

AN INTEGRATIVE REVIEW OF THE FACTORS INFLUENCING THE RETENTION OF
NOVICE NURSES IN ACUTE CARE

by

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Chapter 1: Introduction

1.1 Background

The global nursing shortage is a significant challenge for health care systems around the world, especially for the delivery of care and workforce management (Lavoie-Tremblay, Wright, Desforges, Gélinas, Marchionni & Drevniok, 2008; Numminen, Leino-Kilpi, Isoaho, and Meretoja, 2017). Workforce challenges such as staff skill mix¹, workplace safety and compensation can negatively impact the nursing workforce which, in turn, affects the delivery of safe and effective patient care (World Health Organization [WHO], 2006). In Canada, these and other key factors are resulting in nurses leaving their workplace, producing a consistent void in organizations that are constantly trying to attract and train new staff to ensure a functioning health care system (O'Brien-Pallas, Murphy, Shamian, Li & Hayes, 2010; Schroyer, Zellers, & Abraham, 2016). This staffing void can disrupt workplace functioning and increase nursing workload on patient care units; thus, creating an unsafe work environment for healthcare workers that ultimately decreases quality of care and increases negative outcomes for patients (Laschinger, Leiter, Day, & Gilin, 2009).

Within the Canadian context, The Canadian Nurses Association [CNA] (2009) has estimated that there will be a shortage of 60,000 nurses by 2022. The shortage of nurses is predicted to increase steadily in coming years; novice² nurse attrition, inadequate recruitment, and early retirement are cited as the three most influential reasons for inadequate staffing levels

¹ Skill-mix refers to the number of appropriately skilled RNs and other healthcare workers such as LPNs scheduled on a given shift on a given unit (O'Brien-Pallas et al., 2010).

² For the purpose of this review, a novice nurse will be defined as a nurse who has less than 3 years of experience as a new graduate nurse. This definition reflects Numminen et al.'s (2017) longitudinal research on new graduate nurse competency changes in the first three years of practice.

(Lavoie-Tremblay et al., 2008; McCalla-Graham & De Gagne, 2015). Concurrent with the ongoing and worsening nursing shortage is the increasing demand for nurses to meet the care needs of people in diverse health care contexts who are living longer due to social and biomedical advancements. As people live longer with more complex illnesses, there is also a greater need for specialty trained nurses, such as nurse practitioners³ (Coomber & Barriball, 2007).

Workforce challenges are creating an unsustainable deficit of nurses to provide patient care, especially in acute care settings (Chung, & Fitzsimons, 2013; Guay, Bishop, & Espin, 2016; McCalla-Graham & De Gagne, 2015). The hospital setting is the primary site for complex illness treatment and high level clinical care, increasing the need to retain adequate staffing levels and skilled nurses in this environment (McCalla-Graham & De Gagne, 2015). In Canadian hospitals, the attrition rate for nurses in the first year of practice is 9-13% (Hayes et al., 2012; O'Brien-Pallas et al., 2010; Peterson, McGillis Hall, O'Brien-Pallas, & Cockerill, 2011). Because the Canadian Institute for Health Information [CIHI] (2016) reports that close to 60% of regulated nurses in Canada are employed in the hospital setting, there is a critical need to develop knowledge about how the hospital context impacts retention of novice nurses, especially in their first three years of practice. Retaining nurses in the hospital setting will help reduce the cost of training new nurses, decrease the burnout caused by staffing shortages, and improve the quality of patient care, as well as patient safety (Kooker & Kamikawa, 2011; Schroyer et al., 2016; Yu & Kang, 2016).

³ Nurse Practitioners (NPs) are advanced practice nurses with additional education and clinical training who work within the health care team with a larger scope than a BSN qualified nurse (CNA, 2018). Nurse practitioners provide holistic care to all types of patients and work towards increasing access to care and reducing pressure on the health-care system (CNA, 2018).

Patient and system factors, in addition to nursing workforce challenges, are having an exponential effect on the nursing shortage. To mitigate the ongoing impacts on the nursing workforce, policy and practice strategies are needed to address the known contributors. Although Numminen et al. (2017) determined that decreasing the effects of the nursing shortage is a multi-pronged effort, including targeted recruitment efforts and focusing on delaying retirement, they also highlight that the most cost-effective strategy ought to focus on is the retention of practicing nurses. Specifically, to slow the rate of turnover resources need to be invested towards the retention of novice nurses who are leaving organizations for reasons that could be avoided, such as difficult work environments, burnout, and scarcity of career advancement opportunities. (Lavoie-Trembler et al., 2008).

The transition to the post-RN graduate work environment has been found in the literature to be stressful, especially in the first years of nursing (Flinkman & Salanterä, 2015; McCalla-Graham & De Gagne, 2015; Peterson et al., 2011). There are many studies and reviews written about the retention of new graduate nurses in their first year; however, there are limited studies that focus on strategies tailored to novice nurses in their subsequent years of practice. Yu and Kang (2016) indicate that more than 60% of nurses with less than two years of experience express turnover intentions, and the rate of organizational turnover for this group of nurses is twice the rate of other nurse groups. Lavoie-Trembler et al. (2008) claim that 57% of new nurses leave their position after just two years. O'Brien-Pallas et al. (2010) cited the cost of replacing an acute care nurse at \$45,000 per employee and the cost of replacing a specialty nurse at \$64,000 per specialized employee. These research findings demonstrate the urgent need to curb current deficits within the health care system by focusing on retention of novice nurses to alleviate the significant human resource concerns that already exist. The financial benefits from reducing

turnover, such as the costs saved from replacing and training nurses, can provide a structure within which health care leaders and decision-makers can critically reallocate resources – both human and financial – into policy and practice changes geared toward bolstering the nursing workforce.

Addressing the individual needs of novice nurses and developing strategies to prevent attrition through structural support and improved job satisfaction can increase the likelihood of higher levels of retention (Halfer, 2011). Within published literature there is a myriad of factors cited to influence job satisfaction; these include job demands, self-efficacy, career development, communication, role clarity, organizational support, autonomy, burnout, and overall work environment (Coomber & Barriball, 2005; Ingersoll, Olsan, Drew-Cates, DeVinney and Davies, 2002; Laschinger et al., 2009; Peterson et al., 2011).

Research also indicates that nurses with less than three years of experience have a lower rate of job satisfaction and higher intention to leave their position (Flinkman & Salanterä, 2015; Halfer, 2011; Numminen et al., 2017; Schroyer, et al., 2016). Studies by Numminen et al, (2017), as well as Schroyer et al. (2016), indicate that it can take nurses three years to adequately adjust to the transition into practice and feel competent with their skills. Researchers studying new graduate transition in the first year have indicated that there is a need for support strategies for nurses to continue beyond the first year; some suggest to continue support strategies for two years (Lavoie-Trembley et al., 2008; Peterson et al., 2011) while others suggest three years (Coomber & Barriball, 2007; Flinkman & Salanterä, 2015; Halfer, 2011; Numminen et al., 2017; Schroyer et al., 2016). For this integrative review (IR), I present an analysis of what is known about structural support and job satisfaction for novice nurses while also synthesizing strategies that may positively affect job satisfaction.

1.2 Significance of the Issue

Programs and strategies aimed at supporting novice nurses in the workplace for the first year of practice have been successful in helping nurses transition into professional practice; however, support beyond this one-year period has been identified as critical for maintaining the nursing workforce (Halfer, 2011; Lavoie-Tremblay et al., 2008; Numminen et al., 2017; Peterson et al., 2011). Retaining nurses beyond the first years of practice supports their professional development, self-efficacy, skills, and competence (Peterson et al., 2011), which can also foster organizational commitment⁴ (Laschinger et al., 2009; Schroyer, et al., 2016) and facilitate high-quality nursing care (Coomber & Barriball, 2007; O'Brien-Pallas et al., 2010) while also contributing to cost effectiveness (Kooker & Kamikawa, 2011). Peterson et al. (2011) emphasized that organizational interventions focused on job satisfaction through reducing potential workplace issues can mitigate nurses' intentions thereby pointing to retention strategies for entry level nurses. Laschinger et al. (2009) confirmed organizational commitment to be a strong predictor of nursing turnover, and that an increase in such commitment among nurses can decrease psychological health challenges in nurses, such as those associated with burnout. While job satisfaction and organizational commitment are significant factors to examine, there is a need for a deeper understanding that can inform efforts to decrease organizational turnover in this group of nurses; thereby, minimizing the negative consequences for patient care and reducing the attrition impact on organizations and the health care system (Coomber & Barriball, 2007; Kooker & Kamikawa, 2011; Laschinger et al., 2009; McCalla-Graham & De Gagne, 2015; Schroyer et al., 2016).

⁴ Organizational commitment is the affective attachment or loyalty an employee has to the organization (Laschinger et al., 2009).

The overall aim for this inquiry has been to review and synthesize existing literature focused on nurse retention and distill specific strategies that can be tailored for novice nurses working within an acute care context⁵. The IR framework, described by Whittemore and Knafl (2005) (detailed in Chapter 3) provided the structure and scope to conduct this review; specifically, the derivation of the problem, review questions, analysis of the research and presentation of the results (Whittemore & Knafl, 2005). These stages of the IR framework allowed for a comprehensive investigation of the review question. Both qualitative and quantitative studies (experimental and non-experimental) were included to synthesize evidence and knowledge to address the complex question of how to retain novice nurses (Soares, Hoga, Peduzzi, Sangaleti, Yonekura, & Silva, 2014; Whittemore & Knafl, 2005). Recommendations and implications derived from the synthesis and analysis are provided in later chapters for nurse managers, clinical nurse educators, charge nurses, and other senior stakeholders working with novice nurses. The suggestions focus on ways to improve work environments in acute care settings, practice supports, education, and leadership for novice nurses. The findings will detail how a healthy work environment with appropriate supports can contribute to safe care that can, in turn, increase job satisfaction and organizational commitment, thereby decreasing turnover for novice nurses (Laschinger et al., 2009; Lavoie-Tremblar et al., 2008; Numminen et al., 2017).

⁵ The inquiry is specific to the acute care context in a hospital, setting the scope of the IR to meet the SPAR guidelines (as articulated by the *School of Nursing University of British Columbia*, 2013).

Chapter 2: Literature Review

In this chapter, I provide a literature context to outline the challenges related to retention of novice nurses described in the previous chapter. Specifically, I provide an overview of the strategies for nurse retention from the literature to outline where the gaps in knowledge exist for novice nurse retention which provides the justification for the IR. This section highlights what is found in studies regarding the importance of novice nurse retention in the acute care context both globally and within Canada and the impact of job satisfaction, organizational commitment, and transition theory have on novice nurse retention. Retention strategies within the literature are also explored.

2.1 Importance of Novice Nurse Retention in Acute Care

As indicated at the outset of this paper, research emphasizes the many factors contributing to the current nursing shortage. Specifically, novice nurse turnover has been highlighted as the area with the greatest potential to decrease the nursing workforce challenges through proposed interventions to decrease this burden (Lavoie-Tremblay et al., 2008; McCalla-Graham & De Gagne, 2015). Hayes et al. (2012) claim that nurses are mobile early in their careers, emphasizing the need for research focused on how to limit this movement to decrease attrition in healthcare. Several researcher claims the cause of career mobility to be generational (Hayes et al., 2012; Lavoie-Tremblay et al., 2008; Wilson, Squires, Widger, Cranley, & Tourangeau, 2008) where there is emphasis on the majority of novice nurses who are considered *Millennials* also known as *Generation Y*⁶. While there is some evidence suggesting that nurses

⁶ *Millennials* and *Generation Y* are interchangeable terms used to describe people who are born between 1980-2000. This generational group is characterized by being vocal about their opinions, has a tendency to resist traditional hierarchy, and a need to achieve work-life balance (Lavoie-Tremblay et al., 2008; Chung & Fitzsimmons, 2013).

who belong to this generation have attributes and needs that are different than those of other generations (Wilson et al., 2008), nurses from *Generation Y* have needs and concerns that overlap with those that have been identified by novice nurses. Although a significant proportion of novice nurses are from the *Generation Y* group (Chung & Fitzsimons, 2013; Lavoie-Tremblay et al. 2008), not all novice nurses fall within this generational group and thus this IR does not concentrate on specific generational differences, but rather concentrates on years of experience of the novice nurse.

Nursing literature from around the world, as well as from international organizations, such as WHO, and national organizations, such as CNA, have all emphasised the forthcoming workforce crisis with nursing shortages and nursing turnover. Also emphasized are the pressing issues for healthcare employers due to the impacts of nursing shortages and turnover on patient, nurse, and system outcomes (Hayes et al., 2012; O'Brien-Pallas et al., 2010; Twigg & McCullough, 2014). A nurse staffing shortfall in the organization increases the drain on already scarce resources, as they are reallocated towards recruitment and training of new staff (O'Brien-Pallas et al., 2010; Schroyer et al., 2016). This strain not only puts a large financial burden on the organization, it also puts a strain on the nurses' workload and disrupts the flow of the work environment, causing possible unsafe care that can decrease job satisfaction and the quality of the overall work environments (Laschinger et al., 2009; Maddalena, Kearney, & Adams, 2012; Numminen et al., 2017). Safe, competent, and ethical⁷ care is a key mantra set out for nurses by the CNA (2017) Code of Ethics; when undermined in the workplace, moral distress or ethical conflict can be experienced by nurses. These negative practice issues can also impede

⁷ While ethical considerations to work environment and provision of care has a significant relationship to novice nurse retention (CNA, 2017), it is not an area of focus that will be emphasized in this SPAR.

communication and continuity of care, impact patient outcomes and also increase the chance of medical error when providing patient care (Laschinger, 2012; Maddalena et al., 2012; Niitsuma, Katsuki, Sakuma, & Sato, 2012). The literature confirms that the nursing shortage and nursing retention are global phenomena (Flinkman & Salanterä, 2015; Lavoie-Tremblay et al. 2008; Mills, Woods, Harrison, Chamberlain-Salaun, & Spencer, 2017; Niitsuma et al., 2012). While studies of nursing workforce issues and concerns have unique features in the Canadian context (Laschinger et al., 2009; Lavoie-Tremblay et al. 2008; Maddalena et al., 2012; O'Brien-Pallas et al., 2010; Wilson et al., 2008), there are similar issues internationally (WHO, 2013).

Kooker and Kamikawa's (2011), Laschinger (2012), Laschinger et al. (2009), and McCalla-Graham and DeGagne's (2015) claim, in their respective studies in Canada and the US, that the majority of new-graduate nurses in work in hospital settings. In Canada, CIHI (2016) reported 60% of new nurses are employed in a hospital setting. Being the primary site for the treatment of complex illnesses hospitals require the greatest number of nursing staff, making the clinical context an ideal learning environment for new nurses to build their skills, knowledge, confidence and competence (Flinkman & Salanterä, 2015; McCalla-Graham & DeGagne, 2015). Complex and high acuity patients also receive care in these clinical settings that can add to nursing workload in ways that are associated with burnout (Bobbio & Manganelli, 2015; Schroyer et al., 2016). These factors point to the need to investigate how leaders of health care organizations can work on decreasing burnout and increasing retention in acute care areas.

2.2 Job Satisfaction and Organizational Commitment

A supportive work environment creates the context wherein nurses can provide quality patient care in a professional manner (O'Brien-Pallas et al., 2010). Job satisfaction and organizational commitment are two of the principal factors influencing nurses' intention to stay

and retention (Laschinger, 2012; O'Brien-Pallas et al., 2010; Wang, Tao, Ellenbecker, & Liu, 2012).

There are many different variables that contribute to job satisfaction. While the variable related to novice nurse job satisfaction are similar to those of experienced nurses, there are some unique aspects relevant to nurses in their first few years of practice (Coomber & Barriball, 2007; Pineau Stam, Laschinger, Regan, & Wong, 2015). Wilson et al. (2008) stated that job satisfaction is one of the strongest predictors of retention. Retention is achieved when a nurse continues to effectively work for the organization (Dimeglio et al., 2005) and job satisfaction is measured by specific facets that contribute to the nurses' overall professional fulfilment (Wilson et al., 2008). Some of the main facets that need to be achieved in order for novice nurses to reach higher rates of job satisfaction have been identified as learning the job description, obtaining the knowledge and skills to be autonomous in providing patient care as part of the team, and positive relationships in the work environment (Coomber & Barriball, 2007; Halfer, 2011; Maddalena et al., 2012; Wang et al., 2012). Working in an environment that is not conducive to these factors can cause dissatisfaction and self-doubt in the novice nurse, further impacting retention (Halfer, 2011; Peterson et al., 2011; Mills et al., 2017).

Wang et al. (2012) claim a positive relationship exists between organizational commitment and nurses' job satisfaction, which is why these two concepts are fundamental to include in a review about retention. Building trust and providing support are key mechanisms for organizations to establish commitment among their employees, especially those who are new to the practice environment and have not had a chance to build their loyalty (Bobbio & Managanelli, 2015; Twigg & McCullough, 2014). Nurses recognise that getting along with their peers, and having the adequate material resources needed to provide safe quality care for their

patients are two essential characteristics for a positive practice environment; this allows them to feel valued which reduces their chance of considering leaving the organization (Bobbio & Managanelli, 2015; Bontrager, Hart, & Mareno, 2016). Discord between novice nurses and their support network (i.e. other nurses in the workplace and nurse managers) has also been shown to increase frustration and further contribute to poor organizational commitment (Pineu Stam et al., 2015).

2.3 Transition from Student to Novice Nurse

McCalla-Graham & DeGagne (2015) report that the knowledge attained in nursing school is focused on passing the licensure exam versus preparing for the clinical setting. Consequently, this means the hospital orientation is a significant and substantive learning process for the new graduate nurse. Although skills such as starting an IV or inserting a catheter with sterile technique are important to learn as a new graduate, learning time management, social skills training, and coping strategies are equally as essential to *transitioning* from student to RN within an organization (Niitsuma et al., 2012; McCalla-Graham & DeGagne, 2015).

Transition theory has informed research related to novice nurse retention to describe the steps a new nurse experiences while adapting to their new role. Duchscher (2008) studies *Transition Shock*⁸ by investigating various stages of transition, as well as methods to ease a novice nurse through the early years of nursing (Duchscher, 2008; Guay et al., 2016; Lavoie-Tremblay et al., 2008). Transition theory has been proposed as useful when investigating the first year of RN practice, emphasizing the need for a thorough orientation, a method for integrating

⁸ *Transition Shock* is what new graduate nurses can experience when moving from the student role to the professional role (Duchscher, 2008; Guay, 2016). When faced with the many demands of the professional environment, the novice nurse can experience the negative effects. *Transition Shock* is demonstrated in Duchscher (2008)'s *Transition Shock Model* and includes loss, doubt, confusion, and disorientation.

into the work culture, such as preceptorship and mentorship, as well as the importance of more frequent *check-ins* with the new nurse (Guay et al., 2016; Maddalena, et al., 2012; Suzuki, Tagaya, Ota, Nagasawa, Matsuura, & Sato, 2010).

2.4 Retention Strategies Found in the Literature

Transition theory research highlights the critical need for support during the first year of practice and subsequently many organizations have integrated such strategies into new graduate orientation and support. Numerous retention strategies have been successfully implemented and these efforts have shown an increase in novice nurse retention in the first year of practice (Kooker & Kamikawa, 2009).

Facilitating a nurse's transition into a new practice environment or organization is critical during and beyond the first year, and for retaining nurses in the first three years of practice (Halfer, 2011; Schroyer et al., 2016; Yu & Kang, 2016). Schroyer et al. (2016) and Numminen et al. (2017) report that it takes three years for new nurses to achieve the status of being competent; research is needed to determine the needs of novice nurses and effective strategies to keep them in their jobs until they achieve competency and have an established loyalty and investment to the organization (Halfer, 2011). The focus for the first year of novice nurses is to achieve transition, task mastery, and integration into the workplace (Kramer, Halfer, Maguire, & Schmalenberg, 2012; Tomietto, Rappagliosi, Sartori, & Battistelli, 2015). Competence acquisition, understanding of the role and organizational rules through orientation, education, ward assignment, socialization, academic preparation, building peer networks, and residency programs are key methods used to help novice nurses transition (Bontrager et al., 2016; Kramer et al., 2012; Liebermann, Müller, Weigl & Wegge, 2015; McCalla-Graham & DeGagne, 2015; Suzuki et al., 2010; Tomietto et al., 2015; Yu & Kang, 2016).

The literature also emphasizes how preceptorship and mentorship are two effective methods to facilitate organizational socialization (Bontrager et al., 2016; Yu & Kang, 2016). The focus of the second year of practice is a higher level of integration into the organization (Lavoie-Trembley et al., 2008; Peterson et al., 2011; Tomietto et al., 2015; Yu & Kang, 2016). Career development opportunities, as well as involvement in the workplace decision-making, are critical for this group of novice nurses (Peterson et al., 2011; Tomietto et al., 2015; Van den Heede et al., 2013; Wang et al., 2012; Wilson et al., 2008; Yu & Kang, 2016). Supporting career development is a high priority for novice nurses in their third year of practice (Coomber & Barriball, 2007; Flinkman & Salanterä, 2015; Halfer, 2011; Numminen et al., 2017; Schroyer et al., 2016; Tomietto et al., 2015).

Although research show the impacts of *onboarding strategies*⁹ that are implemented during the first year of practice, several studies indicate that attention ought to also be paid to retention for nurses in the second and third year of practice (Tomietto et al., 2015). Laschinger's (2012) research indicates that although there are different needs amongst novice nurses of different years of practice, it is still important to engage novice nurses past the first year and work on strategies to ease their transition and strengthen their job satisfaction. Numminen et al. (2017) emphasized that although there is modest competence development in the first two years, the third year is essential to solidify the factors needed to be proficient in a particular practice area. Beyond the risk of leaving an organization, the most significant reason to target nurses in the first three years of practice is to build nurses' competence in one practice area; as their level

⁹ Onboarding strategies are methods put into place to recruit and retain new employees to the organization and can differ by employment organization; such as orientation to the hospital or mentorship programs (McCalla-Graham & DeGagne, 2015, Tomietto et al., 2015).

of mastery in their practice area can then aid in transitioning and mentoring novice nurses with less experience (Schroyer et al., 2016).

In an effort to further investigate the viewpoints covered in this literature review, the IR component to this SPAR project will endeavour to comprehensively explore the important factors effecting novice nurse retention within a specific sample of studies. Furthermore, this same IR sample will be examined for evidence-based retention strategies for nurses in the first and second year of practice and extend to nurses up until the completion of their third year of practice.

Chapter 3: Methodological Approach: Integrative Review

3.1 Project Design

This project was undertaken using an integrative review design. The IR synthesized primary research to construct an understanding of the concepts under study (Whittemore & Knafl, 2005). Aligned with the purpose of an IR, this review synthesized studies to shed light from different perspectives to answer the research question. Integrating different research designs, this IR incorporated both qualitative and quantitative studies to synthesize what is known. Exploring what is known about individual and organizational influences and strategies for nurse retention highlights new ways of looking at the current issues and can inform changes in clinical practice, policy and future research.

Currently, there is no widely accepted standard or framework for an integrative review (Webb & Roe, 2008); however, the framework proposed by Whittemore and Knafl (2005) has been used successfully in other studies, and was therefore used in this review to optimize consistency and rigour. The five steps of the review framework are as follows: identify research questions, conduct a literature search, evaluate data, analyze data, and present results (Whittemore and Knafl, 2005). These steps are outline in more detail in the sections below.

3.2 Identification of Research Questions

This project has 2 phases associated with 2 questions; the first phase included a review to answer the following question: *what is known about the individual and organizational influences on novice nurse retention?* This question was addressed by identifying the key individual factors influencing job satisfaction, such as lack of flexibility, being overworked, and lack of career advancement (Coomber & Barriball, 2007; Laschinger et al., 2009; Lavoie-Trembley et al., 2008), as well as organizational factors such as inadequate equipment, insufficient staffing, and

poor leadership support (Coomber & Barriball, 2007; Flinkman & Salanterä, 2015; Laschinger et al., 2009). Other influences prominent in the literature that lead to turnover such as work environment, ethical climate (Numminen et al., 2017), workplace empowerment, and supervisor and co-worker incivility (Laschinger et al., 2009) were also examined. Literature focused on identifying consequences for job dissatisfaction, intent to quit (Lavoie-Trembler et al., 2008; Yu & Kang, 2015) and turnover (Lavoie-Trembler et al., 2008; Coomber & Barriball, 2007) were also included to account for the negative effects on nurses' physical and mental health for impacts on lower productivity (O'Brien-Pallas et al., 2010), absenteeism, and burnout (Lavoie-Trembler et al., 2008).

The second phase of the IR was based on the second question: *what is known about individual or organizational strategies that foster novice nurse retention in the hospital setting?* To answer this question, studies describing specific programs that are in place for the transition of nurses in their first year of practice were reviewed and, from those studies, implications and recommendations for support novice nurses past the initial one-year new grad transition period were created. Also included in the IR were the few studies focusing on novice nurses beyond the first year. General retention strategies proposed for all nurses, ranging from short-term approaches, such as informal teaching on the unit, to prolonged formalized education programs used for certification or credentialing that were proposed within the literature were also included.

3.3 Search Strategy

The literature search for the IR was informed by the literature presented in Chapter 2; the literature contexts in the prior chapter helped to refine the strategy to conduct the comprehensive computer-assisted search of the electronic databases Google Scholar, PubMed, Medical Literature On-Line (MEDLINE), Cumulative Index of Nursing and Allied Health Literature

(CINAHL), and Web of Science¹⁰. While the preliminary literature searches in the previous chapter revealed a wealth of literature on the retention of new graduate nurses, a deeper search for the sample studies for the IR revealed the lack of research focused on the retention of novice nurses beyond the first year. The articles relevant to the IR question and those that were published in the last ten years were reviewed for inclusion. Journal articles meeting all inclusion criteria were considered: (1) studies that were peer reviewed research; (2) studies that discussed retention for entry level nurses; (3) studies that provided one or more strategies for nurse retention, and (4) full-text studies available on electronic databases. Due to the scope of this SPAR, unpublished abstracts and studies published in a language other than English were excluded. Thus, the extensive background information regarding novice nurse retention uncovered in Chapter 2 was useful in creating a focus for this IR and therefore drove the keyword search to obtain the sample for this review. Concepts such as organizational orientation, work environment, and organizational commitment were brought forward as key factors effecting novice nurse retention, in Chapter 2. For this reason, keywords used in the search for this IR were: retention, quality work environment, job satisfaction, new graduate nurse, novice nurse, organizational commitment, turnover, empowerment, communication, productivity, workforce, patient outcomes, intention to stay/leave, employee engagement, and burnout.

To broaden the scope of the search, keyword database searches were not the only method of searching for articles; relevant articles were also found through an ancestry approach¹¹ as well

¹⁰ Web of Science is a database of high quality publications in emerging scientific fields. Due to its extensive citation index, this database is useful to use for the descendency search method (Polit & Beck, 2014).

¹¹ The ancestry approach is a search strategy where the researcher uses citations within a study to find earlier research on which the study was based (Polit & Beck, 2014).

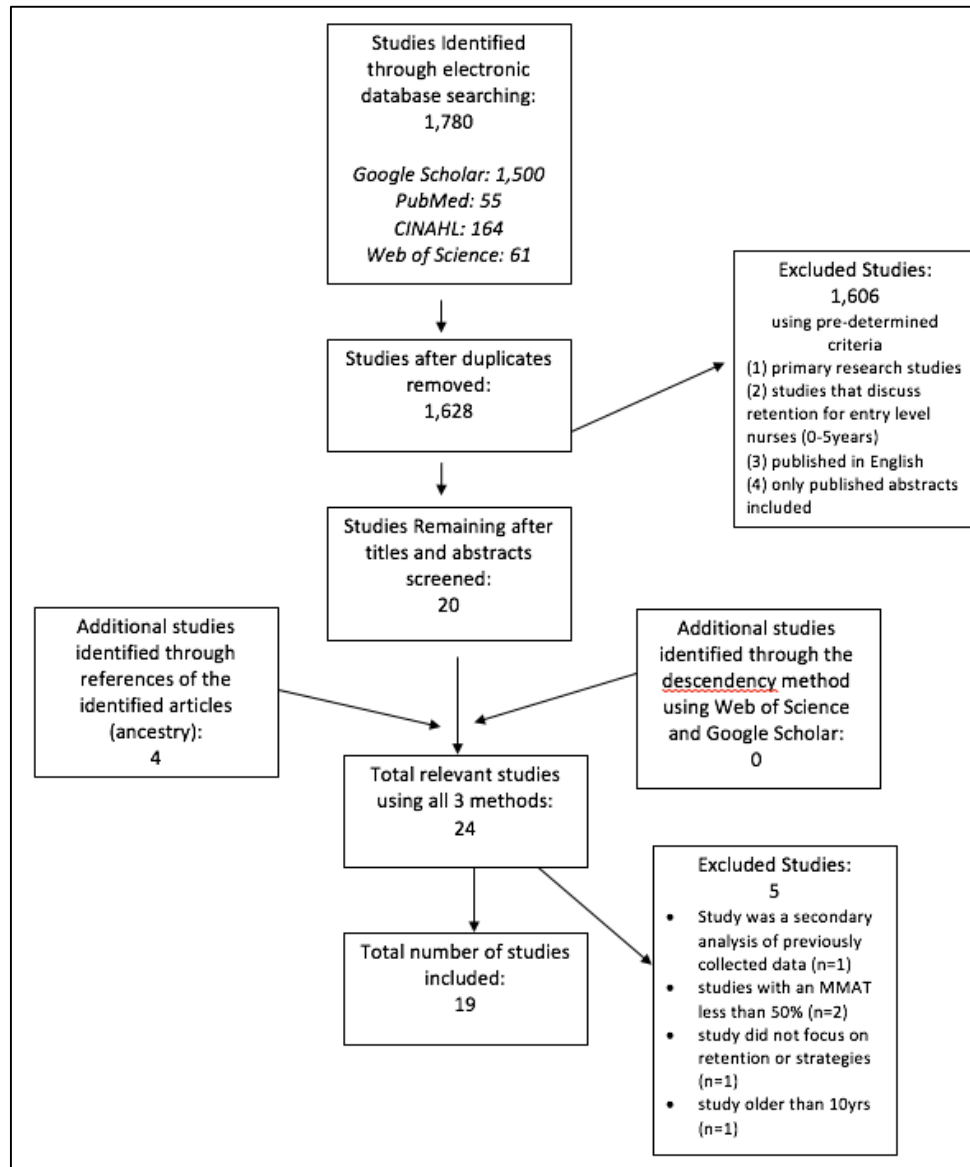
as a descendancy approach¹² (Soares et al., 2014; Souza, Silva, & Carvalho, 2010; Whitemore & Knafl, 2005).

3.4 Study Sample

Based on the above search strategy, a preliminary search of the four electronic databases yielded 1,780 articles. Once titles and abstracts of each of the relevant articles were screened, and duplicates removed, only 20 articles met the inclusion criteria. Adding in the 4 additional articles found through the ancestry method, and taking into consideration that there were no relevant articles found through the decendency method, a total of 24 articles were being considered. After all of the articles were read in their entirety, an additional 5 studies were omitted based on the predetermined inclusion and exclusion criteria. The selection process is illustrated in Figure 1 below, showing that 19 articles remained in the final study sample for this integrative review.

¹² The descendancy approach is a search strategy where the researcher identifies earlier salient studies and searches for more recent studies that have cited the prominent research (Polit & Beck, 2014).

Figure 1: Flow diagram representing the article selection process



3.5 Data Analysis

Mixed-method reviews, are a new form of appraisal looking to understand a concept or answer a question by drawing on and synthesizing the literature from a combination of qualitative studies, quantitative studies, and mixed-methods studies (Pace et al., 2012). Mixed methods reviews are beneficial for investigating research questions that may not be served by

focusing on either qualitative¹³ or quantitative¹⁴ studies alone¹⁵ (Soares et al., 2014; Whittmore & Knafl, 2005). As mixed methods reviews are new to report in the literature and lack consensus on the analytic method, there is some difficulty integrating results from studies founded in different paradigms (Soares et al., 2014); therefore, some mixed methods reviews have been reported to not effectively integrate the results these two research paradigms (Polit & Beck, 2008). In this IR I include both qualitative and quantitative studies in the thematic review process. This review is guided by the approach described by Whittmore and Knafl (2005); data analysis included data reduction, data display, data comparison, and verification and conclusion drawing.

3.5.1 Data reduction. The first step of evaluating the quality of the studies is to extract relevant data from primary sources and use a classification system to categorize the primary studies into sub-groups based on the type of research design used in the study (Souza et al., 2010; Whittmore & Knafl, 2005). Due to its neophyte status, there are few tools to appraise mixed methods research, and no standard tool has yet been suggested (Pace et al., 2012). More recently, a proposed tool called the Mixed Methods Appraisal Tool [MMAT] (Pluye et al., 2011) has been used in many mixed methods integrative reviews. Since the MMAT is still new, additional efforts to establish content validation, and reliability testing is needed; however, there are many published articles demonstrating that the MMAT is efficient. The MMAT is also unique as it is the only instrument that integrates all types of research within one tool (Pace et al., 2012; Souto et al., 2015); for these reasons, the MMAT was used in this study.

¹³ Qualitative studies focus on experiences and outlooks.

¹⁴ Quantitative studies focus on precise measurements and statistical analysis.

Using Pluye et al.'s MMAT (2011), the primary sources in this integrative review were sorted comparable to the five categories of evidence in the tool: Qualitative, Quantitative Randomized, Quantitative Non-Randomized, Quantitative Descriptive, and Mixed Methods. Based on the pre-determined questions of the tool pertinent for each sub-type of research, the studies were assigned a percentage score so that each article could be compared to one another. Only articles with a score of 50% or more were included in this study; for this reason, the 2 articles that fell below the 50% score were not included in the final 19 articles selected as the sample for this study (*as shown in Figure 1*). Sub-group classification is useful to simplify the data into a manageable framework and have a display to compare the studies (Whittemore & Knafl, 2005).

3.5.2 Data display. During the data extraction process, it was evident that there was an overabundance of relevant information to include in the matrix. For this reason, two different matrices¹⁶ were created in order to keep all necessary information ready in a systematic way. The first matrix, found in Appendix A, included key research factors of each study using the headings: *Author (s), date, title, journal, methodology, research methods, findings, and strengths and limitations*. As it is an iterative process, subheadings to include *study sample, study setting, and MMAT score* were also included within the matrix. The second matrix, found in Appendix B, is a thematic matrix meta-matrix using headings related to the three themes related to Q1 studied in this review. During the abstraction process, the author realized the importance of including the recommendations each article identified for retention of novice nurses in order to answer this study's Q2 and therefore an additional column was included in the thematic matrix to include

¹⁶ Matrices are an important step in identification and categorization of data and important for synthesizing and displaying the results of the review (Polit & Beck, 2008; Soares et al., 2014; Whittemore & Knafl, 2005).

recommendations. Much like Polit and Beck (2014) describe, this meta-matrix also uses each row to represent each case, and columns include summary notes from multiple data sources to allow for easy comparison. Additionally, both data matrices are split into three tables to separate out the quantitative, qualitative, and mixed-methods sources in order to facilitate comparison for readers.

3.5.3 Data comparison. This review utilised the constant comparison method commonly used in qualitative research to compare the similarities and differences of the data presented by the primary sources (Polit & Beck, 2008). This process, suggested by Whitemore and Knafl (2005), utilize the data from the thematic matrix to create a concept map that allowed the researchers to identify patterns and draw conceptual categories or themes. This break down facilitates the comparison and analysis of the data in a way that reduces bias and error as well breaks down the data into manageable segments, similar to the methods used in qualitative research. The comparison method used in this review was an iterative process and the themes evolved as the analysis process took place and new data was uncovered. Comparison results and thematic analysis is included in the findings section of this review.

3.5.4 Conclusion drawing and verification. This final phase of the analysis process is where the researcher describes how the themes conceptual connections were able to shape conclusions and clustered into three main themes from the information in the thematic matrix (Whitemore & Knafl (2005). In addition, conclusions drawn in this review occur as an integrated summation with all types of research rather than as conclusions for separate subgroups. This review therefore moves beyond being merely a catalog of the concepts, but is a description of what is salient in the overall questions for this IR.

During the conclusion drawing phase, time was spent re-visiting the conclusions and themes multiple times in order to avoid premature analytic closure (Whittemore & Knafl, 2005). Transparency and an analytical audit trail are an important part of an integrative review (Polit & Beck, 2008; Whittemore & Knafl, 2005); a reflective journal was kept during the review process where all thoughts, questions, and decisions relevant to the analysis were documented. The findings from the sample studies in this IR were synthesized to not only provide a summary of what is known about issues affecting novice nurse retention, but also to generate recommendations for how to decrease turnover and attrition for novice nurses up until the completion of their third year of practice.

3.6 Presentation of Findings

The IR results are presented in a descriptive form. An overview of findings outlines the methodology of the sample sources and different aspects of the sample are discussed. This overview is followed by a re-orientation to each of the research questions, first with a thematic review process (Polit & Beck, 2014) summarizing the synthesis for each of the three themes drawn (Soares et al., 2014) with supporting examples from the primary sources. Using a thematic review process is often used in qualitative analysis and is consistent with the constructivist paradigm as this perspective is often used in qualitative analysis (Polit & Beck, 2014). Lastly, in response to the second research question, a summary of the recommendations suggested among the primary sources is described.

Chapter 4: Findings

4.1 Study Characteristics

The final sample consisted of nineteen full text articles published between 2010-2017 addressing nurse retention (Bobbio & Manganelli, 2015; Bontrager et al., 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Halfer, 2011; Kramer et al., 2012; Laschinger, 2012; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Mills et al., 2017; Niitsuma et al., 2012; Numminen et al., 2017; Peterson et al., 2011; Schroyer et al., 2016; Suzuki et al., 2010; Tomietto et al., 2015; Van den Heede et al., 2013; Wang et al., 2012; Yu & Kang, 2016); Figure 2 includes the breakdown of the characteristics of each study. The studies were reported from countries all over the world although the majority of the studies originated from North America; five from USA (Bontrager et al., 2016; Halfer, 2011; Kramer et al., 2012; McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016) and four from Canada (Guay et al., 2016; Laschinger, 2012; Maddalena et al., 2012; Peterson et al., 2011). The remaining studies were conducted in Belgium (Van den Heede et al., 2013), Finland (Flinkman & Salanterä, 2015; Numminen et al., 2017), Italy (Bobbio & Manganelli, 2015; Tomietto et al., 2015), Japan (Niitsuma et al., 2012; Suzuki et al., 2010), China (Wang et al., 2012), South Korea (Yu & Kang, 2016), and Australia (Mills et al., 2017).

Due to the complex nature of the questions being explored in this review regarding novice nurse retention, an integrative review design was used. This design method requires both qualitative and quantitative studies to produce new knowledge as well as to give a multi-dimensional understanding of the synthesis of the studies (Soares et al., 2014) of what is impeding novice nurse retention and what can be done to enhance retention. As I have indicated above, for this reason, a variety of qualitative and quantitative studies were included in this

sample, as well as one mixed-methods study. The five qualitative studies used different approaches; naturalistic inquiry (Maddalena et al., 2012), descriptive (Flinkman & Salanterä, 2015); descriptive phenomenology (McCalla-Graham & DeGagne, 2015) and Grounded theory (Guay et al., 2016). The researchers used a combination of purposive and snowball sampling; except Guay et al. (2016) used a criterion sampling method. The fourteen quantitative studies included one using quasi-experimental method with random sampling (Schroyer et al., 2016), two descriptive designs (Kramer et al., 2012; Halfer, 2011) with unknown sampling, and eleven using a non-randomized design (Bobbio & Manganelli, 2015; Bontrager et al., 2016; Laschinger, 2012; Mills et al., 2017; Niitsuma et al., 2012; Numminen et al., 2017; Peterson et al., 2011; Suzuki et al., 2010; Tomietto et al., 2015; Wang et al., 2012; Yu & Kang, 2016). The non-randomized studies used either purposive, convenience, or stratified sampling. Six studies did not identify the type of sampling method used (Halfer, 2011; Kramer et al. 2011; Niitsuma et al., 2012; Peterson et al., 2011; Schroyer et al, 2016; Suzuki et al., 2010). Lastly, Van den Heede et al. (2013) used a mixed-methods design with random sampling in their research study.

The research designs were categorized and analysed using the MMAT tool. Only articles that scored 50% or higher were included in the sample for this IR. Six studies scored 50% (Bontrager et al., 2016; Mills et al., 2017; Niitsuma et al., 2012; Numminen et al., 2017; Schroyer et al., 2016; Yu & Kang, 2016), Six studies scored 75% (Bobbio & Manganelli, 2015; Kramer et al., 2012; Laschinger, 2012; McCalla-Graham & DeGagne, 2015; Peterson et al., 2011; Wang et al., 2012), and seven studies scored 100% (Flinkman & Salanterä, 2015; Guay et al., 2016; Halfer, 2011; Maddalena et al., 2012; Suzuki et al., 2010; Tomietto et al., 2015; Van den Heede et al., 2013). The implication is that the higher the MMAT score, the higher the methodological quality of the study (Pluye et al., 2011). Although it would be ideal to only

include studies on the higher end of the scoring spectrum, the lack of research in this area meant the threshold was set at a score of 50%.

Figure 2: Characteristics of the primary studies included in the integrative review (N=19)

Characteristics	N	%
Country		
Canada	4	21
USA	5	26
Belgium	1	5
Finland	2	11
Italy	2	11
Japan	2	11
China	1	5
South Korea	1	5
Australia	1	5
Study Design		
Qualitative	4	21
Quantitative (randomized)	1	5
Quantitative (non-randomized)	11	58
Quantitative (descriptive)	2	11
Mixed Methods	1	5
MMAT scores		
50%	6	32
75%	6	32
100%	7	37
Years of experience of sample within		
First year of practice	5	26
First two years of practice	5	26
First three years of practice	4	21
Beyond three years of practice	4	21
Other	1	5

Although this IR focused on novice nurses, not all of the studies discuss novice nurses specifically. Sixteen articles discuss novice nurses in their study (Bontrager et al., 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Halfer, 2011; Kramer et al., 2012; Laschinger, 2012; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Mills et al., 2017; Niitsuma et al., 2012; Numminen et al., 2017; Peterson et al., 2011; Schroyer et al., 2016; Suzuki et al., 2010; Tomietto et al., 2015; Yu & Kang, 2016) whereas the other 3 observe challenges and

strategies for nurse retention across all levels of experience (Bobbio & Manganelli, 2015; Van den Heede et al., 2013; Wang et al., 2012). Additionally, each study focused on a different level of experience in nursing. Even though the focus of this review was to look at the first three years of practice, the studies included represented a range from a few months of practice to more than three years of practice. This wide range of nursing experience amongst participants was included due to the gap of literature focusing on the first three years. Despite this wide range, distinctions between groups of nurses with different levels of experience were nevertheless seen. Five articles look at retention for the first year of practice (Bontrager et al., 2016, Guay et al., 2016; McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016; Yu & Kang, 2016), 5 articles look at the retention of the first two years (Laschinger, 2012; Maddalena et al., 2012; Peterson et al., 2011; Suzuki et al., 2010; Tomietto et al., 2015), 4 articles look at retention in the first three years (Halfer, 2011; Kramer et al., 2012; Niitsuma et al., 2012; Numminen et al., 2017), and 4 articles went beyond three years (Bobbio & Manganelli, 2015; Mills et al., 2017; Van den Heede et al., 2013; Wang et al., 2012). Flinkman and Salanterä's (2015) study does not stratify their samples based on years of experience, instead they use the nurses age.

4.2 Themes Drawn from the Studies

In an effort to try to categorize and display the influences found in the sample studies, the information drawn from the sample studies was sorted into three predominant themes:

Orientation, Knowledge and Skills Training, Work Environment and Socialization, and Organizational Commitment, Support, and Recognition. Although there are many factors that effecting job satisfaction, organizational commitment and overall retention for novice nurses, the three themes identified for this review were the most frequently cited as having the greatest potential to impact retention rates. These themes illustrate both the challenges and possibilities

for transition support for novice nurses in the first three years of practice. These themes are not mutually exclusive, but are interconnected; for example, knowledge and training influence the novice nurses' socialization while group cohesion in the workplace depends on the support and recognition from the organization conveyed through the frontline manager, which also depends on the knowledge, skill and effectiveness of the manager.

4.2.1 Theme 1: Orientation, knowledge, and skills training. Orientation, including mentorship programs, was discussed in 12 studies (Bontrager et al., 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Halfer, 2011; Kramer et al., 2012; Laschinger, 2012; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Numminen et al., 2017; Schroyer et al., 2016; Tomietto et al., 2015; Yu & Kang, 2016), knowledge was discussed in 6 studies (Flinkman & Salanterä, 2015; Halfer, 2011; Guay et al., 2016; McCalla-Graham & DeGagne, 2015; Mills et al., 2017; Peterson et al., 2011), and skills training was discussed in 7 studies (Flinkman & Salanterä, 2015; Halfer, 2011; McCalla-Graham & DeGagne, 2015; Niituma et al., 2012; Peterson et al., 2011; Schroyer et al., 2016; Tomietto et al., 2015). These three areas make up the basis for novice nurses. Knowledge and training are discussed in many different facets of novice nurse retention.

Understanding the influence of previous knowledge on the novice nurses' experience is essential; several studies, for example, described new graduate nurses as having low self-confidence as they felt they did not have the skills and knowledge from nursing school to work on the unit (Flinkman & Salanterä, 2015; Halfer, 2011; McCalla-Graham & DeGagne, 2015; Peterson et al., 2011). Nonetheless, Wang et al. (2012) reported that previous education did not have a significant correlation to job satisfaction.

The knowledge nurses obtained from the hospital varied amongst the studies; many discussed the importance of orientation programs in general, while others discussed residency programs (Bontrager et al., 2016; Halfer, 2011; Kramer et al., 2012; Schroyer et al., 2016), preceptorship programs (Bontrager et al., 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Laschinger, 2012; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Yu & Kang, 2016), and mentorship programs (Bontrager et al., 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Halfer, 2011; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016; Tomietto et al., 2015). Yu and Kang (2016) as well as Flinkman and Salanterä (2005) state that retention rates are higher for orientation programs three to four months long. It was found that onboarding and training were most important in the first six months (Tomietto et al., 2015); this is also when the guidance from a preceptor is beneficial (Yu & Kang, 2016). A good preceptor ensures a holistic orientation to the workplace, including socialization, patient care routines, and assists in promoting critical thinking (Bontrager et al., 2016; Guay et al., 2016; Maddalena et al., 2012). A negative preceptor experience, such as an inconsistent or negative preceptor, can cause anxiety, difficulty integrating into the organization, and overall job dissatisfaction (Bontrager et al., 2016; Maddalena et al., 2012; Niitsuma et al., 2012). Mentorship programs were also seen as necessary to facilitate long term transition (Flinkman & Salanterä, 2015). Mentorship programs help increase job satisfaction for novice nurses by improving integration into workplace culture, decreasing stress and anxiety with the use of coping skills development and emotional support (Bontrager et al., 2016; Guay et al., 2016; Halfer, 2011; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016; Tomietto et al., 2015). Schroyer et al. (2016) claim that the novice nurse retention rates increased after implementation of a mentorship program.

Finally, professional development, as a method of ongoing knowledge, skills, and leadership training as a form of competency development is reported in 7 studies (Halfer, 2011; Wang et al., 2012; Tomietto et al., 2015; Schroyer et al., 2016; Yu & Kang, 2016; Mills et al., 2017; Numminen et al., 2017). Novice nurses at all levels benefit from professional development; however, the main factor that contributes to novice nurse retention in the second and particularly the third year of practice is the availability and access to continuing education and professional development opportunities (Halfer, 2011; Tomietto et al., 2015). Numminen et al. (2017) indicated that novice nurses do not achieve competence until the third year of practice; these findings align with Halfer's (2011) claim that novice nurses are not ready to move through a clinical ladder until they have two to three years of clinical experience. Providing an opportunity for nurses to grow personally and professionally can enhance nurses' job satisfaction and occupational commitment (Wang et al., 2012). "Insufficient chance for development may result in occupational dissatisfaction and deteriorate nurses' intention to stay in the organization" (Yu & Kang, 2016, p.129).

4.2.2 Theme 2: Work environment and socialization

The significance of a positive practice environments is an essential component for novice nurses to achieve job satisfaction and build organizational commitment. Van den Heede et al. (2013) found that "patient-to-nurse staffing ratios and nurse work environments are significantly ($p < 0.05$) associated with intention-to-leave" (p.185). Nine articles in this sample associated aspects of positive work environment with nurse retention (Bontrager et al, 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Laschinger, 2012; Maddalena et al., 2012; Mills et al., 2017; Peterson et al., 2011; Suzuki et al., 2010; Van den Heede et al., 2013). Many aspects of the work environment, such as adequate staffing, adequate resources, workload, and pay were identified as

important in nurses' overall job satisfaction (Bontrager et al, 2016; Flinkman & Salanterä, 2015; Guay et al., 2016; Mills et al., 2017; Peterson et al., 2011; Suzuki et al., 2010). The findings from several studies emphasize the importance of understanding the needs of the novice nurse, which can vary based on age (Flinkman & Salanterä, 2015; Schroyer et al., 2016), as well as on the nurses' level of experience (Flinkman & Salanterä, 2015; Halfer, 2011; Yu & Kang, 2016). Kramer et al. (2012), as well as Tomietto et al. (2015), stated that novice nurses from 0-12 months were mostly fixated on the various aspects of the work environment they claim are dissatisfying. On the other hand, Guay et al. (2016) indicate that, as the novice nurses gain experience, their needs change and the impact of the workplace is less of a factor for retention.

Although the above workplace factors are important for novice nurse retention, socialization to the work environment was also found to be crucial component to achieving a positive work environment. In this sample, 7 studies addressed the importance of formal and informal socialization situations to contribute to nurse retention (Bontrager et al., 2016; Halfer, 2011; Kramer et al., 2012; McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016; Tomietto et al., 2015; Yu & Kang, 2016). Socialization can take place in many different ways. Tomietto et al. (2015) emphasize that socialization strategies built into a formal onboarding orientation program increases self-confidence and eases the transition of a novice nurse into practice. Support from co-workers and group cohesion was identified as a key component to orientation by 5 studies (Bontrager et al., 2016; Kramer et al., 2012; Schroyer et al., 2016; Tomietto et al., 2015; Yu & Kang, 2016); socialization was found to ease transition and reduce turnover. When novice nurses have negative experiences with preceptors or mentors, or other team members, they can become fearful of asking questions and develop anxiety about coming to work (Bontrager et al., 2016; Guay et al., 2016). Novice nurses often have fears and anxieties that

come with starting a new or unfamiliar experience, such as complex patients or a heavy workload. Having an emotionally supportive work team can help alleviate these anxieties and allow novice nurses to provide safe, competent, ethical patient care (Flinkman & Salanterä, 2015; Guay et al., 2016).

4.2.3 Theme 3: Organizational commitment, support, and recognition

Constructive socialization for novice nurse integration into the organization is also the responsibility of the managers and other organizational leaders (Bobbio et al., 2015; Bontrager et al., 2016; Kramer et al., 2012; Laschinger, 2012; Maddalena et al., 2012; Mills et al., 2017; Niitsuma et al., 2012; Peterson et al., 2011; Wang et al., 2012). Organizational commitment is a major contributor to novice nurse retention as emphasized by 9 studies in this sample (Bontrager et al., 2016; Flinman & Salanterä, 2015; Laschinger, 2012; Maddalena et al., 2012; Niitsuma et al., 2012; Numminen et al., 2017; Suzuki et al., 2010; Tomietto et al., 2015; Wang et al., 2012). Wang et al. (2012) found that age was a significant factor affecting occupational commitment and job satisfaction. Similarly, Flinkman and Salanterä (2015) ascertained that "...young registered nurses need social support from nurse managers and experienced colleagues to successfully transition into nursing practice environments" (p.1050). The main factors that influence nurses' organizational commitment are leadership effectiveness (Numminen et al., 2017), support and trust of the organization (McCalla-Graham & DeGagne, 2015; Mills et al., 2017), and recognition by leaders (Bontrager et al., 2016; Kramer et al., 2012; McCalla-Graham & DeGagne, 2015; Van den Heede, 2013; Wang et al., 2012).

Open communication, trust, and empowerment are reported to be some of the qualities novice nurses looked for in a nurse manager (Bobbio & Manganelli, 2015; Mills et al., 2017). Bobbio & Manganelli (2015) found that nurses trust their direct supervisor more than the

organization; however, rewards and recognition obtained through the organization increased trust. Nurses appreciated when their managers were visible, accessible, supportive, and had an interest in their progress (Bontrager et al., 2016; Flinkman & Salanterä, 2015; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Van den Heede et al., 2013). Different types of leadership styles, such as *servant leadership*¹⁷ (Bobbio & Manganelli, 2015), *authentic leadership*¹⁸ (Flinkman & Salanterä, 2015; Laschinger, 2012; Tomietto et al., 2015), and *participative management*¹⁹ (Van den Heede et al., 2013) were identified as models that were seen by nurses as a means to provide effective management.

Support of and trust in managers of an organization was an important aspect of organizational commitment (Laschinger et al., 2009). Halfer (2011) found that an important element towards job embeddedness was for the novice nurse to feel like a good fit within the organization; whether based on the culture or the specialty of the unit. Occupational commitment has a strong relationship with job satisfaction (Bontrager et al., 2016; Kramer et al., 2012; Numminen et al., 2017; Wang et al., 2012). Perceived support and trust in managers of an organization is attributed to the level of job satisfaction because positive working relationships with colleagues, including managers, can help nurses feel like their needs are being heard; this collegial trust encourages and fosters empowerment in nurses (Bobbio & Manganelli, 2015; Laschinger et al., 2009). Job satisfaction can be challenging when nurse values do not align with

¹⁷ *Servant leadership*¹⁷ is defined by Bobbio & Manganelli (2015) the leader putting the needs of the follower first. Servant leaders concentrate on serving others, concentrate on organizational goals, and are perceived as consistent and fair.

¹⁸ *Authentic leadership*¹⁸ is demonstrated by leaders when showing moral integrity and transparency in their decision making (Laschinger, 2012).

¹⁹ *Participative management*¹⁹ is when employees of the organization, in this case nurses, are invited to participate in hospital committees, groups, and innovation projects that allows for decision-making and hospital governance (Van den Heede et al., 2013).

organizational values or goals (Halfer, 2011; Wang et al., 2012). Nurse retention can be more successful when managers investigate the applicant's values and the way they fit in with the organization (Halfer, 2011). Negative experiences could be minimized and a more supportive environment could be achieved if organizational leaders were cognisant of the challenges faced by being inexperienced and overwhelmed (Flinkman & Salanterä, 2015; Guay et al., 2016). Underscored is the importance of nurse managers for creating a workplace culture that is supportive, allowing young RNs to voice their concerns" (Flinkman & Salantera, 2015, p.1055).

4.3 Strategies Drawn from the Studies

The individual and organizational strategies that foster novice nurse retention identified through this IR can also be organized using the following themes; *Orientation, Knowledge and Skills Training, Work Environment and Socialization, and Organizational Commitment, Support, and Recognition.*

Onboarding and socialization strategies are the most important for the initial phase of novice nurse transition. These two areas were found to be important in the literature review and apply to both the theme 1 and 2. It is recommended that organizations use a multilevel orientation program (Schroyer et al., 2016) as their standard practice, integrating theoretical knowledge (Guay at al., 2016; Tomietto et al., 2015), orientation to the organization (Laschinger, 2012), residency or preceptorship programs (Bontrager et al., 2015; Kramer et al., 2012), formal mentorship programs (Bontrager et al., 2016; Flinkman & Salanterä, 2015; Maddalena et al., 2012; McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016; Tomietto et al., 2015), and transition workshops (Guay et al., 2016). Within the aspects of orientation, there are more specific suggestions such as ensuring the onboarding process is lengthy enough to ensure appropriate orientation (Flinkman & Salanterä, 2015; Kramer et al., 2012; Numminen et al.,

2017), having a consistent preceptor in the first year of practice (Laschinger, 2012), and a formalized mentor as a coach, emotional support, and to enhance coping skills to decrease stress (Guay et al., 2016; McCalla-Graham & DeGagne, 2015). Professional socialization is important to be integrated into the onboarding process (Flinkman & Salanterä, 2015; McCalla-Graham & DeGagne, 2015), as well as an ongoing strategy for nurse retention. Organizations need to provide social skills training for all nurses and managers (Niitsuma et al., 2012) as well as facilitate group cohesion through team building and other social events (Maddalena et al., 2012).

It is important for hospital leadership to understand the needs of each novice nurse (Maddalena et al., 2012), considering different factors of retention at each transitional period (Yu & Kang, 2016) and modifying the orientation accordingly. Additionally, when organizations are aware of novice nurses' fears and transition barriers it is more likely that novice nurses will build trust towards the organization (Flinkman & Salanterä, 2015; Guay et al., 2016). Using supportive communication, providing recognition and reward for performance, and avoiding using nurses as a means to reach operational goals are other ways for organizations to build the trust of novice nurses (Bobbio & Manganelli, 2015; Mills et al., 2017). Ensuring the visibility of managers and administrative leadership was proposed as another way to build trust (Flinkman & Salanterä, 2015); however, only if manager and leaders are accessible and follow-up on reported problems (Van den Heede et al., 2013). Frequent communication with novice nurses allows the manager an opportunity to listen to the needs of the nurse as well as provide support and suggestions for further development. Performance appraisals at regular intervals, such as three months, six months, one-year, and then annually after that is suggested by Maddalena et al. (2015) as an appropriate timeline. These methods of building trust and supporting novice nurses are in line with theme 3.

In relation to Theme 2, practice environments for novice nurses are a source of anxiety and changes are needed to enhance job satisfaction. According to Van den Heede et al. (2013), using Magnet²⁰ criteria to enhance the workplace is an effective strategy. Managers also need to work with novice nurses to ensure their needs are met by adjusting workload (Peterson et al., 2011), task structure (Wang et al., 2012), and schedules (Kramer et al., 2012; Yu & Kang, 2016).

Career development support is important for novice nurses of all levels of experience; however, it is a significant strategy once novice nurses are in their second and third years of practice (Tomietto et al., 2015; Yu & Kang, 2016). For this reason, career development resources should be at the forefront of retention strategies for nurses beyond the first year of practice. There are many strategies to support career development; certifications, classes, research, and workplace training, all which can enhance novice nurses' skills, knowledge and overall competencies (Halfer, 2011). Once novice nurses achieve a certain level of professional experience and competence, they can then start to give back to the organization, either through mentoring a new nurse (Halfer, 2011), through participation in committees (Mills et al., 2017), or quality improvement and innovative organizational projects (Van den Heede et al., 2013). Although career development requires novice nurses to have a certain level of initiative to complete, leadership support is also necessary; leaders need to communicate what opportunities are available, provide funding to attend, or to arrange work coverage to allow the nurses time off to attend the development activity (Halfer, 2011; Maddalena et al., 2012).

²⁰ The Magnet recognition program is a conceptual model consisting of 14 forces of magnetism and five key components that hospitals strive to integrate into their organizational policies to create best practices and provide positive practice environments that attract and retain nurses (Van den Heede et al., 2013).

In addition to orientation and training, continuing education is essential to theme 1: *Orientation, Knowledge and Skills Training*. Several studies emphasize the importance of implementing professional development plans at the organizational level to facilitate nurses' personal growth and development (McCalla-Graham & DeGagne, 2015; Mills et al., 2017; Tomietto et al., 2015; Wang et al., 2012). In an effort to enhance nursing leadership, confidence, and competencies, clinical laddering (Flinkman & Salanterä, 2015; Halfer, 2011) and leadership pathways (Mills et al., 2017) are promising strategies for retaining nurses through professional advancement.

Finally, several studies emphasized the critical role of research for promoting novice nurse retention; longitudinal studies, controlled studies, and experimental studies were proposed for contributing to evidence about effective competency development that can enhance organizational commitment and retention (Flinkman & Salanterä, 2015; Laschinger, 2012; Numminen et al., 2017; Schroyer et al., 2016; Wang et al., 2012). The need for organizational leadership and novice nurses to conduct and participate in further research in this field of study falls under all three themes (list again here) derived from this IR. The importance of pre and post measures to evaluate retention interventions highlighted in this IR point toward effective strategies to implement to improve novice nurse conditions (Van den Heede et al., 2013).

Chapter 5: Recommendations and Implications for Nursing and Health Care

5.1 Recommendations

The findings from this IR confirm that onboarding and socialization of new nurses in their first year of practice, career development for novice nurses in their second and third year, and further research are essential to address nursing and health workforce challenges. The recommendations discussed in this chapter have been organized into three domains derived from the findings of this IR: (1) professional development, (2) organizational leadership and (3) practice environment. These recommendations are intended to guide stakeholders in their efforts to foster organizational commitment and job satisfaction for novice nurses beyond their first year of practice.

5.1.1 Professional development.

Recommendation 1: Provide support to navigate professional development opportunities. Professional and career development is an essential part of nursing, and is a key component of the CNA Code of Ethics (2017). Professional practice standards emphasize the importance for nurses to stay current with policies, procedures, and technology in the hospital, yet retention concerns brought up in this IR underscore the lack of career development support that facilitates competency development. A significant issue for novice nurse turnover is lack of opportunity for career development; the lack of clinical or theoretical learning opportunities as well as the lack of career advancement opportunities. Nurse educators play a critical role in increasing access to professional development both within the organization (Maddalena et al., 2012), and can promote awareness of mandatory and elective training opportunities, classes, and conferences (Griscti & Jacono, 2006).

Recommendation 2: Encourage nurse involvement in organizational work. Novice nurse retention can also be enhanced by engaging nurses in evidence-based practice; including participating in research that may expand their practice as well as career. Frontline nurses often have minimal exposure to appraising research. The findings of this IR support the strategy to provide frontline nurses with relief on the unit to participate in working groups, quality improvement projects, and policy development as it can facilitate organizational commitment and belonging to the institution (Griscti & Jacono, 2006; Halfer, 2011; Hogan, Moxham, & Dwyer, 2007; Mills et al., 2017; Pineau Stam et al., 2015; RNAO, 2008; Van den Heede et al., 2013; Wilson et al., 2008). Another more comprehensive suggestion is to create a virtual journal club where nurses participate in a facilitated program that is focused on appraising, discussing, and implementing the latest research (Berger, Hardin & Topp, 2011; Lachance, 2014). The online component can provide a meaningful and flexible way – at work or home – to engage novice nurses in competency development for evaluating and utilizing evidence based practice (Lachance, 2014; Park & Jones, 2010).

Recommendation 3: Create clinical laddering program. Clinical laddering programs have been implemented in some institutions and can be considered to increase professional development in hospital settings (Flinkman & Salanterä, 2015; Gaudine & Lamb, 2015; Schalk, Bijl, Halfens, Hollands, & Cummings, 2010; Twigg & McCullough, 2014). Yet some organizations have an unofficial ladder system that can be seen as ineffective because of the lack of a systematic pathway to advance through different positions. Effective clinical laddering programs require commitment, structure and collaboration; they require joint effort by the organization's management and education team, with involvement with the health authority's chief nursing officer for optimal success of the program within clinical settings (Warman,

Williams, Herrero, Fazeli, & White-Williams, 2016). Not only is clinical laddering a way of motivating and rewarding nurses for their performance (Twigg & McCullough, 2014; Warman et al., 2016), it is useful to help novice nurses begin their progression into specialty nursing roles as well as give senior nurses career fulfilment while being able to remain in direct care as experts in their specialty (Gaudine & Lamb, 2015). This intervention would not only increase the opportunity for nurse retention (Flinkman & Salanterä, 2015), but cross-training staff in different areas can enhance the skill levels and qualifications allowing managers to draw on nurses with diverse skills to train newer nurses or fill vacancies on various units (Warman et al., 2016).

5.1.2 Organizational leadership.

Recommendation 4: Ensure organization has effective leaders. Positive and effective leaders have been shown to increase retention (Hogan et al., 2007; Laschinger & Leiter, 2006; Laschinger, 2012; Van den Heede et al., 2013). Nurse managers and other members of the leadership team need to be trustworthy, transparent, and approachable in order to gain the trust and appropriately support novice nurses (Flinkman & Salanterä, 2015; Gormley, 2011; Hogan et al., 2007; Laschinger & Leiter, 2006; Laschinger, 2012; Van den Heede et al., 2013). These types of leaders are shown to have an open style of communication with the nurses on the unit, thereby creating a satisfying work culture (Flinkman & Salanterä, 2015; Gormley, 2011; Hogan et al., 2007). Along with being careful with selecting the right people into leadership positions, it is important that health care leaders and decision-makers provide leadership training, coaching, and conflict management education to all leaders including nurse managers (Niitsuma et al., 2012). Novice nurse leaders could then be provided with resources and training to become a great leader, while existing leaders can continue to develop their skills to actively listen, provide positive reinforcement, and constructive feedback (Gormley, 2011; Kooker & Kamikawa, 2011;

Mills et al., 2017). Effective nurse leaders also create a reason for novice nurses to stay within the organization; therefore, a multilevel leadership program can provide an avenue for nurses across experience levels for professional development, continuing education, and engagement into the organization (Johnson, Billingsley, Crichlow, Ferrell, 2011; Mills et al., 2017; Twigg & McCullough, 2014).

Recommendation 5: Ensure leaders provide support and feedback to nurses. Nurse managers have a responsibility to provide all nurses with feedback on their performance; in fact, regular performance appraisals should be done often and in a consistent manner (Suzuki et al., 2010; Maddalena et al., 2012). The findings from this IR indicate that, for novice nurses, appraisals should be completed at 3 months, 6 months, 1 year, and every year thereafter (Maddalena et al., 2012). In smaller department with fewer employees, these one-on-one interactions with nurses are logistically more likely to occur. These connection points are at key intervals in the transition journey for novice nurses (Duchscher, 2008; Suzuki et al., 2010), and a yearly review for those beyond the first year effective ways to reflect on how these new nurses are functioning with their work environment, are experiencing the overall organization, and their perception of the recognition of the value of their work, along with potential next steps for career development (Suzuki et al., 2010). In addition to these formal meetings, leaders also need to regularly visit the nursing workplace and ensure that they are accessible to listen to the ideas and concerns of nurses (Twigg & McCullough, 2014; Van den Heede et al., 2013).

5.1.3 Practice environment.

Recommendation 6: Provide opportunities for flexible scheduling. Novice nurses often have minimal seniority and often are last to select their schedules and vacation time (Wilson et al., 2008), which affects the quality of their practice environment. For this reason, managers need

to look at flexible schedules, such as self-scheduling, or switches to allow different option for nurses to be able to get their time off within the confines of the collective agreement.

Researchers have acknowledged that nurses from different generations may have different needs (Chung & Fitzsimons, 2013; Liebermann et al., 2015; Lavoie-Tremblay et al. 2008; Wilson et al., 2008). Nurses from *the Generation Y* group, making up the majority of novice nurses, often look to part time lines to attain the flexibility and time off need to either support their young families, or to further their education by going back to school (Chung & Fitzsimons, 2013; Lavoie-Tremblay et al. 2008; Wilson et al., 2008). For this reason, managers need to conduct the cost-benefit analyses of having more part time positions to avoid the hefty price tag of turnover (Wilson et al., 2008; Yu & Kang, 2016).

Recommendation 7: Establish a formalized mentorship program. Mentoring has been used in different programs in different ways and has demonstrated mixed results; however, if used appropriately, it can be very beneficial (Jewell, 2013; Johnson et al., 2011; Maddalena et al., 2012). Traditionally mentors are senior nurses on the unit who are assigned to one or two new nurses to guide and help them adapt to their practice environment and transition during their first year (Park & Jones, 2010; Schroyer et al., 2016). By establishing a formalized mentorship program, leaders can facilitate this opportunity for senior nurses to grow professionally and give back to the organization by volunteering to be mentors (Bontrager et al., 2015; Schroyer et al., 2016). By embedding mentorship into the workplace culture, novice nurses would have a wide selection of possible mentors to self-select mentors from their practice area and with whom they have created a foundational connection (Maddalena et al., 2012). Nurse managers and educators can support this connection and mentorship process. Novice nurses could also mentor other novice nurses in the form of peer-support; for example, they could facilitate groups that create

connections whereby they can relate and sympathize with each other's concerns or stresses (Guay et al., 2016). Mentorship in an organization can also be fostered through self-care initiatives for all RNs on a regular basis; employees with different levels of experience can get together and create relationships that can support learning and self-care practices that could decrease stress and burnout for all staff (DiMeglio et al., 2005; Maddalena et al., 2012).

Recommendation 8: Recognize staff. Health care leaders and nurse managers ought to recognize and reward nurses preceptors and mentors who nurture new nurses. (Hogan et al., 2007). Providing thank you notes, small tokens, recognition at award ceremonies, as well as additional training for preceptors and mentors to recognize their efforts providing mentorship within the organization, all are strategies for facilitating novice nurse retention (Twigg & McCullough, 2014, Van den Heede et al., 2013; Wilson et al., 2008).

Recognizing and rewarding staff for their individual performance, in addition to recognizing staff as a team within an organization, is a critical strategy for valuing employees in their practice environments (Bobbio & Manganelli, 2015; Maddalena et al., 2012). Hosting regular events where employees get together such as hospital appreciation breakfasts, holiday parties, and unit food prizes are all essential ways to promote team building. Providing a lounge where nurses can get together for connection time is also another avenue for nurses of all experience levels to get together outside of the hustle and bustle of the unit and bond. These strategies are especially helpful for novice nurse retention; however, all nurses can benefit from this strategy (DiMeglio et al., 2005).

5.2 Implications for novice nurse retention

In this paper I have shown that research in the area of novice nurse retention is critical for addressing nursing and health care workforce challenges within Canada. Prioritizing retention

can enhance workplace stability, fosters teamwork, and can build confidence in novice nurses (Schroyer et al., 2016). Finding ways to support the novice nurse can boost the moral and increase efficacy and flow of the whole unit (Laschinger et al., 2009). It is important for advanced practice nurses, such as nurse educators and nurse managers, to implement evidence from research about novice nurse retention and engage in knowledge translation to apply the recommendations to their organization.

Novice nurse retention strategies within the IR have also pointed to concomitant cost savings for health care facilities (Schroyer et al., 2016). For example, facilitating job satisfaction and organizational commitment for novice nurses is an investment in developing loyalty to an organization; nurses will then look for opportunities within the organization rather than elsewhere (Ingersoll et al., 2002; Lavoie-Tremblay et al., 2008). And reducing vacancy rates has been shown to have positive financial impact organizations and overall health care budgets (Kooker & Kamikawa, 2009).

The focus of this IR has been on the novice nurse retention and its positive impacts on the nurses themselves and the organization. Yet, the benefits of retaining novice nurses extend beyond these domains. There are additional stakeholders relevant in this effort to retain new nurses; for example, patients are also positioned to benefit from novice nurse retention. The findings from this IR confirm that novice nurse retention can increase patient satisfaction and continuity of quality patient care (Guay, 2016; Kramer et al., 2012; Schroyer et al., 2016).

The emphasis within the literature is on retaining nurses within the first year, and several studies in this IR highlight the importance of further research (Flinkman & Salanterä, 2015; Laschinger, 2012; Schroyer et al., 2016; Van den Heede et al., 2013; Wang et al., 2012). Advanced practice nurses are well-positioned to conduct research in this area, specifically

experimental comparative studies while also testing the efficacy of the interventions for novice nurse retention (Van den Heede et al., 2013). An organizational commitment through nurse manager and director support is required to conduct research in different practice contexts to measure the impact of retention interventions (Peterson et al., 2011).

5.3 Discussion

Strengths. Using an integrative review design, this study engaged in a multi-method search strategy and included qualitative and quantitative research to maximize the potential that the study question could be answered drawing from evidence in different paradigms (Whitmore & Knafl, 2005; Soares et al., 2014). Employing these techniques of mixed-methods decreases potential bias and error (Polit & Beck, 2008) and allows the researcher to answer the question that cannot be answered from only one approach (Polit & Beck, 2008; Whitmore & Knafl, 2005). Using data triangulation, keyword search, ancestry, and dependency, increases the rigor of this IR to decrease the potential for (Polit & Beck, 2014). The mixed methods IR approach is compatible with the goals of nursing research to create evidence and knowledge for practice, thereby providing direction for programs relevant to clinicians and decision makers (Pace et al., 2012, p.2). The author kept a reflexive journal during this IR analysis process; the journal notes were used to increase the IR rigor by creating a space to reflect on any biases and their influence during the IR process (Polit & Beck, 2008). The reflexive journal was used as a place to see connections between ideas, notes, thoughts, findings from different studies, and how they fit together. The reflexive journal was a means of keeping track of the significant outcomes, how they related back to the scope of the IR and how the thoughts evolved over time.

Limitations. Several limitations of the SPAR are important to discuss. As part of the master's degree SPAR criteria, there was only one primary analyst conducting the study in

consultation with 2 faculty supervisors; therefore, inter-research confirmability of the IR analysis was not implemented (Polit & Beck, 2008); however, the analysis matrices were reviewed and confirm by the primary supervisor at 2 time points. Another limitation was the exclusive use of electronic databases for full text articles as print and alternate sources were not easily accessible.

While mixed method studies come with many strengths, the emerging empirical status of this type of research and the apprehension of combining research with different methodologies can decrease rigor (Whittemore & Knafl, 2005). Also, the MMAT tool is relatively new and its use has been limited, thereby potentially weakening the confirmability and validity of the tool until further testing has been undertaken.

The most difficult aspect of this review was working with the existing research. Saturation was not able to be reach due to the minimal primary studies available investigating novice nurse retention beyond the first year of practice. Additionally, despite a comprehensive search of the electronic databases the most relevant sample of studies contained many methodological flaws, including low response rates, response biases, sampling biases and were mostly conducted in a cross-sectional nature.

Although some aspects of this study could be generalizable, given that similar conclusions were drawn from studies conducted in countries all over the world, there is some restriction of generalizability due to some of the methodological limitations. Despite this constraint, the results from this review re-emphasizes that concerns about novice nurse retention are at the forefront in all areas of nursing worldwide and that further, more rigorous research is needed.

Further research. From the results of this integrative review, it is evident that more rigorous research is needed in this area of study. Some ways to improve rigor in this area of

research include more researchers taking on primary studies, using longitudinal designs, and conducting the studies in multisite contexts. Many studies are limited to one hospital, or one geographical area and the results are not widely generalizable (Schroyer et al., 2016). Not only is it necessary for researchers to conduct primary studies on evaluating retention methods (Van den Heede et al., 2013), it is also important for longitudinal research that goes beyond the common 6-12 month time frame (Laschinger, 2012; Schroyer et al., 2016). These additional methods of conducting research about novice nurses, and the ways in which to retain them, can contribute to evidence-based strategies for their implementation within health care organizations.

Another research area for novice nurse retention would be to create a cost-benefit-analysis of certain retention strategies and compare them to the cost of turnover. Although this review focused on the importance of novice nurse retention in a hospital setting, there is evidence to suggest that certain strategies such as mentoring, training, and communication could start in nursing school (Guay et al., 2016). It would also be advantageous to involve school administrators, instructors, and nursing students in further research. It would be beneficial to see if additional strategies linking hospitals and other health care organizations with nursing students while in school would also help with post-grad novice nurse retention.

5.4 Conclusion

The focus of this SPAR project was to use an integrative review method to investigate the pressing issue of novice nurse retention in the current health care system. Novice nurses, especially in the first three years of practice, are at high risk for turnover due to the multitude of factors identified in this preliminary review. The goal of this research was to identify the existing retention literature, acknowledge the gaps in the literature, and critically analyze the findings from selected studies to provide recommendations on how to retain novice nurses. Using the

framework of the three themes (*Orientation, Knowledge and Skills Training, Work Environment and Socialization, and Organizational Commitment, Support, and Recognition*) identified within this review, the SPAR aimed to provide frontline stakeholders and policy makers with information and interventions that can be put into place in order to support novice nurses and thus decrease turnover in this large and significant group of nurses. The end result of retaining novice nurses will help decrease the burden felt by the nursing workforce allowing nurse satisfaction, successful operational functioning, and provision of safe, competent, and ethical patient care.

Revealing what the evidence shows in regards to the retention of novice nurses could also stimulate an interest for advanced practice nurses to pursue further research related to the strategies presented, ideally through intervention studies, to show the effectiveness of each of the identified retention strategies. Novice nurses in the first three years of practice have the longest workforce potential, and increasing retention rates in this group can lighten a large human and financial resource burden worldwide (Chung, & Fitzsimons, 2013). The insight and strategies provided in this literature synthesis can contribute to retention of novice nurses in the acute care context, and ultimately alleviate some of the pressure of continuously hiring and training new nurses. The outcomes of this review are meant to help frontline stakeholders such as nurse managers, nurse educators, and senior staff with leadership responsibilities understand and support novice nurses. Additionally, the outcomes should help administrative stakeholders, such as institutional or legislative policy makers, decrease the overall cost and impact of turnover on the healthcare system (McCalla-Graham & DeGagne, 2015; Schroyer et al., 2016) by instituting some of the strategies recommended for retaining novice nurses. Understanding influences on

turnover intentions of novice nurses and strategies of how to retain this group is critical for maintaining a functional healthcare system in both local and global contexts.

Author contributions

SA, HB, and PR were responsible for the study conception and design. SA was the primary investigator and performed IR analysis, and drafted the SPAR submission document. HB and PR made revisions to the paper and provided administrative support. HB and PR supervised the study.

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Conflict of Interest

No conflict of interest has been declared by the authors.

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Appendix A: Matrices for Key Research Factors

Table 1: Matrix of key research factors in quantitative studies

Author(s), Date, Title, Journal	Methodology	Research Methods	Findings	Strengths and Limitations
<p>Suzuki, Tagaya, Ota, Nagasawa, Matsuura, & Sato (2010)</p> <p>Factors affecting turnover of Japanese novice nurses in university hospitals in early and later periods of employment</p> <p><i>Journal of Nursing Management</i></p>	<p>Study Design: Prospective cohort study (quantitative)</p> <p>Aim/Objective: To explore factors affecting turnover of novice nurses during 10th-15th month</p> <p>Study Sample: -1030 full-time Japanese novice nurses in from phase I who are now in their 10th-15th month of practice -response rate for phase I 85.6% response rate for phase II 77.1% (762 novice nurses) -sampling method not identified</p> <p>Study Setting: -20 hospitals with more than 400 beds in Japan</p>	<p>Data Collection: -mailed self-administered questionnaires -Burnout measure: Japanese version of the Maslach Burnout Inventory (Cronbach alpha ranged from 0.77-0.80) -Assertiveness measure: Japanese version of the Rathus Assertiveness Schedule (J-RAS) -Stressful life events measure: Social Readjustment Rating Scale -also measured reality shock/transition and social support and coping</p> <p>Data Analysis: - SAS software used to measure student's t-test and multiple logistical regression analysis with stepwise variable selection method</p> <p>MMAT score: 100%</p>	<p>Results: -factors effecting turnover were: burnout, dissatisfaction with workplace and hospital location -these factors were different than those identified by this same group in the preceding 6 months -rate of turnover in phase I = 4.6% and in phase II: 4.0% -turnover rate the same but factors effecting turnover were different for both periods</p>	<p>Strengths: -follow up study looking at 10-15mo after employment (passed the first year) -high response rate (85.6%) -the 20 hospitals from the study are representative of the 102 hospitals in Japan with over 400 beds</p> <p>Limitations: -this part of the study does not look beyond 15months of experience</p>
<p>Halfer (2011)</p> <p>Job Embeddedness Factors and Retention of Nurses with 1 to 3 Years of Experience</p> <p><i>Journal of Continuing Education in Nursing</i></p>	<p>Study Design: Descriptive study (quantitative)</p> <p>Aim/Objective: -to find out what characteristics are associated with turnover, -what job factors are different for those who stay versus those who leave -career development supports</p> <p>Study Sample: -RNs with 1-3 years with the organization -191 graduates from the pediatric RN internship program at a pediatric medical center</p> <p>Study Setting: 270-bed, urban, academic center -Midwestern USA</p>	<p>Data Collection: -measures: job embeddedness factors (alpha reliability for the overall measure was 0.87) -career development priorities -1 year turnover rates -second data collection 1year later to compare data from those who stayed with those who left the organization -info collected through online questionnaires accessed through work email</p> <p>Data Analysis: -descriptive statistics used to describe data from the first collection and the second collection (1 year later) -demographic data compared using Fisher's exact test -logistic regression modeling -Wilcoxon rank sum test to compare organizational embeddedness scores</p> <p>MMAT score: 100%</p>	<p>Results: -majority of the new graduate nurses were in the Generation Y cohort, and predominately single -only statistical significant demographic data was age: nurses who were younger were more likely to leave the organization -two items of job embeddedness were statistically significant to those who left after 1 year: those who did not feel part of the work team or did not feel like a good match to the hospital -highest rank types of career support: certifications, continuing education classes, and funding for education -shiftwork and financial barriers were identified as roadblocks to continuing education -results were consistent with other research to say that 'organizational fit' is a strong predictor for novice nurse retention</p>	<p>Strengths: -looking at 1-3years of organizational tenure -the group being studied had specialty training in pediatrics -response rate of 61% -use of an online questionnaire -secondary data collection 1 year later -results consistent with other studies indicating that job embeddedness was an influencing factor for novice nurse retention</p> <p>Limitations: -possible biased sample as all RNs in the sample are graduates from a special internship program in the pediatric specialty of a magnet hospital</p>

<p>Peterson, McGillis Hall, O'Brien-Pallas, & Cockerill (2011)</p> <p>Job satisfaction and intentions to leave of new nurses</p> <p><i>Journal of Research in Nursing</i></p>	<p>Study Design: Cross-sectional survey (quantitative)</p> <p>Aim/Objective: to examine effects of perceived demands, control, social support, and self-efficacy on job satisfaction and intention to leave</p> <p>Study Sample: -232 new graduates working in acute care in the first 2 years -sampling method not identified</p> <p>Study Setting: -Acute care hospitals in Ontario, Canada</p>	<p>Data Collection: -mailed surveys -utilising Karasek's Job Demands-Control-Support model -Job demands: 7 item scale -Job control: 20/22 items from Dwyer and Ganster (1991) with Chronbach alpha value of 0.79 -social support from supervisors (0.88), social support from co-workers (0.87): each measured with a 4-item tool -Self efficacy was measured with the Personal Efficacy Beliefs Scale (0.82) -Job satisfaction: 3-item scale (0.88) -intention to leave: Lyons's (1971) propensity to leave scale (0.87)</p> <p>Data Analysis: -multiple regression -SPSS -Pearson's bivariate correlations – relationship between study variables</p> <p>MMAT score: 75%</p>	<p>Results: -job demands were significantly and negatively related to job satisfaction -self-efficacy had a significant and positive main effect on job satisfaction (congruent with organizational socialization literature) -demands and support from coworkers were related to intention to leave -coworkers' support negatively related to intention to leave the job -participants had an average of 15months of experience -demands had a significant and positive effect on job dissatisfaction while control did not -new nurses working at a teaching hospital were more likely to report lower intention to leave the job than those working in small or community hospitals -self-efficacy did not have an effect on intention to leave</p>	<p>Strengths: -looked at the first 2 years of nurses' experience (beyond 1st year) -looked at significant factors influencing novice nurse retention</p> <p>Limitations: -no response rate reported -cross sectional design -generalizability limited to Ontario nurses who received education in Canada -need for longitudinal study to confirm relationships between variables -JDC-S model was not comprehensive enough for this study</p>
<p>Kramer, Halfer, Maguire, & Schmalenberg (2012)</p> <p>Impact of Healthy Work environments and multistage nurse residency programs on retention of newly licensed RNs</p> <p><i>Journal of Nursing Administration</i></p>	<p>Study Design: Longitudinal descriptive design (quantitative)</p> <p>Aim/Objective: to examine effects of health unit work environment and multistage nurse residency programs on retention rates of new nurses</p> <p>Study Sample: -5,316 new graduates (employed from 2006-2008) from 28 Magnet hospitals -administrative data looking at the records of RNs with up to 3 years of practice experience -sampling method not identified</p> <p>Study Setting: USA</p>	<p>Data Collection: -each hospital in the study had on-site investigators -3 years of data collected (2006-2008) -used a retention history form developed by 2 Magnet hospitals not included in this study</p> <p>Data Analysis: -Analysis of Variance with post hoc multiple comparisons using Tukey statistical procedures -new nurse retention rates at 6mo, 1, 2, and 3 years post hire were used for correlational analyses</p> <p>MMAT score: 75%</p>	<p>Results: -new nurses working in environments that needed work resigned at a higher rate -significantly more retention in community hospitals than academic centers -significantly more new nurses resigned after 6mo after hire -quality of clinical unit environment is the most important factor in new nurse retention -no significant differences regarding educational preparation or by clinical units -higher professional work satisfaction in the very health work environments -nurse residency programs regardless of length shown to increase retention</p>	<p>Strengths: -looking at retention rates in the first 3 years of novice nurse practice -unit response rate of 40% was met for valid and reliable data aggregation -longitudinal</p> <p>Limitations: -not actual participants, retrospective data on participants -possible bias in sample due to all applicants being from magnet hospitals -question of bias in results between the nurses retained during each of the 3-year time frame. Possible higher retention due to economic instability (2007 & 2008)</p>
<p>Laschinger (2012)</p> <p>Job and career satisfaction and turnover</p>	<p>Study Design: cross-sectional descriptive design (quantitative)</p> <p>Aim/Objective: to describe new graduate nurses' work life experience in the first 2 years of</p>	<p>Data Collection: -mailed survey packages -modified version of the Total Design Method by Dilman (2000) was used -data collected from July to October 2010</p>	<p>Results: -workplace factors influence new graduate's satisfaction and turnover intention -new graduates reported adequate orientation (averaged 10 weeks) and</p>	<p>Strengths: -looking at 1st and 2nd year of RN career -Canadian study -sample demographics are representative of the population</p>

<p>intentions of newly graduated nurses</p> <p><i>Journal of Nursing Management</i></p>	<p>practice, examine predictors of job and career satisfaction and turnover intentions</p> <p>Study Sample: -342 RNs in their 1st or 2nd year of work in 2005 -Purposive sampling</p> <p>Study Setting: Ontario, Canada</p>	<p>-all instruments were standardized assessment tools shown to have acceptable properties in previous nursing studies</p> <p>Data Analysis: -independent t-tests to compare differences between nurses in 1st and 2nd year of practice -correlational and regression analyses were used to measure between job satisfaction and turnover</p> <p>MMAT score: 75%</p>	<p>participated in government supported program where they were supernumerary for 6months -structural empowerment, authentic leadership, coworkers incivility, emotional exhaustion, cynicism and career satisfaction were significant predictors of job satisfaction in the combined group (p.480) -empowerment, incivility, and emotional exhaustion were important in the first year -empowerment and cynicism were important for the second year</p>	<p>Limitations: -only one province -37.7% response rate -self-selection of sample (possible sample bias) -no follow up on those who chose not to participate (study design)</p>
<p>Niitsuma, Katsuki, Sakuma, & Sato (2012)</p> <p>The relationship between social skills and early resignation in Japanese novice nurses</p> <p><i>Journal of Nursing Management</i></p>	<p>Study Design: correlational descriptive design (quantitative)</p> <p>Aim/Objective: find relationship between social skills and early resignation in Japanese novice nurses</p> <p>Study Sample: 272 participants from hospitals in the Kanto area and have worked for 1-3years as RNs -response rate of 83% -sampling method not identified</p> <p>Study Setting: RNs at hospitals with 100-beds in the Kanto area of Japan</p>	<p>Data Collection: -early resignation was studied using a questionnaire -social skills measured using Kikuchi’s Scale of Social Skills (KiSS-18) adapted from the validated tool of Goldstein’s scale of social skill -July to August 2007</p> <p>Data Analysis: -univariate logistical regression analysis -multiple logistic regression analysis</p> <p>MMAT score: 50%</p>	<p>Results: -nurses with low sociality were more likely to resign than those with higher sociality -independent variables: base attributes, social skill levels, factors related to sociality, and factors related to early resignation -dependent variable: incidence of early resignation -early resignation rate higher for those who were not assigned to the ward of their choice</p>	<p>Strengths: -response rate of 83%</p> <p>Limitations: -self-administered questionnaire survey (subjective evaluation by nurses) -cross-sectional study (could not clarify the causal relationship between social skill and resignation) -retrospective study -possible bias with the categorization of novice nurses as socially immature</p>
<p>Wang, Tao, Ellenbecker, & Liu (2012)</p> <p>Job satisfaction, occupational commitment and intention to stay among Chinese nurses: a cross-sectional questionnaire survey</p> <p><i>Journal of Advanced Nursing</i></p>	<p>Study Design: Descriptive correlation design (quantitative)</p> <p>Aim/Objective: to explore the relationship between nurses’ job satisfaction, occupational commitment and intent to stay</p> <p>Study Sample: -convenience sample -560 mainland Chinese nurses</p> <p>Study Setting: 4 large hospitals in Shanghai, China</p>	<p>Data Collection: -self-administered survey questionnaires (July-October 2009) -two tertiary hospitals, and two secondary hospitals -all 4 hospitals chosen for >600 beds and -3 instruments: Chinese Nurses Job Satisfaction Scale, Chinese version of the Occupational Commitment Scale, adapted Intent to Quit and Job Search Scales -all 3 adapted and translated scales were either previously validated or validated by the researchers before this study with Cronbach alpha values between .78-.88</p> <p>Data Analysis: -descriptive statistics used to analyse the demographic, characteristics, level of</p>	<p>Results: -job satisfaction and occupational commitment were significantly related to intent to stay -age and job position were significantly related to job satisfaction, occupational commitment and intention to stay -statistically significant positive correlation between occupational commitment and job satisfaction -nurses were most satisfied with their co-workers and least satisfied with their pay</p>	<p>Strengths: -response rate of 90% -some of the results found in this study align with previous studies in this geographical area as well as retention studies in other areas</p> <p>Limitations: -convenience sample (need random sampling) -40.8% of respondents had less than 5years of experience as an RN -possible response bias since recruitment was conducted by the head nurse and president of each hospital asking for volunteers -only nurses working full time for 1 or more years at the participating hospital were eligible to participate</p>

		<p>occupational commitment, level of job satisfaction, and level of intent to stay</p> <ul style="list-style-type: none"> -Spearman's correlation -Independent samples t-test -Pearson's correlation <p>MMAT score: 75%</p>		<ul style="list-style-type: none"> -generalizability limited due to only 4 nurses in one geographical area -the use of bivariate analysis is limiting -cross-sectional study design (prevents definitive cause and effect relationships)
<p>Bobbio & Manganeli (2015)</p> <p>Antecedents of hospital nurses' intention to leave the organization: A cross sectional survey</p> <p><i>International Journal of Nursing Studies</i></p>	<p>Study Design: Correlational Study Design (quantitative)</p> <p>Aim/Objective: to support previous research results suggesting perceived organizational support, trust in leader, and trust in the organization decreases nurses' intention to leave the hospital</p> <p>Study Sample: nurses with all different levels of work experience from 2 large public hospitals -convenience sample</p> <p>Study Setting: Italy – Sample 1: Veneto Region in North East of Italy, Sample 2: Puglia Region in Southern Italy</p>	<p>Data Collection:</p> <ul style="list-style-type: none"> -servant leadership was assessed with the 30-item Servant Leadership Survey (translated) -Perceived organizational support was measured from an existing tool used by Eisenberger et al. (1986) and adapted by Bobbio et al. (2012) in a previous study, alpha coefficient of .88 -Trust in the leader and trust in the organization were assessed by using an Italian version of an inventory developed by Vidotto et al. (2008), alpha coefficient between .89-.95 -Job burnout was measured with the Italian version of the MBI-General Survey by Borgogni et al. (2005), alpha coefficient ranges between .76-.89 -intention to leave was measured by selection of the tool previously used by Bobbio et al. (2007) with an alpha coefficient of .89 in sample 1 and .87 in sample 2 <p>Data Analysis:</p> <ul style="list-style-type: none"> -in order to test 10 hypotheses, multiple analysis methods were implemented in this study including χ^2, correlational analyses, and SEM <p>MMAT score: 75%</p>	<p>Findings:</p> <ul style="list-style-type: none"> -servant leadership demonstrated by managers and perceived organizational support showed a negative relationship with nurses' job burnout -trust in leader showed a positive effect on professional efficacy -servant leadership translated to high trust in the leader -perceived organizational support translated to increase trust in the organization -trust in leader & organization decreased emotional exhaustion and cynicism scores, and increased professional efficacy 	<p>Strengths:</p> <ul style="list-style-type: none"> -Response rate 41% and 40.5% for the two hospitals -results of the study supported the research hypotheses -acceptable degree of invariance across two independent convenience samples -the two sample regions have different cultural, historical, socioeconomic, and geographic conditions <p>Limitations:</p> <ul style="list-style-type: none"> -self-reported questionnaires filled out by respondents (possible common method bias, self-selection bias, and social desirability bias) although the researchers did put in strategies to reduce the change of these biases -not able to separate out new graduates and non-new graduate level nursing in data collection -cross-sectional design (2012)
<p>Tomietto, Rappagliosi, Sartori, & Battistelli (2015)</p> <p>Newcomer nurses' organizational socialization and turnover intention during the first 2 years of employment</p>	<p>Study Design: Correlational Study Design (quantitative)</p> <p>Aim/Objective: to see what components of organizational socialization affects retention in nurses in the first 2 years of practice</p> <p>Study Sample: 156 Italian RNs divided into 3 groups based on months of experience (0-6mo, 7-12mo, 13-24mo)</p>	<p>Data Collection:</p> <ul style="list-style-type: none"> -data collected using both paper (30.1%) and web-based (69.9%) surveys -utilized the HR department of the hospitals to identify participants -data collected from March-December 2012 -standardized scale Organisational Socialization Inventory used after being adapted to increase the alpha value of the tool with an overall Chronbach alpha of 0.90 -Turnover intention measured using a tool by Kelloway et al. (2009) with a Chronbach alpha of 0.88 	<p>Findings:</p> <ul style="list-style-type: none"> -the main factors shown to decrease turnover intention included: competence acquisition and comprehension of organizational rules (0-6mo group); integration into unit culture (7-12mo group); professional development (13-24mo group) -independent variables: training, co-worker support, formal understanding, informal understanding, future prospects -dependent variable: turnover intention 	<p>Strengths:</p> <ul style="list-style-type: none"> -looking at the first 2 years of work experience -response rate was 68.4% -separated RNs into three groups in an attempt to create statistically homogenous groups -participants were from a variety of ward types: critical care, emergency room, medical-surgical, maternity, and day-care (from both local and major public hospitals) -no statistically significant differences found between

<p><i>Journal of Nursing Management</i></p>	<p>-all nurses in the sample had a permanent job within the hospital -convenience sampling was used</p> <p>Study Setting: local and major public hospitals in Italy</p>	<p>Data Analysis: -ANOVA was used to assess difference between the factors and scales across the three periods of employment -linear regression</p> <p>MMAT score: 100%</p>		<p>participants responding by web or paper</p> <p>Limitations: -cross sectional not longitudinal -small sample size (should have more than 200 RNs in each category to have adequate power)</p>
<p>Schroyer, Zellers, & Abraham (2016)</p> <p>Increasing Registered Nurse Retention Using Mentors in Critical Care Services</p> <p><i>The Health Care Manager</i></p>	<p>Study Design: Quasi-experimental design (quantitative); retrospective review</p> <p>Aim/Objective: RN retention rate would increase after implementation of a mentorship program</p> <p>Study Sample: new graduate nurses (less than 1yr experience, re-entry nurses, and nurses new to a specialty area (70 nurses total split into 2 groups – not mentored and mentored)</p> <p>Study Setting: 3 inpatient units at a 325 bed, not-for-profit acute care hospital in Northern Indiana, USA</p>	<p>Data Collection: -measurements taken retrospectively 6 months before implementation using information for HR -measurement taken 6 months after the mentorship program was implemented -mentors were recruited after being nominated by the unit managers of each unit -mentees were recruited face-to-face or by email -all participants in the study were given satisfaction surveys via email or in work mailbox -15mentees and 10mentors returned satisfaction surveys</p> <p>Data Analysis: -retention rates before and after intervention were calculated using χ^2 statistical method (valid to find relationship of 2 categorical variables)</p> <p>MMAT score: 50%</p>	<p>Findings: -six mentors had more than 1 mentee -independent variable: new mentorship program for newly hired RNs -dependent variable: retention rates -there is an association between mentorship and retention rates in CCS -percentage of nurses retained in non-mentored group was 66% (23/35) -percentage of nurses retained in mentored group was 91% (32/35) -data collected was statistically significant (P<.05) -alternate hypothesis -common observation by both mentors and mentees was the inability to connect outside of work or due to opposing schedules</p>	<p>Strengths: -study identified the need to research methods of retention past the first 2 years of practice</p> <p>Limitations: -use of retrospective data for pre-intervention group and not having reasons for why they left the unit/hospital -measuring two different groups hired at different time frames can cause potential bias (e.g. history bias) -units involved were ever-changing (cannot control for unit culture at different time periods) -different work conditions (e.g. mandated 16hr shifts) for non-mentored group (pre-intervention) -policy changes made during the study could influence the change in retention rate post intervention -response rate of satisfaction surveys for post-intervention survey was only 43% for mentees and 31% for mentors</p>

<p>Yu & Kang (2016)</p> <p>Factors Affecting Turnover Intention for New Graduate Nurses in Three Transition Periods for Job and Work Environment Satisfaction</p> <p><i>Journal of Continuing Education in Nursing</i></p>	<p>Study Design: Correlational design (quantitative)</p> <p>Aim/Objective: identify factors effecting novice nurses at different transition periods by examining job/work environment and satisfaction</p> <p>Study Sample: -443 New graduate nurses from 9 regions with 0-18months of experience -stratified sampling method</p> <p>Study Setting: -9 regions of the Hospital Nurses Association (HNA) in South Korea</p>	<p>Data Collection: -survey method -Halfer and Graf’s Job/Work Environment Nursing Satisfaction Survey translated to Korean was used in this study -survey had high levels of reliability at each transition period -Turnover intention measured through tool by Lawler (1983)</p> <p>Data Analysis: -Pearson product-moment correlation -stepwise multiple regression analysis identified the factors affecting turnover intention</p> <p>MMAT score: 50%</p>	<p>Findings: -variables: job/work environment satisfaction and turnover intention -turnover intention was higher for the group who worked 13-18 months, moderate for the 7-12mo group and lowest in the group who worked less than 6mo -lowest turnover intention if orientation was 9-12 weeks, no differences in turnover intention for <4mo orientation or 5-8 week orientation, lowest turnover if orientation >13weeks -turnover intention for 7-12mo depended work schedule and practical support</p>	<p>Strengths: -large sample -stratified sampling method -looking beyond the first year of practice -validated survey tool</p> <p>Limitations: -response rate not identified -identified turnover intention is high from 13-18mo -cross sectional design -only one tool used to survey nurses</p>
<p>Bontrager, Hart, & Mareno (2016)</p> <p>The role of Preceptorship and Group Cohesion on Newly Licensed Registered Nurses' Satisfaction and Intention to Stay</p> <p><i>Journal of Continuing Education in Nursing</i></p>	<p>Study Design: descriptive prospective study design (quantitative)</p> <p>Aim/Objective: relationship between preceptor role effectiveness, group cohesion, job satisfaction, and intent to stay</p> <p>Study Sample: -newly licensed RNs (NLRNs) attending residency program in their first year of practice -convenience sample -response rate of 40% (84 participants)</p> <p>Study Setting: regional, multihospital, community health care system, USA</p>	<p>Data Collection: -multiple tools used: researcher-designed demographic questionnaire, the Preceptor Role Effectiveness Scale, the Group Cohesion Scale, the Nurse Job Satisfaction Scale, and the Intent to Stay Scale -tools demonstrated moderate to high internal consistency -online survey through Survey Monkey – link provided to possible participants in their monthly residency classes by researcher -email sent out by residency manager to participants who did not attend in-class sessions</p> <p>Data Analysis: -descriptive and inferential statistics -stepwise multiple regression -correlational analyses conducted to examine relationships</p> <p>MMAT score: 50%</p>	<p>Findings: -high levels of preceptor effectiveness, group cohesion, and job satisfaction -preceptor role effectiveness and group cohesion are predictors of intent to stay -relationship found between preceptor role effectiveness and job satisfaction as well as with intent to stay = statistically significant -Q1: independent variables: preceptor role effectiveness, group cohesion; dependent variable: job satisfaction -Q2: independent variables: preceptor role effectiveness, group cohesion and job satisfaction; dependent variable: intent to stay -job satisfaction was the only predictor of intent to stay</p>	<p>Strengths: -response rate of 40% -only looking at newly licensed RNs in their first year, and registered in a residency program -multiple data collection tools used</p> <p>Limitations: -convenience sample -cross sectional design -survey conducted in only one health care system</p>
<p>Mills, Woods, Harrison, Chamberlain-Salaun, & Spencer (2017)</p> <p>Retention of early career registered nurses: the</p>	<p>Study Design: Correlational study (quantitative)</p> <p>Aim/Objective: investigate factors related to RN attrition in the first 5 years</p> <p>Study Sample:</p>	<p>Data Collection: -online survey method through HHS email -4 survey instruments used: Nurse Self-Concept Questionnaire, the Practice Environment Scale of the Nursing Work Index, the Connor-Davidson Resilience Scale, and the Nurse Retention Index -Internal consistency for the scales were good to excellent</p>	<p>Findings: -nurse retention scores declined over 5 years but no significant results -when looking at the practice environment there is a statistically significant difference between groups 1-5 years -no statistically significant differences between groups for staffing and resource, and collegial relations</p>	<p>Strengths: -looks at the first 5 years -strength of cross sectional design is it looks at all the data at one point in time (avoiding participant attrition) -response rate greater than 40% -combination of survey tools</p> <p>Limitations:</p>

<p>influence of self-concept, practice environment and resilience in the first five years post-graduation</p> <p><i>Journal of Research in Nursing</i></p>	<p>-413 RNs out of the HHS workforce of 1032 RNs met inclusion criteria (only 369 received the emails) -response rate of 44% (161 RNs) -convenience sample</p> <p>Study Setting: Northern Queensland hospital and Health Services (HHS)</p>	<p>Data Analysis: -one-way ANOVA and Tukey’s post-hoc test -t-test and ANOVA for practice environment and demographic variables -regression analysis for predictors of nurse retention</p> <p>MMAT score: 50%</p>	<p>-some correlation between participation in hospital affairs and second year post-graduate nurses’ retentions, but strong correlation with third year nurses’ retention -first, fourth, and fifth year post-graduate nurse retention are not correlated with practice environment -significant correlation between practice environment nurse manager ability and workplace location -findings support existing literature</p>	<p>-self-reporting (social desirability bias) -not longitudinal</p>
<p>Numminen, Leino-Kilpi, Isoaho, & Meretoja (2017)</p> <p>Development of Nurses’ Professional Competence Early in Their Career a Longitudinal Study</p> <p><i>Journal of Continuing Education in Nursing</i></p>	<p>Study Design: descriptive correlational study (quantitative); longitudinal and cross-sectional design</p> <p>Aim/Objective: focus on individual and organizational factors in new graduate nurse’s work environment</p> <p>Study Sample: Convenience sample -318 new graduate nurses with less than 12months of RN work experience (response rate: 30.3%; 61.3% retention of participants after the first year; 47.7% retention of participants after the second year</p> <p>Study Setting: Finland</p>	<p>Data Collection: -Use of 5 internationally tested instruments: Nurse Competency Scale; Practice Environment Scale of the Nursing Index; Hospital Ethical Climate Survey; Commitment Scale; Qualities of Empowered Nurse Scale</p> <p>Data Analysis: -NCSS 10 statistical software used -Mixed model module was used; Bonferroni multiple comparisons; McNemar’s test and Fisher’s exact test; Multiple regression model (t-test) -No statistical significant differences found in the demographic variables</p> <p>MMAT score: 50%</p>	<p>Findings: -modest increase of competence in first 2 years but stronger in the third year -demographics: respondents were predominantly women; average age was 30 -change from the 1st year to 3rd year was not statistically significant, but it increased -highest two increases were in therapeutic intervention and managing situations -statistically significant decrease in practice environment score due to nursing manager ability, leadership and support of nurses, nursing participation in hospital affairs -statistically significant decrease in occupational commitment -small increase in empowerment between first and third year -there was a statistically significant increase in nurses’ willingness to leave the profession very or fairly often from the first to the third measurement -no significant changes noted due to demographic variables -competencies showed improvement only during the third year -competence associated with development of the nurses’ intellectual skills -positive relationship between empowerment and effectiveness, career development and quality care</p>	<p>Strengths: -looking at the first 3 years after graduation -longitudinal study (from November 2012- November 2014) -quality measurement tools -national sample from all clinical fields and settings</p> <p>Limitations: -response rate less than 40% -participant attrition over 3 years (may affect the reliability of the study) -nurses’ self-reflection of initial competence in the first year could have been inaccurately high (bias in self-reporting)</p>

Table 2: Matrix of key research factors in qualitative studies

Author(s), Date, Title, Journal	Methodology	Research Methods	Findings	Strengths and Limitations
<p>Maddalena, Kearney, & Adams (2012)</p> <p>Quality of work life of novice nurses</p> <p><i>Journal for Nurses in Staff Development</i></p>	<p>Study Design: naturalistic inquiry (qualitative)</p> <p>Aim/Objective: examine the quality of work life of novice nurses (less than 2 years of experience)</p> <p>Study Sample: sample of 10 novice nurses with less than 2 years of experience -convenience, purposive, and snowball sampling</p> <p>Study Setting: The Eastern Regional Health Authority in St. John's, Newfoundland and Labrador, Canada (conducting research in a naturalistic setting)</p>	<p>Data Collection: -in-depth semi-structured interviews -45min-1.5hrs</p> <p>Data Analysis: -inductive data analysis as characterized by the naturalistic inquiry methodology -thematic analysis -three members of the team worked within the nursing profession – insider knowledge played an important role in analysis</p> <p>MMAT score: 100%</p>	<p>Results: -novice period is both exciting and stressful -highly motivated to provide quality and safe care -concern with responsibility of seasoned nurse rather than novice nurse -fear of encountering “difficult personalities” -nurses believed that the quality of work life and job satisfaction are dependent on work environment and work demands -four themes: human resource issues, workload and work life, relationships, support/mentoring -making a difference = source of pleasure and professional satisfaction</p>	<p>Strengths: -in-depth semi-structured interviews -all interviews conducted with 2 researchers -results from this study align with results from previous literature</p> <p>Limitations: -small sample -no additional limitations were documented in the study</p>
<p>Flinkman & Salanterä (2015)</p> <p>Early career experiences and perceptions – a qualitative exploration of the turnover of young registered nurses and intention to leave the nursing profession in Finland</p> <p><i>Journal of Nursing Management</i></p>	<p>Study Design: Descriptive Study (qualitative)</p> <p>Aim/Objective: To describe why young RNs had previously left an organisation and why they intend to leave the profession</p> <p>Study Sample: 15 RNs under the age of 30 in 2012 -nurses who were approached to participate had left their organization during the previous year -purposive sample -included acute and non-acute care areas</p> <p>Study Setting: one hospital district and one public-health care center in Finland</p>	<p>Data Collection: -in depth descriptive approach -semi-structured interviews with open ended questions -June to November 2012 -interviews conducted by first author who was in her 30s and an RN PhD student -interviews in person, telephone, or skype</p> <p>Data Analysis: -conventional content analysis -coding and analysis used computer software ATLAS</p> <p>MMAT score: 100%</p>	<p>Results: -Study revealed themes: poor nursing practice environment, lack of support orientation and mentoring, and nursing as a serendipitous or ‘second best’ career choice -new nurses need strong orientation and mentorship programs from their place of employment (more than being shown the bathrooms and breakroom) -new nurses need support from managers and senior staff -RN's experienced busy wards, staffing shortages, and not being able to provide appropriate care -physically and mentally demanding workplace, unreasonable workload -new grads need social support, manager visibility, and adequate work conditions -highest retention rates for preceptor programme models 3-6 months long - those who intended to leave the</p>	<p>Strengths: -semi-structured interviews -methods in which credibility, dependability, conformability and transferability were addressed was included in the study -</p> <p>Limitations: -sample selected based on age rather than years of experience as an RN -differing years of experience could have influenced opinions -cross-sectional sample -narrow sample – similar cultural backgrounds in one country</p>

			profession fell into the category where nursing was not an initial career choice	
<p>McCalla-Graham & DeGagne (2015) The Lived Experience of New Graduate Nurses Working in an Acute Care Setting;</p> <p><i>Journal of Continuing Education in Nursing</i></p>	<p>Study Design: Descriptive Phenomenology (qualitative)</p> <p>Aim/Objective: explore the lived experiences of new graduate nurses employed in an acute care setting in southwest Florida</p> <p>Study Sample: 10 new grad nurses working in acute care in the first 12 months -purposeful and snowball sampling</p> <p>Study Setting: Acute care setting in Florida</p>	<p>Data Collection: -interviewed via open-ended questions (45-60min) -tape recorded verbatim</p> <p>Data Analysis: -Colaizzi’s classical phenomenological method of data analysis NVivo 10 software – 3 themes emerged</p> <p>MMAT score: 75%</p>	<p>Findings: -3 themes: knowledge, skills, environment -Knowledge: nursing school didn’t prepare them for the first year of practice, they suggested that having some background experience on worse-case scenarios in nursing school would have prepared them better -Skills: many participants expressed that they lacked practical skills, needed more time in their clinical rotations, suggesting having heavier load during clinical rotation -need more emphasis on time management, prioritization, and accessing resources -Environment: emotional exhaustion hard to deal with, good to have support from leadership and support staff, and organizational skills help transition</p>	<p>Strengths: -participants from different a variety of acute care hospitals all over southwest Florida -participants selected based on their professional experience not place of employment</p> <p>Limitations: -only looking at the first 12 months of a nurses’ career -data consists mainly of narratives from southwest Florida (limited transferability)</p>
<p>Guay, Bishop, & Espin (2016)</p> <p>New Graduate RNs’ perceptions of transitioning to Professional Practice after completing Ontario’s new graduate guarantee orientation program</p> <p><i>Journal of Continuing Education in Nursing</i></p>	<p>Study Design: Grounded Theory study (qualitative)</p> <p>Aim/Objective: novice nurse transition experience in the 12 months after orientation</p> <p>Study Sample: 10 new graduate nurses (following the 12month long new graduate orientation program) -purposeful/criterion sampling -theoretical sampling (until saturation reached)</p> <p>Study Setting: Urban academic hospital in Ontario, Canada</p>	<p>Data Collection: -recruitment at the urban academic hospital -individual semi-structured interviews -audio recorded</p> <p>Data Analysis: -Charmaz (2006) framework for constant comparative method of analysis</p> <p>MMAT score: 100%</p>	<p>Findings: -transition is progressive; 1st few months are the most challenging without safety net -transition setbacks (e.g. new units, unfamiliar patient situations, and different staff) rather than regression -themes: Discovering Professional Self, Surviving Without a Safety Net, Experiencing Fear, figuring it Out, learning on the Job, Turning of the Tables, Being Trusted, Gaining Confidence, and Feeling Comfortable -eventually nurses were competent enough that they were being trusted by their colleagues and patients and they were being asked for help from other nurses. This builds confidence and decreased stress -demonstrates evidence of success of new grad transition programs -transition programs provide tools to limit anxiety and allow them to thrive as new nurses</p>	<p>Strengths: -looks beyond first year of experience (looks up to 24months) -collected data until saturation met -use of constant comparative analysis method -use of framework to guide the study</p> <p>Limitations: -all participants were on the Nursing Resource Team (not intentional) -participants volunteered for study (possible bias) -recruitment at one academic, tertiary center</p>

Table 3: Matrix of key research factors in mixed-method studies

Author(s), Date, Title, Journal	Methodology	Research Methods	Findings	Strengths and Limitations
<p>Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus (2013)</p> <p>Effective strategies for nurse retention in acute hospitals: A mixed method study</p> <p><i>International Journal of Nursing Studies</i></p>	<p>Study Design: sequential research design (mixed-method)</p> <p>Aim/Objective: to understand impact of nursing practice environment and nurse education on intention to leave and which organizational practices are being used to create sound practice environments and retain nurses</p> <p>Study Sample: -3186 bedside nurses of 272 randomly selected nursing units -Random sample -response rate of 72% (ranging from 59%-90% between hospitals)</p> <p>Study Setting: 56 Acute Care Hospitals in Belgium</p>	<p>Data Collection: -cross-sectional data collection from nurse and organizational surveys used to create associations (quantitative component) -semi-structured interviews (2hrs each) with chief nursing officers from the 3 highest performing hospitals and 3 lowest performing hospitals (consecutive qualitative component) -tools used from existing studies and translated into 3 languages: Dutch, French, and German - Content Validity Scale ranged from 0.70-1.00 by panel of 10 bilingual experts -staffing levels measured via patient-to-nurse ratios -nursing work environment measured by the Practice Environment Scale of the Nursing Work Index (Lake, 2002)</p> <p>Data Analysis: -a GEE logistical regression analysis was used to estimate impact of organizational nursing care on intention to leave -controlled for certain factors -nursing work environment categorized as poor, mixed, and better -logistic regression analyses were used to look at the association between organizational characteristics and intention to leave</p> <p>MMAT score: 100%</p>	<p>Results: -nurse work environments are significantly ($p<.05$) associated with intention-to-leave -investing in improved nursing work environments is a key strategy to retain nurses -Chief nursing officers provide support for the empirical finding that nursing work environment affects turnover intention -hospitals with lower intention to leave rates used participative management style</p>	<p>Strengths: -mixed methods (cross-sectional quantitative + consecutive qualitative) -random sample -qualitative component interviewed chief nursing officers in selected hospitals to get a different angle of insight -overall response rate with 72% -control for confounding variables: demographic characteristics of respondents, organizational profile characteristics, and the region -trustworthiness of findings enhanced by both researchers having different background relevant to the study (ie manager/clinical skills versus research methodology skills) -part of a large European multi-country study</p> <p>Limitations: -not restricted to novice nurses -not all magnet components included in the RN4CAST nurse survey (limited by the cross-sectional data used) -generalization limited by only using 6 Flemish hospitals for the qualitative component -could have used additional methods to increase trustworthiness such as data triangulation, member checking and additional software analysis</p>

Appendix B: Matrices for Themes and Suggestions

Table 4: Matrix of themes and suggestions in quantitative studies

	Q1: Organizational influences on novice nurse retention			Q2: organizational strategies fostering novice nurse retention
Authors and Date	Orientation, Knowledge and Skills Training	Work Environment and Socialization	Organizational Commitment, Support, and Recognition	Recommendations from Studies (implications for leaders and researchers)
Suzuki, Tagaya, Ota, Nagasawa, Matsuura, & Sato (2010)	<ul style="list-style-type: none"> - Nursing Education (graduation from vocational nursing schools) - Education was a factor affecting turnover in phase I (0-10months) 	<ul style="list-style-type: none"> - Good working environment provide appropriate support in preventing turnover - Lack of peer support was more of a concern in phase I (0-10months) - Dissatisfaction with workplace was a main factor for nurses in phase II (10-15months) 	<ul style="list-style-type: none"> - Atmosphere of the workplace was an important factor in organizational commitment 	<ul style="list-style-type: none"> ✓ The active facilitation of personal friendships among novice nurses within the first 3 months of employment. ✓ About 9 months after employment, nurse managers should also confirm that novice nurses have peer support and are free of severe strain. ✓ Recommended to avoid a policy of assigning only one novice nurse per ward as this may result in a novice nurse feeling isolated. ✓ Approximately 1 year after employment, nurse managers should check whether novice nurses are satisfied with their work place, have appropriate interpersonal relationship (further indication for performance appraisals at 1yr)
Halfer (2011)	<ul style="list-style-type: none"> - Residency program was implemented to retain nurses in their 1st year of practice but turnover rates were still high for the same nurses in the first 3 years - Importance of continuing competence development, in knowledge, skills, and role mastery for nurses early in their careers - Higher turnover intention for those who rate themselves lower on skill, self-confidence, and nursing competency - Factors effecting this: individual learning characteristics, complexity of patient care, and insufficient 	<ul style="list-style-type: none"> - Better socialization of the new nurse if the ward nurses are in the interview process - Low self-confidence at 1 year due to insufficient mentoring and socialization - Different focuses at different stages of professional socialization 	<ul style="list-style-type: none"> - Leaders use behavioural interview questions to determine a fit between the nurse and organizational values - Younger nurses were more likely to leave the organization - Two items on the job embeddedness tool were statistically significant – being part of the work team and being a good fit for the hospital 	<ul style="list-style-type: none"> ✓ Recommendations for career development: certifications, continuing education classes, mentoring activities, quality improvement projects, research, and social networking. ✓ Organizations can facilitate the right fit in an interview setting using interview ✓ Clinical ladder advancement – not until 2-3yrs of clinical experience ✓ Leaders can support professional development (including financially and time) based on novice nurse needs ✓ Need to provide professional socialization ✓ Improving retention will contribute new knowledge to the nursing literature

	mentoring and professional socialization			
<p>Peterson, McGillis Hall, O'Brien-Pallas, & Cockerill (2011)</p>	<ul style="list-style-type: none"> - Often felt did not have the skills and knowledge needed to work on the unit when they were hired - Intent to leave was higher when self-confidence in nursing skills was low 	<ul style="list-style-type: none"> - Workplace demands are related to increased job dissatisfaction - Demands had a significant and positive effect on job dissatisfaction while control did not - The main effects of support and self-efficacy significantly and negatively predicted job dissatisfaction - A significant predictor of job satisfaction in the current study was clinical setting, as nurses working in an ICU or ER were less likely to report job dissatisfaction than nurses working on other specialty units. 	<ul style="list-style-type: none"> - Supervisor support 	<ul style="list-style-type: none"> ✓ Important for managers and nurse leaders to ensure manageable workloads for new nurses ✓ Managers to consider decreasing the number of patients assigned to a novice nurse or limiting the complexity and severity of patient conditions when determining the assignment for a new nurse.
<p>Kramer, Halfer, Maguire, & Schmalenberg (2012)</p>	<ul style="list-style-type: none"> - Residency programs of different lengths and stages - Stage 1: transition (3mo) - Stage 2: integration (7-12mo long) 	<ul style="list-style-type: none"> - Quality of the Work environment for newly licensed RNs is the most important factor in retention - Nurse residency programs are critical to new nurse socialization, professional work satisfaction, organizational commitment, cost effectiveness and retention - Professional socialization model includes 3 stages: knowing (academic preparation), becoming (transition stage 2-3mo), and integrating/affirming (9-12mo) - Newly licenced RNs practicing in very healthy work environments had higher professional work satisfaction, less environmental reality shock 	<ul style="list-style-type: none"> - Need to examine organizational structures - Organizational support through residency programs - Recognition 	<ul style="list-style-type: none"> ✓ new grad residency program at any length can help with retention ✓ Develop a culture of retention – enable them to engage in professional practice, allow them to provide quality patient care

<p>Laschinger (2012)</p>	<ul style="list-style-type: none"> - Dissatisfaction with the initial orientation has been associated with younger RNs intending to leave the profession - Core self-evaluation higher in second year nurses – maybe because of greater self-efficacy as a result of experience - Lower career satisfaction associated with having more than one preceptor in the first year 	<ul style="list-style-type: none"> - New graduates’ work environment is lacking - Burnout and work engagement are strongly related to job satisfaction and turnover intention - Co-worker incivility, emotional exhaustion, cynicism and career satisfaction were significant predictors of job satisfaction in the combined group. 	<ul style="list-style-type: none"> - Structural empowerment and authentic leadership were two of the key predictors of job satisfaction - Second year new graduates are more attuned to the leadership behaviour of their immediate supervisors 	<ul style="list-style-type: none"> ✓ Need for longitudinal research in this area ✓ All new graduates need to be provided with a strong orientation, both to the organization and to the nursing profession (Scott et al. 2008) ✓ try to only have one preceptor per new grad in the first year of practice ✓ Work needs to be done on a new graduate’s work environment
<p>Niitsuma, Katsuki, Sakuma, & Sato (2012)</p>	<ul style="list-style-type: none"> - Due to low social skills, novice nurses unable to seek and therefore receive adequate workplace education 	<ul style="list-style-type: none"> - Higher rates of early resignation if nurses not assigned to their desired unit - Low levels of social skills have been related to the rapid turnover of young RNs -novice nurses do not form good relationships with other staff members because of low social skills -nurses with high level of social skills are more likely to seek out social support and cope better with workplace stress 	<ul style="list-style-type: none"> - Better social skills may be associated with better leadership and management 	<ul style="list-style-type: none"> ✓ Need to provide social skills training for all nurses and managers ✓ Managers need to use primary leadership as a function
<p>Wang, Tao, Ellenbecker, & Liu (2012)</p>	<ul style="list-style-type: none"> - Previous education did not have a significant correlation to job satisfaction or intent to stay 	<ul style="list-style-type: none"> - Correlation between job satisfaction and intent to stay was significant - Nurses scored low on their satisfaction with professional opportunities and their workload - Increase workload and increase stress due to short staffed and lack of nursing assistants to do ADLs for patients 	<ul style="list-style-type: none"> - Intent to stay was related to occupational commitment and job satisfaction (including administration, workloads, co-workers, work itself, pay, professional opportunities, praise/recognition and family/work balance) p.546 - Age was significantly found to be related to intent to stay, occupational commitment, and job satisfaction - Older nurses had higher satisfaction with job - Occupational commitment had the strongest relationship with job satisfaction 	<ul style="list-style-type: none"> ✓ Enhancing nurses’ job satisfaction and their occupational commitment are vital for improving nurses’ intent to stay ✓ Strategies should focus on increasing salaries, decreasing workloads, modifying task structure, cultivating work passion ✓ Need for longitudinal research ✓ Administration system may be a key in improving nurses’ occupational loyalty and intention to stay (using more people-oriented strategy) ✓ creating more professional opportunity for nurses’ personal growth, development, and promotion

			- Affective commitment had the strongest correlation with job satisfaction (maybe due to alignment with organizational values/goals)	✓ develop and implement effective strategies that support and improve nurse occupational commitment
Bobbio & Manganelli (2015)	-n/a	- Job burnout is influenced by many factors including objective job conditions	- Nurses trust their direct supervisors more than the organization - Job burnout is influenced by many factors including behaviours of the immediate supervisor and perceived support and trust from the organization - Servant leaders are supposed to respect, defend, appreciate, and empower followers and actively contrast social injustice and inequality -reward team and individual	✓ Pay attention to the servant leadership model used to train nurse managers, as well as to be adopted into recruitment and selection processes ✓ Ideas to increase trust in the organization: reward the team and individual performances, help nurses with work-life balance ✓ nurture nurses as people rather than an instrument to reach organizational goals
Tomietto, Rappagliosi, Sartori, & Battistelli (2015)	- On boarding and training was most important for those in the 0-6mo group - Professional development was most important for those in the 12-24mo group - Training – newcomer acquires skill to meet job demands - First 2 years are the most unstable period for new graduate nurses - First 2 years are critical to new graduate nurses as well as experienced workers new to the organization - Task mastery is a way to reduce inadequacy in a new work environment	- Integration into unit culture was most important for the 7-12mo group - Important to explore expectations in socialization process - Organizational socialisation (mastering competence or workgroup integration) - Co-worker support (emotional, moral, and instrumental help)	- Newcomer support using authentic leadership - <i>Future prospects</i> -organization provides prospect of rewarding career	✓ concentrate on socialization in the first year and professional development in the 2 nd year ✓ Enhancing task mastery, workgroup integration, and understanding organizational rules at the ward level (in the first year) ✓ Institute a professional development plan at the organisational level ✓ Clearly defined programmes, such as the identification of a trained mentor and a clear definition of goals and competence acquisition during the orientation period, are the most effective strategies to decrease newcomers' turnover intention ✓ plan different onboarding strategies to enhance socialization success
Schroyer, Zellers, & Abraham (2016)	- Retention rate increase after implementation of mentorship program	- Increasing RN retention creates an environment of stability, fosters teamwork,	- Workplace development increases retention & feeling of support across generations	✓ Multilevel retention programs such as combining mentor programs with nurse residency programs

		<p>builds confidence, and increases patient satisfaction</p> <ul style="list-style-type: none"> - Mentor programs have been found to improve RNs' sense of belonging and increase job satisfaction while decreasing stress and anxiety 		<p>and specialty education classes to assist in transitions, develop leadership and socialization</p> <ul style="list-style-type: none"> ✓ Organizational leaders to invest in programs for workplace development by creating conditions where all generations of nurses feel supported – one method is through mentorship program for new grads ✓ Need for mentorship programs with more involvement (e.g. worksheets, mandatory meetings, etc.) & additional training regarding communication between mentors and mentees ✓ Recommendations for future research include longitudinal studies lasting longer than 6 months to 1 year and using multiple sites, determining the reasons a nurse leaves his or her place of employment, and studying areas outside the CCS specialty.
Yu & Kang (2016)	<ul style="list-style-type: none"> - Insufficient chance for professional development may result in occupational dissatisfaction and deteriorate nurses' intention to stay - Turnover intention is positively related to orientation duration - Orientation lasting 9-12 weeks is considered the best time frame as the others are too short or too long - Preceptorship is important for those with less than six months of experience 	<ul style="list-style-type: none"> - Turnover intention is negatively related to overall nursing and work environment satisfaction - Preceptorship is an important part of socialization < 6mo - Good relationships with preceptors are important for becoming a part of the team - Professional development, rather than work schedule, made significant differences in turnover intention 1 year after employment, which supports previous research findings 	<ul style="list-style-type: none"> - Turnover intention for 7-12mo depended on practical support 	<ul style="list-style-type: none"> ✓ Need to consider different factors of retention at each transitional period ✓ Improving nurses' work environment by providing frequent opportunities for professional development (most between 12-18mo) ✓ Off-semester internship programs for nursing students – give experience in clinical area/hospital that give 'taste' of the organization and help students decide if they want to work there ✓ Nurse managers need to discuss work schedules at unit orientations – need efforts for flexible schedule to help with work-life balance
Bontrager, Hart, & Mareno (2016)	<ul style="list-style-type: none"> - An effective preceptor ensures good orientation to unit and helps with socialization to the unit and transition into practice - Preceptors promote critical thinking - Negative preceptor 	<ul style="list-style-type: none"> - Negative effects include: difficult work conditions, job strain, high patient loads, and reward imbalance (recognition) - Nurse's intent to leave increased due to problematic workplace issues - An effective preceptor ensures good orientation to unit 	<ul style="list-style-type: none"> - A supportive work environment that elevates empowerment & work engagement increases novice nurse job satisfaction - Enhancement of organizational commitment can decrease turnover intentions - Positive preceptor experience 	<ul style="list-style-type: none"> ✓ Effective preceptors for are important to job satisfaction and novice nurses' intent to stay ✓ Nurse residency programs ✓ Opportunity for novice nurses to network with each other and have peer support ✓ Formal mentorship program

	experiences can cause anxiety	and helps with socialization to the unit and transition into practice - Supportive environment & positive relationships help novice nurses cope and transition - Cohesion important to job satisfaction	can increase organizational commitment - Enhancing group cohesion and group environment should always be at the forefront for nurse leaders	
Mills, Woods, Harrison, Chamberlain-Salaun, & Spencer (2017)	- Nurse self-concept & resilience influence intention to quit - Third year post-graduate retention is strongly correlated with knowledge	- Perception of the practice environment influence job satisfaction and intention to remain in the workforce - Strong correlations among third year graduate retention and staffing and resource adequacy, being involved in hospital affairs	- Third year post-graduate retention is strongly correlated with staff relations, and moderately correlated with communication and leadership - Strong correlation between third year graduate retention and nurse manager ability, leadership, and support of nurses	<ul style="list-style-type: none"> ✓ Create career development programmes to enhance nursing leadership, confidence and competencies ✓ Need well-trained and skilled supervisors ✓ Performance related reward and incentive programs ✓ Supportive communication from employers ✓ Provide opportunities for novice nurses to participate in leadership capacity (e.g. committees) ✓ Specific needs of novice nurse career and leadership pathways should be incorporated into human resource policy
Numminen, Leino-Kilpi, Isoaho, & Meretoja (2017)	- Nurse competence didn't really improve until the 3rd year - Includes re-entry to new specialty area - Empowerment, work experience, satisfaction with quality care, predicted positive competence	- Increased work experience can cause a decrease in the nurses' perceptions of practice environment, quality of care, occupational commitment	- Positive relationship between empowerment and effectiveness, career development, and quality care.	<ul style="list-style-type: none"> ✓ Factors enhancing or preventing competence development need further studying and developing proactive interventions ✓ Competence development takes time – need for long orientation programs ✓ Interventions to overcome retention issues are needed from management, policy makers, and nurse educators

Table 5: Matrix of themes and suggestions in qualitative studies

	Q1: Organizational influences on novice nurse retention			Q2: organizational strategies fostering novice nurse retention
Authors and Date	Orientation, Knowledge and Skills Training	Work Environment and Socialization	Organizational Commitment, Support, and Recognition	Recommendations from Studies (implications for leaders and researchers)
Maddalena, Kearney, & Adams (2012)	<ul style="list-style-type: none"> - New nurses encountered inadequate orientation and mentoring - Those who had a “good” preceptor had an easier time transitioning than those with less positive/less consistent preceptorship - Educational preparation and extent of orientation as well as level of confidence, maturity, are some factors to ease transition into the workplace - Supportive mentoring and adequate orientation are key factors to successful transition 	<ul style="list-style-type: none"> - Senior nurses were perceived as unapproachable and intimidating, unsupportive and did not provide assistance - Not uncommon to see horizontal violence, workplace bullying and aggressive language - When students felt welcomed and supported by the nursing staff, the transition was generally positive - Nurses believed that quality of work life and job satisfaction are dependent on their work environments and workload demands (need adequate equipment, supportive peer relationships and opportunities for time off) - Encountered many sources of stress including staffing shortages and heavy workload - Level of support on the unit, capacity to work within the scope of practice, and overtime demands effects transition into the workplace - Float, or inconsistent work schedules were considered a source of anxiety, concerns with patient safety and quality of care 	<ul style="list-style-type: none"> - More contact with the manager would have been very helpful - None of the nurses received any type of performance appraisal - Organizational culture and policies can play a significant role in easing the transition for novice nurses 	<ul style="list-style-type: none"> ✓ Orientation programs need to be modified to the novice nurses’ needs for appropriate transition rather than being standard for everyone. ✓ Ensure that novices receive constructive, ongoing performance appraisals (both formal and informal) at regular intervals, for example, at 1, 3, and 6 months and 1 year. (team based follow up... eg. PCEs, PCs, and performance appraisal) ✓ Provide access to continuing education and awareness of what opportunities are available ✓ Host events promoting teambuilding ✓ Formalized peer support such as mentors & recognize the nurses who serve as mentors ✓ Novice nurses need to feel valued by the organization ✓ Treat student nurses as potential employees and co-workers ✓ Avoid hiring new graduates into casual or float positions
Flinkman & Salanterä (2015)	<ul style="list-style-type: none"> - Theme 3: orientation and mentoring - Adequate orientation and 	<ul style="list-style-type: none"> - Positive practice environments associated with nurse retention, poor nursing 	<ul style="list-style-type: none"> - Theme 2: lack of support - In previous studies, adequate social support and authentic 	<ul style="list-style-type: none"> ✓ Longitudinal research needed

	<p>mentoring programmes are needed to facilitate this transition (need stronger orientation than just being shown the bathrooms and break room)</p> <ul style="list-style-type: none"> - Nurses felt like being ‘thrown into the deep end’ - Did not have adequate practical skills and knowledge for their workplace once graduated - Retention rates are higher for preceptor programs between 3-6months long 	<p>environments influence nurse outcomes (burnout, dissatisfaction, intention to leave)</p> <ul style="list-style-type: none"> - Adequate staffing and resources, play important roles in nurse retention - Young nurses described feeling isolated, anxieties ignored, and given too much responsibility - Need to recognize generational needs, but also consider individual differences - Work can be both physically and mentally demanding - Novice nurses experience busy wards, staff shortages and unreasonable workloads which can cause moral stress and inability to provide adequate care - Not room for career development - Concerns regarding verbal abuse, poor opportunities for advancement - Young nurses reported needing more social support for their transition – orientation from nursing school to a practice environment (successful programs documented in literature, from brief informal to extended formal) 	<p>leadership has been found to be an important determinant of positive work outcomes</p> <ul style="list-style-type: none"> - Behaviour and attitudes of managers and director affected job satisfaction – distant and rushed - Young nurses need positive acknowledgement and feedback from their managers - Need for authentic leadership - Visibility of managers and administration - Young registered nurses need social support from nurse managers and experienced colleagues to successfully transition into nursing practice environments. - Nurses’ contributions to hospital decision-making and managerial support of nursing care contribute to nurse retention 	<ul style="list-style-type: none"> ✓ Adequate orientation and mentoring programmes are needed to facilitate this transition (3-6months long) ✓ Exit interviews - managers should listen to the concerns of young RNs, to identify whether they are considering leaving because of such avoidable factors ✓ Visibility of nursing managers and administrative leadership ✓ Career advancement and personal developmental possibilities should be created through various clinical advancement opportunities and career ladder programmes ✓ Managers to foster supportive environment and encourage young RNs to voice their concerns and provide contribution to hospital decision making; managerial support important to nurse retention ✓ Age differentiated measures ✓ major areas to improve: practice environment, opportunities for advancement & development, and mentorship ✓ By better understanding young RNs’ feelings of being inexperienced and overwhelmed, nurse managers and colleagues could provide more support, to ease the transition of young RNs into practice
<p>McCalla-Graham & DeGagne (2015)</p>	<ul style="list-style-type: none"> - Nursing school only provides you with info to pass the licensure exam (which is not clinical knowledge) - Novice nurses need more instruction regarding complex 	<ul style="list-style-type: none"> - Nurses were happy when they had support from co-workers and preceptors 	<ul style="list-style-type: none"> - Need for positive reinforcement - Nurses appreciated when their managers had an interest in their progress - Nurses were happy when they 	<ul style="list-style-type: none"> ✓ Facility or unit-based orientation – especially acute/illness situations may promote retention in the acute care clinical setting ✓ Continuing education needed to enhance graduate nurses’ professional growth

	<p>situations and clinical skills</p> <ul style="list-style-type: none"> - Need more experience learning time management, prioritization, customer service, or accessing resources - Need to learn how to develop coping strategies - Onboarding education differs by employment organization (i.e. orientation to ward and hospital) - Even experienced nurses need orientation when changing new positions 		<p>had leader support</p>	<ul style="list-style-type: none"> ✓ New nurses need consistent support & effective socialization into the workplace ✓ Coaching model used by nurse educators to help graduate nurses develop competencies that are crucial to professional practice ✓ Need to teach new nurses coping skills - working with mentors may enhance coping skill development and decrease stress
<p>Guay, Bishop, & Espin (2016)</p>	<ul style="list-style-type: none"> - Senior nurses in a new work environment may revert back to novice status (Benner’s theory, 2001) - Building theoretical knowledge helps with confidence - Structured, preceptor orientation programs support positive novice nurse transition experience - This study provides strong evidence for the success of new grad orientation programs 	<ul style="list-style-type: none"> - New graduate nurses have a fear of new/unfamiliar experiences (e.g. critically ill patients, heavy workload, unfamiliar units, unsupportive environment) - Fear leads to negative effects on emotional and physical self (e.g. sleepless nights, anxiety to return to work) - Continuity of patient population and practice area eases transition 	<ul style="list-style-type: none"> - Organization’s awareness of new graduate’s transition fears and challenges can help decrease novice nurse anxiety and negative experience 	<ul style="list-style-type: none"> ✓ Need to support formal new grad orientation program including transition programs with information on transition setbacks/challenges in order to reduce the shock (Duchscher, 2012) ✓ strategies identified by nurses: securing a permanent line on one unit, selecting a mentor, building theoretical knowledge, seeking and receiving emotional support (strategies learned in the orientation) ✓ more awareness of new nurse fears and transition barriers at all levels including nurse managers and physicians/interdisciplinary team ✓ educational sessions tailored to new grad nurses ✓ continue to develop and support new graduate transition programs

Table 6: Matrix of themes and suggestions in mixed method studies

	Q1: Organizational influences on novice nurse retention			Q2: organizational strategies fostering novice nurse retention
Authors and Date	Orientation, Knowledge and Skills Training	Work Environment and Socialization	Organizational Commitment, Support, and Recognition	Recommendations from Studies <i>(implications for leaders and researchers)</i>
Van den Heede, Florquin, Bruyneel, Aiken, Diya, Lesaffre, & Sermeus (2013)	n/a	<ul style="list-style-type: none"> - Nurse staffing ratios and nurse work environments are significantly ($p < 0.05$) associated with intention-to-leave - Lower intention to leave rates when hospitals adopt magnet hospital characteristics in their policies to improve quality work environments - Chief nursing officers provide support for the empirical finding that nursing work environment affects turnover intention - Nurses have opportunity to participate in work groups, hospital committees and organizational innovation projects 	<ul style="list-style-type: none"> - High performance related to praise and recognition for a job well done - High performance related to supervisory staff that is supportive - Hospitals with lower intention to leave rates used participative management style - More important that management is accessible than just regularly visiting the units - Autonomy in decision-making, participating in unit and hospital governance, and participative management may be the best retention strategy in the hospital 	<ul style="list-style-type: none"> ✓ Using the Magnet criteria to improve the quality of the work environment and to lower nursing staff turnover ✓ Nurses in these organizations have diverse opportunities to participate in work groups, hospital committees and organizational innovation projects. ✓ Leaders need to regularly visit the nursing units, need to be highly accessible, and need to follow up on reported problems ✓ Recommendation for research: need for more controlled studies with pre/post measures to evaluate interventions that are aimed at improving the nurse work environment ✓ Investing in improved nursing work environments is a key strategy to retain nurses