

**Understanding the Lived Experiences of Nurses Resuscitating Children in Community
Hospital Emergency Departments**

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Preface

Ethical Approval Obtained to Conduct Research

I completed this study with ethical approval from the University of Ottawa's Health Sciences and Science Research Ethics Board (Appendix A).

Statement of Contributions and Co-Authorship

Included in this thesis is an empirical findings manuscript (Chapter 4), of which there are four authors. I have outlined the contributions of each below.

1. Jamie Anne Bentz, RN, BScN

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I completed this research to fulfill the requirements for my master's thesis. I wrote and submitted the ethics proposal, conceived of and conducted the literature review and research design, collected and analyzed the data using interpretive phenomenological analysis, and wrote and revised all chapters. I am the primary author of the empirical findings manuscript in Chapter 4.

2. Brandi Vanderspank-Wright, RN, PhD CNCC(C)

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Dr. Brandi Vanderspank-Wright, my thesis supervisor, provided ongoing support and feedback throughout this research project. She offered guidance and assistance with the ethics proposal and participated in the conceptualization and design of the study.

Additionally, she contributed to the analysis of the data and critically reviewed and offered feedback on each chapter of this thesis.

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As a thesis advisory committee member, Dr. Michelle Lalonde offered guidance on the research design as an emergency department nurse and experienced researcher. She partook in participant recruitment, provided input in the data analysis process, and critically revised all chapters.

4. Jane Tyerman, RN, PhD

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Dr. Jane Tyerman, a thesis advisory committee member, provided valuable input as an experienced emergency department nurse and researcher throughout the research design and data analysis process. She also assisted in participant recruitment and critically revised each chapter of this thesis.

Abstract

Emergency department (ED) nurses exposed to pediatric resuscitations are at a high risk of developing posttraumatic stress (Adriaenssens et al., 2012; Lavoie et al., 2016). This may be especially true in community hospital EDs where nurses have less exposure to, knowledge about, and resources for managing these events (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Interventions to proactively prevent nurse trauma in these contexts remain uninvestigated. To inform such interventions, this study aimed to understand the largely unknown lived experiences of these nurses. In-depth, semi-structured interviews were conducted with four registered nurses who experienced at least one pediatric resuscitation while working in a community hospital ED in Ontario. Data analyzed using Smith et al.'s (2009) interpretive phenomenological analysis revealed three superordinate themes (i.e., "Conceptualizing Pediatric Resuscitations," "Seeing What I See," and "Making Sense of What I Saw") and nine corresponding subthemes. This study provides insight into the infrequent but profound experiences of nurses resuscitating children in community hospital EDs. Participants, who conceptualized these events as unnatural, emotional, and chaotic, were comforted by those who understood their experiences and distressed by those who could not see what they saw. To reconcile what they saw, the nurses reflected and ruminated on the event, ultimately restructuring their experiences of themselves, others, and the world to make room for a new reality where the safety of childhood is not certain. The findings of this study have implications for nursing practice, education, leadership, and research that may enhance nurse coping following these events.

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Chapter 1: Introduction

The Canadian Triage and Acuity Scale (CTAS) is a five-level triage algorithm used by emergency department (ED) nurses to categorize patients according to illness severity in order to facilitate resource allocation and treatment prioritization (Gravel et al., 2012; Mirhaghi et al., 2015; Yates et al., 2016). Patients triaged as Level I, or requiring “Resuscitation,” present to an ED with a condition requiring immediate, aggressive medical intervention due to the threat of the loss of life or limb or the imminent risk of deterioration (Bullard et al., 2017; Warren et al., 2008; Yates et al., 2016). According to CTAS criteria, over 20,000 children between 0 and 19 years of age required resuscitation when presenting to Canadian EDs in the year of 2019 to 2020 (Canadian Institute for Health Information [CIHI], 2020).

Children requiring resuscitation are critically ill, that is, they have conditions that present a high risk of causing multi-organ dysfunction, long-term morbidity, and imminent mortality (Watson & Hartman, 2014). Common causes of pediatric critical illness include sepsis and respiratory tract infections, traumatic injuries, seizures, and complications related to chronic conditions (e.g., asthma, congenital heart defects, prematurity, and cancer; Crow et al., 2017; Watson & Hartman, 2014). Nurses are essential in the resuscitative care of children in the ED, being responsible for triage, resuscitative activities (e.g., preparing medications, monitoring vital signs, establishing venous access, performing chest compressions, and documenting), facilitating effective interprofessional communication, and providing family support (Christ et al., 2010; Clements & Curtis, 2012; Porter et al., 2015; Terzi, 2012). However, ED nurses perceive the care of critically ill and dying children as the most traumatizing events encountered in their work (Adriaenssens et al., 2012; Declerq et al., 2011; Lavoie et al., 2011; Lavoie et al., 2016).

Conceptualizing Trauma and Related Concepts

Traumatic events are extreme situations (i.e., the actual or threatened death, serious injury, or sexual violence to self or another) that threaten to overwhelm a person's ability to cope (American Psychiatric Association [APA], 2013). Primary traumatization is the process of being directly exposed to a traumatic event as a victim or a witness (Peebles-Kleiger, 2000).

Following a primary trauma, a person may develop post-traumatic stress (PTS), a phenomenon characterized by psychological and behavioural symptoms (i.e., avoidance, hyperarousal, intrusion, and changes in cognition and mood; Douglas, 2013).

Avoidance symptoms constitute behaviours where a person avoids stimuli that may bring forth distressing memories of an event (APA, 2013). Hyperarousal symptoms (i.e., increased arousal and reactivity) may include irritability, angry outbursts, hypervigilance, difficulty concentrating, an exaggerated startle response, and sleep disturbances (APA, 2013). Intrusion symptoms are characterized by reliving the event through flashbacks (i.e., dissociative reactions where a person feels as if the event is re-occurring), having vivid memories and dreams about the event, or feeling intense psychological or physical distress following reminders of the event (APA, 2013). Finally, persons with PTS may experience changes in cognition and mood, such as becoming detached from family and friends and losing pleasure in hobbies (APA, 2013). Post-traumatic stress disorder (PTSD) is related to PTS in that a person suffering from severe PTS may meet diagnostic criteria for PTSD (Douglas, 2013). The latter, however, is a diagnosable disorder characterized by PTS symptoms that last for more than a month, result in clinically significant distress, and are not the effect of substance use or another medical condition (APA, 2013).

Related to PTS are the concepts of secondary traumatic stress (STS), compassion fatigue, and burnout. Secondary traumatization, also referred to as vicarious traumatization, is the process of being indirectly exposed to a traumatic event (e.g., by caring for a person with PTS; Peebles-Kleiger, 2000). First noted by Figley (1995), STS is characterized as PTS symptoms in a person caring for traumatized individuals. Burnout and compassion fatigue are concepts that are separate from but related to STS (Meadors et al., 2010). Specifically, burnout is the phenomenon of emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment in the workplace, which results from prolonged occupational exposure to demanding interpersonal situations (Jenkins & Baird, 2002; Stamm, 2010; Watts & Robertson, 2015). Compassion fatigue, in contrast, is the negative reactions (i.e., STS and burnout) resulting from prolonged exposure to distressed individuals (Stamm, 2010).

Traumatic Stress in Emergency Nurses

Prevalence

Researchers have found that ED nurses in the Western world are at a high risk of experiencing traumatic stress (i.e., PTS, STS, and PTSD). Laposa et al. (2003), for example, found that in a sample of ED personnel consisting primarily of nurses working in a large Canadian hospital ($n = 51$), 20% met the criteria for PTSD. This compares to a current PTSD prevalence estimate of 2.4% in the general Canadian population (Van Ameringen et al., 2008). Similarly, in their recent cross-sectional survey study of ED nurses working in the Netherlands ($n = 692$), de Wijn and van der Doef (2020) found that 15.7% of their sample exhibited symptoms of PTS, with exposure to critical events significantly explaining variance in symptoms.

Importantly, symptoms of STS are indistinguishable from those of PTS (APA, 2013; Figley, 1995); therefore, without knowing the context of participants' exposures to traumatic events, it is possible that researchers seeking to measure one construct may actually be measuring the other. Still, in their cross-sectional survey study of 105 ED nurses working in Western Ireland, Duffy et al. (2015) found that 82% of staff nurses met the criteria for STS, as identified by the Secondary Traumatic Stress Scale (STSS; Bride et al., 2004). Similarly, 85% of surveyed ED nurses working in California (Dominguez-Gomez & Rutledge, 2009) and 75% of surveyed ED nurses working in Scotland (Morrison & Joy, 2016) reported at least one symptom of STS.

Multiple Traumas

Events that are associated with the development of PTS in ED nurses include: Being the victim of aggression from patients or colleagues; feeling unable to deliver safe or high-quality care; and being exposed to critical incidents, especially the sudden or unexpected injury, resuscitation, or death of a patient (Adriaenssens et al., 2012; de Wijn & van der Doef, 2020; Gates et al., 2011; Lavoie et al., 2016; O'Connor & Jeavons, 2003; Spencer et al., 2019). While being exposed to these primary traumas, ED nurses may have simultaneous exposure to secondary traumas when caring for, or working with, traumatized patients or colleagues (Arnold, 2019; Figley, 1995). It is possible that the concurrent exposure to both primary and secondary traumas contribute to the high prevalence of compassion fatigue in ED nurses. Of significance, Hooper et al. (2010) found that 86% of surveyed ED nurses ($n = 49$) in the southeastern United States had moderate to high levels of compassion fatigue (i.e., burnout and STS).

The Trauma of Resuscitating a Child

Healthcare providers working with children are at a high risk of experiencing traumatic

stress, especially after witnessing the death, critical illness, or serious injury of a child (e.g., Declerq et al., 2011; Jones et al., 2020; Kellogg et al., 2018; Park et al., 2020). Exposure to pediatric death can be especially traumatizing if the death is: sudden, unexpected, or shocking; involves providing cardiopulmonary resuscitation (CPR); is caused by child abuse or neglect; involves a suicide; or is of a child resembling the healthcare provider's own children (e.g., Baverstock & Finlay, 2006; French-O'Carroll et al., 2019; McKenna & Rolls, 2011). Of note, ED nurses experience pediatric resuscitations and deaths as stressful, sudden, unexpected, shocking, and traumatic (Abraham et al., 2018; Crowley et al., 2015; Gilleland et al., 2014; Goldman et al., 2018; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019). Following these events, they also report feeling personal distress, extreme stress, anger, anxiety, helplessness, chaos, and horror (Crowley et al., 2015; Goldman et al., 2018; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018).

The context in which a healthcare provider is exposed to pediatric critical illness or death is significantly related to their experience of traumatic stress (e.g., Adriaenssens et al., 2012; Baverstock & Finlay, 2006; Goldbort et al., 2011; Jones et al., 2020; Lima et al., 2018; McKenna & Rolls, 2011; Rodriguez-Rey et al., 2019b; Sheen et al., 2015). For example, morally distressing situations involving children (i.e., situations where healthcare providers are unable to do what they believe is right due to contextual restraints) increase the risk of experiencing traumatic stress (Sheen et al., 2015). Furthermore, traumatic stress is especially likely when exposures occur in work environments with inadequate staff, physical isolation from colleagues, diminished resources, and poor supervisor support (e.g., Jones et al., 2020; Lima et al., 2018; McKenna & Rolls, 2011). Pediatric deaths occurring around holidays or in settings where a provider does not have time to emotionally process the event, as is often the case in the ED, also

have the potential to be particularly traumatizing (e.g., Baverstock & Finlay, 2006; Goldbort et al., 2011). Finally, the frequency of exposures to traumatizing events involving children positively correlates to the development of traumatic stress (e.g., Adriaenssens et al., 2012; Rodriguez-Rey et al., 2019b).

It has been reported that while ED nurses largely support family member presence during pediatric resuscitations, this practice may increase nurse distress during these events (Crowley et al., 2015; Fein et al., 2004; Goldman et al., 2018; Jackson, 2017; Lindsay & Heliker, 2018; Mangurten et al., 2006; Porter., 2019). As previously mentioned, nurses participating in pediatric resuscitations may experience both primary and secondary traumas, as they are exposed directly to the pediatric resuscitation while simultaneously witnessing the distress of their colleagues and the child's family.

Outcomes of Trauma

Unfortunately, traumatic stress has negative effects on healthcare providers, patients, and the healthcare system. Negative effects of trauma on healthcare providers include decreased quality of life (e.g., Czaja et al., 2012; Mealer et al., 2009; Rodriguez-Rey et al., 2019a), personal functioning (e.g., Mealer et al., 2009), and physical health (e.g., Czaja et al., 2012; Rodriguez-Rey et al., 2019a). Specifically, persons suffering from traumatic stress are at an increased risk of inflammation, musculoskeletal disorders (e.g., arthritis), metabolic disorders (e.g., type 2 diabetes and significant weight gain), and cardiovascular disease (Ryder et al., 2018; Trudel-Fitzgerald et al., 2016).

Healthcare providers with PTS and STS also are at an increased risk of displaying or experiencing burnout, impaired communication, and reduced decision-making capacity and professional judgement, all of which are associated with diminished patient safety (Colville et

al., 2015; de Lima Garcia et al., 2019; Hall et al., 2016; Jones et al., 2020; Mealer et al., 2009; Regehr & Leblanc, 2017; Rodriguez-Rey et al., 2019a; Rodriguez-Rey et al., 2019b; Sheen et al., 2015). Traumatized healthcare providers may also experience reduced empathy and provide care that is detached, emotionally distant, and perceived as unsatisfactory to patients (e.g., Leinweber et al., 2017; Raja et al., 2015). Finally, traumatic stress and its associated burnout and compassion fatigue increase a HCP's desire to leave their job, direct patient care, or their profession, contributing to staffing shortages (e.g., Czaja et al., 2012; Duffy et al., 2015; Goldbort et al., 2011; Han & Lee, 2013; Jackson, 2017; Lindsay & Heliker, 2018; McDermid et al., 2020).

Factors motivating ED nurse turnover are especially concerning, as researchers have identified ED nurse attrition as a critical and escalating problem (McDermid et al., 2020; Sawatzky & Enns, 2012). Turnover and deficiencies in nursing staff contribute to other issues in the ED, such as increased wait times, overcrowding, ambulance diversion, negative patient experiences, and a reduction in the ability of ED staff to implement timely, evidence-informed care (Carlson & Rubenfeld, 2007; McDermid et al., 2020; Nelson et al., 2018; Olshaker, 2009; Ramsey et al., 2018).

Facilitating Coping

In the fast-paced ED setting, nurses have limited time to process pediatric resuscitations and deaths (Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018). Emergency department nurses have noted that critical incident debriefing sessions may enhance their coping following these events (Healy & Tyrrell, 2013; Jackson, 2017; Lavoie et al., 2011). During critical incident debriefing, colleagues have the ability to discuss the critical incident to address and receive relief from stressors related to the event (Clark et al., 2019). The formal version of this process, critical

incident stress debriefing, is a 7-phase intervention facilitated by a trained professional which allows healthcare providers to discuss a critical incident in a manner intended to facilitate normal recovery from the event (Clark et al., 2019; Mitchell & Everly, 2001). However, ED nurses report that debriefing is uncommon following critical events due largely in part to the time constraints of a fast-paced setting (Lavoie et al., 2011; Jackson, 2017). Instead, most rely on informal colleague support following pediatric resuscitations (Crowley et al., 2015; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019). Furthermore, quality evidence supporting formal debriefing is lacking in the literature (Brooks et al., 2018). In fact, the practice may be harmful to persons exposed to workplace traumatic events, as it may accentuate feelings of guilt or shame and retraumatize participants by having them relive the incident prematurely (Brooks et al., 2018; Brooks et al., 2019; Kearns et al., 2012).

What is Missing

Nurses' Experiences and Proactive Interventions

In the extant literature, the only studies providing a detailed examination of ED nurses' experiences resuscitating children focus solely on their experience of family member presence during pediatric resuscitations (i.e., Crowley et al., 2015) or on their experiences of traumatic events generally, rather than pediatric resuscitations specifically (i.e., Lavoie et al., 2011). Furthermore, despite the lack of quality evidence supporting critical incident debriefing, researchers have not investigated alternative interventions for use during and immediately following these events to proactively prevent nurse trauma (Brooks et al., 2018; Brooks et al., 2019; Healy & Tyrrell, 2013; Jackson, 2017). In contrast, researchers have investigated and advocated for interventions to prevent parental trauma following pediatric resuscitations, including promoting family member presence and compassionately delivering bad news (e.g.,

Harrison & Walling, 2010; McAlvin & Carew-Lyons, 2014). Lavoie et al. (2011) did find, however, that ED nurses desired “defusing activities” (p. 1518), such as talking to colleagues, after exposure to traumatic events like pediatric resuscitations.

Nurses’ Experiences Resuscitating Children in Community Hospitals

Community hospitals provide emergency, general medicine, and surgical services primarily to patients living within the communities they are situated in (Ministry of Health and Long-term Care [MOHLTC], 2009). Unlike large academic-affiliated hospitals, these centres may be unable to provide specialized, complex medical care, including pediatric critical care required beyond the initial period of resuscitation (Health Quality Ontario, n. d.). The Canadian Institute for Health Information (CIHI; 2008) reported that over 80% of pediatric ED visits in Ontario occur in community hospitals. There is, however, a paucity of research on the experiences of nurses resuscitating children in these settings; instead, the majority of the existing literature is set in academic hospitals and pediatric centres.

As will be discussed in Chapter 2, the literature examining nurses’ experiences resuscitating children in community hospital EDs does not offer a detailed examination of participants’ experiences of actual pediatric resuscitations. Gangadharan et al. (2018) and Goldman et al. (2018), for example, studied staff members’ experiences of pediatric resuscitation simulations. Furthermore, Gilleland et al. (2014) focused on the practical and informational needs of community hospital ED staff caring for critically ill children, rather than their lived experiences. Similarly, Porter (2019) focused only on staff experiences of family member presence during resuscitations, rather than the totality of their experiences. Finally, Abraham et al. (2018) only reported that nurses and physicians rated pediatric deaths as one of the most stressful events experienced in their jobs and Sacchetti et al. (2000) found that prior experiences

of family member presence increased staff approval of the practice. Neither group of authors provided details of these experiences.

Researchers have found, however, that staff in community hospital EDs have fewer colleagues to assist in pediatric resuscitations and lack experience, knowledge, and proficiency in managing these events (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). For example, Gilleland et al. (2014) found that most community hospital ED staff reported not seeing more than one critically ill pediatric patient each month. They also found that participants reported lacking specialized staff, practice guidelines, pediatric technical skills, and equipment to perform pediatric resuscitations (Gilleland et al., 2014). Furthermore, participants noted that cases involving critically ill children consumed community hospital ED resources and decreased the staff's global awareness of and ability to tend to the needs of other ED patients (Gilleland et al., 2014). Considering that inadequate staffing and insufficient resources are antecedents for traumatic stress in healthcare providers caring for children, it is possible that nurses find pediatric resuscitations in community hospital EDs particularly distressing (Jones et al., 2020; Lima et al, 2018; McKenna & Rolls, 2011).

Problem Statement and Research Objective

Emergency department nurses exposed to pediatric resuscitations are at a high risk of developing traumatic stress, burnout, and a desire to leave their jobs. This may be especially true in community hospital EDs, where nurses have less exposure to, resources for, knowledge about, and proficiency in managing these events. Evidence-informed interventions for use during and immediately following pediatric resuscitations to proactively prevent nurse trauma remain uninvestigated. To inform such interventions, there is a need to gain a detailed understanding of the largely unknown experiences of ED nurses resuscitating children in community hospital EDs.

The objective of this study, therefore, was to understand the lived experiences of nurses resuscitating children in these settings. To address this research objective, I used Smith et al.'s (2009) interpretive phenomenological analysis (IPA) methodology, chosen for its practical utility in addressing the research objective. Specifically, IPA is concerned with the detailed examination of human lived experience (Smith et al., 2009).

Thesis Outline

In Chapter 2, I present a review of the existing literature on nurses' experiences resuscitating children in community hospital EDs. In Chapter 3, I present my pragmatic research paradigm, the philosophical underpinnings of IPA as a research methodology, and the research methods employed for participant recruitment, data collection, and data analysis. Chapter 4 is an empirical findings manuscript. The thesis concludes with Chapter 5, wherein I present a detailed discussion of the findings within the context of nursing practice, education, leadership, and research.

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Chapter 2: Literature Review

To understand what is known about the experiences of nurses resuscitating children in community hospital emergency departments (EDs), I systematically reviewed extant literature on the phenomenon. In this chapter, I will first describe the method of data collection used for the literature review. Then, I will critically appraise the included articles before discussing findings relevant to the phenomenon of interest. I will close the chapter by summarizing the results of the review and discussing limitations of the current literature.

Method

On December 3, 2020, I conducted a literature review using three databases (i.e., CINAHL, Medline, and PsychINFO) to determine what is known about the experiences of nurses participating in pediatric resuscitations in community hospital EDs. I employed Cooke et al.'s (2012) SPIDER tool for qualitative synthesis as a framework to guide the literature search and used the search terms and database-specific Medical Subject Headings (MeSH) specified in Tables 1 and 2 in Appendix B. I searched all MeSH headings using the "Explode" feature to maximize results. The Boolean operator "OR" was used to combine the results of MeSH heading searches and related manual search terms for each component of the SPIDER tool. Finally, I used the Boolean operator "AND" between all combinations of MeSH headings and search terms.

I used EndNote Basic® to manage all references and Covidence to facilitate article selection (see Figure 1 in Appendix B) and included full-text, peer-reviewed, English-language literature on nurses' experiences of pediatric resuscitations in community hospital EDs. I defined "pediatric resuscitations" as events involving aggressive medical intervention to prevent the imminent loss of life or limb to a person under 18 years of age suffering from life-threatening

illness or injury (Bullard et al., 2017; Warren et al., 2008; Yates et al., 2016). I defined "community hospitals" as centres providing emergency, general medicine, and surgical services to patients living geographically close (Ministry of Health and Long-term Care [MOHLTC], 2009).

I included studies set in large, small, or rural community hospitals. For the purpose of this review, I defined large community hospitals as non-academic-affiliated general hospitals with over 100 patient beds and more than 2700 acute and day-surgery cases per year, situated in a non-metropolitan community (i.e., with a core population of less than 50 000 persons; MOHLTC, 2009; Office of the Auditor General, 2018; Statistics Canada, 2009). I defined small or rural community hospitals as non-academic affiliated general hospitals with less than 100 patient beds and 2700 acute or day-surgery cases per year, located in a community with a core population of less than 10 000 persons (MOHLTC, 2009; Office of the Auditor General, 2018; Statistics Canada, 2009).

I excluded pediatric hospitals and academic-affiliated hospitals (i.e., acute care hospitals affiliated with a medical or health sciences school that can provide highly complex patient care) from this literature review (Canadian Institute for Health Information [CIHI], 2007; DiDiodato et al., 2017; MOHLTC, 2009; Office of the Auditor General, 2018). I also excluded articles that focused only on the investigation of opinions, rather than experiences (e.g., opinions about family member presence during resuscitation, rather than the experience of family member presence); the experiences of family members or non-nursing staff; pediatric resuscitations in settings other than community hospital EDs (i.e., pediatric or academic-affiliated hospitals); grey literature; and case study reports on the medical management of pediatric resuscitations. Due to the limited research available on the subject, I did not exclude articles based on publication

dates.

The process and results of the literature search are shown in Figure 1 in Appendix B. Using the criteria outlined above, I included six articles in my literature review (i.e., Abraham et al., 2018; Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018; Porter, 2019; Sacchetti et al., 2000). Three were qualitative (i.e., Gangadharan et al., 2018; Gilleland et al., 2014; Porter, 2019), two were quantitative (i.e., Abraham et al., 2018; Sacchetti et al., 2000), and one was a mixed-methods study (i.e., Goldman et al., 2018). With the exception of that by Sacchetti et al. (2000), all included articles were published within the past seven years. The aims, settings, samples, and designs of the included studies are summarized in Table 3 in Appendix B.

Critical Appraisal of the Literature

Trustworthiness, or, in the case of quantitative studies, rigour, is the degree to which a reader can have confidence in the quality of research and, in turn, its findings (Kortjens & Moser, 2018; Lincoln & Guba, 1985; Polit & Tatano Beck, 2016). To systematically appraise trustworthiness of the research included in this literature review, I used critical appraisal tools from the Joanna Briggs Institute (JBI; 2020a; 2020b) and Critical Appraisal Skills Programme (CASP, 2018). Given that neither the JBI nor CASP has a tool for assessing the methodological quality of mixed-methods studies, I separately analyzed the qualitative and quantitative portions of Goldman et al.'s (2018) article according to the previously cited checklists. Engaging in the qualitative appraisal of the extant literature was useful because it allowed me to review both the content and quality of information known about nurses' experiences resuscitating children in community hospital EDs. As I will discuss in Chapter 3, doing so allowed me to purposefully create a study addressing both the knowledge gaps and methodological limitations identified. Results of the qualitative appraisals are discussed below and summarized in Table 4 and Table 5

in Appendix B. I will revisit the state of knowledge on the topic as well as the quality of the literature during my integrated discussion in Chapter 5.

Studies Using Qualitative Methods

Congruity Between Philosophical Perspective and Methodology

Paradigms are a set of shared beliefs about the nature of the world (Creswell, 2014; Guba & Lincoln, 1994; Kivunja & Kuyini, 2017). Each consists of ontological, epistemological, and methodological assumptions about the nature of reality, knowledge, and knowledge acquisition, respectively (Guba & Lincoln, 1994; Kivunja & Kuyini, 2017). Guba and Lincoln (1994) described four competing paradigms that guide research inquiry: Positivism, post-positivism, critical theory, and constructivism. One limitation of all studies using qualitative methods (i.e., Gangadharan et al., 2018, Gilleland et al., 2014; Goldman et al., 2018; Porter, 2019) was that the authors did not specify the philosophical or paradigmatic underpinnings of their research studies. It is therefore challenging to interpret whether or not their chosen methodologies align with the philosophical perspective of the researchers.

It is also difficult to assess whether the authors' philosophical perspectives aligned with their chosen methodologies because, with the exception of Gilleland et al. (2014), authors using qualitative methods did not appropriately specify the methodologies used. Gilleland et al. (2014) appropriately identified using Sandelwoski's (2000) qualitative description, a methodology generally accepted as aligning with the philosophical underpinnings of constructivism (Bradshaw et al., 2017; Kim et al., 2017). In contrast, however, while Goldman et al. (2018) and Gangadharan et al. (2018) both described using grounded theory, they did not specify the type of grounded theory employed. This is significant because different types of grounded theory have distinct paradigmatic influences: Glaser's is inspired by positivism's realism; Strauss and

Corbin's by post-positivism's critical realism; and Charmaz' by constructivism's relativism (Singh & Estefan, 2018). It unclear whether Goldman et al. (2018) or Gangadharan et al. (2018) considered these philosophical underpinnings, as both groups of authors cited the works of multiple grounded theorists when describing their research methods.

Similarly, Porter (2019) described using Creswell's (2014) qualitative methodology; however, in the textbook cited by the authors, Creswell (2014) presents a general six-step overview of how qualitative research is conducted, rather than a methodology with specific paradigmatic influences. Creswell (2014) does discuss more specific qualitative methodologies (i.e., narrative research, grounded theory, phenomenology, ethnography, and case studies) and their philosophical underpinnings earlier in his textbook, but these are not considered by Porter (2019).

Although the authors did not explicitly discuss their paradigmatic influences, and in most cases, a clear methodology, the reader can infer what worldviews align with their research objectives and methods. For example, it is typically assumed that qualitative research seeking to understand the views or experiences of participants—as is the case in the studies by Gangadharan et al. (2018), Gilleland et al. (2014), and Porter (2019)—are inspired by a constructivist worldview (Creswell, 2014; Guba & Lincoln, 1994). Constructivism's relativist ontology maintains that individuals construct subjective truths based on their unique experiential contexts (Guba & Lincoln, 1994). Researchers ascribing to this worldview assume a subjectivist epistemology, which upholds that knowledge is created when a researcher makes meaning of data through their own subjective thought (Guba & Lincoln, 1994; Kivunja & Kuyini, 2017). Constructivism's subjectivistic epistemology informs a hermeneutical and naturalistic methodology, whereby investigators discover the meaning of contextually-based experiences by directly observing and

interacting with participants, as Gangadharan et al. (2018), Gilleland et al. (2014), and Porter et al. (2019) described doing (Creswell, 2014; Guba & Lincoln, 1994; Kivunja & Kuyini, 2017).

As another example, Goldman et al. (2018) used both qualitative and quantitative data in their research study. Mixed-methods research is generally assumed to be inspired by the pragmatic paradigm (Creswell, 2014). Pragmatism upholds a pluralistic, non-singular reality ontology, asserting that neither realism nor relativism can solely capture truth (Brierley, 2017; Kivunja & Kuyini, 2017; Morgan, 2014). Pragmatists argue that reality is both real and relative, existing both apart from and within an individual's conceptualization of it, respectively (Cherryholmes, 1992; Creswell, 2014; Kivunja & Kuyini, 2017; Morgan, 2007; Morgan, 2014). This informs a relational epistemology, whereby the relationship between the researcher and reality is determined by the nature of the research problem (Kivunja & Kuyini, 2017). For this reason, pragmatic researchers may choose to address their objectives using mixed methods if they believe a diverse dataset will answer their research question more completely (Creswell, 2014). Once again, however, Goldman et al. (2018) do not distinguish what research paradigm influenced their study and subsequent methodology.

Study Aims and Congruity Between Methodology and Objectives

Gangadharan et al. (2018), Gilleland et al. (2014), Goldman et al. (2018), and Porter (2019) all clearly defined concepts relevant to their research and provided adequate justification for their studies. The authors also provided clear and relevant research objectives that justified their methodologies, when specified, and methods. For example, Gilleland et al. (2014) sought to identify healthcare providers' perceptions of barriers and facilitators to managing critically ill children in community hospitals. To do so, the authors appropriately selected Sandelwoski's (2000) qualitative description for its utility in answering questions about everyday phenomena in

participants' language. Porter (2019) sought to explore emergency personnel's experiences and attitudes towards family member presence during resuscitations. Although Creswell's (2014) six-step process to qualitative inquiry is better described as a method, rather than a methodology, this qualitative approach was appropriate, given the author's objective of exploring the meaning that individuals ascribe to the phenomenon of family member presence.

Gangadharan et al. (2018) sought to explore ED providers' perceptions of caring for critically ill infants and children. Although they did not specify the type used, grounded theory was appropriate for this study, given its utility for constructing a detailed understanding of a largely unstudied phenomenon (Charmaz, 2014; Schreiber, 2001; Singh & Estefan, 2018; Strauss & Corbin, 1990). For this reason, grounded theory was also appropriate for addressing Goldman et al.'s (2018) objective of exploring community ED providers' perceptions of caring for pediatric patients. Still, the product of a grounded theory study is typically a middle-range theory explaining the relationship between phenomena (Priya, 2016; Singh & Estefan, 2018; Tie et al., 2019). Neither Gangadharan et al. (2018) nor Goldman et al. (2018) explicitly provided such a theory in their discussion. Therefore, the authors could have addressed their objectives, which called for an inductive process of inquiry, with alternative qualitative methodologies, such as qualitative description or phenomenology (Creswell, 2014).

Ethics and Congruity Between Methodology and Methods of Data Collection and Analysis

All studies employing qualitative methods included statements of ethical approval. With the exception of Goldman et al. (2018), all other researchers also included statements on informed consent and participant confidentiality. In some cases, however, the authors could have provided more information on potential ethical issues. For example, to avoid influencing participants' behaviours, Porter (2019) observed participants in their EDs for a two-week period

without disclosing their study's true objectives. It is unclear if participants were informed of the study's objectives after the observation period ended. Furthermore, Gilleland et al. (2014) learned about staff who may be eligible for their study through interviews with persons in leadership positions (e.g., medical directors, nursing managers, and clinical educators). It is unclear whether persons in these positions of power directly approached participants to inform them about the study; however, participants may have felt pressured to partake if this occurred.

A strength of all qualitative studies was the congruency between the researchers' chosen methodologies and methods. As is appropriate with Sandelwoski's (2000) qualitative description, Creswell's (2014) general qualitative approach, and grounded theory, all researchers purposefully selected their participants based on their experiences of phenomena of interest (Charmaz, 2014; Schreiber, 2001; Singh & Estefan, 2018; Strauss & Corbin, 1990; Tie et al., 2019). The researchers also appropriately collected data using semi-structured interviews, focus groups, or debrief sessions to allow participants to elaborate on their experiences in their own terms (Creswell, 2014; Sandelwoski, 2000; Singh & Estefan, 2018; Tie et al., 2019).

Additionally, all researchers using qualitative methods analyzed data in a manner that was appropriate for their chosen methodologies. For example, in congruence with Sandelwoski's (2000) methodology, Gilleland et al. (2014) described using low-inference conventional content analysis. Specifically, while coding and analyzing transcripts, they used descriptions of the participants' actual words as much as possible, rather than the researchers' interpretation of the words' implicit meaning (Sandelwoski, 2000). Goldman et al. (2018) and Gangadharan et al. (2018) also appropriately described simultaneously collecting and analyzing data and using constant comparative analysis, processes that are appropriate in grounded theory (Singh & Estefan, 2018; Tie et al., 2019).

Congruity Between Methodology and the Interpretation and Discussion of Results

Gangadharan et al. (2018) and Porter (2019) appropriately acknowledged that the results from their qualitative research were theoretically transferable, but not generalizable (Lockwood et al., 2015). Neither Gilleland et al. (2014) nor Goldman et al. (2018) made similar statements; however, all researchers appropriately discussed their results within the context of current research, thus supporting the transferability of their findings (Guba & Lincoln, 1994; Lincoln & Guba, 1985). Furthermore, all of the researchers described how their findings may be used to inform the practice of, for example, preparing staff for pediatric resuscitations in community EDs (e.g., Gangadharan et al., 2018; Gilleland et al., 2014), creating partnerships between community EDs and pediatric hospitals (e.g., Goldman et al., 2018), and facilitating family member presence during critical events (e.g., Porter, 2019). The authors' suggestions for practice and relevance to recent literature were congruent with the findings reported.

Locating the Researchers and their Influence on the Research

Gangadharan et al. (2018) and Goldman et al. (2018) demonstrated adequate reflexivity by considering how their professional backgrounds may have influenced the research process (Forero et al., 2018; Lincoln & Guba, 1985; Korstjens & Moser, 2018). Gangadharan et al. (2018)—a research team consisting of four pediatric ED physicians, one pediatric ED nurse, and one pediatric critical care physician—acknowledged that their roles as pediatric critical care providers would inevitably influence data interpretation. However, to prevent undue bias, they ensured that the physician conducting all debriefs had appropriate training to allow participants to share their feedback with minimal interjections (Gangadharan et al., 2018). Furthermore, transcripts were analyzed first independently by each member of the research team and then as a group to discuss and refine codes (Gangadharan et al., 2018). Goldman et al. (2018), a research team consisting

exclusively of pediatric and emergency medicine physicians, discussed similar methods to eliminate bias, which included: Consistently using one trained debriefer for data collection; ensuring transcripts were analyzed first independently and then as a group; and having qualitative analysis done, in part, by blinded members of the research team.

While Gilleland et al. (2014) and Porter (2019) did not discuss how their professional backgrounds or relationships to participants might have influenced their interpretation of the data, they did discuss methods used to ensure dependability and credibility. For example, Gilleland et al. (2014) described using multiple coders during data analysis and kept an audit trail of major codes and analysis decisions (Kortjiens & Moser, 2018; Lincoln & Guba, 1985). To further enhance their study's trustworthiness, the authors triangulated their interview data with that from transport databases and the opinions of pediatric critical care providers (Forero et al., 2018; Gilleland et al., 2014; Kortjiens & Moser, 2018). Similarly, Porter (2019) noted that data analysis for their study was conducted by "the author and two experienced academics" (p. 269) and that each member of the research team coded the data independently before agreeing on codes and relationships between themes as a group. However, Porter (2019), a nurse and the sole author of the article, did not disclose the identities or professional backgrounds of these academics.

One limitation to all studies using qualitative methods was that none of the researchers fully disclosed the nature of their relationships to their participants. For example, Porter (2019) discussed how a member of their research team was immersed in their participants' environments for a two-week period to establish rapport and increase their comfort with being observed. They did not, however, state whether the observer had prior relationships with the participants. Furthermore, while Gangadharan et al. (2018) described recruiting some participants from the researchers' practice hospitals, it is unclear whether they shared close working relationships with

them before the study began.

Participant Voice and the Relationship of Conclusions to the Interpretation of Data

All researchers demonstrated credibility, as they provided numerous, direct quotes from their data to allow readers to understand participants' experiences (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman, 2018; Lincoln & Guba, 1985; Porter, 2019). The use of direct quotes also enhanced the study's conformability, that is, evidence that the researchers' interpretations were derived from the words of the participants (Korstjens & Moser, 2018). It follows that the themes reported were likely congruent with the words of the participants interviewed.

Studies Using Quantitative Methods

Sampling

Of the studies using quantitative methods (i.e., Abraham et al., 2018; Goldman et al., 2018; Sacchetti et al., 2000), all were cross-sectional survey studies. Abraham et al. (2018) provided a detailed overview of inclusion criteria and recruitment for their survey study. Following an introductory email and study information sessions, the research team distributed questionnaires to all medical and nursing staff working in the EDs of their included hospitals, either in-person or by mail (Abraham et al., 2018). Total response rate was 63.8% for staff from the small regional hospital and 66.9% of staff from the larger regional hospital (Abraham et al., 2018). In contrast, Goldman et al. (2018) and Sacchetti et al. (2000) offered little detail on sampling techniques used for their surveys. Specifically, Goldman et al. (2018) did not specify how they recruited resuscitation teams for their simulation study, and it was unclear whether Sacchetti et al. (2000) sent their survey to all staff members in the EDs included in their study. The only information on sampling that Sacchetti et al. (2000) provided is that 85 of the 107 staff surveyed (i.e., 82.5%) returned completed forms. It is therefore difficult to appraise the extent to which

sampling bias impacted their survey results and whether the characteristics of the staff responding to the surveys reflected those of the total population of staff in the included EDs.

Description of Study Settings and Participants

By providing a detailed description of their study's setting and participants, researchers allow their readers to consider how its findings may apply to their context of interest (JBI, 2020). While all authors employing quantitative methods adequately described their study settings, as reported previously in this chapter, only two adequately described their sample population. Specifically, Abraham et al. (2018) offered detailed demographic information about their participants, including age, sex, job title, and years of work. Goldman et al. (2018) similarly provided demographic information about their study participants, including mean age, sex, profession, number of years worked, number of adult and pediatric resuscitations experienced, Pediatric Advanced Life Support certification, and experience with simulation training. In contrast, Sacchetti et al. (2000) did not provide participant demographic details beyond occupation and place of employment.

Measurement Criteria

All of the authors using quantitative methods adequately reported the criteria used to measure constructs of interest. Goldman et al. (2018) used a five-point Likert scale to measure participants' attitudes about pediatric emergency care, while Sacchetti et al. (2000) measured attitudes about family member presence by having participants select "bad idea," "good idea," or "don't care" to report their opinion about the practice in the context of various procedures in the ED. In contrast, Abraham et al. (2018) measured constructs of interest using three previously established instruments: The Working Environment Scale (WES-10; Rossberg & Friss, 2004; Rossberg et al., 2004) to measure participants' perceptions of their ED working environment; the

Jolowiec Coping Scale Part A (JCS-A; Jalowiec et al., 1984) to measure coping strategies; and Ross-Adjie et al.'s (2007) workplace stressor scale to identify stressful events encountered by ED staff.

Abraham et al. (2018) appropriately employed factor analysis to establish whether their selected tests had construct validity and discussed the impact of the test results on the generalizability of their findings (Polit, 2010). Results of their confirmatory factor analysis were favourable for the WES-10; however, the researchers openly reported that factor analysis did not reveal a suitable factor structure for the JCS-A scale (Abraham et al., 2010). The authors correctly assumed that this result could be attributed to their relatively small sample size in comparison to the number of test items and recommended cautiously considering their findings and repeating their study on a larger sample (Abraham et al., 2018; Polit, 2010). Abraham et al. (2018) also appropriately acknowledged that the stressors on the Ross-Adjie scale may be missing factors that medical staff perceive as stressful, considering that the scale is based on data from a study of ED nurses (i.e., Ross-Adjie et al., 2007).

Appropriateness of Statistical Analyses Employed

When reporting participant characteristics, Abraham et al. (2018) and Goldman et al. (2018) appropriately used descriptive statistics (i.e., percentages or medians with interquartile ranges) to summarize their findings. While all researchers employing quantitative methods also chose appropriate inferential statistical tests, each could have provided additional information to improve the reporting of their results. For example, the chi-square test is used to infer whether a relationship between two categorical variables is statistically significant (Polit, 2010). For this reason, it is appropriate that Sacchetti et al. (2000) chose this test to determine whether a significant relationship existed between prior experience of family-member presence, measured

on a nominal scale, and the opinions of ED staff on its practice, measured on an ordinal scale (Polit, 2010). Likewise, it is appropriate that Abraham et al. (2018) chose this test to determine whether a significant relationship existed between hospital of employment and coping strategies used, as both variables were categorical in nature (Polit, 2010). However, while chi-square test results are generally reported with the name of the test, the value of the test statistic, degrees of freedom, sample size, and significance level, Sacchetti et al. (2000) and Abraham et al. (2018) only reported *p*-values (Polit, 2010). Furthermore, the generalizability of the findings would have been easier to evaluate had the authors reported effect size using Cramér's *V*; however, it is unclear whether the authors conducted a power analysis (Polit, 2010).

Similarly, Abraham et al. (2018) correctly chose the Mann-Whitney *U*-test to compare median WES-10 and JCS-A scores by hospital of employment and clinical role, given the test's practical utility in testing differences in ranks of scores between two independent groups (Polit, 2010). This non-parametric test was especially appropriate given the skewed, non-normal distribution of test scores (Abraham et al., 2018; Polit, 2010). Once again, however, Abraham et al. (2018) only provided *p*-values when reporting test results.

Likewise, it was appropriate for Goldman et al. (2018) to use the Kruskal-Wallis test to assess for significant differences in median comfort scores by provider type and the volume of pediatric cases seen by each of the six hospitals studied, given the non-parametric test's ability to compare ranks when there are three or more groups (Polit, 2010). Once again, however, the authors did not include the *H* statistic when reporting their results and instead only reported *p*-values and medians. Finally, Sacchetti et al. (2000) reported using regression analysis to determine the nature of the relationship between independent variables (i.e., hospital of practice, years of ED experience, professional title, and personal experience with family member

presence) and a positive opinion on family member presence. They did not provide information on the specific type of regression analysis used. Once again, Sacchetti et al. (2000) only reported *p*-values when describing the result of their regression analysis. They did not provide information regarding a goodness-of-fit test for the overall model (Polit, 2010).

Findings

Critical Pediatric Presentations in Ontario Emergency Departments

With the exception of one paper (i.e., Gilleland et al., 2014), the reviewed literature did not include data on the nature of the presentations of critically ill pediatric patients in EDs. Gilleland et al. (2014), however, collected and reported this data to provide context to their qualitative assessment of the needs of healthcare providers resuscitating children in community hospitals. In their study, all participating community hospitals were located in Ontario, Canada and referred critically ill children to McMaster Children's Hospital (Gilleland et al., 2014). In the order of descending occurrence, participants reported that most critically ill children presented with respiratory and airway conditions, physical traumas, sepsis, seizures, cardiac disorders, and illnesses related to diabetes, including diabetes ketoacidosis (DKA; Gilleland et al., 2014). These reports closely reflected data on the primary diagnoses of patients transported from participating EDs to McMaster Children's Hospital's pediatric intensive care unit (PICU; Gilleland et al., 2014).

Gilleland et al. (2014) found that few participants from community hospital EDs encountered a critically ill child more than once a month. Disease presentations described as especially anxiety-provoking by ED staff included airway and respiratory conditions, head injuries and major traumas, cardiac conditions, and sepsis (Gilleland et al., 2014). Participants also noted that pediatric patients in general caused high levels of anxiety, especially those that

were very young (Gilleland et al., 2014). Of note, transportation data indicated that 40% of children transported to the PICU were under the age of two, while 60% were under the age of six (Gilleland et al., 2014).

Challenges of Caring for Critically Ill Children in Community Hospitals

Challenges Related to Infrequent Exposure

Gilleland et al.'s (2014) finding that staff in community hospital EDs have infrequent exposures to pediatric critical illness aligned with those of other authors. Goldman et al. (2018), for example, reported that 61% of participants working in community hospital EDs experienced fewer than five pediatric resuscitations in their careers. Similarly, Gangadharan et al. (2018) found that participants working in general EDs reported fewer exposures to pediatric resuscitations than their counterparts working in pediatric EDs. Infrequent exposures negatively impact ED staff's comfort, confidence, knowledge, and skills related to the management of critically ill pediatric patients (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018).

Comfort and Confidence. Compared to their comfort with managing adult resuscitations, community hospital ED staff reported lower comfort and confidence levels with managing pediatric resuscitations and critical illnesses (i.e., Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). As one participant stated in Goldman et al.'s (2018) study, "[the] biggest challenge is that we don't see that many critically ill kids, and so it's a familiarity issue" (p. 1390). As another participant remarked, "everyone is scared to death when a kid comes in... because we don't see a lot of it and we don't feel comfortable with it" (Goldman et al., 2018, p. 1390). A lack of exposure may be relevant to these findings, as Goldman et al. (2018) found that staff working in community EDs with higher pediatric volumes reported greater comfort in

caring for critically ill children when compared to staff in community hospitals with fewer pediatric cases.

Of note, staff in community hospital EDs reported a lack of confidence with pediatric resuscitation, despite the majority having certification in Pediatric Advanced Life Support (PALS), a course designed to train healthcare providers to participate in the management of pediatric respiratory emergencies, cardiovascular emergencies, and cardiac arrest (American Heart Association, 2016a; Gangadharan et al., 2018; Goldman et al., 2018). Gilleland et al. (2014) noted that participants had increased comfort caring for critically ill children if they had previously worked in a children's hospital; however, these participants related their comfort to their past experiences rather than PALS certification or course-based training. Goldman et al. (2018) similarly found that comfort in managing acutely ill children was significantly related to the volume of pediatric patients presenting in an ED ($p < 0.001$) rather than staff members' experiences with pediatric simulation activities, PALS certification, or years working in an ED.

Even within larger academic-affiliated centres, staff members' discomfort in managing pediatric critical illness is related to their lack of exposure to pediatric cases. For example, in their survey study of nurses ($n= 52$) and physicians ($n=20$) working in a university-affiliated trauma centre specializing mostly in adult critical care in Ontario, Canada, Kester-Green and Lee (2014) found that 74.9% of staff rated their comfort in managing sick neonates as poor or very poor. Still, having encountered a neonate in the ED within the past six months most strongly predicted reported comfort with neonatal resuscitation (Kester-Green & Lee, 2014).

Knowledge and Skills. Due to limited exposure to pediatric critical illness and resuscitations, participants from community hospital EDs described lacking the knowledge and skills required to manage the events (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman

et al., 2018). These findings reflect those of Kester-Green and Lee (2014), who found that 76.3% of surveyed ED staff rated their knowledge in managing a sick neonate as poor or very poor. Goldman et al. (2018) also found that participants attributed their lack of knowledge to the absence of hospital policies, advanced protocols, cognitive aids, and clinical care guidelines relevant to managing critically ill children. Gilleland et al. (2014) similarly found that participants voiced not being aware of practice guidelines relevant to pediatric resuscitations and how evidence-based recommendations for managing critical illness in children may differ from those for adults with similar conditions.

Knowledge deficits described by participants were related to the interpretation of pediatric vital signs (e.g., Gilleland et al., 2014), general knowledge about the management of pediatric critical illness (Gilleland et al., 2014; Goldman et al., 2018), selection of appropriate equipment size (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018), and pediatric medication administration, including the process of calculating and drawing up appropriate weight-based dosages (Gangadharan et al., 2018; Goldman et al., 2018). Participants identified their lack of familiarity with pediatric dosing and a perceived inability to prepare proper medication dosages in emergencies as a safety issue (Goldman et al., 2018). This observation is especially relevant, considering that compared to adults, pediatric patients are more at risk of suffering adverse events related to medication errors (Hughes & Edgerton, 2005). While staff in community hospital EDs acknowledged that pharmacists may be appropriate resources to consult for preparing dosages appropriate for pediatric clients, these professionals may not be available during off-hours in community hospitals (Goldman et al., 2018). Feeling unprepared to appropriately administer medications to critically ill pediatric patients was distressing to ED staff, as evidenced by a comment by a participant in Gangadharan et al.'s (2018) study: "[As]

soon as they would've told me that we were going on any pressor, I was about to cry. We don't have the proper material to get that pressor going" (p. 581).

Staff in community hospital EDs also voiced discomfort in performing skills that are considered essential in pediatric resuscitation, including performing or assisting with intubation and establishing IV access, especially in small children (Gilleland et al., 2014; Goldman et al., 2018). These perceived skill deficits are concerning, considering that respiratory failure is the primary cause of cardiac arrest in children and that early intravenous access is necessary for administering emergency medications and fluid boluses in cases of septic shock or cardiac dysfunction (American Heart Association, 2016a).

Logistical Challenges

Access to Equipment. Besides having limited comfort, knowledge, and skills related to pediatric resuscitations, staff in community hospital EDs encounter logistical challenges when managing these events. One of these challenges is the inability to access appropriately sized equipment (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Participants in Gilleland et al.'s (2014) study, for example, reported that pediatric-specific equipment was sometimes not available in their community EDs and that adult-sized equipment had to be used (Gilleland et al., 2014). One participant noted, "They will use adult [blood] tubes for children. For babies...I don't think our lab is children friendly" (Gilleland et al., 2014, p. 495). This phenomenon is a source of anxiety and frustration for staff resuscitating children in these centres (Gangadharan et al., 2018).

Participants attributed their lack of access to appropriate equipment to funding, the physical layout of their EDs, and familiarity with pediatric resuscitation carts (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). For example, a participant in Goldman et

al.'s (2018) study noted that keeping appropriately sized equipment for relatively infrequent events was expensive, as the equipment was likely to become expired before being used. Gilleland et al. (2014) also reported that accessing appropriate equipment was challenging for participants when some resuscitation bays did not have pediatric crash carts. Furthermore, in cases where a critically ill adult occupies a designated pediatric resuscitation bay, staff may have to run between rooms to retrieve appropriately sized equipment to resuscitate a child that arrives unexpectedly in the ED (Gilleland et al., 2014). Finally, participants attributed their inability to access equipment to their lack of familiarity with their pediatric resuscitation carts and where pediatric equipment is stocked in their ED (Gangadharan et al., 2018; Gilleland et al., 2014).

Staffing Issues. Another logistical challenge to resuscitating pediatric patients in community hospital EDs involves inadequate staffing ratios (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Compared to EDs in large academic-affiliated centres or pediatric hospitals, community hospital EDs are generally staffed with fewer persons, especially during evening or night shifts (Gangadharan et al., 2018; Gilleland et al., 2014). For this reason, Gangadharan et al. (2018) found that, compared to staff from pediatric EDs, healthcare providers from general EDs were more comfortable with multitasking during resuscitation simulations. Nursing staff in particular had to assume multiple roles during resuscitations and sometimes initiated patient care, such as drawing up doses of emergency medications, prior to receiving physician orders (Gangadharan et al., 2018).

Even so, Gilleland et al. (2014) found that a critically ill child consumes community ED resources to the point where ED staff sometimes cannot meet the needs of the child or other ED patients. The authors also found that staff working in community hospital EDs described feeling a loss of global awareness for the needs of other patients in the ED when resuscitating a child

(Gilleland et al., 2014). This phenomenon is especially concerning, considering that the median length of stay for pediatric patients requiring resuscitation when presenting to Canadian EDs is 222 minutes (CIHI, 2020).

Healthcare providers from community hospital EDs also described lacking immediate access to specialized staff that may be required to care for a critically ill child, including pediatricians, pharmacists, radiography technicians, anesthesiologists, and respiratory therapists (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). However, Gilleland et al.'s (2014) participants reported that having an on-call pediatrician assist in a resuscitation could negatively impact team functioning and communication. As one participant noted, "They don't really know anybody right. They come to emerg and they don't know us or you or whatever and they're kind of rhyming orders" (Gilleland et al., 2014, p. 496).

The Emotional Impact of Pediatric Resuscitations

Healthcare providers in community hospital EDs perceive the critical illness, resuscitation, or death of an infant or child as sudden, extremely stressful, unexpected, shocking, and emotionally distressing (Abraham et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Resuscitations with negative outcomes are especially distressing to staff, who report the death of a child as the most stressful events in their practice (Abraham et al., 2018). Experiencing pediatric critical illness as a distressing event is not unique to staff in community hospitals, as ED staff in academic-affiliated hospitals and pediatric centres similarly experience this phenomenon as upsetting (e.g., Crowley et al., 2015; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019). In community hospital EDs, however, staff's infrequent exposure to pediatric cases, lack of familiarity with necessary equipment, and inability to access cognitive aids to guide pediatric critical care accentuate the anxiety experienced when caring for

critically ill children (Goldman et al., 2018). Goldman et al. (2018) found that staff from community hospital EDs did not experience this same level of distress during adult resuscitations.

As discussed in Chapter 1, witnessing the death or critical illness of a child in an ED may be a traumatic event for healthcare providers, that is, an extreme situation overwhelming a person's ability to cope (American Psychiatric Association [APA], 2013; Crowley et al., 2015; Jackson, 2017; Lavoie et al., 2011; Lavoie et al., 2016; Xu et al., 2019). It is understandable, therefore, that researchers have found that ED staff in pediatric or academic-affiliated hospitals perceive the resuscitation, death, or serious injury of a child as the most traumatizing events encountered in their work (Adriaenssens et al., 2012; Declerq et al., 2011; Lavoie et al., 2011; Lavoie et al., 2016). Although trauma was not explicitly discussed by Goldman et al. (2018), participants voiced that typical strategies used to cope with adult losses were often ineffective in relieving the emotional distress associated with cases of pediatric loss.

Healthcare providers exposed to pediatric critical illness and death may be especially likely to develop posttraumatic stress (PTS) symptoms (Declerq et al., 2011; Jones et al., 2020; Kellogg et al., 2018; Park et al., 2020). In their qualitative study of 12 ED nurses sampled from an academic-affiliated medical centre in the province of Quebec, Lavoie et al. (2011) found that participants were especially likely to report PTS symptoms after being exposed to a critically ill or dying child. One nurse, for example, described intrusion symptoms after witnessing a pediatric death: "I can still see that little girl. I dreamed about her for a month. The other nurse and I cried and cried, we couldn't get over it. We kept saying, 'it doesn't make sense, it can't be'" (Lavoie et al., 2011, p. 1517). Considering that inadequate staffing and insufficient resources may also contribute to traumatic stress in healthcare providers caring for children (e.g.,

Jones et al., 2020; Lima et al., 2018; McKenna & Rolls, 2011), and that staffing issues and inadequate resources were identified as issues in community hospital EDs (e.g., Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018), it is possible that pediatric resuscitations in these settings are particularly traumatizing for healthcare providers.

The Experience of Family Member Presence

Acknowledging that the family is a child's primary source of strength and support, the American Academy of Pediatrics (2012) has emphasized the importance of patient and family-centred pediatric healthcare. This philosophy of care emphasizes the centrality of the family in a patient's life, considers the patient within the context of their family, and supports family members in their roles as caretakers (American Academy of Pediatrics, 2012; Smith, 2018). In their concept analysis on the phenomenon, Smith (2018) reported that family-centred care in hospitalized pediatric patients is characterized by healthcare providers respecting unique family characteristics, providing support to the patient and their family, promoting family participation in care, openly communicating and forming partnerships with family members, and demonstrating cultural competence and appreciation. An antecedent to these activities is promoting family member presence (Smith, 2018).

Porter (2019) found that ED staff working in both rural and metropolitan settings were more likely to promote family member presence during pediatric, rather than adult, resuscitations. Participants described routinely allowing a child's parents to remain present in the resuscitation room, whereas they tended to escort family members of critically ill adults away (Porter, 2019). Staff also noted that they were more likely to call on the support of a care coordinator (i.e., someone whose role was to support the family during a resuscitation) immediately for pediatric resuscitations, but not as consistently for adult resuscitations (Porter,

2019). When asked why this discrepancy in practice existed, participants described perceiving children as dependent on their parents, even when critically ill (Porter, 2019). The finding that family member presence is more accepted by healthcare providers in the context of pediatric, rather than adult, resuscitations is a phenomenon previously noted and critiqued in the literature (e.g., Vincent & Lederman, 2017).

Porter (2019) also reported that ED staff viewed family member presence during pediatric resuscitations as beneficial to a child's care. In the case of pediatric resuscitations, for example, participants noted that the child's caregiver is likely to know the child's history, presenting conditions, and medications (Porter, 2019). Staff also believed that resuscitations could be less traumatic for a child with a parent present and that parents can promote a sense of calm for the child (Porter, 2019). Finally, participants perceived parents as focusing on their child during pediatric resuscitations (Porter, 2019). In contrast, participants perceived that family members of adults tended to focus on and critique the activities of the healthcare team, question care decisions, and seek rationales for emergency procedures, which could delay time-sensitive care (Porter, 2019).

Promoting family member presence during pediatric resuscitations benefits family members. For example, in their systematic review of articles investigating the phenomenon, McAlvin and Carew-Lyons (2014) found that parents wanted the option to be present during the resuscitation of their child and would choose to be present again, if given the opportunity. In cases where a child dies, parents that were present to witness the resuscitation attempt demonstrate enhanced coping compared to those who were not present (McAlvin & Carew-Lyons, 2014).

Despite acknowledging the benefits of family member presence during pediatric resuscitations, Porter (2019) and Sacchetti et al. (2000) found that comfort with the practice is dependent on healthcare providers' prior experiences with it. Specifically, participants in Porter's (2019) study noted that while they tended to avoid interacting with families during resuscitations early in their career, they gained the confidence and skills to do so by watching other healthcare providers. Sacchetti et al. (2000) similarly found that healthcare providers who had personally experienced family member presence during pediatric endotracheal intubation, cardiopulmonary resuscitation (CPR), or critical resuscitation were significantly more likely to describe the practice as a "good idea" in these contexts, compared to staff without this experience ($p = 0.001$). Furthermore, in their regression analysis using hospital of practice, years of experience working in an ED, professional designation, and personal experience with family member presence as independent variables, Sacchetti et al. (2000) found that personal experience most significantly predicted a positive opinion about family member presence within the context of pediatric intubation ($p = 0.022$), CPR, ($p = 0.015$), and critical resuscitation ($p = 0.006$). Whether or not participants worked in a hospital that regularly promoted family member presence also significantly predicted positive opinions about the practice in the context of pediatric CPR ($p = 0.02$).

Even so, while healthcare providers in community hospitals appreciate the importance and value of family member presence during pediatric resuscitations, they may experience this practice as distressing (Goldman et al., 2018; Porter, 2019). For example, Porter (2019) found that healthcare professionals experienced increased anxiety when family members were present during resuscitations, fearing that the family would become critical of their care. Multiple participants in Goldman et al.'s (2018) study also described feeling increased anxiety and

emotional distress when caring for a sick child in the presence of their distressed caregivers, especially when the caregivers were highly emotional or in denial of their child's condition.

The finding that family member presence during pediatric resuscitations may increase the emotional distress experienced by ED staff has also been noted in studies set in pediatric EDs (e.g., Crowley et al., 2015; Fein et al., 2004; Mangurten et al., 2006) and a level-one trauma centre (Lindsay & Heliker, 2018). As discussed in Chapter 1, exposure to the trauma of family members as they witness the resuscitation or death of their child may become a secondary trauma for healthcare providers, which, in turn, may contribute to the development of secondary traumatic stress (Figley, 1995; Peebles-Kleiger, 2000; Meadors et al., 2010). Therefore, it is also possible that healthcare providers participating in pediatric resuscitations experience both primary and secondary traumas, as they simultaneously witness the critical illness or death of a child (e.g., Goldman et al., 2018; Lavoie et al., 2011) and the distress of the child's family.

Coping with Pediatric Resuscitations

Cognitive Aids and Algorithms. Staff in community hospital EDs described relying heavily on algorithms and cognitive aids while caring for critically ill children, whereas healthcare providers from pediatric EDs mostly applied intuitive knowledge acquired through experience (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). One cognitive aid used during pediatric resuscitation is the Broselow Pediatric Emergency Tape, a colour-coded measuring tape used to estimate a child's weight and the appropriate sizes and dosages required for emergency equipment and medications (ALSulaibikh et al., 2017). In their simulation study, Gangadharan et al. (2018) found that while staff from both pediatric and general EDs used the Broselow tape to estimate a child's weight, staff from general hospital EDs relied on the tape more to calculate medication dosages and select emergency equipment.

Furthermore, while pediatric ED providers used “muscle memory” and previous experience to interpret vital signs or determine the rate at which to deliver rescue breaths to a child, providers from community hospitals relied more on cognitive aids, such as vital sign sheets (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018).

When available, general hospital ED staff identified resuscitation algorithms, such as those taught in the PALS course, as helpful while providing care to critically ill children (Gangadharan et al., 2018). Staff infrequently providing pediatric critical care are especially comfortable using algorithms similar to those used in adult resuscitations. For example, Gangadharan et al. (2018) found that staff from general EDs felt more comfortable performing pediatric resuscitations that involved chest compressions, given the similarities between the PALS algorithm for cardiac arrest and the adult Advanced Cardiovascular Life Support algorithm for cardiac arrest (American Heart Association, 2016a; 2016b). In contrast, general ED staff voiced discomfort with caring for a child in septic shock, despite the existence of a PALS algorithm for its treatment (American Heart Association, 2016b; Gangadharan et al., 2018).

Coping with Emotions. Due to the fast-paced nature of the ED setting, previous research has identified that ED staff have limited time to emotionally process pediatric resuscitations and deaths before returning to their work (Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018). Considering that community hospital EDs have fewer staff working each shift compared to larger academic hospitals and pediatric centres, this phenomenon may be especially true in these settings (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). In the studies included in this review, however, little information is provided on healthcare providers’ experiences and feelings following pediatric resuscitations.

Goldman et al. (2018) found that community hospital ED staff primarily relied on informal colleague support to cope with pediatric resuscitations. This finding is reflective of those of other studies of nurses resuscitating children in EDs (e.g., Crowley et al., 2015; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019). Participants in Goldman et al.'s (2018) study also described how pediatric resuscitations fostered a sense of comradery amongst teammates. Besides speaking with their colleagues, staff may also cope by sharing their emotions with others outside of their working environment. For example, while Abraham et al. (2018) did not investigate how ED staff cope with pediatric resuscitations specifically, they found that staff coped with stressful events encountered at work by talking about them with family or friends.

Reliance on Pediatric Hospitals. To address knowledge deficits and enhance emotional coping, community hospital ED staff voiced wanting to form collaborative partnerships with local pediatric hospitals (Gilleland et al., 2014; Goldman et al., 2018). Participants in Gilleland et al.'s (2014) study, for example, described relying on the local children's hospital to disseminate evidence-based guidelines and practices for the care of critically ill children. Participants also desired mentorship opportunities with staff from the pediatric hospital to gain real-life experience managing critically ill children (Gilleland et al., 2014). Goldman et al. (2018) reported that community ED healthcare providers found the ability to communicate with experts at their local pediatric hospitals during pediatric resuscitations particularly useful.

Considering their findings, Goldman et al. (2018) proposed additional ways that local pediatric hospitals could support community hospital staff, including sharing coping mechanisms, cognitive aids, and clinical care guidelines and providing simulation-based teaching activities. Community hospital ED staff also discussed a desire for more feedback and follow-up from pediatric hospitals about the care they provided and the outcomes of critically ill pediatric

transfers (Gilleland et al., 2014; Goldman et al., 2018). Participants noted that this practice could help them emotionally process the event while gaining knowledge applicable to future cases (Gilleland et al., 2014; Goldman et al., 2018). Besides the suggestion that pediatric hospital staff participate in community hospital debriefs following pediatric resuscitations (e.g., Goldman et al., 2018), debriefing as a coping mechanism was not discussed in detail in the reviewed literature.

Summary of the Literature and What is Missing

Considering my critical appraisals of the extant literature, studies reporting nurses' experiences resuscitating children in community hospital EDs must be interpreted with caution, as all include methodological limitations. What is known, however, is that due to the relative infrequency of pediatric resuscitations, community hospital ED staff lack experience, knowledge, and proficiency in managing these events and rely heavily on cognitive aids and the support of pediatric hospitals to deliver pediatric critical care (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Furthermore, staff in community hospital EDs often must resuscitate children without adequate staff, specialists, appropriate equipment, and clinical guidelines (Gilleland et al., 2014). For these reasons, managing a critically ill child consumes community hospital ED resources and prevents staff from being able to effectively care for the needs of their other patients (Gilleland et al., 2014).

It is also known that community hospital ED staff experience pediatric resuscitations as extremely stressful, anxiety-provoking, and emotionally distressing events (Abraham et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). While staff in these settings appreciate the importance of promoting family member presence during pediatric resuscitations, this practice can contribute to their distress and anxiety (Goldman et al., 2018; Porter, 2019). Unfortunately,

community hospital ED healthcare providers report that methods typically used to emotionally cope with adult resuscitations are not sufficient for coping with pediatric cases. However, they do seek informal support from their colleagues to emotionally process these events (Goldman et al., 2018).

While the intention of this literature review was to examine what is known about the experiences of nurses resuscitating children in community hospital EDs, a detailed examination of this phenomenon was notably absent in the extant research. Firstly, none of the included studies focused on the unique experiences of nurses. While nurses were included as participants, their perspectives were not emphasized and reports of their experiences were interwoven with those of other healthcare providers. It is, however, possible that nurses' experiences resuscitating children in community hospitals are unique, especially considering the multifaceted and necessarily proactive roles they assume during these events (Gangadharan et al., 2018).

Furthermore, besides not emphasizing the perspectives of nurses, none of the extant literature investigates the lived experiences of ED staff during actual pediatric resuscitations. Gangadharan et al. (2018) and Goldman et al. (2018), for example, examined participants' experiences of resuscitation simulations rather than actual events. Gilleland et al. (2014) investigated the practical and informational needs of staff in community hospital EDs during pediatric resuscitations rather than the totality of their lived experiences. Similarly, Porter (2019) focused only on staff experiences of family member presence during resuscitations, and it was not always clear whether the author was reporting on staff experiences of adult or pediatric cases. Finally, Abraham et al. (2018) only found that staff rated pediatric deaths as the most stressful events experienced in their work and Sacchetti et al. (2000) found that prior experiences of family member presence were associated with its approval. Neither group of authors reported the

details of these experiences.

Pediatric resuscitations have been identified as among the most traumatizing events that ED nurses encounter in their work (Adriaenssens et al., 2012; Declerq et al., 2011; Lavoie et al., 2011; Lavoie et al., 2016). This phenomenon may be especially distressing to nurses in community hospitals, where aside from witnessing the critical illness of a child, staff sometimes experience inadequate staffing and a lack of resources required to appropriately manage these cases. As identified in the reviewed literature and research conducted in academic-affiliated and pediatric hospitals, colleague support may enhance nurse coping following these events (Goldman et al., 2018; Jackson, 2017; Lavoie et al., 2011). However, what is missing are more proactive interventions for use during and immediately following pediatric resuscitations that may prevent nurse trauma. A detailed examination of nurses' experiences in these contexts may provide insight into what these interventions might entail and how nursing managers and clinical educators can better support staff following these events. In my next chapter, I will describe the approach I used to begin addressing these knowledge gaps.

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Chapter 3: Methodology and Methods

In this chapter, I will discuss the philosophical underpinnings of this study, including my pragmatic worldview and the ideas inspiring interpretive phenomenological analysis (IPA). Following this discussion, I will describe the methods used for setting and participant selection, data collection, and analysis. Then, I will discuss processes used to uphold rigour and theoretical transferability. I will conclude by describing procedures taken to uphold standards for the ethical conduct of research as required by the University of Ottawa's Health Sciences and Science Research Ethics Board.

Pragmatism as a Research Paradigm

As discussed in Chapter 2, Guba and Lincoln (1994) described four competing paradigms that guide research inquiry: Positivism, post-positivism, critical theory, and constructivism. None of these four worldviews, however, align completely with my beliefs about the nature of the world. I do not, for example, identify as a positivist, as I reject the paradigm's ontology of naïve realism, that is, the belief that researchers can objectively know reality (Creswell, 2014; Guba & Lincoln, 1994). Pure objectivity, I argue, is not possible in science, as the value that a researcher ascribes to pre-existing evidence and theories influences inquiry (Avis, 1998). Instead, I accept the modified realism of post-positivism: While reality exists independent of our subjective experience of it, researchers can only find imperfect knowledge about it (Creswell, 2014). Simultaneously, however, I appreciate constructivism's relativist ontology, which states that individuals construct subjective truths based on their experiential contexts (Guba & Lincoln, 1994).

I assert that reality exists both apart from, and relative to, our understanding of it. For this reason, I am critical of Guba and Lincoln's (1994) discussion of realism and relativism as

dichotomous ontologies that inspire conflicting objective and subjective epistemologies, respectively. Due to my pluralistic understanding of reality, I therefore accept using both objective and subjective methodologies to obtain knowledge. To appropriately address a research question, I choose methodologies based on their practical utility, rather than their epistemological foundations. I am a pragmatist.

Philosophical Origins and Assumptions of Pragmatism

Charles Sanders Pierce, William James, and John Dewey, the first pragmatic philosophers, all emphasized the practicality and consequences of ideas, rather than metaphysical assumptions about the nature of reality (Cherryholmes, 1992; Creswell, 2014; Nowell, 2015). Pierce's pragmatic maxim, for example, dictated that scientists clarify meanings of concepts by identifying their practical utility (Cherryholmes, 1992; Ormerod, 2006; Pierce, 1905). Inspired by Pierce's work, James (1907/2014) proposed that different kinds of truth exist, as beliefs are considered true if they prove useful in an individual's situation (Nowell, 2015; Ormerod, 2006). Dewey similarly asserted that inquiry should inform action and that beliefs result from reflecting upon the consequences of these actions (Dewey, 1937; Morgan, 2014; Nowell, 2015).

Ontology and Epistemology

Influenced by the aforementioned philosophers, pragmatists ascribe to a pluralistic, non-singular reality ontology, asserting that neither realism nor relativism can solely capture truth (Brierley, 2017; Kivunja & Kuyini, 2017; Morgan, 2014). Instead, pragmatists argue that there are multiple truths, as reality exists both apart from, and within, an individual's conceptualization of it (Cherryholmes, 1992; Creswell, 2014; Kivunja & Kuyini, 2017; Morgan, 2007; Morgan, 2014). Beliefs are true if they inform actions with useful consequences; therefore, truth can change and is determined by context (Creswell, 2014; James, 1907/2014; Nowell, 2015).

Pragmatism's assumption of a pluralistic, non-singular reality informs its relational epistemology, whereby the relationship between the researcher and reality is determined by the nature of the research problem (Kivunja & Kuyini, 2017). It is important to note that academics frequently criticize pragmatic researchers for ignoring the ontological underpinnings of methodologies in favour of practicality (McCready, 2010). I argue, however, that pragmatism's pluralistic ontology provides a philosophical argument for accepting multiple ways of knowing as valid (Morgan, 2007).

Guided by a relational epistemology, pragmatic nurse researchers can choose methodologies based on their usefulness in answering research questions, rather than their paradigmatic underpinnings (Creswell, 2014; Kivunja & Kuyini, 2017). Methodologies may therefore be subjectively or objectively inspired, or a combination of both, as is the case in mixed-methodology research (Creswell, 2014; Doyle et al., 2009; Kivunja & Kuyini, 2017; Morgan, 2007). This pluralistic and practical approach to inquiry benefits the nurse researcher, who can apply multiple ways of knowing to approach the complex diversity of nursing practice problems (McCready, 2010; Nowell, 2015; Weaver & Olson, 2006).

Interpretive Phenomenological Analysis

As a pragmatist guided by a relational epistemology, I have chosen to adopt the subjectively inspired methodology of IPA (Smith et al., 2009) for its practical utility in addressing my research question. Specifically, IPA is concerned with the detailed examination of human lived experience (Smith et al., 2009). The methodology dictates an inductive approach to inquiry to inspire theory, rather than prove or disprove it (Smith et al., 2009). Since there is a paucity of knowledge on the experiences of nurses resuscitating children in community hospital EDs, this inductive approach proved useful in addressing my research problem.

The purpose of IPA is to investigate human experience in its own terms, rather than attempting to fit experience into predefined categories (Smith et al., 2009). Thus, IPA is generally not used for research primarily inspired by theory-driven questions, nor is it used primarily to test theoretical assumptions or hypotheses (Smith et al., 2009). This means approaching participant interviews in a manner that allows participants to speak freely about their experiences without the expectation of addressing a specific practice question or pre-existing theoretical preconception (Smith & Osborn, 2008). Of note, Smith et al. (2009) discuss that while theoretical frameworks do not usually guide data collection in IPA, researchers may engage with theoretical concepts when interpreting participants' experiences, as I have done in my integrated discussion (Chapter 5). For these reasons, I have chosen to discuss the philosophical ideas inspiring IPA, rather than a specific theory underpinning the research study.

Origins of IPA

Jonathan Smith, a psychologist, first introduced IPA in 1996. In describing the utility of IPA, Smith et al. (2009) refer to William James' pragmatic and pluralistic view of psychology. James did not deny the need for objectively inspired psychological research; however, he also emphasized the need to investigate subjective experiences (Smith et al., 2009). Researchers from a variety of disciplines, including nursing, have since used IPA (Chaplin & McLuskey, 2020; Smith, 1996; Smith et al., 2009; Pringle et al., 2011). While the methodology is relatively new, its theoretical influences (i.e., phenomenology, hermeneutics, and idiography) have a longer history grounded in philosophers that Smith et al. (2009) reference in their work.

Phenomenology is the philosophical study of human experience (Lopez & Willis, 2004; Smith et al., 2009; Sokolowski, 2000). Its founding father, Edmond Husserl posited that humans experience everyday life with a natural attitude, that is, an attitude focused on the objects of the

world (Lopez & Willis, 2004; Palmer, 2014; Smith et al., 2009). A phenomenological attitude, in contrast, involves consciously reflecting upon one's perceptions and experiences of those objects (Palmer, 2014; Smith et al., 2009). To adopt this latter attitude, Husserl argued that it is necessary to "bracket," or put aside, all prior knowledge and judgements about the world to instead focus one's attention on the conscious perception of that world (Palmer, 2014). In doing so, he believed a person was more likely to understand and describe the essential components of an experience that could transcend circumstance and even reflect the experiences of others (Lopez & Willis, 2004; Smith et al., 2009).

Martin Heidegger critiqued Husserl's descriptive phenomenology, emphasizing the inseparability of experience and context (Smith et al., 2009). His seminal work, *Being and Time* (1927/1962), philosophized about the nature of Dasein, a term he used to refer to both the entity of a human being and the experience of being human. Heidegger (1927/1962, p. 219) conceptualized Dasein as being "thrown" into a pre-existing world of people, objects, language, and culture. Dasein always exists in relation to something else: In relation to physical objects, time, and others (Heidegger, 1927/1962). Merleau-Ponty (1945/2012) expanded upon the discussion of Dasein's being-in-the-world by describing the embodied nature of existence. It is through our body, he argued, that we come to know and experience the world and the people in it (Merleau-Ponty, 1945/2012). Sartre (1943/1956) similarly emphasized that Dasein continuously evolves based on its worldly experiences and relationships with others (Smith et al., 2009).

Hermeneutics, the theory of interpretation, closely relates to phenomenology (Lopez & Willis, 2004; Smith et al., 2009). Heidegger posited that experienced phenomena have both visible and concealed meanings, the latter of which must be carefully examined so they can appear, or become known (Heidegger, 1927/1962; Smith et al., 2009). He argued that it is

therefore not possible to describe experience without interpreting it (Heidegger, 1927/1962). Furthermore, as a being-in-the-world, the researcher naturally comes into the process of interpretation with fore-conceptions (i.e., prior experiences, assumptions, and preconceptions) that will inevitably change their interpretation of new stimuli (Heidegger, 1927/1962, pp. 191-192; Smith et al., 2009). For this reason, Heidegger (1927/1962) believed that complete bracketing, as proposed by Husserl, is not possible. This assumption is characteristic of interpretive phenomenology and IPA (Lopez & Willis, 2004).

Assumptions of IPA

Congruent with the pluralistic, non-singular reality assumed by pragmatists, Smith et al. (2009) describe the simultaneous existence of both a world outside of a person and each person's subjective experience of that world. The focus of IPA, however, is the understanding of the latter. The methodology also assumes that the person is a cognitive, relational, and physical (i.e., embodied) being-in-the-world (Smith et al., 2009). Like Husserl, Smith et al. (2009) assume that people are capable of reflecting on their experiences; however, like Heidegger, they believe that a person cannot meaningfully separate themselves from their context. Heidegger (1927/1962) emphasized that our subjective experiences of objects of the world and the meanings we ascribe to them are related to how these objects are useful to us within our spatial and temporal context. This resonates with pragmatism's emphasis on context and the practical utility of truth (Creswell, 2014; James, 1907/2014; Nowell, 2015). In assuming that the researcher cannot completely separate themselves from their context, however, Smith et al. (2009) agree with Heidegger that complete bracketing is impossible, and that fore-conceptions inevitably influence the research process.

Smith et al. (2009) note that an IPA study involves a double hermeneutic process consisting of the researcher attempting to make sense of the participant attempting to make sense of their own lived experience. Smith et al. (2009) have the epistemological assumption that while one cannot gain knowledge about conscious experience directly, there exists “a chain of connection” between what people think and what people say (Smith & Osborn, 2008, p. 54). Therefore, the best way to gain knowledge about another’s experience is by considering their personal account of that experience (Smith & Osborn, 2008). This relates to the methodological assumption that idiographic inquiry (i.e., that which prioritizes the detailed, in-depth analysis of individuals) is the best way to acquire knowledge about lived experience (Smith et al., 2009).

Choosing IPA

As discussed in Chapter 2, a detailed examination of nurses’ experiences resuscitating children in community hospital EDs is missing in the extant literature. While Gilleland et al. (2014), for example, investigated the experiences of ED staff resuscitating children in these settings, they used a qualitative description approach focusing on practical and informational needs. Their analysis did not focus on interpreting the meaning that these experiences had for participants (Gilleland et al., 2014).

Most popular phenomenological methodologies seek to answer questions about the essence, or common structures, of an experience (Smith et al., 2009). Smith et al.’s (2009) methodology, however, differs from usual inquiry inspired by phenomenology in that it focuses on the reflective domain. Smith et al. (2009) acknowledge that people, being sense-making creatures, ascribe meaning to significant experiences, and this sense-making and meaning represents and becomes a part of the lived experience itself. For this reason, they describe their methodology as appropriate for researchers seeking to examine “personal meaning and sense-

making in a particular context for people who share a particular experience” (Smith et al., 2009, p. 45).

Choosing a method focusing on participants’ reflections on their experiences proved important in the context of my research question. In the literature, emotions such as stress, anxiety, and emotional distress were reported as elements of experiencing actual and simulated pediatric resuscitations (e.g., Abraham et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). A detailed examination of the meaning of these emotional experiences, however, was not examined. Understanding the meaning that nurses ascribe to these events may also enhance an understanding of why pediatric resuscitations are experienced as particularly distressing in these settings, perhaps for reasons that extend beyond the logistical challenges discussed in Chapter 2. What meaning, for example, do nurses ascribe to their experience of critically ill and dying children that make these cases particularly distressing? I chose Smith et al.’s (2009) methodology for its utility in addressing these elements of experience currently missing in the literature.

Methods

Setting and Participant Inclusion Criteria

In this research study, participants were registered nurses (RNs) who had experienced at least one pediatric resuscitation while working in a large or small community hospital ED in Ontario, Canada. For the purpose of recruitment, I defined community hospitals as those providing emergency, general medicine, and surgical services primarily to patients living within the communities they are situated in (Ministry of Health and Long-term Care [MOHLTC], 2009). For the purpose of recruitment, I defined large community hospitals as non-academic-affiliated general hospitals with over 100 patient beds and more than 2700 acute and day-surgery

cases per year, situated in a community with a core population of less than 50, 000 persons (MOHLTC, 2009; Office of the Auditor General, 2018; Statistics Canada, 2009). I defined small community hospitals as non-academic affiliated general hospitals with less than 100 patient beds and 2700 acute or day-surgery cases per year, located in a community with a core population of less than 10, 000 persons (MOHLTC, 2009; Office of the Auditor General, 2018; Statistics Canada, 2009).

While eligible settings had the capacity to resuscitate critically ill children, all survivors needing complex medical care or hospital admission required transportation to a pediatric centre. Healthcare providers working in children's hospitals have frequent exposure to pediatric illness and injury; therefore, they may experience pediatric resuscitations differently than those working in community hospitals (Gangadharan et al., 2018). For this reason, nurses employed in pediatric hospitals in the province (i.e., the Children's Hospital at London Health Sciences Centre, the Children's Hospital of Eastern Ontario [CHEO], the Hospital for Sick Children, and McMaster Children's Hospital) were excluded from this study.

Being unilingual, I obtained informed consent and conducted interviews in English; therefore, participants had to be comfortable reading, writing, and speaking in this language. I did not exclude participants based on age, length of nursing practice, or number of pediatric resuscitation exposures. Instead, the sample was purposive and homogenous in that all nurses had been exposed to a pediatric resuscitation in a community hospital setting (Smith et al., 2009). Demographic details of the included participants and contextual data about their practice settings are outlined in the empirical findings manuscript in Chapter 4 and Appendix K.

Participant Recruitment

Focused on an idiographic methodology, IPA studies are usually conducted on a small

sample size of purposefully selected individuals (Smith et al., 2009). Smith et al. (2009) recommend a sample size of 3 to 6 participants to ensure the feasibility of conducting a detailed, narrative account of participants' lived experiences. Of note, data saturation is not usually relevant in an IPA study, which focuses on the idiographic investigation of unique, subjective experiences (Smith et al., 2009). A sample of four participants was deemed sufficient, however, as each of the included interviews proved to contain rich, detailed narratives of the participants' experiences.

I selected participants on a first-come, first-serve basis using a three-pronged approach. First, the research team, which included me, Dr. Brandi Vanderspank-Wright (my thesis supervisor), Dr. Michelle Lalonde (a thesis committee member), and Dr. Jane Tyerman (a thesis committee member), publicly posted a PDF of the recruitment poster (Appendix C) with an accompanying social media message (Appendix D) on our professional Facebook pages. Secondly, Dr. Lalonde and Dr. Tyerman, who did not have access to raw study data, identified key informants working as staff nurses in community hospital EDs who could share information about the study with potential participants. They contacted these key informants by email using the script outlined in Appendix E, including the study recruitment poster (Appendix C). Finally, at the end of each participant session, I encouraged participants to consider other nurses who may be interested in sharing their experiences in an effort to promote recruitment through snowballing (Smith et al., 2009).

Participants initiated contact with me through my University of Ottawa email address, which was located on the recruitment poster. In replying to their emails, I verified inclusion criteria, sent the study information sheet (Appendix F) and link to the demographic questionnaire (Appendix H), and determined their preferred date and time for their interview.

Data Collection

Demographic and Contextual Data Questionnaires

The findings of an IPA study are considered theoretically transferable, rather than generalizable (Smith et al., 2009). The demographic and contextual data gathered in the questionnaire were intended to enhance the ability for readers to determine whether findings may be transferable to their own practice settings. SurveyMonkey, a secure online survey tool available through the University of Ottawa, was used for all online questionnaires. As shown in Appendix H, each questionnaire began with questions used to create unique participant identification codes. This ensured that participants' identification codes, rather than their names, were collected with their survey responses. To provide context to our conversations, I asked participants to complete their questionnaire prior to their scheduled interviews.

Interviews

As experiential experts, IPA study participants must be able to freely express a detailed account of their individual experiences (Smith et al., 2009). For this reason, semi-structured, face-to-face, one-on-one, in-depth interviews are the preferred method of data collection for this methodology (Smith et al., 2009). This method enhances the researcher's rapport with participants and allows the participant "space to think, speak, and be heard" (Smith et al., 2009, p. 57). Unfortunately, traditional face-to-face interviews were not possible during the data collection period due to the coronavirus pandemic. For this reason, I conducted all interviews over Microsoft Teams, a secure video-conferencing system endorsed by the University of Ottawa. This video conferencing system required an invitation to join the conversation to protect participant confidentiality and privacy. Previous literature has shown that participants consider teleconferencing a highly-rated, convenient, and accessible method of data collection that

promotes comfort with sharing potentially emotional experiences (Archibald et al., 2019; Gray et al., 2020). The ability to see and be seen by my participants allowed me to quickly establish rapport with them while simultaneously making note of their body language and non-verbal cues during our conversation.

At the start of each session, I introduced myself and verbally discussed the purpose of the research study. I verified consent again using the script in Appendix I. Then, I reminded participants that they did not have to answer questions that they were uncomfortable answering and that they could pause or stop the interview at any time. After participants indicated they were ready, I began audio-recording the session on an encrypted device. Then, I started the interview using the guide in Appendix J. The included interview questions were structured in a manner that provided participants the opportunity to discuss their experiences from start to finish (i.e., before, during, and following the event) in their own terms. I had piloted the interview guide with an RN with experience resuscitating a child in an ED. The pilot interview was not used for data collection; instead, its purpose was to assess whether the interview guide would allow for participants to speak freely and naturally about their lived experiences in their own terms. Based on the results of the pilot interview, no modifications were made to the interview guide.

I allowed participants to speak for however long they desired. The recorded portion of each interaction lasted between 46 minutes and 42 seconds and 1 hour, 15 minutes, and 5 seconds. As soon as possible after each session, I transcribed each interview verbatim to facilitate the interpretation of the explicit and concealed meanings of the participants' words (Smith et al., 2009). While transcribing, I included all of the words spoken and notable non-verbal utterances, such as sighs and laughter, significant pauses, and hesitations (Smith et al., 2009).

Smith et al.'s (2009) methodology assumes that the interviewer and interviewee are both

active participants in the research process. For this reason, the semi-structured interview questions in Appendix J were modified during each interview, based on participant responses, and between participants, following preliminary data analysis. During and immediately following each interview, I journaled key themes, thoughts, and observations related to the participants' narrative descriptions, affect, and behaviours to facilitate data analysis by adding context to the audio recordings (Smith et al., 2009).

Data Analysis

I analyzed each transcript as soon as possible after the original interview using IPA to understand the experiences of interviewed ED nurses "in [their] own terms" (Smith et al., 2009, p. 1). I began by conducting an in-depth reading and re-reading the first transcript to immerse myself with the data (Smith et al., 2009). During my first and second readings, I made notes of my first impressions of the data, including powerful recollections and personal reflections brought up from the transcript. Acknowledging my initial personal experiences of the transcript allowed for enhanced focus on the data itself (i.e., the words and experiences of the participants) during future read-throughs (Smith et al., 2009). Next, I engaged in initial noting that examined the semantic content and language in the transcript (Smith et al., 2009). These included descriptive comments, which described the content of what the participant said; linguistic comments exploring the participant's use of language; and conceptual comments, which engaged with transcript data on a conceptual level, moving away from the participant's explicit claims and towards interpretation (Smith et al., 2009).

I used these notes to identify emerging themes from the transcript that reflected the participant's words and my interpretation of them (Smith & Osborn, 2008; Smith et al., 2009). After listing all emerging themes, I discerned connections between them through a process that

Smith et al. (2009) describe as “abstraction” (p. 96). Specifically, I organized emerging themes relating to each other into clusters (Smith & Osborn, 2008). Then, I compared theme clusters to phrases from the transcript in an iterative process to ensure that my interpretations reflected what the participant said (Smith & Osborn, 2008). Finally, I organized these theme clusters under “superordinate themes” (Smith & Osborn, 2008, p. 72). I shared and discussed theme clusters, superordinate themes, and supporting quotations with Dr. Vanderspank-Wright, who had access to the raw data. The purpose of this discussion was to ensure that the identified themes were congruent with participants’ accounts and reflections.

I repeated the above process for each transcript, allowing each case to be analyzed initially on their own terms to allow new themes, possibly not seen in previous transcripts, to emerge (Smith et al., 2009). This process upholds the idiographic commitment of IPA, which emphasizes the value of the detailed examination of individual experiences (Smith et al., 2009). After identifying emerging and superordinate themes for each subsequent transcript, I then identified thematic patterns between cases (Smith et al., 2009). By considering emerging and superordinate themes from all transcripts together, I was able to reconfigure themes, as appropriate, if I discovered themes from individual cases represented higher-order concepts shared by all transcripts (Smith et al., 2009). To visualize overarching thematic patterns, I created a master table of themes with exemplary participant quotes, which was once again shared and discussed with Dr. Vanderspank-Wright. Finally, the identified thematic patterns, along with supporting quotations, were reviewed by and discussed with Dr. Lalonde and Dr. Tyerman. After this discussion, I described the thematic patterns identified in a detailed, narrative account including verbatim extracts from the cases, as shown in Chapter 4 (Smith & Osborn, 2008).

Rigour and Theoretical Transferability

Reflexivity and Cyclical Bracketing

Smith et al. (2009), like Heidegger (1927/1962) acknowledge that researchers are beings-in-the-world that have fore-conceptions (i.e., prior experiences, assumptions, and preconceptions) that will inevitably change their interpretation of new stimuli (Heidegger, 1927/1962). For this reason, Smith et al. (2009) emphasize the need for cyclical bracketing, that is, an attempt to identify and set aside fore-conceptions throughout the research process. They acknowledge that this attempt will be imperfect, but necessary (Smith et al., 2009).

Prior to the data analysis process, I journaled about my fore-conceptions regarding the topic, including my own experiences resuscitating children, and reflected upon how these fore-conceptions could influence my interpretation of the data. I shared these reflections with Dr. Vanderspank-Wright while preparing for interviews, in post-interview debrief sessions, and during data analysis meetings. While analyzing data, I attempted to bracket out my knowledge of the literature that found caring for critically ill children can be traumatizing for ED nurses. Had I not done so, I may have been more inclined to interpret that participants had experienced trauma when they had actually experienced healthy stress reactions, resilience, or even indifference.

Strategies to Enhance Trustworthiness

To enhance study rigour, we incorporated methods to uphold the standards of trustworthiness for qualitative inquiry (i.e., credibility, transferability, dependability, and confirmability), as described by Korstjens and Moser (2018). To promote credibility, I partook in prolonged engagement with participants and the transcripts (i.e., by reading and rereading the transcripts during the data analysis process). We also ensured method triangulation (i.e., by analyzing experiential themes within the context of demographic and contextual data; Korstjens

& Moser, 2018). As per Smith et al.'s (2009) methodology, we used direct quotations from participants when reporting identified themes. To promote transferability, we offered a thorough description of participant characteristics and the context of their EDs (Kortstjens & Moser, 2018). Finally, as shown in Chapter 4, we promoted dependability by thoroughly describing our methodology and research process when sharing our results (Kortstjens & Moser, 2018).

Researcher and Research Team Qualifications

Prior to this study, I had practiced as an RN in the area of pediatric critical care for three and a half years, specializing primarily in neonatal intensive care. I had also worked as a Research Assistant for Dr. Vanderspank-Wright since July of 2017 and had experience as a research volunteer in CHEO's ED. For previous research projects, I had conducted qualitative, semi-structured research interviews and focus groups with participants having undergone sensitive experiences (e.g., providing end of life care and having a child requiring ED services after an injury). Having originally pursued post-secondary studies in psychology prior to nursing, I first began studying phenomenology during the second year of my undergraduate studies (i.e., in 2013).

Dr. Vanderspank-Wright, an Associate Professor at the University of Ottawa's School of Nursing, acted as my research supervisor for this project. She has clinical experience in critical care nursing and has conducted research on the experiences of healthcare professionals in critical care settings. She also has experience in phenomenological inquiry. Dr. Michelle Lalonde and Dr. Jane Tyerman, Associate and Assistant Professors, respectively, acted as my thesis committee members. Both have clinical experience as RNs in EDs and have conducted qualitative research on the experiences of healthcare professionals in critical care settings.

Ethical Considerations

Approval and Conflict of Interest

Before recruiting for this study, we obtained ethical approval through the University of Ottawa's Health Sciences and Sciences Research Ethics Board. We had no conflicts of interest to declare prior to engaging in this research. Key informants (i.e., staff nurses working in community hospital EDs who could share information about the study with potential participants) were casual contacts of Dr. Lalonde and Dr. Tyerman and were not invited to participate in the study unless they expressed interest. Dr. Lalonde and Dr. Tyerman did not have access to the raw data and all data were anonymized; therefore, it is unknown whether or not any key informants participated in this study.

Informed Consent

Participant consent was obtained or verified at three points in this study. First, I gave participants a PDF copy of the study's information sheet (Appendix F) after they initiated contact with me by email. Consent was also obtained at the start of the demographic questionnaire using the text contained in Appendix G. Finally, I confirmed verbal consent using the script outlined in Appendix I prior to starting the recording of each qualitative interview.

Confidentiality and Handling of Data

I was the only member of the research team with access to the participants' names, which I obtained when the participants contacted me by email. At all other points during the study, participants were identified only through their unique participant identification codes, which were created using questions at the start of each questionnaire and interview.

The names of the hospitals that participants worked at were collected on the surveys to contextualize participants' lived experiences (i.e., according to the size of the hospital the event

occurred in and its proximity to the nearest pediatric hospital). Aside from myself and Dr. Vanderspank-Wright, no other member of the research team had access to participants' hospitals of employment. The names of hospitals or information that would reasonably allow a reader to conclude where participants worked were not shared in the empirical findings manuscript (Chapter 4). Finally, pseudonyms were used when quoting participants.

Participants could choose the location that they completed their online survey and Microsoft Teams interview at. On the study information sheet (Appendix F), participants were advised to take standard safety measures while participating in the online survey and interview, such as signing out of their accounts, closing their browsers, and locking their screens or devices when they were no longer using them.

I transcribed each audio-file into an encrypted Word Document on my password-protected computer after each interview, then deleted the audio-file. If a participant accidentally used names or identifying information during their interview, I removed this information when transcribing and labeled and saved transcripts according to their participant code. The encrypted transcripts were uploaded to the University of Ottawa's secure Google drive platform. They, and the demographic data questionnaires, will remain on the drive and the University of Ottawa's Survey Monkey site, respectively, for ten years, starting from the final day of data collection (i.e., March 3, 2031).

During the period of data collection, a fifth nurse expressed interest in participating in the study and, after reading the study information sheet, gave consent to complete the survey. They completed the demographic data questionnaire, but decided not to participate in the interview, as they believed sharing their story may be emotionally distressing. Their demographic data was subsequently deleted from the Survey Monkey site and their data was not used for this study.

Preventing Harm

I was aware that participants could feel distressed when recalling potentially unpleasant, and possibly traumatic, memories associated with their experiences. As a critical care RN, I had professional experience in offering support to persons experiencing upsetting situations prior to conducting this study. If a participant became visibly distressed during an interview, I reminded them that they did not have to answer questions that they did not feel comfortable asking. I also reminded participants they could pause or stop our sessions at any time. After completing each interview and turning off the recording devices, I offered each participant the opportunity to debrief. The study information sheet contained a Crisis Line phone number that I encouraged participants to call if they experienced distress following our conversation.

Interestingly, during our debrief sessions, most participants described benefiting from sharing their experiences with me. This finding is congruent with literature stating that emergency nurses rely on informal colleague support and opportunities to talk about their experiences as a coping mechanism following pediatric resuscitations (Crowley et al., 2015; Jackson, 2017; Lavoie, 2011; Lindsay & Heliker, 2018; Xu et al., 2019). This concept will be discussed in more detail in the integrated discussion in Chapter 5. The results of this study are detailed in Chapter 4, an empirical findings manuscript.

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Chapter 4

“They All Stay With Me”—An Interpretive Phenomenological Analysis on Nurses’ Experiences Resuscitating Children in Community Hospital Emergency Departments

This chapter is an unpublished manuscript prepared for submission to the Journal of Clinical Nursing. The appendix referred to in this manuscript can be viewed in Appendix K.

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Abstract

Aim: To understand the lived experiences of nurses resuscitating children in community hospital emergency departments. **Background:** Emergency department nurses exposed to pediatric resuscitations are at a high risk of developing posttraumatic stress. This may be especially true in community hospital emergency departments, where nurses have less exposure to, knowledge about, and resources for managing these events. Interventions to proactively prevent nurse trauma in these contexts remain largely uninvestigated. To inform such interventions, a detailed understanding of the largely unknown lived experiences of these nurses is necessary. **Design and Methods:** In-depth, semi-structured interviews were conducted with four registered nurses that had experienced at least one pediatric resuscitation while working in a community hospital emergency department in Ontario, Canada. Data were analyzed using interpretive phenomenological analysis. **Results:** Analysis revealed three superordinate themes (i.e., “Conceptualizing Pediatric Resuscitations,” “Seeing What I See,” and “Making Sense of What I Saw”) and nine corresponding subthemes. **Conclusion:** This study provides insight into the infrequent, but profound experiences of nurses resuscitating children in community hospital emergency departments. Nurses, who conceptualize these events as unnatural, emotional, and chaotic, are comforted by those who understand their experiences and are distressed by those who cannot see what they see. To reconcile what they have seen, nurses may reflect and ruminate on the event, ultimately restructuring their experiences of themselves, others, and the world to make room for a new reality where the safety of childhood is not certain. **Relevance to Clinical Practice:** Our findings contribute to pragmatic recommendations for interventions to proactively prevent nurse distress in these contexts, including psychoeducation, psychological support, and in-situ simulation activities. Nursing leaders should consider staff that have

resuscitated children as valuable sources for information on how to improve practice settings.

Keywords: Nurses, community hospital, emergency department, pediatric resuscitation, interpretive phenomenological analysis

**“They All Stay With Me”—An Interpretive Phenomenological Analysis on Nurses’
Experiences Resuscitating Children in Community Hospital Emergency Departments**

Emergency department (ED) nurses are at a high risk of experiencing posttraumatic stress (PTS), a phenomenon characterized by symptoms of intrusion, avoidance, and hyperarousal following exposure to a traumatic event (Adriaenssens et al., 2012; de Wijn & van der Doef, 2020; Lavoie et al., 2016). Notably, ED nurses perceive the resuscitation, death, or serious injury of a child as the most traumatizing events encountered in their work (Adriaenssens et al., 2012; Declerq et al., 2011; Lavoie et al., 2011; Lavoie et al., 2016). Interventions to proactively prevent nurse trauma following these events remain largely uninvestigated in the literature. In contrast, researchers have investigated and advocated for interventions to prevent parental trauma following pediatric resuscitations, including promoting family member presence and compassionately delivering bad news (Harrison & Walling, 2010; McAlvin & Carew-Lyons, 2014). To inform similar, proactive interventions for nurses, it is first necessary to understand the experiences of ED nurses participating in pediatric resuscitations.

Background

Children require resuscitation when presenting to an ED with a condition requiring immediate, aggressive medical intervention due to the threat of the loss of life or limb or the imminent risk of deterioration (Bullard et al., 2017; Yates et al., 2016). Nurses are essential in the care of these children, being responsible for triage, resuscitative activities (e.g., preparing medications, monitoring vital signs, establishing venous access, performing chest compressions, and documenting), facilitating effective interprofessional communication, and providing family support (Christ et al., 2010; Clements & Curtis, 2012; Porter et al., 2015; Terzi, 2012). Emergency department nurses experience pediatric resuscitations as stressful, sudden,

unexpected, and shocking and may report feeling personal distress, extreme stress, anger, anxiety, helplessness, chaos, and horror following the events (Abraham et al., 2018; Gilleland et al., 2014; Goldman et al., 2018; Jackson, 2017; Lindsay & Heliker, 2018; Xu et al., 2019).

Lavoie et al. (2011) and Lindsay and Heliker (2018) found that exposure to pediatric resuscitations was associated with an increased likelihood of ED nurses experiencing PTS symptoms. Posttraumatic stress positively correlates to nurse burnout, turnover, and decreased patient safety and quality of care (Colville et al., 2015; Hall et al., 2016; Han & Lee, 2013).

In the fast-paced ED setting, nurses have limited time to emotionally process pediatric resuscitations and deaths (Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018). While nurses believe that critical incident debriefing sessions may enhance their coping following these events, this process is rarely practiced and may be minimally effective or even harmful (Brooks et al., 2018; Brooks et al., 2019; Jackson, 2017; Lavoie et al., 2011). Instead, nurses rely primarily on informal colleague support to cope (Crowley et al., 2015; Goldman et al., 2018; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019).

Community hospitals provide emergency, general medicine, and surgical services primarily to patients living in the communities they are situated in (Ministry of Health and Long-term Care [MOHLTC], 2009). These centres may be unable to provide specialized, complex medical care, including pediatric critical care required beyond the initial period of resuscitation (Health Quality Ontario, n. d.). While there is a paucity of research on nurses' experiences resuscitating children in these settings, it is known that community hospital ED staff lack experience, knowledge, and proficiency in resuscitating children and rely heavily on cognitive aids and the support of children's hospitals to deliver pediatric critical care (Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Furthermore, staff in community hospital

EDs often must resuscitate children without adequate staff, specialists, appropriate equipment, and clinical guidelines (Gilleland et al., 2014). For these reasons, managing a critically ill child consumes community hospital ED resources and prevents staff from being able to effectively care for the needs of their other patients (Gilleland et al., 2014).

Community hospital ED staff describe and experience pediatric resuscitations as extremely stressful, anxiety-provoking, and emotionally distressing events (Abraham et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). While they appreciate the importance of promoting family member presence during pediatric resuscitations, this practice can contribute to their distress and anxiety (Goldman et al., 2018; Porter, 2019). Community hospital ED staff report that methods typically used to emotionally cope with adult resuscitations are not sufficient for coping with pediatric cases (Goldman et al., 2018). A detailed examination of nurses' experiences in these contexts may provide insight into proactive interventions to enhance nurse coping and how nursing leaders can better support nurses following these events.

Aim

The objective of this study was to understand the lived experiences of nurses resuscitating children in community hospital EDs.

Methods

Methodology and Design

Guided by a relational epistemology, whereby the relationship between the researcher and reality is determined by the nature of the research problem, we chose Smith et al.'s (2009) interpretive phenomenological analysis (IPA) methodology for its practical utility in addressing our research aims (Kivunja & Kuyini, 2017). Specifically, IPA is concerned with the detailed examination of subjective human lived experience (Smith et al., 2009). This methodology

involves a double hermeneutic process consisting of the researcher attempting to make sense of the participant attempting to make sense of their own lived experience (Smith et al., 2009).

Smith et al. (2009) have the epistemological assumption that while one cannot gain knowledge about conscious experience directly, there exists a chain of connection between what people think and say. Therefore, the best way to gain knowledge about another's experience is by considering their personal account of that experience (Smith et al., 2009). This relates to the methodological assumption that idiographic inquiry is the best way to acquire knowledge about lived experience (Smith et al., 2009). As experiential experts, IPA study participants must be able to freely express a detailed account of their individual experiences (Smith et al., 2009). For this reason, semi-structured, one-on-one, in-depth interviews are the preferred method of data collection, which we incorporated into our study design (Smith et al., 2009).

Participants

Participants were English-speaking, registered nurses (RNs) who had experienced at least one pediatric resuscitation while working in a community hospital ED in Ontario, Canada.

Nurses employed in pediatric hospitals in the province were excluded from this study.

Participants were not excluded based on age, length of nursing practice, or number of pediatric resuscitation exposures. Instead, the sample was purposive and homogenous in that all nurses had been exposed to a pediatric resuscitation in a community hospital setting (Smith et al., 2009).

Participant recruitment was conducted using a three-pronged approach, which included posting a recruitment poster and accompanying social media message on Facebook, email communication with nurses who the research team (ML and JT) had contact with as community hospital ED nurses, and snowballing by encouraging participants to consider others who may be interested in sharing their experiences.

Interpretive phenomenological analysis studies are usually conducted with a small sample size of purposefully selected individuals to ensure the feasibility of conducting a detailed, narrative account of participants' lived experiences (Smith et al., 2009). For this study, a sample of four participants was deemed sufficient, as each of the included interviews proved to contain rich, detailed narratives of the participants' experiences. Demographic details of the included participants and contextual data about their practice settings are outlined in Tables 1 and 2 in the Appendix.

Data Collection

We first collected demographic and contextual data using an online questionnaire delivered by the secure online survey tool, SurveyMonkey. Traditional face-to-face interviews were not possible during the data collection period due to the coronavirus pandemic; therefore, all interviews were conducted on a secure video-conferencing system endorsed by the University of Ottawa.

Smith et al.'s (2009) methodology assumes that the interviewer and interviewee are both active participants in the research process. For this reason, the interview schedule, piloted with an ED nurse with experience resuscitating a child, was used flexibly. All interviews were audio-recorded on an encrypted device and lasted between 46 minutes and 75 minutes. As soon as possible after each session, each interview was transcribed verbatim to facilitate the interpretation of the explicit and concealed meanings of the participants' words (Smith et al., 2009). All data were anonymized using unique participant identification codes, and later, pseudonyms, to protect confidentiality.

Data Analysis

J.A.B. analyzed each transcript using IPA to understand the experiences of interviewed ED

nurses “in [their] own terms” (Smith et al., 2009, p. 1). Upholding IPA’s idiographic inquiry, she read the first case’s transcript several times line-by-line to make notes about descriptive, linguistic, and conceptual items of significance (Smith et al., 2009). She used these initial notes to identify themes emerging from the transcript and, after listing all emerging themes, discerned connections between them (Smith et al., 2009). She compared theme clusters to phrases from the transcript in an iterative process to ensure that her interpretations reflected what the participant said before organizing theme clusters under superordinate themes (Smith et al., 2009). She discussed theme clusters with B.V.W., who had access to raw data, to ensure that themes were congruent with participants’ accounts and reflections. After identifying emerging and superordinate themes for each subsequent transcript, J.A.B. then identified thematic patterns between cases (Smith et al., 2009). She shared these thematic patterns and supporting quotations with B.V.W., M.L. and J.T., who critically appraised the congruence between the two. After this discussion, J.A.B. described the thematic patterns identified in a detailed, narrative account (see Results) including verbatim extracts from the cases (Smith et al., 2009).

Rigour and Theoretical Transferability

The research team engaged in cyclical bracketing—that is, an imperfect, but necessary attempt to set aside prior experiences, assumptions, and preconceptions—throughout the research process (Smith et al., 2009). During research meetings, for example, we openly discussed and reflected upon how our own experiences of resuscitations may have influenced our engagement with and analysis of the data. We incorporated methods to uphold the standards of trustworthiness for qualitative inquiry, as described by Korstjens and Moser (2018). To promote credibility, for example, J.A.B. partook in prolonged engagement with the transcripts through reading and rereading, and we ensured method triangulation by analyzing experiential themes

within the context of demographic and contextual data (Korstjens & Moser, 2018). As per Smith et al.'s (2009) methodology, we used direct quotations from participants when reporting identified themes and, to promote transferability, we offer a thorough description of participant characteristics and the context of their EDs. Finally, we promote dependability here by thoroughly describing our methodology and research process (Kortstjens & Moser, 2018). Our research team had the following expertise: J.A.B. is an RN specializing in pediatric critical care, specifically neonatal resuscitation and intensive care. M.L. and J.T. both have expertise working as RNs in EDs and B.V.W. is an RN with experience in critical and palliative care. All members of the team had previous experience conducting qualitative research.

Ethics

Ethical approval for this study was obtained from the University of Ottawa's Health Sciences and Research Ethics Board (file number: H-09-20-6092). Participants did not have previous close working or personal relationships with any of the researchers. Participant consent was obtained or verified by J.A.B. at three points: Through a study information sheet; at the start of the demographic questionnaire; and prior to starting the recording of each qualitative interview.

Results

To uphold IPA's study of subjective realities, we did not define "pediatric resuscitation" during the recruitment or consent process. When asked how they conceptualize pediatric resuscitations, 3 of the 4 participants distinguished these events specifically as those where a healthcare team provides life-saving interventions, including establishing an airway and providing chest compressions, to a child presenting to an ED with vital signs absent (VSA). While Monique's conceptualization of pediatric resuscitation was broader than that noted by

other participants, her definition was “anything where the child is mainly unresponsive.” All participants conceptualized pediatric resuscitations as events involving children under five years of age. As noted in Table 2, these events occurred infrequently at participants’ hospitals, with most having two or fewer events each year. For Jessica and Jasmine, the events they spoke about in their interviews were the only pediatric resuscitations they had witnessed in their careers. Findings of participants’ experiences are illustrated by three superordinate themes and their nine constituent subthemes (see Table 3 in the Appendix).

Conceptualizing Pediatric Resuscitations

An Unnatural Phenomenon – Defying Assumptions About Childhood

All participants experienced pediatric resuscitations as unnatural, tragic, unexpected, and shocking phenomena that defied their previously held assumptions about childhood as a time of health, innocence, and potential. For this reason, all noted that they experienced resuscitations involving children as phenomenologically different from those of adults. As Chloe stated:

They’re usually not this chronically ill 98-year-old... They’re usually this healthy little kid who had a congenital heart disease we didn’t know about or who drowned... like it’s usually something that’s gone wrong...[They] had no reason to be here besides a series of unfortunate events.

For participants, since pediatric critical illness was perceived as coming at a time before life had been lived, it threatened more than just the loss of life, but the loss of what life could be. As Monique reflected, “A baby hasn’t lived their life to the fullest yet. They haven’t had any experience other than being new to the world.”

When reflecting on their memorable cases, participants emphasized imagery accentuating the smallness, innocence, and humanity of the child, which they could recount in detail at the

time of their interview. Chloe stated, “My first initial thought was watching him get carried onto the bed by EMS in his little Paw Patrol swim trunks,” also noting, “I was kind of shocked. When a child comes in on a stretcher, you forget—well, me personally—I forget how small they are. They were doing compressions with *one hand*.” Jasmine similarly described feeling shocked by how her toddler patient was “dwarfed by” the healthcare team. Images that were most memorable for participants were those that juxtaposed the innocence of childhood with the unexpected reality of premature death. For Jessica, one of the most shocking and unforgettable aspects of her experience was finding a child, thought by the parents to be sleeping, VSA in their car seat: “To just think I was seeing a sleeping child and then seeing, like, a dead infant.”

A Powerful Emotional Experience

All participants reflected upon the meaning of powerful emotions experienced before, during, and following pediatric resuscitations. Chloe, Monique, and Jasmine all described feeling adrenaline, fear, and anxiety when awaiting the child’s arrival to the resuscitation bay. All participants related these emotions to an increased responsibility to save the child’s life and preserve their potential. Monique relived physical elements of her emotional experience while telling her story: “Even when I’m talking about it now, my heart is beating so fast. We literally have this huge community come together to try and save this baby’s life, which is amazing, thrilling, but also absolutely terrifying.” For Chloe, these emotions became especially palpable after a colleague reminded her of her responsibility to protect the child from a premature death: “One of the more senior nurses, she looked at me and she’s like, ‘this is your first pediatric case? Don’t [explicit] it up.’”

Jessica recalled feeling relief each time the infant regained spontaneous circulation; however, this hope was replaced with “heartbreak” when she recognized the child would

ultimately not survive the resuscitation. For Jessica, her logical acceptance of the futility of the situation did not lessen the devastation she felt following the child's death: "This child had so much life before them...it was just incredibly sad that so much potential had been lost." This sentiment was shared by Chloe, who also experienced a multi-hour, unsuccessful resuscitation: "It was absolutely devastating. We tried to get him back, but nothing would help him."

Both Jessica and Jasmine described the intensity of emotion during and following pediatric resuscitations as phenomenologically different and more challenging to manage than those following adult cases. Jessica noted, "Adult [deaths]...not that they don't phase us. They do. But we're just so much better equipped to deal with them." While all participants described feeling devastation and extreme sadness following the events, which concluded either with the child's death or transfer to a pediatric facility, they each made sense of their sadness in different ways. For Jasmine, her sadness stemmed primarily from the tragedy of the unexpected context of the child's demise, which occurred after they had been struck by a car on a family camping trip. Monique, who mentioned cycling between profound sadness and feeling "utterly numb" in the hours and days following the resuscitation, attributed her emotions to an empathetic response to witnessing parents lose their child.

Chaos and Disorder

All participants experienced pediatric resuscitations as chaotic, unexpected, and sudden events. Chaos was sometimes experienced even prior to the child's arrival to the department. Jessica, for example, noted that the child arrived unexpectedly by a civilian vehicle when she was already managing a rapidly declining patient in an isolation room. Her colleague, the only other nurse staffing the ED, was preparing another critically ill patient for transport. All participants recounted how a lack of familiarity with pediatric practices, protocols, and

equipment contributed to a sense of disorder while resuscitating a child. Jasmine, for example, recalled feeling frustration and anxiety when unable to find a piece of equipment required for providing fluid resuscitation to a toddler. Chloe noted, “We don’t know what to do. We don’t know the meds. We don’t know the rates that we have to push... All of this stuff that we don’t usually do.”

All participants described ways that they attempted to restore order amidst this chaos. Lacking intuitive knowledge about pediatric resuscitations, Jessica and Monique relied heavily on pediatric resuscitation algorithms, such as Pediatric Advanced Life Support (PALS). Still, the experience of applying infrequently practiced algorithms was anxiety-provoking for participants, especially when resuscitating infants. As Monique noted: “[I] was literally, like, kind of swearing in my head, like, ‘oh my God. My gosh. Okay, I actually have to apply the PALS.’ Like, I don’t even know how old this child is. All I know is that it’s a baby.” Jessica also noted that relying on pediatric resuscitation algorithms as a cognitive aid became a source of ambivalence when a child could not easily be categorized as requiring PALS or the Neonatal Resuscitation Program: “They’re still so young. They kind of, like, fit in both categories but they’re not just, like, freshly born.”

To gain a semblance of control over the chaos, all participants spoke of becoming task-oriented, fixating all their attention towards the child. Participants referred to this shift in orientation in different ways, with Jessica, for example, calling it “work mode” and Monique referring to it as an “immediate emergency response.” For Chloe, this response meant relinquishing a global awareness of other events occurring in the ED: “It was very much, ‘alright, I have a job to do...I’m going to do this job to the best of my ability. I don’t care what else is going on around me.’” Chloe and Monique also described how this task orientation

changed interpersonal interactions with colleagues during the event. Monique remarked that unlike adult resuscitations, “There was no smiling. No laughing. No, like, dark humour. Everyone was kind of in their own world.”

To manage the chaos of a pediatric resuscitation with limited resources, participants employed unorthodox methods to regain control. Jasmine noted that since all ED staff were consumed by the pediatric resuscitation, an admitting clerk was left to watch the waiting room, a task usually designated to a triage nurse with advanced training in recognizing signs of patient deterioration. Jessica similarly noted that they had to have a radiologic technologist obtain a medical history from, and provide updates to, the child’s parents. Furthermore, all participants but Chloe, who worked in a larger community hospital, reported that staff from other units in the hospital came to the ED to assist with the pediatric case. All participants assumed the role of providing instructions and delegating tasks to these helpers; however, the presence of additional staff did not necessarily restore order. Jessica, for example, noted that nurses redeployed to assist with the resuscitation could not anticipate or locate the equipment needed. Monique similarly noted that the large influx of staff contributed to the disorder experienced:

Of course, it’s just utter chaos, you know? People are kind of yelling things to one another to ‘get this, get that.’ In every simulation...they tell you to do closed loop communication (*laughs*), but because we had so many cooks in the kitchen, it was really hard to know who was talking to whom.

Seeing What I See

The Visible

Participants did not experience pediatric resuscitations in solitude: All experienced other people as central to their lived experiences. Bearing witness to the tragedy of a child’s

unexpected critical illness created a sense of comradery and unspoken understanding amongst those present: Together, they had experienced a subjective reality before and after the innocence of childhood had been dismantled. As Chloe stated, “I felt like this was kind of a secretive thing that we have to bear as nurses, but no one else in society has to know... that children die like this.” All four participants discussed their emotional experiences during and following the resuscitations in relation to those of their colleagues sharing in the experience. Chloe, who had taken part in a pediatric death resulting from child abuse, described the anger shared amongst her colleagues as one of the most memorable parts of her experience. Jessica recalled crying with the ED physician immediately following the child’s death. Jasmine and Monique spoke of sharing a sacred silence with their coworkers prior to returning to their duties. All participants discussed turning to colleagues that were present at the event and nursing friends that had witnessed similar tragedies for support and comfort, as these select others had seen what they had seen.

Both Jasmine and Monique used the word “heavy” to describe the atmosphere of the resuscitation room before, during, and following the resuscitation. Monique related this heaviness to a collective understanding of the need to protect the child from a loss of potential: “I think everyone tends to unify on that and the fact that we want this baby to have a life.” When participants perceived others as ascribing similar meaning to the event that they did, they became increasingly motivated to do their best for the child. For example, when making sense of the determination shared by her colleagues, Monique related this to a shared understanding of the need to protect the child’s potential: “I have all of these skills that I’ve learned because I’ve lived. What can I do to make sure this child lives too? It was this huge purpose, the determination on everybody’s face.” Experiencing others as seeing what they saw also allowed

participants to cope with their experience. Jessica, who returned to work with the same physician and nursing colleague the day after the pediatric resuscitation took place noted, “We’re all here together, the three of us, so at least we understand what each is feeling.”

The Invisible

Participants were distressed by, and unable to make sense of, situations where they felt others did not see or did not seem to share an understanding of the pediatric resuscitation as tragic. Jessica, for example, recounted being shocked by a senior nurse who claimed “he’s dead” before assisting in resuscitating an infant. Jessica recounted the other nurse’s indifference as one the most memorable, distressing parts of her experience:

The other nurse was, like, very unphased by the entire thing...which then was, like, also challenging because we’re like, ‘why aren’t you like bothered?’ This is so traumatic. This is such a sad occurrence for this family and you’re just like, ‘well, it happens.’

Monique similarly described one of the most memorable elements of her experience as the distress and frustration her teammates felt while attempting to have a pediatric hospital accept their critically ill child. To Monique, the staff at the pediatric hospital did not appreciate the gravity of the situation and the lack of resources her ED had to sustain the child’s life. Once the child was eventually transferred, she became devastated to hear that the pediatric hospital had removed the child from life support shortly after their arrival. Through tears, she recounted:

It just feels like they did not let the parents grieve enough or think about it enough to let that happen. Like, less than an hour after we had dropped off baby! And baby’s blood pressure was actually climbing and improving. We had to actually titrate down the

pressors. Like, this is what was gut-wrenching. That was the first case I ever went home and bawled my eyes out.

Monique related her distress to the knowledge that the pediatric hospital would not have had the time to offer the parents an opportunity to consider organ donation, what she perceived as the only possible good that could come from the child's death. She interpreted that the staff at the pediatric hospital did not see the value in this process in the same way that she did.

All participants discussed feeling similarly distressed when parents could not appreciate the gravity of their child's condition. Jessica, for example, could not make sense of how an infant's parents could calmly present their baby to an ED without vital signs: "The fact that the family was oblivious was shocking. Because when I go out there and see how calm the family was, I wasn't expecting to find... a baby in that kind of distress." Monique similarly recalled feeling distressed when parents appeared overly hopeful after their baby, who likely had little brain function after a sustained resuscitative effort, had regained a pulse: "They had heard he got a pulse and I think everything after that just went [*gestures over her head*]. I think their hope and excitement that their baby was alive overtook everything else."

Making Visible

To gain additional support following the resuscitation, all participants described making certain elements of the events visible to select others who had not witnessed it. Monique, for example, described driving to her father's house after her shift: "I just said, 'I can't talk about it, but people shouldn't die when they've hardly lived.' And I remember saying that exactly to my dad and, ah, he just—he knew that was it... that it was a pediatric case." These chosen others—partners, spouses, parents, or roommates—could not share in "seeing" the event with participants

and could only superficially understand the tragedy of the situation. Still, they could support participants in practical ways, such as providing comfort food or listening to their stories.

All participants discussed how family members who were once unable grasp the gravity of their child's condition could see what participants saw after their child was declared dead. Bearing witness to the family's grief in this moment of clarity was distressing for participants and one of the most memorable elements of their experience. As Chloe remembered, "[after calling the time of death] everything else just kind of stepped in the background. It was just the parents. And then the sister bringing in the baby's favourite stuffed animal to help him." Participants could not share in the grief of the loss of a son or daughter—that is, they could not bear witness from the parents' perspective—however, parents' grief reactions made visible some element of their immense pain, which was viscerally experienced by participants. As Monique recalled:

You almost have to drown them out because it's almost too intense hearing the parents wail at losing their child. Like, that's probably some of the most intense pain I've ever heard from someone...and I've seen people's femurs poking out of their legs... it does not match the wail of a mother that's losing their child... the guttural growl from a dad... It was absolutely gut-wrenching.

Making Sense of What I Saw

Reflecting and Ruminating

Following pediatric resuscitations, participants ruminated and reflected on their experience to make sense of what they had seen. The resuscitation remained at the forefront of participants' consciousness following the event. As Jessica noted, "We resuscitate adults and then go right back to work...you can move on with your day and it's not really sitting there with you. The kid

ones do. That's at the forefront of your thought the whole time." Chloe, who had experienced a pediatric resuscitation at the beginning of her shift, noted that she felt "preoccupied" with thoughts and mental images of the event for the remainder of the day.

Because the death of a child was perceived as unnatural, participants sought reasons for their demise. This search for reason sometimes manifested as guilt and self-blame, with some participants being preoccupied with worry that they had somehow contributed to the child's death, either through action (e.g., lacerating an internal organ during chest compressions), or inaction (e.g., improperly executing resuscitation algorithms). Jessica recalled replaying the events in her mind: "I was very upset. Again, I was like, 'did I miss something?' Like, 'did I cause trauma in some way that affected the outcome for this child?' I really was just, like, questioning every action."

Given that this process of reflecting could be painful, 3 of the 4 participants described returning to work as soon as possible after the event. These participants conceptualized an immediate return to work as a source of distraction and a means to mitigate the development of fear. As Chloe stated, "Once you stop working and you get to process everything, you're like, 'no, I don't want to go back.' Like, 'I am a-okay with never going back in that emergency [department].'" However, while Monique noted she may have benefitted from time off to process the event, she was unable to request this, due to the lack of staff available for coverage in her small ED. When returning to work the next day, she was unable to take the time to emotionally process the event with her colleagues: "I remember going, 'If I talk right now, I won't be able to do my shift. And I have to do my shift.'"

Reconciling

After reflecting, all participants reconciled their experience, sometimes by understanding the logistics behind the child's death and absolving themselves of guilt. This was done by confirming the cause of death through a medical examiner's report, reassuring themselves that they had followed resuscitation algorithms, and emphasizing the hopelessness of the child's case. While participants all noted that having a formal debrief reviewing the technicalities of the case would have allowed them to further reconcile their experiences, few were offered this. Jessica, whose formal debrief was scheduled but then cancelled by management, emphasized, "we need to have formal debriefs instead of just, like, casual check-ins [from managers] being, like, 'are you okay? Well, you came to work today, so I guess you're doing fine.'" Monique emphasized that lacking a formal debrief prevented her from reconciling her experience:

I think it would have made me... question less about what else we could have done... I feel like if I was in that department and another Code Pink got called later on that week or later on next month, my heart would probably be pounding out of my chest because of not having that much closure with it.

Context surrounding the pediatric resuscitation also could make the case more challenging for participants to reconcile. For example, Monique had difficulty reconciling the child's death after organ donation was not possible. Similarly, while already having difficulty reconciling a pediatric death caused by child abuse, Chloe noted her ability to process the event was complicated by an inability to speak about her experience with her colleagues:

It was kind of like a black mark...we weren't able to talk about it freely in our medical setting because the police were always over our shoulder...It was never talked about

again...It was swept under the rug, like, 'we don't talk about this.' ... [It was a conversation] that needed to be had that couldn't be had.

Restructuring the World, Self, and Other

The resuscitated child was not forgotten by participants: Instead, the experience became omnipotent. While not always at the forefront of participants' thoughts in the days, weeks, and years following the event, the resuscitation was easily relived and continued to transform participants' experiences of the world, self, and other. Chloe encapsulated this reality in saying:

The thing with me and pediatric codes is they all stay with me. I can tell you each one of their names. I can tell you the colour of their eyes and the colour of their hair and how their hair was and the nail polish on their fingers...I can tell you each and every detail about each one of these kids.

After engaging in sense-making activities, and in some cases, being unable to reconcile elements of the resuscitation, participants reconstructed reality to create space for their experience.

Exposure to pediatric resuscitation, an event that had defied their previous beliefs about childhood as a time of innocence and health, changed all participants' experiences of the world, which they now viewed as cruel and dangerous. Jessica stated, for example, "I had, like, thoughts like that for a while, like, 'how could that happen to someone?' Like, 'how can life be so cruel to somebody?'" Jasmine, now a mother, noted that her experience caring for a dying child caused anxiety in her own parenting: "Now I have kids of my own and them being hit on the road is still one of my top five anxieties. So, I don't know. When we see these families go through these things, it's not something that we forget." Monique similarly noted that her experience of witnessing the grief of the child's parents made her frightened at the concept of

becoming a parent herself: “God forbid that would ever happen to myself or anyone close to me...That’s kind of terrifying.”

As a part of their transformed experience of the world, all participants viewed their professional space with a new, critical lens following pediatric resuscitations. Monique, for example, noted that she had lost faith in her local pediatric hospital after the event: “If my child were to end up in that ICU or that emerge, would I question almost everything that is happening and the motives behind the words that people are saying to me? Absolutely.” After reflecting upon her experience, which she described as traumatic, she also demonstrated anger towards hospital management for failing to provide her team with adequate psychological support:

Sure as [explicit]—pardon the swearing —if anybody else in that hospital that’s not medical went through that exact situation or had to watch that situation the entire time, they would need counselling. They would need to talk to someone. They would need a debrief.

For Jessica, her experience made her critical of her practice setting and the lack of resources she had, prompting her to leave the ED due to concerns for patient safety:

Like, kids get sick and we are more than competent at being able to help them as best as we can. But the whole reason I signed up for this [study] was because the resources in community hospitals are terrifyingly low...I feel like I am leaving my coworkers in the trenches...They are so underfunded, under-resourced, under-staffed. It is so terribly unsafe.

Despite these negative views of the world following the event, some participants described gaining new perspective on what mattered to them. As Jessica noted, “I was going through a breakup at the time and...I was devastated by that as well, but then I was just like, ‘no one died.’”

Participants' experiences also altered their experiences of themselves, especially as nurses. Jessica, Chloe, and Monique, for example, spoke of how their experience of caring for a critically ill child prompted them to become more anxious, but also more vigilant and competent with providing care to children in the ED. Unfortunately, however, the experience also had what participants perceived to be negative impacts on the care they provided. For example, after witnessing the death of a child, Chloe perceived her approach to patient care as fundamentally different: "I was more pissed off at everyone and everything that walked through that door." Monique described how she now attempts to dissociate her pediatric patients from their humanity to cope with providing their care: "It can't effect you as if you're losing someone else around you, you know? You didn't lose another human being."

Finally, participants' experiences with pediatric resuscitations changed their view of others. Some participants conceptualized the newfound anger they directed towards others as a way to cope with the grief they had experienced. After witnessing the tragedy of a pediatric death, Chloe described feeling frustration towards patients that entered the ED for non-urgent conditions: "I lost a five-year-old. Now what do I do? Like how do I go back to my 97-year-old person who keeps pressing the call bell and try not to strangle them?" Having gone through a breakup at the time of the pediatric resuscitation, Jessica described feeling increased bitterness towards her former partner, who did not have to deal with the grief of losing a pediatric patient along with the grief of losing a relationship. Jasmine similarly discussed feeling resentment when her friends allowed their small child to run unsupervised across a road after caring for a child who had been killed in a similar situation. When her friends inquired about the interesting things she had seen at work, she responded by saying, "That's a really insensitive question to ask. *These* are the things I've seen."

Discussion

Congruent with previous research, we found that community hospital ED nurses experienced pediatric resuscitations as infrequent, shocking, emotional, and anxiety-provoking events (Abraham et al., 2018; Gilleland et al., 2014; Goldman et al., 2018). Participants experienced greater anxiety when children were very young and required weight-based resuscitation algorithms and equipment they were less familiar with, as was consistent with findings by Gilleland et al. (2014). This study, however, provides additional context to the strong emotions that nurses feel during pediatric resuscitations in these settings. Compounded with their lack of familiarity with managing these events, participants were confronted with an upsetting interruption of the innocence of childhood and the profound responsibility to protect a young child from losing a life not yet lived. Furthermore, consistent with previous literature set in community hospital EDs, nurses in our study described simultaneous exposure to other factors that increase the risk of traumatic stress, including inadequate staffing and insufficient resources (e.g., Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018; Jones et al., 2020; Lima et al., 2018). Considered together, these findings may provide insight into previous literature showing that community ED staff find typical methods used to emotionally cope with adult resuscitations ineffective for coping with pediatric cases (e.g., Goldman et al., 2018).

Our findings offer guidance about how hospital leadership (e.g., nurse educators and managers) may better support staff during and following pediatric resuscitations. All participants noted that a formal debrief would have facilitated their coping. As found in previous literature, however, this opportunity was rarely offered (Crowley et al., 2015; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019). When considering this finding, it is important to note that quality evidence supporting formal debriefing is lacking in the literature (Brooks et

al., 2019). In fact, in their review of the literature on interventions to prevent negative psychological outcomes related to workplace traumatic events, Brooks et al. (2019) found that this practice may even be harmful to staff exposed to workplace trauma. Even when conducted by mental health professionals, it is possible that formal debriefing accentuates feelings of guilt or shame or retraumatizes participants by having them prematurely relive the event (Brooks et al., 2019; Kearns et al., 2012). Our participants did report, however, that they would benefit specifically from reviewing the technical and physiological aspects of pediatric cases to gain closure about and learn from their experiences. Nurse educators might consider facilitating non-judgmental, early sharing of this information in place of formal critical incident debriefing sessions.

In contrast to formal debriefs, other interventions to support staff following potentially traumatic workplace events are more strongly supported by the literature. These include: active monitoring for signs of PTS within the first month of the event (e.g., by nurses themselves, trained professionals, nurse educators, and care facilitators) followed by early psychoeducation and cognitive-behavioural therapy; mindfulness activities; and adaptive coping techniques, such as humour, problem solving, and talking about the event (Adriaenssens et al., 2012; Brooks et al., 2018; Colville et al., 2015; McGarry et al., 2013; National Institute for Health and Care Excellence, 2018; O'Mahony et al., 2017; Rodriguez-Rey et al., 2019). It follows that nursing leaders should advocate for affordable and accessible mental health care and educate nurses on mindfulness activities, adaptive coping techniques, and the signs of acute stress and PTS. Ideally, these interventions should take place during nurses' orientation to the ED and should be reviewed after cases involving young children arriving to the hospital unresponsive or VSA.

These interventions should be offered to all persons present at the resuscitation, including nurses from other units that come to assist ED staff during the event.

Previous research indicates that informal colleague and supervisor support following pediatric resuscitations may also facilitate coping (Adriaenssens et al., 2012; Colville et al., 2015; Lavoie et al., 2011). All participants in our study similarly found comfort in sharing their experiences with others who had seen what they had seen. Being unable to speak of the event prevented our participants from being able to fully share in the experience with their colleagues and emotionally process what had occurred. It is therefore imperative that nursing leaders facilitate opportunities for staff to openly discuss their experiences following these events.

All participants emphasized feeling distressed by the lived chaos they experienced during pediatric resuscitations, which they attributed to the suddenness of the child's presentation and the perceived lack of knowledge, staff, equipment, and experience needed to manage the case. To prevent chaos during potentially traumatizing workplace events, Brooks et al. (2019) emphasize the importance of pre-disaster education. Research has shown that interprofessional, in-situ simulation-based training in pediatric resuscitation is an effective method to increase provider confidence and self-efficacy in the infrequently practiced skill (Sage-Rockoff et al., 2019; van Schaik et al., 2011). We recommend that this is practiced in community hospital EDs, although further research is needed to investigate whether increased self-efficacy related to participation in pediatric resuscitation simulations influences nurse coping, acute stress, and PTS symptoms following actual events.

As was consistent with previous literature, all participants found the presence of parents during resuscitation distressing, both when parents shared in an understanding of the gravity of their child's condition and when they did not (Goldman et al., 2018; Porter, 2019). Exposure to

the trauma of family members as they witness the resuscitation or death of their child may become a secondary trauma for healthcare providers, which, in turn, may contribute to the development of secondary traumatic stress (Peebles-Kleiger, 2000; Meadors et al., 2010). Therefore, it is possible that healthcare providers participating in pediatric resuscitations experience both primary and secondary traumas, as they simultaneously witness the critical illness or death of a child (e.g., Goldman et al., 2018; Lavoie et al., 2011) and the distress of the child's family.

Since our participants emphasized the challenge of managing parents and a resuscitation while necessarily being task-oriented, interprofessional simulation activities should include assigning someone to be with the parents. While this may not be an ED nurse, this could include a staff member from another floor with the ability to articulate what is occurring. Nursing educators can emphasize evidence-informed ways to communicate with parents during a resuscitation to enhance their understanding and coping during an event, including providing real-time clinical information, addressing the child by name, and clearly preparing the parents for, and announcing death (Lizotte et al., 2020; Stewart, 2019).

Finally, it is important for nurses, nursing educators, and nursing managers to understand that exposure to pediatric resuscitations may change how a nurse experiences themselves, others, and the world. Our participants experienced themselves as more competent, knowledgeable nurses following these events, a finding previously noted in resuscitation literature (Lee & Cha, 2018). However, in some cases, participants experienced increased cynicism and anger towards other patients and those in their personal life. Anger has been identified as a grief reaction in nurses coping with the death of a patient, and nurse burnout following stressful situations may in part be mediated by suppressing this emotion (Khalaf et al., 2018; Lee et al., 2021). Knowing

this, it is important for nursing leaders to allow for a safe space for nurses to verbalize their anger following pediatric resuscitations. Nurse managers should also be aware that staff involved in pediatric resuscitations may develop a newfound critical lens of their practice setting. Managers can use this lens in a positive way by seeking nurses' input on how to improve patient safety, job satisfaction, and resuscitation practices. Of note, nursing managers that seek to empower and engage their staff while fostering healthy working environments can reduce nurse burnout caused by stressful situations (Wei et al., 2020).

Limitations

A limitation impacting the potential transferability of our findings is the homogeneity of our sample: Namely, all participants were female-identifying, Caucasian, and 30 years of age or under with under 10 years of clinical experience. Male nurses and those with more clinical experience may have contributed other perspectives and future research on this topic would benefit from including these voices. It is also possible that we have under or over-emphasized some aspects of participants' lived experience due to our own experiences with critical care and resuscitation. To promote trustworthiness, we engaged in cyclical bracketing throughout the research process, partook in prolonged engagement with participants and transcripts, ensured method triangulation, included participant quotes in our findings, and provided a detailed description of participants' EDs and our methods.

Conclusions

Nurses in community hospital EDs experience pediatric resuscitations as sudden, highly emotional, and chaotic events. Others are central to their experiences: Nurses are comforted by those who share the burden of knowing the tragedy of pediatric resuscitation and are distressed by those who cannot see what they see. The experience of a pediatric resuscitation is easily

relived and has a profound and lasting impact on nurses. To make sense of what they have witnessed, nurses may ruminate and reflect on the resuscitation and attempt to reconcile what they have seen. To obtain reconciliation, nurses may seek absolution of the guilt they may feel about negative outcomes. Ultimately, nurses may restructure their experiences of themselves as nurses, others, and the world to make room for a new reality where the innocence and safety of childhood is not certain.

Relevance to Clinical Practice

This study provides important insight into the relatively infrequent but profound lived experiences of nurses resuscitating children in community hospital EDs. Our findings contribute to pragmatic recommendations for interventions that nursing leaders can use to proactively prevent nurse distress during and following these events, including psychoeducation, psychological support, and in-situ simulation activities. Nursing leaders should consider nurses that have participated in these events as valuable sources for information on how to improve patient safety and practice settings.

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Conflicts of Interest

The authors declare no conflict of interest.

Author Contributions

JAB and BVW designed the study with input and feedback from ML and JT. JAB collected all data and conducted primary data analysis with feedback and consultation from

BVW, ML, and JT. Finally, JAB wrote and revised the manuscript with feedback and final approval from BVW, ML, and JT.

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What Does this Paper Contribute to the Wider Global Clinical Community?

- Nurses in community hospital emergency departments experience pediatric resuscitations as shocking, highly emotional, and chaotic events that have a profound and lasting impact on how they experience themselves, others, and the world.
- To enhance their coping, nurses should have the opportunity to talk about their experiences with others and obtain information to absolve themselves of self-ascribed guilt.
- Nursing managers should recognize nurses who have witnessed pediatric resuscitations as valuable sources for information on improving practice settings.

Chapter 5: Integrated Discussion

This study found that nurses working in community hospital EDs conceptualized pediatric resuscitations as unnatural, powerfully emotional, and chaotic events. Nurses were comforted by others who shared the burden of knowing the tragedy of pediatric resuscitation (i.e., “the visible”) and were distressed by those unable to see what they saw (i.e., “the invisible”). To gain support following the resuscitation, participants described making elements of their lived experience visible to select others (i.e., “making visible”). The experience of a pediatric resuscitation was easily relived and had a profound and lasting impact on the nurses. Participants ruminated and reflected on the resuscitation to make sense of what they witnessed, sometimes ascribing guilt and self-blame to negative outcomes.

To reconcile what they saw and absolve themselves of self-imposed guilt, participants sought logical explanations for the child’s critical illness and death. Reconciliation became difficult in contexts where participants could not make sense of the child’s death (e.g., in cases of child abuse or neglect) or when they could not freely speak about their experience with others. Ultimately, the participants restructured their experiences of themselves as nurses, others, and the world, to make room for a new reality where the innocence and safety of childhood are not certain. Specifically, participants viewed themselves as more competent, but also more anxious and cynical nurses following pediatric resuscitations. They were also more easily angered by others, viewed the world as a dangerous and cruel place, and became acutely aware of the limitations of their practice settings.

These findings provide important insight into the relatively infrequent but profound lived experiences of nurses resuscitating children in community hospital EDs. In this concluding chapter, I will discuss these findings within the context of the extant literature and propose

pragmatic recommendations for nursing practice, education, and leadership. Finally, I will discuss the strengths and limitations of the current study and how the findings may inspire future nursing research.

Findings in the Context of the Extant Literature

Context

Over 20, 000 children between 0 and 19 years of age required resuscitation when presenting to Canadian EDs in the year of 2019 to 2020 (Canadian Institute for Health Information [CIHI], 2020). There is, however, is limited data describing the number of pediatric resuscitations and deaths occurring specifically in community hospital EDs. In our study, all participants working in smaller community hospital EDs (i.e., staffed with four or fewer nurses each shift) reported that only one to two pediatric resuscitations occurred in their departments each year. In contrast, Chloe, who worked in a larger community hospital ED (i.e., staffed with 17 to 22 nurses each shift), reported that her ED saw 15 to 20 pediatric resuscitations annually. In both contexts, these events were relatively infrequent experiences for participants, which corresponds with Gilleland et al.'s (2014) finding that few staff members working in Ontario community hospital EDs saw more than one pediatric resuscitation each month.

According to CTAS criteria, patients require resuscitation when presenting to an ED with a condition requiring immediate, aggressive medical intervention due to the threat of the loss of life or limb (Bullard et al., 2017; Warren et al., 2008; Yates et al., 2016). In this study, however, participants more narrowly defined pediatric resuscitations as events where a healthcare team provides life-saving interventions (e.g., chest compressions and airway management) to a child presenting to an ED VSA or unresponsive. Similarly, while pediatric care is generally conceptualized as treatment provided to patients ranging from newborns to young adults (e.g.,

Committee of Pediatric Workforce, 2015; Emergency Nurses Association, 2020), all participants more narrowly defined “pediatric patients” as those under five years of age. By considering these narrower conceptualizations, nursing managers and educators can better focus interventions aimed at supporting nurses (see Implications for Nursing Practice, Leadership, and Education).

Conceptualizing Pediatric Resuscitations

An Unnatural and Powerful Emotional Experience

All participants experienced pediatric resuscitations as shocking, emotional, and anxiety-provoking events. These findings are congruent with those by Abraham et al. (2018), Gilleland et al. (2014), and Goldman et al. (2018). Like Goldman et al. (2018), we found that our participants described feeling more distressed by pediatric, rather than adult, resuscitations. Also consistent with previous literature (i.e., Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018), participants related the anxiety they experienced partially to their infrequent exposure to critically ill children. Participants also experienced greater distress when children were very young and required infrequently used weight-based resuscitation algorithms and equipment, as reported in Gilleland et al.’s (2014) study. Still, our participants related the distress they experienced during and after pediatric resuscitations to more than their lack of familiarity with managing these events. Specifically, they were confronted with the upsetting interruption of childhood innocence and the profound responsibility to protect a young child from losing a life not yet lived.

These findings provide insight into previous literature showing that community ED staff find methods typically used to emotionally cope with adult resuscitations are ineffective for coping with pediatric cases (e.g., Goldman et al., 2018). These findings also provide insight into why witnessing the death or critical illness of a child in an ED may be a traumatic event for

healthcare providers, that is, an extreme situation overwhelming a person's ability to cope (Adriaenssens et al., 2012; American Psychiatric Association [APA], 2013; Crowley et al., 2015; Declerq et al., 2011; Jackson, 2017; Lavoie et al., 2011; Lavoie et al., 2016; Xu et al., 2019). Aside from exposure to the shock and tragedy of a critically ill child, nurses in our study, like the community hospital healthcare providers in previous literature, were simultaneously exposed to other factors increasing the risk of traumatic stress, including inadequate staffing and insufficient resources (e.g., Jones et al., 2020; Lima et al., 2018; McKenna & Rolls, 2011; Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018).

Chaos and Disorder

As was consistent with findings from previous literature (i.e., Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018), nurses in our study attributed the chaos and disorder they experienced while resuscitating a child in a community hospital ED to: the suddenness of the child's arrival; a lack of familiarity with pediatric resuscitation practices; the inability to find or easily access necessary equipment; inadequate human resources; and an unorganized response to the emergency that necessarily involved staff from other areas of the hospital. As found by Gangadharan et al. (2018), our participants attempted to gain control of this chaos by relying on pediatric resuscitation algorithms to guide their care. We also found that nurses attempted to restore order through unorthodox methods, such as having an admitting clerk watch the ED waiting room, a role usually reserved for nurses trained in recognizing signs of acute deterioration (Innes et al., 2017).

Gangadharan et al. (2018) found that, compared to staff from pediatric hospitals, community hospital ED staff were better able to multi-task during pediatric resuscitations. This multi-tasking was evident in the stories of our participants. Most, for example, provided

direction and support to healthcare workers coming to assist from other units while actively resuscitating the child. This multi-tasking, however, was limited in the sense that participants were task-oriented, focusing their attention solely on resuscitative efforts. Like those in Gilleland et al.'s (2014) study, our participants described lacking a global awareness for other events and patients in the ED during the event. This phenomenon is concerning, considering that the median length of stay for pediatric patients requiring resuscitation when presenting to Canadian EDs is 222 minutes (Canadian Institute for Health Information, 2020). During this time, other patients in the ED may remain unobserved and potentially deteriorate.

The nurses in our study emphasized the importance of having pediatric hospitals and policymakers understand, as Jasmine described, the “underfunded, under-resourced, [and] understaffed” environments within which community hospital ED staff resuscitate children. Jasmine believed that community ED staff are “more than competent” in managing critically ill children but sometimes do not have the resources to do so adequately. Moral distress—characterized by the psychological discomfort experienced when constrained from acting in accordance with one’s personal or professional values—has been associated with unsafe practice conditions and insufficient resources (Epstein & Hamric, 2009; Jalali et al., 2019; Wolf et al., 2016). This phenomenon may, in part, explain the psychological disequilibrium that participants felt in relation to being unable to provide the standard of care they believed critically ill children deserved (Epstein & Hamric, 2009).

As was reflected in Jasmine’s case, ED nurses experiencing moral distress are at risk of leaving their positions (Fernandez-Parsons et al., 2013). For example, in their survey study of 51 nurses working in a community hospital ED in California, Fernandez-Parsons (2013) found that 6.6% of participants had left a previous position due to moral distress, 13.3% were considering

leaving their current position due to the phenomenon, and 20% had considered leaving but did not.

Seeing What I See

All participants spoke of experiencing others (i.e., their colleagues and nursing peers, staff at pediatric hospitals, and the child's family) as central to their lived experiences. Participants recounted that gaining the support of others who had seen what they had seen—either by bearing witness to the same event or witnessing similar events in the past—allowed them to process and cope with their experience. Previous research has similarly found that informal colleague and supervisor support following pediatric resuscitations may facilitate healthcare providers' coping following these events (Adriaenssens et al., 2012; Colville et al., 2017; Lavoie et al., 2011).

Researchers have suggested that local pediatric hospitals may be possible sources of support to community hospital staff during pediatric resuscitations (Gilleland et al., 2014; Goldman et al., 2018). For example, Gilleland et al. (2014) noted that pediatric hospitals could disseminate evidence-based guidelines for the care of critically ill children to community hospital EDs. The authors also suggested mentorship programs that would allow community hospital staff to work alongside staff in pediatric EDs to gain experience resuscitating children (Gilleland et al., 2014). Goldman et al. (2018) similarly suggested that pediatric hospital staff share their emotional coping techniques, cognitive aids, and clinical care guidelines with staff in community centres. The authors also found that community hospital staff experienced consultations with local pediatric experts as beneficial while managing pediatric resuscitations (Goldman et al., 2018).

In contrast, Monique experienced her local pediatric hospital as a source of frustration and distress during her experience. She believed that the consultants at the pediatric centre neither

appreciated the urgency of the situation nor understood the lack of resources that her team had to save the child's life. She also perceived the pediatric hospital's staff as dismissive of the needs of the child's family, who had inadequate time to make an informed choice about organ donation before their infant's removal from life support. Monique's experience offers an important contrast to previous literature and has implications for the training of healthcare providers in both community and pediatric hospitals (see Implications for Nursing Practice, Leadership, and Education).

Finally, consistent with previous research findings (e.g., Goldman et al., 2018; Porter, 2019), all participants found parental presence distressing, both when parents could not grasp the seriousness of their child's condition and when they displayed grief reactions after learning that their child may not survive. Participants could easily relive and remained disturbed by the reactions of the child's parents during the resuscitations. As discussed in Chapter 1, exposure to the trauma of family members as they witness the resuscitation or death of their child may become a secondary trauma for healthcare providers, which, in turn, may contribute to the development of secondary traumatic stress (Meadors et al., 2010; Peebles-Kleiger, 2000). Therefore, healthcare providers participating in pediatric resuscitations may experience both primary and secondary traumas, as they simultaneously witness a child's critical illness or death (e.g., Goldman et al., 2018; Lavoie et al., 2011) and the distress of the child's family.

Making Sense of What I Saw

Reflecting and Ruminating

Following pediatric resuscitations, all participants described ruminating about their experiences and being preoccupied with thoughts about the event in the hours and days following it. In some cases, participants described reliving the emotions and physical reactions experienced

during the resuscitations as they told their stories. Lavoie et al. (2011) similarly found that ED nurses exposed to traumatic events such as pediatric resuscitations tended to think about their experiences in vivid detail immediately following them. Likewise, Lima et al. (2018) reported that pediatric critical care nurses exposed to unexpected pediatric death and critical illness experienced consuming and sometimes intrusive thoughts about their experiences. Intrusion symptoms, which may manifest as reliving an event through vivid memories or feeling intense psychological or physical distress following reminders of the event, are a known symptom of PTS (APA, 2013). Self-ascribed blame or perceived wrongdoing is thought to be both a characteristic of, and proposed contributing factor to, this phenomenon (Pugh et al., 2015). This may explain why participants' intrusive thoughts about the pediatric resuscitations were alleviated once they felt absolved of guilt surrounding the child's death (e.g., after a medical examiner confirmed the child's demise was not caused by actions of the healthcare team).

In some cases, participants noted that their preoccupation with thoughts and images of the resuscitation negatively impacted their ability to complete their tasks in the time immediately following the resuscitation (i.e., in the hours and days following the event). However, instead of avoiding reminders of the resuscitation, as would be an expected manifestation of PTS (APA, 2013), participants described returning to work as soon as possible to prevent developing a fear of their practice setting. This approach may have mitigated the development of more severe PTS symptoms in our participants. Avoidant coping responses are positively correlated to PTS symptom severity, perhaps because avoidant behaviours hinder a person's ability to process, and therefore recover from, traumatic events (Badour et al., 2012; Batchelder et al., 2018; Pineles et al., 2011).

Reconciling

To reconcile their experience and absolve themselves of guilt, participants attempted to gain a logical understanding of the child's critical illness and death. To do so, they sought confirmation of the cause of death through medical examiner reports, revisited resuscitation algorithms to ensure they were followed correctly, and emphasized the hopelessness of the child's case. All participants discussed how formally debriefing about the cases would have enhanced their ability to move on from the event. As found in previous literature, however, this opportunity was rarely offered (Crowley et al., 2015; Jackson, 2017; Lavoie et al., 2011; Lindsay & Heliker, 2018; Xu et al., 2019).

The context of pediatric critical illness and death made cases especially difficult for participants to reconcile. These included deaths caused by child abuse or neglect, deaths that participants could not speak about with their colleagues, and, in Monique's case, a death occurring before the family could consider organ donation. These findings reflect those in the extant literature. For example, previous literature has shown that healthcare providers exposed to pediatric injuries and deaths resulting from suspected child abuse, neglect, or sexual violence experience greater PTS symptoms and difficulty coping (Adriaenssens et al., 2012; Declerq et al., 2011; Lavoie et al., 2016; Van Stejin et al., 2019). Healthcare providers also have reported enhanced coping and decreased PTS symptoms when gaining support from colleagues following pediatric deaths and critical incidents (Adriaenssens et al., 2012; Colville et al., 2017; Lavoie et al., 2011; Pardoe, 2011; Somville et al., 2016). Therefore, access to support from colleagues may help improve coping and limit PTS symptoms, as having such support may lend itself to the reconciliation of events.

Restructuring

After reflecting upon and reconciling elements of their experiences, all participants developed a transformed experience of self, others, and the world. Most participants experienced themselves as more anxious but also more competent, knowledgeable, and vigilant when providing care to other children following the event. Lee and Cha (2018) similarly found that nurses experienced themselves as becoming more knowledgeable and competent following resuscitations, as the incidents presented an opportunity to expand upon their skillset and reflect upon their practice. Goldbort et al. (2011), Rice and Warland (2013), and Tatano Beck et al. (2015) also found that healthcare providers exposed to traumatic events involving neonates reflected more on their practice, which, in turn, improved their knowledge and competence as providers. However, alongside this increased knowledge and competence, all participants also experienced increased cynicism and anger towards other patients and those in their personal life following pediatric resuscitations. Anger can be a grief reaction in nurses coping with the death of a patient and suppressing this emotion may mediate nurse burnout following stressful situations (Khalaf et al., 2018; Lee et al., 2021).

Healthcare providers exposed to traumatic events involving children, including pediatric resuscitations, are at an increased risk of experiencing burnout, especially its emotional exhaustion and depersonalization dimensions (Colville et al., 2015; Czaja et al., 2012; Jones et al., 2020; Rodriguez-Rey et al., 2019a; Rodriguez Rey et al., 2019b; Sheen et al., 2015). The depersonalization dimension of burnout is characterized by an indifferent attitude towards one's work and may present as callous or cynical behaviours and impersonal and negative attitudes and interactions with others, including patients (Nabizadeh-Gharghozar et al., 2020). Liu and Aungsuroch (2017) found that nurse burnout had a direct, negative influence on nurses' quality

of care. Even after exposure to one pediatric resuscitation, most of our participants discussed feeling increased resentment and frustration towards other patients in the ED, especially those presenting with non-emergent conditions. This, in turn, negatively impacted the quality of care they perceived providing to other patients. Importantly, nurses resuscitating children in community hospitals may be especially at risk of developing burnout, as they often experience these events within the context of limited resources, inadequate staffing, and, in some cases, inadequate social supports (Dall'Ora et al., 2020; Shah et al., 2021). Of concern, nurse burnout is associated with reduced job performance, negative patient experiences, and nurse turnover (Dall'Ora et al., 2020).

Finally, following their experiences of pediatric resuscitations, participants developed a new worldview. While participants experienced the world as dangerous and cruel and became increasingly critical of their practice setting, most simultaneously developed a greater appreciation for life and what they valued most. Post-traumatic growth is characterized by a discovering of meaning and an enhanced appreciation for life following a traumatic event (Malhotra & Chebiban, 2016). Previous literature has identified this phenomenon in healthcare providers who have been exposed to traumatic events involving neonates and children (e.g., Mull et al., 2019; Rodriguez-Rey et al., 2017; Rodriguez-Rey et al., 2019a; Taubman-Ben-Ari & Weintraub, 2008).

Implications for Nursing Practice, Leadership, and Education

Promoting Coping and Preventing Trauma

Based on the findings of this study, nurses practicing as charge nurses, care facilitators, or managers in community hospital EDs should be aware that some staff may prefer not to take time off following a pediatric resuscitation. Returning to work immediately following these

events may avert avoidant coping behaviours, which are significantly associated with PTS symptom severity (Badour et al., 2012; Batchelder et al., 2018; Pineles et al., 2011). Even so, our findings indicate that nurses may be preoccupied and unable to effectively, compassionately, and safely complete their tasks immediately following a pediatric resuscitation (i.e., in the period of time between the end of the resuscitation and the resolution of their shift). Therefore, it is imperative for each nurse to have an awareness of what their limitations are and whether they can safely provide care during this period. Nurses should feel comfortable requesting downtime (i.e., time away from the bedside or the practice setting) as needed and when possible. Charge nurses and other nursing colleagues should also be alert for signs of preoccupation or irritability in their peers exposed to pediatric resuscitations so they can offer coverage for their downtime accordingly.

The optimal downtime period for emergency service providers following a potentially traumatic event may be under 30 minutes after the event to the end of the provider's shift (Halpern et al., 2014). Researchers have found that downtime lasting over one day is less beneficial, a concept that nurses in our study agreed with (Halpern et al., 2014). Most emergency service providers spend their downtime with their peers, an important finding when considering that peer support following traumatic events may significantly reduce nurse PTS (e.g., Adriaenssens et al., 2012; Colville et al., 2017; Halpern et al., 2014; Lavoie et al., 2011). Although Halpern et al. (2014) found that downtime did not significantly impact emergency responders' PTS symptoms, it did significantly decrease depressive symptoms and may, by extension, increase patient safety following critical events. In cases where downtime is not possible, nurses exposed to pediatric resuscitations should be especially vigilant in following patient care protocols that reduce adverse outcomes in the ED. These include following

medication administration procedures (e.g., avoiding verbal orders; conducting independent double-checks on high-risk medications; and scanning medications when possible), verifying patient identification, practicing closed-loop communication, and strictly adhering to infection control procedures (Amanian et al., 2020; Weant et al., 2014).

Although all participants felt that formal debriefing would have enhanced their coping following pediatric resuscitations, quality evidence supporting this practice is lacking in the literature (Brooks et al., 2018). Formal debriefing may be harmful to staff exposed to workplace trauma, potentially accentuating feelings of guilt or shame or retraumatizing participants by having them relive the event prematurely (Brooks et al., 2018; Brooks et al., 2019; Kearns et al., 2012). Given the limited and conflicting evidence on this intervention, further research should be conducted on the effectiveness of formal critical incident debriefing sessions (Brooks et al., 2018; Brooks et al., 2019). However, the nurses we interviewed reported that they would benefit specifically from reviewing the technical and physiological aspects of pediatric cases to gain closure about and learn from their experiences. As such, nurse educators should consider facilitating non-judgmental, early sharing of this information to the nurses.

In contrast to debriefs, other interventions to support staff following potentially traumatic workplace events are more strongly supported by the literature. According to the National Institute for Health and Care Excellence (NICE; 2018) guidelines on PTS, it is most beneficial to actively monitor for signs of PTS (i.e., re-experiencing and avoidance symptoms, hyperarousal, irritability, negative alterations in mood and cognition, dissociation, and interpersonal problems) within the first month following exposure to a traumatic event. This monitoring could be conducted by nurses themselves, care facilitators or charge nurses, nursing educators, and healthcare providers caring for nurses. If symptoms arise, early access to psychoeducation and

evidence-informed cognitive behavioural therapy is imperative (NICE, 2018). It follows that nursing leaders (e.g., nurse educators, care facilitators, and nurse managers) should educate nurses on the signs of PTS and adaptive coping techniques, as well as advocate for affordable and accessible mental health care.

Psychoeducation for nurses to reduce PTS symptoms may include how to engage in problem-focused coping (i.e., help-seeking, problem-solving, and positive-thinking), rather than emotion-focused coping techniques (i.e., rumination, avoidance, self-isolation, and self-blame); using humour; and talking to others about the event (Adriaenssens et al., 2012; Colville et al., 2015; McGarry et al., 2013; Rodriguez-Rey et al., 2019b). Mindfulness-based interventions that encourage focusing on the present moment with a non-judgemental state of awareness may also significantly reduce PTS following exposure to traumatic events (Hopwood & Schutte, 2017; O'Mahony et al., 2017). Ideally, nurse educators should instruct nurses about these interventions during their orientation to the ED and review these principles after events involving children under five years of age arriving VSA or unresponsive. Furthermore, this education should be offered to all persons present at the resuscitation, including nurses from other units assisting ED staff. Finally, nursing leaders might consider facilitating opportunities for staff to discuss their experiences openly while upholding standards of patient confidentiality (e.g., through open door policies).

Preventing Chaos

All participants emphasized feeling distressed by the lived chaos they experienced during pediatric resuscitations. Consistent with findings from previous studies (e.g., Gangadharan et al., 2018; Gilleland et al., 2014; Goldman et al., 2018), our participants relied heavily on resuscitation algorithms, rather than intuitive knowledge, to organize their thoughts and actions

while caring for critically ill children. All participants had certification in pediatric resuscitation; however, relevant algorithms were infrequently reviewed and practiced, causing anxiety when they needed to use them unexpectedly. Research shows that practitioners certified in resuscitation can rarely effectively perform skills required to manage actual events (Anderson et al., 2019; Dudzik et al., 2019; Oermann et al., 2020). For this reason, rather than relying solely on annual certifications, the extant literature supports brief, frequent training sessions (i.e., daily, weekly, or monthly) to maintain competence and comfort in resuscitative practices (Anderson et al., 2019; Dudzik et al., 2019; Oermann et al., 2020). Instead of assuming that nurses with PALS certification can competently and confidently resuscitate a child, nurse educators should consider offering frequent, brief revisions of the initial steps of pediatric resuscitation and the location of essential equipment in the ED.

Brooks et al. (2019) emphasize the importance of pre-disaster education to prevent chaos during potentially traumatizing workplace events. Researchers have found that interprofessional, in-situ simulation-based training in pediatric resuscitation is a method to increase provider confidence and self-efficacy in the infrequently practiced skill (Sage-Rockoff et al., 2019). Furthermore, participants in this study emphasized that an unorganized response to pediatric resuscitations, which included staff from other units, contributed to the chaos of the emergency response. For these reasons, I recommend that community hospitals consider creating pediatric emergency response teams that include ED staff and professionals from other units with critical care skills (e.g., staff from intensive care units, operating rooms, and post-analgesia-care units) or pediatric experience (e.g., perinatal nurses). In collaboration with hospital leaders in medicine and respiratory therapy, nurse educators could organize in-situ simulation-based training sessions on resuscitation scenarios involving children under five years of age presenting to the ED VSA

or unresponsive. These interprofessional activities would allow teammates to practice applying pediatric resuscitation protocols, delegating tasks, locating essential equipment, and practicing closed-loop communication together before actual events occur.

Uncovering What is Seen

Participants in this study were distressed by the presence of parents during the resuscitation, both when parents could not understand the gravity of their child's condition and when they displayed strong grief reactions. Nurse educators are encouraged to inform nurses about the importance of promoting parental presence, given that witnessing a child's resuscitation improves family member's coping in the event of their death (McAlvin & Carew-Lyons, 2014). To prepare nurses to manage the challenge of parental presence, however, educators may consider arranging standardized patients to play a child's family during simulation activities. Standardized patients positively impact an interprofessional healthcare team's knowledge in managing difficult conversations and patient deterioration (Ignacio et al., 2015; Marken et al., 2010). Having a member of the team act as the child's parent during simulations (i.e., peer role play) may be a cost-effective alternative to arranging for a trained standardized patient (Bosse et al., 2015). During simulations, educators could instruct the resuscitation team to assign a teammate to manage this simulated family member. They should emphasize evidence-informed ways to communicate with parents during pediatric resuscitation to enhance their understanding and coping during the event, including providing real-time clinical information, addressing the child by name, and preparing the parents for, and announcing, a child's death (Lizotte et al., 2020; Stewart, 2019).

Finally, participants described being distressed and frustrated by pediatric hospital staff who, when consulted, could not share in an understanding of the limited resources they had to

keep a critically ill child alive. Ideally, pediatric centres should be sensitive to and aware of community hospitals' resource constraints before being consulted in emergency situations. With this knowledge, they could tailor their treatment recommendations and triage a child's transport accordingly. Having critical care staff from pediatric hospitals participate in in-situ simulations in community hospital EDs may enhance community hospital staff's knowledge and skills in managing critically ill children. Additionally, this intervention may enhance pediatric providers' awareness of the resource limitations that community hospital ED staff experience.

Moving Forward with a Changed Perspective

While our participants experienced themselves as more competent, knowledgeable nurses following participation in a pediatric resuscitation, all also experienced increased cynicism and anger towards other patients and those in their personal life. There is limited evidence to support formal debriefing following critical events (Brooks et al., 2018; Brooks et al., 2019); however, nursing colleagues, nurse educators, and nurse managers should enable a safe space for nurses to verbalize emotions such as anger following pediatric resuscitations, especially considering that suppressing the emotion is associated with the development of burnout (Lee et al., 2021).

Nursing educators may also consider group-based anger management training for nurses as a part of nursing orientation in the ED, as researchers have found that similar interventions are effective in improving anger management skills in nursing students (Üzar-Özçetin & Hiçdurmaz, 2017). This training may also benefit ED nurses as it is associated with increased confidence in managing aggressive patient behaviour (Heckemann et al., 2015; Kaeser et al., 2018).

Nurses in our study demonstrated the ability to critically reflect upon how their changed worldview and newly acquired knowledge impacted the quality of care they provided. In knowing the potential impacts of exposure to pediatric resuscitations on practice, other nurses

exposed to these events should be encouraged to similarly make a conscious effort to engage in reflective practice. The College of Nurses of Ontario (2014) upholds practice reflection—that is, an intentional process of thinking about, analyzing, and learning from one’s practice—as a professional obligation. Self-reflective practice may decrease nurses’ stress and anxiety, enhance emotional coping, improve learning and competence, and promote self-awareness (Caldwell & Grobbel, 2013; Contreras et al., 2020).

Finally, nursing managers should recognize that nurses exposed to pediatric resuscitations in community hospitals may develop a newfound critical lens of their practice setting. Managers can positively utilize this lens by seeking nurses’ input on improving patient safety, job satisfaction, and resuscitation practices. In this way, nursing managers can ensure that nurses exposed to pediatric resuscitations can use their newfound knowledge and worldview to impart positive change in their practice setting. Psychological empowerment mediates the relationship between transformational leadership (i.e., a leadership style whereby leaders authentically motivate, inspire, and encourage employees to create change) and reduced staff burnout (Liu et al., 2019). Wei et al. (2020) reported that nursing managers that seek to empower and engage their staff while fostering healthy working environments could reduce burnout caused by stressful situations.

Strengths and Limitations

This study had several strengths compared to the limited extant literature on the topic discussed in Chapter 2. Firstly, this study was explicitly congruent with a pragmatic worldview, which assumes a relational epistemology that emphasizes choosing methodologies based on their practical utility in answering research questions (Brierley, 2017; Creswell, 2014; Morgan, 2014; Kivunja & Kuyini, 2017). Interpretive phenomenological analysis is concerned with the detailed

examination of human lived experience, with special focus on the personal meaning and sense-making activities that participants ascribe to their experiences (Smith et al., 2009). This methodology allowed for an examination of the previously uninvestigated meaning that participants ascribed to the emotional experience of resuscitating a child in a community hospital ED. Unlike the extant literature, this study also investigated the unique perspective of nurses and focused on experiences of actual, rather than simulated, pediatric resuscitations.

My personal experience with pediatric resuscitations allowed me to meaningfully engage with participants and formulate appropriate probing questions during their interviews. Furthermore, while face-to-face interviews, as recommended by Smith et al. (2009), were not possible due to the coronavirus pandemic, video conferencing allowed me to establish rapport with the nurses and make note of their verbal cues. This method was deemed effective, as evidenced by participants' comfort in sharing detailed, rich narrative accounts of their lived experiences.

Given my practice background, however, it is possible that I have under or over-emphasized some aspects of participants' lived experiences. To mitigate this potential limitation, I took actions to promote trustworthiness. For example, as suggested by Smith et al. (2009), I engaged in cyclical bracketing throughout the research process, journaling about my preconceptions regarding the topic and sharing my reflections with Dr. Vanderspank-Wright. To promote credibility, I partook in prolonged engagement with the transcripts through reading and rereading. Furthermore, I ensured method triangulation (i.e., by analyzing experiential themes within the context of demographic and contextual data; Korstjens & Moser, 2018).

There remain, however, limitations to this study that impact its potential transferability. Our sample was highly homogenous in that all participants were female-identifying, Caucasian,

and 30 years of age or under with under 10 years of clinical experience. Non-female identifying nurses and those with more clinical experience may have contributed other perspectives, especially considering previous literature suggesting significant differences in response to traumatic events based on sex, gender, age, and clinical experience (e.g., Czaja et al., 2012; Lavoie et al., 2011; McGarry et al., 2013; Olff, 2017; Roden-Foreman et al., 2017).

Future Research

As described throughout the Discussion, the results of this study have significant implications for avenues of future nursing research. First, considering the limitations related to the homogeneity of the current study's sample, nursing researchers may consider examining the experiences of non-female-identifying and more experienced nurses in the future. They may also consider conducting survey-based analyses on how factors such as age, years of experience, and past exposure to pediatric resuscitations and deaths may impact burnout and PTS scores following exposure to pediatric resuscitations in community hospital EDs.

Based on the findings of this study, more research is needed on anger as an outcome of witnessing pediatric resuscitations in community hospitals and its impact on nurses' quality of life and patient experiences. Future studies may also investigate how anger management training influences nurses' interactions with patients following critical incidents in the ED. Researchers may also explore when (e.g., during hospital orientation, ED orientation, or following critical incidents) and how (e.g., via in-person sessions or video training modules) to best implement this training in resource-limited settings.

Considering the paucity of research on downtime in nursing, researchers may also consider investigating whether downtime following critical incidents in the ED improves patient safety and nurse psychological outcomes. Furthermore, while Halpern et al. (2014) studied downtime in

medical technicians and paramedics, nursing-specific research is needed to determine the optimal period of downtime following critical incidents in the ED and how and where this time should be spent. Research is also needed on how downtime is practiced following critical incidents in community hospital settings, which may have fewer staff available to provide relief for nurses exposed to traumatic events.

Based on the findings of this study, I also suggest that researchers investigate the efficacy of implementing pediatric emergency response teams in community hospitals. The Canadian Paediatric Society (CPS) has recommended that pediatric hospitals have rapid response teams responsible for the early identification and management of patients at risk of clinical deterioration (Cheng & Mikrogianakis, 2018). The CPS also recommends in-situ, interprofessional, simulation-based training for these teams (Cheng & Mikrogianakis, 2018). Kolovos et al. (2018) found that implementing a rapid response team comprised of experienced critical care staff trained to recognize and manage acutely deteriorating patients in a pediatric hospital significantly reduced patient mortality, illness severity, and length of stay following intensive care unit admissions (Kolovos et al., 2018). At present, however, the implementation of pediatric emergency response teams in community hospitals responsible for responding to critically ill children in the ED remains uninvestigated.

It follows that intervention-based research is needed to investigate how interprofessional, in-situ simulation activities (i.e., simulations occurring in the actual practice setting) and pediatric emergency response teams may impact community hospital healthcare providers' experiences, self-efficacy, and psychological outcomes during and following actual pediatric resuscitations. Outcomes may also include pediatric morbidity and mortality statistics. Researchers should consider including critical care staff from pediatric hospitals in these simulation studies to

promote shared knowledge and understanding between pediatric and community hospital staff (see “Preventing Chaos” and “Uncovering What is Seen.”)

Conclusion

The objective of this study was to understand the lived experiences of nurses resuscitating children in community hospitals. Four nurses who had encountered these events in their practice shared rich, detailed accounts of their profoundly impactful and easily relived experiences. Participants conceptualized pediatric resuscitations as unnatural, emotional, and chaotic events. They were comforted by others who understood their experiences and were distressed by those who could not see what they saw. To reconcile what they saw, the nurses reflected upon and ruminated about the resuscitation, ultimately restructuring their experiences of themselves, others, and the world to make room for a new reality where the safety of childhood is not certain. These findings have implications for nursing practice, education, leadership, and research that may enhance nurse coping during and following these events.

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Appendix A: Research Ethics Board Approval from the University of Ottawa

28/09/2020

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

CERTIFICAT D'APPROBATION ÉTHIQUE | CERTIFICATE OF ETHICS APPROVAL**Numéro du dossier / Ethics File Number**

H-09-20-6092

Titre du projet / Project TitleUnderstanding the Lived
Experiences of Nurses
Resuscitating Children in a
Community Hospital Emergency
Department**Type de projet / Project Type**Thèse de maîtrise / Master's
thesis**Statut du projet / Project Status**

Approuvé / Approved

Date d'approbation (jj/mm/aaaa) / Approval Date (dd/mm/yyyy)

28/09/2020

Date d'expiration (jj/mm/aaaa) / Expiry Date (dd/mm/yyyy)

27/09/2021

Équipe de recherche / Research Team**Chercheur / Researcher Affiliation****Role**

Jamie BENTZ

École des sciences infirmières / School of Nursing

Chercheur Principal / Principal Investigator

Brandi VANDERSPANK

École des sciences infirmières / School of Nursing

Superviseur / Supervisor

Conditions spéciales ou commentaires / Special conditions or comments550, rue Cumberland, pièce 154 550 Cumberland Street, Room 154
Ottawa (Ontario) K1N 6N5 Canada Ottawa, Ontario K1N 6N5 Canada613-562-5387 • 613-562-5338 • ethique@uOttawa.ca / ethics@uOttawa.ca
www.recherche.uottawa.ca/deontologie | www.recherche.uottawa.ca/ethics

28/09/2020

Université d'Ottawa

Bureau d'éthique et d'intégrité de la recherche

University of Ottawa

Office of Research Ethics and Integrity

Le Comité d'éthique de la recherche (CÉR) de l'Université d'Ottawa, opérant conformément à l'*Énoncé de politique des Trois conseils* (2014) et toutes autres lois et tous règlements applicables, a examiné et approuvé la demande d'éthique du projet de recherche ci-nommé.

L'approbation est valide pour la durée indiquée plus haut et est sujette aux conditions énumérées dans la section intitulée "Conditions Spéciales ou Commentaires". Le formulaire « Renouvellement ou Fermeture de Projet » doit être complété quatre semaines avant la date d'échéance indiquée ci-haut afin de demander un renouvellement de cette approbation éthique ou afin de fermer le dossier.

Toutes modifications apportées au projet doivent être approuvées par le CÉR avant leur mise en place, sauf si le participant doit être retiré en raison d'un danger immédiat ou s'il s'agit d'un changement ayant trait à des éléments administratifs ou logistiques du projet. Les chercheurs doivent aviser le CÉR dans les plus brefs délais de tout changement pouvant augmenter le niveau de risque aux participants ou pouvant affecter considérablement le déroulement du projet, rapporter tout événement imprévu ou indésirable et soumettre toute nouvelle information pouvant nuire à la conduite du projet ou à la sécurité des participants.

The University of Ottawa Research Ethics Board, which operates in accordance with the *Tri-Council Policy Statement* (2014) and other applicable laws and regulations, has examined and approved the ethics application for the above-named research project.

Ethics approval is valid for the period indicated above and is subject to the conditions listed in the section entitled "Special Conditions or Comments". The "Renewal/Project Closure" form must be completed four weeks before the above-referenced expiry date to request a renewal of this ethics approval or closure of the file.

Any changes made to the project must be approved by the REB before being implemented, except when necessary to remove participants from immediate endangerment or when the modification(s) only pertain to administrative or logistical components of the project. Investigators must also promptly alert the REB of any changes that increase the risk to participant(s), any changes that considerably affect the conduct of the project, all unanticipated and harmful events that occur, and new information that may negatively affect the conduct of the project or the safety of the participant(s).

Kim THOMPSON

Responsable d'éthique en recherche / Protocol Officer

Pour/For **Daniel LAGAREC** Président(e) du/ Chair of the **Comité d'éthique de la recherche en sciences de la santé et sciences / Health Sciences and Sciences Research Ethics Board**

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University of Ottawa

Office of Research Ethics and Integrity

H-09-20-6092 - MOD1-6092 - Modification approuvée / Modification Approved*(English message follows)*

Cher/Chère Jamie Bentz,

Merci d'avoir soumis une demande de modification pour votre projet de recherche intitulé «Understanding the Lived Experiences of Nurses Resuscitating Children in a Community Hospital Emergency Department».

Ces modifications ont été approuvées et sont assujetties au certificat d'approbation éthique, valide jusqu'au 27-09-2021.

Research Design: Two nurses working in the Emergency Department (ED) at [REDACTED] can be included.

Si vous avez des questions, n'hésitez pas à communiquer avec le Bureau d'éthique au ethique@uottawa.ca ou au 613-562-5387.

Vous pouvez voir votre demande en vous connectant à votre compte [eReviews](#).

Cordialement,

Kim Thompson

Responsable d'éthique en recherche

Président(e) : Daniel Lagarec

CÉR : Comité d'éthique de la recherche en sciences de la santé et sciences / Health Sciences and Sciences Research Ethics Board

Ceci est une réponse automatisée, merci de ne pas répondre à ce courriel.

Dear Jamie Bentz,

Thank you for submitting a modification request for your research project titled "Understanding the Lived Experiences of Nurses Resuscitating Children in a Community Hospital Emergency Department".

These modifications are now covered under the certificate of ethics approval, valid until 27-09-2021.

Research Design: Two nurses working in the Emergency Department (ED) at [REDACTED] can be included.

If you have any questions, please contact the Ethics Office at ethics@uottawa.ca or 613-562-5387.

You can view your project at any time by logging into [eReviews](#).

Best regards,

Kim Thompson

Protocol Officer

Chair: Daniel Lagarec

REB: Comité d'éthique de la recherche en sciences de la santé et sciences / Health Sciences and Sciences Research Ethics Board

This is an automated message. Please do not reply directly to this email.

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Université d'Ottawa
Bureau d'éthique et d'intégrité de la recherche

University of Ottawa
Office of Research Ethics and Integrity

Attachement(s) / Attachment(s)

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Appendix B: Tables Relevant to the Literature Review

Table 1

Search Terms Selected Based on the SPIDER tool by Cooke et al. (2012)

SPIDER Component	Search Terms
Sample	Nurses nurses OR nursing OR nurse OR registered nurse OR staff nurse
Phenomenon of Interest	Pediatric resuscitations in emergency departments <i>PI 1:</i> pediatric OR paediatric OR infant OR neonate OR child* OR adolescent OR teenager <i>PI 2:</i> resuscitation OR resus OR cardiopulmonary OR cpr OR critical illness OR critically ill <i>PI 3:</i> emergency department OR emergency room OR ed OR er OR emergency center OR emergency centre OR community hospital OR community centre OR community center OR rural hospital OR rural centre OR general center OR general centre OR general hospital OR general emergency department
Design Evaluation	<i>Not included</i> Experiences Experience OR perspective OR view OR perception OR attitude OR lived experience
Research Type	<i>Not included</i>

Table 2*Database-Specific Medical Subject Headings and Relevant SPIDER Tool Components*

CINHAL	Medline	PsychINFO
Nurses (S)	Nurses (S)	Nursing (S)
Pediatric Nursing (S & PI)	Pediatric Nursing (S & PI)	Nurses (S)
Pediatric Care (PI)	Pediatrics (PI)	Pediatrics (PI)
Pediatric Critical Care	Pediatric Emergency Medicine	CPR (PI)
Resuscitation (PI)	(PI)	Emergency Services (PI)
Resuscitation,	Child (PI)	Health Personnel Attitudes
Cardiopulmonary (PI)	Resuscitation (PI)	(PI)
Emergency Nursing (S & PI)	Cardiopulmonary Resuscitation	Experiences (events) (E)
Emergency Care (PI)	(PI)	
Emergency Medical	Emergency Service, Hospital (PI)	
Services (PI)	Hospital, Community (PI)	
Hospitals, Community	Hospital, Rural (PI)	
(PI)		
Hospitals, Rural (PI)		
Nurse Attitudes (E)		
Work Experiences (E)		

Note. S = Sample; PI = Phenomenon of Interest; E = Evaluation

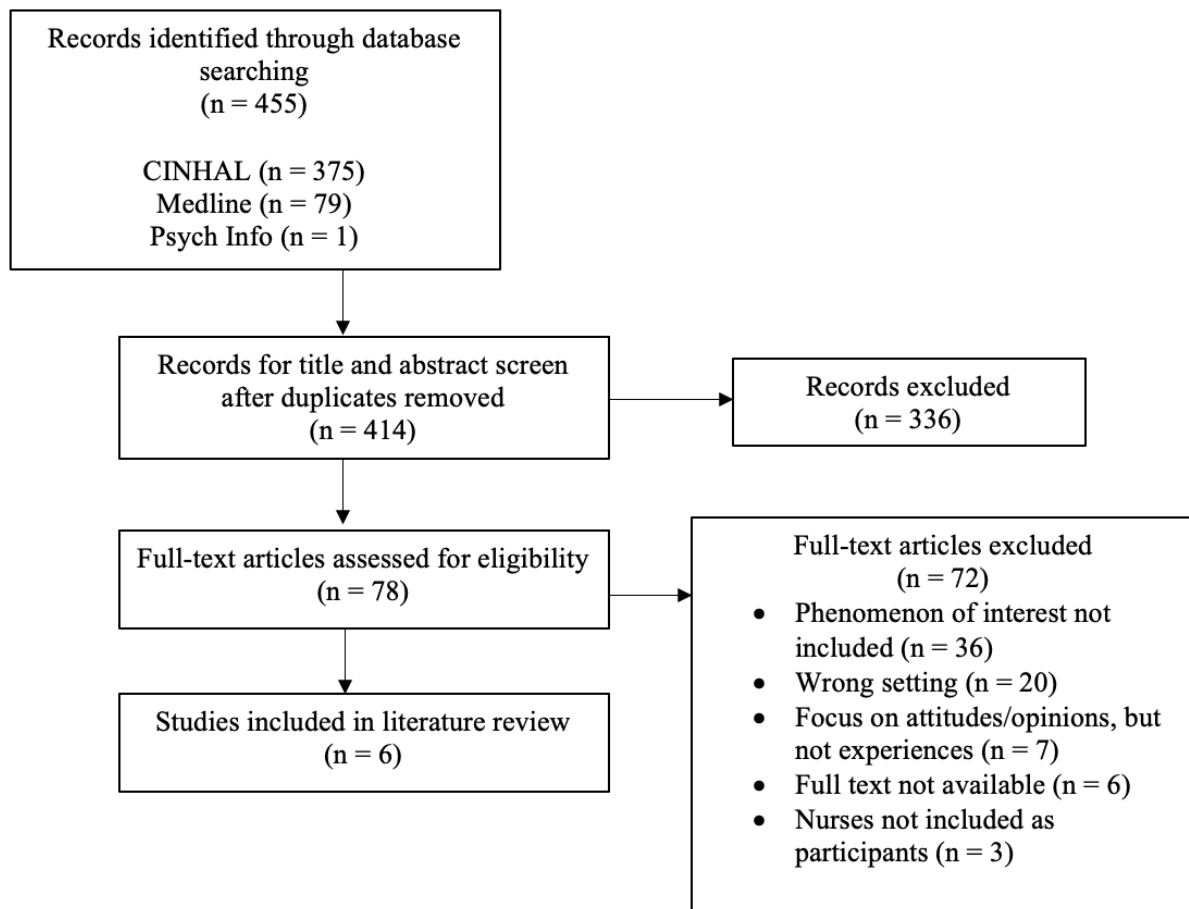
Figure 1*PRISMA Diagram for the Literature Search*

Table 3*Characteristics of the Studies Included in the Literature Review*

Authors(s) (Year)	Purpose	Design/ Methodology	Country (Region)	Setting(s) Sampled From	Sample
Abraham et al. (2018)	To describe and compare ED staff perceptions of their working environment	Quantitative Cross-sectional survey study	Australia (Queensland)	1 small regional public hospital and 1 large regional hospital serving as the smaller hospital's referral centre	Smaller hospital: Nurses ($n = 27$), physicians ($n = 16$), and unspecified HCWs ($n = 1$) Larger hospital: Nurses ($n = 53$), physicians ($n = 27$), and unspecified HCWs ($n = 5$)
Gangadharan et al. (2018)	To explore pediatric ED and general ED providers' perceptions of caring for critically ill children	Qualitative, simulation-based study Grounded theory (type not specified)	United States (northeastern and mid-Atlantic)	8 pediatric EDs and 16 general EDs ^a	Simulation teams consisting of 1 to 2 physicians, 3 to 5 nurses, and 2 to 3 nursing assistants or medical technicians from each ED Pharmacists and RTs were included in simulations if these professionals usually participated

Authors(s) (Year)	Purpose	Design/ Methodology	Country (Region)	Setting(s) Sampled From	Sample
					in resuscitations in their respective EDs
Gilleland et al. (2014)	To explore providers' perceptions of the barriers and facilitators to managing critically ill children in community hospitals	Qualitative Sandelwoski's qualitative description	Canada (South-Central Ontario)	5 community hospital EDs and McMaster Children's Hospital	Community hospitals: Nurses ($n = 36$), RTs ($n = 4$), and physicians ($n = 13$) McMaster Children's Hospital: Pediatric intensive care specialists ($n = 4$) ^c
Goldman et al. (2018)	To explore ED providers' perceptions of caring for pediatric patients	Mixed-methods, simulation-based study Grounded theory (type not specified)	United States (Rhode Island)	6 community hospital EDs	Nurses ($n = 84$), physicians ($n = 38$), and technicians ($n = 49$)
Porter (2019)	To explore ED providers' experiences of FMP during resuscitations	Qualitative Creswell's qualitative analysis	Australia (Victoria)	1 rural hospital ED and 1 metropolitan ED	Nurses ($n = 16$) and physicians ($n = 13$)

Authors(s) (Year)	Purpose	Design/ Methodology	Country (Region)	Setting(s) Sampled From	Sample
Sacchetti et al. (2000)	To investigate the effect of prior experience on ED staff acceptance of FMP during various procedures	Quantitative Cross-sectional survey study	United States (New Jersey)	1 community hospital ED routinely practicing FMP 1 community hospital ED occasionally practicing FMP 1 urban academic-affiliated ED rarely practicing FMP	Nurses ($n = 57$), physicians ($n = 22$), and technicians ($n = 6$)

Note. Abbreviations in order of appearance as are follows: ED = emergency department; HCWs = healthcare workers; RTs = respiratory therapists; FMP = family member presence.

^a While Gangadharan et al. (2018) did not explicitly state that they recruited a resuscitation team from a community hospital, I included this study in my literature review, as they noted sampling from "general emergency departments of various sizes, locations, and staffing models" (p. 579).

^b Sacchetti et al. (2000) all have affiliations with hospitals in New Jersey, United States, although they do not explicitly state the location of the EDs sampled from.

^c Gilleland et al. (2014) interviewed pediatric intensive care specialists to provide context to the information collected from community hospital staff.

Table 4*Summary of Findings for the Qualitative Appraisal of Studies Employing Qualitative Methods*

Author(s) (Year)	Evidence of Congruity Between Philosophical Perspective and Methodology	Evidence of Congruity Between Methodology and Research Objectives	Evidence of Consideration for Ethical Issues	Evidence of Congruity Between Methodology and Methods	Evidence of Congruity Between Methodology and the Interpretation and Discussion of Results	Evidence that the Relationship Between the Researcher and Participants Was Adequately Considered	Evidence of the Use of Participant Voice	Evidence of a Relationship Between Conclusions and the Interpretation of Data
Gangadharan et al. (2018)	X	✓	✓	✓	✓	/	✓	✓
Gilleland et al. (2014)	/	✓	/	✓	✓	/	✓	✓
Goldman et al. (2018)	X	✓	/	✓	✓	/	✓	✓
Porter (2019)	X	✓	/	✓	✓	/	✓	✓

Note. Symbols represent the following conclusions: ✓ = yes; X = no; / = unclear, more information required.

Table 5*Summary of Findings for the Qualitative Appraisal of Studies Employing Quantitative Methods*

Author(s) (Year)	Sampling Techniques Adequately Discussed	Setting and Participants Adequately Described	Measurement Criteria Adequately Reported and Appropriate	Evidence that the Appropriate Statistical Methods Were Employed
Abraham et al. (2018)	✓	✓	✓	✓
Goldman et al. (2018)	X	✓	✓	✓
Sacchetti et al. (2000)	X	X	✓	/

Note. Symbols represent the following conclusions: ✓= yes; X = no ; / = unclear, more information required.

Appendix C: Recruitment Poster

NURSE PARTICIPANTS NEEDED FOR RESEARCH



Have you resuscitated a child in a community hospital emergency department in Ontario? If so, we want to hear your story.

We are looking for volunteers to take part in a study of nurses' experiences resuscitating children in community hospital emergency departments.

Why are we studying this? • To better understand how to support nurses resuscitating children in community hospitals • To inspire research that may increase nurse job satisfaction and quality of life • To inspire research that may improve the care of critically ill children and their families in community hospitals	What does this study involve? • Completing a 5 to 10-minute questionnaire • Participating in an interview to share your experience (approximately 60 to 90 minutes) by video conference or phone • The possibility of participating in a follow-up interview	You are eligible if: • You work as a Registered Nurse in a community hospital emergency department in Ontario • You have participated in at least one pediatric resuscitation in a community hospital emergency department
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This study is in English only. Participants will be selected on a first-come, first-serve basis.

For more information or to volunteer for this study, please contact the primary investigator:

Jamie Anne Bentz, RN, BScN

University of Ottawa, Faculty of Health Sciences, School of Nursing

Email: [REDACTED]

This study is supervised by Dr. Brandi-Vanderspank-Wright and has been reviewed by, and received ethics clearance through, the University of Ottawa's Health Sciences and Science Research Ethics Board.

Appendix D: Social Media Recruitment Post

Are you a Registered Nurse that has resuscitated a child in a community hospital emergency department in Ontario? If so, you are invited to participate in this research study. If you are interested in sharing your story, please email Jamie Anne Bentz at [REDACTED] for more information.

Appendix E: Recruitment Email

Hello, _____

I hope that this email finds you well. I am writing to let you know about a research study that you may be interested in participating in.

One of our Master of Science in Nursing students at the University of Ottawa, Jamie Anne Bentz, is exploring nurses' experiences resuscitating children in community hospital emergency departments. Study participants will complete one online demographic questionnaire (approximately 5 to 10 minutes) and one interview (approximately 60 to 90 minutes) at a time and date of their choosing. They may choose to complete the interview by videoconference (on the University of Ottawa's Microsoft Teams) or phone.

Attached to this email, you can find the recruitment poster for this study. The study is supervised by Dr. Brandi-Vanderspank-Wright and has been reviewed by, and received ethics clearance through, the University of Ottawa's Health Sciences and Science Research Ethics Board.

I will have no way of knowing whether or not you choose to participate, and your name will not be collected with study data. If you would like to learn more, or are interested in participating, please feel free to contact Jamie by email at [REDACTED].

Have a nice (day/evening),

Appendix F: Study Information Sheet



Université d'Ottawa
Faculté des sciences
de la santé

École des sciences
infirmières

University of Ottawa
Faculty of Health
Sciences
School of Nursing

Study Information Sheet

Title of Study: Understanding the Lived Experiences of Nurses Resuscitating Children in a Community Hospital Emergency Department

Researcher Names and Affiliations:

Principal Investigator: Jamie Anne Bentz, RN, BScN

Master of Science in Nursing Student

University of Ottawa, Faculty of Health Sciences, School of Nursing

Research Supervisor: Dr. Brandi Vanderspank-Wright, RN, PhD, CNCC(C)

Associate Professor

University of Ottawa, Faculty of Health Sciences, School of Nursing

Invitation to Participate: I am invited to participate in the abovementioned research study conducted by Jamie Anne Bentz and supervised by Dr. Brandi Vanderspank-Wright.

Purpose of the Study: The purpose of this study is to understand the experiences of nurses resuscitating children in community hospital emergency departments in Ontario.

To participate in this study, you must meet the following requirements:

- 1) You work as a Registered Nurse in a community hospital emergency department in the province of Ontario;
- 2) You have participated in at least one pediatric resuscitation in this community hospital emergency department;

Participation: My participation will consist of completing a brief, demographic questionnaire (taking approximately 5 to 10 minutes) and one audio-recorded interview (approximately 60 to 90 minutes in length). The interview may be longer or shorter, depending on how much I would like to talk about my experience. I may also be invited to participate in a follow-up interview. I will complete the demographic data questionnaire online (i.e., through SurveyMonkey) and the interview will be scheduled at a date and time of my choosing. In the interview, I

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will be asked to describe my experience before, during, and after participating in a pediatric resuscitation in a community hospital emergency department.

Risks: I will be sharing personal information and experiences with the researcher. I may experience unpleasant emotions while revisiting memories about resuscitating a child (for example, distress, sadness, anxiety, or anger). I have received assurance from the researcher that every effort will be made to minimize these risks. I do not have to answer any questions that I do not feel comfortable answering. If I experience distress during the interview, I have the option of asking the interviewer to pause or stop the interview. I will be given the opportunity to debrief with the interviewer immediately after the interview is complete. If I feel distressed following this interview, I am aware that I can contact the Crisis Line at **1-866-996-0991**. I may also contact my hospital's Employee Assistance Program.

Benefits: My participation in this study will enhance the knowledge about nurses' experiences resuscitating children in community hospital emergency departments. This knowledge will be used to inform interventions used to support nurses and other healthcare providers participating in these events. It may also enhance the care of critically ill and/or dying children in emergency departments.

Confidentiality and anonymity: I have received assurance that the information I share in this study will be used only for activities directly related to the research. The researchers will strictly protect my confidentiality and only Jamie Anne Bentz and Dr. Brandi Vanderspank-Wright will have access to my name and contact information. While completing my demographic questionnaire and interview online, I am aware that the researchers have recommended that I should take standard safety measures, such as signing out of my account, closing my browser, and locking my screen or device when I am no longer using them.

Conservation of data: The data from my demographic questionnaire, audio files, and interview transcripts will be saved according to my participant identification number, password-protected, and stored in the University of Ottawa's secure Google drive platform for ten years. My audio-recording will be transcribed with all names and identifying information removed. While direct quotations from my transcript may be used in publications, my name and the hospital I work at will not be shared.

Compensation (or Reimbursement): There is no compensation for participation in this study.

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Voluntary Participation: I am under no obligation to participate in this study. If I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions without suffering any negative consequences. I do not need to answer questions that I feel uncomfortable answering. If I choose to withdraw, I can decide whether or not to give my consent to allow the researchers to use the data obtained before withdrawal.

If I have any questions about the study, I may contact Jamie Anne Bentz or Dr. Brandi Vanderspank-Wright using the contact information provided above on this information sheet.

If I have any questions regarding the ethical conduct of this study, I may contact the University of Ottawa's Office of Research Ethics and Integrity at:

ethics@uottawa.ca

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Appendix G: Questionnaire Introduction and Consent

Understanding the Lived Experiences of Nurses Resuscitating Children in a Community Hospital Emergency Departments

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This survey is a part of a study investigating nurses' experiences resuscitating children in community hospital emergency departments in Ontario.

To participate in this survey, you must meet the following requirements:

- 1) You work as a Registered Nurse in a community hospital emergency department in the province of Ontario;
- 2) You have participated in at least one pediatric resuscitation in this community hospital emergency department;

Your participation is voluntary. Completing this survey constitutes implied consent. It is anticipated that this survey will take approximately 5 to 10 minutes to complete.

Risks: There are no known risks to completing this survey.

Benefits: My participation in this study will enhance the knowledge about nurses' experiences resuscitating children in community hospital emergency departments. This knowledge will be used to inform interventions used to support nurses and other healthcare providers participating in these events.

Confidentiality and anonymity: I have received assurance that the information I share in this survey will be used only for activities directly related to the research. Only the researchers for this study will have access to the research data. My anonymity as a participant will be protected with the use of an alpha-numeric participant code, which I will create upon starting the survey. I am aware that the researchers have recommended that I should take standard safety measures

while completing this survey, such as signing out of my account, closing my browser, and locking my screen or device when I am no longer using them.

Compensation (or Reimbursement): There is no compensation for participation in this study.

Voluntary Participation: I am under no obligation to participate in this study. If I choose to participate, I can withdraw from the study at any time and/or refuse to answer any questions without suffering any negative consequences. I do not need to answer questions that I feel uncomfortable answering. If I choose to withdraw, the data from this survey will not be used. Please notify the primary investigator, Jamie Anne Bentz, at [REDACTED] to withdraw from this study.

If I have any questions regarding the ethical conduct of this study, I may contact the University of Ottawa's Office of Research Ethics and Integrity at:

ethics@uottawa.ca

613-562-5387

Appendix H: Demographic and Contextual Data Questionnaire

Participant Identification Code

Answers to the following questions will be used to create your participant identification code to ensure that your data remains anonymous.

1. What is your favourite colour? _____
2. How many pets do you have? _____
3. What is the first letter of your maternal grandmother's first name? _____
4. What is the number associated with your birth order (e.g., first born, second born, third born, ect)? _____

Demographic and Contextual Questionnaire

To help us better contextualize your experience, we would like to learn more about you and your practice setting. Please fill in the blanks or select the response that best applies. You do not have to answer questions that you do not feel comfortable answering.

5. How old are you? _____
6. What gender do you identify with?
 - a. Male/Man
 - b. Female/Woman
 - c. Trans Male/Trans Man
 - d. Trans Female/Trans Woman
 - e. Genderqueer/Gender non-conforming
 - f. Prefer not to say
 - g. None of the above applies to me. I identify as: _____
7. Sex assigned at birth
 - a. Male
 - b. Female
 - c. Intersex
 - d. Prefer not to say
8. Race/ethnicity: _____

9. What best describes your relationship status?
- Single, never married
 - Married
 - Widowed
 - Divorced
 - Separated
 - In a domestic partnership or civil union
 - Single, but cohabitating with a significant other
 - Prefer not to say
10. Do you have children of your own?
- Yes
 - No
11. If you answered “yes” to Question 10, how old are your children? _____
12. What best describes your education level (include non-nursing education):
- Baccalaureate degree
 - Master’s Degree
 - Doctorate Degree
 - Post-Doctorate Degree
 - Other (please specify): _____
13. What additional training and/or certifications do you have, if any, in pediatric resuscitation, critical care, or emergency nursing? (*Select all that apply*)
- Emergency Nursing Paediatric Course (ENPC)
 - Neonatal Resuscitation Program (NRP)
 - Pediatric Advanced Life Support (PALS)
 - Other, including Canadian Nurses Association (CNA) certification (please specify): _____
14. How many years have you been a Registered Nurse? _____
15. How many years have you been an emergency department nurse? _____
16. What community hospital do you work at? _____
17. How many years have you worked in this hospital’s emergency department? _____
18. What best describes your employment status in this emergency department?
- Casual
 - Part-time

- c. Full-time

19. How many nurses are scheduled to work each shift in this emergency department?

20. Does this hospital have an on-call pediatrician, respiratory therapist, or anesthetist?
- a. Yes
 - b. No
 - c. Unsure

Thank you for completing this questionnaire. We look forward to learning more about your experience resuscitating a child in a community hospital emergency department in your interview.

Appendix I: Videoconference Verbal Consent Script

Introduction: Hello, [Participant's name]. Thank you for agreeing to participate in this study. Have you had a chance to read the study information sheet that you received by email?

Study participant (scenario 1): No, I have not had time to review the information sheet.

Reply: That is okay. I would like to read it to you. Is that alright with you? *If the participant consents to the interview, proceed with the interview questions in Appendix J.*

Study participant (scenario 2): *Study participant requests information about the study.*

Reply: *After reviewing the contents of the "Email invitation to participate" in Appendix E.*

Do you have any questions or need any clarification? Answer questions and provide clarification. Once the participant is satisfied, verify that they continue to consent to the interview and proceed with the interview questions in Appendix J.

Study participant (scenario 3): Yes, I have had time to review the information sheet.

Reply: Do you have any questions or do you need clarification? *Answer questions and provide clarification. Verify that the participant continues to consent to the interview and proceed with the interview questions in Appendix J.*

Study participant (scenario 4): I am sorry, but something has come up and I can't complete the interview at this time.

Reply: Not a problem. We can schedule an interview at a later time, if you would like. Is there a time or date that would work better for you? *Take note of call back date and time.*

Study participant (scenario 5): I no longer wish to participate in this research.

Reply: I understand. Thank you for your time.

Appendix J: Nurse Interview Guide

Note: The introductory questions were intended to verify the participant's unique alphanumeric identifier, obtain additional information relevant to the topic, and build rapport with the participants before exploring potentially sensitive experiences. The semi-structured questions were intended to promote rich, narrative discussion about the experience in the participant's own terms. As is consistent with Smith et al.'s (2009) methodology, the semi-structured questions were subject to change based on participants' responses.

Part 1: Participant Identification Code Questions

These first few questions will be used to create your participant identification code to ensure that your data remains anonymous.

1. What is your favourite colour?
2. How many pets do you have?
3. What is the first letter of your maternal grandmother's first name?
4. What is the number associated with your birth order (e.g., first born, second born, third born, ect.)?

Part 2: Structured Contextual Questions

1. Approximately how many pediatric resuscitations do you see in your emergency department each year?
2. Do nurses in your emergency department receive mandatory training for pediatric resuscitations? If so, what does this training include?
3. Approximately how many pediatric resuscitations have you personally witnessed at the community hospital that you currently work at? Throughout your career?

Part 3: Semi-Structured Questions

This part of the interview will focus on your experience of a memorable pediatric resuscitation in the Emergency Department.

1. From your perspective, how do you define a pediatric resuscitation?
2. Think back to the shift where you experienced the memorable pediatric resuscitation. When did this memorable experience happen?

Possible prompts: How many days, months, or years ago did this occur? What time of the year was it?

3. Can you tell me about your experiences of the shift before the child arrived to the emergency department?

Possible prompts: What was the start of your shift like (e.g., was it busy or quiet; how many other people were working with you)? How did you feel before being notified that the child was coming?

4. Can you tell me about your experience preparing for the pediatric resuscitation?

Possible prompts: How were you notified that a critically ill child was coming to the emergency department? How did you respond when you received the notification? What feelings were you experiencing? What were your experiences of your teammate's responses?

5. Can you tell me about your experience during the pediatric resuscitation?

Possible prompts: What happened? How old was the child? Who was with you in the room? What were your experiences of the behaviours or reactions of others in the room? What were you feeling during the resuscitation? What made this resuscitation so memorable?

6. Can you tell me about your experience at the end of the resuscitation?

Possible prompts: How did the resuscitation end? What feelings did you experience at this time? What were your experiences of the behaviours or reactions of others in the room?

7. Can you tell me about your experiences from the end of the resuscitation until the end of your shift?

Possible prompts: What were you feeling during this time? Did participating in the resuscitation change how you experienced the rest of your shift? In what ways?

8. Can you tell me about your experience when you returned home from the shift?

Possible prompts: How were you feeling after your shift? Was your experience at the end of this particular shift different than other shifts? How so? Did this experience change how you interacted with your family after this shift? How so?

9. Can you tell me about your experience in the days or weeks following the pediatric resuscitation?

10. How has this experience influenced your nursing practice over time?

Possible prompts: Has this experience changed how you feel or think about pediatric cases? In what ways? How might this experience change the way you will experience future pediatric resuscitations?

11. What might have made this experience easier? What might have made the experience more challenging?
12. Is there anything you would like to add?

Appendix K: Appendix for the Empirical Findings Manuscript in Chapter 4**Table 1***Participant Demographic Data*

Pseudonym	Age	Relationship/Parental Status	Education Level	Years of Practice (as a nurse, as an ED nurse)	Pediatric Resuscitation Certification
Jessica	26	Single, never married, no children	Master's Degree	4.5, 4.5	PALS, NRP
Chloe	23	Single, never married, no children	Baccalaureate Degree	1, 1	PALS
Jasmine	30	Married, children (ages 2 and 4)	Baccalaureate degree	8, 3	ENPC
Monique	28	Domestic partnership, no children	Baccalaureate degree	5, 5	PALS

Note. ED= Emergency department; PALS = Pediatric Advanced Life Support; NRP = Neonatal Resuscitation Program; ENPC = Emergency Nursing Pediatric Course. All participants were female-identifying. While Monique did not disclose her ethnicity, all other participants self-identified as Caucasian.

Table 2*Contextual Data for Participants' Emergency Departments*

Pseudonym	Hospital Distance from the Nearest Pediatric Hospital (km)	Number of ED Nurses Scheduled to Work Each Shift	Pediatric Training Required by Staff	Annual Number of Pediatric Resuscitations ^a	On-Call Pediatrician, Anesthetist, or Respiratory Therapist
Jessica	55.2	2	Yes (NRP and PALS)	1 to 2	Yes
Chloe	137.0	17 to 22	None	15 to 20	Yes
Jasmine	96.8	3 to 4	Yes (PALS or ENPC)	< 1	Yes
Monique	89.0	2 to 3	None	1 to 2	Yes

Note. ED= Emergency department; NRP= Neonatal Resuscitation Program; PALS = Pediatric Advanced Life Support; ENPC= Emergency Nursing Pediatric Course. ^a Approximate number of pediatric resuscitations, as defined and estimated by participants.

Table 3*Superordinate Themes and Subthemes*

Superordinate Themes	Corresponding Subthemes
Conceptualizing pediatric resuscitations	An unnatural phenomenon A powerful emotional experience Chaos and disorder
Seeing what I see	The visible The invisible Making visible
Making sense of what I saw	Reflecting and ruminating Reconciling Reconstructing the world, self, and other