impact. However, due to their young age, children having heart surgery are often unable to verbally communicate their pain experience and therefore will rely of the perceptions of parents and hospital staff to address their comfort needs (Harvey, Kovalesky, Woods, & Loan, 2013; Twycross, Williams, & Finley, 2015).

From a theoretical perspective, pediatric comfort has been examined by Kolcaba and Dimarco (2005) in which they offer an application of Kolcaba’s midrange comfort theory to the pediatric population. In Kolcaba’s seminal work on the concept and theory of comfort in adults, she defines comfort as a holistic experience; “The immediate state of being strengthened through having the human needs for relief, ease, and transcendence addressed.” (Kolcaba, 1994). Comfort was further described as existing within four contexts of experience: physical, psychospiritual, sociocultural, and environmental. When considering the role of the nurse–parent relationship in comfort care of hospitalized children, key attributes for pediatric comfort in the sociocultural domain are familial input and cultural recognition (Kolcaba & Dimarco, 2005). Hence, Kolcaba and Dimarco’s (2005) comfort theory for children is closely aligned with the family centered care movement that has become the model for best practice in pediatric health care (Institute for Patient- and Family-Centered Care, 2018).

The time of diagnosis and peri-operative periods have been consistently noted to be stressful for parents with children needing cardiac surgery (Golfenshtein, Hanlon, Deatrick, & Medoff-Cooper, 2017; Lan, Mu, & Hsieh, 2007; Utens et al., 2000; Wei et al., 2016; Wray & Sensky, 2004). Psychological manifestations for these parents may include depression, anger, or post-traumatic stress/disorder. (Connolly, McClowry, Hayman, Mahony, & Artman, 2004; Garson, Benson, Ivler, & Patton, 1978; Helfricht, Latal, Fischer, Tomaske, & Landolt, 2008). Franck, Mcquillan, Wray, Grocott, and Goldman (2010) administered questionnaires and conducted pre- and post-operatively (days 3, 5, 8 and 15) with 211 parents of children having CHD surgery and noted that stress levels continued relatively high and stable throughout this time. Despite being stressed, many parents take active steps to protect and advocate for their child (Harvey et al., 2013; Pridham et al., 2010; Rempel, Blythe, Rogers, & Ravindran, 2012).

In conclusion, the literature on pediatric post-operative pain experience elucidates the challenges of pain management, the positive impact of parental involvement, and reinforces a family centered care approach to maximize comfort (Carnevale & Gaudreault, 2013). However, there is an absence of recent studies in the literature explore the impact of parental expectations of pediatric post-operative pain and pain management practices (Wei, Roscigno, Hanson, & Swanson, 2015). In a literature review of families of children with CHD (94 articles from 21 countries) Wei et al. (2015) noted that while the use of different methodologies and varied settings showed a range of parental reactions to their child’s diagnosis and treatment of CHD, one area with scant research has been parents’ expectations of care. Moreover, given the

changes in the pain management and recovery practices for children after heart surgery, it is important to examine current comfort care beliefs of both families and staff. The purpose of this study was to explore parents’ and nurses’ expectations about comfort in children after heart surgery to contribute to evidence-based family-centered interventions.

Methods

A descriptive design with content analysis was the methodological framework utilized to explore the expectations of comfort. After approval from the institutional review board at the study site, this research was conducted from March 2017 through September 2017. Semi-structured interviews were used to obtain the qualitative data.

Sample

Both the nurse and parent participants were recruited from a children’s hospital with a pediatric heart surgery program, 82 licensed beds, a 13 bed PICU, and 24-hour pediatric-only emergency department located in the Pacific Northwest region of the United States.

Nurse Participants

A purposive sample of 20 nurses comprised the nurse group in the study. Registered nurses who were currently employed as a bedside nurse in the PICU or in the pediatric medical surgical unit and who had experience caring for a child after heart surgery were eligible for participation in the study. A balance of PICU nurses working the day and night shifts was sought. Those nurses who had <2 years of experience working in inpatient pediatric acute or critical care or had no experience providing care for a child after heart surgery were excluded. Nurses were recruited via emails, announcements at staff meetings, flyers posted in the hospital staff break room, and direct researcher to nurse contact (Table 1).

Parent Participants

A convenience sample size of 23 family participants (18 mothers, 4 fathers, and 1 grandmother) comprised the parent group, representing a total of 18 families. Potential family participants were contacted by the principal investigator (PI) during their child’s heart surgery pre-operative clinic visit to explore their interest in the study. English-speaking families with a child scheduled to have heart surgery at the

Table 1
Demographic information about participating nurses (n = 20).

Unit and shift	
PICU days	7 (35%)
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Ped medical-surgical	6 (30%)
Ethnicity	
Caucasian	16 (80%)
Asian	4 (20%)
Age	
25–34 years	4 (20%)
35–44 years	3 (15%)
45–54 years	11 (55%)
55–64 years	2 (10%)
Nursing education	
Diploma	1 (5%)
Associate degree	4 (20%)
Bachelor degree	14 (70%)
Masters	1 (5%)
Years of nursing experience	
2–5 years	4 (20%)
5–10 years	1 (5%)
>10 years	15 (75%)

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