New Graduate Nurses' Transition in Critical Care:

A Systematic Review of Qualitative Evidence

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Preface

Ethical Approval to Conduct Research

Given the design of this thesis, a systematic review of qualitative evidence, no ethical approval was required.

Statement of Contributions and Co-Authorship

Multiple authors contributed to this thesis and the associated manuscript. The contributions of the primary authorship team are outlined below.

1. Lana Stevenson, BScN RN, *Master of Science in Nursing student, School of Nursing, Faculty of Health Sciences*. This research was completed for my Master's thesis. I led the development of the systematic review. I wrote and revised all chapters within this thesis and am the primary author of the manuscript in Chapter 3.

2. Brandi Vanderspank-Wright, PhD RN CNCC(C), *Associate Professor, School of Nursing, Faculty of Health Sciences, University of Ottawa and Affiliate Investigator, the Ottawa Hospital Research Institute*. Dr. Vanderspank-Wright, acted as my thesis supervisor and also the Nominated Principal Investigator for the primary CIHR study. She provided ongoing support and feedback throughout the conception and completion of this research. Additionally, she contributed to the systematic review design and was involved in all aspects of its execution and completion. She critically revised every chapter of this thesis and is the senior author of the manuscript in Chapter 3.

3. Michelle Lalonde, PhD RN, *Associate Professor, School of Nursing, Faculty of Health Sciences, University of Ottawa*. Dr. Lalonde, acted as a thesis committee member, offered substantive guidance in all aspects of this systematic review. Dr. Lalonde is a Co-Principal Investigator on the CIHR study. She critically revised every chapter of this thesis.

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Other notable contributions:

I would like to formally acknowledge Amanda Ross-White for her contribution and expertise as a Library Scientist and certified systematic review trainer. I also acknowledge the contributions of Antoine Przbylak-Brouillard and Sarah Crawford who facilitated the screening process of this review.

Abstract

Background: The nursing shortage has been heightened by the COVID-19 pandemic. To mitigate shortages, we must rely on a steady influx of new graduate nurses. A considerable preparation-practice gap is affecting transition to practice. The transition experience to critical care is further amplified, as these environments involve specialized training and knowledge.

Objective: To describe the transition of new graduate nurses into critical care nursing practice

Design: Qualitative evidence synthesis

Setting(s): Critical care settings: intensive care units and emergency departments.

Participants: New graduate nurses with at least 2 years' experience beginning their career in critical care

Methods: We searched Ovid MEDLINE® ALL, including EPub, Ahead of Print and In-Process; Other Non-Indexed Citations, Embase Classic + Embase, PsycINFO, CINAHL and Education Source on EBSCO and the Nursing and Allied Health and ERIC databases on ProQuest.

Results: Twelve studies met inclusion criteria. Seventy-eight findings were extracted and grouped into six synthesized themes: (i) Barriers and Facilitators to Communication in Critical Care; (ii) Struggling with Uncertainty during Difficult Situations; (iii) Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care; (iv) Knowledge Develops with Time and Exposure to Complex Clinical Situations; (v) Being a Student in Critical Care; and (vi) Novel Perspectives Related to COVID-19.

Conclusions: This qualitative evidence synthesis affirms that NGN transition is a complex phenomenon in critical care. Offering support, guidance and ensuring access to resources during transition to professional practice could improve new graduate nurse retention, as well as improving confidence and competence in the workplace.

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Chapter 1: Introduction to the Research Problem

1.1 Background

Registered nurses (RN) are integral to the Canadian healthcare workforce. RNs are Canada's largest group of healthcare providers representing almost three-quarters of regulated workers (Canadian Institute for Health Information [CIHI], 2015). Historically, the nursing workforce has ebbed and flowed between current and impending shortages (Tomblin-Murphy et al., 2012). Shortages have been precipitated by an aging nursing workforce, retirement of the 'baby boomer' generation, and fewer nurses entering the profession (Crimlisk et al., 2017; Lindfors & Junttila, 2014). Shortages contribute to a variety of negative consequences including but not limited to an impact on patient mortality rates, decreased patient satisfaction, contribution to substandard quality of care, potentially increased burnout, job dissatisfaction among nursing staff (Foster et al., 2016; Lindfors & Junttila, 2014), and an increase in market demands while facing high nurse turnover (American Association of Colleges of Nursing, 2012).

From a Canadian perspective, in 2009, the Canadian Nurses Association (CNA) (2009) predicted a shortage of 60,000 full-time nurses by 2022. In Canadian hospitals, the most current data identified a mean turnover rate of 19.9% among RNs indicating that nearly one in five nurses entering the profession will leave their original practice setting or the profession entirely (O'Brien-Pallas et al., 2010). According to the World Health Organization (WHO) (2020), countries experiencing severe nursing shortages must increase their number of NGNs by approximately 8% each year to strengthen its workforce. Despite this warning from the WHO, in 2019, Canada's RN workforce only increased by 1.9% (CIHI, 2020) which is far below recommendations for workforce sustainability. Unfortunately, it was anticipated that Canada's

RN shortage would significantly increase over the next 15 years (Tomblin-Murphy et al., 2012). According to the CIHI (2019), over fifty percent of Canadian nurses are within 10 to 15 years of retirement age.

The predicted shortage has now been exacerbated and magnified by the COVID-19 pandemic. The International Council of Nurses Policy Brief (2021) focusing on the global nursing shortage has indicated that 13,000,000 will be needed. Findings from recent studies suggest that "rapidly changing policy and information, overwhelming and unclear communication, meeting patient care needs in new ways while staying safe and managing home and personal commitments to self and family" (Crowe et al., 2021, p. 1) and ever-increasing nursing work related stress have negatively impacted RNs from a mental health perspective (Turale & Nantsupawa, 2021).

Grave concerns regarding the stability of the current nursing workforce have been noted. For example, in a recent RN (N=2102) work survey conducted by the Registered Nurses' Association of Ontario (RNAO), it was recorded that 37.4% (N=740) of respondents reported a significant reduction in desired work hours post-pandemic, 2.6% (N=51) of those no longer wanting to work added hours (RNAO, 2021). Retirement may also be on the rise post-pandemic. Based on reported findings, amongst all eligible respondents to retire 22.2% (n=462), 1.6% (n=7) plan to retire immediately, 9.3% (n=42) within the first-year post-pandemic, and 16.3% (n=75) within two years (RNAO, 2021). Even more concerning, survey results indicated nurse's intent to leave the profession all together – 9.3% were very likely and 7.1% indicated likely (RNAO, 2021). Consequently, to mitigate shortages and maintain a robust nursing workforce, health care organizations must rely on a steady influx of new graduate nurses (NGNs) who transition into a variety of practice areas. While an emphasis on the importance of recruitment of NGNs has

always been important, now more than ever the successful transition and retention of these NGNs is paramount.

1.2 Conceptualizing Transition in Nursing

To best understand the experiences of NGN transition into nursing practice it is helpful to understand the concept of transition itself and how it has been articulated within the nursing profession. It is helpful to draw on the work of several nursing scholars: Marlene Kramer (1974), Patricia Benner (1982), Afaf Meleis (1975) and Judy Duchscher (2008). Each theorist's perspective provides important conceptualization and understanding of the transition experiences of NGNs.

1.2.1 Marlene Kramer – Reality Shock

NGN transition to professional practice was originally explored by Marlene Kramer in 1974. Her seminal work would provide a foundation for subsequent nursing transition theories. Kramer built on the concept of culture shock that was described by Canadian anthropologist, Kolerva Oberg (1960) Culture shock, which was characterized as emotions experienced by an individual in an unfamiliar environment (Lina & Setiawan, 2017) would lend itself to Kramer's (1974) 'reality shock'. She defined 'reality shock' as a sociocultural, physical, and emotional response to role discrepancies. Reality shock highlights the experience of learning a new role in depth, only to discover that its professional reality is significantly different from expected (Jewell, 2013). Kramer (1974) emphasized that "school-bred values conflict with work-world values" (p. 4). She articulated that it is not uncommon for an NGN to begin their career assuming undergraduate education has prepared them sufficiently for the workplace, then promptly discovering that professional nursing reality is not what was expected. Kramer described how NGNs progress through four phases: the honeymoon phase, the

rejection/regression phase, the recovery, and the resolution phase (Kramer, 1974) – each are described within the context of the NGN experience.

The ***honeymoon phase*** begins with a period of enthusiasm and excitement experienced by NGNs (Graf et al., 2020). NGNs experience a sense of motivation and positive encouragement, as anticipated with any new role (Kramer, 1974). NGNs are delighted to finally have paid employment and are eager to start their chosen career. This period of transition is brief and unfortunately, not all NGNs encounter this limited albeit rewarding phase, and can enter directly into the rejection phase (Al Awaisi et al., 2015).

The ***rejection phase*** provokes feelings of shock and failure. During this phase, NGNs experience frequent conflicting values and ways of doing things. This is evident when skills, interpersonal cues, and appropriate responses are perceived as inadequate, and NGNs experience some form of rejection from their nursing peers (Kramer, 1974). NGNs may lose common ground during this phase. Some may exhibit ethnocentrism (Graf et al., 2020), the opinion that one's group is superior to all others (Hammond & Axelrod, 2006) and therefore reconnect with previous faculty members with whom they built trust, to confide in and seek advice. While others may withdraw, blame themselves or the education system for their failures and may feel overpowered (Kramer, 1974). Various behaviours are exhibited, including, hostility, negative reflections on previous education and ineffective coping strategies (Kramer, 1974).

The ***recovery phase*** is characterized by NGNs experiencing a sense of belonging and ease in their new role and environment (Graf et al., 2020). NGNs are less anxious when confronted with various situations and bedside scenarios (including situations that are new). During this phase, the NGN can confidently assess and objectively evaluate their work environment (Kramer, 1974) while adapting to their surroundings. They have learned, developed, or improved coping strategies to adjust to the work environment (Kramer, 1974).

During the final ***resolution phase***, the NGN either adapts to their new environment, leaves their current position and transfers to a different unit, or may decide to leave the nursing profession all together (Martin & Wilson, 2011). It is important to note that Kramer's (1974) model is an iterative process. NGNs may move back and forth between phases depending on new experiences encountered (Graf et al., 2020).

1.2.2 Patricia Benner – Novice to Expert

Benner's "From Novice to Expert" incorporated Dreyfus' Model of Skill Acquisition (Dreyfus & Dreyfus, 1980) into nursing practice. Skill acquisition is known as the process of accomplishing and learning tasks, embodying knowledge, and putting them into practice (Benner, 1982). Dreyfus' model assumes that skill development and acquisition is achieved through five levels of proficiency: novice, advanced beginner, competent, proficient, and expert (Dreyfus & Dreyfus, 1980). Benner expanded on Dreyfus' Model of Skill Acquisition using an interpretive phenomenological approach and developed her model based on results of in-depth interviews and clinical observations with critical care nurses and then applied it to nursing practice. Benner's analysis resulted in thirty-one nursing competencies organized under seven core nursing domains. The attainment of these competencies depicts what an 'expert' nurse should resemble (McEwen & Wills, 2014; Tomey & Alligood, 1998). Benner's model serves as a guide or standard that locates NGNs' development of skills over time and provides objective means of evaluating progress in learning these skills (Benner, 1984; Dale et al., 2013; Davis & Maisano, 2016). This developmental model is situational, focusing on performance and outcomes in unique situations over periods of time (Benner, 2004). Given the focus of this thesis on NGNs, three of the five levels of proficiency are described in greater detail: novice, advanced beginner and competent.

Novice. In the first stage of skill acquisition, novice nurses are task oriented, dependent on textbook rules for determining appropriate actions and have no or little previous clinical experience (Benner, 1982). As a novice, they do not inherently consider the context of a situation and rely primarily on analytical data and/or unit protocols to assist in clinical decision making. Because of low confidence levels and inexperience, novice nurses often lack discretionary judgment (Benner, 1984; Stinson, 2017).

Advanced Beginner. NGNs are usually considered advanced beginners upon entry to practice in any setting, including the ICU (Benner et al., 1992). As advanced beginners, they have some previous clinical experience and are subsequently developing an understanding of relevant context and meaning in clinical situations (Benner, 1982; Dreyfus, 2004). They rely on co-workers for feedback on clinical performance, and carefully observe colleagues' clinical practice to help model their own (Benner, 2004). These rule-guided, task-oriented nurses work in a linear fashion, completing duties one step at a time, and prioritize their care according to their patient's status, to ensure patient stability, instead of forecasting what may occur (Benner et al., 1992)

Competent. Competence normally takes two to three years to achieve in the nursing profession. Actions taken during this stage, significantly contribute to patient plans and goals of care (Benner, 1982). A nurse having achieved this phase of skill acquisition exhibits plans of care based on priorities rather than providing "stimulus-response-based interventions" (Valdez, 2008, p.436). Nurses work at a slower and more comfortable pace (Benner, 1984). They are not as resilient as proficient nurses; however, their ability to "cope with and manage the many contingencies of clinical nursing" is exemplified through feelings of "mastery" (Benner, 1982, p.130).

1.2.3 Afaf Meleis: Transitions Theory

To appreciate the complexity of Kramer (1974) and Benner's (1982) foundational nursing research on reality shock and nursing competencies, it is essential to understand the concept and philosophy of transitions. Theories renew knowledge by drawing on existing knowledge, making it more accessible (Chick & Meleis, 1986). Meleis' transitions theory presents a "framework and a perspective for organization of knowledge related to events and responses to transitions" (Chick & Meleis, 1986, p. 255), signifying its importance when NGNs enter practice.

Meleis (2010) identifies transitions as passages "from one fairly stable state to another fairly stable state and is a process triggered by change" (p. 11). Meleis' concept of transition relative to nursing practice has evolved over four decades, resulting in a middle range theory known as Transition Theory (Meleis, 2010). Transition Theory describes "types and patterns of transitions, properties of transition experiences, facilitating and inhibiting conditions, process indicators, outcome indicators, and nursing therapeutics" (p. 52). Although Meleis' initial work targeted transitions of patients and families, the concept of role transition can be appropriately applied to NGNs transitioning to professional practice.

Three unique paradigms influenced the foundation of Transition Theory: role theory and supplementation, the lived experience and feminist post-colonialism (Meleis, 2015). Role theory suggests that behaviour, in social contexts, is organized and develops meaning in terms of roles (Turner, 2006). Responsibilities and entry to practice competencies, help establish the nursing role and guide behaviour change. Providing sufficient support in new roles is key to a successful transition (Meleis, 2015). The lived experience illustrates the NGN's perceived response to a new role and the experience of being in transition. The feminist post-colonialism paradigm helps

us understand the transition experience through "the multiple lenses of race, ethnicity, nationality, and gender" (Meleis, 2015, p. 363).

1.2.4 Judy Duchscher – Doing, Being, Knowing & Transition Shock

Judy Duchscher's (2008) research has focused on advancing the knowledge of role transition of NGNs into professional practice. She has developed various stages of transition and identified the phenomenon referred to as *transition shock*. According to Duchscher (2008), the NGN transition can be recognized as a "journey of becoming" (p. 445), developmentally, professionally, intellectually, and emotively. She describes this transition experience as *doing*, *being*, and *knowing*. Duchscher's research is globally recognized and used as a supportive framework in designing hospital nurse residency and integration programs.

Doing. In the first stage, the NGN adjusts to their new role and responsibilities as a nurse through active learning. During this learning and performing of roles, they may experience anxiety, stress, and exhaustion (Duchscher, 2012). This complements Benner's advanced beginner level, as the focus is on tasks and prescriptive decision making (Duchscher, 2008). NGN energy levels are spent on coping with their new professional role and even adjusting to new adult responsibilities, such as paying off school debt, purchasing a car, paying rent, and adjusting to new personal and working relationships (Duchscher, 2008). Embedded within the doing stage, is a phenomenon known as transition shock. Transition shock may or may not occur, contingent on the NGN's knowledge, experience and personality (Duchscher, 2008).

Transition Shock. On entry to practice NGNs are challenged with multifaceted changes physically, intellectually, emotionally, developmentally, and socioculturally (Duchscher & Windey, 2018). Transition shock is the "experience of moving from the known role of a student to the relatively less familiar role of professionally practicing nurse" (Duchscher, 2008, p.1105). It incorporates all aspects of a NGN's position that can either modify or influence their

experience including designated roles, responsibilities, knowledge base and performance expectations (Duchscher & Windey, 2018). Transition shock generates exhaustion and isolation, resulting from disorientation, confusion, and ambiguity, denoting their new-found reality (Duchscher, 2012). Its duration and intensity is tailored to personal experiences.

Duchscher's transition shock is reticent of Kramer's (1974) reality shock, as it introduces learning a new role and underscores "school-bred values conflict with work-world values" (Kramer, 1974, p. 4). However, Duchscher's (2008) transition shock is experienced one to four months post-orientation, and Kramer's (1974) reality shock is reported following the honeymoon phase. Conceptually, Kramer's reality shock (1974) focuses on physical, sociocultural and emotional responses, whereas Duchscher's model also incorporates intellectual and developmental responses to transition.

Being. In the being stage, the NGN demonstrates improvement in thinking, knowledge, and skills, along with comfort in their new role. The NGN finds a balance in their work and life, through searching, questioning themselves, and examining their actions. (Duchscher, 2012) This phase reinforces Benner's advanced beginner stage (Duchscher, 2008). Although the NGN still has some self-doubt and remains apprehensive, they now seek reassurance (Duchscher, 2012). Near the end of this stage, NGNs are less concerned and consumed by work and are more focused on their personal growth. (Duchscher, 2008).

Knowing. The final stage, knowing, is when the NGN is more confident in responsibilities and tasks, and understands the reality of nursing. They have learned to explore, critique and accept the journey they have traveled (Duchscher, 2012). Stressors experienced during this phase center on the disparities within the healthcare system as opposed to role discrepancies (Duchscher, 2008). The NGN becomes more organized and prioritizes care with more confidence and knowledge in the knowing phase (Duchscher, 2008).

1.2.5 Novice to Expert and Stages of Transition

Both Patricia Benner's *Novice to Expert* and Judy Duchscher's *Stages of Transition* theories are pragmatic approaches to exploring and understanding the lived experiences of NGNs. Both theories are broadly used in nursing education to establish an understanding of the NGNs early work experiences (Altman, 2007) and are central to this thesis. Benner's theory supports how NGNs clinical skills and abilities are developed over time and with experience (Benner, 1984) and Duchscher's (2008) theory expands on their transition process. Both theories provide systematic and categorization of competency levels, and each assert that one must have experience to explain complex clinical situations (Dumchin, 2010).

Duchscher's theory (2008) also addresses social, emotional, intellectual, and developmental changes that affect the NGNs initial stage of role adaption and ability to transition into their first role as a nurse. Duchscher (2008) refers to their transition as the "*journey of becoming"* (p. 441), in which NGNs float between the unique stages of *doing, being,* and *knowing*. These theories may be useful in organizing and understanding the findings extracted during the systematic review (SR) of qualitative evidence. These variations of change will help researchers understand the transitional progression typically experienced and will provide a comprehensive knowledge base to make sense of the findings extracted during the SR of qualitative evidence (Murray et al., 2019).

1.2.6 NGNs: Practitioners in Transition

NGNs are beginner practitioners with entry level competencies who bring with them, current evidence-informed knowledge, and a dynamic enthusiasm for the workplace environment (College of Nurses of Ontario, 2019; Murray et al., 2019). NGNs are described as keen, eager to learn, they generally enter the workforce with clinical naivety, lack self-assurance in skills and need professional reassurance about how the health care system functions (Ihlenfeld, 2005).

They are an essential human resource and given imminent nursing shortages and a large generational cohort entering retirement (Laschinger, 2012), NGNs are invaluable in sustaining the health care workforce (Buerhaus et al., 2009). However, their integration into clinical practice is not without challenges. Knowledge and experience acquired in nursing school alone is generally insufficient in promoting immediate independence and competence in nursing practice, highlighting the considerable preparation-practice gap that affects NGNs' (Hickerson et al., 2016); their transition to practice is described as both complex and iterative (Duchscher & Windey, 2018).

Duchscher's (2012) stages of transition represent perpetual movement between stages, affecting the NGNs emotions (i.e., fear, anxiety, stress and frustration), their knowledge base, their social interactions, and the impact of their inexperience with complex clinical situations, which can ultimately influence their transition from student to practicing nurses (Duchscher 2012; Duchscher & Windey, 2018; Edwards et al., 2015).

While NGNs are qualified practitioners, they are somewhat unfamiliar with their role expectations upon entry (Murray et al., 2019) and are expected to 'hit the ground running' (Boamah et al., 2016; Duchscher, 2009). With minimal clinical experience and exposure to clinical scenarios, NGNs have relatively little experience in recognizing vital indicators of deterioration in a patient and, generally speaking, lack advanced critical thinking skills (Murray et al., 2019). Their developing clinical reasoning and clinical decision-making skills therefore necessitates and emphasizes the importance of guidance and support from experienced nurses during NGNs' transition to practice (Benner, 1984).

Transitioning to practice has also been represented as a struggle between practice reality and preconceived notions of the nursing workplace environment (Maben, et al., 2006; Price, 2008). Following graduation, NGNs are expected to perform efficiently, while trying to adjust to

physical and emotional demands of unpredictable work environments (Duchscher & Windey, 2018; Trepanier et al., 2012). They are almost immediately expected to manage standard patient assignments, have knowledge and skills to critically think during emergent situations and be accountable for their actions (Chesnutt & Everhart, 2007; Foster et al., 2016).

Combining their relative lack of clinical exposure and learning to adapt to organizational constraints (i.e., working short staffed and managing work life imbalances), NGNs can experience emotionally charged reactions which presents challenges and may hinder their successful transition (Boamah et al., 2016). As a result, experienced nurses should recognize that while NGNs may offer theoretical knowledge and some clinical experience, they are not expert level clinicians and should therefore not be expected to perform beyond entry-level competencies on hire. One study noted that nurse managers and preceptors expected NGNs to be at Benner's (1982) *competent* stage shortly after their orientation period (Charette et al., 2019). However, as Benner (1982) suggested, this stage is typically observed in nurses with two to three years' experience. Because NGNs consistently seek acceptance from their colleagues during this stage, the setting expectations beyond what ought to be expected of a NGN can generate poor integration and transition into the workplace (Charette et al, 2019; Duchscher & Windey, 2018) and subsequently elevate NGN turnover rates (Blegen et al., 2017; Spector et al., 2015).

In addition to transition experiences within nursing practice itself, NGNs are often simultaneously confronting societal transitions. Many NGNs are beginning a new life, leaving the comforts of familial and educational supports, all while anticipating what personal and professional challenges may be in store for them. These identified personal challenges can also impact work-related stress (Fink et al., 2008). Some are learning how to manage their own finances and making major purchases as well as learning to live independently (Duchscher, 2012). Importantly, NGNs are establishing personal and professional relationships to feel

accepted in their new social structure (Duchscher, 2012) and the complexity of their transition experience may extend beyond the clinical context. As previously described, NGNs may experience Duchscher's (2008) *transition shock* with resultant feelings of confusion, doubt, loss, disorientation and depending on its intensity and duration may ultimately encourage NGN turnover (Duchscher & Windey, 2018).

1.3 NGN Turnover

Turnover is the process where nursing staff leave or transfer from one unit to another within the hospital setting (O'Brien-Pallas et al., 2006). NGN turnover rates in the first year of practice generally fluctuate between 12% to 25% (Blegen et al., 2017; Spector, et al., 2015). It was reported that 17.5% of NGNs leave their first job within one year of employment (Kovner et al., 2014), up from 13.4% noted in 2007 (Kovner et al., 2007). Even more concerning is that 33.5% will turnover after two years of employment (Kovner et al., 2014).

Turnover rates are significantly higher in NGNs than in experienced nurses (Hayes, et al., 2011). Researchers in one American study that surveyed 3000 hospitals in 2019, reported that 27.6% of NGNs resigned from their first position (Nursing Solutions Inc, 2020). In the province of Quebec, Canada, NGN turnover has been reported to be as high as 61.5% (Lavoie-Tremblay et al., 2008).

While the literature requires updating, the various costs of turnover are significant and affect both the healthcare workplace and community (Jones, 2008). One report estimated some agencies spend up to $300,000 USD annually because of nurse turnover (Pricewaterhouse Coopers, 2007). Costs incurred include recruitment strategies, hiring new nurses, paid orientation time, increases in overtime payout, and decreased productivity (Brewer et al., 2012). Not only is turnover a financial burden, but also a concern for quality of patient care; it may result in high nurse-to-patient ratios due to staffing shortages and has the potential to lead to burnout and job

dissatisfaction (Jones, 2008). One study indicated that the risk of patient mortality was 6% higher on units understaffed versus those working at full capacity (Needleman et al., 2011). Turnover also negatively influences patients, staff and the care provided within an agency. It can result in human capital loss, disruption of continuity of care (Silvestre et al., 2017), ineffective discharge planning, misinterpreted policies and procedures, miscommunication among staff, and contribute to patient safety concerns secondary to errors (Jones, 2004; Jones, 2008).

1.4 NGN Transition to Critical Care Nursing Practice

Critical care environments are designed to provide 24-hour, intensive observation and deliver the highest level of care to critically ill patients who often require advanced or prolonged respiratory support while maintaining more than one organ system (Critical Care Services Ontario [CCSO], 2018; Canadian Association of Critical Care Nurses [CACCN], 2017). Critical care nurses provide care using evidence-informed protocols and standards to patients challenged with immediate life-threatening conditions, where vital body organs are at risk of failing. To provide sufficient care in these environments, one must develop advanced problem-solving and theoretical knowledge, advanced critical thinking, and judgment skills, possess strong leadership and communication skills by means of specialized knowledge to continuously assess, monitor, and manage patients to promote physiological balance (CACCN, 2017; CCSO, 2018).

Critical care nursing requires complex skill acquisition and the provision of specialized care in a highly technical, fast paced environment (Panunto & Guirardello, 2012). Critically ill patients are considered high risk and often have extreme variations in illness severity which necessitates the use of advanced technology (including life-support) for diagnosis and treatment (Panunto & Guirardello, 2012). Notably, the severity of illness among patients in Canada has risen, in part due to an aging population; since 2014 the percentage of Ontarians 50 years and older has risen by 9% increasing the critical care needs for those older than 65 years (CCSO,

2019). It is anticipated that the latter will be a contributing factor to an expected rise in ICU admissions in the next decade (CIHI, 2016).

While the transition experiences of NGNs hired into generalized areas of practice may be challenging, it is possible that these challenges are magnified for NGNs hired directly into areas of specialty nursing practice, such as critical care (i.e., intensive care units (ICU) and emergency departments [ED]). Other factors further increasing complexity of care include increasing number of patients with acute, chronic, or complex co-morbidities (WHO, 2015), hospital acquired infections (Musau et al., 2015), older and frail patients with chronic illnesses (Zwijsen et al., 2021) and new advances in technology (Buchan et al., 2013). Clinicians, including RNs in these clinical environments, require specialized training and knowledge to function and are required to readily adapt to high complexity and constant change.

Like other areas of practice, to alleviate the nursing shortage, one solution has been to employ NGNs directly into critical care settings (Morris et al., 2007, Proulx & Bourcier, 2008). Given the context of these clinical environments (ICUs and EDs) additional pressure may be experienced by NGNs during their transition period. Consequently, offering NGNs in critical care additional support, guidance, and accessible resources through mentorship programs during their transition to critical care practice was initiated to improve NGN retention and promote NGN confidence and competence in the workplace (Schroyer et al., 2020).

A critical care RN is trained to care for critically ill patients through specialized, on-going education and on-site training that is in *addition to* their basic nursing education (CACCN, 2019). Critical care nurses are required to possess advanced assessment and intervention skills to effectively manage and recognize complex, unpredictable clinical situations, where life sustaining measures (e.g., mechanical ventilation and administration of potent vasoactive medications) are required (CACCN, 2019). Ongoing education and support are essential to

maintain competence in these rapidly changing critical care nursing environments (CACCN, 2019).

1.5 NGN Experiences in Critical Care

1.5.1 ICU Experiences

In a recent SR of qualitative evidence by Elias and Day (2020), experiences of NGNs working in adult ICUs in their first two years of employment were reported. This review which was comprised of eight studies reported on five common themes: 1) ICU readiness, 2) an emotional spectrum, 3) developing relationships, 4) the journey to self-satisfaction, and 5) commitment to ICU (Elias & Day, 2020).

ICU readiness addressed issues relating to undergraduate preparation, health care orientation strategies and the challenges NGNs faced relating to how prepared they felt starting their new roles in ICU. NGNs felt that their undergraduate education, both theory and practice, did not prepare them effectively to work in critical care environments (Elias & Day, 2020). This was especially true for NGNs those who did not have previous student placements in the area (Elias & Day, 2020).

The theme titled “an emotional spectrum” described the context driven range of emotions experienced by NGNs in ICU (Elias & Day, 2020, p. 338). Both positive and negative emotions were described including excitement related to the ‘adrenaline rush’ felt when actively saving someone’s life, as well as the fascination of the complexities of the environment. Fear of making errors was experienced near the end of the NGNs’ orientation periods as they began to work independently from their mentors (Elias & Day, 2020).

Developing relationships with co-workers, patients, and families was important to NGNs as they entered the profession. The mentor-mentee relationship was deemed essential to NGNs

but revealed mixed views. While some felt their relationship with their mentor was beneficial because it provided them with a role model, others experienced ridicule which was harmful to their work experience (Wiles, 2010). The NGNs' journey to becoming confident practitioners incorporated improved critical thinking skills and competence. Overtime, NGNs felt more confident in their clinical judgment. They were able to critically reflect on their own practice and learned to recognize their own personal achievements (Elias & Day, 2020).

The NGNs' commitment to staying in their first paid nursing role revealed mixed feelings. While most chose to stay in their ICU role, others did not. It was debated whether previous clinical experience was a contributing factor to NGN satisfaction and retention in ICU (Elias & Day, 2020). If challenges transitioning into critical care environments are more prominent than in general units, understanding the NGN's experiences within this specialty context is key. In general, when transition experiences are self-appraised as less than favourable, NGNs are likely to change clinical settings or leave the profession all together (Buchan & Aiken, 2008; Foster et al., 2016).

1.5.2 Emergency Department Experiences

In addition to the ICU, EDs are distinct critical care areas that provide care to patients of all ages, presenting with illnesses and conditions of various levels of acuity. According to the National Emergency Nurses Association in Canada (NENA) (2018), the contexts of EDs are unique. EDs are stressful, chaotic environments that must plan to provide emergent care to individuals with varying levels of acuity and intensity (NENA, 2018). The environment is characteristic of fluctuating patient volumes and encompasses a broad scope of patient acuity with various health problems (Emergency Nurses Association of Ontario [ENAO], 2016). The latter may encompass but is not limited to delivering babies, encouraging health promoting behaviours, to active resuscitation which does not preclude the need to provide end-of-life care.

Patients requiring emergency care may have chronic disease, acute exacerbations of chronic conditions or imminent life-threatening critical illness (NENA, 2018). As a result, ED environments are constantly changing which can contribute to a variety of workplace stressors (Adriaenssens et al., 2015) with the potential to lead to poor mental health effects, such as, anxiety, depression, compassion fatigue, burnout, and post-traumatic stress disorder for ED clinicians, including RNs (Bruyneel et al., 2016; Cocker & Joss, 2016).

An ED nurse is required to make immediate life and death decisions using broad knowledge and skill to care for various complex health conditions (Adriaenssens et al., 2011). The role of the ED nurse includes providing care in an uncontrolled environment through assessing, diagnosing, planning, and intervening, followed by an evaluation of patient outcomes (NENA, 2018). Key patient-related nursing responsibilities include triage, prioritization, stabilization, resuscitation, and crisis intervention as well as emergency operations readiness (NENA, 2018). ED nurses educate patients and family regarding their condition and appropriate follow up measures, they review health promotion strategies and patient specific discharge planning and care (NENA, 2018).

While not entirely unique to the ED environment, it is important to recognize that ED nurses are exposed to verbal and physical threats, violent behavior, and are confronted with death, mutilation, and suffering (Adriaenssens et al., 2015; Kilcoyn & Dowling, 2007). Frequent exposure to workplace violence and aggression can induce emotional distress, exhaustion and fatigue and is common among ED staff (Potter 2006; van der Ploeg & Kleber 2003). Post-traumatic stress disorder is notably higher in ED nurses than in any other specialty (Adriaenssens et al., 2012; McDermid et al., 2020).

In contrast to the body of literature specific to NGN experiences in ICU contexts, very little research has focused on NGN experiences during their first few years in EDs (Patterson et

al., 2010). With an increased demand of emergency services by the public (Bruyneel et al., 2017), retention and recruitment of these RNs is essential to the delivery of high-quality care in the ED. In considering the similarities of the ICU and ED clinical context, further understanding of NGN experiences in this area of critical care practice is merited.

1.6 Turnover in ICU and ED Nursing

Given the recent high turnover rates of NGNs in general practice, we must acknowledge the significant impact of beginning one's career in a critical care setting. In 2018, 17% of Ontario's new hires to critical care were NGNs and they were hired into adult critical care units (CCSO, 2019). Over the past decade there has been an increase in nurses under the age of 30 and a significant decrease in nurses aged 40-49 (CCSO, 2019). One study indicated a turnover rate of 92% of nurses hired to hospital specialty areas that felt ill-prepared and unsupported during their first year of employment (Nursing Executive Center, 2001). Importantly, the most recent data specific to a critical care context, reports turnover of staff including NGNs at 26.7% (O'Brien-Pallas et al., 2010). In critical care areas such as adult and neonatal intensive care, the 2018 turnover rate in the province of Ontario alone was 10%, with most nurses leaving have less than three years of experience (CCSO, 2019).

Importantly, turnover rates tend to be higher in specialty nursing units, causing supply and demand concerns (Sawatzky & Enns, 2012). One longitudinal study in Belgium reported 19.7% (N=50) participants left their ED job after only 18 months (Adriaenssens et al., 2015). Sawatzky and Enns (2012) conducted a cross-sectional survey on ED nurses in Manitoba (N=261) and among all participants, 26% reported plans to leave their current ED job within a year of the study. Although there are many reasons for turnover, perceptions of one's work environment and job satisfaction have a significant impact on turnover rates in ED (Adams et al., 2019).

Turnover rates in ED significantly affects health care delivery to the community, as nursing staff shortages generate overcrowding, longer wait times and patients who leave without being assessed or seen (Sawatzky & Enns, 2012). It triggers higher patient-to-nurse ratios resulting in poor patient outcomes (Aiken et al., 2002; Robinson et al., 2004). Necessary measures are required to improve the work environment and increase job satisfaction to retain ED nurses. ED nurse turnover indirectly affects the care provided during the patient transition process to ICU, as patients typically transfer to ICU once stabilized in ED. To ensure successful patient transfers and quality care from ED to various critical care units requires competence and efficiency in our nursing workforce.

In summary, NGNs in critical care face additional challenges as they transition to practice because they require specialized training and knowledge in environments that are highly complex and constantly changing. The stressors they experience in their new role are challenging and can create unease and apprehension (Schroyer et al., 2020). Stressful situations and complex care of patients may affect NGNs' learning and confidence levels (Botma et al., 2012). Establishing functional organizational practices and procedures can help recruit and retain these valuable human resources in health care (Buerhaus et al., 2009) and prevent them from leaving the nursing workforce (Lalonde & McGillis-Hall, 2016). Therefore, it is imperative to provide support, guidance, and secure access to resources during the NGN's transition to professional practice, to help improve retention, as well as developing confidence and competence in the workplace (Schroyer et al., 2020).

1.7 Canadian Institutes of Health Research Project Grant: Exploring New Graduate Nurses' Transition into Critical Care Nursing Practice

This thesis project intersects with the Canadian Institutes of Health Research (CIHR) funded project titled: Exploring New Graduate Nurses' Transition into Critical Care Nursing

Practice (Spring 2019 Project Grant #407408). The aim of the larger CIHR study is to address an important empirical gap identified in nursing practice, which is establishing best practices specific to the training and support of NGNs transitioning into critical care areas (ICU and ED). The CIHR funded study was designed to meet four objectives:

Objective 1: To identify, describe, and assess effectiveness of interventions that support NGN transition into critical care clinical practice.

Objective 2: To determine readiness for practice and intent to turnover in NGNs working in critical care settings (ICU and ED) during their transition to clinical practice while also updating old data and quantifying the current Canadian context.

Objective 3: To describe the transition process for NGNs working in ICU and ED settings, including factors contributing to and protecting against intention to leave.

Objective 4: To develop a joint, evidence-informed national guideline for NGN transition into critical care (ICU and ED) nursing practice.

My role in the larger CIHR study was that of Research Trainee. My Masters of Science in Nursing thesis helps to meet Objective 3. Given the impacts of the COVID-19 pandemic on research, and the tremendous impact that the pandemic has had on critical care resources (both in ICUs and EDs) a decision was to include a systematic review (SR) of qualitative evidence in lieu of interviews with NGNs in ICU and EDs. The aim of the review was to synthesize what is currently known about the experiences of NGNs as they transition into areas of critical care nursing practice and to produce synthesized statements to inform practice. This proposed SR is purposely broad in that it aims to capture peer-reviewed, qualitative studies that have explored NGNs transition experiences in critical care (ICU and ED).

This current review will build on the findings of Elias and Day's (2020) SR while also expanding search and inclusion criteria to include all pediatric and neonatal critical care in

addition to adult settings and includes ED contexts. We will consider how the expanded review lends consistency to the findings of Elias and Day (2020) and aim to provide new insights into this experience as identified in a broader range of literature. Given CIHR's mandate to consider sex and gender, we will pay attention to elements specific to transition experiences of nurses who identify as a gender minority if this is evident and reported within the included literature.

Research Question

What are the experiences of NGNs as they transition into critical care nursing practice?

Research Aims

1. To describe the transition of NGNs into critical care nursing practice.

1.8 Thesis Structure

1.8.1 Chapter 1: Introduction to the Research Problem

This chapter has provided an overview of the research problem, relevant theories specific to transition, literature on the topic of NGN broadly and with respect to critical care and has stated the research aim and objectives.

1.8.2 Chapter 2: Methods

Chapter two provides an overview of review and synthesis methodologies as well as a rationale for why a SR of qualitative evidence is the preferred methodology to address the research question. The review protocol is outlined in detail.

1.8.3 Chapter 3: New Graduate Nurses' Transition in Critical Care: A Systematic Review of Qualitative Evidence

Chapter three is comprised of a manuscript that has been prepared for submission to International Journal of Nursing Studies (IJNS) and presents the findings of the SR of qualitative evidence.

1.8.4 Chapter 4: Integrated Discussion

Chapter four concludes the thesis with an integrated discussion. The findings of the SR of qualitative evidence are summarized and discussed within the context of extant literature and the state of the science is described implications for nursing practice, research and education are highlighted. Strengths and limitations of the thesis are discussed followed by a conclusion of the thesis.

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Chapter 2: Methods

In this chapter the significance of qualitative research and its importance in understanding phenomenon and lived experience is discussed. I provide an overview of review methodologies and provide a rationale for why a SR of qualitative evidence was the preferred methodology to address the research question. The qualitative evidence synthesis protocol is outlined in detail.

2.1 Qualitative Research

Qualitative research is an evolving methodological movement positioning observers in an individuals' natural setting by means of interpretive practices (research methodologies and methods) that make the participants' world visible (Chicca, 2020). Qualitative researchers embrace various approaches to understanding and answering research questions and ultimately seek to explore and understand in-depth, the complex, holistic views of human phenomena integrating personal meanings, experiences, or accounts of events in one's natural setting rather than in an experimental setting (Ailinger, 2003; Lockwood et al., 2015). Findings from qualitative research establish how context, history, and individuality generate meaning and explain the human response to phenomena (Kearny, 2001).

Since qualitative studies involve systematically gathering, organizing, describing, and interpreting textual, verbal, or visual data, to answer questions of a personal or social nature, researchers must acknowledge and understand real-life experiences and embrace diversity within their interpretations (Hammarberg et al., 2015). Consequently, data is often collected through methods that preface storytelling and first-hand accounts (e.g., interviews) of experiences that describe events, explore context and the meaning(s) attributed to lived experience (Mauk, 2008). Ultimately a focus is placed on words spoken rather than quantifying findings (Meadows-Oliver, 2009).

Qualitative research supports various interpretive frameworks, namely, post positivism, social constructivism, transformative frameworks, postmodernism, pragmatism, feminist theories, and critical theory (Creswell & Poth, 2018). For the purposes of this research study, a pragmatic approach provides the overarching paradigmatic stance. As will be explained, a pragmatic approach is consistent with the chosen review methodology. Pragmatic research empowers a researcher to highlight a phenomenon of interest by using any epistemological and methodological approach that corresponds to the research question, and produces meaningful results for participants (Houghton et al., 2012).

Applying and/or incorporating multiple methodologies most appropriate and practical for answering complex research phenomena directly aligns with the philosophical tradition pragmatism (O'Reilly et al., 2018). Pragmatism acknowledges individual context and experience, suggesting that multiple forms of reality exist and helps promote the development of theory directly from practice (Christ, 2013; O'Reilly et al., 2018). It emphasizes the importance of desired outcome(s) of research rather than process (Dewey, 1998). This SR of qualitative evidence aligns with the pragmatic approach, relying on its findings, its pertinence to current practice and suggests a 'line of action' at an individual and community level (Hannes & Lockwood, 2011).

2.1.1 Qualitative Research, Systematic Reviews and Evidence-Based Nursing Practice

Qualitative research provides a foundation for evidence-based practice (EBP) (Meadows-Oliver, 2009) and helps yield a complete representation of participants under investigation (Atkins, 2007) by establishing an in-depth construction of a phenomenon, population, or clinical situation (LoBiondo-Wood & Haber, 2013). EBP merges best available research evidence with clinical expertise, while considering participants' values, preferences, and current situation to support clinical decision making (Flemming, 2007; Meadows-Oliver, 2009). A SR is considered

the highest level of evidence in the research hierarchy (LoBiondo-Wood & Haber, 2013), reinforcing the rationale for implementing this method to answer my research question.

SRs summarize best available evidence from previous research studies on one topic (Houde, 2009). A SR is an analysis relying on "a focused question and predetermined protocol to identify, critique, and ultimately summarize different primary research studies" (Baker & Weeks, 2014, p. 464), delivering an impartial, comprehensive synthesis of findings (Aromataris & Pearson, 2014; Egger et al., 2001; Khan et al., 2003; Tricco et al., 2011). Its purpose is to gather and synthesize all valuable, relevant research studies regarding one topic into one document (Aromataris & Pearson, 2014; Baker & Weeks, 2014) and to certify the SR can be easily reproduced or audited (Aromataris & Pearson, 2014; Johnson et al., 2000; Moher et al., 2015).

The rationale for conducting a comprehensive SR is to present researchers with a well-organized synthesis of findings (Hannes et al., 2007) and delivering confidence in the evidence collected through a rigorous, transparent process (Aromataris & Pearson, 2014; Rew, 2010; Tricco et al., 2011). Findings are used to inform clinical practice, policy, and decision making in health care settings (Aromataris & Pearson, 2014; Moher et al. 2015).

One benefit of summarizing best available evidence on a topic using a SR approach, is a step-by-step process supporting minimal errors and bias, through clearly established protocols and the foundation of specific inclusion and exclusion eligibility criteria (Medina & Barria-Pailaquilen, 2010). SRs appraise research using a precise, more objective approach (Egger et al, 2001) ensuring chosen research studies will appropriately answer the research question at hand. They offer a framework where findings from independent research studies can be incorporated to deliver compelling evidence on a topic (Evans & Pearson, 2001).

Various types of SRs can be produced, such as quantitative, qualitative, or mixed research reviews. Given the research question - *What are the experiences of NGNs as they*

transition into critical care nursing practice? and research aim - *To describe the transition of NGNs into critical care nursing practice.* To accurately explore NGN transition experiences in a critical care setting, a SR of qualitative evidence was identified as the most appropriate review methodology. Integrating results from various primary qualitative research studies offers a pragmatic, rich and realistic approach to synthesis of findings (Jones, 2004; Murphy et al., 1998; Porritt & Pearson, 2013) and strengthens the review's credibility (Finfgeld, 2003). Using single primary qualitative research studies and synthesizing their findings, qualitative evidence syntheses aim to "create a systematic logic within which findings from distinct studies in a field can be rigorously integrated into stronger and more generalizable knowledge claims" (Thorne, 2009, p.571).

2.1.2 Systematic Reviews of Qualitative Evidence Synthesis

A synthesis of knowledge involves combining diverse "ideas, influences or objects into a new whole" (Pearson, n.d., p.6). A qualitative SR aims to integrate and interpret findings from qualitative research studies (Sandelowski & Barroso, 2007). More specifically, a qualitative evidence synthesis (QES) is a rigorous, interpretive process of collecting rich, qualitative research findings from primary sources, to promote a comprehensive examination of a phenomenon (Flemming, et al., 2019). The process welcomes various perspectives, as well as contradictory viewpoints (Flemming et al., 2019; Sandelowski & Barroso, 2007).

Conducting a QES can assist in recognizing barriers, facilitators, and significant gaps in the current evidence relating to NGN transition broadly, as well as in the critical care nursing context (Flemming et al., 2019). QES offers methods to nurse researchers "to navigate their way to the best available evidence to inform their decision-making" (Aromataris et al., 2015, p. 133) and apply relevant information to clinical practice environments.

QES methodologies are located on a broad scale from an epistemological perspective. On one end of the scale, they highly yield constructivist approaches to knowledge generation and at the other end, examine the world in a realist perspective where reality exists independent of human construction (Booth, 2020). Five distinct positions on the epistemological scale include subjective idealism, objective idealism, critical realism, scientific realism, and naïve realism (Booth, 2020). In this regard, Lockwood et al. (2019) note that "methodological diversity should be encouraged in order to acknowledge and meet the broad range of knowledge needs associated with scholarship and theory generation, as well as policy and practice" (p. 1).

QES offer valid answers to specific questions about clinical practice and/or examining a range of views regarding interventions or health concerns (Munn et al., 2014). Primary research concerning nursing interventions in health care settings focusing on the intervention's acceptability, functions and outcomes are well supported by QES methodology (Booth, 2020). QES can answer intricate questions about issues in healthcare that cannot be answered using quantitative research (Munn et al., 2014; Pearson, 2004; Sandelowski & Leeman, 2012) as well as offering insight to culture of communities, explore how individual's experience illness and health care, and evaluate healthcare services provided such as health promotion and community development (Munn et al., 2014).

2.2 The Joanna Briggs Institute

The Joanna Briggs Institute (JBI) was founded by Professor Alan Pearson in 1996, providing researchers with a rigorous, transparent, and systematic process for the conduct and development of SRs (Aromataris & Pearson, 2014). JBI's goals are to establish collaborative global entities, train systematic reviewers worldwide and to develop best practice information guidelines (Joanna Briggs Institute, n.d.). Their initial vision has far exceeded expectations, as they are partnered with Wolters Kluwer and Ovid, supporting access to all their valuable

resources and are renowned for its international collaboration of health scientists, professionals and researchers committed to best clinical practice through promoting and supporting evidence-based healthcare (The Joanna Briggs Institute, n.d.). Their focus is "getting the appropriate information into the hands of those who determine health policy and who deliver healthcare is fundamental to improvements in healthcare delivery and health outcomes" (Pearson & Jordan, 2010, p. 98).

2.2.1 JBI Model for Evidence-based Health Care

JBI originally established their model of evidence-based healthcare (EBHC) in 2005 (Pearson et al., 2005) and later revised their model to ensure its structure and language supports recognition at an international level (Jordan et al., 2019). They hypothesized evidence-based practice as "clinical decision-making that considers the best available evidence; the context in which the care is delivered, client preference and the professional judgment of the health professional" (Pearson et al., 2005, p. 209). There are four key components to the EBHC model that inform global health, including evidence generation, evidence synthesis, evidence transfer, and evidence utilization (Jordan et al., 2019). This model fosters a fluid and iterative process where researchers can begin at any segment of the model depending on individual research goals and aims.

This current QES is best situated within the evidence synthesis segment of the model. QES findings will be used to support the fourth and final objective in the CIHR funded study, to develop a joint, evidence-informed national guideline for NGN transition into critical care (ICU and ED) nursing practice. Clinical guidelines are recommendations intended to improve care strengthened through a rigorous SR of evidence, achieved by integrating SRs findings while embracing clinical expertise and experiences (Jordan et al., 2019).

2.2.2 Appropriateness of The Joanna Briggs QES Approach

The JBI approach to evidence synthesis has several strengths and is appropriate to answer this research question. Its ability to syndicate multiple views, including contradictory sources, may not necessarily be uncovered in one single study (Flemming et al., 2019; Sandelowski & Barroso, 2007). JBI's SR process (refer to Table 1) presents an in-depth analysis of available literature ensuring that quality of studies chosen are strategically appraised for clinical effectiveness (Pearson, 2004; Pearson et al., 2005).

JBI's methods are clearly organized, summarized, and incorporate an accurate peer review process that is completed prior to publication of the systematic review itself (The Joanna Briggs Institute, 2014). The peer review process validates consistency between the review protocol and the final review itself, consequently reducing risk of bias and supporting the validity of findings (The Joanna Briggs Institute, 2014).

TABLE 1

Systematic Review Process (Pearson et al., 2005, p. 211)

Step	Systematic Review Process Joanna Briggs Institute
1	The development of a rigorous proposal or protocol. The review protocol provides a predetermined plan to ensure rigour and minimize potential bias. It also allows for periodic updating of the review if necessary. All of the stages of the review are described fully in the protocol, and it is usually subjected to peer review before the review commences.
2	Stating the questions or hypotheses that will be pursued in the review.
3	Identifying the criteria that will be used to select the literature.
4	Detailing a strategy that will be used to identify all relevant literature within an agreed time frame.
5	Establishing how the quality of each study/paper will be assessed or critically appraised and any exclusion criteria based on quality considerations.
6	Detailing how data will be extracted from the primary research or text.
7	Setting out a plan of how the data extracted will be synthesized.

JBI's transparent process to critical appraisal has been trialed, tested, and updated methodically and is fundamental to ongoing research credibility, transferability, and theoretical potential (Averis & Pearson, 2003). QES methodology provides answers to multiple research questions, helps refine conclusions and acts as an early approach to traditional systematic reviews (Hannes & Macaitis, 2012). QES research reveals new explanations and deeper insights into a particular phenomenon (Soilemezi & Linceviciute, 2018).

JBI offers a pluralistic design toward collecting evidence and considers qualitative research findings, as "rigorously generated evidence" (Pearson et al., 2005, p. 211). Data collected through opinions, experiences and expertise is widely accepted when results of the research are unavailable (Pearson et al., 2005). The comprehensive inclusion of all available philosophical research evidence and its applicability to various situations and review contexts (Lockwood et al., 2019), namely quantitative, qualitative, opinion and discourse as well as economic analyses, validates the reliability and dependability of JBI's method and process (Pearson et al., 2005).

I registered and successfully completed the JBI Comprehensive Systematic Review Training workshop offered June 2020 virtually by Queen's University in Kingston, to ensure the QES is rigorous and completed according to JBI regulations. The workshop prepares researchers to develop, conduct, and report systematic reviews of evidence. Upon completing this 5 day workshop, I was competently trained to examine the nature of evidence in health care and how it is transferred to clinical practice.

2.3 Data Synthesis

JBI (2001) developed a transparent process including two components of data synthesis, 1) meta-aggregation, and 2) synthesis (Pearson et al., 2011; The Joanna Briggs Institute, 2014), to produce synthesized statements that will inform practice and develop directives or "lines of

action" within the context of the clinical environment (Hannes & Lockwood, 2011, p. 1634; Lockwood et al., 2015, p. 181). Its focus is on a study's finding and not necessarily the data collected. Summarized statements relevant to practice that validate meanings of themes are resultant from findings in original qualitative studies (Pearson, n.d.). Meta-syntheses merge unique components of primary qualitative research applying a rigorous process to the analysis to build new knowledge (Pearson, 2004; Thorne et al., 2004). The objective of a qualitative meta-synthesis is "theory development, higher level abstraction, and generalizability in order to make qualitative findings more accessible for application in practice" (Thorne et al., 2004, p. 313). This qualitative evidence synthesis incorporates the JBI methodology.

2.4 Review Protocol

As the trainee, I had a primary role in the development of this review protocol and worked in collaboration with Dr. Brandi Vanderspank-Wright who is the Nominated Principal Investigator for the CIHR funded study as well as my thesis supervisor. As co-Principal Investigators, Drs. Michelle Lalonde and Amanda Vandyk provided critical feedback to ensure that 1) the protocol was rigorous, and 2) that it sufficiently met Objective 3 of the CIHR study.

2.4.1 Introduction

RNs are integral to the Canadian healthcare workforce. Historically, the nursing workforce has ebbed and flowed between current and impending shortages (Tomblin-Murphy et al., 2012). Shortages have been precipitated by an aging nursing workforce, retirement of the 'baby boomer' generation, and fewer nurses entering the profession (Crimlisk et al., 2017; Lindfors & Junttila, 2014). The current nursing shortage is a global concern adversely affecting health care systems worldwide (Cavanaugh & Huse, 2004; Clow et al., 2014; Foster et al., 2016; Lindfors & Junttila, 2014). Consequently, to mitigate shortages and maintain a robust nursing

workforce, health care organizations must rely on a steady influx of new graduate nurses (NGNs).

It can be argued, that while the transition experiences of NGNs being hired into generalized areas of practice are challenging, these experiences may be magnified for NGNs hired directly into areas of specialty nursing practice such as critical care (i.e., intensive care units and emergency departments – neonatal, pediatric, or adult). While hiring practices of NGNs into critical care provide mechanisms to alleviate the stress of the nursing shortage (Morris et al., 2007, Proulx & Bourcier, 2008); working in specialty contexts like critical care, increases the demand placed on NGNs considerably.

NGNs in critical care contexts face additional challenges as they transition to practice because they require specialized training and knowledge in environments that are highly complex and constantly changing. Therefore, it is imperative to provide support, guidance and ensure access to resources during NGNs' transition to professional practice to improve NGN retention, as well as improve their confidence and competence in the workplace (Schroyer et al, 2020).

In a recent SR of qualitative evidence by Elias and Day (2020), experiences of NGNs working in adult ICUs in the first two years of employment were reported. Findings from this review outlined five common themes: 1) ICU readiness, 2) an emotional spectrum, 3) developing relationships, 4) the journey to self-satisfaction, and 5) commitment to ICU (Elias & Day, 2020). Transferability of findings only connects to one area of critical care - adult ICU, other critical care units such as neonatal and pediatric ICUs as well as Emergency Departments were excluded in the review.

Our review will build on the findings from Elias and Day's (2020) review, centering on NGNs working in *most* critical care areas but will expand the scope to include neonatal,

pediatric, and adult ICUs and EDs. Findings will be compared, and new themes will be identified with respect to context.

2.4.2 Review question

What are the experiences of new graduate nurses as they transition into critical care nursing practice?

2.4.3 Review Aims

1. To describe the transition of new graduate nurses into critical care nursing practice.

2.4.4 Methods

2.4.4.1 Protocol and registration. This protocol will be prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-2020) (Page et al., 2021).

2.4.4.2 Design. This will be a review guided by the Joanna Briggs Institute Methodology for Systematic Reviews of Qualitative Evidence (Joanna Briggs Institute, 2014).

2.4.4.3 Eligibility criteria. Eligibility criteria were created using **PICo** (**P**opulation, Phenomena of **I**nterest, **Co**ntext), as specified in the Joanna Briggs Institute methodology (Joanna Briggs Institute, 2014). **P:** New graduate nurses; **I:** Transition to practice experience; **Co:** Critical care settings. *Critical care* will be defined as any general medical and/or surgical intensive care unit (neonatal, pediatric, adult or combination thereof) including specialized units (e.g., neurosurgical intensive care unit, cardiovascular intensive care unit), as well as any emergency department (excluding mental health units). We will include qualitative studies of all methodologies. We will not place any language or date restrictions on the search.

2.4.4.4 Inclusion/Exclusion Criteria.

TABLE 2

Inclusion/Exclusion Criteria

	Inclusion	Exclusion
Participants	New graduate nurses with up to 2 years nursing experience No age range stipulated All genders inclusive Started their career in a critical care setting	New graduate nurses with previous experience in other non-critical areas post-registration Nurses with >2 years post-registration experience (even if commenced working in ICU as a New Graduate Nurse)
Clinical Settings	Intensive care units of any type (Level II and Level III) Intensive care unit specialty areas (cardiac, neurologic, trauma, surgical, etc.) Emergency Departments Emergency Specialty areas (e.g., urgent care areas)	Non-critical care areas post-anaesthetic care units, mental health units and operating rooms.
Patient Populations Served	Neonatal Pediatric Adult	
Health Care Settings	Private and publicly funded secondary, tertiary, and quaternary care settings Academic, Urban and Rural Health care settings	All other settings
Studies	All qualitative research designs or mixed methods with a clear qualitative component	Quantitative research, Grey literature, theses and dissertations
Language	English including languages researchers are able to translate Greek, French	All other
Date	All	None

2.4.4.5 Search strategy. In collaboration with a medical information specialist, we will develop and test the search strategy using an iterative process in consultation with the review team. The strategy will be peer reviewed by another senior information specialist using the PRESS Checklist. Using the OVID platform, we will search Ovid MEDLINE® ALL, including EPub Ahead of Print and In-Process; Other Non-Indexed Citations, Embase Classic + Embase, and PsycINFO. We will also search CINAHL and Education Source on EBSCO and the Nursing and Allied Health and ERIC databases on ProQuest.

2.4.4.6 Data collection and analysis.

2.4.4.6.1 Identifying relevant literature. Screening will be undertaken using Covidence® an online citation screening tool. Covidence® allows for complete screening of citations and clearly displays differences in reviewers' ratings and help mitigate issues pertaining to inter-rater reliability. The selection process will include four steps: 1) removal of duplicates, 2) screen of title and abstract for congruence with eligibility criteria, 3) from titles and abstracts chosen, full-text screen for congruence with eligibility criteria, and 4) hand search of reference lists of included articles. Two team members will independently assess the retrieved citations (steps 2 to 4).

2.4.4.7 Methodological quality. Two reviewers will independently assess the quality of each included study using the Joanna Briggs Institute Quality Appraisal Forms (Checklist for Qualitative Research) and a third reviewer will be consulted as needed if discrepancies cannot be resolved between the first two reviewers. Given the emergent nature of the topic and the descriptive focus of this review, we will not exclude studies based on quality. Instead, we will summarize the appraisal results narratively to report on the state of science in this area.

2.4.4.8 Data extraction. Data extraction is the process of extracting research findings from original sources. These findings are eventually categorized and synthesized. Data extraction forms will be created using a .docx format and pilot tested. Subsequently, relevant data from all included studies will be independently extracted by two members.

2.4.4.9 Data synthesis. Data synthesis will follow a conventional content analysis approach as outlined by Hsieh and Shannon (2005). This process is inclusive of the following steps:

1. Data are read word by word to capture key thought or concepts
2. Notes are then made to by the researcher regarding first impressions, thoughts and preliminary analysis
3. Initial codes and labels are identified
4. Relationships between codes are established
5. Codes are grouped into meaningful clusters
6. Summary statements and supportive evidence are created for each cluster

2.4.5 Rigour

For final SR reporting and review quality we will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRIMSA) statement (Moher et al., 2015) and enhancing transparency in reporting the synthesis of qualitative research (ENTREQ), which includes 21 items under 5 headings: introduction, methods and methodology, literature review and selection process, appraisal, and synthesis of findings (Tong et al., 2012).

2.4.6 Discussion

Supporting NGN into critical care areas like the ICU and ED is important, particularly considering the current nursing shortage. This review will describe NGN transition experiences to help guide and support NGN transition into these critical care areas of specialty nursing

practice and will provide an essential foundation for developing strategies and to help create suitable national guidelines to support NGN transition to practice.

2.4.7 Limitations

It is possible that accounts of NGN experiences of transitioning into ICU and/or ED may be evident in quantitative research and therefore not captured in this review. It is possible that other areas of practice often associated with critical care such as the operating room or post-anesthesia care units may have bodies of literature specific to NGNs but will not be included in this review. It is also possible that included studies may have incomplete or missing information – in this instance we will attempt to contact study authors. In the instance that we encounter unforeseen circumstances where we need to deviate from our protocol, we will document and report the change in the completed review. Finally, as with all reviews, misinterpretation of the original research or data extraction error are possible. To minimize this risk, two team members will independently engage in these activities, and discrepancies will be discussed to reach consensus.

End of review knowledge translation activities will include a peer reviewed publication of the review along with presentations to our knowledge users, the Canadian Association of Critical Care Nurses, and the National Emergency Nurses' Association.

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Chapter 3

A Systematic Review of Qualitative Evidence Exploring New Graduate Nurse Transition to Emergency and Critical Care

This chapter is an unpublished manuscript prepared for submission to International Journal of Nursing Studies.

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Abstract

Background: The current global nursing shortage has been magnified by the current COVID-19 pandemic. To mitigate shortages and maintain a robust nursing workforce, we must rely on a steady influx of new graduate nurses. Unfortunately, there is a considerable preparation-practice gap affecting transition to practice. The transition experience to critical care is further amplified, as these environments involve specialized training and knowledge and are highly complex and everchanging, generating additional pressure on new graduate nurses during their transition phase.

Objective: To describe the transition of new graduate nurses into critical care nursing practice

Design: Joanna Briggs Institute, Qualitative Evidence Synthesis

Setting(s): Critical care settings, intensive care units and emergency departments.

Participants: New graduate nurses with at least 2 years' experience who began their career in critical care

Methods: We searched Ovid MEDLINE® ALL, including EPub, Ahead of Print and In-Process; Other Non-Indexed Citations, Embase Classic + Embase, PsycINFO, CINAHL and Education Source on EBSCO and the Nursing and Allied Health and ERIC databases on ProQuest.

Results: Twelve studies including 201 participants met inclusion criteria. Seventy-eight findings were extracted and grouped into six synthesized themes: (i) Barriers and Facilitators to Communication in Critical Care; (ii) Struggling with Uncertainty during Difficult Situations; (iii) Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care; (iv) Knowledge Develops with Time and Exposure to Complex Clinical Situations; (v) Being a Student in Critical Care; and (vi) Novel Perspectives Related to COVID-19.

Conclusions: This qualitative evidence synthesis affirms that NGN transition is a complex phenomenon, especially in a critical care. Offering support, guidance and ensuring access to resources during transition to professional practice could improve new graduate nurse retention, as well as improving confidence and competence in the workplace. Future research on various transition programs and its impact on transition would offer key stakeholders' significant information to improve orientation programs.

Keywords: New graduate nurse, transition, critical care, transition shock, systematic review

Background

Registered nurses (RN) are integral to the Canadian healthcare workforce. Historically, the nursing workforce has ebbed and flowed between current and impending shortages (Tomblin-Murphy et al., 2012). Shortages have been precipitated by an aging nursing workforce, retirement of the 'baby boomer' generation, and fewer nurses are entering the profession (Crimlisk et al., 2017; Lindfors & Junttila, 2014). The Canadian Nurses Association (CNA) (2009) reported that decreasing attrition rates in RN entry-to-practice programs from 28 to 15 per cent could potentially reduce Canada's nursing shortage to 45, 0000 from 60, 000 by 2022. Unfortunately, this is not the case. Shortages contribute to a variety of negative consequences, including but not limited to, an impact on patient mortality rates, decreased patient satisfaction, contribution to substandard quality of care, potentially increased burnout, job dissatisfaction among nursing staff (Foster et al., 2016; Lindfors & Junttila, 2014). The current nursing shortage is a global concern adversely affecting health care systems worldwide (Cavanaugh & Huse, 2004; Clow, et al., 2014; Foster, et al., 2016; Lindfors & Junttila, 2014).

The COVID-19 Global Pandemic has both exacerbated and magnified this shortage. The International Council of Nurses Policy Brief (2021) focusing on the global nursing shortage has indicated that 13,000,000 will be needed. Findings from recent studies suggest that "rapidly changing policy and information, overwhelming and unclear communication, meeting patient care needs in new ways while staying safe and managing home and personal commitments to self and family" (Crowe et al., 2021, p. 1) and ever-increasing nursing work related stress have negatively impacted RNs from a mental health perspective (Turale & Nantsupawa, 2021). Consequently, one strategy that health care organizations are implementing to mitigate shortages and maintain a robust nursing workforce is to rely on a steady influx of new graduate nurses (NGNs).

New Graduate Nurses: Practitioners in Transition

NGNs are beginner practitioners with entry level competencies who bring with them current evidence-informed knowledge and a dynamic enthusiasm for the workplace environment (College of Nurses of Ontario, 2019; Murray et al., 2019). NGNs are described as keen and eager to learn, but generally enter the workforce with clinical naivety, lack self-assurance in skills and need professional reassurance about how the health care system functions (Ihlenfeld, 2005). NGNs are an essential human resource; given imminent nursing shortages and a large generational cohort entering retirement (Laschinger, 2012), they are invaluable in sustaining the health care workforce (Buerhaus et al., 2009). However, their integration into clinical practice is not without challenges. Knowledge and experience acquired in nursing school alone is generally insufficient in promoting immediate independence and competence in nursing practice, highlighting the considerable preparation-practice gap that affects NGNs' (Hickerson et al., 2016); their transition to practice is described as both complex and iterative (Duchscher & Windey, 2018).

Kramer (1974) originally coined the term reality shock to explain the physical, social, and emotional response to role discrepancies during development from student to professional practice. Building on this influential work, Duchscher (2009) further developed the concept of transition shock, highlighting roles, relationships, obligations, and knowledge of NGNs as dominating both the intensity and length of the transition period. Duchscher's (2012) stages of transition represents perpetual movement between stages, affecting the NGNs' emotions (i.e., fear, anxiety, stress, and frustration), their knowledge base, their social interactions, and the impact of their inexperience with complex clinical situations, which can ultimately influence their transition from students to practicing nurses (Duchscher 2012; Duchscher & Windey, 2018; Edwards et al., 2015).

During transition to independent practice, NGNs are confronted with a practice reality that may conflict with preconceived expectations of the nursing workplace environment (Maben, et al., 2006; Price, 2008). As such, they are often expected to perform efficiently, despite needing to adjust – unexpectedly – to the physical and emotional demands of unpredictable work environments (Duchscher & Windey, 2018; Trepanier et al., 2012).

NGNs can experience emotionally charged reactions, which present challenges and may hinder a successful transition (Boamah et al., 2016). They are often expected to manage standard patient assignments, have knowledge and skills to critically think during emergent situations, and be accountable for their actions, earlier than expected (Chesnutt & Everhart, 2007; Foster et al., 2016). Although NGNs are qualified practitioners, they may be somewhat unfamiliar with their role expectations upon entry (Murray et al., 2019); yet they are expected to 'hit the ground running' (Boamah et al., 2016; Duchscher, 2009). However, Murray and colleagues (2019) suggest that minimal clinical experience and exposure to clinical scenarios may contribute to NGNs lack advanced critical thinking skills and a failure to recognize vital indicators in a deteriorating patient. The current global COVID-19 pandemic is necessitating an increased reliance on NGNs while contributing to cancelled orientations and lost opportunities in education, which has raised concerns about the uncertainty of NGNs' ability to develop competence in their new roles (Crismon et al., 2021).

One seminal study documented that nurse managers and preceptors expected NGNs to control, cope and manage various contingencies of clinical nursing (Benner, 1982) shortly after their orientation period (Charette et al., 2019). However, this stage in development is usually observed in nurses with two to three years' experience (Benner, 1982). Because NGNs consistently seek acceptance from colleagues during this stage, setting expectations beyond what ought to be expected of an NGN can generate poor integration and transition into the workplace

(Charette et al, 2019; Duchscher & Windey, 2018) and subsequently elevate NGN turnover rates (Blegen, et al., 2017; Specto et al., 2015).

In addition to transition experiences within nursing practice itself, NGNs are often simultaneously confronting societal transitions. Many are beginning a new life and leaving the comforts of familial and educational supports, all while anticipating what personal and professional challenges may be in store for them. These acknowledged personal challenges can also impact work-related stressors (Fink et al., 2008). Some are learning how to manage their own finances and making major purchases, as well as learning to live independently (Duchscher, 2012). Importantly, NGNs are establishing personal and professional relationships to feel accepted in their new social structure (Duchscher, 2012). As such, the complexity of their transition experience extends beyond the clinical context.

While the transition experiences of NGNs hired into generalized areas of practice may be challenging, it is possible that these challenges are magnified for NGNs hired directly into areas of specialty nursing practice, such as critical care (i.e., intensive care units [ICU] and emergency departments [ED]). These clinical environments require specialized training and knowledge to function and are highly complex and constantly changing. To alleviate the nursing shortage, one solution has been to employ NGNs directly into critical care settings (Morris et al., 2007, Proulx & Bourcier, 2008), which may generate additional pressure on NGNs during their transition period. Consequently, offering NGNs in critical care additional support, guidance, and accessible resources through mentorship programs during their transition to critical care practice was initiated to improve NGN retention and promote confidence and competence in the workplace (Schroyer et al., 2020).

In a recent systematic review of qualitative evidence by Elias and Day (2020), experiences of NGNs working in adult ICUs in the first two years of employment were reported.

Findings from this review outlined five common themes: 1) ICU readiness, 2) an emotional spectrum, 3) developing relationships, 4) the journey to self-satisfaction, and 5) commitment to ICU (Elias & Day, 2020). Given the scope of the review, the transferability of findings is only applicable to one area of critical care - adult ICU. Other critical care units such as neonatal and pediatric ICUs, as well as emergency departments, were beyond the scope of their review. To build upon Elias and Day's findings and provide a more comprehensive understanding of NGN transition into critical care more broadly, our review will include neonatal, pediatric, and adult ICUs and EDs. Findings from our synthesis will be compared to findings reported by Elias and Day, and new themes will be identified with respect to context (if appropriate).

Review question

What are the experiences of NGNs as they transition into critical care nursing practice?

Review Aim

To describe the transition of new graduate nurses into critical care nursing practice.

Methods

We employed a qualitative evidence synthesis (QES), set within the pragmatic paradigm guided by the Joanna Briggs Institute (JBI) Methodology for Systematic Reviews of Qualitative Evidence (JBI, 2014). A QES is a rigorous, interpretive process of collecting rich, qualitative research findings from primary sources, to promote a comprehensive examination of a phenomenon integrating various perspectives, as well as contradictory viewpoints (Flemming et al., 2019; Sandelowski & Barroso, 2007). It facilitates an understanding of the state of science and assisted our researchers in recognizing barriers, facilitators, and significant gaps in the literature (Flemming et al., 2019).

JBI's process presents an in-depth analysis of available literature ensuring quality of studies chosen are strategically appraised for clinical effectiveness (Pearson, 2004; Pearson et al., 2005). JBI's methods are clearly organized, summarized, and incorporate an accurate peer review process completed in two stages, prior to protocol submission and publication of the systematic review itself (JBI, 2014). We anticipate our results will support and guide the implementation of clinical guidelines for NGNs entering critical care practice environments, strengthened through a rigorous systematic review (SR) of evidence, achieved by integrating SRs findings while embracing clinical expertise and personal experiences.

Protocol Development

The QES protocol was prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA 2020 checklist) (Page et al., 2021).

Eligibility Criteria

Eligibility criteria were created using PICo (**P**opulation, Phenomena of **I**nterest, **Co**ntext), as specified in the JBI methodology (JBI, 2014): P: New graduate nurses with less than or equal to two years' experience; I: Transition to practice experience; Co: Critical care settings. We included qualitative studies of all kinds. There were no date restrictions. Languages were restricted to spoken and read languages of the research team (English, French and Greek). Refer to Table 1 for inclusion and exclusion criteria.

Table 1

Inclusion and Exclusion Criteria

	Inclusion	Exclusion
Participants	New graduate nurses with up to 2 years nursing experience. No age range stipulated. All genders inclusive. Started their career in a critical care setting.	New graduate nurses with previous experience in other non-critical areas post-registration. Nurses with >2 years post-registration experience (even if commenced working in

		ICU as a New Graduate Nurse).
Clinical Settings	*Critical care - defined as any general medical and/or surgical intensive care unit including specialized units* Intensive care units of any type (Level II and Level III). Intensive care unit specialty areas (i.e., cardiac, neurologic, trauma, surgical). Emergency Departments. Emergency Specialty areas (urgent care areas).	Non-critical care areas post-anaesthetic care units, mental health units and operating rooms.
Patient Populations Served	Neonatal Paediatric Adult	
Health Care Settings	Private and publicly funded secondary, tertiary, and quaternary care settings. Academic, Urban and Rural health care settings.	All other settings.
Studies	All qualitative research designs or mixed methods with a clear qualitative component.	Quantitative research, Grey literature.
Language	English including languages researchers are able to translate Greek, French.	All other.
Date	All.	None.

Search strategy

In collaboration with a medical information specialist, we developed and tested the search strategy using an iterative process in consultation with the review team. The strategy was peer reviewed by another information specialist using the PRESS Checklist. Using the OVID platform, we searched Ovid MEDLINE® ALL, including EPub Ahead of Print and In-Process; Other Non-Indexed Citations, Embase Classic + Embase, and PsycINFO. We also searched CINAHL and Education Source on EBSCO and the Nursing and Allied Health and ERIC databases on ProQuest.

Data collection and analysis

Identifying relevant literature

We screened using the online citation screening tool Covidence®. Covidence® enabled complete screening of citations and mitigating issues pertaining to inter-rater reliability. Our selection process included four steps: 1) removal of duplicates, 2) screening of title and abstract for congruence with eligibility criteria, 3) from titles and abstracts chosen, full-text screen for congruence with eligibility criteria, and 4) hand search of reference lists of included articles. Two team members independently assessed the retrieved citations (steps 2 to 4).

Methodological quality

Two reviewers independently assessed the quality of each included study using the JBI Quality Appraisal Form (Checklist for Qualitative Research) and a third reviewer was consulted, as needed, when discrepancies could not be resolved between the first two reviewers. Given the emergent nature of the topic and the descriptive focus of this review, studies were not excluded based on quality. Instead, we summarized appraisal results narratively to report on the state of science in this area.

Data extraction

First, we created data extraction forms using a .docx format and pilot tested them. Next, we extracted research findings from original sources. (Available as a supplemental file on request to the authors). We then categorized and synthesized findings.

Data synthesis

Data synthesis began by summarizing results and exploring relationships in the data collected from our chosen studies. Using this extracted data, we engaged in a conventional qualitative content analysis approach as outlined by Hsieh and Shannon (2005). The process was inclusive of the following steps:

1. Data were read word by word to capture key thought or concepts;
2. Notes were made by the researcher regarding first impressions, thoughts and preliminary analysis;
3. Initial codes and labels were identified;
4. Relationships between codes were established;
5. Codes were grouped into meaningful clusters; and,
6. Summary statements and supportive evidence were created for each cluster.

Once we created a preliminary framework for our findings, we considered extracted data rated as unsupported to see if they also resonated with this coding structure.

Rigour

We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2015) and the enhancing transparency in reporting the synthesis of qualitative research (ENTREQ) (Tong et al., 2012) guidelines for the conduct and reporting of this study.

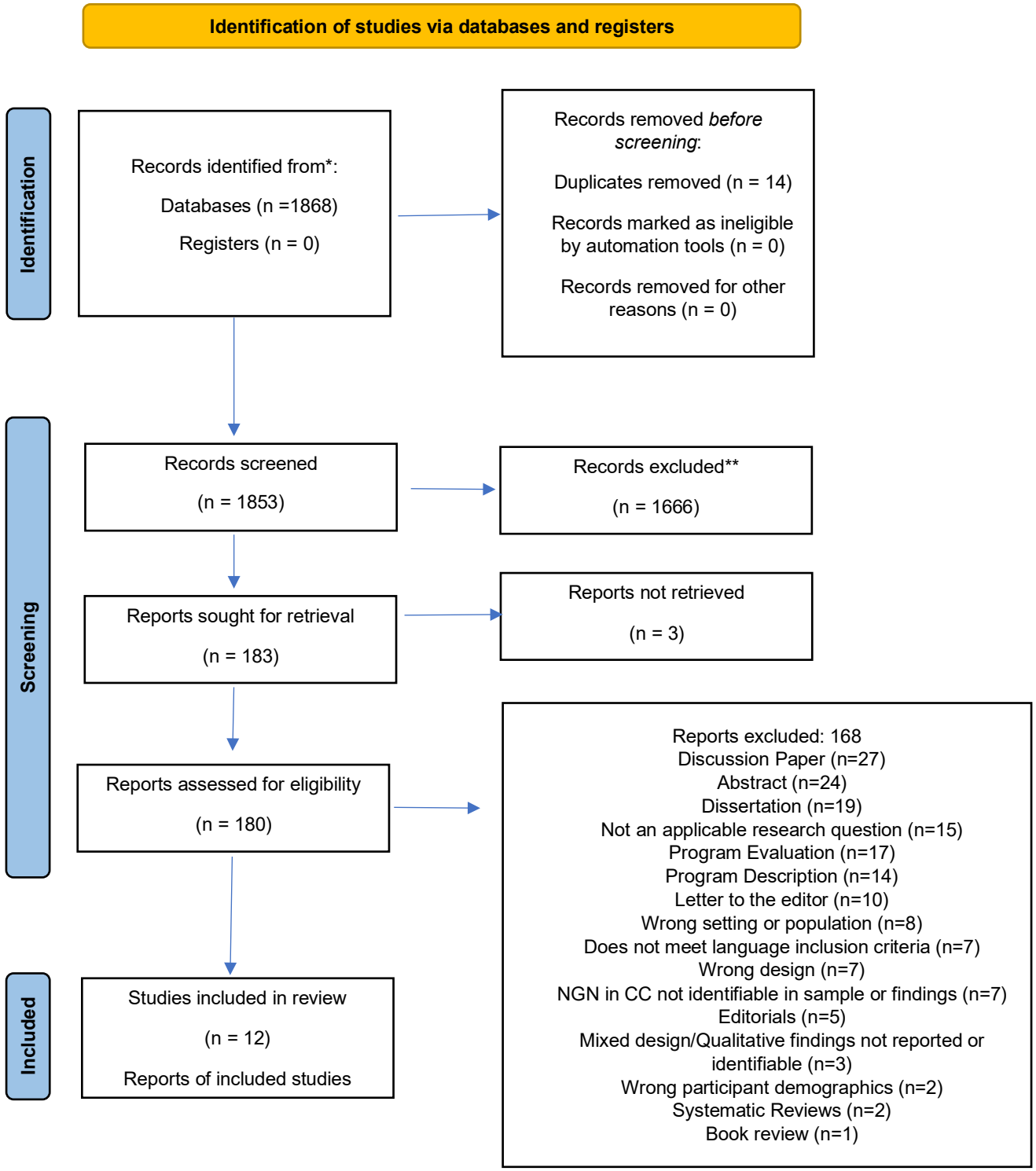
Results

A total of 1868 citations were identified in the database search. Following the removal of duplicates and title and abstract screening, 180 full-text articles were assessed, with 12 studies meeting the selection criteria. Examples of common reasons for exclusion were articles that were

discussion, program evaluation or program description. A PRISMA flow chart of the screening process is illustrated in Figure 1.

FIGURE 1

Prisma Flow Chart



Study designs of the 12 included studies included hermeneutic phenomenology (n=7), mixed methods including longitudinal and descriptive qualitative components (n=2), descriptive qualitative (n=2), and grounded theory (n=1). Included studies all had qualitative content and data were collected either through interviews, observation, focus groups or a combination thereof. Studies were conducted in the United States (n=6), Australia (n=2), Canada (n=1), Spain (n=1), and the UK (n=2) between the years 1992 to 2020. Sample sizes ranged from five to 105, with a total of 201 participants from five different countries. Clinical settings included general critical care (n=1), adult ICU (n=7), neonatal ICU (n=1), and general ED (n=3). See Table 2.

Table 2

Study Characteristics

Author; Title	Year	Country	Setting	Methodology	Sample Size	Data Collection	Data Analysis	Theoretical/ Conceptual Framework	Research Question/Aim
Benner, Tanner & Chesla; From beginner to expert: Gaining a differentiat-ed clinical world in critical care nursing	1992	USA	Adult, pedia-tric & neo-natal ICU	Phenomenology	105 Nurses, advanced beginner (Up to 6 months; N=24), Intermediate (2 years; N=33); Expert (at least 5 years; N=43)	Group & individual interviews, observations	Thematic	Experiential learning, clinical knowledge development and human agency; Dreyfus Model Skill Acquisition/Benner's Novice to Expert	To further explicate the Dreyfus Model of Skill Acquisition in critical care nursing practice
DeGrande, Liu, Greene & Stankus; The experiences of new graduate nurses hired and retained in adult intensive care units	2018	USA	Adult ICU	Qualitative hermeneutic phenomenology	N=11; 7 male, 4 female; 24-30 months experience	one-on-one open-ended interviews	van Manen	Benner's Competent nurse	What is the lived experience of NGRNs who have become competent in the adult ICU as their first job post-graduation?
Della Ratta; Challenging graduate nurses' transition: Care of the deteriorate-ing patient	2016	USA	ICU and ED	Qualitative interpretive phenomenology -ical analysis	N=8; 3 male, 5 female; ranging from 3months-2 years	Semi-structured, one on one interviews	Diekelmann's 1992 Method	Kramer, Benner then Duchscher's Transition Shock	To explore graduate nurses' experiences of caring for deteriorating patients during the first year of practice.

Garcia Martin et al.; Novice nurse's transitioning to emergency nurse during COVID-19 pandemic: A qualitative study	2020	Spain	ED	Heidegger phenomenology -ical hermeneutical approach	N=16; male=6; female=10	Semi-structured interviews	Content analysis & thematic - Colaizzi	-	To explore the experiences and perceptions of recent nursing graduates working in emergency departments during the Covid 19 outbreak
Glynn & Silva; Meeting the needs of new graduates in the emergency department: A qualitative study evaluating a new graduate internship program	2013	USA	ED	Qualitative descriptive	N=8 8 female, first job ED	Interviews	Content analysis	Benner's First 3 Stages: novice, advanced beginner and competent	To examine the experiences of new graduate nurses in an internship program at a 200-bed community hospital
Leathart; Communica -tion and socialisation : perceptions of neophyte ITU nurses	1994	UK	ITU	Grounded Theory	N=6 Neophyte nurses with 2 months - 2 years ITU experience	Semi-structured interviews	Constant comparison, thematic analysis	Bond and Bond Models of Socialization, Benner	**Aim**: To develop inductively a theory about how the process of socialisation influences the attainment of communication skills by the neophyte ITU nurse.

Litchfield & Chater; Can I do everything? Time manage-ment in neonatal unit	2007	Australia	Neona-tal ICU	Phenomenological approach to inquiry as described by Colaizzi (1978)	N=6	In-depth focused	Collaizzi (1978)	Kramer; Benner	To explore the lived experience of managed time for new graduate nurses working in the neonatal unit.
O'Kane; Newly qualified nurses experiences in the intensive care unit	2012	UK	ICU	Comparative, qualitative	NQN = 8; Senior Nurses = 7	Semi-structured interviews, focus group	Thematic Field & Morse, 1996); Colaizzi's (1978); Polit & Beck (2004)	Competency based practice	To investigate different experiences of NQN starting their career in critical care. The aim of this study was to investigate NQN's transition into the ICU.
Patterson et al.; Orientation to emergency nursing: Perceptions of new graduate nurses	2010	USA	ED	Mixed methods - descriptive study	N=18;female = 15; male = 3; each had worked as an unlicensed graduare nurse for 1 to 4 months	Interviews, survey.	Content Analysis	-	What are graduate nurses' perceptions of their orientation program and emergency nursing during both the early months of training and at the end of a 6-month comprehensive, structured orientation program?
Saghafi et al.; New graduate nurses' experiences of interactions in the critical care unit	2012	Australia	Adult ICU	Descriptive qualitative – phenomenology -ical study	N=10 (RNs that have graduated in the last 12 months)	Individual in-depth, semi-structured interviews	Colaizzi's Seven Step Method	Kramer; Duchscher	To highlight the importance of interaction in the intensive care setting from the NGNs' perspective.

Vanderpank-Wright et al.; New graduate nurse transition into the intensive care unit: Qualitative insights from a longitudinal study	2019	Canada	ICU	Multi-method (using survey and interview data), longitudinal study design was used to better understand the transition experience of NGNs	N=6	Face-to-face, semi-structured interviews.	Thematic Analysis	Boychuk Duchscher (2008).	To understand the transition of a cohort of NGNs over a period of 2 years
Wiles et al.; What do I do now?: clinical decision making by new graduates	2013	USA	ICU	Hermeneutic phenomeno-logical approach	N=5; NGN volunteers from adult ICUs in seven hospitals.	One-on-one interviews.	Creswell (2003)	Kolb's Experiential Learning Theory (1984); Bridges Transition Theory (1980); Benner (2001)	To interpret the experience of NGNs as they made clinical judgments (CJ) in the critical care setting and to see if those experiences differed based on the NGN's length of critical care experience.

We used the JBI Critical Appraisal Checklist for Qualitative Research (Lockwood et al., 2020); the validity, robustness, and applicability of included studies were evaluated. Studies with scores greater than seven were of high quality, moderate quality if a score was between four and six and low methodological quality with a score less than four. In all included studies, the aim and results of the study were clearly stated, the research methodology was appropriate, and the research design addressed the aim of the study. All studies clearly reflected on the NGNs' subjective experience and perceived consequences of transition to practice and appropriately answered our research question, participant voices were also documented respectively. However, seven studies did not clearly state the researcher's stance theoretically or culturally or their personal influence on the research.

Three studies scored 10/10 (DeGrande et al., 2018; Della Ratta, 2016; Saghafi et al., 2012), two scored 9/10 (O'Kane, 2012; Vanderspank-Wright et al., 2019), six scored 8/10 (Benner et al., 1992; Garcĩa-Martin et al., 2020; Glynn & Silva, 2013; Litchfield & Chater, 2007; Patterson et al., 2010; Wiles et al., 2013), and one study scored at 7/10 (Leathart, 1994). Critical appraisal criteria are included in Table 3.

TABLE 3

Quality Appraisal

Authors and Date	1. Is there congruity between the stated philosophical perspective and the research methodology	2. Is there congruity between the research methodology and the research question or objectives?	3. Is there congruity between the research methodology and the methods used to collect data?	4. Is there congruity between the research methodology and the representation and analysis of data?	5 Is there congruity between the research methodology and the interpretation of results?	6. Is there a statement locating the researcher culturally or theoretically?	7. Is the influence of the researcher on the research, and vice-versa, addressed?	8. Are participants, and their voices, adequately represented?	9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	Score out of 10
Leathart 1994	yes	yes	yes	yes	yes	no	No	yes	no	yes	7
Glynn & Silva 2013	unclear	yes	yes	yes	yes	no	Yes	yes	yes	yes	8
DeGrande et al. 2018	yes	yes	yes	yes	yes	yes	Yes	yes	yes	yes	10
Litchfield & Chater 2007	yes	yes	yes	yes	yes	unclear	No	yes	yes	yes	8
Benner et al. 1992	yes	yes	yes	yes	yes	yes	No	yes	unclear	yes	8
Patterson et al. 2010	yes	yes	yes	yes	yes	no	No	yes	yes	yes	8
Saghafi et al. 2012	yes	yes	yes	yes	yes	yes	Yes	yes	yes	yes	10
Wiles et al. 2013	yes	yes	yes	yes	yes	no	No	yes	yes	yes	8
Della Ratta 2016	yes	yes	yes	yes	yes	yes	Yes	yes	yes	yes	10
O'Kane 2012	yes	yes	yes	yes	yes	no	Yes	yes	yes	yes	9
Garcĩa-Martin et al. 2020	yes	yes	yes	yes	yes	no	No	yes	yes	yes	8
Vanderspank-Wright et al. 2019	yes	yes	yes	yes	yes	yes	unclear	yes	yes	yes	9

From the 12 included studies, 78 findings were extracted and grouped into six synthesized themes: (1) Barriers and Facilitators to Communication in Critical Care; (2) Struggling with Uncertainty during Difficult Situations; (3) Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care; (4) Knowledge Develops with Time and Exposure to Complex Clinical Situations; (5) Being a Student in Critical Care; and (6) Novel Perspectives Related to COVID-19. Below we provide a narrative synthesis representing the experiences of NGNs transition to practice derived from the included studies. Table 4 provides direct quotes from the participants in the included studies to illustrate our findings.

Themes

Barriers and Facilitators to Communication in Critical Care

Communication was described as essential to care and an important aspect of the critical care nurse's role, but also as a source of frustration (Leathart, 1994; Saghafi et al., 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013). In 11 studies, communication barriers and facilitators within the critical care context were reported (DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; Leathart, 1994; Litchfield & Chater, 2007; O'Kane, 2012; Patterson et al., 2010; Saghafi et al., 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013). Barriers included difficulties encountered during patient interactions, such as interpreting messages and cues (Glynn & Silva, 2013) (Saghafi et al., 2012). Initially, NGNs responded by removing themselves from situations (Leathart, 1994), concealing their novice level of experience from patients and families (Saghafi et al., 2012), and simply avoiding difficult clinical scenarios (Leathart, 1994).

Other barriers were experienced when collaborating with physicians and health care team members (Vanderspank-Wright et al., 2019, Wiles et al., 2013). For example, NGNs discovered that receptive personalities among physicians and senior nurses greatly influenced their approachability (Leathart, 1994; Saghafi et al., 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013). Some NGNs found interacting with physicians as challenging and intimidating (Saghafi et al., 2012). Challenges identified were fear of being ridiculed, not knowing answers to questions, incorrectly relaying patient information, or being a burden by calling often (Wiles et al., 2013). In contrast, other NGNs found interprofessional collaboration was balanced among nursing staff and physicians in critical care (Saghafi et al., 2012).

To overcome these fears and challenges, NGNs sought validation from experienced nurses before contacting physicians (Wiles et al., 2013) and learned to implement different strategies to ultimately reduce their frustration (Leathart, 1994; Saghafi et al., 2012). As they gained experience, NGNs found these interactions less intimidating (Wiles et al, 2013). Regarding experienced nurses, NGNs in the study by Vanderspank-Wright et al. (2019) reinforced that they would likely encounter difficult staff throughout their career, no matter where they work.

Facilitators to communication included having the opportunity to learn from more experienced staff. When caring for intubated, critically ill patients, NGNs found that empathizing with the patient concerning their state of health and inability to communicate effectively, helped manage the NGNs frustration when trying to interpret the patient's messages and was an influencing factor fostering effective communication strategies (Leathart, 1994).

In learning to communicate with patients who were intubated and on mechanical ventilation, NGNs developed a logical sequence of strategies to improve communication, such as "lip-reading, sign language, closed questions or questions providing a process of elimination of

what the patient could mean" (Leathart, 1994, p. 150). If unsuccessful, NGNs would subsequently seek assistance from other experienced nurses (Leathart, 1994; Saghafi et al., 2012) but would feel inadequate and some even gave up trying to communicate all together (Leathart, 1994). Others, however, used this frustration to persevere and further attempt to elicit their patients' needs (Leathart, 1994). Communicating with patients was learned best through observation of experienced nurses (Leathart, 1994).

While in some instances, interpersonal communication training was reported as having been offered in nursing school (Leathart, 1994), NGNs felt communication strategies were not addressed directly in orientations and that it was a skill tailored to individual patient scenarios (Leathart, 1994). Communication skills were established by observing senior nurses in the setting (Leathart, 1994), adding to the NGNs repertoire of skills, and developing their own communication strategies. Once NGNs developed their own strategy, they felt more relaxed and confident (Leathart, 1994).

Struggling with Uncertainty during Difficult Situations

Encountering difficult situations elicited mixed emotions among NGN participants and was acknowledged in eight studies. Difficult situations were characterized as caring for deteriorating patients (DeGrande et al., 2018; Della Ratta, 2016; Wiles et al., 2013), those experiencing a rapid decline in health status, such as a cardiac arrest (Wiles et al., 2013), caring for an actively dying patient (Della Ratta, 2016), patients facing life-threatening incidents (DeGrande et al., 2018), including self-extubation or pulling out central venous access lines (Wiles et al., 2013). Other difficult situations included those where NGNs felt unsure of what to do and when new skills were completed without prior support or guidance, such as titrating unfamiliar medications and managing new technology (Leathart, 1994; Vanderspank-Wright et al., 2019).

NGNs faced uncertainty when confronted with these difficult clinical situations in critical care (DeGrande et al., 2018; Della Ratta, 2016; Leathart, 1994; Vanderspank-Wright et al., 2019). Periods of uncertainty generated mixed emotional reactions. NGNs described a variety of emotions, such as stress (Della Ratta, 2016; DeGrande et al, 2018; Martin et al., 2020; Leathart, 1994), fear (Della Ratta, 2016; DeGrande et al, 2018; Garcĩa-Martin et al., 2020; Leathart, 1994), panic (Della Ratta, 2016), anxiety (Della Ratta, 2016; Garcĩa-Martin et al., 2020; Leathart, 1994), and feelings of inadequacy (Della Ratta, 2016; Leathart, 1994). These emotional reactions triggered sleep quality disturbances (Garcĩa-Martin et al., 2020) and some NGNs experienced "situational paralysis" (Wiles et al., 2013, p. 169) where they froze and felt physically and emotionally incapable of delivering patient care and making appropriate decisions.

Despite personal challenges, DeGrande et al., (2018) offered insight into the use of diversional activities or ways NGNs decompress during or after work. These activities helped NGNs cope with the added stress of the critical care environment. Activities included stepping away from the unit to reflect, getting some fresh air and doing activities non-health care related to disengage and distract them (DeGrande et al., 2018).

Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care

Nine studies discussed informal and/or formal support systems that either promoted or impeded the NGNs' perceived acceptance into the critical care environment (DeGrande et al., 2018; Della Ratta, 2016; Patterson et al., 2010), and were described as mitigating factors in achieving desirable nursing attributes. NGNs who felt unsupported reported significant difficulty with role transition (Glynn & Silva, 2013).

Desirable nursing attributes reported in Glynn and Silva's (2013) study were having the ability to critically think, manage time and stress, and to communicate with staff and patients

with ease, by the end of the orientation phase. Developing courage and assertiveness was also considered essential (DeGrande et al., 2018) by NGNs in critical care. Others included advocating for patients and families and having the courage to do so (DeGrande et al., 2018) which required NGNs to be appropriately outspoken (Patterson et al., 2010). Competence, patience, and having a relaxed, energetic, and compliant personality, and the capability of adjusting to busy, stressful units, were also reported as significant traits (Patterson et al., 2010).

Informal supports included fellow NGNs and colleagues who were recent graduates, who could appreciate the NGN transition process (DeGrande et al., 2018; Della Ratta, 2016; Leathart, 1994; O'Kane, 2012; Patterson et al., 2010; Saghafi et al., 2012; Vanderspank-Wright et al., 2019). Peers were valuable for emotional support, through sharing stories, thoughts, and feelings about their new roles (DeGrande et al., 2018; Della Ratta, 2016; Patterson et al., 2010).

Leathart (1994) noted NGN support was offered mostly by junior staff and unit acceptance was directly associated with the NGN's perception of their own competence (Leathart, 1994). Competence, in this research, represents a psychological concept, rather than a measure of performance (Leathart, 1994). Positive feedback from patients and staff also promoted confidence and a sense of satisfaction in the NGNs (Saghafi et al., 2012). Receiving positive support, encouragement, and working with a good team, facilitated a successful transition (DeGrande et al., 2018) and helped promote NGNs achieve desirable nursing attributes previously identified. In one study, NGNs initially interacted with staff out of necessity to complete daily tasks and to learn new skills (Vanderspank-Wright et al., 2019). With more experience, they eventually socialized to integrate into the unit culture and to feel a sense of belonging (Vanderspank-Wright et al., 2019).

Formal support came from nurses in unit leadership including preceptors, charge nurses, senior nurses, managers (Patterson et al., 2010), and nurse educators (DeGrande et al., 2018;

Della Ratta, 2016; Leathart, 1994; Litchfield & Chater, 2007; O'Kane, 2012; Saghafi et al., 2012; Wiles et al., 2013); this was a key element to a successful transition (DeGrande et al., 2018; Glynn & Silva, 2013). Formal support persons were considered role models (Glynn & Silva, 2013), were relied on for knowledge and skill acquisition (Della Ratta, 2016; Litchfield & Chater, 2007; Wiles et al., 2013), and identified as those with whom one can confide in and gain valuable learning experiences, such as managing complex and stressful situations.

Formal support persons helped foster NGN confidence (DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; O'Kane, 2012; Wiles et al., 2013), provide emotional support (DeGrande et al., 2018; Della Ratta, 2016; Leathart, 1994; Patterson et al., 2010) and protect the NGN from criticism by others (Della Ratta, 2016). Although NGNs felt as though they were a burden by frequently asking for help (Litchfield & Chater, 2007), when formal support was available, NGNs reported feeling less anxious (DeGrande et al., 2018; Della Ratta, 2016; Litchfield & Chater, 2007; Patterson et al., 2010).

Feedback received by formal support persons, negative or positive, was seen as a catalyst for feeling accepted or not accepted in the critical care setting and was described as an indicator of a successful transition in the critical care setting when it was perceived as positive. NGNs expressed the importance of formal support from management because it helped evaluate their progress and achievements and reflected their performance and development. NGNs utilized feedback to modify areas of weakness (Saghafi et al, 2012).

Knowledge Develops with Time and Exposure to Complex Clinical Situations

Knowledge acquisition during transition to independent practice revealed that NGNs clinical knowledge developed with time and with frequent exposure to complex clinical situations and was reported in seven studies (Benner, 1992; DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; Litchfield & Chater, 2007; Vanderspank-Wright et al., 2019; Wiles

et al, 2013). Initially, NGNs' work was described as highly influenced by prioritizing tasks (Benner, 1992) and improving time management abilities (Litchfield & Chater, 2007; O'Kane, 2011). Tasks were based on patient orders, needs, and care plans (Benner, 1992; O'Kane, 2011), and were initiated at the start of each shift. NGNs felt responsible for completing all tasks accordingly, if incomplete, they perceived their practice to be unsafe (Benner, 1992; Litchfield & Chater, 2007). NGNs sensed a loss of control, increased anxiety, and often felt distressed, if something was either added or different from their original task list or plan (Benner, 1992; Litchfield & Chater, 2007; O'Kane, 2011).

As NGNs gained exposure to critical care practice, their focus shifted to time management strategies, such as planning and structuring their day by creating goals and plans; subsequently, their actions were based on these set goals and plans of care (Benner, 1992; Litchfield & Chater, 2007) rather than on predetermined patient priorities and needs (Benner, 1992; O'Kane, 2011). Findings also suggested that, with experience, NGNs felt accountable to manage clinical scenarios independently and understood when to request assistance (Benner, 1992). NGNs carefully planned or 'set out their day' (Litchfield & Chater, 2007, p. 40) as an essential part of their care (Litchfield & Chater, 2007).

Findings suggest that through personal reflection, NGNs demonstrated recognition and responded accordingly to changes in clinical scenarios (Benner, 1992). Previous feelings of anxiety and distress were overcome with the development of analytical planning and problem-solving abilities to facilitate NGNs' determining appropriate actions (Benner, 1992; Vanderspank-Wright et al., 2019). In clinical scenarios NGNs remained calm, analyzed data (Benner, 1992), understood what to look for and how to respond, and knew resources available (DeGrande et al., 2018, Della Ratta, 2016; Vanderspank-Wright et al., 2019). NGNs prepared for the unknown, reacted appropriately and provided safe competent care (Glynn & Silva, 2013).

Ultimately, organization of the workday was based on clinical data and not predetermined goals set at the beginning of the shift (Benner, 1992). Having frequent exposure to clinical scenarios facilitated NGNs intuitive knowing and intuition (DeGrande et al., 2018; Della Ratta, 2016, Vanderspank-Wright et al., 2019).

Finally, nearing the end of the NGN transition period, participants reported having improved pattern recognition abilities, experience in various patient scenarios including unstable, rapidly declining patients, and described having a more realistic sense of agency and professional responsibility (Benner, 1992). NGNs managed complex and difficult situations, such as titrating vasoactive medications, while managing other aspects of care, such as providing updates to family (Benner, 1992; Vanderspank-Wright et al., 2019), addressing ethical concerns (Vanderspank-Wright et al., 2019) or attending to individual patient and family needs (Benner, 1992; DeGrande et al., 2018; Vanderspank-Wright et al., 2019) thus improving relational skills (Della Ratta, 2016).

These findings revealed that regular exposure to clinical situations was considered necessary for NGNs to increase their confidence, skill, and knowledge base (DeGrande et al., 2018; Della Ratta, 2016; Wiles et al., 2013). NGNs expressed learning many new skills on their own in practice (Vanderspank-Wright et al., 2019) and that being exposed more frequently to various scenarios would help build their repertoire of nursing skill and knowledge (DeGrande et al., 2018; Della Ratta, 2016; Wiles et al., 2013; Vanderspank-Wright et al., 2019). Wiles et al. (2013) reported that NGNs with more experience can anticipate what their patient may need and plan accordingly.

Being a Student in Critical Care

One study by O'Kane (2012) found NGNs who consolidated (i.e., completed a major practicum) in critical care as students, and who were subsequently hired into a critical care unit,

had similar experiences to those who did not, negatively effecting professional development. Even though they had previous critical care exposure, the reality of being a registered nurse and accountable for patient care and actions, significantly impacted their transition to practice leading to reality shock (O'Kane, 2012).

Although some NGNs were students before hire, they still experienced the same emotional challenges as their NGN counterparts with no prior critical care experience (O'Kane, 2012). Establishing that *all* NGNs learning a new professional role can be faced with the physical, emotional, social, emotional, and intellectual demands during transition to practice (Duchscher, 2009). These changes are further complicated with addition of professional nursing responsibility and accountability of care; duties that student nurses do not have experience with (Duchscher, 2009).

Novel Perspectives Related to COVID-19

One study, conducted in an emergency department at the beginning of the current pandemic, reported on organizational issues, including administrative and institutional obstacles, which affected NGNs' professional transition experiences (Garcĩa-Martin et al., 2020). In this study, NGNs identified a lack of planning and support during the hiring process and the orientation process. They felt they were not given enough time to consider employment offers and felt the number of hours assigned were not ideal for learning and integration into the emergency setting. Garcĩa-Martin et al. (2020) emphasized the need for a robust and organized acute care agency orientation, including specialization training, and continuing professional development. Some NGNs in this study felt training was neither offered nor available and that orientation periods were too short (Garcĩa-Martin et al., 2020). Orientation concerns expressed by NGNs included lack of administrative support during their first days of work, the need for

extended shadowing periods during orientation, to better understand how each unit runs and where to find equipment, as examples (Garcĩa-Martin et al., 2020

TABLE 4

Themes and Supporting Quotations

Theme	Supporting Quote
Barriers and Facilitators to Communication in Critical Care	"I do strive on feedback, I find that really important just so I can take it on and improve my skills. Sometimes I will ask people and go 'am I doing the right thing' and different stuff, because I like to get feedback off people about doing stuff." (Linda) (Saghafi et al., 2012) "Every day I feel there's something new that I haven't done before or even seen before. So whenever that happens, I'm like . . .'How do I do this?' (Vanderspank-Wright, 2019) "I think just accepting that there's going to be people like that no matter where you go. And you still have to work with them. Like, there's one nurse that is on my line, but she switches mostly to nights . . . she's nice enough, but she's just very loud, very obnoxious . . . you just kind of develop your own strategy of going around them and still being able to work with them" (Vanderspank-Wright et al., 2019, p. 435).
Struggling with Uncertainty during Difficult Situations	"All of the sudden the decision was made to…you know extubate the patient, withdraw life support. It was definitely very, very overwhelming" (DeGrande et al., 2018, p. 75). "I just remember thinking it is just amazing how this patient can come in with a minor complaint, such as dizziness or stomach pain, and all of a sudden just deteriorate in front of you" (Della Ratta et al., 2016, p. 3041). "I had no idea that would feel like that . . . and until you go through that, I don't think you can [know] what it's like . . . I was prepared in terms of how to deal with it . . . the skills and stuff . . . but emotionally.." (Vanderspank-Wright et al., 2019, p. 434)
Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care	Informal support: ''Because you're nervous as a new grad. One of the girls that started the programme together, internship, she was also a new grad. . . Knowing that someone else is with you and experiencing that." [P8] (DeGrande et al., 2018) ''I love the matrix [team] I work with. . . it's all about teamwork. I think that you should be able to go to whatever you know, you will learn. It depends on, honestly, it all depends on

	what facility or hospital you're going to work for and how great the teamwork is there too". [P8] (DeGrande et al., 2018) Formal support: ''My preceptor. . .and so seeing how calm and how well she manages. . . in the beginning, I was really hard on myself. I was like why can't I just get there. And she would tell me, she was like, it's not going to happen overnight, you know, you're doing good." [P8] (DeGrande et al., 2018) I remember specifically one code when the doctor said to me 'get amio'. So I said to her [preceptor], 'I am going to go get amiodarone' and she said 'ok, how much?' under her breath. And so she reminded me of what I had to ask him. . .I didn't know that there were different doses of amiodarone so she cued me in without making me feel belittled. (Lauren, nearing the end of transition programme year) (Della Ratta et al., 2016)
Knowledge Develops with Time and Exposure to Complex Clinical Situations	'I like being in control and get everything done like my writing at the right time, but I always like to have jobs in front of me. . . .to have a patient on Noradrenaline or that needs lots of gases (arterial blood gas) throughout the day'. (P1) (O'Kane, 2012) 'Time management, all the drips and things that might be running out, fitting in your obs [observations], doing your washes and timing in breaks and people wanting to go for breaks and wanting turns (Patients positional changes) and just everything to do with time management was just a nightmare'. (P6) (O'Kane, 2012)
Being a Student in Critical Care	'I'd enjoyed being a student so much. I hadn't really thought how hard my transition would be from being a student. It was a lot more hard work than I realised. I think my expectations were a little bit rose tinted of what it would be like to actually work here'. (P7) (O'Kane, 2012) You still seem like a nursing student in training when you finish your degree. That is how I feel. There still has to be someone to "back you up" because you can't be independent. There is too much bureaucracy in EDs, paperwork, protocols… I feel useless EN1 (Garcĩa-Martin et al., 2020) ''Some of our nurses that were supposed to be hired on as ICU nurses end up having to back out [of] their ICU position. People who are shy don't really. . . tend to do so well in the ICU or critical care setting because they won't ask for help" [P5]." (DeGrande et al., 2018)
Novel Perspective Related to COVID -19	Shadowing training periods should be included to explain how the unit works, where things are, something just to get some information. Because if they call you from a hospital that you don't know… you feel lost EN15 (Garcĩa-Martin et al., 2020)

	There should be different pathways of hiring and you should be able to choose according to the specialization which you have been trained for, doing continuing professional development or other things. So, you could opt for a contract already having some basic knowledge of the unit, which shouldn't be taken for granted (EN12) (Garcĩa-Martin et al., 2020)

Discussion

Contributions of this Review: Comparison to Elias and Day's Findings

The intent of this review was to build on the previous review conducted by Elias and Day (2020). Our findings highlight the progression of NGN transition both during and post-orientation including skill and knowledge development (Benner, 1992; DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; Litchfield & Chater, 2007; Vanderspank-Wright et al., 2019; Wiles et al, 2013); these findings were similar to those reported by Elias and Day (2020). Further, our findings support the notion that NGNs experience a variety of challenges in their early work experience (Elias & Day, 2020). Uncertainty of how to perform in certain clinical scenarios, especially if new skills were introduced were challenging, such as titrating unfamiliar medications and managing new technology (Leathart, 1994; Vanderspank-Wright et al., 2019). This validates Elias and Day's (2020) citation "I learned medications in the nursing schools but the discussions did not include all the ICU medications such as beta-blockers and analgesics" (p. 337).

In contrast to their statement that some NGNs felt disadvantaged by not having a final student placement in ICU prior to employment (Elias & Day, 2020; Lewis-Pierre, 2013; Salkaya, 2012), one study confirms that NGNs with previous critical care experience as a student had comparable experiences to those who did not (O'Kane, 2012). This significantly impacted transition to practice, some NGNs even revealing reality shock (O'Kane, 2012).

Having previously consolidated in critical care, NGNs did not anticipate this difficult transition. They felt they had higher expectations from staff compared to those NGNs who had not previously been students in the critical care unit. Examples provided in O'Kane's (2012) study included, fearing they would be always regarded as a student, or concern that they would

be given too much responsibility too soon because they have previous experience as a student in the unit. However, being an NGN who was also a student in the critical care unit within which they were hired, promoted socialization, and understanding of unit dynamics, because they had the opportunity to establish some working relationships during their education (O'Kane, 2012).

In Elias and Day's (2020) review, supernumerary periods were viewed as a way of enhancing ICU readiness. This is also echoed in one of the included research studies, involving NGN onboarding during a pandemic, which pinpoints the need for robust and organized orientation periods which consist of specialized training required in critical care areas. Some participants felt specialized training was not offered and that orientation periods were too short (Garcĩa-Martin et al., 2020).

Whereas Elias and Day (2020) highlight positive emotions, including excitement, our review identifies negative emotions, namely anxiety and stress (Benner, 1992; Litchfield & Chater, 2007; O'Kane, 2011). In our findings, negative emotions subsided as NGNs gained knowledge and skill (Benner, 1992; Litchfield & Chater, 2007). The findings of our review also report on different approaches identified within the literature that NGNs used to alleviate stress, such as diversional activities, like doing non-health care related activities, to manage negative emotions (DeGrande et al., 2018). Complementary to Elias and Day (2020), providing regular exposure to clinical scenarios facilitated NGNs intuitive knowing and intuition thus improving confidence (DeGrande et al., 2018; Della Ratta, 2016, Vanderspank-Wright et al., 2019).

Our research identifies formal and informal support persons offered in critical care, distinguishing formal supports as fundamental to smooth NGN transition. We found informal and/or formal support systems either promoted or complicated NGNs' perceived acceptance into critical care (DeGrande et al., 2018; Della Ratta, 2016; Patterson et al., 2010), and were key components to achieving desirable nursing attributes. NGNs who felt unsupported conveyed

difficulty with role transition (Glynn & Silva, 2013). The findings from this review also highlights formal feedback and its benefits to transition (Saghafi et al., 2012).

Communicating with patients, family and staff in critical care is an important aspect of a nurses' role, but also as a source of frustration (Leathart, 1994; Saghafi et al., 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013). Aligning with Elias and Day's (2020) review, our review describes communication strategies used in critical care and reinforced the difficulty recognizing patient needs due to physical restrictions due to sedation or intubation (Saghafi et al, 2012). Our review also recognized techniques NGNs used to improve their communication skills (Leathart, 1994).

Elias and Day (2020) identified a progressive development of critical thinking and self-reflection in practice, as a means toward self-satisfaction and a sense of belonging. Our research illustrates a timeline where NGNs gradually develop skills and knowledge, and reflect on clinical experiences, which in turn, expands intuitive knowing (Benner, 1992; DeGrande et al., 2018; Della Ratta, 2016, Vanderspank-Wright et al., 2019) and encourages an ultimate acceptance through formal and informal support persons (DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; O'Kane, 2012; Wiles et al., 2013).

Novel Perspective Related to COVID -19

One study in our review examined individual NGN transition experiences in an ED department throughout the onset of the global Covid-19 pandemic (Garcĩa-Martin et al., 2020). This study influences our review findings, as it encourages the researchers to seek alternate interventions and strategies to ensure a smooth transition to practice, incorporating the detrimental effects a pandemic has on individuals and society. Naylor and associates (2021) examined NGN experiences working in acute care during a pandemic and identified unique findings on their transition. NGNs feared become infected with the virus, had concerns regarding

availability and proper fitting of personal protective equipment, and struggled to learn whilst working extremely short staffed (Naylor et al., 2021). Exposing NGNs experiences during pandemic and understanding their exclusive challenges provides groundwork for educational interventions that could potentially strengthen and preserve our current nursing workforce (Naylor et al., 2021).

Offering NGNs evidence-informed support and resources during transition is key to job satisfaction and NGN retention (Naylor et al., 2021). Naylor et al.'s (2021) research participants had negative experiences including "inability to eat and sleep, nightmares, crying over difficult work situations, reluctance to return to work, and feeling depressed that are potential evidence of extreme anxiety and stress, depression, or burnout and intention to leave nursing" (p. 391). Some found caring for acutely ill patients with little training stressful and were significantly overwhelmed by each death they encountered (Naylor et al., 2021).

A systematic review identified post traumatic stress disorder (PTSD) among nursing staff during the first two pandemics, a reality for those currently caring for Covid-19 patients (Carmassi et al., 2020). Researchers discovered that frequent exposure to critically ill patients, years of nursing experience, and female gender, influences whether individuals experience PTSD during a pandemic (Carmassi et al., 2020). In previous epidemics, namely SARS and Middle East Respiratory Syndrome, nurses experienced mental health disparities (D'Ettore et al., 2021). Therefore, offering NGNs additional support to combat anxiety, depression, or PTSD, through counseling services, mentoring programs, structured weekly debriefing sessions, as well as introducing educational opportunities on caring for critically ill patients and the proper use of PPE (Naylor et al., 2021) can foster a smooth NGN transition process. NGNs are not alone, "working as a nurse during a pandemic was unknown to all nurses" (Naylor et al., 2021, p. 389).

Strengths and Limitations

Strengths of our review include the creation a systematic search that was comprehensive and is easily replicated. Our search strategy was peer reviewed using the PRESS Checklist (McGowan et al., 2016) in collaboration with a medical information specialist and included only peer reviewed journals. All studies that met inclusion criteria were included, regardless of study quality. Inclusion and exclusion criteria were clearly outlined, and our research expanded to include all critical care areas, comprising ED, pediatric and neonatal intensive care settings. This addition of critical care clinical settings expands the findings in Elias & Day's (2020) review based in adult ICUs, thus enhancing transferability of findings. Another strength in our review is the importance and use of clinical expertise, knowledge, and personal experiences among team members. Our research team consists of three certified JBI reviewers and one who is also a JBI instructor. Other team members have expertise and knowledge in critical care nursing and have previously executed research on NGN and their transition practices.

Limitations include being unable to locate some articles in our screening process, despite our search efforts. We limited our inclusion with respect to language to the language abilities of the review team. Another limitation is the possible misinterpretation of original research findings. However, all studies clearly reflected on the NGNs subjective experience and perceived consequences of transition to practice and appropriately answered our research question, participant voices were also documented respectively.

Implications

- Emphasis on initiating and offering supporting services and guidance, including informal and formal, to NGNs entering practice is essential

- Studies in our review were based in USA, Australia, Canada, Spain, and the UK, reflecting current Western society, limiting the research found in developing countries. Future research is thus needed to explore NGN experiences as they transition to critical care nursing practice in developing countries, to identify cultural differences and/or similarities in findings.
- The additional stress imposed by the COVID-19 pandemic has intensified the existing pressures felt during transition to practice
- Offering additional elective courses with a focus on critical care nursing, can present NGNs with a foundational knowledge of the critical care setting and expectations of care in these unique environments
- Encouraging students, who are interested in critical care, to partake in any community workshops, additional educational opportunities and participating in national critical care programs can support knowledge acquisition and role awareness
- Additional research on various transition programs and its impact on NGN transition would also offer substantial information to key stakeholders in developing robust orientation programs.

Conclusion

Findings from our review affirm that NGN transition is a complex phenomenon. In a critical care context, NGNs face additional challenges transitioning to practice, involving specialized training and supplementary knowledge in environments that are intricate and everchanging. Therefore, providing support, guidance and guaranteeing access to resources during transition to professional practice could improve NGN retention, as well as improving

confidence and competence in the workplace (Schroyer et al, 2020). Understanding the depth of the NGNs experience in transition, helped identify learning needs and has influenced our researchers to develop applicable national guidelines to facilitate a smooth transition to critical care practice in Canada. Implementing robust critical care transition to practice guidelines and supporting NGNs with our review findings, will hopefully improve NGN retention to improve the nursing shortage.

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Chapter 4: Integrated Discussion and Conclusion

In this concluding chapter, I provide a summary and interpretation of the study's main findings. I then provide an overview of our current nursing shortage and its significant impact on NGN transition experiences – particularly given the exacerbated shortage secondary due to the COVID-19 pandemic. I then compare the findings of this review to previous research and systematic reviews completed. Finally, I describe the strengths and limitations of this review and provide implications for nursing practice, research, policy, and leadership.

4.1 Summary of Findings

The aim of this SR was to synthesize existing qualitative evidence of NGN experiences as they transition into critical care nursing practice. Twelve studies were included that were published between 1992 and 2020 and were representative of experiences in five countries (United States (n=6), Canada (n=1), Australia (n=2), Spain (n=1), UK (n=2)). Clinical settings included general critical care (n=1), adult ICU (n=7), neonatal ICU (n=1), and general ED (n=3). The experiences of NGNs reported in the included studies were summarized into the following six synthesized themes: (1) Barriers and Facilitators to Communication in Critical Care, (2) Struggling with Uncertainty during Difficult Situations, (3) Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care, (4) Knowledge Develops with Time and Exposure to Complex Clinical Situations, (5) Being a Student in Critical Care, and (6) Novel Perspective Related to COVID-19.

4.1.1 NGN Transition to Critical Care Nursing Practice

In this QES we collected, identified, and synthesized qualitative research findings to describe NGN experiences as they transitioned to critical care nursing practice. Our research expands on Elias and Day's (2020) review on NGNs' experiences of transitioning to adult ICU

settings, with a broader and comprehensive focus on other critical care areas, including neonatal and pediatric ICUs, as well as EDs.

Results from our review suggest NGN transition develops progressively over time and is enhanced with additional exposure to clinical scenarios (Benner, 1992; DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; Litchfield & Chater, 2007; Vanderspank-Wright et al., 2019; Wiles et al., 2013). NGNs sought to learn, develop, and master necessary knowledge and communication skills (Leathart, 1994) and provide effective, competent, and safe patient care in a critical care context (Leathart, 1994; Saghafi et al., 2012; Wiles et al., 2013). One study unexpectedly revealed that despite being a student in critical care, this experience did not prevent transition barriers, in fact, some participants suffered the effects of Kramer's (1974) *reality shock* (O'Kane, 2012). Like previous research, NGNs experienced an array of emotions, periods of uncertainty, and frustration (DeGrande et al., 2018; Della Ratta, 2016; Leathart, 1994; O'Kane, 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013) including organizational concerns affecting professional development (Garcĩa-Martin et al., 2020).

It was widely reported that additional support from both formal and informal support persons (DeGrande et al., 2018; Della Ratta, 2016; Leathart, 1994; O'Kane, 2012; Patterson et al., 2010; Saghafi et al., 2012; Vanderspank-Wright et al., 2019) and regular exposure to complex clinical situations (Benner, 1992; Litchfield & Chater, 2007) during this period alleviated challenging transition experiences and encouraged the development of clinical knowledge and communication skills (Della Ratta, 2016; Litchfield & Chater, 2007; Wiles et al., 2013). Participants developed these skills through observation (Leathart, 1994), participation, and evaluation of performance (Saghafi et al., 2012). It was reported that NGNs strive to achieve an acceptable level of comfort, confidence, and competence in their new working environment,

eventually leading to social and professional acceptance (DeGrande et al., 2018; Della Ratta, 2016; Patterson et al., 2010) in critical care practice environments.

4.1.2 Urgency of the Research Problem and Question

Even at the outset of planning this review, countries including Canada, United Kingdom (UK), United States (US) and Australia were facing unstable nursing labour markets, represented by an extreme shortage and high turnover rates of frontline nursing staff (Currie & Carr Hill, 2012). In 2012, a study by Tomblin-Murphy et al. (2012) reported that Canadian nurses exiting the profession ranged from "2% per year for nurses aged 35-49 years old to 11% for nurses aged 60 or over" (p. 198). More recent data is particularly alarming. For example, Scheffler and Arnold (2019) report that the nursing shortage was expected to rise significantly to 2.5 million nurses by 2030. And, by 2021, as previously reported, the International Council of Nurses (2022) projects a global shortage of 13,000,000 nurses. The current COVID-19 global pandemic has exacerbated and magnified the nursing shortage, by increasing demands of bedside care, rapidly increasing capacity calls for ICU beds (World Health Organization, 2020). Recently published studies have provided some insight into how the pandemic experience has been particularly detrimental to critical care practice. For example, in a mixed design study that explored Canadian ICU and high acuity care unit nurses' experience found that, "rapidly changing policy and information, overwhelming and unclear communication, meeting patient care needs in new ways while staying safe and managing home and personal commitments to self and family" was very challenging for nurses (Crowe et al., 2021, p. 7). Given the similarities to the findings of this QES, for example, knowledge acquisition, caring for complex, critically ill patients, learning skilled communication techniques and managing one's self-care needs, it is *very possible* that the pandemic experience may be particularly challenging for NGNs in critical care. Turale and

Nantsuwapan (2021) remarked on the escalating stress levels impacting the mental health of frontline nurses which is also reported in the study by Crowe et al. (2021).

Frontline nurses working through this pandemic have reported being exhausted and evidence suggests that many are contemplating leaving the profession entirely (Catton, 2021). This departure is associated with caring for highly acute patient workloads and watching too many patients die (Turale & Nantsupawa, 2021). Buerhaus (2021) highlights that when the pandemic began "the sudden, unexpected, and overwhelming surge of very sick patients requiring intensive specialty care nursing and medical care was shocking" (p. 248). Evidence suggests that nurses are struggling to balance both personal and professional lives, are working additional shifts, and staying overtime more than ever to support fellow colleagues (Turale & Nantsupawa, 2021). They are also facing unsettling ethical concerns in practice, including the care they wish to provide versus the care they can provide with the limited resources offered and current nursing shortage (David et al., 2021; Turale & Nantsupawa, 2021).

With this additional stress exacerbated by the COVID-19 pandemic, one can only assume the detrimental impacts this will have on future NGNs transitioning to critical care nursing practice. While researchers like Hickerson et al. (2016), have previously described the preparation-practice gap – the current situation may widen this gap further. Because of the pandemic, NGNs are now confronted with variations to education and onsite training, ever-changing roles, high nurse-to-patient ratios, and frequent updated policies and procedures (Maben & Bridges, 2020), as well as adding the risk of exposure to the COVID-19 virus and its physical and psychological effects on personal health (Fernandez et al., 2020). Further, given the reported exhaustion and stress being felt by practicing nurses, this could impact their ability to provide mentorship and support to NGNs in their practice settings. As such, while this review

was prefaced on issues of recruitment and retention in critical care contexts – the current reality facing critical care is a crisis.

4.1.3 Contributions of this Review: Comparison to Elias and Day's Findings

As previously described, the intent of this review was to build on the previous review conducted by Elias and Day (2020). This section highlights the similarities and novel findings. Table 4.0 summarizes these similarities and differences.

4.1.3.1 ICU Readiness. "ICU readiness" (Elias & Day, 2020, p. 337) was described as feelings expressed by NGNs entering the ICU setting, including preparation such as "undergraduate education, structure of orientation, supernumerary time and challenges faced during early days" (Elias & Day, 2020, p. 337). Four themes from our research expand on and strengthen this previously synthesized finding: *Knowledge Develops with Time and Exposure to Complex Clinical Situations*, *Struggling with Uncertainty during Difficult Situations, Being a Student Critical Care*, and *Novel Perspective Related to COVID -19*.

Complementing Elias and Day's (2020) first theme "ICU Readiness" our findings highlight the progression of NGN transition both during and post-orientation including skill and knowledge development (Benner, 1992; DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; Litchfield & Chater, 2007; Vanderspank-Wright et al., 2019; Wiles et al, 2013). Further, our findings support the notion that NGNs experience a variety of challenges in their early work experience (Elias & Day, 2020). Challenges identified in our research including NGN uncertainty of what to do in certain clinical scenarios and especially when new skills were performed without prior support or guidance, such as titrating unfamiliar medications and managing new technology (Leathart, 1994; Vanderspank-Wright et al., 2019) supports Elias and Day's (2020) citation "I learned medications in the nursing schools but the discussions did not include all the ICU medications such as beta-blockers and analgesics" (p. 337).

In contrast to their statement that some NGNs felt disadvantaged by not having a final student placement in ICU prior to employment (Elias & Day, 2020; Lewis-Pierre, 2013; Salkaya, 2012), one of our studies, also included in their review, confirms that NGNs with previous critical care experience as a student had comparable experiences to those who did not, and it significantly impacted their transition to practice, some even revealing reality shock (O'Kane, 2012). Our final theme *Novel Perspective Related to COVID -19* considers organizational affairs relating to orientation and supernumerary periods.

In Elias and Day's (2020) review, supernumerary periods were viewed as a way of enhancing ICU readiness. This is also echoed in Garcĩa-Martin et al.'s (2020) study involving NGN onboarding during a pandemic and pinpoints the need for robust and organized orientation periods which consist of specialized training required in critical care areas. Several participants felt specialized training was not offered and that orientation periods were too short (Garcĩa-Martin et al., 2020).

4.1.3.2 An Emotional Spectrum. Reported research findings repeatedly suggests that NGNs face a combination of negative and positive emotions during transition, the most prominent being fear (Della Ratta, 2016; DeGrande et al, 2018; Elias & Day, 2020; Garcĩa-Martin et al., 2020; Leathart, 1994). "An Emotional Spectrum" (Elias & Day, 2020, p. 338) is represented in two of our study's themes: *Struggling with Uncertainty during Difficult Situations* and *Knowledge Develops with Time and Exposure to Complex Clinical Situations*. Our review highlights negative emotions, namely anxiety and stress (Benner, 1992; Litchfield & Chater, 2007; O'Kane, 2012) whereas Elias and Day (2020) highlight positive emotions, including excitement (Elias & Day, 2020). In our findings, negative emotions subsided as NGNs gained knowledge and skill (Benner, 1992; Litchfield & Chater, 2007). Our study also reports on different approaches identified within the literature that NGNs used to alleviate stress such as

diversional activities, like doing non-health care related activities, to manage negative emotions (DeGrande et al., 2018). Complementary to Elias and Day (2020), providing regular exposure to clinical scenarios facilitated NGNs intuitive knowing and intuition thus improving confidence (DeGrande et al., 2018; Della Ratta, 2016, Vanderspank-Wright et al., 2019).

4.1.3.3 Developing Relationships. Elias and Day (2020) interpret developing relationships as receiving and accepting peer support, building relationships with peers and other health care professionals, communication challenges, and include individual mentorship experiences. Themes in our review supporting developing relationships are *Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care* and *Barriers and Facilitators to Communication in Critical Care*.

Our research identifies formal and informal support persons offered in critical care, distinguishing formal supports as fundamental to smooth NGN transition. We found informal and/or formal support systems either promoted or complicated NGNs' perceived acceptance into critical care (DeGrande et al., 2018; Della Ratta, 2016; Patterson et al., 2010), and were key components to achieving desirable nursing attributes. NGNs who felt unsupported conveyed difficulty with role transition (Glynn & Silva, 2013). Our study also recognizes formal feedback and its benefits to transition (Saghafi et al., 2012).

Communicating with patients, family and staff in critical care is an important aspect of a nurses' role, but also as a source of frustration (Leathart, 1994; Saghafi et al., 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013). Aligning with Elias and Day's (2020) review, our review findings highlight the intricacy in communication strategies necessary in critical care and reinforced the difficulty recognizing patient needs due to physical restrictions due to sedation or intubation (Saghafi et al, 2012). Our review also reported on the techniques NGNs used to improve their communication skills (Leathart, 1994).

4.1.3.4 The Journey to Self-Satisfaction. Elias and Day (2020) identified a progressive development of critical thinking and self-reflection in practice, as a means toward self-satisfaction and a sense of belonging. Themes from our research supporting this statement are *Knowledge Develops with Time and Exposure to Complex Clinical Situations* and *Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care*. Our research illustrates a timeline where NGNs gradually develop skills and knowledge and reflect on clinical experiences, which in turn, expands intuitive knowing (Benner, 1992; DeGrande et al., 2018; Della Ratta, 2016, Vanderspank-Wright et al., 2019) and encourages an ultimate acceptance through formal and informal support persons (DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; O'Kane, 2012; Wiles et al., 2013).

4.1.3.5 ICU Commitment. As reported by Elias and Day (2020), ICU commitment examined NGN preconceptions working in ICU versus present NGN outlooks post transition phase and elicited different views on beginning a career in ICU (Elias & Day, 2020). NGNs indicated that working in ICU was their "dream" job (Elias & Day, 2020, p. 339) and felt they had more time to safely care for patients owing to the low nurse-patient ratio in ICU (Elias & Day, 2020). Our findings uncovered NGN experiences entering critical care, and its influence on retention.

TABLE 5

Comparison of Themes (Elias & Day 2020; Stevenson et al., 2022)

Elias and Day 2020	Stevenson et al., 2022
ICU Readiness -how prepared NGNs felt to work in critical care: including preparation by undergraduate education, structure of orientation, supernumerary time and challenges faced during early days -inadequately prepared -undergraduate training provided little exposure to critically ill patients -medications and equipment in critical care -disadvantaged not being a student -supernumerary time seen as a way of increasing ICU readiness (longer periods increased NGN satisfaction)	**Knowledge Develops with Time and Exposure to Complex Clinical Situations** -skill and knowledge improve with time and more experience **Struggling with Uncertainty during Difficult Situations** -Challenges faced in difficult situations including, new skills, titrating medications and managing technology Being a Student in Critical Care -the reality of being an RN and accountable for patient care and actions impacted their transition to practice eliciting reality shock **Being a Student in Critical Care** -those who consolidated and hired had similar experiences to those who did not -encountered the reality of being accountable for actions and patient care -some even experienced reality shock -NGNs did not expect this difficult transition -felt they had higher expectations from those who were not students -fear they would always be known as "student" or giving too much responsibility too soon -positive: promoted socialization, understanding of unit dynamics, already **Novel Perspective Related to COVID -19** -organizational concerns -lack of planning and support during the hiring process -hours assigned not ideal for learning and integration in ED -need for robust and organized acute care orientation including specialized training and continuing professional practice -some felt training was not offered or available -orientation too short
An Emotional Spectrum -range of emotions -positive and negative	**Struggling with Uncertainty during Difficult Situations** -difficult situations induced mixed emotions

-excited about the environment -feared making mistakes -scared being on their own without their mentor -some hid fears to avoid looking inferior -fear during emergency situations	-difficult situations = deteriorating patients, rapid decline in status, life-threatening incidences, titrating medications, managing technology -uncertainty generated mixed emotions: stress, fear, panic, anxiety, feeling inadequate -physical response – sleep disturbances and "situational paralysis" -NGNs found ways to cope with these emotions: diversional activities, walk, fresh air, doing non healthcare activities **Knowledge Develops with Time and Exposure to Complex Clinical Situations** -emotions seem to dissipate with more experience and time -initial feelings of stress and anxiety, loss of control -with time NGNs felt accountable, remained calm, analyzed data, understood what to look for, aware of resources available, prepared for the unknown, improved pattern recognition, more realistic sense of agency, ability to manage care (titrating medications while also addressing other aspects of care such as communication with family and patient) -with time NGN increase confidence, skill, and knowledge
Developing Relationships -patients, colleagues, peers were important relationship building for NGN -bonding with family bolstered confidence -others lacked confidence around families -difficulty communicating with patients, due to sedation or delirium -communication barriers -felt satisfaction when communication was effective -mentor relationships – mixed experiences: role model vs. belittled -multiple mentors had a negative impact resulted in lack of consistency -peer support: confiding in peers helped them feel they were not alone -starting in groups of NGNs in the unit helped as they had a "mutual understanding"	**Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care** -informal and formal supports mitigating factor in achieving desirable nursing attributes and eased transition -informal support persons: fellow NGNs, colleagues who recently graduated (who can appreciate the transition process) -peers were valuable for emotional support, sharing stories, thoughts, and feelings -acceptance associated with the perception of their own competence -positive support and encouragement facilitated successful transition -formal support persons: fostered confidence, emotional support, protecting from criticism by others -when formal support available – reports less anxiety -feedback: essential and catalyst for feeling accepted and indicator of successful transition and helps NGN focus and modify on weaknesses **Barriers and Facilitators to Communication in Critical Care** ***Patient interaction*** -source of frustration -complex communication skills required

	-struggle recognizing needs of patients -barriers: interpreting messages and cues -initially removed themselves to avoid interaction ***Staff Interaction*** -barriers when collaborating with physicians and other health care providers -different personalities influenced approachability -fear of being laughed at, not knowing answers, or being a burden by calling so much -some found a balanced and equal collaboration -to conquer fears of communication NGNs sought validation from experienced RNs before calling physician -with experience felt these encounters less intimidating ***Facilitators to Communication*** -learn from experienced nurses through observation -providing empathy encouraged NGNs to try their best to understand their patient -logical sequence to improve communication: lip reading, sign language, closed questions, process of elimination. -if unsuccessful, requested help from experienced nurses
The Journey to Self-Satisfaction -development of critical thinking skills -self-reflection -observe trends and treatment patterns -began to trust their instincts and confidence grew -advocated for patients -questioned and reflected what they could have done better -reflection on scenarios where they made a difference, and this made them increase their self-satisfaction and sense of belonging in ICU	**Knowledge Develops with Time and Exposure to Complex Clinical Situations** -knowledge develops with time and experience -***initially***: task oriented based on orders, needs and care plans, checklist to complete all tasks -NGNs felt unsafe if tasks were not completed -loss of control, increased anxiety, distressed when tasks were added or skewed from the NGN expectation -***as they gain more experience***: time management strategy focus, creating goals and plans and actions based on set goals -felt accountable to manage clinical scenarios independently, and knew when to ask for assistance -***with more experience***: personal reflection, recognizing and responding accordingly to changes in clinical scenarios -anxiety and distress decreased -remained calm, analyzed data, understood what to look for and

	Support and Its Impact on Acceptance and Attaining Desirable Nursing Qualities in Critical Care -Acceptance (ties in with sense of belonging): either promoted or impeded by informal or formal supports provided -desirable nursing attributes recognized as: critical thinking, time management and stress management, effective communication -develop courage and assertiveness -advocating for families and patients
ICU Commitment -preconceptions of ICU and perception now that they have worked there -motivated by ICU being their dream job -perceived that lower nurse-patient ratio would give more time to look after patients -mixed views on ICU being appropriate for NGNs was dependent on previous experience, but others did not think this was necessary -not recommended for those with no past nursing experience (UK?) then do GNP should not go to ICU -senior nurses want GNPs to do a placement on ward first	**Being a Student in Critical Care** -those who consolidated and hired had similar experiences to those who did not -encountered the reality of being accountable for actions and patient care -some even experienced reality shock -NGNs did not expect this difficult transition -felt they had higher expectations from those who were not students -fear they would always be known as "student" or giving too much responsibility too soon -positive: promoted socialization, understanding of unit dynamics, already established some work relationships which help with transition process **Novel Perspective Related to COVID -19** -organizational concerns -lack of planning and support during the hiring process -hours assigned not ideal for learning and integration in ED -need for robust and organized acute care orientation including specialized training and continuing professional practice -some felt training was not offered or available -orientation too short

4.2 Integrated Discussion – Major Points of Consideration

4.2.1 Advanced Communication Skills in Critical Care

Eleven studies in our review cited elements of communication barriers (DeGrande et al., 2018; Della Ratta, 2016; Glynn & Silva, 2013; Leathart, 1994; Litchfield & Chater, 2007; O'Kane, 2012; Patterson et al., 2010; Saghafi et al., 2012; Vanderspank-Wright et al., 2019; Wiles et al., 2013) with one study focused exclusively on communication barriers and facilitators (Leathart, 1994). NGNs have difficulties with communication which in turn impacts the transition experience to critical care practice (Aydogan & Ulupinar, 2020).

Critical care nurses are required to have effective communication skills, as well as equally competent clinical abilities (The American Association of Critical-Care Nurses [AACN], 2005). In fact, communication skills and strategies are cited in three Canadian Association of Critical Care Nurses [CACCN] practice standards for Critical Care Nursing Practice (CACCN, 2017) and in Standard VII of National Emergency Nurses Association's (NENA) standards (NENA, 2018). The AACN's (2015) Standards of Professional Performance, used in combination with AACN's (2015) Scope or Practice and Standards of Practice, also reports on the significance of communication in critical care. Critical care nurses must engage in skilled communication using various approaches to support healthy work environments (AACN, 2005). One recent pre-post research study, in a 32-bed cardiothoracic ICU at a large, quaternary academic medical center in the southeastern United States, measured six standards of the Healthy Work Environment Framework and included appropriate interventions for each (Kester et al., 2021). To improve communication, unit staff were offered basic training in communication, organized, and delivered by the agency's clinical education department; management hosted approximately twelve department meetings each month including evening and night shift staff; a

newsletter with clinical information and acknowledging staff celebrations was distributed each month; and every day, the unit hosted interprofessional huddles to review patient outcomes and concerns (Kester et al., 2021).

Kester and associates (2021) study results promoted nurse engagement, suggesting nurses employed in healthy work environments improves nurse retention and reduces moral distress, thus facilitating high quality patient care (Kester et al., 2021; Ulrich et al., 2019). Interestingly, the AACN indicates that critical care nurses must master writing, speaking and nonverbal communication skills to maintain a safe work setting (AACN, 2005; Ulrich et al., 2007). While these elements are reported in the Standards, these elements of communication were not reported on in the QES findings. When considering what is currently known on NGNs in critical care and communication – other elements communication methods, for example, written, may expand the state of the science in this regard and merit future consideration.

Further, communicating with non-verbal patients is complex and demands time, continuity, and increased awareness by the nurse (Karlsson et al., 2012). It is essential to assess the patient's ability to communicate, to establish an effective plan of care to meet the physical and emotional demands of the patient (Grossbach et al. 2011). Misinterpreting patient messages or even missed communication can induce panic and fear, leading to adverse patient consequences (Happ, 2021). Challenges communicating with non-verbal patients may generate frustration, a common finding in our research, between both the nurse and patient (Carroll, 2007; Flinterud & Andershed, 2015; Holm & Dreyer, 2017; Rodriguez et al., 2015).

Critical care nurses do not necessarily receive specialized training in assessment or techniques to assist with non-verbal patients (Radtke et al., 2012) and are rarely offered communication supports, strategies and/or materials (Finke et al., 2008; Hemsley et al., 2001; Simmons, 2021). Our review stresses the importance of communication abilities and how these

NGN skills improved through observation and/or trial and error (Hemsley et al., 2001; Leathart, 1994; Magnus & Turkington, 2006). Consequently, incorporating communication training in undergraduate education, as well as agency orientation can prove valuable. The College of Nurses [CNO] (2019) entry to practice competencies reinforce the importance of incorporating evidenced informed communication strategies to develop strong therapeutic relationships in practice (CNO, 2019). A recent literature review reinforced the need for "(1) evidence-based communication tools, (2) clinician training, and (3) unit-based support to facilitate patient communication" (Happ, 2021, p. 257).

4.2.2 Being a Student in Critical Care Does Not Necessarily Make Transition Easier

The assumption that 'consolidating' or completing a major practicum in critical care enhances NGN transition to practice (often reported anecdotally), was surprisingly unsupported in our review, not to mention the challenge in securing a placement in these popular areas (Bautista et al., 2021). Although some NGNs were students before hire, they still experienced the same emotional challenges as their NGN counterparts with no prior critical care experience (O'Kane, 2012). This supports that *all* NGNs learning a new professional role can be faced with the physical, emotional, social, emotional, and intellectual demands during transition to practice (Duchscher, 2009). These changes are further complicated with addition of professional nursing responsibility and accountability of care; duties that student nurses do not have experience with (Duchscher, 2009).

One recent study noted that previous experience in a unit was not always related to NGNs' job satisfaction, turnover intent, role conflict or role ambiguity (Lalonde & McGillis Hall, 2017), which is consistent with our review findings. Another study documented the need for policy makers, key stakeholders, and those responsible for NGN onboarding, to appreciate that successful NGN transition to critical care practice is not necessarily shaped by previous

undergraduate clinical experience, but rather satisfaction with current work influences, such as being able to meet the holistic needs of complex patients, delivery of a robust orientation and acceptance from co-workers (Phillips et al., 2013).

A phenomenological study of nursing students' transition to NGN exposed initial optimism about their future in practice and role in nursing; however, after beginning their role, NGNs witnessed substandard nursing culture and often felt excluded (Jenkins et al., 2021; Kelly & Ahern, 2009). This data signifies the importance for nursing management, staff, and nurse leaders to provide equal support to NGNs hired to practice despite clinical and learning background (Lalonde & McGillis Hall, 2017).

4.2.3 Overcoming Challenges in Difficult Situations

Our review reveals that NGNs experience a range of emotions during transition to critical care critical care practice, especially during difficult clinical situations, such as caring for rapidly deteriorating patients (DeGrande et al., 2018; Della Ratta, 2016; Wiles et al., 2013). Our analysis aligns with Duchscher's (2009) transition shock model and its supportive elements. As previously noted, transition shock is referred to as "the experience of moving from the known role of a student to the relatively less familiar role of professionally practicing nurse" (Duchscher, 2009, p. 1105), and it can cause severe anxiety that may lead to physical and emotional strain, and high levels of stress (Duchscher, 2009). Our findings lend support to the latter. For example, intense emotions were found to elicit sleep disturbances (Garcĩa-Martin et al., 2020) among NGN participants, supporting the growing exhaustion experienced during transition shock. As Duchscher remarked, it is possible for NGNs to bring their work home with them; they may even dream about work (Duchscher, 2009).

Failure to recognize indicators of clinical deterioration is considered a patient safety concern and results in poor patient outcomes (Moldenhauer et al, 2009). Research contends that

NGNs have difficulty recognizing deterioration cues compared to experienced nurses (Orique et al., 2018) and lack clinical reasoning skills (Kavanagh & Szweda, 2017; Missen et al., 2016) necessary to respond and react accordingly, generating feelings of frustration and guilt about the inability to perform effectively in the nursing role (Duchscher, 2009).

NGNs focus on functioning day to day competently and are often "unable to recognize non-traditional clinical presentations or incapable of understanding the significance of subtle changes in the clinical condition of their patients" (Duchscher & Painter, 2021, p. 64). As the NGN progresses through stages of the Novice to Expert Model (Benner, 1982) during transition, their ability to recognize cues from the environment and attach meaning to those cues gradually improve (Burritt & Steckel, 2009; Hill, 2010).

Our research highlights coping mechanisms employed by NGN participants to counter emotional and difficult times during their transition. NGNs partook in diversional activities outside of work after experiencing an emotional or stressful event at work, this was found as an effective coping measure (DeGrande et al., 2018). Since diversional activities were found useful for stress reduction, the researcher sought after approaches to support NGNs when confronted in a difficult clinical scenario and ways to cope and respond after these experiences. One recommendation to alleviate intense emotions related to difficult events was participation in debriefing sessions (Lyman, 2021; Melin-Johansson et al., 2014; Santiago & Abdool, 2011, Taylor et al., 2020).

4.2.3.1 Formal Debriefing. Debriefing offers nurses an opportunity to cope with stressful situations (Santiago & Abdool, 2011), enhance communication among staff, improve patient care and reduce emotional burden (Halcomba et al., 2004). Participants in a recent study stated that a formal debriefing session initiated by hospital leadership would have facilitated more effective coping skills (Bentz et al., 2022). Debriefing promotes reflective thinking (Decker

et al., 2013), strengthens knowledge and skills (Dreifuerst, 2012), and focuses on promoting quality patient care (Decker et al., 2013). Debriefing shortly after an event allows for open conversations and helps to process thoughts (Nunes & Harder, 2019). Research suggests debriefing sessions are highly recommended following difficult scenarios, when health care providers experience intense emotions, or when new staff are involved (Taylor et al., 2020).

Debriefing is identified as an effective method to reduce stress among critical care nurses. For example, NICU nurses welcome support and debriefing from colleagues after a patient loss, rather than reaching out to family and friends, since other nurses would understand their unique experience (Jonas-Simpson et al., 2013) and can provide guidance along with sharing their own personal encounters. One palliative care study also disclosed nursing students' ability to effectively cope with their feelings after being able to share experiences with others holding debriefing sessions (Nunes & Harder, 2019).

Taylor et al.'s, (2020) qualitative study on ICU nurse experiences post withdrawal of life-sustaining treatments identified how nurses were rarely offered support or debriefing following a patient death and wished to have more time to include these open sessions to discuss thoughts and feelings about an event and to help them mentally prepare for their next experience in withdrawing life sustaining treatments (Taylor et al., 2020). An ED study on post-resuscitation debriefings stated that upper management could easily incorporate debriefing as part of a regular process, it is simple to execute, can be performed during a staff members shift, and only requires a quiet room, which is a cost-effective tool (Lyman, 2021). Another systematic review by Melin-Johansson et al. (2014), also found debriefing to have the most impact on the emotional well-being of pediatric healthcare professionals caring for children at the end of life (Rodriguez et al., 2020).

Debriefing after experiencing a difficult situation or event, facilitates open conversation to help normalize a difficult encounter and allows one to process their thoughts about an event (Nunes & Harder, 2019). One study collecting information on workplace well-being in ICU, discussed the importance of including formal debriefing into common bedside practice, as it "would allow for a better understanding of medical decision making and allow a more multi-disciplinary approach to patient care. It also means staff do not end up taking things home with them or feeling they could have done better" (Jarden et al., 2019, p. 18).

Understanding NGNs perceptions and feelings can inform future practice. Implementing debriefing can also prevent MD, promote retention, improve quality of care and safety, improve job satisfaction, and financially stabilize a unit (Spenceley et al., 2017; Wolf et al., 2019). MD is prevalent among CC nurses particularly in ICU settings (Browning, 2013). Literature supports when a nurse is unable to cope with MD to the point of burnout, patient care is significantly at risk (Pattison et al., 2020). Introducing group debriefing sessions in CC settings can help NGNs manage complex concepts and scenarios, professional and legal concerns, and develop strategies to address concerns in a timely manner and help prevent ill effects of MD commonly experienced (Santiago & Abdool, 2011).

Debriefing offers NGNs the opportunity to "ask questions, discuss feelings, review the events that occurred, and receive feedback, reassurance, and validation" (Hood & Copeland, 2021, p. 890). It is most effective when a reasonable amount of time is provided for participants to engage (Decker et al, 2013) and facilitators of the session must also assess participants learning needs and modify debriefing sessions according to the characteristics of each participant (Decker et al., 2013). Therefore, professional training is highly recommended for effective outcomes (Decker et al., 2013). Debriefing sessions can help NGNs cope with emotional distress and intense feelings, some may even uncover something important from these exposures,

through acknowledging personal reactions (Pender & Anderton, 2016; Vanderspank-Wright et al., 2018).

4.2.3 Supporting NGNs in Critical Care Nursing

Nine studies in our review discussed informal and/or formal support systems and their impact on NGN feelings of acceptance in CC (DeGrande et al., 2018; Della Ratta, 2016; Patterson et al., 2010). The level of assistance offered by formal supports, such as preceptors or managers, significantly influenced the transition experience (Glynn & Silva, 2013). Our findings reinforce Elias and Day's (2020) recommendations, stressing the significance of initiating and sustaining robust orientation programs for NGNs, that offer peer support services and robust mentorship programmes.

A recent systematic review (N= 130 included) examined various interventions used to support NGN transition to practice and uncovered very few studies concentrating on support for nurses in specialty areas, these studies only represented metropolitan hospital settings, excluding rural communities (Kenny, 2021). Transition to practice is distinct in rural settings, researchers have noted higher expectations of the rural NGN in the context of having with little to no supervision on site and remote access to physicians (Kenny et al., 2020). This emphasizes the importance of implementing further support resources for all NGNs transitioning to critical care practice regardless of the setting (urban, rural, academic, non-academic).

Wray et al.'s (2021) rapid evidence assessment review evaluated approaches to enhance transition experience and to improve NGN retention. Wray et al.'s (20201) review recognized informal approaches used to enhance and ease NGN transition included offering positive experiences and supportive work environments (Chandler, 2012), which includes acceptance by co-workers and multidisciplinary team members, and aspiring to feel part of the team (Andersson & Edberg, 2010; Brandt et al., 2017; Moore & Cagle, 2012). This supportive organizational

culture was strengthened by offering NGNs various learning opportunities and regular feedback (Edwards et al., 2015; Gardiner & Sheen, 2016; Pasila et al., 2017; Oosterbroek et al., 2017). These findings reinforce the need to promote socialization and incorporate peer support groups in hospital orientation programs.

4.2.3.1 Socialization. Socialization, the way NGNs learn the culture, behaviour, and values necessary to function in their new professional role (Farnell & Dawson, 2006; Lalonde & McGillis, 2017), is an important component when transitioning to critical care work environments (Ankers et al. 2018; Kelly & Ahern, 2009; Scholtz et al., 2016). The process of socialization can be perceived as overwhelming and stressful because of the discrepancy between professional values learned in education versus the realities of the clinical settings (Ankers et al., 2018; Feng & Tsai, 2012; Hickerson et al., 2016; Horsburgh & Ross, 2013; Lalonde & McGillis, 2017; Phillips et al., 2015; Voldbjerg et al., 2021). Finding solutions to foster an efficient socialization process can certainly improve transition experiences.

Voldbjerg et al.'s (2021) study exploring NGN socialization into the clinical environment and collaboration with health care staff and its impacts on NGN use of knowledge sources, one participant stated they "felt inadequately prepared on how to put theory into practice in a real-life setting" (p. 705). NGNs discovered an incongruence between standards taught in undergraduate nursing and the realities of professional practice (Ankers et al., 2018; Hickerson et al., 2016; Voldbjerg et al., 2021). This discrepancy prompted feelings of uncertainty, generating transition shock (Duchscher, 2009), affecting their ability to apply learned skills within an evidence-based practice context (Maben et al., 2006; Mooney, 2007), leading them to seek guidance and support from more experienced nurses (Voldbjerg et al., 2017) as a primary source of knowledge.

NGNs described their first few months transitioning to practice as "overwhelming, insecure and very difficult" (Voldbjerg et al., 2021). With additional clinical experience and

exposure, NGNs progressively established confidence in skills and capabilities, daily tasks became routine practice, and they were able to manage complex clinical scenarios, set priorities and felt independent providing safe patient care (Voldbjerg et al., 2021). Clinical experiences were significant to nursing student learning needs especially during post-clinical debriefings, allowing an open forum for reflection on experiences (Naylor et al., 2021). NGNs felt more independent and accomplished when able to complete tasks without seeking assistance from experienced staff (Voldbjerg et al., 2021).

4.2.4 Novel Perspective Related to COVID -19

One study in our review examined individual NGN transition experiences in an ED department throughout the onset of the global COVID-19 pandemic (Garcĩa-Martin et al., 2020). This study influences our review findings, as it encourages us to seek alternate interventions and strategies to ensure a smooth transition to practice, incorporating the detrimental effects a pandemic has on individuals and society. Naylor et al.'s (2021) examined NGN experiences working in acute care settings during a pandemic and identified several themes reinforcing our findings on transition. Exposing NGNs experiences during pandemic and understanding the exclusive challenges endured provides a foundation for educational interventions that have the potential to strengthen and preserve the nursing workforce (Naylor et al., 2021).

Offering NGNs proper support and resources during transition is key to job satisfaction and NGN retention (Naylor et al., 2021). Naylor et al.'s (2021) research identified astonishing participant encounters during transition to practice, including the "inability to eat and sleep, nightmares, crying over difficult work situations, reluctance to return to work, and feeling depressed that are potential evidence of extreme anxiety and stress, depression, or burnout and intention to leave nursing (p. 391). Some NGNs found caring for extremely acutely ill patients

with little training stressful and were overwhelmed with the everchanging PPE guidelines from the agencies (Naylor et al., 2021).

NGNs were significantly affected by each death they encountered. “The amount of loss that I’ve seen since March, at first it was always in front of my mind. I would say, I’ve lost four patients so far, I’ve lost six patients so far and now the sad truth is, I can’t even keep track anymore.” (Naylor et al., 2021, p. 386). NGNs also expressed uncertainty about their ability to identify signs and symptoms of a deteriorating patient (Naylor et al., 2021) which also links to our review. End of life decisions required frequent recommendations and collaboration with ethics committees (Naylor et al., 2021), which “takes a little bit of your soul away every time you have to do it” (Naylor et al., 2021, p. 386).

One systematic review (n= 24) concluded the presence of post-traumatic stress disorder (PTSD) among nursing staff during the first two pandemics and may be a reality for those currently caring for COVID-19 patients (Carmassi et al., 2020). Researchers discovered that exposure level to ill patients, years of nursing experience, female gender, and other strength and risk factors as an influence whether individuals might experience PTSD working during a pandemic (Carmassi et al., 2020). In previous epidemics, namely SARS and Middle East Respiratory Syndrome (MERS), nurses experienced mental health disparities (D’Ettore et al., 2021). Therefore, offering NGNs additional support to combat anxiety, depression, or PTSD, through counseling services, mentoring programs, structured weekly debriefing sessions, as well as introducing educational opportunities on caring for critically ill patients and the proper use of PPE (Naylor et al., 2021) can foster a smooth NGN transition process. NGNs are not alone, “working as a nurse during a pandemic was unknown to all nurses” (Naylor et al., 2021, p. 389).

4.2.5 Considering Self-Efficacy

Although previously undiscussed in this thesis, the results of this QES suggest that self-efficacy may be an important conceptual consideration for understanding NGN transition into critical care practice. Self-efficacy is a defined as "people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391). In the context of nursing practice, self-efficacy is termed as "the expectations of learning the knowledgebase and performing the various skills necessary to become a registered nurse" (Harvey & McMurray, 1994, p. 472). Benner's (1982) Novice to Expert model offers a robust conceptual framework in the development of national guidelines for NGNs entering critical care environments with the main objective of improving and building on NGN self-efficacy. Self-efficacy is the notion that successful work can be achieved (Bandura, 2012), and inspires the development of knowledge and skills required in a professional context post- graduation (Henderson et al., 2016).

Benner's Novice to Expert model will help promote change in how NGNs knowledge and skills are developed and will serve as a foundation for how NGNs can build and improve their skills based on experience levels (Benner, 1984). Benner's model will assist researchers in recognizing NGN performance and learning needs and classify them based on the five levels of skills acquisition (Benner, 1984). Researchers will also consider the effects of Duchscher's (2009) transition shock and incorporate strategies to target those times when NGNs emotions take over.

Our review recognizes three characteristics that promote self-efficacy support a smooth transition to professional practice through the accomplishment of achieved confidence, achieved comfort, and achieved competence. Achieving self-efficacy, in this context, the NGN realizes they can perform their professional role competently and achieve positive health outcomes

(Bandura, 1993), which in turn, motivates one to continue in their professional role. Factors associated with smooth NGN transition, identified in a scoping review on interventions that facilitate transition to practice in a final nursing student placement, include "the quality of the supervision, adjusting to a professional nurse's role, achieved comfort and confidence and achieved competence" (Kaihlanen et al., 2018).

Achieved comfort and confidence includes coping strategies, awareness of the work environment, and perceived NGN development (Kaihlanen et al., 2018). Achieved competence relies on the ability to put theory into practice (Demeh & Rosengren, 2015; Rebeschi & Aronson, 2009), perform clinical skills (Tseng et al., 2013; Chung et al., 2008), enhance communication (Démeh & Rosengren, 2015; Hamrin et al., 2006), develop leadership and critical thinking skills (Tseng et al., 2013), developing documentation, organizational and time management skills (Wieland et al., 2007), as well as understanding ethical nursing practice (Chung et al., 2008). Competence also correlates to the concept of "do no harm" (Aller, 2021) and provision of safe patient care.

As NGNs gain additional clinical experiences in their working environment, the more confident they become (Jenkins et al., 2021). A study exploring NGN work experiences and its relationship between self, workplace, and home-life, revealed positive and supportive work environments can bolster confidence levels in NGN participants around approximately six months into their new role (Ho et al., 2021). Confidence is nurtured through "formal preceptorship or similar newly qualified nurse programmes and being supported to engage with educational courses and conferences" (Ho et al., 2021, p. 2378).

Gazaway et al.'s (2019) research on the impacts of mentor relationships and NGN professional socialization noted an increase in confidence levels when NGNs "successfully took care of high-acuity patients" (p. 1187), expressing that without confidence they "would not feel

comfortable" (p. 1187). Improved confidence is also associated with enhanced knowledge and decision-making skills (Goldsworthy et al., 2019). NGNs also stated that their documentation and communication skills developed as their levels of comfort and confidence improved (Gazaway et al., 2019). Feeling like a competent professional nurse was ultimately met when participants' confidence and comfort increased in practice (Gazaway et al., 2019).

Tebbs et al.'s (2021) study discovered when participants were able to competently perform advanced assessments and understood the relevance of the clinical data they have collected, their confidence strengthened. Lalonde et al.'s (2021) research demonstrates "four key areas of transition for NGNs: performance of skills, comfort and confidence, transition into the role of the RN, and job satisfaction" (p. 409). Over time participants' confidence and comfort increased (Lalonde et al., 2021), correlating with other studies that discovered confidence and comfort advanced with more clinical exposure, after approximately one year of practice (Casey et al., 2004; Correale, 2017; Lalonde et al., 2021; Pfaff et al., 2014).

Confidence and competence are essential components to effectively transition to nursing practice (Aller, 2020; Klingbeil et al., 2016; Numminen et al., 2015; Phillips et al., 2015; Stam et al., 2015). Building on Aller's (2020) grounded theory research on nursing student development in decision-making and self-efficacy in undergraduate nursing school, our review's intent is to employ and develop appropriate practice guidelines that will encourage NGN confidence, competence, and comfort to reach self-efficacy within the first year of practice.

Participants established a correlation between knowledge and confidence (Aller, 2020). Over time they felt less uncertain in practice and developed more confidence in skills performed, thus improving professional competence (Aller, 2020). Inadequate nursing competence in areas such as direct clinical practice and patient safety measures (Willman et al., 2020), causes additional pressures in practice, diminishes confidence and NGNs may experience high anxiety,

stress and even burnout (Hu et al., 2017; Woo & Newman, 2020) affecting their commitment to the organization (Karami et al., 2017) and profession. Therefore, it is paramount that agency orientations are developed to target and promote NGN self-efficacy. NGN transition to critical care can be improved with an introduction to a formal program, supported by evidenced based best practices, by creating substantial guidelines that will target and promote NGN self-efficacy, thus improving nursing retention.

4.3 Strengths and Limitations of the Thesis

Implementing the JBI (2014) methodology strengthened our review. Using this approach allowed us to collect rich, qualitative data from peer reviewed literature and explore how previously reported findings can be synthesized to deepen our understanding of NGNs' transition experiences in critical care. Integrating findings from various qualitative sources, presents a more comprehensive view than in an individual primary study alone (Downe et al., 2019; Flemming & Noyes, 2021).

Our QES protocol was prepared according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA 2020 checklist) (Page et al., 2021). PRISMA 2020 was designed to assist researchers establish transparent accounts for their reviews and considers recent advances in systematic review methodology and terminology (Page et al., 2021). Our original plan was to register the protocol with PROSPERO, but researchers were already screening at the time we planned to submit. This is a condition in the PROSPERO guidelines; therefore, registration was not executed. Registering review protocols helps reduce bias, increases transparency, facilitates analysis, and improves trustworthiness of systematic reviews (Page et al., 2018; Stewart et al., 2012) and be seen as a limitation of this review. That being said, our efforts to provide a clear and transparent reporting of what how the completed the review aims to mitigate that limitation.

Creating a systematic search that is comprehensive and easily replicated, is a distinctive feature in a robust systematic review (Tong et al., 2012). Our search strategy was peer reviewed using the PRESS Checklist (McGowan et al., 2016) in collaboration with a medical information specialist (A.R-W.). Screening was completed using a web-based screening and data extraction platform Covidence® which streamlines the process of conducting a systematic review (Covidence Cochrane Community, 2022) and allows researchers to "import and screen citations and full text articles, resolve conflicts, extract data using customizable forms and export results in various formats" (Cleo et al., 2019, p. 2).

Two limitations of using Covidence® include potential malfunctions in software and the inability to backtrack when including and excluding references, as they disappear once a decision is confirmed (Cleo et al., 2019) – however, this was not experienced during our screening process. We also engaged in a rigorous hand-searching process and did include articles at this stage. Hand-searching, also known as "pearl growing" (Booth, 2016), locates relevant research not captured in the original database search and ensures that relevant studies were not overlooked.

Our research question and aim were clearly stated, a crucial component to ensure a successful QES (Drisko, 2020). Our review included only peer reviewed journals. All studies that met inclusion criteria were included, regardless of study quality. Studies ranking low methodological quality can produce new understanding, established from the data collected, while methodologically sound research studies may be compromised by poor analysis, leading to deficient insight into the phenomenon being examined (Noyes et al., 2022). Inclusion and exclusion criteria were clearly outlined, and our research expanded to include all critical care areas, comprising ED, pediatric and neonatal intensive care settings. This addition of critical care clinical settings expands the findings in Elias and Day's (2020) review based in adult ICUs, thus

enhancing transferability of findings. During our screening process, we also discovered an abundance of research literature found on NGN transition to areas of critical care practice such as, operating rooms and post-anesthetic care units, which could have also proven useful and add to our research findings.

Two reviewers (APB, SC) independently assessed the quality of each included study using the Joanna Briggs Institute Quality Appraisal Forms (Checklist for Qualitative Research) and a third reviewer (LS) examined all 12 studies. JBI's transparent process to critical appraisal has been analyzed and updated systematically and is fundamental to ongoing research credibility, transferability, and theoretical potential (Averis & Pearson, 2003). As needed, when discrepancies that could not be resolved between the first two reviewers, a third reviewer was designated to resolve the conflict. Using a critical appraisal tool helped establish transparency of the evidence synthesis results and findings. Expert judgement is an important factor when appraising the quality of research (Noyes et al., 2014).

One key strength in our review is the importance and use of clinical expertise, knowledge, and personal experiences among team members. Our research team consists of three certified JBI reviewers (AV, ARW, LS) who successfully completed the JBI Comprehensive Systematic Review Training workshop. One author (ARW) is also JBI instructor. This validates that our QES is rigorous and completed according to JBI regulations. The workshop prepares researchers to develop, conduct, and report systematic reviews of evidence. Other team members have expertise and knowledge in critical care nursing and have previously executed research on NGN and their transition practices (BV, ML, LS, SC, APB).

Our review examined twelve qualitative research articles. Booth et al. (2016) states that approximately a dozen research papers could offer rich data and feasibility in a review. By including other review methodologies such as quantitative research, and grey literature, may

have increased our understanding of the NGN transition experience to critical care. Accounts of NGN transition experiences may be present in quantitative research and may offer researchers different views using various data collection sources. We were unable to locate a few articles in our screening process, despite our search efforts, which also could have offered further information. Also, a few studies were published in various languages, including Italian and Cantonese, our team chose to not translate these articles. Translation of research was limited to only languages our researchers were fluent in, including English, Greek and French.

Findings from our review adequately represent the data from original primary studies and were used to develop nursing practice recommendations (JBI, 2014) for future NGN practice. Research findings supported and added value to our research question and provided valid information to support our future transition guidelines to CC practice. One study limitation identified in our review, discussed NGN communication strategies (Leathart, 1994). This study was executed in 1994 and may not necessarily reflect experiences of our current NGN generation and its accompanying characteristics of the millennial and Gen Z population, as the study represents new nurses working in ICU in the early 1990s. Another limitation is the possible misinterpretation of original research findings. However, all studies clearly reflected on the NGNs subjective experience and perceived consequences of transition to practice and appropriately answered our research question, participant voices were also documented respectively.

4.4 Recommendations

4.4.1 Implications for Nursing Practice

Findings from our review offer considerable insights on the unique NGN transition experience into critical care nursing practice. To successfully integrate NGNs into critical

nursing practice, we will disseminate our reviews key findings to nursing educators, administrators, and other key stakeholders, to determine any modifications and/or additions required to guarantee and implement robust orientation and transition programs for NGNs entering critical care nursing practice. Successful integration of NGNs into clinical practice is ultimately the responsibility of the employer and health care agency (Meghani & Sajwani, 2013). Highlighting how the nursing environment and examining its quality, is an important factor in successful NGN transition.

In the context of confronting the current global nursing shortage and sustaining the nursing workforce, emphasis on initiating and offering supporting services and guidance, including informal and formal, to NGNs entering practice is essential, especially those entering critical care settings. Critical care nurses require a basic set of foundational knowledge and skills. Critical care nursing is challenging technically, intellectually, physically, and emotionally where many NGNs entering practice are inexperienced (Chestnutt & Everhart, 2007; Stewart, 2021). The COVID-19 pandemic has negatively impacted working environments and the mental health of frontline healthcare workers in various critical care settings, intensifying the complicated transition experience even further. Therefore, offering NGNs unlimited supportive services upon entering critical care nursing practice, using a more flexible approach (Stewart, 2021) will permit time to develop clinical skills and knowledge at a gradual pace during the first two years of professional practice (Ho et al., 2021), until self-efficacy is achieved.

4.4.1.1 Leadership Responsibilities. Nursing educators and management lead the way for new nursing staff. NGNs feel the need to be validated by clinical educators and management (Mellor, 2021). Therefore, offering regular meetings with NGNs during and post orientation to promote encouragement and to assess whether further education or resources are required to improve their clinical experience, would be valuable. Keeping NGNs informed of any

organizational changes, access to additional educational opportunities and resources is also recommended.

Educators must also update staff concerning NGN transition to practice including the concept of transition shock, as well as educating appropriate staff about individual NGN knowledge, skills, abilities, strengths, and areas of improvement. This can help them allocate appropriate patient assignments to ensure safe patient care and practice.

4.4.1.2 NGN Orientation Programs. Pending approval and implementation, we recommend the application of a standard Canadian national guideline for all NGNs transitioning to critical care practice. A guideline that is universal across the board, inclusive of urban, rural and outpost settings and critical care settings with exception of operating room settings, as nursing in the operating room is a different skill set. Our guideline will provide a framework to all critical care orientations in Canada and will be supported by this reviews' findings, incorporating strategies to prevent and minimize potential harmful transition experiences by supporting the NGN along the way offering additional services.

Another recommendation is to modify individual agency orientations considering various factors affecting, and strategies implemented to improve the transition process to easily integrate the NGN into the critical care unit culture, reducing the probability of experiencing transition shock. Offering the NGN more time in orientation and more exposure to clinical scenarios would also prove useful.

4.4.1.3 Mentorship Programs. Mentors influence NGN socialization into unit culture (Buffum & Brandon, 2009), encourage career development by offering additional resources, helping identify strengths and weaknesses, create personal goals to improve practice and by evaluating personal achievements of these goals (Race & Skees, 2010). These programs strengthen nursing performance, improve retention rates, improve job satisfaction, generate

positive patient outcomes, and enhancing leadership skills (Bally, 2007; Huybrecht et al., 2011; Gazaway et al., 2016; Shaffer et al., 2000; Shaw & Degazon, 2008). Programs that correspond with NGN transition phases will influence role transformation from mentee to mentor and can undoubtedly enhance job satisfaction among experienced nurses and meet the needs of the NGN (Duchscher, 2008; Coomber & Barriball, 2006; Glasberg et al., 2007; Rowe & Sherlock, 2005).

4.4.1.4 Support Groups. Offering ongoing supportive services and resources during NGN transition is crucial for retention and improves job satisfaction (Naylor et al., 2021). Support is necessary on an organisational level (Regan et al., 2017). A culture of safety built and supported by nursing and organisational leadership offers the NGN the ability to seek support without fear of recrimination and provides an opportunity to build confidence. Lack of practice supports, such as mentors, negatively affects transition to practice (Parker et al., 2014). Implementing robust mentorship programs extending beyond the orientation period offers continued support and learning for NGNs (Casey et al., 2004). Additional support from expert nurses develops clinical competence and improves patient safety (Willman et al., 2020).

4.4.1.5 Communication Training in Critical Care. Communication skills in critical care unique and demand a unique set of strategies and tools. Training is recommended for all levels of nursing including NGNs. Unit educators and administrators should implement continuing education initiatives on communication methods and strategies, particularly with non-verbal patients or those requiring mechanical ventilation and unable to communicate. This will improve the quality of patient care and improve communication in critical care (Dithole et al., 2017).

4.4.1.6 Preceptor Training. Our review highlights the importance of preceptors and their influence on NGN transition to practice and how they bridge the gap between theory and nursing practice (Powers et al., 2019; Quek & Shorey, 2018; Ward & McComb, 2017). Offering

additional educational in-services to future preceptors can enhance professional development (Clipper & Cherry, 2015). Offering supplementary education via workshops, in-services, online education, etc. can strengthen the relationship dynamics between preceptor and preceptee. It is also recommended to inform preceptors regarding the NGN transition process including key elements of transition shock in their training, so they can understand and appreciate what the preceptee may be experiencing (Clipper & Cherry, 2015).

4.4.2 Implications for Nursing Education

Our study suggests several implications for nursing education. Firstly, the additional stress caused by the COVID-19 pandemic has intensified existing pressures felt during transition to practice. NGNs starting practice during the 2020 pandemic experienced scary moments, where orientation programs were frequently revised, reduced, and routines on units changed daily. Therefore, collaborating with local academic programs and health care agencies to implement structured nurse residency programs can ease the transition experience.

Incorporating theory on psychosocial and emotional aspects of the nursing profession grams informs students of the potential challenges they may face during transition to practice. Students “need to be aware of the reality of transition and how to navigate the health care culture” (Mellor, 2021, p. 1642). Having recent NGNs as guest lecturers, presents firsthand experiences and offers students an opportunity to inquire further.

Offering additional clinical hands-on experience and/or courses on critical care nursing in undergraduate programs presents future NGNs with a foundational knowledge of the CC setting and expectations of care in these unique environments. Participating in educational workshops, in-services, and various online education programs also encourage knowledge acquisition. The quality of clinical placements must also be evaluated on a regular basis to ensure students are acquiring proper clinical and management skills to practice effectively.

Undergraduate education programs should dedicate time and effort on the application and development of technical (Bucknall et al., 2016) and non-technical skills in health care, such as communication, leadership development, priority setting, and critical thinking (Tebbs et al., 2021). Developing non-technical skills offers NGNs confidence to integrate effortlessly into nursing environments and enhances quality of care and improves health outcomes (Tebbs et al., 2021).

4.4.3 Implications for Nursing Research

The findings of this review emphasize the limited amount of qualitative research examining NGN transition experiences entering CC. Only twelve studies met inclusion criteria, despite our rigorous search efforts. Studies in our review were based in USA, Australia, Canada, Spain, and the UK, reflecting current Western society, limiting the research found in developing countries. Future research is thus needed to explore NGN experiences as they transition to critical care nursing practice in developing countries, to identify cultural differences and/or similarities in findings.

Future research, including qualitative and quantitative approaches on NGN transition to CC practice could build on the strengths and limitations of our current studies. Also, implementing longitudinal research over a two-year period, to capture the NGN transition process, could offer more insight to the unique NGN transition journey. Considering our findings, expanding, and exploring further on what NGNs desired work outcomes and expectations are during their first few years of practice, could offer additional understanding of transition.

Additional research on various transition programs and its impact on NGN transition would also offer substantial information to key stakeholders in developing robust orientation programs. Integrating research on transition programs and incorporating a focus on the concept

of NGN self-efficacy, can contribute significantly to the research teams plans to implement national guidelines for NGNs entering critical care environments. Hence, further research is needed to develop and validate self-efficacy scales that will adequately measure NGN self-efficacy. Researching various educational approaches in orientation to nursing practices, including didactic and clinical components could also add value to our current research findings. Finally, additional research focused on our key review findings including communication in CC, support systems offered, difficulty during difficult clinical situations could further explain the NGN experience and expand our review findings.

4.5 Conclusion

Examining NGN transition experiences during the first two years of practice to CC practice, helped us discover relevant information that will support NGNs during transition to CC practice. Implications of this study include, improving agency leadership, management and understanding of NGN transition process and transition shock, through implementation of robust, structured orientation, mentorship and preceptorship programs, and the inclusion of standard education on transition to practice in undergraduate education programs, as well as offering additional elective courses in critical care theory. An effective transition to practice is crucial for sustainability of our NGN workforce (Kenny et al., 2021; Pellico et al., 2012; WHO, 2016).

In a critical care context, NGNs face additional challenges transitioning to practice, inclusive of specialized training and supplementary knowledge in an intricate, everchanging environment. Offering additional support, guidance, and access to various resources during the NGN transition to professional practice can foster retention, and improve confidence and competence (Schroyer et al, 2020). Understanding the depth of NGN transition experience, through the NGNs own narrative, helped researchers identify learning needs and has influenced the team to develop applicable national guidelines to facilitate a smooth transition to CC practice

in Canada. Implementing robust CC transition to practice guidelines and supporting NGNs with our review findings, will hopefully improve NGN retention to improve our current nursing shortage.

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