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Progression of Clinical Self-Efficacy Among Baccalaureate Nursing Students

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This is to certify that the doctoral dissertation by

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Walden University
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Abstract

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by

Christine Hamilton

MSN, University of Phoenix, 2009

BSN, University of Tennessee at Martin, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Clinical self-efficacy, or the confidence that nursing students have in their ability to successfully perform nursing clinical skills, is imperative for the safe and effective practice of nursing. A gap in knowledge exists about the change in clinical self-efficacy as baccalaureate nursing (BSN) students move through a nursing program, in which they learn and practice clinical skills in laboratory and clinical settings. Guided by Bandura's social cognitive theory, the purpose of this quantitative study was to determine the relationship between clinical experience within a nursing program and the reported clinical self-efficacy of BSN students in the sophomore, junior, and senior years. One hundred ten BSN students (29 sophomores, 39 juniors, and 42 seniors) were recruited from 2 universities in the Central United States to answer the Clinical Skills Self-Efficacy Scale survey, which assessed 9 clinical nursing skills. Data were analyzed using a one-way MANOVA, which revealed statistical significance. Post hoc analysis using the Tukey HSD indicated statistically significant differences between sophomore- and junior-level students on intramuscular and insulin injections, intravenous therapy start, intravenous piggyback administration, and percutaneous endoscopic gastrostomy tube feeding. Noting this relationship, nurse educators can evaluate clinical curriculum to ensure that instructional methods and opportunities to practice clinical skills are sufficient to foster the development of clinical self-efficacy. Preparing nurses with higher self-efficacy promotes positive social change because a more confident nurse with higher self-efficacy provides a higher quality of care. Future research should focus on conducting a longitudinal study to note the progression of self-efficacy in students as they progress through the nursing curriculum.

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Dedication

This dissertation is dedicated first and foremost to God and my Lord and Savior, Jesus Christ, without whom I would never have had this wonderful, challenging, and enlightening experience. My faith has grown even stronger during this journey, as I have asked God every night for the patience, knowledge, and fortitude to stay the course and finish this milestone in my life.

To Spencer, my husband and soul mate, you are my rock and the reason I have survived this road relatively unscathed. You have supported me in every choice that I have made, telling me all the while that I can do it. I love you a bushel and a peck and a hug around the neck, and I will always be in your corner as you have been in mine.

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Chapter 1: Introduction to the Study

The topic of this study was the potential change in reported clinical self-efficacy between sophomore-, junior-, and senior-level baccalaureate nursing students. Clinical self-efficacy expands upon the concept of *self-efficacy*, coined by Albert Bandura (1977) in his social cognitive theory (SCT). Bandura defined self-efficacy as one's perception of success or failure in a task and noted that such perceptions can be influenced by several factors, including environment, experiences, and outcome expectations. This study, by exploring the relationship between the clinical experience and clinical self-efficacy of baccalaureate nursing students, provided insight into the effectiveness of clinical curriculum. An effective clinical curriculum adequately prepares nursing students to transition smoothly into practice, making a positive impact on the healthcare field and in the lives of the public.

Throughout Chapter 1, aspects of the study are outlined and explained. The background, problem statement, purpose, and research questions and hypotheses are provided, with connections to the theoretical framework identified. The nature of the study is explained, and definitions, assumptions, delimitations, and limitations are highlighted. Finally, the significance and meaningfulness of the study are provided, linking all of the sections together to clarify the need for this exploration into the clinical self-efficacy of nursing students.

Background of the Study

Bandura's concept of self-efficacy has been widely studied, with researchers exploring self-efficacy in various settings. Hassankhani, Aghdam, Rahmani, and

Mohammadpoorfard (2015) applied self-efficacy to nursing students as it related to learning motivation, finding that promotion of self-efficacy increased students' motivation to learn. Clinical self-efficacy specifically addresses the self-efficacy of nursing students as it applies to the demonstration of and confidence in the ability to perform clinical skills (Oetker-Black, Kreye, Davis, Underwood, & Naug, 2016). Students' confidence in their own success in a task can be impacted through incremental increase of difficulty in mandatory skills practice and demonstration as well as frequent assessment of skills throughout a nursing program (Chong, Lim, Liuy, Lau, & Wu, 2016; Öztürk, Çaliskan, Baykara, Karadag, & Karabulut, 2015).

Clinical self-efficacy of nursing students has been explored in the evaluation of the Clinical Skills Self-Efficacy Scale (CSES; Oetker-Black et al., 2016), as well as the use of the CSES to assess clinical self-efficacy among junior- and senior-level baccalaureate nursing students (Van Horn & Christman, 2017). In evaluating the reliability of the CSES, Oetker-Black et al. (2016) found that among their study participants, scores differed between sophomore, junior, senior, and accelerated nursing students, with sophomore students reporting lower clinical self-efficacy. Oetker-Black et al. did not seek to evaluate differences in clinical self-efficacy as students grow in nursing knowledge, but rather to demonstrate reliability and validity of the CSES. Van Horn and Christman (2017) found that senior students did display higher levels of clinical self-efficacy on invasive clinical skills but that these gains were limited to the junior and senior levels in their study.

A gap existed in the literature pertaining to differences in clinical self-efficacy among baccalaureate nursing students from their sophomore to senior year in a nursing program. Progression in clinical self-efficacy from the beginning to the end of nursing clinical education had not been studied to show whether clinical experience affects nursing students' clinical self-efficacy as they learn and practice new clinical skills. My study served to identify any differences in clinical self-efficacy in nursing students at varying levels within a nursing program and alluded to the impact of clinical instruction, skills practice, and direct patient care experiences on students' confidence in their clinical skill.

As my study identified increases, decreases, and stagnation of clinical self-efficacy among baccalaureate nursing students, the results could be useful for nurse educators in evaluating clinical curriculum and practice of clinical skill within their program. My study was also of benefit to students, in that self-evaluation and inflection on their own ability pushed them to continue their efforts in the classroom and clinical settings (DeBourgh & Prion, 2017). Students may recognize their weaknesses in clinical skills and seek out learning and practice opportunities after viewing the list of basic clinical skills outlined in the CSES. As nursing education is aimed at teaching students to become competent, confident healthcare professionals, adequate quality and vigor of clinical education are essential in proper preparation of novice nurses.

Problem Statement

Nursing education is designed to outline a process by which students are taught how to perform clinical skills as well as their role and implications in patient care

(Nielsen, Noone, Voss, & Mathews, 2013). As nursing students are exposed to and practice new clinical skills, confidence in their ability to perform such skills should increase. Research has shown that nursing students who display confidence in clinical skills will experience a smoother transition from academia to practice (Cochran, 2017). Clinical preparedness has been noted as a weakness of new graduate nurses, impacting their ability to function effectively and independently in patient care situations (Bull, Shearer, Phillips, & Fallon, 2015). Nursing education should be focused on fostering development of clinical skills throughout a nursing program to produce competent, confident graduate nurses, working to combat the trend whereby 35%-61% of new nurses leave their first position within the first year of practice (Guay, Bishop, & Espin, 2016).

Bandura (2001) defined self-efficacy in his SCT as one's perception of likely success or failure in a task when presented with challenges or obstacles. Expanding upon this concept, *clinical self-efficacy* denotes perceived confidence in one's ability to make sound clinical decisions and perform clinical skills (Oetker-Black et al., 2016). To facilitate, foster, and develop clinical self-efficacy, nursing education should focus on deliberate practice of clinical skills, with skills introduced early and practiced often (Cinar et al., 2014). Practice of clinical skills throughout nursing education promotes a permanent change in behavior, allowing sophomore-level nursing students to retain and apply knowledge of clinical skills as they progress to junior and senior levels (Oermann, Muckler, & Morgan, 2016). Oetker-Black et al. (2016) highlighted the importance of proper clinical instruction in the development of clinical self-efficacy, promoting competency incrementally as students learn and master new skills.

Assessment of change in the clinical self-efficacy of nursing students between the sophomore, junior, and senior levels can allude to the efficacy of clinical instruction and guide changes in the nursing curriculum to increase exposure to and practice of essential clinical nursing skills (Duncan & Schulz, 2015). Existing research focuses on the impact of simulation and other experimental studies on clinical self-efficacy but lacks exploration of the clinical self-efficacy of nursing students from one point in nursing education to another to show possible growth, stagnation, or regression. In exploring one of the many facets of clinical self-efficacy, this study served to fill a gap in the literature by addressing the impact of varying levels of clinical experience on the reported clinical self-efficacy of sophomore-, junior-, and senior-level baccalaureate nursing students.

Purpose of the Study

The purpose of this quantitative study was to determine the relationship between clinical experience within a nursing program and the reported clinical self-efficacy of baccalaureate nursing students. The variables in the study were the reported clinical self-efficacy of nursing students and level of clinical experience within a nursing program (sophomore, junior, or senior).

Research Question and Hypotheses

What is the relationship between clinical experience and the clinical self-efficacy of sophomore-, junior-, and senior-level baccalaureate nursing students?

- H_0: There will be no difference in clinical self-efficacy between sophomore-, junior-, and senior-level baccalaureate nursing students as they gain clinical experience from progression through the nursing program.

- H_1: There will be a difference in the clinical self-efficacy between sophomore-, junior-, and senior-level baccalaureate nursing students as they gain clinical experience from progression through the nursing program.

Clinical self-efficacy was measured using the CSES, which addresses nine essential nursing skills. Along with the CSES, study participants were asked to indicate their level of clinical experience within the nursing program at the data collection site. The study explored differences in clinical self-efficacy in relation to students' level of clinical experience within a nursing program.

Theoretical Foundation

Bandura's SCT served as the theoretical framework for this study. Bandura (1977) defined self-efficacy in his SCT, noting that confidence in success as well as fear of failure stem from various factors, including vicarious experiences, outcome expectations, and environment (Bandura, 2001). Bandura (1977) coined the term *self-efficacy* and explained it as the source of behavioral change, with people changing their behavior to display agentic (i.e., purposeful) action or avoidant practices. The SCT was applied to the concept of clinical self-efficacy, expanding on self-efficacy to specifically address nursing students' confidence in their own success while attempting a nursing clinical skill.

The research questions of my study specifically were aligned with the SCT as self-efficacy was included in the focus. Bandura (1977) provided the cornerstone for the study through his concept of self-efficacy, in that I sought to evaluate the effect of clinical experience and practice of clinical skills on clinical self-efficacy by applying

Bandura's notion that increased difficulty and experience result in higher self-efficacy when one is confronted with challenges or obstacles. Vicarious experiences and progressively challenging activities were specifically noted by Bandura (1982) as essential for developing strong self-efficacy. Bandura's SCT is explained in greater detail in Chapter 2, with specific references to clinical self-efficacy and the need for further research and exploration of its application to baccalaureate nursing students.

Nature of the Study

The study was quantitative, descriptive, and cross sectional. A descriptive, cross-sectional design was chosen because it allowed for a clear and concise picture of the differences in clinical self-efficacy among groups of nursing students at different levels of experience while in the same nursing program. The relationship, if any, between clinical experience and the clinical self-efficacy of nursing students was easily identifiable through quantitative analysis.

The variables in the study were the level of clinical experience among baccalaureate nursing students, including students at the sophomore, junior, and senior levels, and the reported clinical self-efficacy of nursing students on nine essential nursing clinical skills outlined in the CSES. Data were collected from baccalaureate nursing students at a university in West Tennessee using the CSES, with additional demographic questions, one of which inquired about level of experience added to data collection procedures to identify the level of each study participant within the nursing program. The data were analyzed using SPSS and an analysis of variance (ANOVA) model. There were

nine clinical skills listed in the CSES, as well as items inquiring about the students'

experience in attempting each skill.

Definitions

Agentic behavior: Behavior that includes purposeful action or intent and is

dependent upon one's perception of success or failure in a task (Bandura, 2001).

Clinical self-efficacy: Confidence in one's own success in a nursing clinical skill,

demonstrating transfer of classroom instruction of clinical skills to successful application

of knowledge in front of a clinical instructor and/or in the clinical setting, whether

simulated or with a live patient (Oetker-Black et al., 2016).

Clinical simulation: Method of instruction wherein students are exposed to a

simulated patient care situation or scenario, controlled by the instructor, that demands

application of knowledge and skill to act decisively to best care for the patient (Forouzi,

Heidarzadeh, Kazemi, Jahani, & Afeshari, 2016). Patients in simulation are interactive

mannequins and may respond to the students through a prompt from their instructor.

Mannequins in simulation are designed to undergo invasive as well as basic care and

comfort nursing interventions, as students are required to perform nursing care as if the

mannequin were a live patient (Roh & Kim, 2014).

Deliberate practice: Purposeful and repetitive practice of a clinical skill to master

its basic tenets of application, with feedback and corrective action taken as existing skills

are practiced and new skills are learned (Chee, 2014).

Level of experience: Amount of clinical education acquired in a nursing program

thus far, beginning with sophomore, moving to junior, and ending with senior.

Self-efficacy: Confidence in one's own success in a task when faced with obstacles or challenges (Bandura, 1977).

Vicarious experiences: Experiences that include personal or witnessed successful or failed attempts at a skill, which are thought to contribute to the level of energy expended to attempt or avoid a task (Chan, 2015).

Assumptions

Studies have shown that clinical self-efficacy increases through deliberate practice of skills and the use of clinical simulation (Dunn, Osborne, & Link, 2014; Ross, Bruderle, & Meakim, 2015). Assumptions of my study were that students desire mastery of clinical skills, and that students desire to achieve a higher level of clinical self-efficacy. As students reached levels of proficiency through continued and deliberate practice of clinical skills and clinical simulation, it was assumed that they would strive for higher levels of skill mastery, moving from basic nursing care to situations of higher acuity. It was assumed that as students identified areas of weakness in their clinical skill set, they would then seek out help from nurse educators to gain clarification to reach the desired level of skill mastery and clinical self-efficacy.

Scope and Delimitations

The scope of the study encompassed nursing students in West Tennessee and their utilization of clinical education and skills practice opportunities within a nursing program. Students who report low self-efficacy and lack confidence in their own clinical ability, according to Bandura (2001), will avoid experiences and situations in which they are expected to demonstrate their clinical skills. Clinical preparedness of nurses has been

noted to be underwhelming, but this could be the case for many reasons (Bull et al., 2015). Identification of a relationship between level of clinical experience and reported clinical self-efficacy could allude to the effectiveness of clinical curriculum and clinical preparedness of new nurses. My study could guide changes in clinical instruction or amount of clinical practice opportunities to increase the clinical self-efficacy of nursing students and prepare them to perform confidently in the clinical setting.

Delimitations of the study included its focus on the clinical self-efficacy of baccalaureate nursing students on only nine of many clinical skills used in nursing practice, those determined as essential in nursing education by Oetker-Black et al. (2016), and the use of only three levels of experience (sophomore, junior, and senior). The aspect of accelerated programs was not included in the study, in that significant clinical experience in healthcare outside of clinical rotations for a nursing program might have skewed the data. Data were collected from one university to gain insight into any relationship between clinical experience and clinical self-efficacy, although numerous universities were in close geographic proximity.

Bandura's SCT was chosen for my study because clinical self-efficacy branches off self-efficacy directly. Clinical self-efficacy, or confidence in one's own success in a task, directly influences agentic behavior, defined as purposive and intentional action by Bandura (2001). Patricia Benner's model of skill acquisition in nursing was considered for this study, but was excluded due to its relation to practicing nurses rather than nursing students (Benner, 1982). Progression of clinical self-efficacy may occur from sophomore

to senior level, but the application of an adaptation of Benner's model to nursing students' clinical skills was beyond the scope of my study.

This study can be replicated among baccalaureate nursing programs across West Tennessee, using the CSES to evaluate nursing students at different levels of clinical experience, and possibly addressing methods of clinical instruction as well as skills practice opportunities. The CSES addresses a short list of nine clinical skills, decreasing the amount of time needed to complete a survey, which could lead to increased willingness to participate as opposed to longer, more detailed tools. Results from my study can be used for comparison to future studies, with generalizability increasing as more programs and students are evaluated.

Limitations

Limitations of the study may be attributed to the cross-sectional design, as it provides data from one point in time. A longitudinal study, following the same group of students from start to finish of their clinical education, may better identify changes in clinical self-efficacy as they matriculate through a nursing program. Longitudinal studies outside of national or large-scale surveys have been noted as difficult for use in quantitative research; in this case, there would be the threat of student attrition, which would decrease the sample size representing higher levels of clinical experience as compared to previous years (Babbie, 2017). A 3-year data collection process was beyond the scope of this study; thus, comparison of three groups of students within the same nursing program was conducted to identify any relationship between clinical experience and clinical self-efficacy. Although the desired data collection site's nursing program

consisted of a high number of nursing students, the threat to sample size existed due to potential lack of willingness to participate. The sample for my study needed be sufficient to represent a population of students, and a threat to sample size therefore threatened generalizability.

I held no position at the selected data collection site, nor did I have any professional connection with the faculty or students within that nursing program. It was of benefit to my study participants that I had no academic or professional influence at the data collection site, in that students could feel assured that their responses were not only confidential, but also had no bearing on their course and/or clinical grades within their current or future courses.

Significance of the Study

The nursing shortage is an ever-present threat to the health of the public, but the attrition rate (35-61%) of new nurses in their first position may be attributed to the levels of clinical preparedness and confidence that they have upon completion of their nursing education (Bull et al., 2015; Guay, Bishop, & Espin, 2016). By ascertaining the level of clinical self-efficacy that nursing students have as they learn and practice new clinical skills, it is possible to identify areas of strength or weakness in a students' ability. Findings from this study can be shared with administration and faculty of universities so that they may understand the potential relationship between clinical experience and clinical self-efficacy, and how clinical curriculum may foster or inhibit such growth. Identification of skills with which students may struggle can be helpful in adjusting clinical curriculum to best foster clinical practice and skill mastery.

Significance to Theory

Bandura (2001) introduced the concept of *self-efficacy*, noting that individuals make decisions to act in or avoid situations based upon confidence or perceived success or failure in a task. Applying self-efficacy to clinical abilities of nursing students, Oetker-Black et al. (2016) noted that limited research existed on the clinical self-efficacy of nursing students and recommended that research be conducted with the CSES involving various groups of nursing students. Progression, stagnation, or regression of clinical self-efficacy found in this study may guide future changes in clinical instructional methods and skills practice, better preparing students to be confident in the skills necessary to function effectively and independently as novice nurses. This study addressed one university's nursing students, but it can be replicated easily at numerous surrounding facilities, further applying Bandura's concept of self-efficacy in educational and clinical settings.

Significance to Practice

Associate degree in nursing (ADN) programs at community colleges in Tennessee have begun to implement a common curriculum that involves course as well as clinical content, and public universities may not be far behind. If a relationship between the clinical experience and clinical self-efficacy of nursing students is identified at the baccalaureate level, leaders of ADN programs may seek to explore the efficacy of their common curriculum as it pertains to the clinical confidence of their students. The health of the public can be affected by the confidence of nursing students as well as new

graduate nurses in the clinical setting, and clinical self-efficacy, whether high or low, can impact key decisions made in patient care.

Mastery of clinical skills and development of clinical self-efficacy begin in nursing education, where students are given opportunities to apply information from coursework in interactive and tactile ways. Delving into the reported clinical self-efficacy of baccalaureate nursing students, albeit at a single university, may shed light on areas in which students excel and struggle. For nurse educators, this study offers a method of evaluating the effectiveness of their efforts in clinical education beyond their normal course evaluations, which may be skewed if students feel as if their responses may affect aspects of the classroom and clinical environment. Because this study was not conducted by an institution's faculty but by an outside source who had no bearing on course and clinical grades, students had the opportunity to be honest when evaluating their own clinical self-efficacy.

Significance to Social Change

Self-evaluation is vital to student success, in that identification of weaknesses in clinical skills may lead to increased desire to practice or seek help from nursing faculty (DeBourgh & Prion, 2017). As noted in this chapter, students have an innate desire to succeed, and completion of the CSES may aid in identifying clinical skills needing more attention and effort. Another way in which this study may influence positive social change involves attrition rates for nursing students in local programs. When students identify their own weaknesses, and seek out help from their instructors, their chances of success in the classroom and clinical setting increase. As student success increases and

nursing programs produce greater numbers of graduates, the healthcare needs of the public have a better chance of being met.

Summary and Transition

Self-efficacy, expanded into clinical self-efficacy, was explored in this study. Bandura's SCT explains the basic tenets of self-efficacy and agentic behavior, indicating that confidence in success as well as fear of failure can guide decisions made about a course of action when approaching a task or challenge. Clinical self-efficacy was explored using the CSES by Oetker-Black et al. (2016) as well as Van Horn and Christman (2017), with each study revealing differences in clinical self-efficacy among various groups of nursing students. What remained to be explored was the relationship between the clinical experience and the clinical self-efficacy of baccalaureate nursing students, with assessment of sophomore-, junior-, and senior-level students to identify any changes in clinical self-efficacy as certain stages of nursing education are completed.

My quantitative, descriptive, cross-sectional study served to fill a gap in the literature by addressing potential changes in clinical self-efficacy with varying levels of clinical experience. Results from this study can be used to guide changes in clinical curriculum, helping nurse educators better prepare the next wave of new nurses needed to care for an ailing and aging society. A detailed description of the chosen theoretical foundation for this study is provided in Chapter 2, along with an extensive review of literature supporting the need for this study and its potential impact on the teaching and practice of nursing.

Chapter 2: Literature Review

Nursing students' confidence in their ability to succeed in using a clinical nursing skill has a profound impact on patient care and their ultimate success as practicing healthcare professionals. Confidence in success on a task despite significant challenges was described as *self-efficacy* by Bandura (1977) in his SCT. Nursing students' self-efficacy may change as they are taught and practice clinical skills in the nursing laboratory or in clinical rotations with actual patients. Nursing students' clinical self-efficacy has been noted as a precursor to a smooth transition from academia to practice and as vital to competent and professional practice at the bedside (Bull et al., 2015). Timely introduction to and frequent deliberate practice of clinical skills in nursing education should result in increased student clinical self-efficacy from beginning to end of a nursing program.

Clinical self-efficacy is a multifaceted concept that has been researched and explored at length. In this chapter, I explain the need to delve further into clinical self-efficacy to gain insight into possible changes in nursing students' confidence in their own clinical skills as they matriculate through a nursing program. I outline my literature search strategy, explain my chosen theoretical foundation and its applicability to my topic of interest, and provide a thorough review of the literature that explains the history of clinical self-efficacy and its influence on nursing education and practice.

Literature Search Strategy

My review of the literature involved an online database search. Articles were found in the databases available in the Walden University Library, including CINAHL

Plus, ProQuest, MEDLINE with Full Text, and PubMed. Terms and phrases used to search for applicable articles included *nursing students' clinical self-efficacy, clinical self-efficacy, clinical confidence, deliberate practice of clinical skills, confidence and competence of nursing students, clinical self-efficacy of baccalaureate nursing students*, *level of clinical experience and clinical self-efficacy*, and *clinical self-efficacy and clinical curriculum*.

Articles in this literature search were written no earlier than 2013, except for Bandura's seminal works on his SCT, written in 1977, 1982, and 2001. A separate search was conducted for research articles using Bandura's SCT, specifically his concept of self-efficacy, as it pertained to nursing education and clinical practice and teaching. Articles were found on various types of teaching methods and their influence on the self-efficacy of nursing students, including simulation and the use of vicarious experience to increase student understanding and decrease clinical apprehension (Chan, 2015).

Theoretical Foundation

Bandura's SCT served as the theoretical foundation for this study. Bandura (1977) posited that one's willingness to embark upon a course of action depends upon a combination of past experiences, emotional responses, and expectations of outcomes, both positive and negative. SCT can be used to suggest that fear of failure as well as confidence in success are determinants of one's readiness to attempt a task or venture into an unknown situation. Bandura (1982) posited that an individual's perceived success or failure and the experience of witnessing others' performance determine the amount of effort that an individual expends on a task. Successful attempts, both personal and

witnessed, can result in increased confidence for future tasks, whereas failure or unsuccessful witnessed attempts decrease confidence in future ability.

Bandura (1977) noted that a person's self-efficacy represents perceived confidence or an assumption of success in a task despite significant opposition or challenges. The concept of self-efficacy can be expanded into clinical self-efficacy, which specifically addresses confidence that one will successfully perform a clinical skill (Oetker-Black et al., 2016). Clinical self-efficacy among nursing students can be affected by the vicarious experiences they encounter as they practice and perform clinical skills together. According to Bandura (1982), success or failure in a task, whether personal or witnessed, influences the amount of effort expended in current and future tasks.

Bandura (2001) posited that human behavior is driven by a sense of purpose, or agency, and that decisions made to attempt or avoid a task are made deliberately. Self-efficacy influences agentic, purposeful behavior; Bandura (2001) noted that purposeful behavior is vital in seeking out learning opportunities without fear of failure. Agentic behavior demonstrates confidence that decisions made will be based on reactive thought and responsiveness to the surrounding environment and available information (Figure 1). Clinical self-efficacy can be fostered through repeated practice, building upon knowledge and skill, and resulting in a greater number of successful attempts in nursing skills. Increased incidence of successful attempts results in higher expectations of self, leading to a drive to seek out learning opportunities of greater difficulty that will promote competence in basic clinical skill and judgment (Bandura, 1977, 2001).
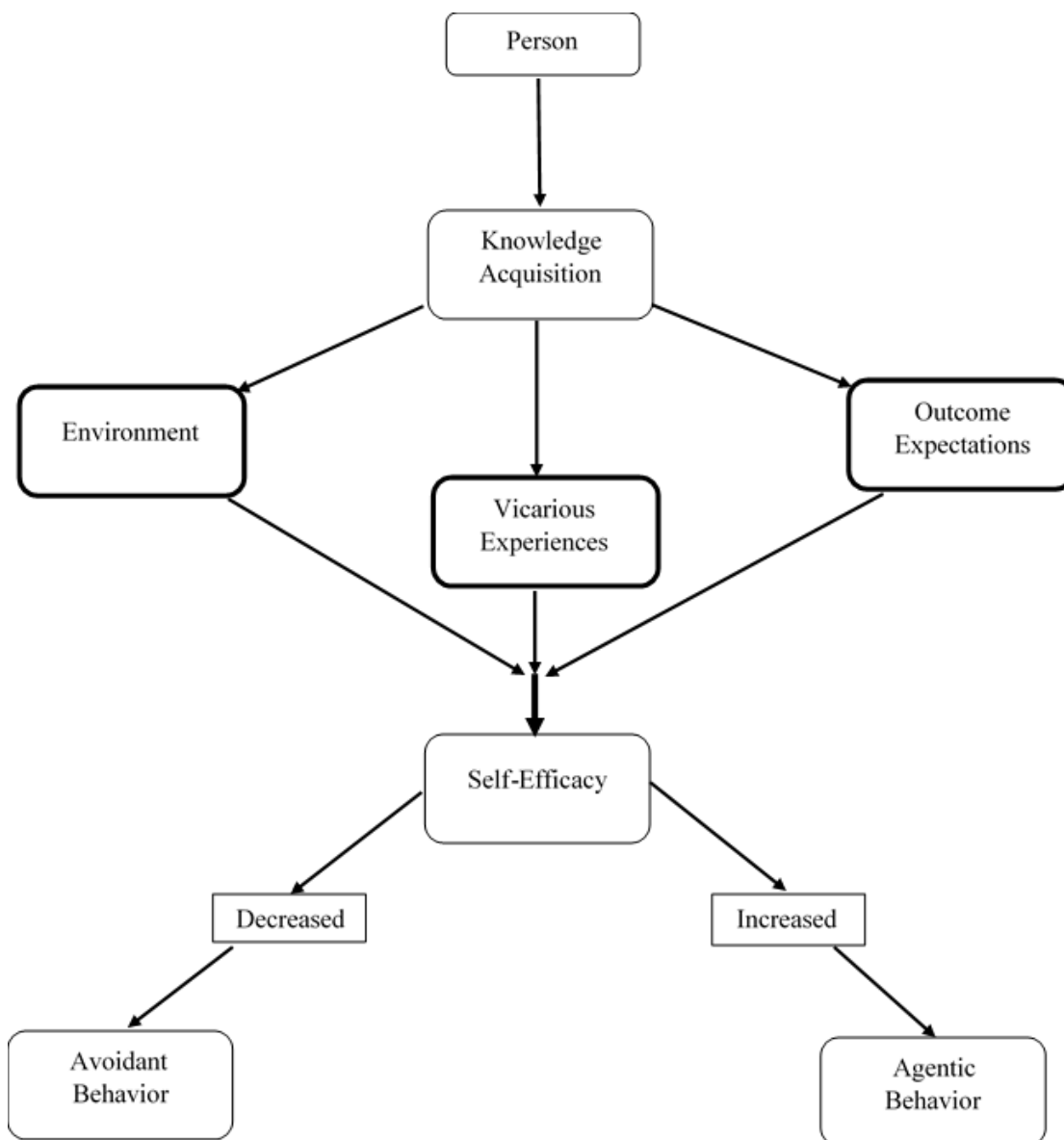
Figure 1. Social cognitive theory, self-efficacy, and resulting behavior.

Bandura's SCT has been applied in multiple studies pertaining to nursing education, with clinical confidence and self-efficacy as topics of interest. Oetker-Black et al. (2016) used Bandura's definition of self-efficacy as the basis for developing the CSES, noting that individuals' judgment of their own capability can influence their success of failure when performing a task. The Nursing Competence Self-Efficacy Scale (NCSES) was developed by Kennedy, Murphy, Misener, and Alder (2015), who based the elements of the tool upon Bandura's concept of self-efficacy and its influence on nursing confidence. Hart, Spiva, and Moreno (2014) used Bandura's SCT as the basis for their development of the Clinical Decision-Making Self-Confidence Scale (CDMSCS), applying Bandura's definition of self-efficacy to nursing students' abilities to adapt to and effectively perform in situations involving critically ill or deteriorating patients.

SCT was chosen for the theoretical framework of this study due to its correlation with clinical self-efficacy and students' confidence in their own ability. Nursing students are shown how to perform clinical skills, informed of their importance and implications in patient care, and given opportunities to practice those skills and demonstrate competence. Bandura (1982) suggested that past personal success and witnessing the success and/or failure of others influence confidence in one's own success in current and future tasks; the same could be said of nursing students and their ability to perform clinical skills compared to their perceived ability. Clinical skills should increase in difficulty as students move through a nursing program, with students mastering more challenging skills while maintaining competence in fundamental clinical skills. Bandura (1982) referenced an experiment in which perceived self-efficacy increased as study

participants mastered activities that were progressively more challenging. In that my research questions pertained to potential progression in clinical self-efficacy as students move through a nursing program, Bandura's SCT was well suited for this study.

Progression in clinical self-efficacy among baccalaureate nursing students from sophomore to senior year relates to SCT because the perceived success and agentic behavior of nursing students could change with varying amounts of experience and opportunities to practice new and existing clinical skills. Bandura's (2001) suggestion that purposive, intentional application of acquired information depends upon perceived success may be supported by the behavior and reported clinical self-efficacy of nursing students as they learn and attempt new clinical skills. The research question in this study addressed possible changes in the clinical self-efficacy of baccalaureate nursing students from sophomore to senior year, building upon Bandura's idea that confidence and self-efficacy increase with time and experience.

Bandura (2001) noted that self-efficacy relies on agentic behavior, with actions taken intentionally and with well-thought-out purpose and rationale. Nursing clinical skills must be approached with the same mentality, as purposive, confident interventions help to support positive patient care outcomes and build trust between nurse and patient. Nursing students are taught both how to perform clinical skills and about the importance of continued practice of those skills to increase confidence in patient care. Students' clinical self-efficacy should increase over time as they learn and practice new skills, resulting in a greater ability to act decisively in patient care situations. Bandura (1977) posited that self-efficacy is more than simply knowing what to do in each situation,

contending that it involves a culmination of skills and responses to the environment and available information that results in desired outcomes. This study served to support Bandura's concept of organized application of knowledge, as nursing students were asked to report their own ability to perform clinical skills based upon their level of experience.

Literature Review

Self-Efficacy

Confidence in one's ability to succeed in a task despite obstacles or challenges was described as *self-efficacy* by Bandura (1977). The amount of effort and time dedicated to a specific task depend upon the level of self-efficacy that individuals have about their own success, with less effort expended if fear of failure exists (Bandura, 2001). Effort by nursing students in their studies and care of patients in the clinical setting thus depend upon their self-efficacy as it pertains to their success in the task at hand. Bandura (1982) posited that as success is experienced, self-efficacy increases and efforts become agentic and purposive, driven by success rather than fear of failure.

Using Bandura's concept, researchers have explored the existence of self-efficacy among nursing students, as well as how nursing curriculum, method of teaching, and clinical setting impact nursing students' confidence in their own success at the bedside. Self-efficacy, in combination with motivation and experience with information and opportunity to practice clinical skills and apply clinical knowledge, prepares nursing students to seek out opportunities to exercise clinical skills with decreased apprehension regarding failure (Hassankhani, Aghdam, Rahmani, & Mohammadpoorfard, 2015). Self-

efficacy fostered throughout nursing students' educational experience can work to increase confidence as they transition from the classroom to the patient care setting.

Self-efficacy affects one's agentic behavior or desire to engage in activities or take on a task to complete (Bandura, 1982). Positive reinforcement of knowledge from nurse educators can help foster self-efficacy and motivation in nursing students as they learn and practice new skills and apply new nursing knowledge. Experience, described by Bandura as impacting individuals' outlook on their own self-efficacy and ultimate success, can be positive or negative, depending upon those involved in the learning process. An encouraging attitude, a positive evaluation approach, and demonstrated competence are among the characteristics noted by nursing students of an effective clinical nursing instructor who facilitates success and enhances the learning process (Rowbotham & Owen, 2015).

Self-assessment of clinical confidence and general self-efficacy by nursing students can allude to strengths and weaknesses in clinical curriculum, the effect of continued practice of clinical skills in laboratory and clinical settings, and the transition of theoretical nursing knowledge from the classroom to the clinical setting (Hadid, 2017). Students' perception of their likely success or failure can impact the confidence and effort they expend in the clinical setting, with students who are less confident in academic or clinical success demonstrating hesitancy during or avoidance of clinical aspects of patient care. Participation in the classroom or clinical setting can be fostered through application activities, including but not limited to role-play, clinical simulation, and kinesthetic learning practices (Abdrbo, 2017; Wagner, 2014).

Clinical Self-Efficacy

Using the basic tenets of self-efficacy, nurse researchers have expanded the concept into clinical self-efficacy, focusing specifically on nursing students' confidence in their ability to be successful with a specific nursing skill. Nursing skills can be divided into many categories, including, but not limited to, communication, invasive skills, and basic care and comfort interventions. Focusing on nine clinical nursing skills, Oetker-Black et al. (2016) assessed nursing students' clinical self-efficacy through the CSES. The CSES was used to assess a student's confidence in and experience with skills including injections, tube feedings, and administration of intravenous medication. Oetker-Black et al. found that students were more confident in basic nursing skills such as patient transfers and least confident in invasive skills such as insertion of a nasogastric tube.

Level of self-efficacy in clinical skills as nursing students reach the end of their nursing education was evaluated by Kennedy et al. (2015) as they assessed senior nursing students' confidence in clinical skills via the NCSES. Kennedy et al. found that future research is warranted in nursing curriculum to ensure that clinical self-efficacy increases as students move through a nursing program, as such an increase will aid in the readiness of senior nursing students to step into the role of healthcare professional. This study was aimed at exploring the possible changes in and/or progression of clinical self-efficacy among baccalaureate nursing students, with the assumption that senior-level nursing students would have higher reported clinical self-efficacy than their sophomore- and junior-level peers.

Clinical self-efficacy branches off the concept of self-efficacy, denoting the level of confidence that students have in their own success in a clinical skill (Bandura, 1977, Oetker-Black et al., 2016). Hart et al. (2014) explored the influence on self-confidence in nursing skills on clinical judgment via the CDMSCS, finding significantly higher levels of self-confidence among those with more nursing experience. Progression of clinical self-efficacy with practice of clinical skills was addressed by the research questions, with different levels of clinical experience being used as the study's independent or predictor variable.

Increased levels of clinical proficiency can be seen with increased exposure to and practice of clinical skills in the nursing curriculum (Ross, Bruderle, & Meakim, 2015). However, learning through vicarious experiences resulting in error was seen to have value in promoting clinical growth by Chan (2015), who sought to teach students how to be successful by examining the incorrect methods by which to perform a urinary catheterization. Discussion of negative practices resulted in higher levels of clinical confidence as students identified errors made and methods to decrease the incidence of errors when performing such an invasive skill (Chan, 2014). Students seeking out solutions concerning a clinical skill display agentic behavior, attempting to avoid future clinical mistakes by practicing sound clinical skill and acting proactively rather than reactively when providing patient care (Bandura, 1982).

Despite efforts in nursing education in the classroom and clinical setting, failure of nursing students to perform clinical skills can negatively impact success in a nursing program. Scanlan and Chernomas (2016) noted that failure of a nursing student to

perform a clinical skill is likely due to decreased self-confidence and inability to connect theory and practice. Clinical self-efficacy of nursing students is evident in their performance in the clinical setting with simulated as well as actual patients. Should a student's level of clinical self-efficacy result in erroneous behavior, patient care outcomes will not be met, placing patients at significant risk.

Deliberate Practice

Application of clinical knowledge allows students to become proficient in nursing skills and gain confidence when providing patient care. Repetitive and ample opportunity to practice clinical skills at various stages in nursing education, along with corrective and constructive instructor feedback, enhances transition of theoretical knowledge to the clinical setting (Ross, Bruderle, & Meakim, 2015). As students master skills and incorporate instructor feedback, the level of difficulty of skills can be incrementally increased (Chee, 2014), promoting growth from one stage of nursing education to the next.

Increasing the level of difficulty of skills practiced in nursing education as students learn new skills prepares them to care for patients of various acuities in clinical rotations, avoiding stagnation in clinical and critical thinking skills (Chong, Lim, Liu, Lau, & Wu, 2016). Incorporating kinesthetic learning activities as a transitional tool from classroom to clinical serves to link theory to practice (Wagner, 2014), allowing students to apply knowledge as they attempt to master clinical skills and perform them in patient care. The amount of practice that a student has with clinical skills should increase as they

move through a nursing program, building upon previously taught and mastered skills and incorporating new skills incrementally.

As the clinical knowledge base of nursing students grows, the application of such knowledge in a low-stakes learning environment could foster clinical self-efficacy. Tanriverdi et al. (2017) explored the gap between theory and nursing practice, finding that practice of clinical skills prior to nursing students' exposure to the hospital setting reinforced knowledge from the classroom, thus increasing effectiveness of nursing students in providing direct patient care. Along with ample practice of clinical skills prior to clinical rotations, Tanriverdi et al. outlined the importance of communication as a skill, as it ensures that information is shared among educators, students, and partners within the healthcare facilities that host clinical rotations.

Communication, though not a tactile skill, is supportive of clinical self-efficacy, as students grow in their willingness to ask questions and clarify information involved in patient care. Song, Yun, Kim, Ahn, and Jun (2015) explored the effect of confidence in communication on nursing students' self-efficacy, incorporating a self-directed learning model. Song et al. found that self-directed learning acted as a mediator between communication and self-efficacy of nursing students, with those who attained a higher level of communication competence having a higher level of perceived self-efficacy. As nursing students must be able to communicate effectively with patients, physicians, and other members of the healthcare team, they must practice communication skills along with tactile and invasive skills to function proficiently as a nurse. Communication skills

should evolve with tactile nursing skills as students master new content and practice in various clinical settings.

Ahlin, Klang-Söderkvist, Johansson, Björkholm, and Löfmark (2017) explored the effect of self-training and multiple sessions of skills practice on the ability of nursing students to adequately initiate a peripheral intravenous line. Ahlin et al. found that a greater number of practice sessions as well as ample opportunity for self-training with a mannequin resulted in increased competence of nursing students in performing such an invasive skill. Repeated, deliberate practice of clinical skills offers students opportunity to apply their knowledge and create an environment supportive of learning through success as well as failure without placing an actual patient at risk. Vicarious experiences occur through the process of deliberate practice, as students master skills in a low-stakes environment, gaining confidence and clinical self-efficacy with each successful attempt. Each level of clinical experience within a nursing program requires mastery of previously learned skills as well as growing knowledge of and willingness to practice newly acquired clinicals skills.

Clinical Simulation

Instructional methods vary when teaching nursing students to perform clinical skills. Evaluation of students' competence and confidence in those skills can be completed in a multitude of settings. Clinical simulation has been widely used to allow students to demonstrate mastery of clinical skills as well as the ability to use clinical judgment in forming a patient plan of care, without placing an actual patient at risk (Franklin & Lee, 2014; Lucas, 2014).

Clinical simulation has been used to supplement lecture-based learning, promoting linkage between theory and practice and allowing students to apply what they have learned on a simulated patient (Forouzi, Heidarzadeh, Kazemi, Jahani, & Afeshari, 2016). Low stakes learning that encourages students to test clinical skills without the fear of harming a simulated patient proves useful in decreasing apprehension and erroneous behavior when caring for live patients in the hospital setting (Brannan, White, & Long, 2016).

Clinical self-efficacy is fostered through clinical simulation in nursing education as students are encouraged to use the "see one do one" concept, demonstrating clinical skills after instruction (Dunn, Osborne, & Link, 2014). Learning styles, whether auditory, kinesthetic, or visual, are captured through the involved and interactive nature of clinical simulation. As students practice skills repeatedly in a low stakes environment, confidence is gained, creating a smoother transition to the care of actual patients. The inclusion of clinical simulation as students learn new skills could prove effective in increasing clinical self-efficacy, building upon previous knowledge and skill and promoting growth in the ability to effectively care for patients with various health problems.

Incremental instruction and evaluation of students' clinical skill using simulation allows for constant improvement and application of new and existing clinical knowledge. Oermann, Kardong-Edgren, and Rizzolo (2016) explored the use of summative evaluation of student knowledge through simulation, requiring students to demonstrate competence and confidence in clinical skill as well as clinical judgment in caring for deteriorating simulated patients. Oermann, Kardong-Edgren, and Rizzolo developed

guidelines for summative simulation, suggesting that summative simulations be tailored to each course, increasing in length of time and level of difficulty as students master new skills. As each term progresses and new clinical skills are taught, summative simulation could be developed with scenarios that require demonstration of basic patient care skills as well as invasive skills that are new to the students. Opportunity to master new skills while applying previously learned skills could help students pull together clinical knowledge from several terms, enabling them to care for patients in various challenging situations. The ability to perform in summative simulations can be used to show growth in clinical confidence and clinical self-efficacy.

Examining students' lack of sufficient opportunity to practice clinical skills in the hospital setting, Richardson and Claman (2014) sought to identify the applicability of clinical simulation in supplementing hospital rotations to meet student learning outcomes and better prepare students to confidently practice as registered nurses. In reviewing multiple research studies, Richardson and Claman found that high fidelity simulation (HFS) resulted in increased levels of self-efficacy and proficiency among nursing students in various clinical skills and in caring for simulated patients of varying acuity. The use of HFS in nursing education as a supplement to patient care in the hospital setting can provide students with learning scenarios and opportunities that may not be encountered in clinical, as some facilities do not allow students to participate in select critical care and emergent situations. Exclusion of critical and emergent care situations in hospital-based student clinical learning hinders translation of theory into practice and

stunts student confidence in their ability to care for patients in such high acuity settings (Richardson & Claman, 2014).

Student exposure to and performance in emergent care situations in clinical rotations can be limited, making training on such patient care challenging for nurse educators. Using computer-based simulation, Roh and Kim (2014) evaluated nursing students' self-efficacy and post code stress levels after participation in cardiopulmonary arrest scenarios. Although student self-efficacy and post code stress levels did not significantly differ between computer-based simulation and mannequin based simulation, Roh and Kim noted that computer based simulation can be used to address detailed aspects of care that are beyond the capabilities of other means of assessment. Roh and Kim suggested that computer based simulation be used as a supplement to traditional HFS, as it allows for more flexibility for both educators and students.

Clinical Preparedness of Nursing Graduates

The main goal of nursing education is to prepare nursing students, through assessment in the classroom and clinical setting, to transition into nursing practice and function safely and effectively as novice nurses. Bull et al. (2015) discussed the theory-practice gap that exists for graduate nurses who have just completed their baccalaureate degree, with that gap affecting nurses' ability to function as a new staff member and accountable nurse. While much focus for the graduate nurse lies on orientation programs and retention efforts, examining nursing education and the rigor and challenges faced by nursing students can elude to their level of preparedness for the transition from academia to practice.

As nursing students are introduced to new skills in the classroom and lab settings, challenges lie in the availability to practice such skills in clinical rotations and hospital settings. Cinar et al. (2014) explored the frequency and availability of clinical skills to senior level nursing students in the emergency care setting, finding that low acuity skills were much more frequently offered to nursing students than invasive, more critical nursing skills. Opportunities to practice skills in the clinical setting at varying levels allows nursing students to translate what they are taught in class into real-life situations, visualizing how their knowledge can be demonstrated in a tactile manner. Cinar et al. noted that invasive skills including providing a nasogastric feeding and caring for a tracheostomy were not seen or performed by senior level nursing students in the host facilities. This lack of exposure to clinical skills outside of the academic setting inhibits growth in knowledge and clinical self-efficacy among nursing students.

To better prepare nursing students to confidently practice in the clinical setting and as novice nurses, various teaching models have been developed to support critical thinking and clinical judgment skills. The Oregon clinical education model was developed by Nielsen, Noone, Voss, and Mathews (2013), who found that building upon existing clinical knowledge in a manner that challenged students to delve deep into a patient care situation promotes higher level thinking and prioritization skills. New disease processes and clinical skills are introduced as students move through each year of nursing school, increasing in difficulty from basic care to critical and emergent care. Students must be able to apply both basic nursing clinical skills and knowledge as well as invasive,

critical skills to effectively care for high acuity patients and show growth in clinical ability as they move through various levels of clinical experience.

Duncan and Shultz (2015) explored the use of concept-based learning as opposed to traditional, specialty-based methods used in baccalaureate nursing programs, positing that the use of concept-based learning reflects and adapts to the trends and changes in today's healthcare environment. Duncan and Shultz found that while no significant difference in critical thinking scores existed between students in the traditional versus concept-based learning groups, the self-efficacy of those in the concept-based group was slightly higher, indicating that concept-based learning in nursing can promote students' confidence in their own success and skill.

Clinical Self-Efficacy According to Level of Experience

Clinical self-efficacy of nursing students depends upon learning a clinical skill, practicing that skill, and being able to demonstrate proficiency in that skill in front of a clinical instructor in the laboratory and/or clinical setting. Durkin and Feinn (2017) explored the possible differences between the self-efficacy of traditional nursing students and those in an accelerated program, suggesting that increased self-efficacy among nursing students would likely result in increased willingness to persevere in challenging tasks and situations. Durkin and Feinn found that accelerated students reported higher self-efficacy than traditional students. With students in the accelerated program having more life and practice experience, these findings would suggest that a higher level of experience would increase self-efficacy of nursing students.

Changes in thinking and behavior are expected as students learn new information and skills. Öztürk, Çaliskan, Baykara, Karadag, and Karabulut, (2015) explored the effect of periodic training on the psychomotor skills of nursing students throughout a nursing program, noting that clinical education and skills practice are vital in the ultimate success of nursing students in academia and practice. Öztürk, et al. found that frequent practice of skills throughout nursing education resulted in increased self-efficacy from year to year, with students exhibiting less hesitation to perform skills as well as a decrease in unsuccessful attempts of clinical skills. Reinforcement of clinical knowledge and opportunity to practice and demonstrate clinical skills better prepares students to perform in the clinical setting and effectively care for patients.

Changes in clinical self-efficacy and confidence have been explored over the course of a single clinical term, with Struksnes and Engelien (2016) comparing the satisfaction of nursing students with a simulation training before entering the clinical facility and after a full term of clinical rotations. Simulation was used to introduce various clinical skills to the students, who were to use that clinical knowledge while in long term care facilities with actual patients. Struksnes and Engelien found that students reported greater satisfaction with the simulation before clinical rotations began, with students reporting that ongoing practice with actual patients served to better prepare them to proficiently perform clinical skills. Results suggest that ongoing practice is needed to reinforce clinical knowledge, and that experience over the course of the semester proved vital to students' confidence in their own ability to perform clinical skills.

Clinical self-efficacy from the beginning to end of clinical education is the goal of this study, including sophomore, junior, and senior level baccalaureate nursing students. Van Horn and Christman (2017) conducted a similar study using the Clinical Skills Self-Efficacy Scale (CSES) that included junior and senior level baccalaureate nursing students, and found that senior level nursing students reported a higher level of clinical self-efficacy on several clinical skills, with those skills being more invasive. Van Horn and Christman recommended further research on the role of self-efficacy in relation to the acquisition of clinical skills, identifying that clinical curriculum may need to be altered to ensure adequate instruction and practice.

Transition From Academia to Nursing Practice

The goal of nursing education is to produce competent, confident nurses who will go on to effectively care for patients in a multitude of settings. Although nursing students are instructed on various clinical skills and nursing care standards and practices, the transition from academia to practice can be jarring for some if proper measures are not taken to train and retain graduate, novice nurses. Theisen and Sandau (2013) evaluated the strengths and weaknesses of new graduate nurses, finding that confidence in decision making based on clinical knowledge was a weakness of some new graduate nurses, suggesting that more effort is needed to foster and develop clinical confidence among nursing students in the hope that it will follow them as they move into nursing practice. Stress management was also noted to be a weakness of new graduate nurses, with Theisen and Sandau suggesting that specific patient care situations, specifically critical,

emergent, and end-of-life, be focused upon to better prepare graduates to act effectively and decisively while providing patient care.

As stressful and high acuity patient care situations have been noted as challenging for new nurses, Lucas (2014) sought to examine the potential impact of simulation on continued competence in clinical and critical thinking skills. Lucas suggested that nurses of all experience levels could benefit from simulation scenarios depicting various acuities and patient care settings. Changes in healthcare and the stereotypical patient were noted by Lucas to be important to include in any nursing education program, but especially for nurses who are developing clinical skills.

Additional tools to aid nursing students in the transition from academia to practice include the use of scripts, which guide nurses in assessments and interventions to ensure that all necessary items have been addressed in the care of patients. Hines and Wood (2016) examined the use of clinical judgment scripts in teaching senior-level nursing students, finding that organized debriefing better allowed the students to reflect on vital patient information and make sound clinical decisions. Such scripts make habits in nursing care, which can be used in clinical skills performance, acclimating the students and/or graduate nurses to procedural clinical tasks involved in patient care.

Acquisition of skills needed to perform clinical skills and make critical decisions occurs during a students' time in a nursing program, but the confidence to use those skills may decrease upon transition from academia to practice. Guay, Bishop, and Espin (2016) noted that consistent clinical practice of skills further develops knowledge acquired from pre-licensure nursing education, suggesting that shock of such a transition negatively

impacts performance and retention of new nurses. Consistent practice of clinical skills and application of clinical knowledge while in nursing programs, involving complex and challenging scenarios, may serve to increase clinical self-efficacy as students graduate and move into independent nursing roles.

Summary and Conclusions

Self-efficacy, as defined by Bandura (1977) in the SCT, refers to the perception of success or failure that one has pertaining to a challenge or task. Self-efficacy has been expanded upon to address the clinical skills in nursing by Oetker-Black et al. (2016) in their development of the Clinical Skills Self-Efficacy Scale (CSES). Self-efficacy, or confidence in one's own success or failure, depends upon several variables, including environment, vicarious experiences, and outcome expectations (Bandura, 1982; Chan ,2015; Cinar et al., 2014). To better prepare students for the challenges of nursing practice, continuous and deliberate practice of clinical skills and application of knowledge are incorporated into nursing programs, using simulation as well as direct patient care experiences (Chee, 2015; Forouzi et al., 2016; Wagner, 2016). Application of clinical knowledge in multiple patient care situations is aimed at incrementally increasing students' clinical self-efficacy, easing the transition from academia to practice and reducing the incidence of new graduate nurse attrition (Guay, Bishop, & Espin, 2016).

Clinical self-efficacy has branched off the widely discussed self-efficacy, coined by Albert Bandura in his Social Cognitive Theory. Clinical self-efficacy, or the confidence that one has in their success or failure in a task, was specifically applied to nursing students by Oetker-Black et al. (2016) in their development and evaluation of the

CSES. Oetker-Black et al. noted that assessment of students' perceived self-efficacy in clinical skills can be used to highlight the effectiveness of clinical instruction as compared to student demonstration in laboratory and patient care situations.

Despite exploration into the clinical self-efficacy of nursing students, little is known about changes in clinical self-efficacy as students matriculate through a nursing program. Progression or regression of perceived clinical self-efficacy among nursing students may occur from sophomore to senior year, as students learn, witness, and demonstrate clinical skills in the laboratory and clinical settings. This study served to fill the gap in knowledge about changes in clinical self-efficacy of nursing students at different stages in nursing education, following the recommendation of Oetker-Black et al. (2016) in their evaluation of the CSES.

Level of nursing education as well as frequent opportunities to practice clinical skills may affect how nursing students perceive their own ability to successfully perform clinical skills. Van Horn and Christman (2017) used the CSES to evaluate the difference in clinical self-efficacy between junior and senior level baccalaureate nursing students, but did not address progression from the beginning of clinical education to the end. This study addressed three levels of nursing students and their perceived clinical self-efficacy on nine clinical skills, all outlined in the CSES. A quantitative study using the CSES served to demonstrate differences, if any, in the clinical self-efficacy among the three levels of nursing students included in the sample. If changes in clinical self-efficacy were identified in this study, the information may then be used to guide any necessary adjustments in clinical curriculum to maximize student exposure to clinical skills and

their readiness to perform in both the academic clinical setting as well as novice graduate

nurses. Chapter 3 explains the methodology of my study.

Chapter 3: Research Method

Clinical self-efficacy impacts the willingness of nursing students to attempt skills with patients and may change as clinical experience is gained in nursing education. The notion of clinical self-efficacy stems from Bandura's (1977) concept of self-efficacy and denotes action dependent upon perception of success or failure. The purpose of this quantitative study was to determine the relationship between clinical experience within a nursing program and the reported clinical self-efficacy of baccalaureate nursing students. In that students reported their level of confidence in performing clinical skills, this study can be used by nurse educators to evaluate the effectiveness of clinical curriculum. Self-evaluation of students' own clinical self-efficacy may prompt students to seek out help in areas of identified weakness, increasing chances of success in a nursing program.

Chapter 3 explains elements pertaining to the research design for my study. Aspects of the methodology, including the target population, sampling and sampling procedures, recruitment and participation, data collection, and instrumentation, are described. My plan for data analysis is explained, with descriptions of software and statistical testing applicable to my research questions and hypotheses. Threats to validity, both external and internal, are outlined and explained as well. Ethical concerns are identified, along with methods used to protect study participants and to secure data.

Research Design and Rationale

This quantitative study was descriptive and cross-sectional and served to identify a relationship between the level of clinical experience and reported clinical self-efficacy of baccalaureate nursing students. The variables in this study were the level of clinical

experience within a nursing program (sophomore, junior, or senior) and the reported

clinical self-efficacy of nursing students in relation to nine clinical nursing skills, as

measured by the CSES.

The research questions for this study inquired about the relationship between level

of clinical experience and clinical self-efficacy. This study was designed to identify

progression, regression, or stagnation in clinical self-efficacy in nursing students with

varying levels of clinical experience. By assessing three different levels of clinical

experience, it was possible to identify changes that occurred as new skills were

introduced and existing skills were mastered.

Time constraints that applied to this study pertained to the academic year of

universities' nursing programs, with a spring/fall rotation in which students were

available for participation. A cross-sectional design was chosen in lieu of a longitudinal

study, given that a 3-year data collection process was beyond the scope of this study and

could have proven difficult for data collection (Babbie, 2017). Comparison of various

levels of nursing students and their respective clinical self-efficacy can allude to the

effectiveness of clinical instruction, as it is assumed that students' clinical self-efficacy

will increase as they gain experience and knowledge in classroom and clinical settings.

Methodology

Population

The target population for this study consisted of sophomore-, junior-, and senior-

level nursing students in a baccalaureate (BSN) nursing program in West Tennessee.

Accelerated BSN programs were not considered for this study because existing clinical

experience as a registered nurse would have skewed the data and prevented clear identification of any relationship between the study's variables. The population size for the study was approximately 130 students because that was the number of students enrolled in the BSN program at the data collection site.

Sampling and Sampling Procedures

As the target population for this study possessed specific characteristics, purposive sampling was used to help ensure that an adequate sample size was met (Burkholder, Cox, & Crawford, 2016). To be included in the study, participants needed to have been enrolled in the nursing program at the university in the traditional BSN program and must have been at least sophomore-level students, in that the sophomore year was the point at which students were commonly introduced to clinical content. Participants were excluded from the study if they were enrolled in an accelerated BSN program, and/or if they held a license as a licensed practical nurse (LPN), emergency medical technician (EMT), or paramedic. Exclusion of licensed healthcare practitioners was based upon potential skew of the data, in that previously mastered content and skills would not have alluded to the effectiveness of current instructional efforts.

A power analysis was based upon the power level of 0.8, representing an 80% chance that the null hypothesis would be rejected if it were false, or making a Type II error (Warner, 2013). To calculate an adequate sample size, an effect size of 0.3, power of 0.8, and three groups were used. G*power was used to calculate a sample size based upon the chosen power, effect, and number of groups needed to conduct a one-way analysis of variance (ANOVA) test, which can be used to identify if a relationship exists

between predictor and outcome variables. The resulting sample size was determined to be 111 study participants, or 37 in each group. A level of significance, or alpha (α) of 0.05, was chosen for this study, allowing for a 5% chance of rejecting the null hypothesis if it was true (Frankfort-Nachmias & Leon-Guerrero, 2015). The effect size, or strength of relationship between two variables, was chosen at 0.3 to represent a medium effect (Warner, 2013).

Procedures for Recruitment, Participation, and Data Collection (Primary Data)

Recruitment for the study was conducted through communication with the university data collection site, as well as through a handout and presentation to prospective study participants to clarify the purpose of the study's use of collected data. I scheduled a meeting with the department chair of the data collection site and arranged a time to meet with the students in the BSN program. During the scheduled meeting(s), I presented information to students about the study, explaining the purpose and significance of the research, and stressing that participation in the study was strictly voluntary.

Demographic information collected included age, race, gender, marital status, clinical course in which participants were currently enrolled, level of clinical experience, and current licensure as an LPN, EMT, or paramedic (Appendix B). I also inquired as to whether the students were first-generation students, and whether nursing was their first chosen degree major.

Informed consent was obtained through completion of a consent form. The form provided an explanation of the study's purpose, the use of data in research, the

confidentiality of participant information, the storage of information after study

completion, and the voluntary nature of the study. Forms were provided to all BSN

nursing students at the data collection site. Data were collected through the CSES and

demographic questionnaire, using a traditional paper-and-pencil survey. Data were then

entered into SPSS for analysis. After completing the survey, students were not required to

attend any follow-up sessions, in that this study was not interventional and did not require

any debriefing.

Instrumentation and Operationalization of Constructs

Data were collected in the study using the CSES (Appendix A). The CSES was

first developed in 2008 by Oetker-Black, Kreye, Underwood, Price, and DeMetro. The

CSES, originally consisting of 14 nursing clinical skills, was evaluated in 2014 for

validity and reliability, and was revised in 2016 to include an abbreviated list of nine

clinical skills (Oetker-Black, Kreye, Underwood, Price, & DeMetro, 2014; Oetker-Black

et al., 2016). The CSES was an appropriate tool for use in this study because it inquired

about nine essential clinical nursing skills:

- Intramuscular injections

- Insulin injections

- Dressing changes while maintaining sterile technique

- Insertion of Foley catheters while maintaining sterile technique

- Nasogastric tube insertion with correct placement

- Intravenous line insertion

- Transfer of an immobile patient from bed to chair

- Administration of an intravenous piggyback medication via an infusion pump

- Administration of a tube feeding to a patient with a percutaneous endoscopic gastrostomy (PEG) tube

These nine clinical skills were "deemed essential" in nursing education and are commonly used in caring for patients in long-term care, emergent care, medical-surgical, and critical care settings (Oetker-Black et al., 2016, p. 169). Mastery of these essential nursing clinical skills prepares students to excel in the clinical setting and perform confidently and independently as novice nurses upon completion of their nursing education. Identification of areas of strength and weakness in clinical skills allowed students to see when and where they needed to seek help from nurse educators, increasing students' chance of success in nursing programs.

Permission to use the CSES was obtained from Dr. Sharon Oetker-Black, given that the tool would not be altered during data collection. Reliability and validity testing were completed in 2016 for the revised version of the CSES, with researchers assessing baccalaureate nursing students at a university in the Midwestern United States (Oetker-Black et al., 2016). Face validity was established at that time, with no confusing questions found by participants. Content validity was established by four nursing education experts using a content validity index rating that rated the relevance of each item on the CSES to clinical skills in nursing education (Oetker-Black et al., 2016). Construct validity was established by comparing three groups of participants and their reported clinical self-efficacy on three clinical skills on the CSES, with significant differences found between the groups of students who had performed certain skills and

those who had not. To test reliability, Oetker-Black et al. (2016) used a predetermined Cronbach's alpha of > 0.7. Data from their study yielded a Cronbach's alpha of 0.96, indicating that the CSES was reliable.

The CSES was also used by Van Horn and Christman (2017) for the comparison of clinical self-efficacy among junior- and senior-level baccalaureate nursing students. Van Horn and Christman found that senior-level nursing students reported higher clinical self-efficacy than their junior-level counterparts, indicating a growth or increase in clinical self-efficacy as clinical experience is gained and new skills are learned and practiced. My study moved beyond the scope of Van Horn and Christman's study, assessing three levels of nursing students to determine if a relationship existed between level of clinical experience and clinical self-efficacy.

<div align="center">**Data Analysis Plan**</div>

Select methods of quantitative analysis were applicable to the research questions in this study. Data analysis was completed using IBM Statistical Package for Social Sciences (SPSS) Statistics software.

Research Question: What is the relationship between clinical experience and the
clinical self-efficacy of sophomore-, junior-, and senior-level baccalaureate
nursing students?

H_0: There will be no difference in clinical self-efficacy between sophomore-,
junior-, and senior-level baccalaureate nursing students as they gain
clinical experience from progression through the nursing program.

H_1: There will be a difference in clinical self-efficacy between sophomore-,

junior-, and senior-level baccalaureate nursing students as they gain

clinical experience from progression through the nursing program.

Surveys were reviewed for completeness and appropriateness of responses to the

study. Problems that may have occurred with administration of a survey included *straight*

lining, where participants mark the same rating for each item, and *Christmas tree*

behavior, in which participants form a shape of some sort with their responses rather than

honestly answering the questions (Cole, McCormick, & Gonyea, 2012). Evaluation of

surveys that display straight lining or another purposive technique to complete the survey

quickly must be done to avoid skewing of the data and muddying any relationship

between study variables upon data analysis.

As the tools to be used in the study were used to collect demographic data as well

as data pertaining to the clinical self-efficacy of nursing students, descriptive statistics

were needed to display the means and ranges from participant responses. Scores from the

CSES were analyzed through a one-way ANOVA to identify any existing relationships

among the study variables. The ANOVA is commonly used when data are collected from

more than two groups and allows for identification of relationships between variables.

The ANOVA was used in lieu of multiple independent-sample *t* tests to condense results

into a collective display.

ANOVA was chosen for the study to compare the responses of three groups of

students simultaneously rather than making inferences from pairwise comparisons seen in

independent-samples t tests (Frankfort-Nachmias & Leon-Guerrero, 2015). Data analysis

using ANOVA enabled me to compare the responses of participants in different groups, as well those in the same groups, to evaluate any relationship between study variables (Frankfort-Nachmias & Leon-Guerrero, 2015). A confidence level of 95% and a level of significance (α) of 0.05 were used during data analysis.

<div align="center">**Threats to Validity**</div>

External Validity

Threats to external validity for the study were related to the population from which participants were selected. The study was completed by surveying nursing students at a single university in West Tennessee. Results from this study need to be compared to those of future studies in areas with varying student populations to generalize the findings and make them applicable to other groups. Nursing programs will vary from state to state and among rural and urban areas, making the results of this study localized until additional similar research is conducted. To address potential selection bias that would pose a threat to external validity, purposive sampling was used in this study. Rather than collecting data until a certain number of responses was obtained, I invited all students in the BSN program at the data collection site to participate.

Internal Validity

Internal validity could be threatened by the exclusion criteria in this study because responses from students in accelerated BSN programs and those who held an LPN, EMT, or Paramedic license were not considered in the data analysis. Growth in clinical self-efficacy among students who hold an existing clinical license could still allude to the efficacy of clinical instruction and curriculum, albeit from an established level of clinical

mastery. However, the comparison of students with no outside clinical experience in this study was better able to demonstrate the relationship between clinical experience and skills practice in relation to clinical self-efficacy, in that students were exposed to new information and built upon knowledge gained while in the nursing program, rather than through previous instruction and exposure.

Construct Validity

Threats to construct or statistical conclusion validity are seen when a lack of power is achieved in a study and/or when assumptions of a statistical test are violated. Assumptions for a one-way ANOVA include homogeneity of variances, observations independent of one another, and normally distributed scores within groups and in the entire sample (Warner, 2013). To ensure that these assumptions were not violated, I performed a Levene's test, examined a histogram of scores, and used a box and whisker plot to examine data. The Levene's test provided information about homogeneity of variances, the histogram showed whether data were normally distributed, and the box and whisker plot aided in identification of any outliers among collected data (Warner, 2013).

Ethical Procedures

To ensure that the study included ethical procedures and did not pose any threat to potential participants, a proposal was submitted to the Institutional Review Board at the data collection site for approval, and then to the Walden Institutional Review Board for approval. The purpose of this first and necessary step was to protect the rights of any human participants in the study. I received a letter of cooperation from the nursing

department chair at the data collection site supporting the conduction of research by surveying the BSN students in that program.

The main ethical issue that could arise in the study is the confidentiality of participants' responses and information. Through collaboration with the department chair and nursing faculty of the data collection site, I met with students to explain the purpose of the study and its significance in nursing education, and provided a handout addressing all that the study involves. I provided information about myself and explained my role as a doctoral student. Written informed consent was obtained from participants, but stressing that participation was strictly voluntary and consent may be withdrawn at any time. I explained to the students that their responses and the results of this study had no bearing on course and clinical grades, and that they would not be able to be identified by their responses.

Data collection was completed via a survey that included the CSES and additional questions aimed at collecting demographic data. I coordinated with the department chair and nursing faculty at the data collection site and scheduled a time to speak with the students, obtain consent, and administer the survey. An ethical concern during my explanation of the study and data collection was the potential for students to feel pressured to participate in the study if it was conducted in person rather than online. To combat feelings of obligation, I reinforced the fact that participation in the study was voluntary and had no bearing on course and/or clinical grades.

Data were entered into SPSS for analysis on my personal computer, protected by a username and password. Consent forms and surveys were stored in a locked location in

my office, to which I have the only key. Data on my personal computer, consent forms, and completed surveys will be stored for a minimum of five years, following Walden's recommendation for storage and maintenance of research information. After five years, consent forms and completed surveys will be shredded and disposed of. Results and data analysis information will be deleted from my personal computer after five years. Results from data analysis will be shared only in the form of tables, figures, and discussion within my final published dissertation, in which no study participant will be specifically identified.

As I held no position at the data collection site, I had no influence on participants recruited for the study. I maintained contact with the department chair and nursing faculty to arrange meetings and collect data from participants, but no other contact was warranted for this study. There was no incentive offered for completing the survey for the study, and students were not required to complete any type of follow up or debriefing session after completion of data collection.

Summary

A quantitative method with a descriptive, cross-sectional design was selected for this study, as the aim of the study was to explore a potential relationship between level of clinical experience and the reported clinical self-efficacy of baccalaureate nursing students. The target population for the study was baccalaureate nursing students at a university in West Tennessee, with sophomore-, junior-, senior-level students included as potential study participants. Students who held a license as an LPN, EMT, or Paramedic, and those who are enrolled in the accelerated BSN program, were excluded from this

study, as clinical experience prior to enrolling in the BSN program may have skewed the data.

Data were collected through a survey administered to students upon receipt of written informed consent and consisted of the CSES and questions aimed at collecting demographic information. Data analysis was completed using SPSS. All information collected from study participants will be securely maintained for five years after the completion of this study, and will be disposed of in a manner that poses no risk for identification of study participants. Ethical issues that may have occurred during the process of participant recruitment and data collection, specifically those related to confidentiality and pressure to participate were handled through explanation of the voluntary nature of the study and its lack of influence on course and clinical grades, with careful consideration of data when analysis and storage are concerned. In Chapter 4, I provide a detailed explanation of data collection and results, include statistical reports and discuss of findings that serve to answer the research questions.

Chapter 4: Results

Clinical self-efficacy, or the confidence that nursing students have in their ability to perform clinical skills, can impact their desire to attempt skills with patients. As knowledge and clinical skills are introduced to students throughout a nursing program, their clinical self-efficacy may change, depending upon their practice of clinical skills and willingness to seek out practice opportunities with patients. Clinical self-efficacy, as applied to nursing students, stems from Bandura's (1977) concept of self-efficacy, in which individuals' action or avoidance of a situation or event is dependent upon the perception of success of failure.

The purpose of this quantitative study was to determine the relationship between clinical experience within a nursing program and the reported clinical self-efficacy of baccalaureate nursing students. Results from the study can be used by nurse educators to determine if instructional efforts and design within clinical curriculum are effective in increasing students' clinical self-efficacy as they matriculate through a nursing program.

The research question for the study was the following: What is the relationship between clinical experience and the clinical self-efficacy of sophomore-, junior-, and senior-level baccalaureate nursing students?

H_0: There will be no difference in clinical self-efficacy between sophomore-, junior-, and senior-level baccalaureate nursing students as they gain clinical experience from progression through the nursing program.

H_1: There will be a difference in the clinical self-efficacy between sophomore-,

junior-, and senior-level baccalaureate nursing students as they gain clinical

experience from progression through the nursing program.

In this chapter, I provide a description of the data collection process used in the

study, including Institutional Review Board processes, recruitment processes, and sample

characteristics. I discuss the results of data analysis and provide a summary of the study

findings as they apply to the research question and hypotheses.

Data Collection

Institutional Review Board Process

Applications for Institutional Review Board (IRB) approval were submitted to

two 4-year universities in the central United States. During proposal development for my

study, a sample size of 111 students was calculated using G*power. Because BSN

student enrollment at the initial data collection site was found to be only 78 students, it

was necessary to use a second data collection site to increase the chances of meeting my

calculated sample size. Applications to both universities' IRBs were submitted between

March 15, 2018 and April 2, 2018, with approval granted from both data collection sites

by April 5, 2018.

Recruitment and Data Collection

Recruitment and data collection involving BSN students at the first data collection

site began on April 19, 2018 and concluded on April 25, 2018. Of the 78 enrolled BSN

students, 71 completed a survey, and 67 of those surveys were usable in data analysis,

having met all inclusion criteria. Data were collected via a paper-and-pencil survey at this

site, at which time a consent form was signed by any student willing to participate in the study. I met with three groups of BSN students, explained my study, and answered any questions. I then left the room to allow students who were willing to participate in the study to fill out the consent form and survey tool, to avoid any coercion resulting from my presence during this time. Completed consent forms and surveys were submitted to separate drop boxes to avoid connection of individual surveys with consent forms. Completed surveys and consent forms, after data analysis, were locked in a lockbox, to which I had the only key.

Recruitment of BSN students at the second data collection site was completed online and began on April 16, 2016. An online consent form was used, with students clicking "I Agree" in order to proceed to an online survey. Invitations to participate in the study were sent via email to 326 BSN students, with 53 completed surveys returned. The online survey was available from April 16, 2018 until May 16, 2018. Of the 53 completed surveys, 43 were usable and met all inclusion criteria. As the online survey software PsychData was used for data collection at the second data collection site, data were downloaded directly into an Excel spreadsheet from the site, with no identifying information to link back to individual students. Data collected from the online survey were password protected on my personal laptop.

Sample Characteristics

The sample size yielded from data collection between the two universities was 110 participants. Sixty-seven usable surveys were obtained from the 78 enrolled BSN students at the first data collection site, yielding an 85.9% response rate. Such a rate was

likely made possible due to the use of paper-and-pencil surveys and face-to-face meeting

and recruitment. Email invitations were sent to 326 BSN students at the second data

collection site, yielding 43 usable surveys and a 13.2% response rate. In the total sample,

29 students were at the sophomore level, 39 were at the junior level, and 42 were at the

senior level (Table 1). Students ranged in age from 18 to 45 years (Table 2), with a mean

age of 23.3 years and a standard deviation of 4.611 (Table 3). The sample included

students from White, African American, and Hispanic ethnicities (Table 4).

Table 1

Between-Subjects Factors

		Value label	N
Level of	1	Sophomore	29
clinical	2	Junior	39
experience	3	Senior	42

Table 2

Age of Study Participants

		Frequency	Percent	Valid percent	Cumulative percent
Valid	18-25	94	85.5	85.5	85.5
	26-30	5	4.5	4.5	90.0
	31-35	6	5.5	5.5	95.5
	36-40	4	3.6	3.6	99.1
	41-45	1	.9	.9	100.0
	Total	110	100.0	100.0	

Table 3

Age Descriptives

N	Valid	110
	Missing	0
Mean		23.30
Median		22.00
Mode		21
Std. deviation		4.611
Variance		21.258
Minimum		18
Maximum		45

Table 4

Race of Study Participants

		Frequency	Percent	Valid percent	Cumulative percent
Valid	White	100	90.9	90.9	90.9
	African American	6	5.5	5.5	96.4
	Hispanic/Latino	2	1.8	1.8	98.2
	Other	2	1.8	1.8	100.0
	Total	110	100.0	100.0	

Comparison of Sample to Population

According to the Biennial Survey of Nursing Schools completed by the National League for Nursing (NLN, 2016), 75% of BSN students are under the age of 25. In the sample collected for this study, 85.5% of students were 18-25 years of age (Table 2), with an average age of 23.3 years and a standard deviation of 4.611 years (Table 3). According

to the NLN (2016), basic RN programs enrolled 10.8% African American and 8.1%

Hispanic students on average. The sample yielded 5.5% African American and 1.8%

Hispanic students (Table 4). Although these percentages are below the 2016 averages

found by NLN, these ethnicities are included in the sample and are therefore represented

in the sample population.

Results

All study participants were enrolled in BSN nursing courses at one of the data

collection sites and did not hold an active LPN, EMT, or Paramedic license. Those who

held an existing healthcare license were excluded from data analysis due to the potential

influence of past clinical instruction on current clinical confidence. Existing knowledge

and practice of clinical skills included in the CSES outside of the universities' clinical

curriculum would have skewed the data, possibly revealing increased levels of clinical

self-efficacy.

Statistical Assumptions

Upon organizing the data from my study, I opted to change my statistical test of

choice from the one-way ANOVA to the one-way multivariate analysis of variance

(MANOVA) test, as the nine clinical skills on the CSES served as dependent variables

when rated by students of varying levels of clinical experience. I discussed the use of

MANOVA with my committee chair and a Walden statistician, and it was supported for

use in my study by all parties. The statistical assumptions for the MANOVA include the

following:

- Observations in the outcome variable are independent of one another

- Outcome variables are all quantitative and normally distributed

- Multivariate normality

- Homogeneity of variance between outcome variables (Warner, 2013).

The first assumption of the MANOVA is the independence of outcome variables among the groups. Nursing students in each group within the sample population (sophomore, junior, and senior) were only members of one level of clinical experience and could not fall into any other group within the predictor variable. Each outcome variable pertained to a separate clinical skill, with participants unable to assign multiple ratings to a single variable.

The second assumption of the MANOVA requires that all outcome variables be quantitative and normally distributed. The third assumption of MANOVA requires that there is multivariate normality. Each outcome variable, representing a separate clinical skill, was measured on a 0-10 numerical scale. To test the second and third assumptions, I ran a Shapiro-Wilk test in SPSS (Table 5). According to the Shapiro-Wilk test, scores for various clinical skills vary in terms of normal distribution between sophomore, junior, and senior nursing students. For example, the Shapiro-Wilk test reveals that the sophomore students' ratings of their clinical self-efficacy as it pertains to IM injections do not differ from the normal distribution of data $(p = 0.195$; Figures 2 and 3). However, juniors' clinical self-efficacy in relation to IM injections differed from the normal distribution of data $(p = 0.001)$, with seniors following suit $(p = 0.000)$.

Table 5

Tests of Normality

	Level of clinical experience	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	*df*	Sig.	Statistic	*df*	Sig.
IM injection	Sophomore	.136	29	.179	.951	29	.195
confidence	Junior	.255	39	.000	.892	39	.001
	Senior	.285	42	.000	.809	42	.000
Insulin injection	Sophomore	.364	29	.000	.775	29	.000
confidence	Junior	.309	39	.000	.816	39	.000
	Senior	.368	42	.000	.694	42	.000
Sterile technique	Sophomore	.196	29	.006	.940	29	.103
confidence	Junior	.166	39	.009	.955	39	.120
	Senior	.146	42	.024	.957	42	.117
Foley sterile	Sophomore	.122	29	.200*	.958	29	.295
confidence	Junior	.174	39	.005	.927	39	.014
	Senior	.138	42	.044	.948	42	.055
NGT placement	Sophomore	.140	29	.153	.963	29	.385
confidence	Junior	.196	39	.001	.937	39	.030
	Senior	.126	42	.093	.926	42	.010
IV start	Sophomore	.374	29	.000	.640	29	.000
confidence	Junior	.156	39	.017	.936	39	.028
	Senior	.143	42	.030	.954	42	.091
Transfer	Sophomore	.299	29	.000	.777	29	.000
immobile pt	Junior	.233	39	.000	.860	39	.000
confidence	Senior	.220	42	.000	.900	42	.001
IVPB w/ pump	Sophomore	.388	29	.000	.665	29	.000
confidence	Junior	.158	39	.015	.916	39	.007
	Senior	.220	42	.000	.886	42	.001
PEG tube	Sophomore	.195	29	.006	.820	29	.000
feeding	Junior	.112	39	.200*	.975	39	.518
confidence	Senior	.184	42	.001	.917	42	.005

*This is a lower bound of the true significance.

[a]Lilliefors significance correction.
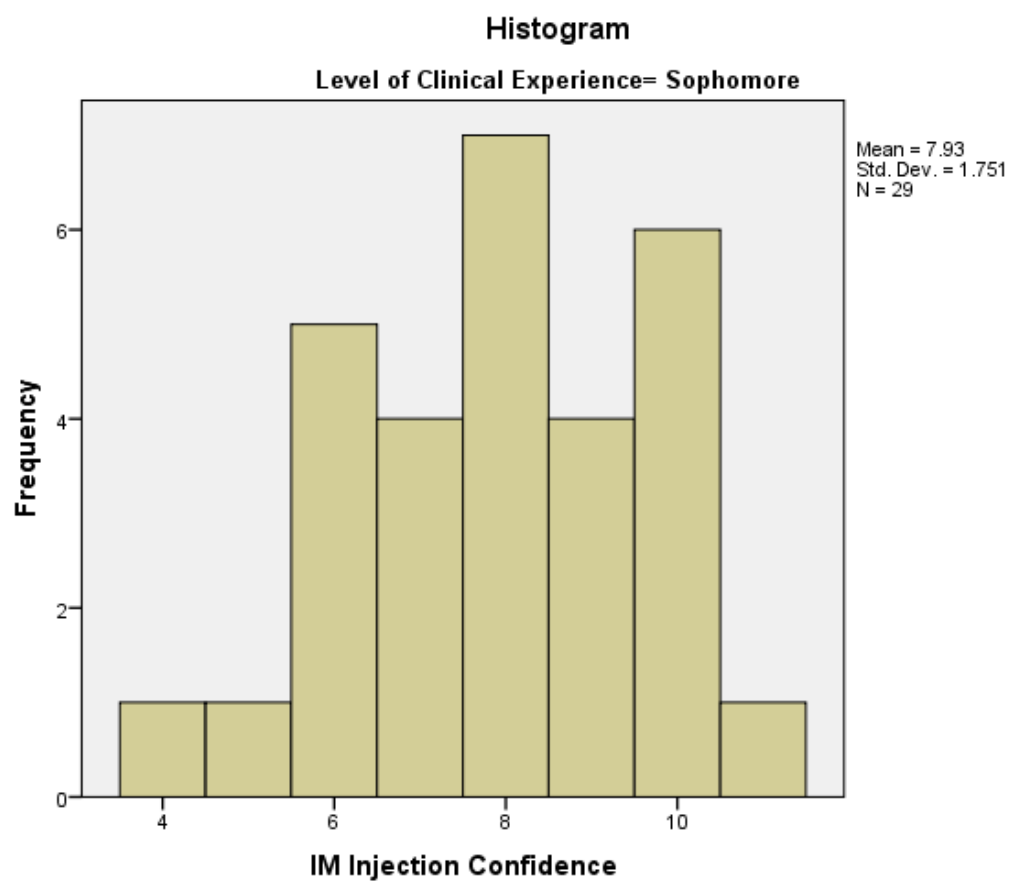
Figure 2. Histogram for IM injection confidence.

Normal Q-Q Plot of IM Injection Confidence

Level of Clinical Experience= Sophomore
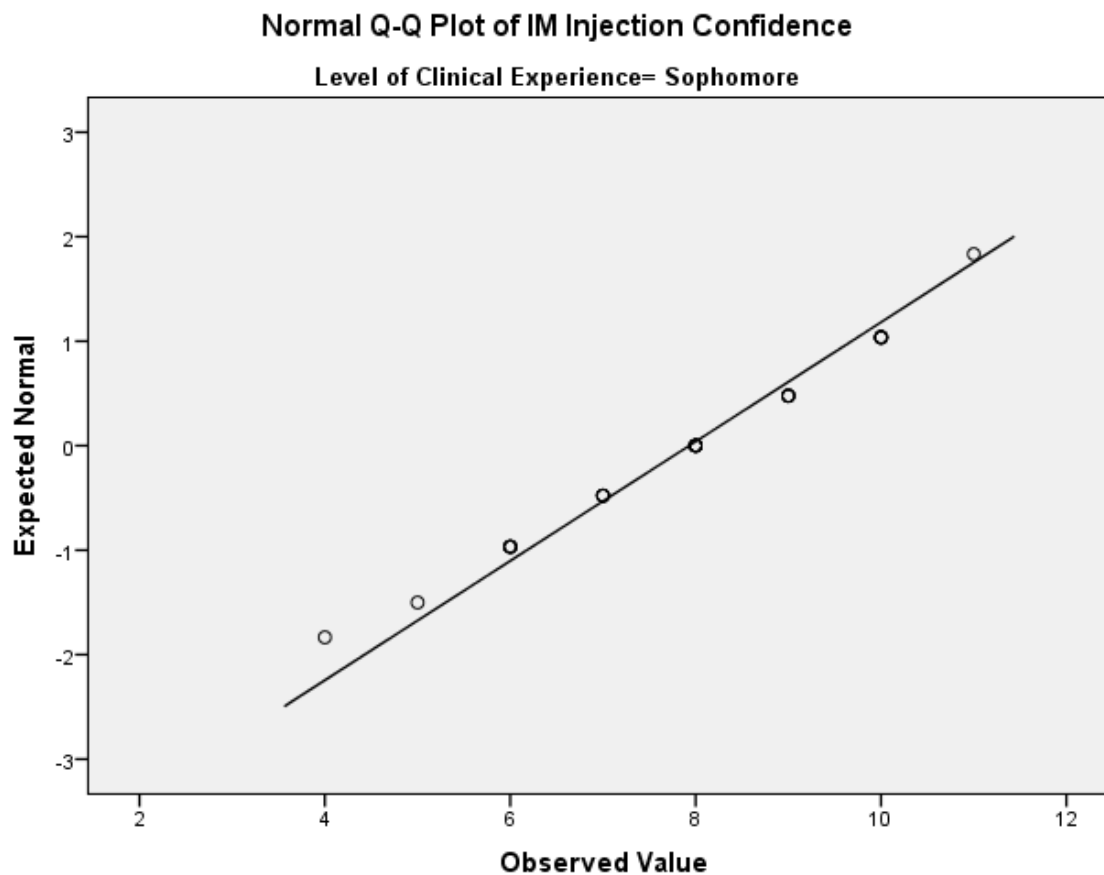
Figure 3. Scatterplot for IM injection confidence.

Among the nine clinical skills assessed, only insulin injection, transfer of an immobile patient, and use of an IV pump to administer an IVPB showed data that were normally distributed with multivariate normality. Variations in distribution could be due to the varying number of participants among the three levels of clinical experience, as the sample consisted of groups of sophomore, junior, and senior students at 29, 39, and 42, respectively. However, Warner (2013) noted that due to variances in group sizes within a variable, a visual examination of distribution shape is sufficient in determining normal distribution and multivariate normality. Figures 2 and 3 show data from sophomores that

resulted in a visually normal distribution, while the Shapiro-Wilk test deemed the data

regarding administration of an IM injection to vary from normal distribution. Differences

between the Shapiro-Wilk test and a visual assessment of data may be explained by the

limited sample size of the sophomore group and might have been different had the

sample size been larger.

The fourth assumption for the MANOVA is that there is homogeneity of variance

between outcome variables. To test this assumption, I conducted a Box's test of Equality

of Covariance Matrices within SPSS. As seen in Table 6, the Box's test of Equality was

found to be statistically significant ($p = 0.000$), indicating that this assumption has failed,

necessitating the use of the Levene's Test of Equality of Error Variances, which allows

for the evaluation of variances across multiple groups (Table 7). According to Meyers,

Gamst, and Guarino (2013), heterogeneity among variables for a MANOVA requires the

use of a stricter level of significance, resulting in my changing from $\alpha = 0.05$ to $\alpha = 0.01$.

Changing the level of significance when evaluating the MANOVA and each variable

decreases the chance of error.

To determine whether the MANOVA conducted was statistically significant,

several tests were run to compare the variables. The Box's Test of Equality indicated that

variances are not equal across the three groups (Table 6). To better understand where the

variances occurred, I reviewed the Levene's Test of Equality, which shows each clinical

skill as it pertains to the various groups in the study. Analysis of the Levene's Test of

Equality revealed that IM injection, insulin injection, IV start, and IVPB administration

had unequal variances but all other skills were indicated to have equal variances across

groups (Table 7). Statistical significance found in the Levene's Test for IM injection,

insulin injection, IV start, and IVPB indicate that differences were found among

responses of the three groups, but further testing was needed to determine specific

differences in clinical self-efficacy for each clinical skill among the three groups of BSN

students.

Table 6

Box's Test of Equality of Covariance Matrices[a]

Box's *M*	212.367
F	2.066
*df*1	90
*df*2	25744.317
Sig.	.000

Note. Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.
[a]Design: Intercept + LevelofClinicalExperience.

Table 7

Levene's Test of Equality of Error Variances[a]

	F	*df*1	*df*2	Sig.
IM injection confidence	6.421	2	107	.002
Insulin injection confidence	17.407	2	107	.000
Sterile technique confidence	.141	2	107	.869
Foley sterile confidence	.209	2	107	.811
NGT placement confidence	.898	2	107	.411
IV start confidence	10.261	2	107	.000
Transfer immobile pt Confidence	.642	2	107	.528
IVPB w/ pump confidence	9.405	2	107	.000
PEG tube feeding confidence	.145	2	107	.865

Note. Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.
[a]Design: Intercept + LevelofClinicalExperience.

Statistical Analysis Findings

A MANOVA was used for data analysis to compare the three groups of nursing students and the nine clinical skills on which they were surveyed concurrently rather than conducting nine different ANOVAs, as there would have been an increased risk of statistical error. Students' clinical self-efficacy ratings for the nine clinical skills differed with each level of clinical experience (Table 8). An increase in clinical self-efficacy was seen from sophomore to junior and junior to senior levels in all clinical skills, with the exception of transferring an immobile patient and administration of a PEG tube feeding. Increases in clinical self-efficacy ratings from sophomore to junior and junior to senior levels indicate growth in clinical self-efficacy and increased confidence as BSN students gained clinical experience.

The multivariate test for the MANOVA was conducted to see if the overall MANOVA was statistically significant, comparing the three levels of nursing students across the nine clinical skills that were evaluated (Table 9). There was a statistically significant difference in clinical self-efficacy across the three levels of clinical experience ($p < 0.05$; Wilks $\Lambda = 0.238$, partial $n^2 = 0.512$). A statistically significant MANOVA indicates that there is a relationship between clinical self-efficacy and students' level of clinical experience within a BSN program.

Table 8

Descriptive Statistics

	Level of clinical experience	Mean	Std. deviation	*N*
IM injection confidence	Sophomore	7.93	1.751	29
	Junior	9.28	1.255	39
	Senior	9.88	1.017	42
	Total	9.15	1.528	110
Insulin injection confidence	Sophomore	9.24	1.380	29
	Junior	9.97	.707	39
	Senior	10.36	.533	42
	Total	9.93	.983	110
Sterile technique confidence	Sophomore	7.38	1.678	29
	Junior	7.62	1.566	39
	Senior	7.81	1.714	42
	Total	7.63	1.647	110
Foley sterile confidence	Sophomore	6.69	1.929	29
	Junior	7.10	2.198	39
	Senior	7.88	1.824	42
	Total	7.29	2.033	110
NGT placement confidence	Sophomore	4.48	2.165	29
	Junior	4.82	2.304	39
	Senior	5.36	2.497	42
	Total	4.94	2.351	110
IV start confidence	Sophomore	2.03	3.510	29
	Junior	7.41	1.601	39
	Senior	7.48	2.133	42
	Total	6.02	3.392	110
Transfer immobile pt confidence	Sophomore	8.79	2.144	29
	Junior	9.10	1.759	39
	Senior	8.64	1.859	42
	Total	8.85	1.897	110
IVPB w/pump confidence	Sophomore	1.86	2.997	29
	Junior	7.82	1.998	39
	Senior	8.79	1.601	42
	Total	6.62	3.607	110
PEG tube feeding confidence	Sophomore	2.14	2.489	29
	Junior	5.67	2.747	39
	Senior	7.79	2.533	42
	Total	5.55	3.415	110

Table 9

Multivariate Tests—MANOVA[a]

Effect		Value	*F*	Hypothesis *df*	Error *df*	Sig.	Partial eta squared	Noncent. parameter	Observed power[d]
Intercept	Pillai's trace	.993	1676.168[b]	9.000	99.000	.000	.993	15085.513	1.000
	Wilks's lambda	.007	1676.168[b]	9.000	99.000	.000	.993	15085.513	1.000
	Hotelling's trace	152.379	1676.168[b]	9.000	99.000	.000	.993	15085.513	1.000
	Roy's largest root	152.379	1676.168[b]	9.000	99.000	.000	.993	15085.513	1.000
LevelofClinical Experience	Pillai's trace	.850	8.215	18.000	200.000	.000	.425	147.875	1.000
	Wilks's lambda	.238	11.561[b]	18.000	198.000	.000	.512	208.095	1.000
	Hotelling's trace	2.837	15.445	18.000	196.000	.000	.587	278.009	1.000
	Roy's largest root	2.700	29.999[c]	9.000	100.000	.000	.730	269.990	1.000

[a]Design: Intercept + LevelofClinicalExperience. [b]Exact statistic. [c]The statistic is an upper bound on *F* that yields a lower bound on the significance level. [d]Computed using alpha = .05.

Post Hoc Analyses of MANOVA

The Tukey HSD was selected as the post-hoc test for the MANOVA, as it can be used to display multiple comparisons of means, aiding in the identification of any relationships that differ from the overall MANOVA and other tests of homogeneity (Lane, 2010). Each clinical skill was compared across the three levels of clinical experience to show the relationships between the groups and their clinical self-efficacy (Table 10). Statistically significant differences in clinical self-efficacy were found in the clinical self-efficacy of sophomore and juniors ($p < 0.01$) and sophomores and seniors ($p < 0.01$) pertaining to the administration of an IM injection, an insulin injection, an IVPB, a PEG tube, and IV start (Table 10). No statistically significant differences in clinical

self-efficacy were found between the three groups concerning sterile technique, sterile insertion of a Foley catheter, NGT placement, and transfer of an immobile patient. The only clinical skill that revealed statistically significant differences in clinical self-efficacy across all levels of clinical experience was the administration of a PEG tube feeding ($p <$ 0.01) (Table 10). Significant differences in the clinical self-efficacy of BSN students indicate that growth occurred from sophomore to senior levels, but that there may be slight stagnation between the junior and senior levels. Stagnation could be explained by the inclusion of select clinical skills in a specific year of clinical instruction, or a lack of exposure to select skills in the clinical setting.

The research question for the study was designed to determine if there were differences in clinical self-efficacy among sophomore, junior, and senior level baccalaureate nursing students. Data analysis revealed and overall statistically significant MANOVA ($p = 0.000$), allowing for the rejection of the null hypothesis that there is no difference in clinical self-efficacy between sophomore, junior, and senior level baccalaureate nursing students as they gain clinical experience from progression through the nursing program. The alternative hypothesis, that there will be a difference in the clinical self-efficacy among sophomore, junior, and senior level baccalaureate nursing students as they gain clinical experience from progression through the nursing program, is then accepted and supported by the Tukey HSD post-hoc test findings that indicate a statistically significant difference in clinical self-efficacy between various levels of clinical experience.

Table 10

Multiple Comparisons

Dependent variable	(I) Level of clinical experience	(J) Level of clinical experience	Tukey HSD Mean difference (I-J)	Std. error	Sig.	95% confidence interval Lower bound	Upper bound
IM injection confidence	Sophomore	Junior	-1.35*	.325	.000	-2.12	-.58
		Senior	-1.95*	.320	.000	-2.71	-1.19
	Junior	Sophomore	1.35*	.325	.000	.58	2.12
		Senior	-.60	.295	.110	-1.30	.10
	Senior	Sophomore	1.95*	.320	.000	1.19	2.71
		Junior	.60	.295	.110	-.10	1.30
Insulin injection confidence	Sophomore	Junior	-.73*	.217	.003	-1.25	-.22
		Senior	-1.12*	.214	.000	-1.62	-.61
	Junior	Sophomore	.73*	.217	.003	.22	1.25
		Senior	-.38	.197	.132	-.85	.09
	Senior	Sophomore	1.12*	.214	.000	.61	1.62
		Junior	.38	.197	.132	-.09	.85
Sterile technique confidence	Sophomore	Junior	-.24	.405	.830	-1.20	.73
		Senior	-.43	.399	.530	-1.38	.52
	Junior	Sophomore	.24	.405	.830	-.73	1.20
		Senior	-.19	.368	.858	-1.07	.68
	Senior	Sophomore	.43	.399	.530	-.52	1.38
		Junior	.19	.368	.858	-.68	1.07
Foley sterile confidence	Sophomore	Junior	-.41	.488	.675	-1.57	.75
		Senior	-1.19*	.481	.039	-2.33	-.05
	Junior	Sophomore	.41	.488	.675	-.75	1.57
		Senior	-.78	.443	.189	-1.83	.27
	Senior	Sophomore	1.19*	.481	.039	.05	2.33
		Junior	.78	.443	.189	-.27	1.83
NGT placement confidence	Sophomore	Junior	-.34	.575	.827	-1.70	1.03
		Senior	-.87	.566	.275	-2.22	.47
	Junior	Sophomore	.34	.575	.827	-1.03	1.70
		Senior	-.54	.522	.560	-1.78	.70
	Senior	Sophomore	.87	.566	.275	-.47	2.22
		Junior	.54	.522	.560	-.70	1.78

(*table continues*)

						95% confidence interval	
Dependent variable	(I) Level of clinical experience	(J) Level of clinical experience	Mean difference (I-J)	Std. error	Sig.	Lower bound	Upper bound
IV start	Sophomore	Junior	-5.38*	.594	.000	-6.79	-3.96
confidence		Senior	-5.44*	.585	.000	-6.83	-4.05
	Junior	Sophomore	5.38*	.594	.000	3.96	6.79
		Senior	-.07	.539	.992	-1.35	1.22
	Senior	Sophomore	5.44*	.585	.000	4.05	6.83
		Junior	.07	.539	.992	-1.22	1.35
Transfer	Sophomore	Junior	-.31	.467	.786	-1.42	.80
immobile pt		Senior	.15	.460	.943	-.94	1.24
confidence	Junior	Sophomore	.31	.467	.786	-.80	1.42
		Senior	.46	.423	.525	-.55	1.47
	Senior	Sophomore	-.15	.460	.943	-1.24	.94
		Junior	-.46	.423	.525	-1.47	.55
IVPB w/pump	Sophomore	Junior	-5.96*	.534	.000	-7.23	-4.69
confidence		Senior	-6.92*	.526	.000	-8.17	-5.67
	Junior	Sophomore	5.96*	.534	.000	4.69	7.23
		Senior	-.97	.485	.119	-2.12	.19
	Senior	Sophomore	6.92*	.526	.000	5.67	8.17
		Junior	.97	.485	.119	-.19	2.12
PEG tube feeding	Sophomore	Junior	-3.53*	.637	.000	-5.04	-2.01
confidence		Senior	-5.65*	.628	.000	-7.14	-4.16
	Junior	Sophomore	3.53*	.637	.000	2.01	5.04
		Senior	-2.12*	.578	.001	-3.49	-.74
	Senior	Sophomore	5.65*	.628	.000	4.16	7.14
		Junior	2.12*	.578	.001	.74	3.49

Tukey HSD

Note. Based on observed means. The error term is mean square(error) = 6.759.
*The mean difference is significant at the .05 level.

Statistically significant differences in clinical self-efficacy among BSN students can serve to answer the research question, indicating that there is a difference in clinical self-efficacy between sophomore, junior, and senior level baccalaureate nursing students as they gain clinical experience in a nursing program. It is interesting that the only clinical skill in which there was a statistically significant difference in ratings between juniors and seniors was administration of a PEG tube feeding, as this skill is one that is commonly learned in the first year of nursing clinical curriculum.

Summary

Clinical self-efficacy, or confidence in one's ability to successfully perform clinical nursing skills, is imperative to effective and safe practice of nursing. Clinical education in nursing programs is aimed at developing a skillset of basic nursing clinical skills and providing instruction of and practice opportunities for clinical skills, allowing students to grow in their confidence in the clinical setting. The purpose of the study was to determine if there was a relationship between clinical self-efficacy and the level of clinical experience within a BSN program. Results may be useful to nurse educators and students alike as students were required to evaluate their own clinical strengths and weaknesses as they pertained to nine clinical skills deemed essential to the basic practice of nursing.

Three groups of BSN students (sophomore, junior, and senior) were surveyed regarding their clinical self-efficacy as it applied to nine clinical skills. Results from 110 eligible study participants were analyzed using a MANOVA in SPSS to identify any potential relationships between clinical self-efficacy and level of clinical experience

within a BSN program. Although the Wilks Λ showed that the overall MANOVA was statistically significant, the post-hoc Tukey HSD test revealed that certain comparisons of groups of students, most frequently juniors and seniors, were not statistically significant. Of the nine clinical skills surveyed, five of them yielded statistically significant differences between the clinical self-efficacy ratings of sophomores and juniors and sophomores and seniors. As eight out of the nine clinical skills revealed an increase in average ratings from sophomore to senior level, it can be stated that overall there is a difference in clinical self-efficacy between the three levels of clinical experience, indicating a growth in clinical self-efficacy as students learn and practice new clinical skills.

In Chapter 5, I provide my interpretation of the findings of the study, discuss limitations of the study, make recommendations based upon the results and the existing literature, and discuss implications of the study results as they pertain to positive social change, nursing education, and the practice of the nursing profession.

Chapter 5: Discussion, Conclusions, and Recommendations

Clinical self-efficacy, or the confidence that nursing students have in their ability to perform clinical skills, can impact their desire to attempt skills with patients. As knowledge and clinical skills are introduced to students throughout a nursing program, their clinical self-efficacy may change, depending upon their practice of clinical skills and willingness to seek out practice opportunities with patients. Clinical self-efficacy, a concept specifically developed and aimed at evaluating nursing students, stems from Bandura's (1977) concept of self-efficacy. Bandura noted that purposive behavior to engage in or avoid tasks is dependent upon individuals' preconceived confidence in their own success or failure in those tasks. Nursing students are taught how to perform clinical skills and given opportunities to practice those skills in laboratory and clinical settings. The purpose of this quantitative study was to explore a potential relationship between baccalaureate nursing students' level of clinical experience and reported clinical self-efficacy on select clinical nursing skills. Differences in clinical self-efficacy between groups of BSN students can be used by nurse educators to determine if instructional efforts and design within clinical curriculum are effective in increasing students' clinical self-efficacy as they matriculate through a nursing program.

Data collected from three groups of nursing students (sophomore, junior, and senior) were analyzed using SPSS and a MANOVA to identify any statistically significant differences in clinical self-efficacy ratings from those students on nine clinical skills. The Wilks Λ indicated that the overall MANOVA was statistically significant, but the Tukey HSD post-hoc test revealed that only select clinical skills yielded statistically

significant differences between the various levels of clinical experience. Skills including IM injection, insulin injection, IV start, use of an IV pump to administer an IVPB, and PEG tube feeding administration yielded statistically significant differences in clinical self-efficacy ratings between sophomores and juniors and between sophomores and seniors. Only PEG tube feeding administration yielded a statistically significant difference between juniors and seniors ($p = 0.001$), with all other clinical skills showing no statistically significant difference between juniors and seniors.

Interpretation of Findings

Relation of Findings to Existing Literature

Results indicated that although growth was seen in the average clinical self-efficacy ratings for eight out of the nine clinical skills from sophomore to senior level, that a statistically significant difference was found between sophomore and juniors and sophomores and seniors. Ratings from the junior- and senior-level students were statistically significantly different on only one skill, with that skill commonly taught in the first year of nursing clinical curriculum.

When compared to the existing literature, correlations between clinical self-efficacy and level of clinical experience revealed in data analysis extend knowledge regarding clinical self-efficacy of varying levels of nursing students, as Oetker-Black et al. (2016) tested the reliability of the CSES and recommended future research among nursing students. Van Horn and Christman (2017) used the CSES to evaluate differences in clinical self-efficacy between junior- and senior-level nursing students and found that seniors reported higher levels of clinical self-efficacy than their junior-level counterparts.

My study correlates with Van Horn and Christman's work, in that sophomores and juniors as well as sophomores and seniors, when compared across nine clinical skills, demonstrated statistically significant differences in clinical self-efficacy on five of those clinical skills, with sophomores and seniors having an additional skill in which there was a statistically significant difference in clinical self-efficacy ratings.

Although statistically significant differences in clinical self-efficacy ratings were not found between the levels of clinical experience for all clinical skills evaluated in my study, there was a trend in average ratings for each skill, with the exception of PEG tube feedings. Average clinical self-efficacy ratings for all other skills increased from sophomore to junior and senior levels, indicating that increased exposure to and practice of clinical skills resulted in higher levels of clinical self-efficacy. Although not statistically significant in all cases, increases in clinical self-efficacy correlate with research conducted by Kennedy et al. (2014), who suggested that increased clinical self-efficacy as students matriculate through a nursing program will lead to readiness of senior students to transition to the role of novice practicing nurse. Kennedy et al. recommended that further research be conducted on the changes in clinical self-efficacy of nursing students at different levels of clinical experience, which was the aim of my study.

The statistically significant differences in clinical self-efficacy ratings seen in data analysis were mainly found in sophomore versus junior and sophomore versus senior comparisons. Administration of an IM injection, an insulin injection, an IVPB, a PEG tube feeding, and IV start showed statistical significance, indicating that increased

exposure to basic clinical skills resulted in increased clinical self-efficacy ratings over time between the sophomore and senior levels. Increased levels of clinical proficiency were noted by Ross, Bruderle, and Meakim (2015) to be seen with increased exposure to practice of clinical skills in the nursing curriculum, with results of my study following their findings. Increased clinical self-efficacy ratings from sophomore to junior and senior levels can be explained by deliberate practice of clinical skills often found in nursing clinical curriculum, with students being shown a skill and then given opportunities to practice that skill in the laboratory and clinical settings. Chee (2014) posited that increased exposure to clinical skills improves skill mastery, better enabling students to move on to more challenging clinical skills from one stage in nursing education to another. As the skills assessed by the CSES range from basic body mechanics to invasive and involved clinical skills, various levels of clinical mastery are represented.

Existing literature points to the growth of clinical self-efficacy as students gain experience and practice skills, but my study had one skill, the transfer of an immobile patient, in which senior students' average rating was the lowest among the three groups. Transfer of a patient is a basic nursing skill and is taught and practiced during the first year of nursing school. The fact that seniors rated their clinical self-efficacy lowest of all groups may indicate that the focus of their clinical rotations and experiences did not involve transferring patients. The skill of transferring patients is addressed during first-year clinical rotations. Chong, Lim, Liu, Lau, and Wu (2016) suggested that students

must be exposed to a multitude of clinical rotations, varying the types of patients whom they care for in an effort to avoid stagnation of clinical skills.

Social Cognitive Theory and Study Findings

Bandura's (1977) concept of self-efficacy was developed with his SCT, in which he suggested that behavior to seek out or avoid tasks or challenges is dependent upon individuals' preconceived confidence in their own success or failure in those tasks or challenges. Bandura (1982) also suggested that experiencing success or witnessing another have success can impact the confidence with which one behaves when future opportunities arise. My study assessed three levels of nursing students—sophomore, junior, and senior—and their clinical self-efficacy ratings for nine clinical skills. Results indicated that although statistical significance was not found in all comparisons for the nine clinical skills, there was growth seen in the average ratings for eight out of the nine clinical skills (Table 8). My findings correlate with Bandura's (1982) suggestion that personal successes or witnessing the success of others can increase confidence. Students at the sophomore level reported lower self-efficacy ratings on eight of the nine clinical skills, with junior and senior counterparts reporting incrementally higher clinical self-efficacy ratings. The trending up of average ratings does indicate growth in clinical self-efficacy, albeit in small and sometimes not statistically significant amounts.

Bandura (1982) noted an experiment in which study participants were given skills or tasks that were progressively more difficult, reporting that perceived self-efficacy increased as participants mastered each level of skill. My study demonstrated this concept in the changes that occurred between sophomores, juniors, and seniors, as average

clinical self-efficacy ratings increased with the level of clinical experience. More involved, invasive skills are commonly introduced and often practiced by junior- and senior-level BSN students, explaining the higher ratings provided by those groups.

Limitations of the Study

Limitations can still be attributed to the cross-sectional design, as it provides information from one point in time and from different groups of students within the same type of program. The length of time can also be viewed as a limitation, as a 3-year period needed for a longitudinal study was beyond the scope of my study. Sample size, as predicted in Chapter 1, was a limitation in my study. Using G*Power, I calculated that I needed 111 study participants, with 37 in each group, to meet my desired level of power. I came very close to this number at 110 study participants who were eligible for inclusion in the study, but the sample size was still not met, with 29 sophomores, 39 juniors, and 42 seniors included in the 110 study participants. The failure to reach my needed sample size does threaten the reliability of the results and weakens generalizability. Although I used the CSES, which has validity and reliability, lack of an adequate sample size limits the strength of my conclusions as they pertain to the relationship between clinical experience and clinical self-efficacy of baccalaureate nursing students.

I had no influence over the nursing students involved in my study; this was a benefit to the study because their participation had no bearing on course and/or clinical grades, and those whom I met face to face had no obligation to participate in the study. Anonymity and confidentiality were maintained for the study participants, perhaps increasing my response rate.

Recommendations

My recommendations for future research on clinical self-efficacy of nursing students would be to conduct a longitudinal study involving the same groups of students over their time in a nursing program. A longitudinal study would allow for a more accurate measure of changes in clinical self-efficacy, in that the same students would be assessed each year. Because sample size was noted as a limitation for my study, I would recommend involving a region of universities, as results from such a study would allow nurse educators to identify common areas of strength and weakness among students and in the clinical curriculum. Oetker-Black et al. (2016) recommended repeated use of the CSES among various populations of nursing students to increase the validity and reliability of the tool as well as gain better insight into the changes that occur in clinical self-efficacy as student are exposed to and practice new and existing clinical skills.

I would also recommend the use of a recorded video as an introduction if data are to be collected online. I met with students from one data collection site face to face, and I had much higher response rates among that student population. Online data collection is convenient, but adding a humanistic aspect to a study may inspire more students to participate without any feelings of obligation.

A final recommendation would be to conduct a mixed-methods study in which participants answer the CSES but are also interviewed regarding their opportunities to practice skills in the laboratory and clinical settings. Chee (2014) indicated that increased exposure to and practice of clinical skills promotes growth from one stage in nursing education to another. Questions about various instructional methods, including

kinesthetic activities and clinical simulation, could be involved in the interview for the

qualitative portion of the study, allowing researchers to identify the effectiveness of

various teaching methods. Wagner (2014) noted that kinesthetic learning activities

allowed students to apply their clinical knowledge, while Brannan, White, and Long

(2016) noted the low-stakes simulation environment as useful in decreasing student

apprehension in performing clinical skills on live patients. Instructional methods,

technology, and student assessment are constantly changing, and a mixed-methods study

may better capture the effectiveness of such efforts in nursing education, allowing nurse

educators to see where they excel and where they may need to adapt in order to increase

student success and promote clinical self-efficacy among future nurses.

Implications

Positive Social Change

My study may promote positive social change through the exploration of

students' clinical strengths and weaknesses, which involved use of the CSES to evaluate

their own clinical skills. According to the American Association of Colleges of Nursing

(2017), the nursing shortage is now projected to reach 1.09 million in the United States

by the year 2024. The ever-growing need for confident, competent nurses must be filled

by nursing programs like those involved in my study. As my study showed an increase in

average clinical self-efficacy ratings from sophomore to senior level, movement is seen

in the direction needed to fill this daunting void of practicing nurses. Identification of

areas of needed improvement is vital to clinical growth. As noted by Theisen and Sandau

(2013), clinical confidence is a weakness of new graduate nurses, because exposure to

critical and acute patient care situations is limited during nursing school, which may hinder the development of clinical self-efficacy. Graduates of nursing programs go on to care for the public, including people of all ages and walks of life. Assessment of future nurses' confidence in their clinical ability allows them to see where they excel and where they may need to seek out help from their instructors, which affects positive social change because a more confident nurse with higher self-efficacy provides a higher quality of care (Hart et al., 2014).

A final way in which my study may promote positive social change involves its potential impact on clinical nursing curriculum in nursing programs. Nurse educators can use my results to guide them in conducting a longitudinal or mixed-methods study involving their own students, through which they may evaluate the effectiveness of their clinical curriculum and the development of students' self-efficacy. The CSES can be used to assess whether growth in clinical self-efficacy occurs with current practices in clinical curriculum, which may provide critical evidence for the need for curriculum revision to enhance student learning, retention, and confidence regarding clinical skills that are vital to the basic practice of nursing.

Conclusion

Clinical self-efficacy, when decreased or increased as nursing students matriculate through a nursing program, can be predictive of their ability to function effectively as novice practicing nurses upon completion of their nursing education. BSN students ($N = 110$) from two universities in the central United States participated in a study aimed at exploring the relationship between clinical self-efficacy and the respective level of

clinical experience within a baccalaureate nursing program (sophomore, junior, and senior). Results from data collected through use the CSES revealed that there was an increase in clinical self-efficacy from sophomore to junior and senior levels on eight out of nine clinical skills. A MANOVA was conducted to evaluate the presence of any relationship among the data, which revealed statistically significant differences in clinical self-efficacy ratings on five out of nine clinical skills between sophomores and juniors, and between sophomores and seniors. Interestingly, only administration of PEG tube feeding revealed statistically significant differences in clinical self-efficacy ratings between juniors and seniors, with that skill being an introductory skill commonly learned in the first year of nursing clinical curriculum. The finding that increases in average clinical self-efficacy ratings occurred from sophomore to junior and senior levels on eight out of nine clinical skills warrants further investigation. Future research studies are needed using a larger sample size and either a longitudinal or mixed-methods design to gain insight into the effectiveness of the clinical nursing curriculum, and to ascertain what is effective in fostering the development of clinical self-efficacy. Developing nurses' self-efficacy will help to increase the confidence they need to provide high-quality patient care and effect positive social change.

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Appendix A: Clinical Skills Self-Efficacy Scale (CSES)

Clinical Skills Self-Efficacy Scale

DIRECTIONS: This questionnaire should take no more than 10-15 minutes to complete.

Each of the statements below is written so nursing students can describe their perceptions of their confidence in performing certain skills that they are routinely expected to do in their clinical settings.

Please **circle the number** that identifies how confident you are **right now** of your ability to perform each of the behaviors. Remember there is no right, or wrong answers but it is very important that you answer the questions honestly.

1. How confident are you **right now** that you can independently administer an intramuscular injection?

```
      0   1   2   3   4   5   6   7   8   9   10
No Confidence                          Total Confidence
```

2. How confident are you **right now** that you can independently administer an insulin injection?

```
      0   1   2   3   4   5   6   7   8   9   10
No Confidence                          Total Confidence
```
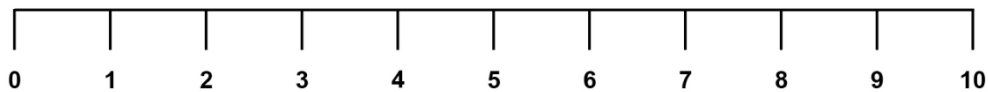
3. How confident are you **right now** that you can independently change a dressing maintaining sterile technique?

```
      0   1   2   3   4   5   6   7   8   9   10
No Confidence                          Total Confidence
```

4. How confident are you **right now** that you can independently insert a Foley catheter using sterile technique?

```
|    |    |    |    |    |    |    |    |    |    |    |
0    1    2    3    4    5    6    7    8    9    10
```
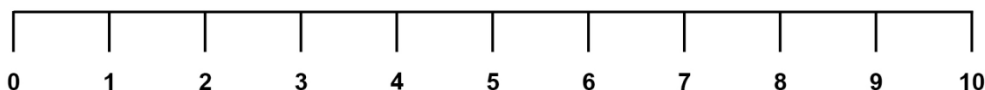
No Confidence   **Total Confidence**

5. How confident are you **<u>right now</u>** that you can insert a nasogastric tube with correct placement?

```
|    |    |    |    |    |    |    |    |    |    |    |
0    1    2    3    4    5    6    7    8    9    10
```

No Confidence   **Total Confidence**

6. How confident are you **<u>right now</u>** that can independently start an intravenous line?

```
|    |    |    |    |    |    |    |    |    |    |    |
0    1    2    3    4    5    6    7    8    9    10
```

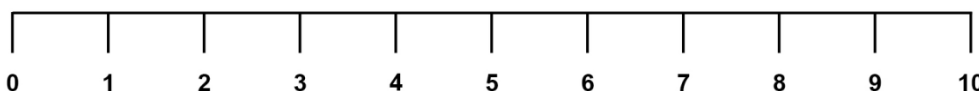**No Confidence**   **Total Confidence**

7. How confident are you **<u>right now</u>** that you can correctly transfer an immobile patient from bed to chair using correct technique?

```
|    |    |    |    |    |    |    |    |    |    |    |
0    1    2    3    4    5    6    7    8    9    10
```

**No Confidence**   **Total Confidence**

8. How confident are you **<u>right now</u>** that you can independently hang an intravenous piggyback medicine and program the pump accurately?

```
|    |    |    |    |    |    |    |    |    |    |    |
0    1    2    3    4    5    6    7    8    9    10
```

No Confidence   **Total Confidence**

9. How confident are you **<u>right now</u>** that you can administer a tube feeding through a PEG tube using correct technique?

```
 ┌──┬──┬──┬──┬──┬──┬──┬──┬──┬──┐
 0  1  2  3  4  5  6  7  8  9  10
```

No Confidence   **Total Confidence**
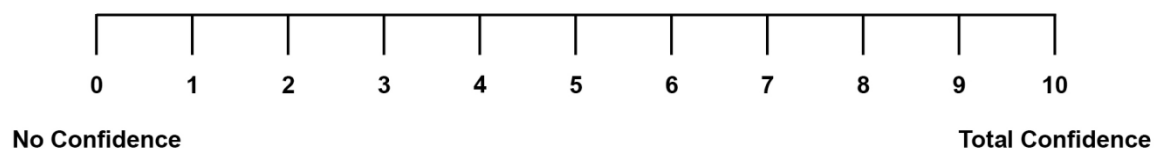
Before finishing this questionnaire, please fill in all of the blank spaces in this section:

1. What is your age? _____

2. Male _____   Female _____

3. Clinical course currently enrolled in _____

4. Have you ever administered an intramuscular injection?
    Yes _____   No _____

5. Have you ever changed a dressing using sterile technique?
    Yes _____   No _____

6. Have you ever inserted a Foley catheter?
    Yes _____   No _____

7. Have you ever inserted a nasogastric tube?
    Yes _____   No _____

8. Have you ever started an intravenous line?
    Yes _____   No _____

9. Have you ever calculated a dose of medication?
    Yes _____   No _____

10. Have you ever transferred a bedridden patient from bed to chair?

Yes _____   No _____

11. Have you ever hung an intravenous piggy back medication?

Yes _____   No _____

Thank You for completing this questionnaire!

Today's Date _____

Appendix B: Demographic Questionnaire

Part 2: Demographic Questions

Level of clinical experience in BSN program

         Sophomore_____   Junior_____   Senior_____

Marital Status

  Single_____   Married_____   Divorced_____   Separated_____   Widowed_____

Race

        White_____   African American_____   Asian/Pacific Islander_____

            Hispanic or Latino_____   Other_____

Existing healthcare license

  LPN_____   EMT_____   Paramedic_____   None_____

First generation college student

         Yes_____   No_____

Was nursing your first (original) choice of major?

         Yes_____   No_____