

SELF-EFFICACY OF NURSE PRECEPTORS

The Factors Influencing the Self-Efficacy of Nursing Preceptors

Maja Bugarski

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School of Nursing
Faculty of Health Sciences
University of Ottawa

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Abstract

Background. In Canadian baccalaureate nursing education, many schools pair their nursing students with a nurse preceptor to complete a consolidation placement in their final year of studies. The preceptor plays an important role in students' learning and their success in the program. Although there are many factors that may influence preceptors' ability to be successful in the role, the literature suggests that self-efficacy may affect their performance as a preceptors and may have an impact on students' learning and their preceptorship experience. Self-efficacy is defined as a person's confidence in their abilities to complete a task or goal. As such, preceptors with greater self-efficacy may be more effective in their role and may have a positive impact on students' learning. Therefore, it is important to assess factors that influence preceptors' self-efficacy as this knowledge could help inform and target the development of preceptor training programs, preceptor selection criteria and preceptor supports.

Objectives. The purpose of this thesis is to explore the factors that affect the self-efficacy of preceptors. Five factors were investigated, including: (1) nursing experience, (2) preceptor experience, (3) vicarious preceptor experience, (4) preceptor training, and (5) the personality trait neuroticism. These variables are derived from Bandura's (1986) theory of self-efficacy.

Design. This study was conducted using a cross-sectional, non-experimental study design.

Methods. A total of 95 nurse preceptors participated in the study by completing an online survey and were recruited using multiple strategies, including social media. The survey was comprised of demographic questions, a measure of the Big-Five personality traits, and a measure of clinical teaching self-efficacy. Correlation, independent t-tests and ANOVAs were done to analyze the data.

Results. A statistically significant correlation was found between self-efficacy and two independent variables: nursing experience ($r = 0.33$, $p < 0.01$) and the personality trait of neuroticism ($r = -0.21$, $p = .05$). Additionally, self-efficacy was correlated with agreeableness ($r = 0.22$, $p = .03$) and age ($r = 0.41$, $p < 0.01$). A statistically significant difference in self-efficacy was found between diploma and bachelor degree nurses (mean difference = 0.37 , $p = .02$), and bachelor degree and graduate degree nurses (mean difference = -0.45 , $p = .02$).

Conclusion. Three key results were found to influence the self-efficacy of nurse preceptors. This knowledge can be incorporated into preceptor training, preceptor support and the preceptor selection process.

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Chapter 1: Introduction

In Canada, baccalaureate nursing education uses a combination of classroom, simulation and clinical learning to prepare students for entry-to-practice as registered nurses (Canadian Association of Schools of Nursing [CASN], 2015). As a part of their clinical learning, students complete various clinical placements in acute care, long-term care and community settings, either in small groups of students with a clinical instructor or one-on-one using the preceptorship model (Parsons, 2007). Preceptorship is a one-on-one teaching-learning method where a nursing student works with and learns from a staff nurse in their place of employment (Billay & Yonge, 2004; Luhanga, Yonge, & Myrick, 2008; Udlis 2008; Zilembo & Monterosso, 2008). In the clinical group model, nursing students are accompanied by a clinical instructor to a hospital ward where they are assigned to different patients for the day throughout the semester (Canadian Nurses Association [CNA], 2004) and are able to get help from the staff nurse that is also assigned to that patient. During these placements, students care for patients under the supervision of the staff nurse and clinical instructor. For the final clinical placement of the undergraduate program, often known as consolidation, each nursing student is preceptored by a staff nurse for a full academic term. In this preceptorship model, the consolidating student is supernumerary, works with and cares for the preceptor's patients (CNA, 2004). Nursing curriculum includes preceptorship because it is a valuable and integral part of the nursing student's learning (CASN, 2015).

During consolidation, the preceptorship involves a nursing student, a faculty member from the school and a practicing staff nurse, who is referred to as the preceptor (Billay & Myrick, 2008; Billay & Yonge, 2004; CNA, 2004; Trede, Sutton, & Bernoth, 2015). Students are responsible for taking an active role in their learning (Tan, Feuz, & Bolderston, 2011; Trede,

Sutton, & Bernoth, 2015), to provide the best quality of care within their own level of competence, acknowledge when mistakes are made (Luhanga, Myrick, & Yonge, 2010) and meet course objectives. Faculty members are present intermittently to ensure that course objectives are met and to act as a support for preceptors and students (Baxter, 2007). The faculty members are not directly involved in the teaching-learning process at the clinical setting (Luhanga, Myrick, & Yonge, 2010). The role of the preceptors is to educate and evaluate the students, to teach them appropriate nursing skills, and socialize them into the nursing role (Billay & Yonge, 2004; Earle, Myrick, & Yonge, 2011; Flynn & Stack, 2006; Trede, Sutton, & Bernoth, 2015). The preceptors are responsible for selecting appropriate learning opportunities for the students as they become more competent and confident (Luhanga, Myrick, & Yonge, 2010; Ockerby, Newton, Cross, & Jolly, 2009).

According to the CNA (2004), preceptorship is an important element of nursing education and is used in universities and colleges across Canada. Preceptorship is a professional, short-term relationship that is based on a contract or agreement between the school and the clinical setting (Billay & Yonge, 2004; Myrick & Yonge, 2005; Udliis, 2008). This agreement identifies the number of students, or groups of students, that the clinical setting will accommodate; the placements are organized by hospital administrative personnel in conjunction with the school's faculty members. The objectives of the preceptorship are based on the school's curriculum and the overall goal is to develop a competent nursing graduate who is prepared for entry-to-practice (Billay & Yonge, 2004; Luhanga, Myrick, & Yonge, 2010). The preceptorship has several outcomes. First, it provides nursing students with real-life experiences during which they develop confidence, knowledge and skills (Billay & Myrick, 2008; Ockerby, Newton, Cross, & Jolly, 2009) which ultimately helps prepare them for entry-to-practice (Myrick &

Yonge, 2005; Udulis, 2008). Second, throughout this collaboration the preceptors gain knowledge and teaching skills and professional satisfaction (Billay & Yonge, 2004). The preceptors also experience professional stimulation, such as staying up to date on current practices (Ockerby, Newton, Cross, & Jolly, 2009). Finally, the healthcare system gains new nurses that are ready to enter the profession with competent practice.

The preceptorship experience is vital for students' success; this experience is driven by the preceptors as they guide students through their learning (Bourbonnais & Kerr, 2007). This experience is impacted by the relationship between preceptors and students, the preceptors' preparation and support in the role (Bourbonnais & Kerr, 2007; Luhanga, Dickieson, & Mossey, 2010). A concept that emerged from Bandura's work that is particularly important for preceptors is that of self-efficacy. Self-efficacy is a person's perceptions of their ability to perform a task (Bandura, 1993). Self-efficacy changes as a person gains experience, accomplishes tasks and endures failures (Bandura, 1977; Goldenberg, Iwasiw, & MacMaster, 1997). In Bandura's (1982) theory of self-efficacy, self-efficacy is measured by a person's confidence in performing a task or achieving a goal. According to Bandura's theory, the teacher's self-efficacy can have a positive or negative impact on the students because the teacher has influence over the relationship; the teacher takes the lead role in determining what the student will be learning and how (Bandura, 1993). It is important to understand the factors that influence preceptors' self-efficacy because self-efficacy plays a role in determining the choices they make, the amount of effort they put into accomplishing a goal and their reaction and resilience in difficult situations or failures (Bandura, 1977; Parsons, 2007; Skaalvik & Skaalvik, 2010). People with higher self-efficacy are more resilient to failure and more likely to be persistent in accomplishing tasks or reaching goals (Bandura, 1982). The literature suggests that preceptors' self-efficacy may affect

their performance (Goldenberg, Iwasiw, & MacMaster, 1997) and that it has an impact on the student's learning and preceptorship experience (Goldenberg, Iwasiw, & MacMaster, 1997; Hecimovich & Volet, 2010). Teachers' self-efficacy can be a predictive variable of students' achievements and success (Bandura, 1993; Gibson & Dembo, 1984); preceptor self-efficacy may be an important variable to consider as it may be related to improved preceptor performance and ultimately student learning outcomes. Exploring the factors that influence preceptor self-efficacy could help inform and target the development of preceptor training programs, preceptor selection criteria and preceptor supports.

Bandura's (1982) theory of self-efficacy was also used to develop the research questions for this thesis project. According to Bandura's (1982) theory of self-efficacy, there are four sources of self-efficacy: (1) performance accomplishments, (2) vicarious experience, (3) verbal persuasion and (4) emotional arousal. These four sources from Bandura's theory may be used to identify the factors that may influence preceptor self-efficacy: (1) nursing experience, (2) preceptor experience, (3) preceptor training, (4) vicarious experience and (5) neuroticism-type personality. It is acknowledged that other factors such as preceptor support, clinical learning environment and other preceptor characteristics may influence the preceptor's self-efficacy, however, they will not be explored in this study as they are outside of the scope of this thesis.

Bandura's (1982) theory of self-efficacy suggests that performance accomplishments through experience mastery increase self-efficacy. This suggests that the more students the nurses have preceptored, the higher their self-efficacy would be. There is currently a lack of knowledge on the link between self-efficacy and nursing experience, although it may be theorized that a nurse with more nursing experience may have had more opportunities to observe colleagues preceptoring nursing students. The more that nurses are able to see their colleagues

preceptoring students, the more opportunity the nurses have to compare their own abilities and capabilities to that situation. This process is referred to as the vicarious experience (Bandura, 1982).

The literature reports that preceptor training is beneficial to the preceptorship experience (Myrick, Caplan, Smitten, & Rusk, 2011), increases preceptor self-efficacy (Larsen & Zahner, 2011; Parsons, 2007) and improves preceptors' knowledge (Smedley, Morey, & Race, 2010). Preceptors have an important role in the education of student nurses, as well as contributing to patient safety. Preceptors are responsible for managing students' practice errors and mitigating the risk for future errors by being able to identify an unsafe or failing student, creating an open and trusting relationship with the student, and by practicing good communication skills (Luhanga, Yonge, & Myrick, 2008; Palumbo, Rambur, & Boyer, 2012; Scanlan, Care, & Gessler, 2001). Managing unsafe students is important for patient outcomes and patient safety (Clipper & Cherry, 2015). Skills and techniques for dealing with the aforementioned responsibilities may be included within formal preceptor training programs. In addition, it is suggested that "nurses who had well-trained preceptors had higher, more positive perceptions about their ability to render safe and optimal care" (Clipper & Cherry, 2015, p. 448). As such, preceptor training may also have a positive impact on the self-efficacy of the student.

Preceptors who have received training may improve the student nurses' transition to staff nurse and increase the students' satisfaction by providing a positive experience. Clipper and Cherry (2015) found that "a structured preceptor-training program may contribute to an improved transition to practice and improve first-year retention rates of nurses" (p. 448). The students' clinical experience affects their decisions on where they want to work in the future (Baldwin & Wold, 1993). During preceptor training programs, preceptors receive encouragement

and feedback that may have a positive impact on the preceptor's self-efficacy; Bandura (1982) refers to this as verbal persuasion. Parsons (2007) found that preceptors with previous preceptor training had higher self-efficacy; however, not all preceptors receive formal training before becoming a preceptor (Chang, Lin, Chen, Kang, & Chang, 2015; Luhanga, Dickieson, & Mossey, 2010; Smedley, Morey, & Race, 2010).

In the self-efficacy theory, people who are easily upset or anxious tend to have lower self-efficacy (Bandura, 1982). This characteristic is in line with the definition of one of the Big-Five personality traits, neuroticism (Goldberg, 1992). The Big Five traits are: (1) extraversion, (2) agreeableness, (3) conscientiousness, (4) neuroticism, and (5) intellect/openness (Goldberg, 1992). Neuroticism particularly stands out because it is described as including emotional instability, anxiety and nervousness (John & Srivastava, 1999; Li & Su, 2014). Although neuroticism-type personality will be highlighted in this thesis research because it is directly linked to emotional arousal, the other four personality traits will be assessed as well because they may be confounding variables. All of the Big-Five personality traits have potential to impact preceptor self-efficacy and need to be addressed and explored. Several studies have found a negative correlation between self-efficacy and neuroticism (Hartman & Betz, 2007; Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005; Schyns & Collani, 2002). A study conducted by Li and Su (2014) found a positive relationship between teaching self-efficacy and the extraversion trait.

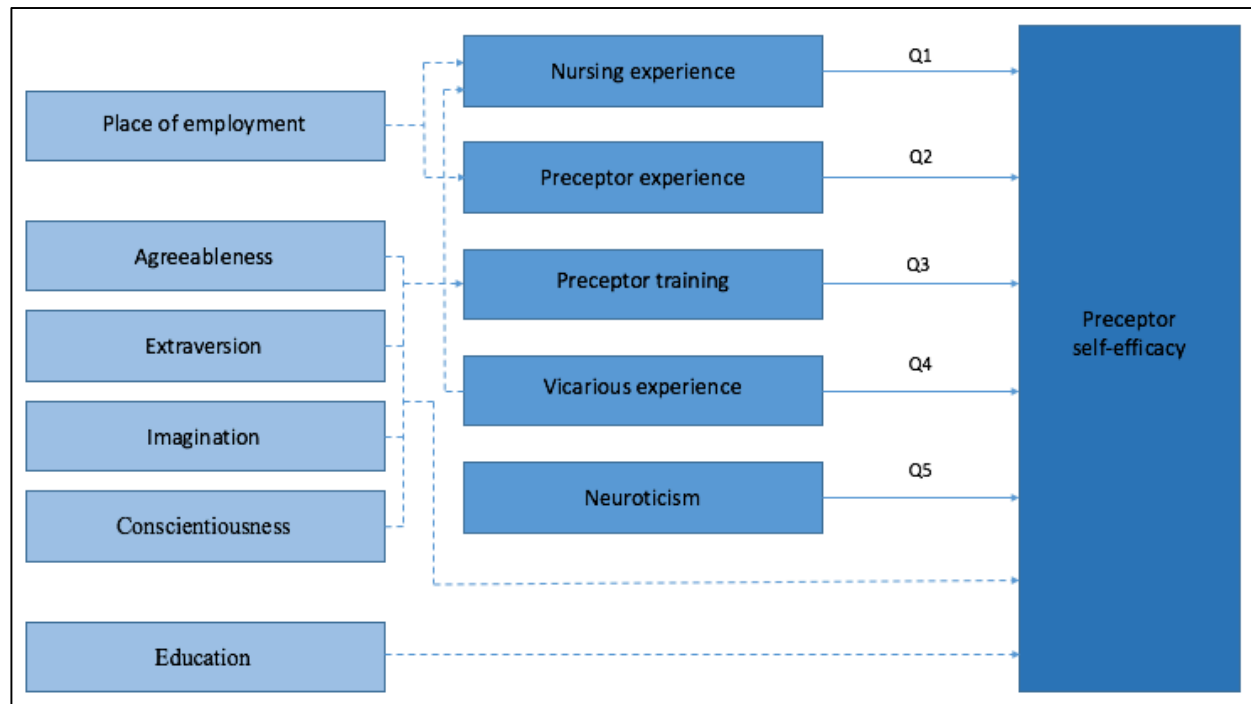
1.1 Research Questions

Preceptors play a pivotal and influential role in nursing students' education. By evaluating what factors contribute to preceptors' self-efficacy, recommendations can be made on ways to improve it; for example, recommendations can be made on the minimum number of

years of nursing experience that a nurse should have before becoming a preceptor. The purpose of this thesis is to explore the factors that influence preceptors' self-efficacy. This new knowledge could support the improvement of preceptor training programs and preceptor selection, which can contribute to improving nursing education.

The objective of this study is to explore the relationships between preceptor self-efficacy and years of experience as a nurse, amount of preceptor training, number of students preceptored and preceptors' personality, specifically neuroticism-type personality. In this study the dependent variable is preceptors' self-efficacy and the independent variables are (1) years of nursing experience, (2) number of students preceptored, (3) positive vicarious preceptor experience, (4) hours of preceptor training and (5) neuroticism-type personality. The conceptual model in Figure 1 was created by the researcher to provide a visual representation of the ideas proposed in this thesis. The conceptual model provides an outline for the research questions in this thesis project, as well as the control variables that may impact them. The model is based on Bandura's (1982) theory of self-efficacy.

Figure 1. Conceptual model.



Research question 1: Is there a relationship between preceptor self-efficacy and the years of nursing experience?

According to Bandura's (1982) self-efficacy theory, performance accomplishments are a major contributor to self-efficacy (Bandura, 1982). It is proposed here that nurses with more years of nursing experience will have higher self-efficacy because they have had more practice experience as a nurse.

Research question 2: Is there a relationship between preceptor self-efficacy and the number of students preceptored?

Performance accomplishments are a major contributor to self-efficacy (Bandura, 1982). It is proposed that the number of students preceptored will be related to the preceptor's perceived

self-efficacy because as they successfully precept students their perceptions of self-efficacy as a preceptor will increase through experience mastery.

Research question 3: Is there a relationship between preceptor self-efficacy and the number of hours of preceptor training?

It is proposed in this thesis that preceptors are provided with verbal persuasion during formal preceptor training. During preceptor training, preceptors gain knowledge and practice on how to approach certain situations, provide feedback and evaluate students. It is hypothesized that formal training will increase preceptors' self-efficacy. Preceptor training that includes various types of simulation may also contribute to performance accomplishments through mastery experience.

Research question 4: Is there a relationship between preceptor self-efficacy and vicarious preceptorship experience?

Vicarious experience as a person observing similar others successfully perform tasks and then comparing their own abilities to this success (Bandura, 1982). Nurses may be able to learn about being effective preceptors by watching colleagues successfully precept students and comparing their own abilities to their colleagues'. It is proposed here that nurses who have seen positive vicarious experiences will have higher self-efficacy. Years of nursing experience may also contribute to the amount of vicarious experience.

Research question 5: Is there a relationship between preceptor self-efficacy and neuroticism-type personality?

The final factor that contributes to self-efficacy is emotional arousal (Bandura, 1982). People who more easily have negative reactions to stressor or threats have lower self-efficacy (Bandura, 1993). It is proposed that neuroticism may influence self-efficacy. Neuroticism is

described as emotional instability, such as getting upset or angry easily (Donnellan, Oswald, Baird & Richard, 2006; John & Srivastav, 1999; Teng, Hsu, Chien, & Chang, 2007). It is hypothesized that neuroticism will negatively affect self-efficacy, as people with neuroticism type personalities are more easily emotionally aroused. The other four personality traits will be assessed as they are a part of the personality assessment tool and may also have an impact on preceptor self-efficacy.

As there are several factors that may confound the relationships between the proposed variables, selected factors will be statistically controlled for in this study during the regression analyses. First, place of employment will be controlled for, using statistical methods, because the nature of each unit or department may promote or hinder the preceptors' abilities to fulfil their role and subsequently their self-efficacy. Second, level of education will be statistically controlled using statistical methods because nurses with higher education may have increased self-efficacy (Parsons, 2007). Extraversion, agreeableness, imagination and conscientiousness personality traits will be statistically controlled for because they may influence preceptor self-efficacy. Some studies have explored the relationship between certain personality traits and self-efficacy, however, all of the Big-Five personality traits have not been assessed in the context of nurse preceptor self-efficacy. For example, Li and Su (2014) explored the relationship between self-efficacy and extraversion, neuroticism and psychoticism in a cross-sectional; they found only extraversion to be positively related to nurse preceptor self-efficacy. A gap in literature exists on the impact of the Big-Five personality traits on the self-efficacy of nurse preceptors.

Chapter 2: Theoretical Framework

Bandura's (1982) theory of self-efficacy is used as a foundation for this research. Self-efficacy is a concept that has been researched and applied in education (Goldenberg, Iwasiw, & MacMaster, 1997) and other areas such as nursing (Wilkinson & Whitehead, 2009) and psychology (Larson & Daniels, 1998). Self-efficacy is defined as "an individual's perception of confidence in [their] ability to successfully complete a task" (Goldenberg, Iwasiw, & MacMaster, 1997, p. 303). A person's self-efficacy is self perceived and is susceptible to change as a person experiences different situations (Bandura, 1993). A person may have a high perception of self-efficacy in certain domains of functioning and low self-efficacy in others (Bandura, 1977). For example, a person who has been a nurse for eight years may have high perceptions of self-efficacy as a nurse, however, they may have low self-efficacy as a parent because it is their first time in that role. Self-efficacy influences the person's thoughts, behaviours and actions, and emotional reactions (Bandura, 1982). Although self-efficacy cannot solely predict performance outcomes, it does play an important role in determining the amount of effort a person devotes to accomplishing tasks, overcoming a challenge or rebounding from a failure (Bandura, 1982; Bandura, 1986). According to Bandura's (1982) theory, people with high self-efficacy are more likely to attempt challenging tasks and are more resilient to failure. Similarly, people with low self-efficacy avoid tasks or opportunities that they believe are beyond their capabilities (Bandura, 1982). There are several contributing factors that shape a person's self-efficacy.

There are four sources of self-efficacy: performance accomplishments, vicarious experience, verbal persuasion and emotional arousal (Bandura, 1977). The first source, performance accomplishments, is developed through the mastery of experience (Bandura, 1977).

As a person accomplishes smaller or simpler tasks successfully, their perceptions of self-efficacy increases for tasks that are more complex. Bandura (1977) proposed that this source has the greatest influence on the development of self-efficacy because the person has personally experienced the success or achievement. For example, a nurse that has a lot of practice inserting intravenous lines will have high self-efficacy for this skill and will be more likely to attempt an intravenous line insertion on a patient who has poor veins. The second source of self-efficacy is vicarious experience, which entails an individual observing a similar other individual successfully accomplishing tasks (Bandura, 1982). Self-efficacy is increased when an individual observes other's accomplishments and compares their own capabilities to pursue comparable tasks (Bandura, 1982). According to self-efficacy theory, a person is also able to construct appropriate behaviours and increase self-efficacy by observing the effects of other's actions (Bandura, 1977), particularly with successful outcomes. The third source of self-efficacy is verbal persuasion. This encompasses positive feedback, suggestions or encouragement from others (Bandura, 1977). Verbal persuasion may be the boost in efficacy that a person needs in order to attempt a task; however, a failed attempt at the task may again lower the person's perceived self-efficacy (Bandura, 1982). The fourth source of self-efficacy is the physiological state; this refers to the body's natural response to a threat, such as anxiety or anger (Bandura, 1977; Bandura, 1982). This emotional arousal affects self-efficacy because it encompasses the person's ability to cope with stressful situations (Goldenberg, Iwasiw, & MacMaster, 1997). According to Bandura (1993) adverse emotional reaction can impair thinking and action; it takes skill to overcome this reaction. People more readily take on challenges that they judge themselves capable of accomplishing, which overall, has less impact on their emotional arousal (Bandura, 1993).

2.1 Dimensions of self-efficacy

A person's perceptions of self-efficacy may differ from one task or situation to another. Self-efficacy can be measured in several different ways including magnitude, strength and generality (Bandura, 1977; Bandura, 1982). Magnitude refers to the level of difficulty a person may face when performing a task (Bandura, 1977). Some individuals may be limited to simpler tasks, while others have less difficulty accomplishing more taxing tasks (Bandura, 1977). As self-efficacy increases, the person is able to take on situations of higher magnitude (Bandura, 2006). Strength refers to the person's self-efficacy perceptions (Bandura, 1977). While weaker expectations are easily extinguished, stronger expectations are more resilient (Bandura, 1977). A person with high self-efficacy is able to persevere when faced with a difficult situation (Bandura, 2006). Generality refers to a person's ability to apply the self-efficacy gained in one situation to a different situation (Bandura, 1977). In preceptorship, the preceptor may have high self-efficacy as a nurse but lower self-efficacy as a preceptor. Certain tasks as a preceptor may be perceived to be higher in magnitude. For example, showing a new student nurse around the clinical unit may be easy and require less self-efficacy than dealing with a failing student, which may be much more difficult and require the preceptor to be more self-efficacious. If the nurse has experience with firing unsuccessful employees either in a different job or role, he/she may be able to draw on those skills and the self-efficacy gained in that situation to deal with this one.

2.2 Outcome expectations and goals

According to self-efficacy theory, individuals are more influenced by how they perceive their performance than by the actual outcomes (Goldenberg, Iwasiw, & MacMaster, 1997). For example, a student taking a chemistry course is struggling to learn the content. They perceive themselves as bad at chemistry because they need a lot of help with the assignments and

understanding the content. Although the student passes the course at the end of the year, their self-efficacy in terms of chemistry will remain low as they anticipate continuing to struggle in the chemistry course the following year. There are two types of expectations: outcome expectations, which is the belief that a certain behaviour will lead to an outcome, and efficacy expectations, which is the belief one can successfully perform the behaviour that will lead to the outcome (Bandura, 1977). Bandura (1982) suggests that “behaviour would be best predicted by considering both self-efficacy and outcome beliefs” (p. 140). As such it can be proposed that people who have high self-efficacy are likely to anticipate successful outcomes, while those who perceive themselves as less self-efficacious will anticipate less favourable outcomes (Bandura, 1982). As a result, self-appraised capabilities influence personal goal setting (Bandura, 1993).

Bandura (1982) also discusses the use of proximal and distal goal setting. These are short and long term goals. Proximal goals provide immediate gratification, whereas distal goals are further removed and at times dwindle in motivation (Bandura, 1982). Bandura (1982) suggests that setting a timeline of several proximal goals may be the most effective way to reach outcomes and increase self-efficacy. By aiming for, and accomplishing goals, people experience a sense of satisfaction (Bandura, 1982). In preceptorship, one of the major outcomes is the development of a competent and confident nurse who is prepared to enter practice (Trede, Sutton, & Bernoth, 2015). While this may be viewed as a distal goal, setting proximal goals throughout the experience may help the preceptor and student nurse reach outcomes and become more self-efficacious. For example, a nursing student may take care of one patient at the start of the preceptorship. As the preceptorship continues the student will take on more patients. Every few weeks the goal may be to take an additional patient until the end result, or distal goal, is reached of having a full patient load.

2.3 Self-efficacy in the academic setting

According to Bandura (1993), teacher's self-efficacy affects the learning environment and student success. Teachers, or in this case preceptors, play a role in the student's self-efficacy. For instance, feedback from teachers has a strong affect on student self-efficacy, which subsequently has an affect on their goal attainments (Bandura, 1993). Teachers' self-efficacy also plays a role in their own achievements. According to Bandura's (1993) theory, teachers with high levels of self-efficacy are able to better manage academic stressors, while those with low levels of self-efficacy are more vulnerable to burnout. Teachers with high self-efficacy are able to provide students who are struggling with help and praise students for their accomplishments, while teachers with low self-efficacy more readily give up on difficult students and overall provide more negative than positive feedback (Bandura, 1993). Bandura (1993) concludes that teachers with high self-efficacy are able to provide students with the mastery experiences they need in order to increase their self-efficacy and advance their learning. The student's self-efficacy is particularly important for their success. Students with low self-efficacy struggle meeting academic demands and are susceptible to higher levels of anxiety, while students with higher self-efficacy are more resilient to failure (Bandura, 1993). The teacher's self-efficacy stands as a predictive variable of the students' achievements (Bandura, 1993; Gibson & Dembo, 1984). Beyond the teacher and the student, the academic environment has an impact on the student's learning as well. The teachers and students are interdependent (Bandura, 2006) and as they interact they create a school culture and environment (Bandura, 1993). Teachers who collectively view themselves as highly efficacious are able to create a positive learning atmosphere for the students (Bandura, 1993). The self-efficacy and outcome expectations of each member of the group is linked to the self-efficacy of the group as a unit (Bandura, 2006). The

higher the group's collective self-efficacy, the higher their motivation, the greater their resilience, and the the greater their performance accomplishments (Bandura, 2006).

According to Bandura's (1982) theory, self-efficacy plays a major role in a person's functioning. It has been shown to affect behaviour "by its impact on other determinants such as goals and aspirations, outcome expectations, affective proclivities, and perception of impediments and opportunities in the social environment" (Bandura, 2006, p. 309). It influences performance directly and indirectly through goal setting and subsequently by enhancing performance (Bandura, 1993). Self-efficacy has been shown to affect motivation and action (Bandura, 1986). A meta-analysis lent support to the influential role of self-efficacy on human development and adaption (Bandura, 2006). The theory of self-efficacy suggests that self-efficacy levels influence the amount of effort persons will put into a situation, how resilient they are, and how detrimental the failures will be to them (Bandura, 1977; Bandura, 1982; Bandura, 1993; Bandura, 2006). In fact, there is a difference between having knowledge and skills and being able to use them in stressful situations (Bandura, 1993). Although self-efficacy levels cannot solely predict the performance outcomes, there is a relationship between higher levels of self-efficacy and higher performance accomplishments (Bandura, 1982).

Chapter 3: Literature Review

A focused literature review was conducted to gain an understanding of the literature on self-efficacy, nursing experience, preceptor training and personality traits. The following literature review will present the current literature on the state of the knowledge of the relationship between preceptor training, nursing and preceptor experience, personality and self-efficacy.

3.1 Search Strategy

Inclusion criteria for the searches included nursing literature written in English, and published from 2000 to 2016. Articles written in 1999 and earlier were excluded because nursing education and preceptorship has changed and evolved (Hyrkas & Shoemaker, 2007). Articles that are considered classics were included, despite being outside of the year of publication limits (Goldenberg, Iwasiw, & MacMaster 1997; Nugent, Bradshaw, & Kito, 1999). Non-nursing literature was excluded due to potential differences in programs, competencies and context. Personal opinion articles, editorials and non-scientific articles were excluded to maintain a high level of evidence in the results. Also excluded, were articles about mentoring and coaching as they are separate concepts. All clinical settings, such as primary or tertiary care, were included to make the search more comprehensive. The same criteria were used for all of the databases; this includes Medline Ovid, CINAHL, ERIC, and PsychInfo. Search terms used included: nurse, student nurse, preceptor, preceptorship, clinical environment, workplace, experience, education, education status, training, teaching, self-efficacy, personal satisfaction, burnout, workload, and job satisfaction, personality, characteristics, personality assessment, personality inventory, personality tests, personality measures, five factor personality model, mini IPIP, and mini international personality item pool.

First, Medline Ovid database was searched using a combination of medical subject heading (MeSH) terms and truncated terms. This search yielded 1338 articles. Truncated terms are identified with an asterisk, and were used to search titles and abstracts when no mesh terms were available. After removing duplicates, 818 articles were left. Next, the inclusion and exclusion criteria were used to further narrow the results based on the title and abstract, 28 articles remained. The same steps were used for the search of the CINAHL, ERIC and PsychInfo databases. As a result, five new articles were found. A bibliography search of reference lists in key articles was done, eight new articles were added. Additionally, a search of frequently cited authors was completed, and one new article was found. This shows that the search conducted was exhaustive, as few new articles were arising and many were repeated.

A search of grey literature via Google Scholar was completed. A combination of terms similar to the previous database searches was used. The following terms were new additions: guideline, best practice, and standards. This search yielded one new and relevant piece of literature; a Canadian Nurses Association (2004) preceptor guideline.

3.2 Preceptorship

Preceptorship is a one-on-one teaching-learning method used in clinical nursing education (Billay & Yonge, 2004; Luhanga, Myrick, & Yonge, 2010; Ockerby, Newton, Cross, & Jolly, 2009; Udalis, 2008). It is a short-term relationship that allows the nursing student to experience a real-life clinical setting with a preceptor, at the preceptor's place of employment (Billay & Myrick, 2008). It provides the student with an opportunity to develop competence and confidence, and is a part of preparing the student for entry-to-practice (Billay & Myrick, 2008).

In the nursing literature, mentorship is often used synonymously with preceptorship, however, the two are distinct concepts (Billay & Yonge, 2004; Ockerby, Newton, Cross, & Jolly,

2009). Mentorship is defined as “a situation that promotes personal and professional development in which general well-being is enhance[d]... and ways to success are developed” (Meier, 2013, p. 342). Mentorship is a long-term relationship that is typically informal and voluntary (Doerksen, 2010; Meier, 2013; Poronsky, 2012). In contrast to preceptorship, mentorship is a bidirectional relationship, whereby both parties contribute to and gain from the relationship (Mills, Francis, & Bonner, 2005; Poronsky, 2012). Coaching is another concept similar to preceptorship. Coaching is defined as a process that helps with transition or integration into a new role (Link, 2009). The role of the coach is to provide guidance and support (Link, 2009), to introduce the incoming nurse to expectations and provide feedback (Batson & Yoder, 2012). Although the goals can be set mutually, they do involve the organizational needs (Batson & Yoder, 2012). Nurses who are being coached may not be novice to the profession of nursing, but rather are novice to the role they are entering (Link, 2009). When reviewing the literature, it is important to identify these differences and to acknowledge that while these terms are often used interchangeably, they are distinct concepts.

3.3 Self-efficacy

The following section provides a review of the nursing literature on the factors that affect self-efficacy, such as nursing experience, preceptor experience, preceptor training, personality, nursing education, and place of employment.

3.3.1. Nursing experience

In Bandura’s (1982) theory of self-efficacy, the mastery experience was identified as a major contributor to developing self-efficacy. This provides rationale to explore the relationship between nurses’ experience as practicing nurses and as preceptors. Unfortunately, there are currently no studies that explore the relationship between nursing experience and self-efficacy.

Several studies attempted to identify characteristics of preceptors, while others described the experience of being a preceptor to a student nurse.

3.3.2. Preceptor experience

Bandura's (1982) theory suggests that the most effective way to increase self-efficacy is through the mastery experience. Several studies lent support to this theory by finding a positive correlation between the number of years as a preceptor and self-efficacy (Larsen & Zahner, 2011; Nugent, Bradshaw, & Kito, 1999), while one study found no relationship between the two (Parsons, 2007). Larsen and Zahner's study focused on public health nurses (N = 31) and used their own 21-question preceptor self-efficacy questionnaire, while Parsons (2007) studied public and community health nurses (N = 67) using the Community Advisor Self-efficacy questionnaire. Nugent, Bradshaw and Kito (1999) evaluated the self-efficacy of new nurse educators (N = 346). The study is also the only one to use a version of the Self-Efficacy Towards Teaching Inventory tool (Nugent, Bradshaw, & Kito, 1999).

3.3.3. Preceptor training

Preceptor training and education have been trending topics for many years. There is evidence that suggests that the success of the preceptorship experience depends on adequate preceptor preparation and training (Luhanga, Dickieson, & Mossey, 2010). Three studies reviewed the relationship between preceptor self-efficacy and formal preceptor training. These authors all reported a statistically significant, positive correlation between having preceptor training and preceptor's self-efficacy (Larsen & Zahner, 2011; Nugent, Bradshaw, & Kito, 1999; Parsons, 2007). Overall, authors researching preceptor training concluded that results support the use of online preceptor education (Larsen & Zahner, 2011; Parsons, 2007), and that mentoring new faculty in the teacher role is supported (Nugent, Bradshaw, & Kito, 1999).

3.3.4. Personality

One study assessed the relationship between preceptors' self-efficacy and personal characteristics, including traits such as extroversion, neuroticism and psychoticism (Li & Su, 2014); a positive correlation was found between preceptors' (N = 116) who had an extroversion personality and self-efficacy (Li & Su, 2014). This indicates that preceptors who scored higher in extroversion on the personality scale also had a higher self-efficacy. In addition, preceptors with an extroverted personality were also found to have higher maturity, professional skills, teaching strategy effectiveness and ease using student evaluations (Li & Su, 2014). Although the authors collected demographic data, such as number of years as a preceptor and as a nurse, they did not report the results of any statistical tests using these variables.

3.3.5. Nursing Education

Several authors have explored the relationships between self-efficacy and nursing education. Larsen and Zahner (2011) explored the factors affecting the self-efficacy of public health nurses using a quasi-experimental study design. Although there was no correlation between preceptor's knowledge and self-efficacy, there was a statistically significant, positive correlation between the preceptor's education level and self-efficacy. Preceptors with a master's level education were found to be more self-efficacious. A cross-sectional study by Nugent, Bradshaw, & Kito (1999) examined the self-efficacy of new nurse educators and also found that nurses with master's level education had higher self-efficacy. Parsons (2007) examined the self-efficacy of public health nurses that worked with students and reported that nurses with Master's level education had higher self-efficacy.

3.3.6. Place of employment

Goldenberg, Iwasiw and MacMaster (1997) studied the self-efficacy of baccalaureate nursing students (N = 23) and their preceptors (N = 24). They found a relationship between preceptors' self-efficacy and place of employment. It was found that preceptors working in community settings and critical care settings had higher self-efficacy. This study also examined the relationship between preceptor and student self-efficacy; the authors report that no relationship was found.

3.3.7. Self-efficacy as an influencing factor

Although many factors influence self-efficacy, self-efficacy can also impact other variables as well, such as burnout. Being a preceptor can be a rewarding, but also a very demanding experience. Often preceptors have the same patient care responsibilities as their coworkers with the addition of the challenges that come with preceptoring a student (Bourbonnais & Kerr, 2007; McCarthy & Murphy, 2010). There was no literature that explored the relationship between self-efficacy and burnout of preceptors, however, there is literature on this topic for school teachers. The decision was made to include these articles in the literature review because nurse preceptors are a type of teacher; preceptors teach nursing students at their place of employment. Two studies found that teachers with lower self-efficacy were have higher rates of burnout (Schwarzer & Hallum, 2008; Skaalvic & Skaalvic, 2010). Schwarzer and Hallum (2008) proposed that teachers with lower perceptions of self-efficacy had higher job related stress and subsequently were more susceptible to burnout. The authors also reported that age was another factor linked to burnout rates; younger teachers had lower self-efficacy and were found to be more prone to burnout (Schwarzer & Hallum, 2008). This is congruent with the self-efficacy theory, as someone with who is older may have more years of experience, which

increases the opportunity for the mastery experience to take place and thus increase self-efficacy (Bandura, 1982).

3.4 Preceptor Training

Dealing with a struggling student or having to fail a student are very stressful experiences for preceptors (Luhanga, Yonge, & Myrick, 2008; McCarty & Murphy, 2010). Preceptor experience is needed to be able to identify a failing student and to take appropriate steps to help them succeed (Luhanga, Yonge, & Myrick, 2008). Luhanga, Yonge and Myrick (2008) report that some preceptors struggle with failing students due to their “lack of experience or confidence in the preceptor role” (pp. 6-7). Failing a student is stressful and produces a physical response that can lower self-efficacy (Bandura, 1982). Challenges and undesirable experiences can lead to a decrease in self-efficacy (Bandura, 1922), preceptors need to be trained to deal with struggling students or failing a student (McCarthy & Murphy, 2010).

Many articles describe the implementation and evaluation of various types of preceptor training programs. For instance, Windey and colleagues (2015) conducted a systematic review (N = 12) on preceptor development interventions. Ten were in-class or a workshop format while two were computer-based or self-directed learning. Through this review, the authors identified the following similar content areas covered within the various preceptor training programs: providing feedback and communication, facilitating adult learning, and preceptor roles and responsibilities. The authors found that although most of the interventions were deemed effective, many were flawed in research design and lacked development quality, such as not having evidence-based information, while others did not use valid instruments to measure outcomes.

One qualitative study explored preceptors' (N = 36) perceptions of a two-day hospital

based training program and found that preceptors viewed this preparation as adequate (Henderson & Malk-Nyhan, 2006). This study also identified that preceptors perceived intrinsic rewards and support from the organization as essentials in performing their roles as preceptors. The authors provided recommendations to include support in the form of continuing education for preceptors as well as effective scheduling and adequate time for the teaching-learning process. Another qualitative study examined the effects of the implementation of an in-class preceptor training program and measured the preceptors' (N = 63) perception of the effectiveness of the training, attitude towards students and confidence (Smedley, Morey, & Race, 2010). The results suggest that preceptors perceived the program to be effective in increasing their knowledge and preceptor skills, such as evaluating students (Smedley, Morey, & Race, 2010). It was found that as preceptors' confidence increased, their attitudes towards students became more positive (Smedley, Morey, & Race, 2010). A Canadian study used a qualitative approach to examine the effectiveness of a one-day in-class preceptor training program (Myrick, Luhanga, Billay, Foley, & Yonge, 2012). The authors found that preceptors (N = 29) valued the engagement opportunities that were provided throughout the course, such as sharing their own stories and listening to the stories of others, and were overall able to gain knowledge on the preceptor role that increased their self-confidence. The authors concluded that the participation during the training was effective as preceptors were able to draw on their own previous experiences and contribute to discussions.

Another Canadian qualitative study (N = 18) examined the effects of a five-month online preceptor support program that included a combination of learning modules and discussions with other preceptors (Myrick, Caplan, Smitten, & Rusk, 2010). The support program provided an online forum for preceptors to communicate and collaborate with one another. Participants

reported that the ongoing support was greatly beneficial. The authors suggest that further evidence is needed to support this unconventional, yet innovative, program.

A qualitative study conducted in Taiwan examined preceptors' (N = 386) perceptions of preceptor training programs they have taken in the past and what content they found useful (Chang, Lin, Chen, Kang, & Chang, 2015). The study concluded that the nurse preceptors found the courses to be more theoretical than practical, and therefore inadequate for training (Chang, Lin, Chen, Kang, & Chang, 2015). Content on adult learning theory was found to be least useful, while communication skills aspects of the training were found to be most useful. Similarly, a Canadian qualitative study conducted by Luhanga, Dickieson and Mossey (2010) examined preceptors' (N = 22) perceptions of their training, along with the facilitators and barriers that support the preceptor role. Participants noted gaps in their current preceptor preparation programs, such as how to appropriately evaluate students. Other common themes were the lack of access to resources and support from the university, as well as lack of understanding of their role expectations. Preceptors need to know their roles and responsibilities as a preceptor (Rogan, 2009). Additionally, the preceptors described a need for implementation of a preceptor selection process; a process that would ensure that preceptors receive formal training before accepting a role as a preceptor (Luhanga, Dickieson, & Mossey, 2010).

3.5 Preceptor Experience

There are many challenges associated with preceptoring a student. Many nurses want to become preceptors; however, the role can be stressful and challenging, which is a barrier for many nurses (Luhanga, Yonge, & Myrick, 2008; Paton, 2010). Being a nurse and preceptor at the same time is especially challenging when organizational support, feedback, recognition and time are lacking (McCarthy & Murphy, 2010). Paton (2010) found that preceptors viewed

knowledge translation to students and assessing the student's competence as some of the most challenging tasks. As a result, nurse with limited nursing experience may find it particularly overwhelming to preceptor a student. There was no evidence found that suggests the number of years of nursing experience that nurses should have prior to becoming preceptors.

3.6 Nursing Experience

As previously mentioned, there is currently no evidence exploring the relationship between nursing experience and self-efficacy. However, the literature does provide some insight into the types of nurses who become preceptors. Using a quantitative study, Palumbo, Rambur and Boyer (2012) explored differences between nurses who became preceptors and those who did not. They compared variables such as age, years of nursing experience, highest level of education, and type of hospital the nurses are employed in, such as urban or rural (Palumbo et al., 2012). The one significant finding of the study was that preceptors were younger than non-preceptors. Phillips and Duke (2000) compared clinical teachers and preceptors. They found that clinical teachers had more nursing experience and higher levels of education. These clinical teachers were also found to ask students more questions in general and asked more questions at a higher cognitive level (Phillips & Duke, 2000). Bandura (1982) suggests that both experience and education are related to higher self-efficacy.

3.7 Preceptor Characteristics and Personality

Several studies explored the characteristics and personalities of nurse preceptors. A variety of personality tests were used as measures and were compared to a variety of variables, such as maturity and professionalism.

Several authors explored the relationship between nurses' personality and various nursing related variables. Li and Su (2014) used the Eysenck Personality questionnaire to compare

preceptors' personality and their teaching self-efficacy. The authors found that preceptors with extraverted-type personalities had higher scores of maturity, teacher self-efficacy, teaching strategy effectiveness, professional skills, and were more objective with evaluations (Li & Su, 2014). Preceptors with neuroticism-type personalities were found to have lower levels of maturity (Li & Su, 2014), while in another study, nurses with neuroticism-type personalities were perceived by patients to be less responsive and empathetic, and provided less assurance. A study conducted by Allen and Mellor (2002) using Costa and McCrea's (1992) NEO Five-Factor Inventory tool also associated nurses (N = 104) with neuroticism-type personalities with higher exhaustion, cynicism and reduced professional efficacy. Using the Mini Marker tool (Saucier, 1994), nurses' (N = 192) openness was found to be correlated with the patient's perceptions of responsiveness (Teng, Hsu, Chien, & Chang, 2007). Another study conducted by Lalonde and McGillis Hall (2016) compared preceptor characteristics and new graduate nurses' socialization outcomes and found that preceptors' openness was positively correlated with new graduates' job dissatisfaction and role conflict and that preceptors' conscientiousness was positively correlated with higher turnover rates of the new graduate nurses. Although these relationships were unexpected, the authors propose that they are due to generational differences in work-related values and expectations. Preceptors' emotional stability was positively correlated to new graduates' role clarity (Lalonde & McGillis Hall, 2016), making it a desirable characteristic for preceptors to have. The authors admit that these findings are odd especially as older studies found the opposite to be true (Lalonde & McGillis Hall, 2016). Strunk and Strunk (2012) compared the Big-Five personality types to nurse turnover rates. Using the Mini International Personality Item Pool (Donnellan, Oswald, Baird, & Lucas, 2006), they found that nurses with agreeable type personalities had higher turnover rates among the sexual assault nurse examiners (Strunk &

Stunk, 2012). Matching preceptors and students by personality type was also proposed in one study; however, the study concluded that similar personality types may not be compatible and that further research is required to explore this idea (Poradzisz, Kostovich, O'Connell, & Lefaiver, 2012). Overall, these results can help in the process of choosing nurses to become preceptors. They show characteristics in nurses and preceptors such as extraversion (Li & Su, 2014) and openness (Teng, Hsu, Chien, & Chang, 2007) that are associated with more desirable outcomes, while characteristics such as neuroticism which were associated with less favourable outcomes (Allen & Mellar, 2002; Li & Su, 2014; Teng, Hsu, Chien, & Chang, 2007).

3.8. Summary of the literature review

Several factors were found to have a relationship with self-efficacy, including preceptor experience (Larsen & Zahner, 2011; Nugent, Bradshaw, & Kito, 1999), preceptor training, personality (Larsen & Zahner, 2011; Nugent, Bradshaw, & Kito, 1999; Parsons, 2007), education (Larsen & Zahner, 2011; Parsons, 2007), and employment (Goldenberg, Iwasiw, & MacMaster, 1997). Although there is current literature investigating the concepts discussed above, there is still a gap in literature regarding the factors that contribute to nurse preceptor self-efficacy. There is a need to explore these factors because of the implications they may have on preceptor training and selection, and nursing education as a whole.

Chapter 4: Methodology

This section will outline the design and setting of the study, the sample, as well as the recruitment and data collection strategies.

4.1 Design

This study was conducted using a cross-sectional, non-experimental correlational study design (Polit & Beck, 2008). A self-report questionnaire was administered to nurses at one point in time. A combination of convenience sampling and snowball sampling was used for this study (Polit & Beck, 2008).

4.2 Setting and Sample

The sample consisted of Ontario nurses who have been preceptors to consolidating undergraduate nursing students at least once in their nursing career. Nurses working in all specialty areas were recruited for the study. Inclusion criteria were as follows: (1) a registered nurse with the College of Nurses of Ontario; (2) preceptored at least one consolidating nursing student in their career; and (3) ability to read and write in English. Exclusion criteria were: (1) not a registered nurse in Ontario; (2) no previous experience preceptoring a consolidating nursing student; (3) inability to read and write in English. Nurses who have not preceptored an undergraduate nursing student at least once, even if they have preceptored a new graduate nurse or have helped orient new staff to their unit, were excluded from the study because there are differences in knowledge and experience between undergraduate nursing students and their graduated counterparts (Myrick & Yonge, 2005).

A power analysis was conducted to determine that a sample size of 122 was needed to detect a medium effect with a power of 0.80 and alpha of 0.05 (Cohen, 1992).

4.3 Recruitment

Several strategies were used to recruit participants. First, participant recruitment was done using a social media platform called Facebook. This platform was selected because it provides direct access to the study population. By using current technologies, the researcher was able to access participants throughout Ontario. Recruitment involved posting an advertisement poster (Appendix A) on six Facebook groups' pages, such as nursing school alumni pages, various nursing groups, and the researcher's own Facebook page. The researcher posted in the following groups: UOttawa's graduate nurses' association, McMaster Nursing 2014, Nurses, Ontario Nurses Connect, Emergency Nurses' Association of Ontario, and Nurses and Midwives in Ontario, Canada. The researcher posted once per week for four weeks due to the nature of the social media platform and the decreased access to posts that are several days old. Recruitment posts were posted during different times during the day and on different days of the week to ensure that posts were accessible to nurses using social media at different times of the day. On this platform, the posts have a potential to be further disseminated by Facebook users if they select the share button and repost the advertisement and link. The posts included the recruitment poster and a direct link to the online survey. By clicking on the link, participants had access to the information and consent page (Appendix B) and subsequently the survey (Appendix C).

Secondly, an advertisement was placed in the classified advertisements section of the Registered Nurses' Association of Ontario (RNAO) Journal (Appendix D). This journal was chosen because it provided access to nurses across Ontario. A description of the inclusion criteria and a URL for the survey were included in the advertisement. Participants were asked to follow the link to complete the survey.

Finally, the last recruitment strategy involved ten key informants. The key informants were colleagues and friends of the researcher and were selected because they have knowledge of other nurses who may fit the inclusion and exclusion criteria. The researcher used Facebook to reach the key informants and send them a copy of the advertisement in a private message. Key informants were asked to disseminate the advertisement (Appendix A) to other nurses as an invitation to participate in the survey.

4.4 Instruments

Participants were asked to complete an online survey which included demographic questions and questions to obtain information on each of the variables under study. The survey included multiple-choice and short-answer questions; each question had a designated comment box for participants who wished to provide additional information. See Appendix C for survey.

The survey was pilot tested using three registered nurses who are colleagues of the researcher. These nurses were asked to fill out the survey and time how long it took to complete the survey. Minor changes in wording were made to improve the flow and presentation of the survey based on the suggestions from the pilot testing. Based on the average time of the pilot tests, it was concluded that the survey takes approximately 10 to 15 minutes to complete. The surveys from the pilot testing were not included in the results.

4.4.1. Demographic information

The demographic information was collected using two questions; one multiple-choice and one short-answer question on gender and age.

4.4.2. Education and training

This section was comprised of five questions; two multiple-choice questions, two short-answer questions, and one table format question.

Nursing and non-nursing education. Participants were asked to state their highest level of completed nursing education and non-nursing education.

Preceptor Training. Preceptor training was conceptualized as a formal education session on preceptorship that is provided by an organization using an online format or in-class setting. This variable was measured by asking the participants to answer three questions about the type and amount of formal preceptor training they have received. These questions included whether they have received preceptor training in the past and how many hours of preceptor training they have had in total. The next question asked the participants to describe any other courses they may have taken; this data included the name of the course, the organization that provided it, the year it was completed, the length in hours of the course, and the number of times it was completed. All courses were examined by the researcher for an official duration. The amount of preceptor training was measured in hours per course or workshop. A sum of all of the courses taken by the preceptor resulted in the number of hours of preceptor training.

4.4.3. Preceptor experience

Experience as a preceptor was conceptualized as the number of consolidating nursing students the nurse has preceptored in their career. This variable was measured by asking participants to provide information on the number and type of learner they have preceptored. Consolidating nursing students are in the final year of their program and are paired with one preceptor for the duration of a semester. This section was comprised of eight questions; five multiple-choice questions and three short-answer questions. First, the preceptors were asked how they became a preceptor; whether it was on a voluntary basis or if they were assigned the role. Participants were also asked to state the number of consolidating nursing students and new graduate nurses they have preceptored, if they have experience orienting new staff to the unit,

and if they have any non-nursing teaching experience. The next question asked the participants to state if they are currently in a preceptor role and how many years it has been since they last preceptored a student.

4.4.4. Employment

This section included seven questions; five multiple-choice questions and two short-answer questions. The first question asked participants about their nursing experience; by providing the number of years spent as a nurse. Participants were asked to provide their current employment status, such as full-time or part-time, and job title, such as staff nurse, manager, and so on. The participants were asked which department they were currently employed in and how long they have been working in this department.

4.4.5. Vicarious experience

Vicarious preceptor experience was conceptualized as the observation of the interactions between colleagues in a preceptor role and their consolidating nursing student. This variable was measured using two yes or no questions. First, participants were asked if they have observed colleagues in the preceptor role, and second, if these observations influenced their experience as a preceptor.

4.4.6. The Big Five personality traits

The Big Five personality traits (Goldberg, 1992) include extraversion (being talkative, assertive and energetic), agreeableness (being cooperative and trustful), conscientiousness (being responsible, dependable and orderly), neuroticism (being emotionally unstable and anxious) and intellect (being imaginative, independent-minded and intellectual) (John & Srivastava, 1999). For this thesis, the Big Five were measured using the open access mini-International Personality Item Pool (IPIP) (Donnellan, Oswald, Baird, & Lucas, 2006). The mini-IPIP is comprised of 20

questions; four questions for each of the five personality traits. It uses a five-point Likert-scale ranging from one, strongly disagree, to five, strongly agree. As 11 items were reversed, they were transformed prior to obtaining a global score. A global score was obtained by adding each of the items per trait. Scores ranged from four to 20, with four indicating a low level of the personality trait and 20 indicating a high level of the personality trait.

The mini-IPIP is a condensed version Goldberg's (1999) 50-item *International Personality Item Pool – Five Factor Model* (IPIP-FFM) (Donnellan et al., 2006). Donnellan et al. conducted psychometric assessment of the mini-IPIP and reported that the instrument was comparable to Goldberg's (1999) version. For example, Donnellan et al. reported the following correlations between the IPIP-FFM and mini-IPIP, as well as the reliabilities for the mini-IPIP: extraversion ($r = .93, p < .05; \alpha = .77$), agreeableness ($r = .89, p < .05; \alpha = .70$), conscientiousness ($r = .90, p < .05; \alpha = .69$), neuroticism ($r = .92, p < .05; \alpha = .68$) and intellect ($r = .85, p < .05; \alpha = .65$) in a preliminary study with a sample of 2 663 participants. The mini-IPIP has been used in a nursing population with a reported Cronbach's alpha reliability for extraversion ($\alpha = .83$), agreeableness ($\alpha = .71$), conscientiousness ($\alpha = .66$), neuroticism ($\alpha = .70$) and intellect ($\alpha = .68$) (Strunk & Strunk, 2012).

4.4.7. Self-efficacy

Self-efficacy is defined as a person's self-perceived ability to perform or complete a task (Bandura, 1982). Preceptors' self-efficacy was measured using an adapted version of Bolton's (2011) Self-Efficacy Towards Teaching Inventory (SETTI) tool, used with the author's permission.

Bolton's (2011) SETTI tool is a 39-item tool that measures clinical nurse teachers' self-efficacy on a four-point Likert-scale ranging from one, not confident, to four, completely

confident. Although the tool was used to measure the self-efficacy of clinical instructors, it was deemed appropriate to use in this study because of the similarities between clinical nurse instructor's role and nurse preceptor's role. Both roles involve teaching students and take place in the clinical setting. The SETTI was slightly modified to ensure wording and items reflected the preceptor role. Minor modifications to the questions included replacing words such as lab or assignment to patient assignment, and clinical and lab strategies to teaching strategies. Eight questions were eliminated, in consultation with the committee, because they were outside of the preceptors' scope of practice. For instance, question regarding marking student assignments were removed. Thirty-one questions remained. The participant's self-efficacy score was the result of the sum of all of the items in question 25; the lowest possible score being 31 and the highest being 124.

The SETTI was first developed by Tollerud in 1990 to measure the self-efficacy of teaching skills of advanced doctoral students and graduates from counselor education programs. This SETTI has 48 items and with a reported reliability of $\alpha = .94$ (Tollerud, 1990). The SETTI was modified by Nugent, Bradshaw and Kito (1999) to measure the teaching self-efficacy of undergraduate nurse educators, with a reported reliability of $\alpha = .95$. The tool was then further modified by Bolton (2011), as part of a MScN thesis, to measure the self-efficacy of clinical teachers. Bolton reported a reliability of $\alpha = .95$.

4.5 Data analysis

This section will describe the preliminary data management, assumptions of statistical tests and the statistical tests used to analyze the data. The data collected during this study were analyzed using IBM SPSSTM version 24 (2016) statistical software. The data was directly

exported from LimeSurvey (2016) to Microsoft ExcelTM, and then imported into IBM SPSSTM version 24 (2016).

4.5.1. Preliminary data management

The first step in the data analysis was to review and evaluate the data for extreme outliers and irregularities (Polit & Beck, 2008); ratio level data was assessed using the box and whiskers plots. Descriptive statistical analyses were completed first. Measures of central tendency, such as a mean, median, mode, frequency and standard deviation, were calculated for all ratio level data. Distribution was assessed using a histogram and a normal curve line, as well as skewness and kurtosis calculations. Next, missing data was assessed using Little's MCAR test via IBM SPSSTM (2016) for self-efficacy and the personality traits. The expectation maximization (EM) method was used for data that were missing completely at random (Tabachnick & Fidell, 2001).

4.5.2. Assumptions

The variables were assessed to determine if they met the assumptions of the parametric statistical tests. The assumptions for multiple linear regression are: (1) interval or ratio level data, (2) having a linear relationship between the dependent and independent variables, (3) no significant outliers, (4) showing homoscedasticity and (5) normal distribution (Polit & Beck, 2008). Both the independent and dependent variables were collected as ratio level data; signifying that the data has a real zero, can be ordered with equal distance between points and that an average can be computed (Polit, 2010). The linear relationship assumptions were tested by completing linear correlations (R^2) between the variables. Outliers were assessed using a box and whiskers plot; extreme outliers were coded as missing data. Next, homoscedasticity was assessed visually using the scatter plot; a visual comparison was done by comparing the results to the normal ranges found in Tabachnick and Fidell (2001). Normal distribution was assessed

using a histogram and normal curve line and compared to the normal ranges found in Tabachnick and Fidell. Skewness and kurtosis measurements were conducted and were examined according to normal ranges (Tabachnick & Fidell, 2001).

For t-tests and ANOVAs the following assumptions were tested: (1) normal distribution of dependent variable, and (2) equal variance in the groups (Polit & Beck, 2008). T-tests and ANOVAs are robust to violations of these assumptions if the sample size is large and if the groups are of similar size (Polit & Beck, 2008). Levene's test of equal variance was used to assess the variance of the groups to determine if the groups being compared were similar (Polit & Beck, 2008).

4.5.3. Statistical tests

Bivariate inferential statistics were done to answer the following research questions: is there a relationship between preceptors' self-efficacy and (1) years of experience, (2) number of students precepted, (3) number of hours of preceptor training, (4) vicarious experience and (5) neuroticism-type personality. Using a two-tailed Pearson's (Polit & Beck, 2008) product moment correlation coefficient ($\alpha = .05$), correlations were computed between self-efficacy, years of experience, number of students precepted, hours of training received and personality type. One of the variables under study, vicarious preceptor experience, had nominal level data and as such was dichotomized to evaluate the relationships between this variable and self-efficacy using a two-tailed Pearson's product moment correlation coefficient. The reliability of each of the Big Five personality traits and self-efficacy was assessed using Cronbach's alpha.

T-tests were used to compare the means of self-efficacy between two groups when the independent variable was nominal level data (Polit & Beck, 2008). Variables measured using t-tests included: whether preceptors received training, vicarious experience, orienting new staff,

unsuccessful students and non-nursing teaching experience. ANOVA was used to compare the means of self-efficacy between three or more groups, where the independent variable was nominal (Polit & Beck, 2008). Variables assessed using an ANOVA included: nursing education, place of employment and becoming a preceptor. For statistically significant ANOVAs, a Tukey HSD was done to determine where the difference in means occurred (Polit & Beck, 2008).

4.6 Ethical Considerations

This study was reviewed by the Research Ethics Board of the University of Ottawa and received approval on January 3rd, 2017.

4.6.1 Confidentiality

Each survey was assigned a code number for data entry purposes only. No identifiable information was collected and participant anonymity was guaranteed. The online system used was LimeSurvey (LimeSurvey, 2016), which is a Canadian-based survey service platform that complies with Canadian laws that Canadian information be kept within Canadian borders. It also provides SSL encryption to maintain confidentiality. Only the researcher and the thesis supervisor had access to the raw data.

4.6.2 Implied Consent

Participants were informed that by completing and submitting the survey they were providing implied consent. The information letter (Appendix B) was the first page of the survey and the participant had to provide consent prior to proceeding to the survey. The final page had a submission button which includes the following statement: “by selecting the submission button I understand that I am providing implied consent for this survey”.

4.6.3 Data Management and Storage

Only the primary researcher and supervisor had access to the data. The compiled data was stored on an encrypted and password protected external hard drive. This hard drive was stored in the supervisor's locked, private office in locked filing cabinet. The data will be kept for 5 years as per the University's policy, at which point it will be destroyed as per the University's policy.

Chapter 5: Results

The following section will present the results of the statistical analyses used to evaluate the five hypotheses.

5.1 Response Rate and Missing Data

One hundred and forty-six participants opened the online survey. Of these, 25 participants were excluded because they did not complete the survey and another 26 were removed because they did not meet the study's inclusion criteria. Once these surveys were excluded, a total of 95 participants ($N = 95$) were included in the analyses.

Next, missing data was assessed using Little's MCAR test (IBM SPSSTM, 2016) to determine if the data is missing completely at random. For self-efficacy, this test yielded a statistically non-significant chi-squared of 1102.73, $DF = 1050$, $p = .13$ and for the personality scores it yielded a non-statistically significant chi-squared of 211.633, $DF = 186$, $sig = .096$. A statistically non-significant result indicates that data is missing completely at random (Tabachnick & Fidell, 2001). Data that are not missing at random could indicate issues or flaws within the questionnaire. When data are missing systematically, or not at random, there is a large threat to the generalizability of the results (Tabachnick & Fidell, 2001). The expectation maximization (EM) method "offers the simplest and most reasonable approach to imputation of missing data" (Tabachnick & Fidell, 2001, p. 66). EM is a two step process that involves finding the conditional expectation of the missing data, based on current values and the set parameters, which are substituted for the missing data. This is followed by a maximization estimation with the filled data (Tabachnick & Fidell, 2001). Because variables were found to be missing completely at random, the use of EM was justified (Tabachnick & Fidell, 2001). The advantage to using this approach is that it provides a realistic reflection of the missing variable and the

benefit to the study is that sample size is maintained (Polit, 2010). A t-test statistic was conducted to compare the data pre and post EM and it demonstrated no difference in means. This indicates that the data set was not changed by the imputation of data. Out of the 95 participants that were included in the study, 25 were missing some data in the self-efficacy and/or personality part of the questionnaire. Of those 25, a total of 22 participants were included in the EM process and three participants were excluded from the EM process because they were missing a substantial number of answers. For example, if a participant was missing an entire section of the personality tool, it would be imprudent to input a score for that personality. All participants that were included in the EM process omitted less than three questions in either the personality or self-efficacy assessment.

5.2 Distribution of Variables

Variables were examined to ensure they met the assumptions of normal distribution and multiple linear regression. For the self-efficacy variable, a skewness of -4.15 and kurtosis of 2.05 was found. Kurtosis and skewness were also assessed using a histogram with a normal curve. According to Tabachnick and Fidell (2001), these results are not markedly skewed or kurtosed and therefore these variables do not require any transformations.

5.3 Sample Demographics

This section will outline and describe the demographic characteristics individuals that participated in this study. This includes variables such as gender, age, education, employment and preceptor related characteristics. These are presented in tables one through four.

Age. The mean age of participants was 36.7, and ranged from 23 to 68. The median age was 32, while the mode was 29. The average age of nurses in Ontario in 2016 was 46.2

(Canadian Institute for Health Information [CIHI], 2017), approximately ten years higher than this sample. Findings are presented in Table 1.

Table 1. Age descriptive statistics.

Variable	Median	Mode	Mean (SD)	Range of Responses	Number (N)
Age	32	29	36.7 (11.1)	23 to 68	111

Gender. The majority of the participants were female (93.4%), which is proportionate to the population of Ontario nurses in 2016 where 93.5% of all registered nurses are female (CIHI, 2017).

Education. Most of the nurses had completed a bachelor's degree in nursing (55.4%) while fewer completed a diploma program (19.0%). Only 7.4% of nurses had completed a Master's degree and 3.3% of nurses had completed the RPN to BScN bridging program. The remainder of the sample reported completing other education (2.5%), while 12.4% of the data on education was missing. When comparing the sample to the population of Ontario in 2016, only the amount of nurses with a baccalaureate degree were comparable (49.6%). In comparison to the sample, the population had more than twice as many diploma nurse (43.2%) and masters or PhD (7.2%) (CIHI, 2017). These characteristics are presented in Table 2.

Table 2. Gender and education demographics.

Variable		Number (N)	Percent (%)
Gender	Male	7	5.8
	Female	113	93.4
	Missing value	1	0.8
Education	Diploma	23	19.0
	Bachelors degree	67	55.4
	Masters degree	9	7.4
	PhD degree	0	0
	RPN to BScN	4	3.3
	Other	3	2.5
	Missing	15	12.4

Employment. The majority of the nurses in this sample were employed in a full-time position (64.1%), while others were part-time (11.1%) and casual (4.3%); the remainder of the findings are listed in Table 3. Employment data were similar to the nursing population of Ontario in 2016, where 66.9% of nurses were employed in a full-time position; however, approximately twice as many were part-time (26.1%) and casual (7.0%) (CIHI, 2017). In the sample, the majority of nurses were employed as staff nurses (74.4%), and less were employed as nurse educators (2.6%), managers (0.9%) and nurse practitioners (1.7%). In Ontario in the year 2016, 74.3% of nurses were employed as staff nurses, 5.6% as managers and 20.1% were listed as “other” (CIHI, 2017). The majority of nurses in the sample were employed in the emergency department (17.1%) and on a surgical unit (16.2%). Other nurses were employed on a medicine unit (12.0%), in an intensive care unit (7.7%), in pediatrics (6.0%) and mental health (5.1%). Nurses were also employed in outpatient units (4.3%), hospice or long term care (2.6%) and

labour and delivery (2.6%). A small portion nurses in the sample were employed in a coronary care unit (1.7%), both emergency department and intensive care units (1.7%) and on the resource team (0.9%). The findings are displayed in Table 3.

Table 3. Employment demographics.

Variables		Number (n)	Percent (%)
Current employment status	Full-time	75	64.1
	Part-time	13	11.1
	Casual	5	4.3
	Other	2	1.7
	Missing values	22	18.8
Current job title	Staff nurse	87	74.4
	Clinical nurse specialist	0	0
	Nurse practitioner	2	1.7
	Educator	3	2.6
	Manager	1	0.9
	Other	2	1.7
	Missing values	22	18.8
Place of employment	Medicine	9	7.7
	CCU	2	1.7
	Surgery	18	15.4
	Operating room	1	0.9
	Emergency department	19	16.2
	ICU	9	7.7
	ER and ICU	3	2.6
	Float team/resource pool	1	0.9
	Mental health	6	5.1
	Labour and delivery	3	2.6
	Pediatric	7	6.0
	Oncology	4	3.4
	Outpatient	5	4.3
	Hospice or LTC	3	2.6
	Other	4	3.4
Missing	23	19.7	

5.4 Preceptor Related Characteristics

Preceptor characteristics are presented in Table 4. Slightly more participants volunteered to become preceptors (39.3%, n= 46), while others where assigned the role (35.0%, n= 41). In this sample, 17.1% (n= 20) of the participants were currently in the preceptor role. Just over a quarter of the participants (27.4%, n= 32) reported having non-nursing teaching experience. Almost half of preceptors, 45.2% (n= 66), had also preceptored a new graduate nurse in the past and 79.5% (n= 93) had helped orient new nurses to their unit. The majority of the participants (81.2%, n= 81) had not preceptored an unsuccessful student completing their consolidation.

Table 4. Preceptor related characteristics.

Variables related to Preceptor Characteristics		Number (N)	Percent (%)
How did you become a preceptor?	I volunteered for the role	46	39.3
	I was assigned the role	41	35.0
	I was offered the role	6	5.1
	Other	2	1.7
	Missing values	22	18.8
Are you currently in the preceptor role?	Yes	20	17.1
	No	75	64.1
	Missing	22	18.8
Do you have any non-nursing teaching experience?	Yes	32	27.4
	No	62	53.0
	Missing	23	19.7
Have you preceptored a new graduate nurse?	Yes	66	45.2
	No	32	21.9
	Missing	48	32.9
Have you helped orient new staff to your unit?	Yes	93	79.5
	No	2	1.7
	Unsure	1	0.9
	Missing value	22	17.9
Have any of your students been unsuccessful in completing their consolidation?	Yes	14	12.0
	No	81	81.2
	Missing value	22	18.8

5.5 Assessment of Instrument Psychometric Properties

The Cronbach's Alpha findings for each of the instruments used in this study are presented in Table 5. All of the Cronbach's alpha were above .70, which indicates good internal consistency of the measures (Tavakol & Dennick, 2011).

Table 5. Cronbach's Alpha for self-efficacy and personality tools.

Instrument	Cronbach's alpha (α)	Number (N)	Number of Items
Self-efficacy Towards Teaching Inventory (Bolton, 2011)	0.96	93	31
International Personality Item Pool – Five Factor Model (Donnellan et al., 2006)			
Extraversion	0.85	93	4
Agreeableness	0.75	93	4
Conscientiousness	0.80	93	4
Neuroticism	0.73	93	4
Imagination	0.83	93	4

5.6 Independent Variables

Tables 6, 7 and 8 present the descriptive statistics for the independent variables of nursing experience, preceptor experience, preceptor training, vicarious experience and personality traits.

Nursing experience. On average, the participants had 11.36 (SD = 10.32) years of experience as a registered nurse; ranging from two to 41 years (table 6).

Preceptor experience. The participants had preceptored an average of 3.9 (SD = 5.48) consolidating nursing students; ranging from one to 30 students during the course of their career (Table 6).

Preceptor training. In total, 45.3% of the sample reported that they had completed some kind of preceptor training (Table 7). Preceptors who had training completed an average of 9.6 (SD = 7.3) hours of training, ranging from 3 hours to 48 hours (Table 6).

Vicarious experience. The majority of the sample reported having observed colleagues in the preceptor role (76.1%, n= 89), and of those, 67.5% (n= 79) reported that it had influenced their practice (Table 7).

Table 6. Nursing experience, preceptor experience and preceptor training descriptive statistics.

Variable	Median	Mode	Mean (SD)	Range of Responses	Number (N)
Years of nursing experience	6.8	6.0	11.4 (10.3)	2 to 41	94
Number of consolidating nursing students	2	1	3.9 (5.9)	1 to 30	95
Hours of preceptor training	8	8	9.6 (7.3)	3 to 48	52

Table 7. Vicarious experience and preceptor training variables frequencies.

Variable		Number (N)	Percent (%)
Have you observed your colleagues in the preceptor role?	Yes	89	76.1
	No	6	5.1
	Missing value	22	18.8
Has observing your colleagues in the preceptor role influenced your practice?	Yes	79	67.5
	No	11	9.4
	Missing value	27	23.1
Do you have preceptor training?	Yes	53	45.3
	No	47	40.2
	Missing	17	14.5

Personality. The measures of central tendency for the personality traits are found in Table 8. The scale measuring each of the five personality traits ranged from one, *strongly disagree* to five, *strongly agree*. Agreeableness was found to be the personality trait with the highest mean (4.28, SD = 0.61, mode = 5.00), while neuroticism had the lowest mean (2.31, SD = 0.75, mode = 2.00). Extraversion (3.24, SD = 0.89, mode = 2.25) and imagination (3.68, SD = 0.86, mode = 3.75) had similar means. Conscientiousness had a mean of 3.93 (SD = 0.81, mode = 5.00). Agreeableness had the highest median, 4.50, and neuroticism had the lowest, 2.25. Within each variable, each of the measures of central tendency had little variability, this indicates that the scores were consistently similar. A similar mean, median and mode help describe the data as being normally distributed and not very skewed (Polit & Beck, 2008).

Table 8. Personality and self-efficacy descriptive statistics.

Instrument (Scale range)	Median	Mode	Mean (SD)	Range of scores	Number (N)
Extraversion (Donnellan et al., 2006) (Scale Range 1-5)	3.25	2.25	3.24 (0.89)	1 to 5	93
Agreeableness (Donnellan et al., 2006) (Scale Range 1-5)	4.50	5.00	4.28 (0.61)	2 to 5	93
Conscientiousness (Donnellan et al., 2006) (Scale Range 1-5)	4.00	5.00	3.93 (0.81)	2 to 5	93
Neuroticism (Donnellan et al., 2006) (Scale Range 1-5)	2.25	2.00	2.31 (0.75)	1 to 4	93
Imagination (Donnellan et al., 2006) (Scale Range 1-5)	3.75	3.75	3.68 (0.86)	1 to 5	93

5.7 Dependent variable

The descriptive statistics for self-efficacy are presented in Table 9. On average, participants had a self-efficacy score of 3.31 (SD = 0.46), with a range of one to four. As the self-efficacy instrument had a scale from one to four, demonstrating that the self-efficacy of this sample is well above the middle cutoff. The mode (3.58) and median (3.39) were similar to the mean. These measures of central tendency show little variability in the scores across the sample.

Table 9. Self-efficacy descriptive statistics.

Instrument (Scale range)	Median	Mode	Mean (SD)	Range	Number (N)
Self-efficacy (Bolton, 2011) (Scale range 1-4)	3.39	3.58	3.31 (0.47)	1 to 4	93

5.8 Correlation Analysis

Table 10 provides the correlation matrix and reliabilities for the independent and dependent variables included in this study. The purpose of this thesis was to explore the relationship between self-efficacy and (1) nursing experience, (2) preceptor experience, (3) preceptor training, (4) vicarious experience and (5) neuroticism personality. These relationships were tested using correlation statistics. Correlation (r) values were interpreted using a guideline as a reference point (Polit, 2010).

5.8.1 Nursing experience

For the variable nursing experience, the research question was as follows: is there a relationship between preceptor self-efficacy and the years of nursing experience? This research proposed that there would be a relationship between these two variables and this was supported.

Self-efficacy had a statistically significant, moderate positive relationship with nursing experience; $r = 0.33$, $p < .01$. This indicates that as nursing experience increases, self-efficacy increases. An R^2 of 0.11 indicates that 11% of self-efficacy can be attributed to nursing experience. Another three variables were found to be related to nursing experience. First, age had a statistically significant, large positive relationship with nursing experience; $r = .91$, $p < .01$. This means that as age increases, nursing experience increases. A high R^2 of 0.82 was found and indicates that 82% of nursing experience can be attributed to age. Nursing experience also had a statistically significant, moderate positive relationship with preceptor experience; $r = .33$, $p < .01$. This means that as nursing experience increases, preceptor experience increases. Nursing experience was also found to have a statistically significant, moderate positive relationship with the number of new graduate nurses preceptored; $r = .47$, $p < .01$. This means that as nursing experience increases, the number of new graduates preceptored increases. Additionally, vicarious

experience was found to have a statistically significant, negative relationship with nursing experience; $r = -.51$, $p < .01$. This means that as nursing experience increases, vicarious experience decreases, suggesting that nurses with more experience rely less on vicarious experience.

5.8.2 Preceptor experience

For the variable preceptor experience, the research question was as follows: is there a relationship between preceptor self-efficacy and number of students preceptored? This thesis proposed that there would be a relationship between these two variables and this was not supported.

There was no statistically significant relation between self-efficacy and preceptor experience ($r = .19$, $p = .08$). However, preceptor experience was found to have a statistically significant, small positive relationship with the number of new graduate nurses preceptored; $r = .34$, $p < .01$. This means that as the number of nursing students preceptored increases, so does the number of new graduate nurses preceptored.

5.8.3 Preceptor training

For the variable preceptor training, the research question was as follows: is there a relationship between preceptor self-efficacy and hours of preceptor training? This thesis proposed that there would be a relationship between these two variables and this was not supported. There was no statistically significant relationship between preceptor training and self-efficacy ($r = .07$, $p = .63$).

5.8.4 Vicarious experience

For the variable vicarious experience, the research question was as follows: is there a relationship between preceptor self-efficacy and vicarious preceptorship experience? This thesis

proposed that there would be a relationship between these two variables and this was not supported.

There was no statistically significant relationship between vicarious preceptorship experience and the self-efficacy of consolidating student preceptors. Additionally, the number of new graduate nurses preceptored was found to have a statistically significant, negative relationship with vicarious experience; $r = -.22$, $p = .04$. This means that as the number of new graduates preceptored increases, vicarious experience decreases. With more experience preceptoring new graduate nurses, the preceptors are relying less on vicarious experience to guide their preceptorship practice.

5.8.5 Personality

For the variable personality, the research question was as follows: is there a relationship between preceptor self-efficacy and neuroticism-type personality? This thesis proposed that there would be a relationship between these two variables and this was supported.

Neuroticism was found to have a statistically significant, small negative relationship with self-efficacy; $r = -.21$, $p < .05$. This means that as neuroticism increases, self-efficacy decreases. An R^2 of 0.04 indicates that 4% of the self-efficacy score can be attributed to neuroticism. Next, agreeableness was found to have a statistically significant, small positive relationship with self-efficacy: $r = .22$, $p = .03$, indicating that as agreeableness increases, self-efficacy increases. An R^2 of 0.05 was computed; this indicates that 5% of the self-efficacy score can be attributed to agreeableness. Several variables were found to have a relationship with the personality trait imagination. Preceptor experience was found to have a statistically significant, small positive with imagination; $r = .21$, $p < .05$. An R^2 of 0.05 indicates that 5% of the imagination score can be attributed to preceptor experience. Extraversion was found to have a statistically significant,

small positive relationship with imagination; $r = .23$, $p = .03$. An R^2 of 0.05 indicates that 5% of the imagination score can be attributed to extraversion. Agreeableness was also found to have a statistically significant, small positive relationship with imagination; $r = .25$, $p = .02$. An R^2 of 0.07 indicates that 7% of imagination can be attributed to agreeableness. Neuroticism had a statistically significant, small negative relationship with imagination; $r = -.27$, $p < .01$. An R^2 of 0.09 indicates that 9% of imagination can be attributed to neuroticism. Neuroticism was also found to have a statistically significant, small negative relationship with age; $r = -.21$, $p = .04$. An R^2 of 0.05 indicates that 5% of neuroticism can be attributed to age.

5.8.6 Age

Age was also found to have a statistically significant, moderate positive relationship with self-efficacy; $r = .41$, $p < .01$. An R^2 of 0.16 indicates that 16% of the self-efficacy score can be attributed to age. Preceptor experience had a statistically significant, small positive relationship with age; $r = .29$, $p < .01$. This means that as age increases, preceptor experience increases as well. An R^2 of 0.09 indicates that 9% of preceptor experience can be attributed to age. The number of new graduate nurses preceptored had a statistically significant, moderate positive relationship with age; $r = .44$, $p < .01$. This means that as age increases, the number of new graduate nurses preceptored increases as well. Vicarious experience also had a statistically significant, moderate negative relationship with age; $r = -.43$, $p < .01$. This means that as age increases, vicarious experience decreases.

Table 10. Correlation results

		1	2	3	4	5	6	7	8	9	10	11	12
1. Self-efficacy	(N)	[.96] (93)											
2. Extraversion	r (N)	.03 (92)	[.85] (93)										
3. Agreeableness	r (N)	.22* (92)	-.00 (93)	[.75] 93									
4. Conscientiousness	r (N)	-.07 (92)	.27** (93)	-.08 (93)	[.80] (93)								
5. Neuroticism	r (N)	-.21* (92)	.07 (93)	-.10 (93)	.01 (93)	[.73] (93)							
6. Imagination	r (N)	.14 (92)	.23* (93)	.25* (93)	.06 (93)	-.27** (93)	[.83] (93)						
7. Age	r (N)	.41** (91)	-.02 (91)	.19 (91)	.05 (91)	-.21* (91)	.19 (91)	[N/A] (93)					
8. Preceptor training	r (N)	.07 (51)	.08 (50)	.08 (50)	.21 (50)	-.11 (50)	.19 (50)	.18 (51)	[N/A] (52)				
9. Preceptor experience	r (N)	.19 (93)	-.10 (93)	.04 (93)	-.17 (93)	.01 (93)	.21* (93)	.29** (93)	.14 (52)	[N/A] (95)			
10. Number of NGNS preceptored	r (N)	.10 (92)	.07 (92)	-.04 (92)	-.07 (92)	.09 (92)	-.05 (92)	.44** (92)	.09 (51)	.34** (94)	[N/A] (94)		
11. Nursing experience	r (N)	.33** (93)	-.03 (93)	.17 (93)	-.05 (93)	-.13 (93)	.11 (93)	.91** (92)	.26 (51)	.33** (94)	.47** (93)	[N/A] (94)	
12. Vicarious experience ^	r (N)	-.16 (88)	-.15 (88)	-.03 (88)	-.16 (88)	.11 (88)	-.07 (88)	-.43** (87)	-.27 (49)	-.04 (89)	-.22* (88)	-.51** (89)	[N/A] (89)

r = Pearson Correlation coefficient,

p = sig. (2-tailed), *p < .05, **p < .01

[] = Cronbach's alpha (reliability)

NGNS= new graduate nursing student

^Variable is dichotomized: 1= no vicarious experience and 2= yes vicarious experience

5.9 Comparing Means

Several t-tests and ANOVAs were conducted to compare the means of different variables. Levene's statistic was used to evaluate the variance in each group. The results are reported in Tables 11 to 17.

An independent group t-test was conducted to determine if there was a difference in means between the preceptors who received preceptor training ($M = 3.34$, $SD = .46$) and those who did not ($M = 3.25$, $SD = .48$). Levene's test for equal variances was conducted and was found to be statistically not significant, meaning that the assumption for equal variances was not violated (Pallant, 2007). Therefore, equal variance was assumed. There was no statistically significant differences between the groups; $t(88) = 0.94$, $p = .35$. This indicates that preceptor training is not related to the self-efficacy of nurse preceptors. Results are presented in Table 11.

Table 11. T-tests for preceptor training ($\alpha < .05$).

	Levene's Test		t-test for Equality of Means				
	F (Sig.)	t(df)	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
						Lower	Upper
Equal variances assumed	.25 (.62)	.94 (88)	.35	.09	.10	-.10	.29
Equal variances not assumed		.93(81)	.36	.09	.10	-.11	.29

An independent sample t-test was performed to compare the self-efficacy scores in participants who reported that their practice as a preceptor was influenced by their colleagues (M = 3.3, SD= .48) and those who reported that it was not ((M = 3.5, SD= .39). Levene’s test for equal variances was statistically not significant, meaning that the assumption for equal variances was not violated (Pallant, 2007). Therefore, equal variance was assumed. The results showed no statistically significant difference in the means of the two groups; $t(86) = -1.49, p = .14$. This indicates that vicarious experience is not related to the self-efficacy of preceptors (Table 12).

Table 12. T-test for the vicarious experience variable ($\alpha < .05$).

	Levene's Test		t-test for Equality of Means				
	F (Sig.)	t(df)	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
						Lower	Upper
Equal variances assumed	.43 (.51)	-1.49(86)	0.14	-0.24	0.16	-0.57	0.08
Equal variances not assumed		-1.75(11)	0.11	-0.24	0.14	-0.55	0.06

An independent groups t-test was done to compare the means of preceptors who have (M = 3.3, SD = .46) and have not oriented new staff to their units (M = 2.7, SD = .41). Levene’s test for equal variances was performed and was found to be statistically not significant, meaning that the assumption for equal variances was not violated (Pallant, 2007 p. 235); equal variance was assumed. There was no statistically significant difference between the groups; $t(90) = 1.86, p =$

.07). This indicates that orienting new staff is not related to the self-efficacy of nurse preceptors.

Results are presented in Table 13.

Table 13. T-test for orienting new staff ($\alpha < .05$).

	Levene's		t-test for Equality of Means				
	Test		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
	F (Sig.)	t(df)				Lower	Upper
Equal variances assumed	0.08(.77)	1.86(90)	.07	0.62	0.33	-0.04	1.27
Equal variances not assumed		2.09(1)	.27	0.62	0.29	-2.68	3.91

Unsuccessful students. To compare the means of self-efficacy in nurses who have had unsuccessful consolidating students ($M = 3.4$, $SD = .40$) and those who have not ($M = 3.3$, $SD = .48$) an independent groups t-test was completed. Levene's test for equal variances was completed and was found to be statistically not significant, meaning that the assumption for equal variances was not violated and that equal variance was assumed (Pallant, 2007 p. 235). There was no statistically significant difference found between the groups; $t(90) = 1.20$, $p = .23$. Although the results indicate that preceptoring an unsuccessful student is not related to the self-efficacy of nurse preceptors, this may not be a meaningful result due to the small number of participants that have had an unsuccessful student. The results are presented in Table 14.

Table 14. T-test for preceptoring unsuccessful students ($\alpha < .05$).

Levene's Test		t-test for Equality of Means					
				95% Confidence Interval			
				Mean Difference	Std. Error Difference	Lower	Upper
		F (Sig.)	t(df)	Sig. (2-tailed)			
Equal variances assumed	0.26(.61)	1.20(90)	.23	0.16	0.14	-0.11	0.43
Equal variances not assumed		1.37(20)	.19	0.16	0.12	-0.09	0.41

Non-nursing teaching experience. An independent groups t-test was completed to assess the differences in means between preceptors with non-nursing teaching experience ($M = 3.3$, $SD = .44$) and those without ($M = 3.3$, $SD = .49$). Although Levene's test showed equal variances, the t-test was not statistically significant; $t(89) = 0.10$, $p = .92$. This indicates that having other teaching experience is not related to the self-efficacy of nurse preceptors. The results are presented in Table 15.

Table 15. T-test for teaching experience ($\alpha < 0.05$).

	Levene's		t-test for Equality of Means				
	Test		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval	
	F (Sig.)	t(df)				Lower	Upper
Equal variances assumed	0.25(.62)	0.10(89)	.92	0.01	0.10	-0.20	0.22
Equal variances not assumed		0.10(70)	.92	0.01	0.10	-0.20	0.21

Nursing education. The relationship between education and self-efficacy was measured using a one-way ANOVA between groups test. Education was measured as an ordinal variable including (1) diploma, (2) bachelor's degree, (3) graduate degree, and (4) RPN to BScN. Levene's test showed equal variances (Levene = 1.70, $p = .17$) and the ANOVA was statistically significant; $F(3, 89) = 5.06$, $p < .01$. This means that there is a difference in means between these groups. A Tukey HSD post hoc analysis was done to determine where the difference lies. A statistically significant difference was found between (1) diploma and (2) bachelor's degree ($M = 0.37$, $SD = 0.12$, $p = .02$) and between (2) bachelor's degree and (3) graduate degree ($M = -0.45$, $SD = 0.16$, $p = .02$). This indicates that both diploma prepared nurses and nurses with graduate degrees had higher self-efficacy than nurses with a bachelor's degree. There were no statistically significant results between the (4) RPN to BScN group and the other three groups. The results are presented in Tables 16 and 17.

Table 16. ANOVA results for nursing education ($\alpha < .05$).

ANOVA			
	df	F	Sig.
Between groups	3	5.06	.003
Within groups	89		

Table 17. Tukey HSD Post Hoc comparison for nursing education ($\alpha < .05$).

Multiple Comparisons (Post Hoc Test)					
	Sig.	Std. Error	Mean Difference	95% Confidence Interval	
				Lower bound	Upper bound
(1) Diploma	.02	0.12	0.37	0.05	0.70
(2) Bachelor's degree					
(2) Bachelor's degree	.02	0.16	-0.45	-0.85	-0.04
(3) Graduate degree					

Place of employment. This variable was assessed using an ANOVA between groups test. The place of employment was set into the following categories: (1) medicine, (2) CCU, (3) surgery, (4) operating room, (5) critical care, (6) float team/resource pool, (7) mental health, (8) labour and delivery, (9) pediatrics, (10) hospice or LTC, (11) outpatient and (12) other. Although Levene's test showed that the homogeneity of the sample was not violated (Levene = 1.80, $p = .08$), the ANOVA was found to be statistically not significant; $F(11, 80) = 1.76$, $p = .08$. This means that there is no difference in means between these groups and that the place of employment is not related to the self-efficacy of nurse preceptors. The results are found in Table 18.

Table 18. ANOVA results for place of employment ($\alpha < .05$).

ANOVA			
	df	F	Sig.
Between groups	11	1.76	.08
Within groups	80		

Becoming a preceptor. This variable was assessed using an ANOVA between groups test. Becoming a preceptor was measured as the following groups: (1) being assigned the role, (2) being offered the role, and (3) volunteering for the role. Although Levene's test showed that the homogeneity of variance assumption was not violated (Levene = 1.54, $p = .14$), a statistically not significant result was found; $F(2, 89) = 1.58, p = .20$. This means that there is no difference in means between these groups and that the way a nurse became a preceptor is not related to the self-efficacy of preceptors. The results are presented in Table 19.

Table 19. ANOVA results for becoming a preceptor ($\alpha < .05$).

ANOVA			
	df	F	Sig.
Between groups	2	1.58	.20
Within groups	89		

Chapter 6: Discussion

The purpose of this thesis was to assess the relationships between the self-efficacy of nursing preceptors and several variables derived from Bandura's (1982) theory of self-efficacy. The following chapter will discuss the findings of this research study, as well as situate them within the greater literature. Following this, the implications for nursing practice, research and education will be presented.

6.1 Preceptor self-efficacy and related factors

Based on the literature and Bandura's theory, several factors were proposed to be related to preceptor self-efficacy. Five hypotheses were proposed and two were supported. The following section will discuss the impact of nursing experience, preceptor experience, preceptor training, vicarious experience and personality on the self-efficacy of preceptors.

6.1.1 Nursing Experience

In this study, nursing experience was positively related to preceptor self-efficacy, as proposed by hypothesis one: there is a relationship between self-efficacy and nursing experience. This finding is congruent with Bandura's (1982) theory of self-efficacy. It lends support to Bandura's (1982) notions of *performance accomplishments* and *mastery experience*. Performance accomplishments occur when a nurse completes or achieves tasks or goals and practices skills, leading to an increase in self-efficacy (Bandura, 1982). Therefore, as nursing experience increases, self-efficacy increases as well. As the nurse experiences these accomplishments, their self-efficacy increases and they are then more confident in accomplishing further tasks. This is known as mastery experience. Throughout their careers, nurses have many interactions with patients and colleagues and through these experiences they master new skills and achieve new knowledge. Each of these accomplishments contributes to nurses' confidence,

and positively impacts their self-efficacy. The more experience nurses have, the more time they have had to build up these accomplishments, and therefore their self-efficacy.

There is a lack of literature exploring the relationship between self-efficacy and nursing experience. However, one study examined the relationship between nurses' self-assessed competence and work experience (Meretoja et al., 2004). Although self-efficacy and competence are distinct concepts, they do share a number of similarities that allow the study by Meretoja et al. (2004) to be pertinent within the context of this thesis. For example, the development of both confidence and competence are influenced by previous life experiences; these experiences influence a person's ability to complete a task (Stewart et al., 2000). Competence is an ability to perform or complete a task, which can be measured objectively, whereas confidence is a subjective measure of self-perceived ability (Barnsley et al., 2004). In Bandura's theory (1993), self-efficacy is measured by a person's confidence, it is the individual's perceptions of their ability to perform or complete a task. Confidence, has been described as resilience and willingness to repeat a failed task or attempt a new task (Stewart et al., 2000). Meretoja et al. (2004) examined and compared nurses' self-perceived competence in different hospital work settings. Measuring competence as a self-perceived measure makes it more subjective, and very relatable to confidence. The authors defined competence as "functional adequacy and capacity to integrate knowledge and skills to attitudes and values into specific contextual situations of practice" (Meretoja et al., 2004, pp. 330-331). Meretoja et al. (2004) measured competence using a 73-item questionnaire, derived from Benner's (1984) competency framework. Meretoja et al. (2004) found a positive relationship between the number of years of work experience and participants' perceived competence. This indicates that participants with more nursing experience were more confident in their abilities to competently perform a range of tasks or

achieve goals. The authors state that with more experience, nurses further develop their professional practice. The number of years of experience of the participants in this current thesis was 11.4 years, which is comparable to the average of 11.1 reported in Meretoja et al.'s study. The thesis research project found that self-efficacy increases with experience, and Meretoja et al. found that competence increases with experience. Benner's novice to expert theory (1982) supports and relates to both of these findings.

Benner's (1982) novice to expert nursing theory helps describe the different levels of nursing experience. Starting as a novice, the nurse is able to perform some tasks as outlined by policy or guidelines. As time progresses, the nurse becomes an advanced beginner; who is able to perform tasks well and is able to identify the meaningful aspects of a situation. With two to three years of experience, the nurse progresses to the competent stage and is able to perform tasks, but also to evaluate situations and plan actions for long-term goals. Often nurses do not progress past this stage (Benner, 1982). According to Benner (1982) competence is demonstrated when nurses are able to see their own actions as long-range goals. This means that they are able to analyze problems and prioritize care. A nurse who is not at this stage is still relying on cues to complete tasks (Benner, 1982); perhaps a nurse who has not reached the competent stage is not ready to preceptor a student due to the complex and unpredictable nature of preceptorship. To become proficient, and then an expert, a nurse must be able to assess situations as a whole, and not only the task (Benner, 1982). As an expert, the nurse relies on intuition to guide practice, instead of rules or guidelines (Benner, 1982). The CNA (2008) recommends that a nurse have at least two years of experience before becoming a preceptor. This would ideally place the nurse at the competent level as per Benner's (1982) model. This is appropriate because the nurse is no longer relying on cues, but rather is able to use clinical judgement to plan and make goals

(Benner, 1982). Similarly, in Bandura's (1982) theory of self-efficacy, an increase in experience yields an increase in self-efficacy, or confidence. The more experience nurses have, the more confident they are. This increases confidence to take on unfamiliar situations, such as becoming a preceptor.

6.1.2 Preceptor Experience

Hypothesis two of this thesis proposed that self-efficacy is related to preceptor experience. Although Bandura's (1982) theory would suggest that self-efficacy increases as preceptor experience increases, this was not supported by the findings of this study. This inconsistency may be attributed to Type II error, which can be caused by small sample size. Type II error occurs when a null hypothesis is false, but the researcher accepts the null hypothesis (Polit, 2010).

There is evidence in the literature that supports the relationship between self-efficacy and preceptor experience. One study found a statistically significant, positive relationship between these two variables (Larsen & Zahner, 2011), while one study found no relationship (Parsons, 2007). Larsen and Zahner (2011) administered a self-efficacy questionnaire as a part of an evaluation of a preceptor training program. They found that self-efficacy was higher in preceptors with more years of experience as a preceptor. In their study, nurses had an average of 6.0 years of preceptor experience, while in the thesis study the average was 3.9. This could be because the average age of the sample in the Larsen and Zahner's (2011) study ($m = 45.2$) was higher than the sample of the thesis ($m = 36.7$). Similarly, one study found a statistically significant, positive relationship between self-efficacy and years teaching experience in nurse educators with five or less years of experience (Nugent, Bradshaw, & Kito, 1999). Although nurse educators and preceptors have different roles, this article is relevant because it addresses

the self-efficacy of nurses in an teaching role. According to Bandura's (1982) theory of self-efficacy, a person's self-efficacy may vary between different roles. A person may have high self-efficacy as a nurse, but lower self-efficacy as a preceptor because it involves a different skill set. It is important to assess the impact of both nursing experience and preceptor experience on self-efficacy.

6.1.3 Preceptor training

The third hypothesis of this thesis was that there is a relationship between self-efficacy and preceptor training. The results of this thesis suggest that in this population there is no relationship between self-efficacy and preceptor training. This finding is not consistent with Bandura's (1982) theory of self-efficacy or the literature. This thesis proposed that, through Bandura's (1982) notion on verbal persuasion, preceptor training would increase preceptor self-efficacy. Verbal persuasion is the feedback and encouragement one receives from others (Bandura, 1977). In preceptor training, verbal persuasion is provided through question and answer periods, case scenarios, or simulation. Being encouraged by someone else, or provided with feedback on accomplishments may increase self-efficacy through verbal persuasion (Bandura, 1982).

The lack of relationship between self-efficacy and preceptor training in this study may be attributed to several factors. First, a Type II error may be a contributing factor. Second, the format used to collect preceptor training information from the participants was problematic for several reasons, such as the length of the questions and amount of information required, and this may have impacted participant's ability and willingness to answer the questions. This variable was measured using three questions. The first question asked participants if they had received any preceptor training. The next question asked participants to estimate the number of hours of

preceptor training they received. Out of the 53 participants that reported receiving preceptor training, 52 participants reported the number of hours. Participants may have had difficulty recalling the number of hours they have spent in preceptor training or perhaps were uncertain of how many hours to attribute to the training. Finally, the third question asked participants to state the organization where they received the preceptor training, the year they received it, the modality and the number of times they have completed that training. This question was poorly answered by participants; out of 53 participants that reported receiving preceptor training, less than 30 provided any further information on their preceptor training. It is possible that this question was seldom answered because it was time consuming to complete and it required the participant to recall a lot of information. Although online questionnaires typically have a better response rate than paper and pencil questionnaires (Kongsved, Basnov, Holm-Christensen & Hjollund, 2007), the length of the questionnaire also has an impact. Participant fatigue may be the result of a length questionnaire or complexity of questions; it can result in response errors or missing data (Galesic & Bosnjak, 2009; Jonason & Webster, 2010). Thirdly, the statistically not significant result may be due to the variety of training that participants were enrolled in. In Ontario, there are many preceptor training programs, including online and in-hospital training. It may be difficult to assess and compare all of these programs, especially since some may be more beneficial than others. This inconsistency in training may have contributed to these results. For example, the Preceptor Education Program (PEP) is an open access, online preceptor training program for health professionals (Kinsella et al., 2016). This program was created based on extensive review of the literature and other preceptor training programs (Kinsella et al., 2016). It consists of eight modules that include interactive activities, downloadable resources and animated case scenarios (Kinsella, et al., 2016). The modules cover content on giving and

receiving feedback, fostering clinical reasoning, reflective practice and conflict resolution (Kinsella et al., 2016). In comparison, The Ottawa Hospital holds an in-class preceptor training program, Facilitating Learning Experiences Workshop (FLEW) (The Ottawa Hospital, 2015). This workshop covers giving and receiving feedback, establishing a student-preceptor relationship, several adult learning theories and skills that students are permitted to perform at the hospital. Although both programs have valuable information, it is difficult to compare the two, in terms of their contribution to the preceptors' self-efficacy, because of the difference in content, presentation and activities.

The CNA (2004) recommends that preceptors obtain formal orientation or training for their role. However, less than half of the sample reported receiving preceptor training at any point in their career. This indicates that more than half of preceptors are relying on other methods to inform their preceptor practice; such other examples may include vicarious experience or personal experiences of preceptorship as a student. Although preceptor training is recommended, there is no standardized content or mode of deliver for the information. The CNA (2004) provides a guideline of topics that can be included in the orientation.

The amount of participants with preceptor training varies greatly from study to study. In a study by Parsons (2007), 60.4% of the sample did not have previous preceptor training, while a study done by Nugent, Bradshaw and Kito (1999) reported only 28.9% of the sample as having no previous preceptor education. A study by Larsen and Zahner (2011) reported that in their sample, 93.5% of participants did not have prior preceptor education. The results of this study yielded little information regarding the type of training, content of the education program and length of course. In the literature, many studies evaluate a new or existing preceptor training program without identifying if participants have previous training (Windey et al., 2015). The

preceptor training programs in the studies ranged from one-day (Myrick, Luhanga, Billay, Foley, & Yonge, 2012) to two-day (Henderson & Malk-Nyhan, 2006) of in-class preceptor training, to a five-month online preceptor support program (Myrick, Caplan, Smitten, & Rusk, 2010). Several online preceptor programs are available (Kinsella et al., 2016; Zahner, Scheibel, Own, & Ellison, 2004).

6.1.4 Vicarious Experience

The fourth hypothesis in this thesis was that vicarious experience and self-efficacy are related. In the analysis of the data, it was found that vicarious preceptor experience, which is the experience gained by observing other nurses as preceptors, was not related to self-efficacy. To collect information on the variable of vicarious preceptor experience, participants were asked to answer the following questions: (1) have you observed your colleagues in the preceptor role? (2) has observing your colleagues as preceptors influenced your practice as a preceptor? The wording of these questions may have been problematic. Bandura's (1982) theory mentions that a positive vicarious experience has a positive impact on self-efficacy. However, the questions posed to participants were neutral and did not specify whether the vicarious experience was positive or negative. Additionally, these questions do not specify whether observing colleagues had a positive or negative influence on practice.

Although there was no relationship between vicarious experience and self-efficacy, most of the sample reported having observed colleagues in the preceptor role (76.1%), and of those, many reported that it had influenced their practice (67.5%). Through comments, participants identified that observing colleagues as preceptors influences their own preceptor practice. Examining vicarious experience in this context is new, and no other research has previously been done to explore this topic. Since only 45.3% have had previous preceptor training, many

preceptors may be relying on their own experiences as a student and how they were taught by preceptors (Carlson, Wann-Hansson, & Pilhammar, 2009; Omansky, 2010; Smedley, 2008).

Although the results were not statistically significant, some of the participants provided very meaningful comments. Several commonalities emerged in these comments. First, preceptors found it helpful to see both positive and negative experiences of other preceptors. Participants indicated that the negative situations were helpful because they could see where improvements could be made. For instance, a negative situation may involve a preceptor providing ineffective feedback to a student. The nurse observing this situation might identify that this type of feedback is not beneficial to the student's learning. As such, in the future the nurse would be more mindful to not repeat that ineffective technique with a student of their own. Next, preceptors brought up asking other preceptors for help. Participants stated that asking questions or asking for advice was a part of the experience. These comments showcase the importance participants attributed to the vicarious experience. The comments that some of the participants provided show that there may be valuable information within this topic and that further research is warranted.

Additionally, there was a negative relationship between vicarious experience and age. This means that as age increases, vicarious experience decreases. Perhaps as nurses' age they rely less on vicarious experiences, and more on their lived experiences. This is another notion that could be explored further through research.

There was no available literature that explored the relationship between self-efficacy and vicarious experience in nurse preceptors. One study examined the relationship between vicarious experience provided through classroom simulation and nursing student's self-efficacy using Bandura's theory (Goldenberg, Andrusyszyn, & Iwasiw, 2005). The study found that students had higher self-efficacy after the simulation intervention. The authors report that the simulation

contributed to the students' self-efficacy through the mastery experience, which was their ability to successfully complete the simulation, and through vicarious experience, which was gained through observing their classmates complete the simulation successfully. A literature review by Roberts (2009) revealed that vicarious learning is common in nursing education. Students often learn vicariously through observing others, discussion, and storytelling. The use of vicarious experience in nursing as a method of learning is not a new concept; however, it is new within the context of preceptor development and learning.

6.1.5 Personality

Neuroticism. Finally, the fifth hypothesis of this thesis proposed that there is a relationship between neuroticism and self-efficacy. In this study, there was relationship between self-efficacy and the personality trait of neuroticism. It was found that as neuroticism increases, self-efficacy decreases. This is consistent with Bandura's (1982) theory of self-efficacy. Bandura (1982) discusses that one of the four sources of self-efficacy is emotional arousal, which is the physiological state of the body in response to stressors, threats or anxiety (Bandura, 1982). It indicates that adverse emotional reactions can impact a person's response to a situation and their confidence in accomplishing or overcoming the situation. Neuroticism is described as emotional instability, nervousness and being prone to anxiety (John & Srivastava, 1999). Preceptors with high levels of neuroticism may have difficulty remaining calm in difficult situations or may become very anxious in other situations. These preceptors may have a difficult time teaching or providing feedback due to anxiety or emotional instability.

In this sample, neuroticism was found to be the lowest score; lower scores demonstrate a higher level of emotional stability, and are reflective of being composed and calm (Johnson, 2016). The sample had a low average score of neuroticism ($m = 2.31$, $SD = 0.75$). This result

was anticipated; perhaps individuals who are drawn into nursing as a profession are able to prioritize the feelings of others above their own emotions. As well, several other studies have found similar results. A study by Zellars, Perrewe and Hochwarter (2000) explored the role of personality traits in burnout of nurses (N = 169) in the United States. The authors assessed personality by using the NEO Five Factor Inventory (NEO-FFI). Participants had a low average score of neuroticism ($m = 2.52$, $SD = 0.61$). This is supported by Bandura's (1982) theory, in which people with more emotional stability are more resilient. Another study, conducted by Li and Su (2014) explored the relationship between personality and self-efficacy in nurse preceptors (N = 116) in Taiwan. Using the Eysenck Personality Scale, the authors found preceptors to have a low average score of neuroticism ($m = 6.0$, $SD = 3.0$). A study done by Allen and Mellor (2002) examined nurse (N = 104) burnout by measuring neuroticism, professional self-efficacy and more. The authors used NEO-FFI to assess personality and found that their sample had low levels of neuroticism ($m = 4.04$, $SD = 1.29$). A study by Lalonde and McGillis Hall (2015) examined characteristics and personality of preceptors (N = 41) of newly graduate nursing students. They used Goldberg's (1999) International Personality Item Pool (IPIP) to assess personality traits and found emotional stability to be below-average ($M = 35$, $SD = 0.65$). The sample for this thesis project was comparable to all of the aforementioned studies; although several studies used different tools to measure the Big-Five personality traits, the average of neuroticism in nurses and nurse preceptors was found to be low.

Allen and Mellor (2002) found that higher levels of neuroticism were negatively correlated with professional efficacy. This indicates that as neuroticism increases, there is a decrease in professional efficacy. The authors described professional efficacy as self-efficacy in the context of a job, in this case nursing. Other studies also found a negative correlation between

self-efficacy and neuroticism (Hartman & Betz, 2007; Luszczynska, Gutierrez-Dona, & Schwarzer, 2005; Schyns & Collani, 2002). Another study done by Li and Su (2014) found that preceptors with higher levels of neuroticism had lower levels of maturity. The authors explain that lower maturity, which indicates higher depression and anxiety, has an overall negative impact on teaching effectiveness. A study done by Lalonde and McGillis Hall (2016) found that the emotional stability of preceptors was positively correlated to the role ambiguity of new graduate nurse. The authors found that new graduate nurses paired with preceptors who had higher emotional stability had less role clarity. Therefore, perhaps characteristics of neuroticism should be taken into consideration during preceptor selection and evaluations.

Agreeableness. This sample's highest score was agreeableness ($m = 4.28$, $SD = 0.61$). High levels of agreeableness indicate a strong interest in the well-being of others, being sympathetic and cooperative (Barrick & Mount, 1991; Johnson, 2016). A high level of agreeableness is somewhat anticipated in preceptors because the role is described as caring for others (Earle, Myrick, & Yonge, 2011). Nurses are often viewed as a very caring professionals, perhaps these findings were anticipated because of the nature of the profession. A Canadian study by Lalonde and McGillis Hall (2015) also found high levels of agreeableness among preceptors ($M = 4.36$, $SD = 0.57$). However, Zellars, Perrewé and Hochwarter (2000) as well as Gutierrez, Jimenez, Hernandez and Puente (2005) both reported moderate levels of agreeableness ($m = 3.86$, $SD = 0.44$ and $m = 31.28$, $SD = 6.20$). In addition to neuroticism, agreeableness was the only other personality trait found to be related to self-efficacy. Agreeableness was positively related to self-efficacy; meaning that as agreeableness increases, self-efficacy increases. This finding was expected because people with high levels of agreeableness have a willingness to nurture and support others (Zellars, Perrewé, & Hochwarter,

2000), as well as have a strong interest in the well-being of others (Johnson, 2016). The role of the preceptor is to teach students and help prepare them for entry to practice (Earle, Myrick, & Yonge, 2011; Trede, Sutton, & Bernoth, 2015). The preceptor needs to be nurturing and supportive to help students meet these outcomes. Although there is no nursing literature that explores the relationship between self-efficacy and agreeableness, a study done by Hartman and Betz (2007) explored the Big-Five personality traits and their relationship to career-related self-efficacy in university students in the Ohio. The authors found no relationship between agreeableness and self-efficacy. The authors determined that the participant's interest in helping others did not affect their confidence in performing various career activities, such as helping skills. The results may be different in a nursing population because nurses are considered to be in a caring profession.

Extraversion. In this sample, extraversion was found to be moderate ($m = 3.24$, $SD = 0.89$). Whereas in other studies, extraversion was also found to be moderate; average 3.65 ($SD = 0.49$) (Zellars, Perrewe, & Hochwarter, 2000) and average 31.41 ($SD = 7.07$) (Gutierrez, Jimenez, Hernandez, & Puente, 2005). Extraversion is described as being sociable, talkative, and energetic; a person who enjoys being around others (Johnson, 2016) and is optimistic (Barrick & Mount, 1991; Zellars, Perrewe, & Hochwarter, 2000). In general, extraversion may be a common trait among nurses, as the role of a nurse often requires continual interactions with patients, families and other health care personnel. The lack of relationship between self-efficacy and extraversion was an unexpected outcome because an extraverted personality describes someone who is sociable and outgoing, someone who enjoys being around others (Johnson, 2016). It may be favourable for preceptors to have higher levels of extraversion because they can help socialize nursing students into the role as a nurse and furthermore act as a role model for the student. In

the literature, one study found self-efficacy and extraversion to be positively related (Li & Su, 2014). The study by Li and Su (2014) explored the relationship between self-efficacy and personality in nursing preceptors using the Eysenck Personality Scale. The authors determined that higher levels of extraversion are associated with lower emotional stress and stress in the practice environment. Further they recommend that extraversion is a positive aspect, and should be looked for in potential nursing preceptors.

Conscientiousness. In this sample, a moderate level of conscientiousness was found ($m = 3.93$, $SD = 0.81$). A study done by Zellars, Perrewe and Hochwarter (2000), showed that participants had higher levels of conscientiousness ($m = 4.11$, $SD = 0.44$), while a study by Gutierrez, Jimenez, Hernandez and Puente (2005) showed that participants had moderate conscientiousness ($m = 33.26$, $SD = 6.20$). Lalonde and McGillis Hall (2015) found high levels of conscientiousness as well ($M = 4.10$, $SD = 0.55$). People with high levels of conscientiousness are described as being dependable, organized and hard-working (Barrick & Mount, 1991; Johnson, 2016); perhaps higher levels of conscientiousness are found among nurses because they need to be dependable and meticulous in order to take care of patients. This thesis study found no relationship between self-efficacy and conscientiousness. Conscientiousness describes someone who is hard working, able to set clear goals and is determined to reach those goals (Johnson, 2016; Zellars, Perrewe, & Hochwarter, 2000). This finding is unexpected because someone with high levels of conscientiousness is also described to be confident in their ability to accomplish goals (Johnson, 2016), and Bandura (1986) describes self-efficacy as a person's confidence in their own ability to achieve goals. A preceptor with high levels of conscientiousness may be more goal oriented and resilient to failure. The relationship between self-efficacy and conscientiousness in nursing preceptors was not explored in other literature. However, Hartman

and Betz (2007) found a positive relationship between career self-efficacy and conscientiousness in university students. The authors report that students with high levels of conscientiousness had good organizational and management skills.

Imagination. In this study, the sample was found to have moderate levels of imagination ($m = 3.68$, $SD = 0.86$). Similar findings have been reported by Lalonde and McGillis Hall (2015) ($M = 3.63$, $SD = 0.50$) and Zellars, Perrewe and Hochwarter (2000) ($m = 3.37$, $SD = 0.47$). Imagination, often labeled as openness in some tools, is described as being curious and creative (Johnson, 2016). Someone with high levels of imagination enjoys variety and change (Johnson, 2016). Perhaps nurse preceptors have higher levels of imagination because they need to be more creative to teach students or explain information. In this thesis study, imagination and self-efficacy were found not to be related. This finding was not completely expected because some nurses may want to become preceptors in order to expand their nursing practice or have variety in their practice. A person with high levels of imagination is described as someone who enjoys variety, is curious, and creative (Johnson, 2016). The relationship between self-efficacy and imagination was not previously explored in nursing literature. A positive relationship was found between preceptor experience and imagination. This means that as preceptor experience increases, imagination increases. Perhaps preceptors are able to use their experiences to be more creative or imaginative, or they prefer more variety as they increase their experience.

In conclusion, several relationships were found between different personality types and self-efficacy. Perhaps personalities of preceptors need to be taken into account during preceptor selection and evaluation. Preceptors with neuroticism-type personalities may have lower self-efficacy (Allen & Mellor, 2002; Hartman & Betz, 2007; Luszczynska, Gutierrez-Dona, & Schwarzer, 2005; Schyns & Collani, 2002), and may need additional support during the

preceptorship experience. Whereas, a preceptor who is more extraverted may have higher self-efficacy (Li & Su, 2014), and may not need the same type of support.

6.2 Preceptor role characteristics

Several preceptor characteristics were measured in this study to determine their relationship with preceptor self-efficacy. These variables include: becoming a preceptor, orienting new staff, non-nursing teaching experience and unsuccessful students.

6.2.1 Becoming a preceptor

The way in which nurses became a preceptor was not related to self-efficacy. A number of participants stated they volunteered for the role or were assigned the role. In addition, several participants articulated that they were offered the role, this indicates that they were approached and asked to become a preceptor, and had the option of accepting or refusing. This is markedly different from volunteering for the role, which implies that the participant offered to precept a student, and being assigned the role, where the participant was appointed the role. Volunteering for a role may show readiness or desire by the nurse to take on a new role, while being assigned the role may be for different reasons. A study by Kemper (2007) found that “increasing preceptors’ preparedness and comfort levels can maximize chances that preceptors are at ease with the teaching role” (p. 10). A nurse may be assigned the preceptor role because no other nurses are available to take on the role; this does not allow for proper preparation or self-perceived readiness. Further, no differences in self-efficacy were found between being assigned the role, being offered the role, and volunteering for the role. This result may suggest that how a nurse enters the preceptor role is not important to their self-efficacy. However, this was not explored in sufficient detail in this thesis. Additionally, no nursing literature was found on this topic.

6.2.2 Orienting new staff

Although the majority of the sample reported having participated in the orientation of new staff to the unit, this variable was not related to preceptor self-efficacy. The remainder of the sample answered no or unsure or did not answer the question. No differences were found between the self-efficacy of preceptors who had and those who had not helped orient new staff. This finding may be attributed to a small sample size.

These results may not be related to the self-efficacy of a nurse preceptor. The difference between orienting new staff and preceptoring undergraduate students is substantial. Experienced nurses are already developed professionals and need orientation to the unit, while undergraduate students need teaching of nursing concepts, technical skills and nursing practice, and require greater interaction and contact with the preceptor. As per Bandura's (1982) theory, accomplishing more demanding goals successfully increases self-efficacy and further contributes to the willingness to attempt new, more challenging tasks. Orienting a new staff member may require a different set of skills than preceptoring a student (Lalonde & McGillis Hall, 2016).

6.2.3 Non-nursing teaching experience

A slight majority of participants reported having no non-nursing teaching experience, while some said yes. Non-nursing teaching experience was not related to preceptors' self-efficacy. In comparison, Nugent, Bradshaw and Kito (1999) reported that 59.5% of their sample had previous non-nursing teaching experience. The authors found no relationship between self-efficacy and non-nursing teaching experience. According to Bandura's (1982) theory of self-efficacy, a statistically significant result was anticipated because self-efficacy in certain skills can be transferred over to other situations. For instance, it is plausible that a nurse who has experience teaching a first aid course should have higher self-efficacy as a preceptor of a nursing

student than someone who has never taught before. However, self-efficacy is influenced by a number of different factors. The relationship between non-nursing teaching experience and self-efficacy can be further examined with a larger sample size and more in-depth questions. Further questions could explore the different types of teaching experiences nurses may have.

6.2.4 Unsuccessful students

In this study, very few participants reported having worked with an unsuccessful student. The findings suggest that in this sample there is no relationship between self-efficacy and having preceptored an unsuccessful student. According to Bandura's (1982) theory of self-efficacy, it was anticipated that a negative experience, such as having an unsuccessful student might cause a decrease in self-efficacy. Having a student complete the consolidation preceptorship is an accomplishment for both the preceptor and the student. For the preceptor, this accomplishment may increase self-efficacy because several goals had to be attained for the student to pass the placement. By contrast, working with a struggling student, or having to fail a student, is a stressful experience (Luhanga, Yonge, & Myrick, 2008; McCarty & Murphy, 2010). Preceptors may fear the consequences of failing a student, such as student appeals (Luhanga, Yonge, & Myrick, 2008). A negative experience such as this can influence a person's willingness to continue preceptoring, especially since many preceptors may feel responsible for the failure of a student (Barker & Pittman, 2010; Luhanga, Yonge, & Myrick, 2008). In a qualitative study by Luhanga, Yonge and Myrick (2008), participants reported that as preceptors they might be reluctant to fail a student because of their inexperience and lack of confidence as a preceptor (Luhanga, Yonge, & Myrick, 2008). As per Bandura's (1982) theory, failures can lead to a decrease in self-efficacy, which decreases resilience. Inexperienced preceptors may not be confident in their assessment of the student, and may not recognize that the student's

performance constitutes a failing grade. A preceptor with more experience may be more familiar with evaluating a student's performance and be familiar with what successful student's performance resembles; they may be able to identify when a student is not meeting those standards. If the preceptor interprets the failure of the student as their own failure, the preceptor's self-efficacy may decrease. The preceptor may start to doubt their abilities as a preceptor, and attribute the student's failure to their own poor performance as a preceptor. The preceptor may lose self-confidence as a preceptor, and may not wish to continue with that role. On the other hand, preceptors with high levels of self-efficacy may be more confident with their decision to fail a student. A preceptor that has had unsuccessful students before, may be able to identify them more clearly.

6.3 Preceptor Individual Characteristics

Several individual characteristics were measured to determine their relationship with preceptor self-efficacy. Characteristics included age, personality traits, education and place of employment.

6.3.1 Age and gender

This study sampled Ontario nurses who have preceptored consolidating nursing students. The vast majority of the study's sample was female and the average age was 36.7 (SD = 11.1), which is 10 years younger than the nursing population of Ontario. The difference in age average may be partly due to selection bias. A social media platform called Facebook was used as a primary recruitment method. This may be accessible by a younger portion of the nursing population, as this platform is more common among young adults (McAndrew & Jeong, 2012). Although other methods of recruitment were used, there is no sure indication that the sample was not affected by this method of recruitment.

Age was found to have a positive relationship with self-efficacy. The result suggests that older nurses had higher self-efficacy than younger nurses; several studies have found similar relationships between age and self-efficacy (Nugent, Bradshaw, & Kito, 1999; Schwarzer & Hallum, 2008). This is consistent with Bandura's (1982) theory of self-efficacy which indicates that low self-efficacy is related to low resilience. In the study done by Larsen and Zahner (2011), the average age of preceptors was 45.16, which is considerably higher than the average of the thesis sample ($m = 36.7$), but is more consistent with the nursing population of Ontario ($m = 46.2$) (CIHI, 2017). In Larsen and Zahner's (2011) study, nurses had an average of 20.7 years of nursing experience, while in this thesis, nursing experience averaged 11.4.

In this thesis, age was also found to have a relationship with nursing experience. This indicates that older nurses tend to have greater nursing experience. Therefore, because age and nursing experience are so closely related, it is plausible that age is actually not the best indicator for self-efficacy and that nursing experience is. For instance, younger nurses tend to have less nursing experience simply because they have only been out of school for several years; while older nurses, who graduated many years ago, have much more nursing experience. This finding is congruent with Bandura's (1982) theory of self-efficacy and relates to performance accomplishments as a source of self-efficacy. The more practice nurses have, the more time they have had to gain experience and accomplishments, and therefore increase their self-efficacy. Additionally, both nursing experience and age were also statistically significant and positively correlated with preceptor experience. The results suggest that nurses with more nursing experience had more preceptor experience. This is appropriate because the more nursing experience nurses have, the more time they would have had to gain preceptor experience.

In this study, there was no relationship between gender and self-efficacy. There was no supporting literature found that explored the relationship between the gender of nurse preceptors and their self-efficacy. Although this finding was anticipated, the results may not be accurate due to a small percentage of male participants in the study.

6.3.3 Education

In this study, there were differences found in the self-efficacy of preceptors with diplomas, bachelor degrees and graduate degrees. The results suggest that both diploma prepared nurses and nurses with graduate degrees had higher self-efficacy than nurses with a bachelor's degree. The significance of the result that diploma prepared nurses have higher self-efficacy than bachelor prepared nurses may be explained by experience and age, as opposed to education. As the prerequisite to become a registered nurse in Ontario was changed from a diploma to a bachelor's degree in 2005, diploma prepared nurses tend to be older, and therefore have more nursing experience (CNA, 2017). The results suggest that nurses with graduate level education have higher self-efficacy. These findings are similar to what is reported in the literature. Benner (1982) suggests that nurses gain knowledge and understanding of illness and treatments through experience and education. Bandura (1993) states that students gain mastery experience through completing academic activities. It is expected that preceptors with graduate level education have higher self-efficacy. Several studies found that there was a statistically significant, positive relationship between between preceptors' education level and self-efficacy; nurses with Master's degrees tend to have higher self-efficacy (Larsen & Zahner, 2011; Nugent, Bradshaw, & Kito, 1999; Parsons, 2007). During graduate level training nurses are able to further advance their knowledge in nursing theory, research, clinical competencies and leadership (CNA, 2008). Throughout their careers, nurses have many interactions with other health care professional and

patients; through these experiences they master new skills and achieve new knowledge. Perhaps this exposure to more formal education provides nurses with the experience they need to increase their self-efficacy. By accomplishing similar or related goals experience is gain and therefore self-efficacy is increased (Bandura, 1982).

6.3.4 Employment

Since this sample was of preceptors only, it is plausible that the sample contained less part-time and casual nurses because students are often paired with full-time nurses in order to ensure a level of consistency and continuity throughout their preceptorship. Continuity of care is a concept that often refers to patients, but may be applicable to student learning as well. This concept involves having the same health care providers to maintain a therapeutic relationship, providing a consistent approach to care and to ensuring that the care being provided can evolve as the patients' needs change (Freeman et al., 2001; Haggerty et al., 2003). Similarly, having one preceptor could benefit the student because it provides an opportunity for a student-preceptor relationship to develop and the preceptor is able to monitor the student's progress and adapt accordingly. This continuity is important in the preceptorship experience (CNA, 2004).

In the sample, the majority of the nurses were employed as staff nurses (74.4%) and similarly in the population of Ontario, the majority of nurses were employed as staff nurses (74.0%) (CIHI, 2017). Nurses in this sample were employed in a variety of departments and units. Many of the percentages of nurses in the sample are comparable to that of the population, however, several stand out. Within the sample, 23.1% of nurses reported working on a medical/surgical unit, whereas only 11.8% of nurses in the population work on a medical/surgical unit (CIHI, 2017). This difference may be due to medical/surgical placements being a common place for consolidating preceptorships, in comparison to geriatric/long-term

care where the sample (2.6%) was much lower than the population (10.7%) (CIHI, 2017). The sample also had a higher percentage of nurses working in emergency care (16.2%), in comparison to the population (7.3%) (CIHI, 2017). This may be a result of the researcher having worked in an emergency department and having connections on social media with colleagues working in the same department.

Participants were asked to report their current place of employment. A variety of care areas were reported, ranging from outpatient to critical care. The statistically not significant results could, once again, be attributed to a small sample size; some of the groups had very small numbers of participants. There are many variables that constitute a place of employment, such as work environment, staff satisfaction, staff support and more (Burtson & Stichler, 2010).

There was only one study in the literature that examined the relationship between self-efficacy and place of employment. Goldenberg, Iwasiw and MacMaster (1997) assessed the impact of the preceptorship experience on nursing students and their preceptors. The study found that preceptors in community settings and critical care had higher self-efficacy compared to other settings. The authors attribute these findings to the closeness of the student, preceptor and client relationship and the nature of the nursing responsibilities in these areas. Nurses working in the community at times make home visits to one client at a time and nurses working in critical care often work with a smaller nurse to patient ratio; this may increase feelings of closeness. The skills in both of these areas are more specialized and may provide further opportunity for the preceptors to witness success in students and subsequently increase their own self-efficacy (Goldenberg, Iwasiw, & MacMaster, 1997).

6.6 Implications

The knowledge gained from this study has several implications for nursing practice, research and education. This section is structured using the four competencies of advanced practice nurses (APN): clinical, leadership, consultation/collaboration and research (CNA, 2008). Implications for education will be discussed, as it is a focal point of this thesis. The findings of this thesis study can be imbedded in each of these competencies and incorporated into APN practice and the practice of other clinical leaders, such as managers, administrators, and nurse educators. In this section, practical strategies for the utilization of this knowledge are discussed.

6.6.1 Implications for clinical leaders

Clinical practice. The results of this research may provide information for clinical leaders, such as managers or APN's, to inform preceptor selection practices. These results may further be incorporated into preceptor and student matching processes. Variables such as nursing experience, education and personality will be discussed.

An important aspect of the preceptorship experience is the preceptor selection process. Preceptor selection is challenging because there is a high demand for preceptors from schools of nursing, and a lower supply of nurses who may be qualified or interested in becoming preceptors. Often, unit managers are tasked with preceptor selection. At times, preceptors are chosen just to meet the demands of the academic system. Based on the results of this thesis, there is still a lack of empirical evidence to suggest an exact number of years of experience a nurse should have before becoming a preceptor. However, years of experience remains a variable that should be considered. The CNA (2004) suggests that preceptors should have a minimum of two years of experience in a clinical area. The results of this study support the CNA's guideline by demonstrating that years of experience are positively related to preceptor self-efficacy. Having

some nursing experiences allows nurses to gain the knowledge and skills to be able to work in this setting and gain experiences and accomplishments in order to increase their self-efficacy. According to the Benner's (1982) novice to expert model, it takes two to three years for a nurse to enter the competent stage. At this stage the nurse is able to plan ahead and do work without being cued (Benner, 1982), which are skills that preceptors should have to be effective in their role.

Another beneficial characteristic for preceptors is graduate level education. Nurses with graduate level education tend to have higher self-efficacy, managers could seek out these nurses for the preceptor role. Several studies found that nurses with master's degrees had higher self-efficacy (Larsen & Zahner, 2011; Nugent, Bradshaw, & Kito, 1999; Parsons, 2007). Nurses gain knowledge and understanding of illness and treatments through experience and education (Benner, 1982). Bandura (1993) suggests that students gain mastery experience by accomplishing academic activities. Nurses with graduate level education gain further knowledge in clinical, leadership, research, collaboration and consultation competencies (CNA, 2008). During graduate education, nurses have an opportunity to engage with different types of literature, have in depth discussions and learn about the concepts of advanced nursing practice. Through these opportunities, the nurse gains experience and knowledge, and subsequently an increase in self-efficacy. The disadvantage of having nurses with graduate level education as preceptors is that there are far fewer of them than nurses without graduate level education (CIHI, 2017), and many of them may not be employed as bedside nurses.

Another important component of preceptorship is preceptor and student dyad. To encourage a positive preceptorship experience, preceptor and student matching has been suggested in the past. APNs could be involved in the matching of students and preceptors by

assessing many factors, such as personality or learning styles, before pairing the two together. A number of studies have suggested matching preceptors and students by a variety of factors (Anderson, 1997; Baltimore, 2004; Lockwood-Rayermann, 2003; Luhanga, Billay, Grundy, Myrick, & Yonge, 2010). This thesis study found that preceptors with higher agreeableness and lower neuroticism on the mini-IPIP (Donnellan, Oswald, Baird, & Lucas, 2006) scale had higher self-efficacy. It may be useful to have preceptors complete a personality assessment as a form of screening prior to becoming a preceptor, and then have students complete the assessment to assist with the matching process. The screening does not have to be a method of eliminating nurses from becoming preceptors, but rather a way to identify preceptors who may need further assistance. People with neuroticism-type personalities tend to be more anxious and react poorly in stressful situations. Perhaps these preceptors could be provided with additional learning tools or training to assist with goal setting or communication. This could help to ensure that all students have an equal opportunity to have a positive preceptorship experience. It is important to note that this type of screening may not be feasible in many settings for several reasons, such as the amount of students or amount of time and resources required, including knowledge about personality. Additionally, it may be unrealistic to find a matching preceptor for each student.

Leadership. Although the results of this current study were not statistically significant, there is still ample evidence on the benefits of preceptor training (Windey et al., 2015). It is difficult to compare preceptor training programs from different organizations because the content of the training programs may vary greatly, as well as the modality of delivery and resources provided in the training. Clinical leaders, such as nurse educators or APN's, can take a leadership position in the development and implementation of preceptor preparation programs and preceptor support programs. Once a needs assessment is done, current research can be put into

practice to help address some of these needs. There is an abundance of preceptor training programs available across the country; however, more research is needed to explore what content should be included in the training and what modality it may be presented in. This assessment can further look into the barriers and facilitators to preceptor training programs.

Collaboration and consultation. Collaborating with other health care professionals is a part of the APN scope of practice (CNA, 2008). Preceptorship is not specific to nursing; it is used by other health professions as well, such as paramedics or respiratory therapists (Bassendowski, Layne, Lee, & Hupaelo, 2010). Nurse educators may be involved with this process, but because their role is specific to nurses they may need the help of APN's to expand their reach to other health care professionals. Collaboration and combining knowledge regarding preceptorship with other professions can help expand current knowledge and improve interprofessional practice. The preceptor training programs and other practices created for nursing preceptorship can be shared with other health care professionals such as paramedics, x-ray technologists, physicians, occupational therapists or respiratory therapists. Perhaps, similar practices could be applied, such as selecting preceptors with several years of experience or implementing personality assessments for professionals wanting to become preceptors. APN's may take a role in including other health care professionals in preceptor training programs or support programs. For instance, if a preceptor training program is developed in a hospital, it can be utilized by several different professions in that setting. A general preceptor training program can be tailored to many other health professions, instead of being specific to nursing. The Preceptor Education Program (Kinsella et al., 2016) is an example of such program. This online training is open to preceptors from any health profession. Another program titled E-Tops (Kassam et al., 2012), is an online program that targets a variety of health care professionals.

This study showed that 80% of preceptors indicated that the training was applicable, and 60% reported an increase in confidence in their ability to teach (Kassam et al., 2012). An interprofessional approach to preceptor training can further encourage collaborative practice and patient care (Bassendowski, Layne, Lee, & Hupaelo, 2010; MacDowell, Glasser, Weidenbacher-Hoper, & Peters, 2014). Overall, this collaborative approach helps to ensure the best possible care for patients and their families from all aspects of the health care system.

6.6.2 Implications for research

Nursing experience. The lack of current literature about self-efficacy and nursing experience is certainly a limitation and a gap in knowledge about this topic. Bandura's theory suggests that more nursing experience should contribute to self-efficacy. Research can be done on the different types of nursing experiences. For instance, this may include experiences with different patient groups, nursing skills and the role of nurses.

Vicarious experience. Exploring vicarious experience within this context is new and has not been done in the past. A more in-depth study is required to assess the relationship between self-efficacy and vicarious experience. Currently, there is no literature that describes the impact of vicarious experience on preceptor self-efficacy. Perhaps a qualitative analysis would yield some significant information and provide a starting point for further research. Researchers can look into the various opportunities for vicarious experience, such as where or when it happens. They can evaluate what nurses gain from these experiences, such as the impact of a positive or negative vicarious experience. Nurses work in teams and are constantly having interactions with one another. Since only 45.3% of the thesis sample reported receiving formal preceptor training, perhaps a number of nurses are relying on their vicarious preceptor experience to inform their practice as preceptors (Ohrling & Hallberg, 2001). Nurses may not be aware of the extent to

which the practice of others, or the vicarious experience, is influencing their own practice; further research is necessary to explore this idea.

Preceptor training. There is a need for further research to explore the relationships between self-efficacy and preceptor training. According to Bandura's (1982) theory, mastery experience should contribute to self-efficacy. Researchers can further explore the different modalities of preceptor training, the content that is taught, and if other variables are more powerful in contributing to self-efficacy. The benefit of simulation exercises and case-scenarios within preceptor training can also be assessed (Issenberg, 2006). Several studies have been done to evaluate current preceptor training programs (Myrick, Luhanga, Billay, Foley, & Yonge, 2012; Smedley, Morey, & Race, 2010; Windey et al., 2015). Although many studies have assessed individual programs, it is difficult to compare many of these programs due to their variability in content, mode of instruction, and more. There is no literature that compares the impact of these training programs on the self-efficacy of preceptors.

Preceptor selection. Preceptor selection processes need to be further defined and standardized. Often preceptors are chosen based on availability or willingness to precept (Altmann, 2006). Further research is needed to identify more definitive preceptor selection criteria and characteristics, such as years of nursing experience, training, or personality. For example, preceptor personality can be further examined, and the effect of personality traits on variables such as student success or preceptorship experience could be explored. The results suggest that nurses with graduate level education have higher self-efficacy; this finding can be used to identify nurses who may be suitable to become preceptors. Measures during preceptor selection need to be put into place to ensure that preceptors are qualified to precept students.

Preceptor matching. It has been suggested that matching preceptor and preceptee by learning styles in order to increase job satisfaction and new nurse retention (Willemsen-McBride, 2010). Other studies have suggested matching preceptors based on leadership styles, such as autocratic, democratic, laissez-faire and bureaucratic (Lockwood-Rayermann, 2003). However, no research has been done to explore matching student and preceptor by personality, as well as the impact on student learning.

6.6.3 Implications for education

Nursing education continues to evolve and change as new literature emerges. The overall goal for many researchers is to provide evidence to improve nursing education in order to subsequently improve patient care. Schools of nursing can take an active role in improving preceptorship programs by facilitating mentorship programs for preceptors and taking a leading role in preceptor training and support.

A formal mentorship programs for preceptors may also be beneficial. Having an assigned mentor for a new preceptor may help the preceptorship experience. This program could be overseen by the school of nursing; the faculty members could provide structure and resources to the mentorship program. Having a mentor can help increase the preceptor's self-efficacy through verbal persuasion; the mentor may be there to provide encouragement and support. As a part of the mentorship program, the novice preceptor may shadow the mentor as they precept a student nurse. This provides a vicarious experience for the preceptor and direct access to some private moments with the student. Vicarious experience helps to increase self-efficacy (Bandura, 1982). For example, when the mentor is providing feedback or evaluation to the student, it is often done in a private space. Through a mentorship program, the novice preceptor may be privy to the information shared in this meeting. Faculty members may also be a part of mentoring the

preceptor since they have opportunities to meet with the preceptor and provide support and encouragement (Baxter, 2007; Luhanga, Myrick, & Yonge, 2010). Both a mentor or a faculty member may be able to provide emotional support to the preceptor, which can help decrease any anxiety or stress and increase self-efficacy (Bandura, 1982).

Although the results of this thesis suggest that in this sample, preceptor self-efficacy was not related to preceptor training, preceptor training may need to be more streamlined or standardized, in order to influence self-efficacy. There is still ample evidence from other studies on the benefits of preceptor training (Myrick, Luhanga, Billay, Foley, & Yonge, 2012; Smedley, Morey, & Race, 2010; Windey et al., 2015). As per Bandura's (1982) theory, preceptor training influences self-efficacy through the mastery experience, for example through participating in a simulation. It may also be impacted through vicarious experience, by watching others perform in the simulation. Incorporating high fidelity simulation into preceptor training provides a unique experience for preceptors that would not be available in class-room learning. A study done by Adoryan (2011) showed an increase in preceptor knowledge post simulation training. Verbal persuasion may also be a part of preceptor training through feedback or guidance that is provided. Although the CNA (2004) currently provides some guidance, there is no official outline of the preceptor training.

Since preceptor training varies from institution to institution, perhaps the schools of nursing can take an active role in being involved in preceptor training, which may streamline preceptor education. Across institution, faculty members can take a role in providing preceptors with support and guidance, which is a form of verbal persuasion (Bandura, 1982). Verbal persuasion can help increase the preceptor's self-efficacy (Bandura, 1982). Since high-fidelity simulation is available at schools of nursing, it may be incorporated into the preceptor training.

Additionally, preceptor training through the faculty may be beneficial because the institution may be able to provide specific information on the faculty's specific student evaluation tools and the faculty's expectations of the students. Preceptors need specific training in identifying a failing student (Luhanga, Yonge, & Myrick, 2008) and need training on dealing with that situation in reality (McCarthy & Murphy, 2010). Having a more comprehensive understanding of the school's expectations may be the first step in identifying a struggling student.

6.7 Limitations

Some limitations were encountered throughout the data collection process, which may have impacted the study in a number of important ways. These limitations are further discussed in this section.

6.7.1 Sample

First, this study had a small sample size. The power analysis indicated that a sample of 122 was needed to detect medium effect size with a power of 0.8 and an alpha of 0.05 (Cohen, 1992). As such, the sample was not sufficiently large to detect a medium difference. Potential for Type I and II errors are present. Type I error occurs when the null hypothesis is true in the population, but is falsely rejected (Polit, 2010). This type of error is controlled by the level of significance. Commonly, alpha is set at 0.05, which indicates that there is a 5% chance of Type I error occurring (Polit, 2010). Type II error, which can be caused by small sample size, occurs when a null hypothesis is false, but the researcher accepts the null hypothesis (Polit, 2010). By increasing the sample size, the power is increased and the risk of type II error is decreased (Polit, 2010).

Several participants were excluded from the study because they did not meet the inclusion criteria. Although the criteria were outlined in the information sheet that was provided

to the participants prior to the survey, questions involving the inclusion criteria could have been placed as the first few question of the questionnaire in order to help participants assess if they should continue in the survey or not. These questions could assess whether or not the participant is a registered nurse and if they have been a preceptor to consolidating undergraduate nursing students.

6.7.2 Social media

The small sample size may be due to the methods used to recruit participants. Recruitment for this study was conducted using a social media platform called Facebook. This untraditional method of participant recruitment is not commonly used among researchers due to concerns of selection bias (Shere, Zhao, & Koren, 2014; Van Geest & Johnson, 2011). Selection bias is an issue because not everyone in the population is accessible via this social media platform. This concern was validated when the results found the average age of the sample to be approximately ten years younger than the age of the population. This may be a result of using social media as a primary form of recruitment, as often younger people are on social media more often (Amerson, 2011). Another disadvantage of using social media as a platform for recruitment is the high turnover of the posts. Unfortunately, as the recruitment poster was posted on the Facebook sites, it would be a matter of hours, or sometimes minutes, before it would be overcome by newer posts and become inaccessible for other users to access. Posting more frequently might have helped reduce this limitation; however, that causes further risk of becoming a potential nuisance by over-posting in some of the groups on the social media site. Although several disadvantages have been brought to light, there are several advantages of using social media for recruitment. Facebook is a free online platform, which was inexpensive for both the researcher and participants. Additionally, this platform allowed for the snowball-effect to

take place (Amerson, 2011); participants were able to forward and share the information to other potential participants with ease.

6.7.3 Online survey

The small sample size may also be related to the online method used to do data collection. The website used to collect data, LimeSurvey, had several malfunctions throughout the data collection period. Several participants contacted the researcher to report that they were having issues submitting the survey. As a result, a total of 25 participants had no data entered in the survey. It is impossible to know if some participants answered the survey twice, or how many were deterred from completing the survey again because it had failed to submit the first time. A total of 146 participants attempted the survey, with only 95 eligible to be included in the study.

Another limitation was the wording or length of some questions. Question eight in particular was often omitted by participants. This question required participants to recall information from the past regarding their preceptor training. Only 20% of participants answered parts of this question. As a result, meaningful information was lost. This question may have been too long and demanding. The question could have potentially been shortened to include only the most pertinent data, or even split into two questions. The purpose of this question was to obtain some information about a variety of different preceptor training programs and be able to compare them. Not enough data was provided by the participants to do an analysis.

6.7.4 Registered Practical Nurses

A decision was made not to include registered practical nurses (RPN's) in this study because of the difference in curriculum and scope of practice. This is a potential limitation to the study because RPN's are also a part of nursing practice. Although this study was only done with

registered nurses, there is a potential for generalization of results to RPN's or even other health care professional programs with similar preceptorship characteristics.

6.8 Conclusion

People with higher self-efficacy are more resilient to failure and more likely to be persistent in accomplishing tasks or reaching goals (Bandura, 1982). Exploring the factors that influence preceptor self-efficacy has yielded several significant findings which will help inform the development of preceptor selection criteria, preceptor supports and preceptor training programs. This thesis project has shed light on several avenues of research that should be explored in the future.

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Appendix A: Recruitment Poster

PRECEPTOR

RESEARCH

STUDY

preceptorsurvey.com

Looking for Ontario Nurses who have preceptored at least one undergraduate nursing student. If you would like to participate in this study, follow the URL above to complete the 10 to 15 minute survey.

 Maja Bugarski
BScN, RN, MScN student

Appendix B: Information and Implied Consent

Title of the study: The Factors Influencing the Self-Efficacy of Nurse Preceptors.

Principal Investigator(s) (Supervisor(s)):

Maja Bugarski
BScN, RN, MScN student
Principal investigator
School of Nursing
University of Ottawa

Dr. Michelle Lalonde
RN, BScN, MN, PhD
Supervisor
Assistant Professor
School of Nursing
University of Ottawa

Invitation to Participate: You are invited to participate in the abovementioned research study conducted by Maja Bugarski who is being supervised by Dr. Michelle Lalonde.

Participants: We are looking for nurses who are registered with the College of Nurses of Ontario (CNO) and have preceptored at least one consolidating undergraduate nursing student at any point in their career.

Participation: If you wish to participate in this study, please complete the attached survey. Your decision to complete and return this survey will be interpreted as an indication of your consent to participate. The survey should take you approximately 10 to 15 to complete. You do not have to answer any questions that you do not want to answer. Once you have completed the survey, please select the submit button at the end of the survey. We would appreciate receiving it before April 13, 2017.

Purpose of the Study: From this research we wish to gain nursing knowledge on the factors that influence the self-efficacy of nursing preceptors. Findings of this study could help better inform preceptor selection processes and preceptor training programs, as well benefit nursing undergraduate education.

Benefits: You will not receive any direct benefit from your participation in this study. Your participation may allow the researchers to make recommendations on improving preceptor training and preceptor selection which can contribute to improving nursing education. This may directly benefit future consolidating nursing students and preceptors, and indirectly benefit nursing as a discipline and patients.

Risks: You might find the survey emotionally upsetting or uncomfortable. You might not like all of the questions that you are asked. You do not have to answer any questions that make you uncomfortable.

Confidentiality and Anonymity: The information that you will share will remain strictly confidential and will be used solely for the purposes of this research. The only people who will have access to the research data are Maja Bugarski and Dr. Michelle Lalonde. Your answers to open-ended questions may be used verbatim in presentations and publications but neither you (nor your organization) will be identified, only code numbers will be used. In order to minimize the risk of security breaches and to help ensure your confidentiality we recommend that you use standard safety measures such as signing out of your account, closing your browser and locking your screen or device when completed the study.”

Anonymity is guaranteed since you are not being asked to provide your name or any personal information.

Conservation of data: The surveys will be maintained online on the LimeSurvey website because it is encrypted and it meets the Canadian ethical regulations. Once the study is over, the data will be saved onto a external hard-drive that is encrypted and will be stored in the thesis supervisor’s office in a locked drawer. Data will be kept for a period of 5 years at which time they will be deleted.

Voluntary Participation: You are under no obligation to participate and if you choose to participate, you may refuse to answer questions that you do not want to answer. Completion and return of the questionnaire by you implies consent.

Information about the Study Results: Participants will not have access to the study results unless the study is publish in a public journal.

If you have any questions or require more information about the study itself, you may contact the researcher or his/her supervisor at the numbers mentioned herein.

If you have any questions with regards to the ethical conduct of this study, you may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5, tel.: (613) 562-5387 or ethics@uottawa.ca.

Thank you for your time and consideration.

Appendix C: Preceptor Survey

Before starting the survey

1. I have read the information sheet and have no further questions. I wish to continue to the survey. *

Please choose **only one** of the following:

Yes

Demographic questions

2. What is your gender?

Choose one of the following answers

Female

Male

Other

3. What is your age (in years)?

Only numbers may be entered in this field.

Please write your answer here:

Education and training questions

4. What is your highest level of completed nursing education?

Choose one of the following answers

Please choose **only one** of the following:

Diploma

Bachelors degree

Masters degree

PhD degree

RPN to BScN

Other (please list below)

5. What is your highest level of non-nursing education?

Please write your answer here:

6. Have you had any preceptor training?

Choose one of the following answers

Please choose **only one** of the following:

Yes (If yes, please answer questions 6, 7 and 8)

No (If no, please proceed to question 9)

7. In total, how many hours of preceptor training have you received throughout your career as a nurse? Please estimate.

Only numbers may be entered in this field.

Please write your answer here:

8. The following chart contains information about other preceptor training programs. Please indicate the organization or company the course was run by, the year or years you completed the course, the format of the course, length of the course and the number of you completed the course. Please complete this chart to the best of your ability.

	Organization	Date (or year) completed	Format (online, in-class, or combination)	Length (in hours)	Number of times completed
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Preceptorship Questions

9. How did you become a preceptor?
 Choose one of the following answers
 Please choose **only one** of the following:
 I volunteered for the role
 I was assigned the role
 Other (please describe below)

10. How many consolidating BScN nursing students have you preceptored in your career?
 Only numbers may be entered in this field.
 Please write your answer here:

11. Have any of your students been unsuccessful in completing their consolidation with you? (If yes, please state how many)
 Choose one of the following answers
 Please choose **only one** of the following:
 Yes (if yes, please state how many)
 No

12. How many years has it been since you last preceptored a student?
 Only numbers may be entered in this field.
 Please write your answer here:

13. How many new graduate nurses have you preceptored in your career?

Only numbers may be entered in this field.

Please write your answer here:

14. Have you helped orient new staff to your unit in the past?

Choose one of the following answers

Please choose **only one** of the following:

Yes

No

Unsure

15. Do you have any nursing teaching experience or other teaching experience? (If yes, please describe)

Choose one of the following answers

Please choose **only one** of the following:

Yes

No

16. Are you currently in a preceptor role?

Choose one of the following answers

Please choose **only one** of the following:

Yes

No

Employment Questions

17. In total, how long have you been working as a nurse? (in years)

RN

RPN

18. What is your current employment status?

Choose one of the following answers

Please choose **only one** of the following:

Full-time

Part-time

Casual

Other (please describe below)

19. What is your current job title?

Choose one of the following answers

Please choose **only one** of the following:

Staff nurse

Clinical nurse specialist

Nurse practitioner

Educator

Manager

Other (Please describe below)

20. What department do you currently work in?

Choose one of the following answers

Please choose **only one** of the following:

Medicine

Surgery

Recovery room

Operating room

Emergency department

Intensive care unit

Float team/resource pool

Mental health

Transitioning care unit

Labour and delivery

Mother/baby unit

Neonatal intensive care

Pediatric

Oncology

Interventional radiology

Outpatient

Other (please describe below)

21. How long have you been working in this department? (in years)

Only numbers may be entered in this field.

Please write your answer here:

22. Have you observed your colleagues in the preceptor role?

Choose one of the following answers

Please choose **only one** of the following:

Yes

N

23. Has observing your colleagues as preceptors influenced your practice as a preceptor?

Choose one of the following answers

Please choose **only one** of the following:

Yes

No

Personality

Please answer the following questions by selecting one number on the scale from one (strongly disagree) to five (strongly agree) as they apply to you.

24 []. Please answer the following questions by selecting one number on the scale from one (strongly disagree) to five (strongly agree) as they apply to you.

Please choose the appropriate response for each item:

1. Strongly disagree	2.	3.	4.	5. Strongly agree
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I am the life of the party.

I talk to a lot of different people at parties.

I don't talk a lot.

I keep in the background.

I sympathize with others' feelings.

I feel others' emotions.

I am not really interested in others.

I am not interested in other people's problems.

I get chores done right away.

I like order.

I often forget to put things back in their proper place.

I make a mess of things.

I have frequent mood swings.

I get upset easily.

I am relaxed most of the time.

I seldom feel blue.

I have a vivid imagination.

I have difficulty understanding abstract ideas.

I am not interest in abstract ideas.

I do not have a good imagination.

Self-efficacy

Please answer the following question by selecting one number on the scale of one (not confident at all) to four (completely confident) as they apply to you.

25. Please answer the following questions by selecting one number on the scale from one (not confident at all) to four (very confident) as they apply to you.

Please choose the appropriate response for each item:

	1. Not confident at all	2.	3.	4. Completely confident
State goals and objectives clearly for the student.				
Plan discussions.				
Select and use a variety of teaching strategies.				
Draw students into discussions.				
Communicate at a level that matches student's ability to comprehend.				
Ask open, stimulating questions.				
Recognize and respect individual differences.				
Communicate consistently both verbally and non-verbally.				
Show respect for students' ideas and abilities.				
Respond appropriately to students' questions.				
Respond to student emotional reactions in the clinical setting.				
Integrate readings into clinical practice.				
Evaluate student self-evaluations.				
Provide constructive feedback on patient				

	1. Not confident at all	2.	3.	4. Completely confident
care.				
Develop teaching strategies that promote clinical thinking.				
Ask questions in a clinical setting that stimulate problem-solving.				
Demonstrate confidence in the student.				
Set clinical expectations that are appropriate for the level of the learner, given the learner's academic and clinical background.				
Modify clinical teaching strategies based on the learner's level of performance.				
Assist student in new patient care.				
Stimulate the student to want to learn professional behaviour and competence.				
Adjust clinical assignments to individuals level of performance and confidence.				
Use evaluation criteria to determine students' clinical performance.				
Record and use subjective observation as part of clinical evaluation.				
Identify a struggling student.				

	1. Not confident at all	2.	3.	4. Completely confident
Direct or advise students who are struggling.				
Conclude a student's clinical performance as failing.				
Confront a student with a failing grade.				
Utilize self evaluation in teaching.				
Arrange for constructive feedback and suggestions.				
Use evaluation from students to improve performance as a preceptor.				

By completing and submitting this survey you are proving implied consent to participate in this study.

Submit your survey.
Thank you for completing this survey.

Appendix D: RNAO Advertisement

Nurse preceptor survey. Are you a CNO registered nurse who has preceptored at least one undergraduate consolidating nursing student? Looking for your participation in a master's study. Complete a short online survey improve knowledge on the factors that influence the self-efficacy of nurse preceptors. If you wish to participate, please use the following link: preceptorsurvey.limequery.com/691878?lang=en. If you have further questions, please contact Maja Bugarski, RN, master's student, University of Ottawa.

Appendix E: Glossary of Terms

Term	Definition
Self-efficacy	Self-efficacy is defined as “an individual’s perception of confidence in [their] ability to successfully complete a task” (Goldenberg, Iwasiw & MacMaster, 1997, p. 303). According to Bandura’s (1982) theory of self-efficacy, there are four sources of self-efficacy: (1) performance accomplishments, (2) vicarious experience, (3) verbal persuasion and (4) emotional arousal.
The Big Five Personality traits	<p data-bbox="511 657 1414 814">Agreeableness: means have a willingness to nurture and support others (Zellars, Perrewe & Hochwarter, 2000), as well as have a strong interest in the well-being of others (Johnson, 2016).</p> <p data-bbox="511 814 1414 926">Extraversion: someone who is sociable and outgoing, someone who enjoys being around others (Johnson, 2016).</p> <p data-bbox="511 926 1414 1083">Conscientiousness: describes someone who is hard working, able to set clear goals and is determined to reach those goals (Johnson, 2016; Zellars, Perrewe & Hochwarter, 2000).</p> <p data-bbox="511 1083 1414 1241">Imagination/openness: A person with high levels of imagination is described as someone enjoys variety, is curious and creative (Johnson, 2016).</p> <p data-bbox="511 1241 1414 1352">Neuroticism: described as emotional instability, nervousness and being prone to anxiety (John & Srivastava, 1999).</p>
Student	During the preceptorship the student is typically a final year, or consolidating, student (CNA, 2004).
New graduate nurse	Newly graduated nurses practicing at their first nursing job, participating in the New Graduate Nurse initiative of Ontario (Lalonde & McGillis Hall, 2016).
Preceptor	A preceptor is a practicing staff nurse, who works at the bedside (Billay & Myrick, 2008; Billay & Yonge, 2004).
Preceptorship	Preceptorship is a one-on-one teaching-learning method where a nursing student works with and learns from a staff nurse in their

	place of employment (Billay & Yonge, 2004; Luhanga, Yonge & Myrick, 2008; Udliis 2008; Zilembo & Monterosso, 2008).
Preceptor training	A formal, structured course provided by an organization. It may be provided in any number of modalities, including online, in-class or simulation.
