A MIXED METHODS STUDY OF THE SOURCES OF CLINICAL SELF-EFFICACY
BELIEFS IN BACCALAUREATE NURSING STUDENTS

by

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ABSTRACT

BETH L. HULTQUIST

A MIXED METHODS STUDY OF THE SOURCES OF CLINICAL SELF-EFFICACY BELIEFS IN BACCALAUREATE NURSING STUDENTS
Under the direction of Dr. Laura P. Kimble

Effective clinical instructors evaluate students’ learning needs and develop strategies to build on student strengths and improve areas of weakness. Among student attributes, the concept of self-efficacy is particularly applicable. Self-efficacy beliefs are the beliefs one can organize and execute a course of action to produce a desired result (Bandura, 1997). Bandura identified four sources of self-efficacy beliefs as mastery experiences, vicarious experiences, verbal persuasion, and physiological/affective states. The purposes of this mixed methods study were 1) to characterize the sources of clinical self-efficacy in clinically experienced (CE) BSN nursing students, and 2) to examine the influence of sources of self-efficacy, trait anxiety, and students’ perceptions of clinical instructor effectiveness on clinical self-efficacy outcome beliefs and clinical practice anxiety. A convenience sample of 135 clinically experienced baccalaureate nursing students in a large, Southern metropolitan area were recruited. After demographic data were collected, the sources of self-efficacy were measured using a researcher-developed tool. In addition, trait and clinical practice anxiety were measured using valid and reliable instruments. Qualitative data about student’s perceptions of clinical instructor
behaviors affecting their clinical performance were obtained through an open-ended question which students responded to in writing.

Participants reported all of the sources of self-efficacy had a moderate to high influence on their clinical performance. Results showed greater preference for mastery experiences and lower trait anxiety were significant predictors of greater clinical self-efficacy beliefs. Greater preference for mastery experiences, lower preference for physiological/affective sources, lower trait anxiety, and greater perception of clinical instructor effectiveness were significant predictors of lower clinical practice anxiety. Results indicated perceptions of clinical instructor effectiveness moderated the effect of verbal persuasion on clinical practice anxiety. Specifically, those participants who had greater preference for verbal persuasion and perceived their instructor as having low effectiveness demonstrated the highest clinical practice anxiety.

Qualitative data analysis revealed four themes. Two themes focused on students' experiences of ineffective instructor behaviors described as belittling and destructive feedback and evaluation. Two themes revealed effective instructor behaviors described as constructive feedback/evaluation and encouraging. Qualitative data supported quantitative results.

The continued study of self-efficacy in clinical education, specifically quantifying the sources of self-efficacy has the potential to improve clinical education for the next generation of students.
CHAPTER ONE
INTRODUCTION TO THE STUDY

Nursing education is a complicated endeavor. Student success is influenced by past experiences, future expectations, and varied levels of inherent intellect. In addition, nursing as a practice profession, necessitates the learning of didactic knowledge alongside clinical reasoning for ethical and safe nursing practice. In the pursuit of educating highly motivated, intelligent, and capable students, nurse educators spend substantial amounts of time delving into student behaviors or attributes to predict success, planning/revising nursing curriculum, and evaluating students to anticipate NCLEX-RN performance (Alameida et al., 2011; Harding, 2012; Jeffreys, 2007; McEnroe-Petitte, 2011; Wolkowitz, & Kelley, 2010). In addition to the customary nursing education mores, recent curricular reforms have called for reflective practice, development of critical reasoning, and integration of classroom and clinical learning (Benner, Sutphen, Leonard, & Day, 2010).

The education of nurses warrants intentionality. Nurse educators facilitate the transformation of students into novice nurses, oftentimes in the span of a few academic semesters. This process exacts a toll on students and faculty alike. As nursing curricula are burdened with content saturation, faculty are looking for methods of assessment to inform educators in developing strategies to improve student success both in the classroom and in the clinical area. Clinical education in nursing is fundamental to the acquisition of clinical reasoning. Traditionally, clinical nursing courses run
concomitantly with primarily didactic courses. Ideally, classroom instructors deliver content laden instruction which is reinforced in the clinical area. However, the clinical experience is rarely consistent between clinical groups because the educational objectives of clinical nursing faculty are vulnerable to patient census and community partnership agreements (Cederbaum & Klusaritz, 2009; Delunas & Rooda, 2009; MacIntyre, Murray, Teel, & Karshmer, 2009; Rambo, 1997).

The clinical education of nurses is vital for the formation of the next generation of nurses. Benner, Sutphen, Leonard, and Day (2010) called for the intentional development of transformative teaching in nursing. They advocated integrated clinical experiences within situated contexts to provide students with the experiences necessary for formation of active practicing nurses. To that end, nurse educators adapt clinical learning to students’ needs. Additionally, clinical nurse educators are faced with a group of students with varied levels of competency, knowledge attainment skills, past experiences, and resiliency to educational challenges. Personal attributes of students and clinical faculty influence acquisition of knowledge and the formation of professional nursing practice (Cederbaum & Klusaritz, 2009; Hanson & Stenvig, 2008; Hickey, 2010; Stockhausen, 2005).

Effective clinical instructors evaluate students’ learning needs and develop strategies to build on student strengths and improve areas of weakness (Hanson & Stenvig, 2008). Among student attributes the concept of self-efficacy is particularly applicable. Self-efficacy beliefs are the beliefs one can organize and execute a course of action to produce a desired result (Bandura, 1997). Self-efficacy beliefs are an antecedent property to specific behaviors. Students with high self-efficacy beliefs in the
clinical area are confident their actions will produce positive results in patient outcomes or their own learning objectives. Accurately identifying clinical self-efficacy beliefs and how those beliefs are created and maintained has the potential to positively affect the intentionality of clinical nursing education. Clinical experiences could be tailored to students’ identified self-efficacy beliefs and individual traits in order to improve effectiveness of clinical nursing education.

Statement of the Problem

Clinical nursing education is vital to nursing education since nursing inherently is a practice discipline. Clinical nursing education allows students to apply theoretical and scientific knowledge to the art of nursing practice. This transformation, as Benner et al. (2010) discussed, is a critical component in the education of nurses. Students are exposed to experiential learning, simulation labs, case studies, or other strategies designed to bring learning to life in the clinical area. Clinical instructor effectiveness contribute significantly to successful student learning. Cusatis and Blust (2009) identified the characteristics of effective clinical faculty as supportive, possessing positive interpersonal relationships, able to teach effectively, and demonstrating positive personal traits. In addition, O’Connor (2006) identified professional expectations of clinical instructors to include integration of classroom and clinical content, evaluation of student performance, adherence to policy and procedures, as well as maintaining clinical relationships with community partners.

The role of clinical nursing faculty is complex and necessarily takes place within full view of students and professional peers. Clinical instructors bear an enormous responsibility to students, patients, and to the educational unit. Within their role as
educators, they must accurately identify students’ strengths and weaknesses, encourage the development of clinical reasoning, and support transformation toward professional practice. Students have reported effective clinical instructors promote learning by “actively seeking learning opportunities for students, having clear communication of expectations, being approachable, promoting student independence, and helping students develop clinical judgment skills” (Hickey, 2010, p. 39). Hindrances to learning included poor knowledge base of the clinical instructor, negative interpersonal behaviors, and a propensity to teach from a historical perspective rather than current practice. Clinical instructors must also be mindful of the amount of stress experienced by nursing students in the clinical area (Moscaritolo, 2009). The clinical setting within active nursing units adds a great deal of stress to students’ experience, stress that can become overwhelming (Cook, 2005; Gibbons, Dempster, & Moutray, 2011; Grightmire, 2009). The accumulation of stress from the clinical practice area coupled with the effectiveness of the clinical instructor can either promote or hinder learning (Rambo, 1997).

Clinical instructors are encouraged to identify their personal teaching philosophy, articulate it clearly to their students and to execute their plan to benefit their students (Billings & Halstead, 2009; Gaberson & Oermann, 2010; O’Connor, 2006). However, the attributes of students, faculty and the nursing clinical unit may have as much to do with clinical success as a detailed teaching plan (Levett-Jones, Lathlean, Higgins & McMillan, 2009; Moscaritolo, 2009). Additionally, clinical faculty note the difference in clinical knowledge attainment of students who are willing to work hard and seek out new learning experiences. Anecdotally it has been noted, students who arrive with a “can do” attitude are more successful than those who arrive fearful and pensive. In addition to
students' attitudes, the resilience some students demonstrate in difficult clinical situations is different than the surrender mentality others display when learning becomes difficult. Additionally, students who are prone to anxiety may be inclined toward anxiety in the clinical setting which could impact beliefs and subsequent clinical performances.

Conceptually, the period within the program of study the clinical experience is occurring may impact perceptions of clinical instructor effectiveness, anxiety, and self-efficacy beliefs. Clinically naïve students (CN students) are negotiating new knowledge in a new environment. This may lead to increased anxiety even with the best of instructors and clinical placements. In contrast, clinically experienced students (CE students) are students enrolled in any subsequent nursing courses with a clinical component. For CE students, the unfamiliarity of the clinical experience is reduced and consequently, clinical anxiety and self-efficacy beliefs are more closely related to the clinical environment and interactions with the clinical instructor and other staff.

The education of nursing students in the clinical area remains a vital link between knowledge and practice. Clinical nursing education and clinical instructor behaviors are integral to successful clinical practice and student's self-efficacy beliefs drive their motivation and persistence. While numerous studies have examined clinical nursing education (Bradbury-Jones, Irvine, & Sambrook, 2010; Cederbaum & Klusaritz, 2009; Croxon & Maginnis, 2009; Delunas & Rooda, 2009; Hickey, 2010; MacIntyre, Murray, Teel, & Karshmer, 2009; McHugh & Lake, 2010; Moscaritolo, 2009; Phillips & Vinten, 2010; Stockhausen, 2005; Wolf, Beitz, Peters, & Wieland, 2009) and self-efficacy in nursing and nursing education (Andrew, 1998; Burks, 2001; Clark, Owen, & Tholcken, 2004; Duggleby, Cooper, & Penz, 2009; Goff, 2011; Grightmire, 2009; Harvey &
McMurray, 1994; Lauder et al., 2008; Lev, Kolassa, & Bakken, 2010; Livsey, 2009; McLaughlin, Moutray, & Muldoon, 2008; Mystakidou, Parpa, Tsilika, Galanos, & Vlahos, 2008; Roberts, 2010; Ware, 2008) there is little research of the sources of clinical self-efficacy in nursing students.

Purposes of the Study

The purposes of this mixed methods study were 1) to characterize the sources of clinical self-efficacy in clinically experienced (CE) baccalaureate nursing students, and 2) to examine the influence of sources of self-efficacy, trait anxiety, and students’ perceptions of clinical instructor effectiveness on clinical self-efficacy outcome beliefs and clinical practice anxiety.

Research Questions

The proposed research questions were as follows:

1. What are the types and strength of sources of clinical self-efficacy among clinically experienced (CE) baccalaureate nursing students?

2. Do trait anxiety, sources of clinical self-efficacy, and students’ perceptions of clinical instructor effectiveness significantly predict clinical self-efficacy beliefs of CE baccalaureate nursing students?

3. Do trait anxiety, sources of clinical self-efficacy, and students’ perceptions of clinical instructor effectiveness significantly predict clinical practice anxiety of CE baccalaureate nursing students?

4. Do trait anxiety and students’ perceptions of clinical instructor effectiveness moderate the effects of sources of clinical self-efficacy on clinical self-efficacy beliefs of clinically experienced baccalaureate nursing students?
5. Do trait anxiety and students' perceptions of clinical instructor effectiveness moderate the effects of sources of clinical self-efficacy on clinical practice anxiety of clinically experienced baccalaureate nursing students?

6. What are students' perceptions of how clinical instructor behaviors influence their clinical self-efficacy beliefs?

7. Do the qualitative data support the quantitative findings?

Conceptual Framework

The theory of self-efficacy is a pivotal component of social cognitive theory.

Social cognitive theorists believe human behavior is regulated through the interaction of knowledge structures, cognitive models, and adaptive functioning (Bandura, 1997).

"People are capable of self-reflection and self-regulation and that they are active shapers of their environments rather than simply passive reactors to them" (Maddux, 1995, p. 4).

Within social cognitive theory, perceived self-efficacy influences motivation for knowledge and skill attainment, shapes aspirations, and moves people toward goal attainment. The applicability to clinical nursing education is clear. Students with high levels of perceived self-efficacy beliefs are motivated learners and persist in the face of adversity (Bandura, 1997; Bembenutty, 2007; Margolis, 2005; Schunk, 1995; Zimmerman, 2000). Goal attainment, as a consequence of self-efficacy, has a dual role. According to Bandura (1997), achieving goals reinforces the behaviors that preceded it and encourages the student to expend effort in the next situation toward goal attainment. To a large extent, self-efficacy becomes a self-fulfilling prophecy. This is clear to any instructor in the clinical area. Students who perceive themselves to possess self-efficacy are often motivated learners, set high goals for themselves, and demonstrate resilience
even if the desired goal is not reached the first time. These students call upon their prior experiences, reflect on prior strategies and typically reach their goals. This whole process encourages the student for the next experience and the process repeats.

The theory of self-efficacy has been applied in educational settings (Andrews, 1998; Margolis, 2005; Schunk, 1995; Zimmerman, 2000) to explain motivation and resilience, and to predict success in educational settings. Bandura (1997) described a relationship of “triadic reciprocal causation” (p. 6) to explain the cyclical interaction of internal personal factors, behavior, and environmental events. These three determinants, while cyclical, are not equal and will vary depending on the situations. Self-efficacy beliefs are central to the behavioral determinant (Bandura, 1997). Students with high self-efficacy beliefs participate more readily in tasks and persist when faced with difficulty than students with low self-efficacy beliefs (Schunk, 1995). Self-efficacy, according to Bandura has four sources and the interaction between mastery experiences, vicarious experiences, verbal persuasions, and physiological/affective states influence the perception of self-efficacy by providing a feedback loop that either builds up or tears down self-efficacy beliefs. Frank Pajares, a leading researcher in educational psychology believed, “self-efficacy beliefs touch virtually every aspect of people’s lives . . . how well they motivate themselves and persevere . . . their vulnerability to stress and depression, and the life choices they make” (Bembenutty, 2007, p. 666). The concept of self-efficacy as a powerful motivator for learning is central in clinical nursing education. Nursing education in classroom settings requires students to be motivated toward success and persevere in the face of adversity and ever increasing requirements for learning. However, clinical nursing education may be even more challenging, as it requires a level
of knowledge integration requiring significant personal growth and fortitude. Clinical self-efficacy beliefs of nursing students have the potential to affect every learning interaction in the clinical area. Thus the conceptual basis for this study was Bandura's theory of self-efficacy, specifically identifying and describing the sources of self-efficacy.

Sources of Self-Efficacy

Bandura (1997) identified four sources of self-efficacy beliefs as enactive mastery experiences, vicarious experiences, verbal persuasions, and physiological/affective states. Mastery experiences are those situations where mastery was obtained through direct action. In clinical nursing education, mastery experiences would be the direct, experiential learning the student acquires. However, the sheer amount of learning required for today's nursing student is too broad to expect students will obtain mastery on every nursing skill or concept. The second source of self-efficacy, vicarious experience, occurs when students learn through modeling in the clinical area. Modeling, according to Bandura (1997) is not simply the exposure to role models. Modeling occurs when people observe others struggle within situations and learn from the model's behaviors as they deal with challenging situations. The impact of vicarious experiences upon self-efficacy is dependent upon the similarities between model and student (Bandura, 1997). If the student observes a peer or clinical instructor struggling with a hard concept or task, relates to the model, and observes persistence and success within the situation, then the vicarious experience can improve self-efficacy for the observer (Bandura, 1997). Students use vicarious experiences to form self-efficacy beliefs when watching peers and clinical instructor, but also in the daily interactions with a clinical nurse as long as the
student can identify with the model. While not as strong as mastery experiences, “seeing or visualizing people similar to oneself perform successfully typically raises efficacy beliefs in observers that they themselves possess the capabilities to master comparable activities” (Bandura, 1997, p. 87). Because the magnitude of nursing skills, knowledge, and experiences is untenable for mastery experiences, vicarious experiences offer clinical instructors methods to increase learning. Nursing narratives with staff and instructor, dialog with peers, and observation experiences in clinical and simulated learning environments provide potential vicarious experiences for learning.

Verbal persuasion, as a source of self-efficacy beliefs, is also applicable to clinical nursing education. Clinical students report the interpersonal skills of clinical instructors as important influences on their clinical learning (Hanson & Stenvig, 2008; Hickey, 2010; Stockhausen, 2005). “It is easier to sustain a sense of efficacy, especially when struggling with difficulties, if significant others express faith in one’s capabilities than if they convey doubts” (Bandura, 1997, p. 101). Hanson and Stenvig (2008) found the interpersonal skills of clinical instructors significantly impacted clinical learning. Specifically, the attitude of the educator and an encouraging demeanor where identified as positive clinical instructor attributes. Interestingly, Bandura (1997) discussed the effect of positive verbal persuasion could raise self-efficacy beliefs however, the use of negative verbal persuasion has an even stronger, negative effect.

As the last source of self-efficacy beliefs, the physiological and affective states are a direct result of the learner’s reaction to anxiety. If a student experiences heart palpitations with new learning in the clinical environment, the student may interpret their physiological response as a harbinger of failing and have decreased levels of perceived
self-efficacy. Other students may interpret these responses as motivators to improve outcomes. The physiological and affective states are directly influenced by the level of anxiety students experience in the clinical area. Research has established fear of clinical practice, interpersonal conflicts, anxiety in working with active nurses, and the evaluation process while learning in clinical as sources of clinical anxiety for nursing students (Cook, 2005; Edwards, Burnard, Bennett, & Hebden, 2010; Gibbons, Dempster, & Moutray, 2011; Goff, 2011; Gore, Hunt, Parker, & Raines, 2011; Melincavage, 2011; Melo, 2010; Moscaritolo, 2009; Timmins & Kaliszer, 2002). O'Connor (2006) delineated strategies for clinical instructors to evaluate students' reactions to anxiety in the clinical area and plan for the development of coping skills. Along with transient, clinical anxiety, nursing students who are inherently anxious with higher trait anxiety may be even more restricted in their efforts to gain experience and build clinical self-efficacy. Trait anxiety may exacerbate situational or state anxiety in clinical situations and undermine self-efficacy beliefs.

In summary, while mastery experience, vicarious experience, verbal persuasion, and physical/affective states are all important sources of self-efficacy, according to Usher and Pajares (2009), the most powerful source of self-efficacy beliefs are mastery experiences. These experiences are especially effective when individuals had to overcome difficulty during the attainment of mastery experiences. These challenging experiences, once mastered, offer the strongest positive influence on self-efficacy beliefs. However, mastery experiences pose unique problems to clinical nursing education. It is an impossible task to expose every nursing student to every clinical situation in order to impart mastery experiences. As Benner et al. (2010) wrote, "schools can never
adequately prepare their graduates for the full range of complexity of practice, with its ongoing changes in technology and nursing knowledge” (p. 32). Therefore, investigation of other sources of self-efficacy beliefs will be valuable to identify which of the three remaining sources of clinical self-efficacy may be enhanced to promote the deliberate attainment of stronger clinical self-efficacy beliefs in nursing students. Clinical nurse educators who are attuned to the sources of self-efficacy have the potential to improve the motivation, perseverance, and clinical reasoning of students.

Zimmerman noted students using verbal persuasion as a source of self-efficacy were dependent upon the “credibility of the persuader” (2000, p. 88). If the persuader was viewed as less than credible, verbal persuasion was less effective. Knox and Mogan (1985) identified effective and ineffective clinical instructor behaviors, which were noted to be the difference in interpersonal skills and communication. Participants also noted good clinical instructors were labeled as competent as a nurse and instructor. Gaberson and Oermann (2010) also identified clinical competence as an essential trait in effective clinical instructors. Students in the clinical area depend on the instructor to be confident, competent, and communicate clearly and effectively. Vicarious experiences, verbal persuasion, and physiological/affective sources of self-efficacy rely, to a great extent, on the capabilities of the clinical instructor.

The sources of clinical self-efficacy potentially have unique relationships with the effectiveness of clinical instructors. Thus the model strives to explain the relationship of clinical instructor behaviors to students’ clinical self-efficacy beliefs. Clinical instructors coordinate mastery experiences in clinical education as well as vicarious experiences for learning beyond what the student directly learns. Furthermore, the interpersonal skills of
clinical instructors influence the verbal/social persuasions given to students as well as affect the physiologic/affective states within the clinical learning environment. The last two sources of clinical self-efficacy are theorized largely to be the result of the culture the clinical instructor fosters in the clinical area. An important component of the model is the theorized relationships that clinical instructor effectiveness and students' trait anxiety may moderate or change how sources of self-efficacy impact students' clinical self-efficacy beliefs and clinical practice anxiety. Figure 1 depicts the theoretical model for the study which is based on Bandura’s self-efficacy theory.

![Figure 1](image_url)

**Figure 1. Conceptual Model of Sources of Clinical Self-Efficacy in Clinically Experienced Baccalaureate Nursing Students**

**Significance of the Study**

The education of nurses demands deliberate processes. Within undergraduate clinical nursing education, the integration of knowledge with experiential learning also requires intentional focus on methods and well planned execution of clinical learning. Hickey (2010) found 50% of baccalaureate nursing graduates reported inadequate
instruction during their clinical education. In addition, health care agencies report a
decreased satisfaction level with graduate nurses, and according to Hickey (2010),
“nursing programs must reexamine current clinical teaching models and initiate methods
to maximize student learning” (p. 40). The proposed study examining clinical self-
efficacy beliefs of CE nursing students is an opportunity to quantify self-efficacy and
identify sources of clinical self-efficacy in order to inform the practice of clinical
teaching. Pajares’ (1997) descriptions of the sources of self-efficacy are pertinent to
clinical nursing education especially verbal persuasion. Judgments related to skill
performance can cultivate or destroy self-efficacy beliefs. If the clinical nursing
instructor is particularly firm with a struggling student, will the student leave the
interaction bolstered to take on new challenges or fearful of continuing mistakes?
Likewise, Pajares (1997) noted the danger of artificially elevated self-efficacy beliefs and
called upon educators to help students develop an accurate calibration “so that they may
more effectively deploy appropriate cognitive strategies as they perform a task” (p. 19).
In clinical nursing education, overconfident students can put themselves in situations they
are ill-prepared to handle. Pajares believed in the continued research in the development
of self-efficacy beliefs. Nursing education is an important area where self-efficacy
research can be advanced.

Clinical self-efficacy is an important predictor of academic success and
motivation to succeed. Townsend and Scanlan (2011) challenged nurse leaders to
explore self-efficacy beliefs of clinical students “to initiate positive changes to nursing
curricula that would have significant impact on the future of nursing education in clinical
practice” (p. 12). This study will identify the sources of self-efficacy and explore their
relationship to the perceived clinical self-efficacy of clinically experienced nursing students. Understanding relationships between and among sources of self-efficacy and clinical self-efficacy beliefs, along with characteristics of the students and clinical instructor which impact those beliefs has the potential to guide clinical pedagogy and provide valuable insight into nursing clinical education.

Assumptions

The researcher assumes clinically experienced (CE) baccalaureate nursing students are able to accurately self-reflect. Clinically experienced nursing students have been exposed to reflection as a method of instruction and evaluation of their clinical performance. This study assumes students are capable of reflecting on their past learning and accurately identifying positive and negative learning experiences. In addition, it is assumed students' perceptions of whether or not a clinical instructor is effective are more important in understanding clinical self-efficacy beliefs than the instructor's perspective on his/her own teaching effectiveness.

Definition of Terms

*Clinical self-efficacy beliefs* were defined as the conviction that one's performance in a clinical setting produces desired effects. Clinical self-efficacy is a situation specific construct demanding narrowed measurement. General self-efficacy scales have been developed and tested (Grightmire, 2009; Scherbaum, Cohen-Charash, & Kern, 2006; Shelton, 1990; Sherer et al., 1982; Smith, 1989; Taylor & Reyes, 2012), however, Bandura himself wrote, "particularized efficacy beliefs are most predictive because those are the types of beliefs that guide which activities are undertaken and how well they are performed" (1997, p. 40). Thus the definition of clinical self-efficacy was
necessarily narrow and narrowly measured within the environment of clinical nursing education.

*Clinical practice anxiety* was worry or concern experienced within the clinical learning environment. Clinical learning is inherent with new experiences and stressful, real-life situations. Clinical practice anxiety was described as a variant of state anxiety, “characterized by subjective, consciously perceived feelings of tension and apprehension” (Cook, 2005, p. 157).

*Mastery experiences* were defined as those learning activities involving direct experience with the situation, task, or behavior. Students’ success at the mastery experience either builds self-efficacy or burdens them with doubts for success at the next experience.

*Vicarious experiences* were defined as observational experiences. Students watch a model complete a task or demonstrate a behavior and then internalize the experience to build their own self-efficacy. The extent in which a student used the vicarious experience is directly related to the perceived similarity between themselves and the model, “by their behavior and expressed ways of thinking, competent models transmit knowledge” (Bandura, 1997, p. 88).

*Verbal persuasion* was defined as feedback offered by others toward completion of a task, behavior, or action. To be effective, the verbal persuasion needs to be proximal to the event and given from a person the student finds trustworthy (Bandura, 1997). Additionally, the verbal feedback must be sincere and not a generalized “you can do it” message. The speaker must be cognizant of the student’s skills and offer realistic
feedback in order for the verbal persuasion to be meaningful and effective in raising self-efficacy beliefs.

*Physiologic/Affective states* were those physical and mental reactions to the task at hand. Students who felt nervous, anxious, or scared may use their reaction as proof of their inability to complete the task, thus their reaction will decrease their perceived self-efficacy. On the contrary, students with high self-efficacy beliefs may perceive their nervousness as an impetus toward correct behavior. Bandura (1997) believed “the problem is not arousal per se but the view one takes of it” (p. 109).

*Trait anxiety* was defined as an individual’s proneness toward states of worry, tension, or concern. Trait anxiety is a measurement of anxiety over time and is considered to be a stable construct which can affect a person’s reaction to periods of increased stress or anxiety (Spielberger et al., 1983).

*Clinical instructor effectiveness* was defined as behaviors, words, or actions which facilitated student learning (Knox & Mogan, 1985). Additionally, Gaberson and Oermann (2010) identified effective clinical instructors as those who demonstrated caring, were enthusiastic about nursing and teaching, and possessed good interpersonal skills.

**Summary**

This chapter provided an overview of the conceptual underpinnings of clinical self-efficacy, defined terms, identified researcher assumptions and clarified the purpose of the study. The influence of sources of self-efficacy in conjunction with anxiety and clinical instructor effectiveness is a robust area for further nursing education research. Nursing students often struggle to learn in the clinical area due to the stressful
environment, clinical instructor effectiveness, and personal strengths and weaknesses. This research study explored the relationship between sources of self-efficacy and the clinical self-efficacy beliefs of CE baccalaureate nursing students. Additionally, the study examined trait anxiety and clinical instructor effectiveness as moderators of this relationship. The deliberate inquiry into clinical self-efficacy beliefs will inform clinical nursing education. Results of this study have the potential to inform clinical instructors about the importance of students’ clinical self-efficacy beliefs early in the learning environment and allow educators to tailor clinical experiences to students’ preferred sources of clinical self-efficacy.
CHAPTER TWO
REVIEW OF LITERATURE

Introduction

Self-efficacy beliefs are powerful motivators to student success. There is a great deal of published research of self-efficacy beliefs in K-12 education. On a lesser scale, self-efficacy studies relevant to health maintenance practices, health education, and nursing education have also been pursued. However, few studies have attempted to quantify the process by which students build self-efficacy beliefs in nursing clinical. There has been research into clinical practice anxiety but few examined relationships between developing clinical self-efficacy and anxiety. The examination of these complicated relationships and how instructors can intentionally build students’ clinical self-efficacy has the potential to improve student outcomes, lower anxiety, and improve motivation in clinical nursing students. This review of literature examines self-efficacy within health education and nursing education, clinical practice anxiety, clinical educator effectiveness, and the examination of sources of self-efficacy beliefs in K-12 education. The chapter ends with inferences for the current study.

Synthesis of Literature

Self-Efficacy in Health Occupation Education

Opacic (2003) compared self-efficacy in physician assistant students to the students’ achievement expectation and outcome values and their actual clinical performance. The sample of 290 second year students was drawn from fourteen different
physician assistant schools in the state of Pennsylvania. Participants were given a survey to measure self-efficacy beliefs, achievement expectations, and perceived outcome values. Student’s actual clinical performance was graded by their clinical preceptors. Self-efficacy was measured using a researcher developed tool based on prior studies in counseling and K-12 studies. Self-efficacy was found to be a significant predictor of students’ clinical performance, although self-efficacy only accounted for 5% of the variance. Interestingly, the researchers found actual clinical performance was influenced more by factors unrelated to cognitive skills. Objective measurement of prior GPA and previous experience were less predictive. The researchers found self-efficacy to be a significant predictor of clinical performance, but actual clinical performance was measured in several different schools with different evaluators. Therefore, caution must be taken when discussing the predictive value of self-efficacy to actual clinical performance.

Jones and Sheppard (2011, 2012) developed and tested a self-efficacy scale for physiotherapy students in Australia. In this study, researchers examined student’s self-efficacy before their clinical experiences and then measured their actual clinical performance. Interestingly, the control group (n=16) in the study was educated without any changes, but the intervention group (n=16) was given eight hours of simulation practice prior to completing the self-efficacy scale and then the requisite clinical experience. Surprisingly, the intervention group demonstrated poorer clinical performance than the control group. The researchers attributed this finding to an overestimation of the ability of the group to be successful when they entered a real clinical situation. Bandura (1997) noted, “there is a marked difference between
possessing subskills and being able to integrate them into appropriate courses of action” (p. 37). Jones and Sheppard assumed the additional simulation training would increase self-efficacy scores, which it did, and then raise clinical performance, which it did not. It is vital to note, higher self-efficacy scores did not translate into improved clinical performance in the intervention group. Reinforcing the idea that self-efficacy contributes to but is not the sole determinant of clinical performance. Additionally, the small sample size precludes generalization to other populations. The study would have been strengthened by a larger sample size and a qualitative method to ascertain the student's perceptions of the actual simulation experience and why the simulation may have negatively influenced clinical performance.

Artino et al. (2012) measured self-efficacy across four years of medical school. The sample (n=304) consisted of medical students in all levels of medical education at Uniformed Services University of the Health Sciences, the only federal medical school in the United States. The researcher developed self-efficacy tool used the core competencies of the Accreditation Council for Graduate Medical Education (ACGME) for item development. Admittedly, the researchers conducted a tool development study, however their results across educational levels were interesting. Self-efficacy increased in each year of education suggesting as practice, education, and clinical experience accumulates, self-efficacy improves. This study was cross sectional in design so any comparison between groups must be made cautiously. Additionally, researchers emphasized the importance of domain specific measures of self-efficacy to improve generalizability of results to larger populations.
In summary, these few studies have largely been concerned with tool development essentially noting how stronger clinical self-efficacy beliefs may contribute to better clinical performance. Although there is overlap in the clinical activities of nursing and other health professions, the education of nursing is unique and these findings are likely not directly applicable to clinical nursing education. Nursing education has a broader focus for practice, thus specific inquiry into the development of self-efficacy beliefs in nursing education is necessary.

Self-Efficacy in Nursing Education

Academic and clinical self-efficacy was the focus of a study done by Harvey and McMurray (1994). They developed and refined nursing academic and clinical self-efficacy scales as part of a longitudinal study describing student self-efficacy and its effect on career self-efficacy, persistence in the major, and performance. Their study had three phases for tool development, refinement, and then establishing psychometric evidence for future use. In the last phase, the sample consisted of 306 first year nursing students as part of a three year longitudinal study. Interestingly, first year students who had prior experience in the health care environment demonstrated higher academic and clinical self-efficacy. Bandura believed mastery experiences are a strong source of self-efficacy, thus it was assumed prior experience students would score higher in self-efficacy beliefs. At the end of the three years, students who remained in the nursing program were compared with those who left and correlations with their first semester self-efficacy scores were investigated. Students leaving nursing demonstrated a lower academic self-efficacy score than those who stayed in nursing, however there was no significant difference in clinical self-efficacy between the two groups. The researchers
concluded the academic self-efficacy score relied on classroom/didactic skills and weaknesses in those skills may have been the reason students were unsuccessful in their pursuit of nursing as a career. The higher self-efficacy beliefs in students who stayed offers support for Bandura's theory in which higher self-efficacy leads to more persistence and perseverance in the face of struggles. In their closing discussion, Harvey and McMurray called for further nursing education research in clinical and academic self-efficacy, specifically endorsing inquiries into the sources of self-efficacy and how nursing students develop self-efficacy beliefs.

Andrews (1998), an Australian researcher, investigated science self-efficacy of first-year undergraduate nursing students comparing their science self-efficacy to their academic performance in science based nursing courses. The author developed the Self-Efficacy for Science (SEFS) tool and statistical analysis was used to determine if the SEFS could predict academic performance in nursing students. The sample was comprised of 66 first year nursing students. Their scores on the SEFS were compared to their grades achieved in first year science based courses. Andrews found the SEFS was predictive of students' performance in science-based classes. The SEFS predicted 24% of the academic performance in the first semester science class and 18.5% in the second semester science class. In self-efficacy theory, Bandura has postulated prior mastery experiences are the strongest source of self-efficacy. However, in this study, students with prior science experience in high school did not score significantly higher in science self-efficacy than those students who did not have prior science experience in high school. The researcher did note the scores approached significance (p=0.09).

Interestingly, Andrews focused her study on the measurement and predictive qualities of
self-efficacy theory in order to identify students who would benefit from strategies to improve self-efficacy beliefs. This study also demonstrated the complexity of the relationship between self-efficacy sources and self-efficacy beliefs and what comprises mastery experiences.

Self-efficacy as a method of evaluation was the focus of a study done by Clark, Owen, and Tholcken (2004). Direct instructor evaluation of every student-patient interaction is difficult in clinical education. Thus, the researchers developed a tool measuring self-efficacy beliefs of nursing students in a community based class. In addition, the researchers felt students would incorporate learning into their practice if the learning was deemed as valuable. Therefore they compared clinical self-efficacy to students’ level of perceived importance of each skill. The sample consisted of 80 third-semester baccalaureate nursing students enrolled in a case management course. The Self-Efficacy for Clinical Evaluation Scale (SECS) was adapted from the course objectives and contained two dimensions. One measured student self-efficacy and the second dimension measured students’ perceived importance of each item in the scale. Additionally, clinical faculty were asked to complete a nine item evaluation tool designed to match the tool given to the students. Interestingly, instructors rated student performance higher than the students’ perceived self-efficacy. The study’s authors used the data to improve the learning environment. For example, data showed students perceived nursing in the home care environment as very important, but their self-efficacy scores indicated they felt ill-equipped to perform in this clinical setting. This paradoxical finding led researchers to modify the course, increasing students’ exposure to home care environments. Clark, Owen, and Tholcken were interested in using self-efficacy as a
method of evaluation in clinical where so much goes unobserved by a clinical instructor with responsibilities for numerous clinical students. This study provided the researchers valuable information into the perception of their students’ self-efficacy and preparation for clinical. Self-efficacy was used as a method of evaluation, not only of students’ activities but also as an evaluation of the clinical learning environment.

McLaughlin, Moutray, and Muldoon (2008) studied self-efficacy as part of their longitudinal study examining retention of nursing students. Citing Andrews (1998) along with Harvey and McMurray (1994), the researchers postulated occupational and academic self-efficacy would be predictors for success in nursing school. McLaughlin, Moutray, and Muldoon modified an occupational self-efficacy tool to measure students’ self-confidence in their education and skills to be able to perform as a nurse. Academic self-efficacy was measured along with a personality scale to draw relationships to persistence in nursing school. The study was conducted in the United Kingdom over a two years span, initially with 384 and ending with 350 participants. Of the 350 nursing students, 43 had left the nursing program which afforded the researchers the opportunity to investigate relationships between personality and self-efficacy with success in school. These relationships fell along logical lines of less success manifested in students who demonstrated apathy and impulsiveness. Researchers found occupational self-efficacy was a predictor of student’s final grades. In their discussion of these results, the researchers highlighted the four sources of self-efficacy and the complicated relationships between each source. The researchers continued to stress the importance of schools of nursing attending to students’ self-esteem, thus confusing the distinct concepts of self-efficacy and self-esteem. They concluded, agreeing with Bandura and Locke (2003),
increasing self-efficacy may increase students' feelings of self-control and improve their ability to manage physiological/affective states. The researchers also suggested more research was needed to explore the use of models to offer students vicarious learning and thus increasing self-efficacy. The authors' intent to describe traits associated with retention of nursing students ended with an admonition to be careful when applying personal attributes to admission decisions. However, using data to inform practice in order to prevent attrition was seen by the researchers as a valuable outcome of their study.

Similarly, in Scotland, Lauder et al. (2008) studied self-efficacy in preregistration students (similar to pre-licensure in the U.S.) as a predictor of fitness for practice. Bandura's self-efficacy theory was the basis of the study, including discussion of the four sources. Students who have success in stressful experiences build self-efficacy for future events. Interestingly, the researchers also discussed the dangerous situation of students with self-efficacy beliefs higher than their actual demonstrated competency. The sample consisted of 777 students from two cohorts of preregistration nursing and midwifery students in seven institutions in Scotland. The researchers measured students' clinical competency, self-efficacy, and perceived support from family, peers, university, and/or friends. Data were collected by self-report questionnaires to measure nursing competence, general self-efficacy and support in the preregistration semester of the nursing and midwifery students. The study found a moderate positive correlation between self-efficacy and competency, which is expected because the concepts are similar. The researchers found high self-efficacy reports in their sample which they attributed to the over-confidence of preregistration students. Their
findings about identified support systems indicated students rated family, friends, and peers as a greater support than university and supervisors. Self-efficacy was measured using a general self-efficacy scale. General self-efficacy tools measure a participant's overall feelings of worth or ability to produce a desired result. Bandura (2006) encouraged researchers to develop specific self-efficacy tools since general scales have "limited explanatory and predictive value because most of the items in an all-purpose test may have little or no relevance to the domain of functioning" (p. 307). Thus, it is important to note the general self-efficacy scale may have limited value in predicting fitness for practice in nursing. The high levels of perceived self-efficacy among preregistration students in this study may be due to the generalized nature of the tool itself.

Grightmire (2009) studied nursing student self-efficacy beliefs during clinical, specifically the effect of the four sources on self-efficacy beliefs, differences in self-efficacy across the curriculum, and the effect of clinical instructor behavior on student self-efficacy beliefs. The mixed method study began with qualitative interviews of six students in their first clinical experience and seven students in their sixth clinical experience. Participants were interviewed at the beginning and end of their clinical semester. Grightmire explored the four sources of self-efficacy within each interview. Mastery experiences were noted by students to be valuable in their skill attainment. For example, students in their first clinical experience were taught surgical dressing change in skills lab and then performed in clinical as patient situations allowed. Student comments reinforced the concept of skill acquisition and then approximate practice in the clinical area were ideal for increasing self-efficacy. Generally students in later clinical
experiences reported greater fear in the clinical area than students in their first clinical experience. One student who was in a later clinical experience noted that performing a task or skill several semesters after it had been studied and mastered in the skills lab was detrimental to her self-confidence in performing the skill.

Students also noted the value of vicarious experiences. Watching a peer successfully perform a skill was often more instructive than if the clinical instructor performed the skill. Verbal persuasion was identified by Grightmire as a significant influence on self-efficacy beliefs. The methods employed by clinical instructors to teach and evaluate students were also common threads in the qualitative interviews. Within the physiological/affective source of self-efficacy students did report frequent nausea, nervousness, frustration, and anxiety within the clinical area in general and specifically within personal relationships with clinical instructors.

To validate the qualitative results, Grightmire (2009) used the General Perceived Self-Efficacy Scale developed by Schwarzer and Jerusalem (1995). She also asked students to complete a questionnaire on domains of nursing practice. Students completed both these scales at the end of each qualitative interview. Scores demonstrated an increase in self-efficacy over the semester by the students in their first clinical experience. Surprisingly, students in later clinical experiences demonstrated a decrease in self-efficacy. Grightmire hypothesized the students in later experiences had been exposed to negative clinical teacher behaviors resulting in lower self-efficacy scores. However, the lower scores could also indicate a more accurate appraisal of self-efficacy and skills in the clinical area. Qualitative results from this study are rich with descriptions of student-teacher interactions and the effects on the four sources of student
self-efficacy. In summary, self-efficacy research within nursing education is sparse. The existing studies are limited by small sample sizes and use of general self-efficacy scales rather than domain specific scales. Little is known about the sources of self-efficacy and their effect on building clinical self-efficacy in nursing education. The continued research into students’ perceptions of clinical self-efficacy and clinical teacher effectiveness will also be important to improve clinical nursing education by informing the development of nursing-discipline specific educational interventions to promote clinical self-efficacy and its related outcomes.

Clinical Practice Anxiety

Clinical nursing education is an anxiety-laden environment. Students are practicing skills, implementing knowledge, and being evaluated simultaneously. Billings and Halstead (2009) detailed strategies to accommodate for students’ physical and mental health challenges, O’Connor (2006) noted clinical anxiety increases closer to graduation, and Gaberson and Oermann (2010) advised faculty to “employ strategies to identify students’ fears and reduce their anxiety to a manageable level” (p. 50). Students’ innate anxiety can affect the situational anxiety experienced in clinical learning. It is within the purview of the clinical instructor to identify and attempt to ameliorate student anxiety to improve educational and patient outcomes. Nursing researchers have explored anxiety in the clinical area and strategies to improve student’s coping behaviors.

Kleehammer, Hart, and Keck (1990) studied nursing students’ perceptions of anxiety in clinical nursing education. Using the researcher generated Clinical Experience Assessment Form, 39 junior and 53 senior baccalaureate nursing students took part in this four year study. The highest levels of anxiety were noted to be the first clinical
experience and the fear related to making a mistake. In comparing cohorts, juniors had higher levels of anxiety than seniors, which was expected since the largest anxiety provoking situation was the initial clinical experience. The second highest anxiety provoking situation was faculty observation and evaluation. Kleehammer, Hart, and Keck suggested to ameliorate anxiety, student observation and evaluation be done in a nonthreatening manner and throughout the semester not just at the end as a summative evaluation. Clinical instructor effectiveness had a strong effect on the subjects. Kleehammer, Hart, and Keck also encouraged faculty to be aware of their interactions with students and how those interactions are perceived. They emphasized student anxiety must be kept at manageable levels so learning can take place.

Rambo (1997) researched self-efficacy, anxiety, clinical instructor effectiveness, and students’ perceptions of learning. She used the Self-Efficacy Scale, the T-Anxiety portion of Spielberger’s State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), the Nurse Clinical Teacher Effectiveness Inventory (Knox & Mogan, 1985), and the Stewart Evaluation of Nursing Scale. The researcher modified the Self-Efficacy Scale by adding 13 nursing specific concepts to the scale.

The sample included 83 senior baccalaureate nursing students in varying clinical experiences. Some participants were in a community clinical rotation and others in a typical medical-surgical, hospital based clinical. Findings were mixed. Rambo (1997) hypothesized higher levels of self-efficacy beliefs would positively correlate with higher levels of perceived learning and data supported this hypothesis. However, students with higher trait anxiety did not perceive a decrease in their clinical learning, and higher self-
efficacy beliefs coupled with lower anxiety scores did not increase student's perceptions of their clinical instructor effectiveness.

Rambo (1997) explained the non-significant relationship between clinical instructor effectiveness and self-efficacy beliefs on the fact the sample contained students in a community clinical rotation (63%) who did not interact with the instructor on a consistent basis. In addition, she conceptualized senior nursing students as moving toward independent practice and theorized they may be pulling away from the watchful eyes of clinical instructors. Interestingly, the relationship between trait anxiety and perceived clinical learning was hypothesized to be inversely related. However, data showed a positive relationship, perhaps illuminating Bandura's belief in which small amounts of anxiety can improve a student's performance. "The problem is not arousal per se but the view one takes of it. In fact, to read arousal as challenge can boost perceived efficacy" (Bandura, 1997, p. 109). This arousal has a limiting effect when anxiety overcomes learning, however the Rambo study only quantified a general state of anxiety (trait) and not specific clinical practice anxiety (state).

Cook (2005) used invitational educational theory as the theoretical model for her research on nursing students' clinical anxiety. Her sample consisted of 229 junior and senior nursing students in traditional baccalaureate programs. They were administered a tool to identify invitational teaching practices and their anxiety was measured using the state-anxiety scale of the STAI. She hypothesized students who perceived faculty as inviting would demonstrate lower state anxiety scores, and this hypothesis was supported. Data revealed senior nursing students had similar levels of state anxiety as junior students. Compared to senior students, junior nursing students perceived their faculty to
be more inviting. The researcher postulated senior faculty may be distancing themselves from their students in the clinical area to encourage students' independence as students move toward graduation. Senior students may require different approaches from the clinical instructor to allow for more independence and yet not convey a detachment of caring about their learning. This study supported the hypothesis that clinical teacher behaviors affect clinical practice anxiety in students. More importantly, the study reinforced effective teaching strategies improve student anxiety and have the potential to increase learning.

The impact of nursing curriculum on the anxiety states of students was the focus of research conducted by Melo, Williams, and Ross (2010). Their research compared students’ clinical practice anxiety between nursing programs using problem based learning (PBL) curriculum (n=53) to students in traditional programs (n=42). The researchers explored the differences between groups in relation to different demographic characteristics, hours of study, and anxiety proneness. The STAI was used to quantify both state and trait anxiety and the Clinical Experience Assessment Form (CEAF) developed by Kleehammer, Hart, and Keck (1990) was used to measure clinical practice anxiety. Since problem based learning is rooted in real-life contexts and encourages active learning, the researchers hypothesized the PBL group would experience less anxiety in clinical. Data analysis showed no statistical difference between problem based and traditional curricula students on state and trait anxiety or clinical experiences. However, the mean state and trait anxiety scores for both groups were considered high by the researchers and thus they concluded more faculty strategies needed to be
implemented to assess students accurately so anxiety can be addressed and clinical learning can be supported.

Melincavage (2011) examined clinical anxiety in nursing students through a phenomenological study of seven baccalaureate nursing students who had at least one clinical nursing course before data collection began. The researcher interviewed participants one-on-one and transcribed interviews and mined data for themes consistent across their experiences. She found student clinical anxiety was affected by inexperienced faculty, being demeaned by faculty and staff, feeling exposed to ridicule in front of peers, abandonment by clinical instructor, and being uncertain of ability. One student discussed feelings of anxiety and embarrassment when her clinical instructor described her as a failure in front of peers and staff. In another instance, a student said the clinical faculty’s inexperience with grading practices increased her anxiety because the instructor verbally failed her during the clinical day. Melincavage detailed many students’ accounts of clinical instructor behavior and the effects on their own anxiety level in clinical. Strategies for coping included teaching students to be assertive with staff, to stand up for their learning needs, and deep breathing techniques to decrease the anxiety experienced while in clinical learning. These strategies are relevant to verbal persuasion and physiological/affective sources of clinical self-efficacy. Student anxiety in clinical can be a severe hindrance to clinical learning and can affect student learning as well as self-efficacy beliefs. Clinical instructor behaviors have a direct relation to all four sources of self-efficacy but are particularly relevant to verbal persuasions and physiological/affective states.
Simulation was tested as a strategy to decrease students’ clinical practice anxiety before their initial clinical experience in research conducted by Gore, Hunt, Parker, and Raines (2011). Students in the experimental group (n=47) were given a four hour simulation before beginning on an actual clinical floor. The control group (n=23) was offered the simulation after the actual clinical experience. Anxiety was measured using the STAI- State Anxiety scale and administered to all students before the actual clinical experience. Thus, the experimental group’s anxiety was measured after the simulation experience and the control group’s anxiety data was collected before their actual clinical experience so scores could be compared between groups. The mean pre-clinical anxiety score of the experimental group was significantly lower than the control group. Thus the researchers concluded the simulation experience had decreased the level of anxiety in students preparing to enter the actual clinical unit. These findings are interesting when compared to Jones and Sheppard’s (2011) research with physiotherapy students in which simulation raised self-efficacy but did not improve actual clinical skills. These two studies suggest simulation improved self-efficacy and anxiety levels but did not improve the actual clinical performance.

Gore, Hunt, Parker, and Raines (2011) concluded simulation was an effective strategy to decrease students’ clinical practice anxiety. Simulation, although not defined by Bandura (1997), would be a teaching strategy influencing the vicarious experiences source of self-efficacy. Simulation offers students the ability to practice skills and behaviors in a safe environment and participate in debriefing to evaluate performance against what was expected. This type of learning is closest to Bandura’s definition of vicarious learning in which “efficacy appraisals are partly influenced by vicarious
experiences mediated through modeled attainments" (p. 86). The effect of vicarious experiences as a source of self-efficacy, coupled with anxiety in the clinical area has the potential to improve or destroy clinical self-efficacy in clinical nursing students.

Clinical Teacher Effectiveness

Gillespie (2002) studied clinical teacher connection to students using a qualitative interview process. The sample consisted of eight full or part-time students in a baccalaureate program. The interview was unstructured but designed to explore the experience of students and their feelings of connection with their clinical instructor. The researcher found both personal and professional components to the student-teacher relationship. Students reported feeling valued when instructors acknowledged professional boundaries yet fostered a feeling of mutuality. Students realized the instructor possessed more knowledge but they also felt valued which increased their feelings of connectedness. Additionally, competence was identified as an important facet of the student-teacher relationship. Competence included mutual knowing as essential in forming relationships with students. Students commented on the effectiveness of clinical teachers who help and support learning. This connectedness was important to students when receiving feedback from the teacher. Students who felt valued and connected to their instructor also felt their instructor’s feedback was valuable and not demeaning. The relationship between teacher and student affected the student’s perception of the feedback. When Bandura (1997) wrote about vicarious learning he postulated the more a student can relate to the model, the more effective vicarious learning will become. Gillespie’s study offers support for a clinical instructor to maintain connectedness with
students in order to be more effective in teaching, supporting, and correcting students in
the clinical area.

Allison-Jones and Hirt (2004) studied teaching effectiveness of part-time and full-
time clinical faculty in seven associate degree programs. The sample included 538
students, 30 full-time and 14 part-time faculty. Students were asked to complete a
student version of the Nursing Clinical Teaching Effectiveness Inventory (NCTEI) and
faculty were given the faculty version. Students rated full-time faculty as being more
effective than part-time faculty. There were no statistically significant differences in how
full-time and part-time faculty perceived their own effectiveness. Interestingly,
effectiveness ratings of the faculty and their clinical students were compared and no
significant difference was found in how the faculty member and the students assigned to
their clinical group rated the effectiveness of the clinical instruction. This study offers
support for the use of the NCTEI in future studies as well as demonstrates the amount of
time spent with students may increase perceptions of clinical teaching. The student-
teacher relationship is an important factor in effective clinical education. This
relationship has the potential to affect the development of clinical self-efficacy in
students.

Kube (2010) used Bandura’s broader social learning theory as a basis for her
study exploring the relationship between clinical teaching behaviors and student learning.
The sample consisted of 240 baccalaureate nursing students from three nursing programs
in Midwestern states. The NCTEI was administered along with a researcher developed
Influence on Learning Scale. The researcher hypothesized as clinical instructors used the
positive teaching behaviors identified on the NCTEI, student learning would be positively
affected. The teaching behaviors frequently used by effective clinical instructors were self-confidence, demonstrating clinical skill and judgment, enjoyed teaching and was organized. Teaching behaviors students perceived as contributing to their learning were being approachable, organized, well prepared, supportive, and providing frequent feedback. Those behaviors contributing less to their learning were recognized own limitations, directing students to research, and discussing current development in the field of nursing. In her discussion of social learning theory and the study’s results, Kube referred to the effect clinical educators exert upon students’ self-efficacy beliefs particularly in the area of vicarious learning and modeling.

The literature around clinical teacher effectiveness support teaching in the clinical area is an important role for nursing faculty. Teaching students to assimilate didactic knowledge for practice requires interpersonal, professional, and caring skills. Students’ perceptions of the clinical nurse educator oftentimes impacts their perceptions of a successful or unsuccessful learning experience. In addition, clinical instructors have the potential to affect each of the four sources of self-efficacy and affect their student’s achievement of clinical self-efficacy.

Sources of Self-Efficacy and Motivation to Learn

Self-efficacy research has spanned education, health, and health education and the theory has been examined as a way to predict success in occupations or education and also as a method of evaluation. However, research regarding the distinct sources of self-efficacy and the effect each source has on self-efficacy beliefs and motivation has been sporadic. The following literature from occupational research (Muretta, 2004) and K-12 education (Phan, 2012) is presented.
Muretta (2004) attempted to identify and quantify the four sources of self-efficacy and used aircraft maintenance as the specific task to measure. He created a tool designed to measure the four sources and if the person had strong or weak antecedent properties of each source. Admittedly, the researcher’s tool was cumbersome and the items reflected conceptual overlap between the strength of sources and the effect on overall self-efficacy. He did, however, find strong mastery experiences coupled with physiological arousal were associated with higher self-efficacy beliefs and conversely adverse mastery experiences coupled with physiological arousal were associated with lower self-efficacy beliefs. This was an important finding as it demonstrated negative mastery experiences could decrease self-efficacy. If a student, while learning or practicing a skill experiences physiological arousal and is unsuccessful (negative mastery experience), the physiological state likely reinforces the negative mastery experience. While this relationship appears logical and consistent with self-efficacy theory, the effect of negative mastery experiences has not been widely studied.

Negative mastery experiences are particularly appropriate for discussion within nursing clinical education. Negative clinical experiences may lower students’ clinical self-efficacy. Thus mastery experiences may not only be a positive influence if the student has been exposed to the skill or behavior, but a negative influence if the exposure was adverse. These negative mastery experiences may reflect the dual efficacy sources of verbal persuasion and physiological/affective states and need to be considered when evaluating students’ clinical outcomes.

Similarly, Phan (2012) explored the influence of sources of self-efficacy, self-efficacy beliefs, and academic achievement in fifth and sixth grade math/science students
in Australia. Self-efficacy was assessed at four time points over one year in approximately three month intervals. Phan adapted scales previously used in K-12 math research and tested sources of self-efficacy at the first time point, the self-efficacy beliefs at the last three time points, and then the academic achievement was measured at the end of the four time points using a researcher generated short test along with end of course grades. Phan found enactive mastery experiences, verbal persuasion, and physiological/affective states were predictive of self-efficacy beliefs. Although predictive, the sources did not follow the potency with which they affect self-efficacy beliefs postulated by Bandura in which enactive mastery is the strongest, followed by vicarious learning, verbal persuasion, and then affective states. The potency of the sources varied between math and science students. Researchers postulated this could be due to the different educational practices of teachers and perhaps the influence of one source over the others in the classroom.

Phan (2012) also found children who identified two informational sources, enactive mastery experiences and verbal persuasion, demonstrated increased self-efficacy beliefs over time. However, emotional and physiological states had a detrimental effect on the change in math self-efficacy and verbal persuasion had a negative effect on science self-efficacy. Overall, results showed higher levels of self-efficacy beliefs predicted increased learning.

Inferences for Current Study

The literature review supports the value of self-efficacy in clinical nursing education. Specifically, research in nursing education and K-12 education supports the inquiry into the sources of self-efficacy and these sources along with other relevant
factors contribute to self-efficacy beliefs. Bandura (1997) identified mastery experiences as the most influential in building self-efficacy beliefs. The other three sources had varying degrees of influence. There is a paucity of research examining the relationships between the distinct sources of self-efficacy. In addition, other influences such as anxiety and the clinical instructor can modify this relationship. The research also suggests self-efficacy beliefs early in the nursing program may predict academic performance in the classroom setting in subsequent semesters. However, within clinical settings it appears that self-efficacy beliefs may not be as stable and students may be vulnerable to negative changes in self-efficacy beliefs during clinical experiences. Therefore, this study examined students’ perceived sources of self-efficacy and the influence of these sources on clinical self-efficacy beliefs. Trait anxiety and clinical teacher effectiveness as moderators of the relationship between sources of self-efficacy and clinical self-efficacy beliefs were explored. The examination of these moderating effects provided greater insight into whether effective clinical instructors and/or lower anxiety may modify (strengthen or weaken) the effect of the sources on clinical self-efficacy beliefs and clinical-experience related anxiety. Clinical nursing education is unable to provide mastery experiences for every skill or behavior graduates need for professional nursing practice. By identifying the sources students perceive as building self-efficacy, nurse educators have the potential to tailor clinical learning to students’ needs and ultimately strengthen self-efficacy.

Summary

This chapter provided a review of current literature related to self-efficacy in health care occupation education, nursing education, and research of the sources of self-
efficacy. The applicability of self-efficacy research to clinical nursing education was established. Self-efficacy theory has been investigated for over three decades starting with Bandura's work with spider phobias. Educational psychologists have been studying the development of self-efficacy beliefs, and the effects of self-efficacy beliefs on motivation, goal attainment, and perseverance. Scholars have used self-efficacy as a predictor variable in order to identify students who are struggling and whom could be helped with intentional strategies in both elementary education and higher education.

Nursing education has also used self-efficacy in varying degrees of specificity to explain, predict, improve, or evaluate nursing students' performance. Clinical nursing education with its focus on skills and behaviors necessary for safe, professional practice has a unique opportunity to explore self-efficacy. Clinical nursing education is often the setting students make important connections between classroom knowledge and clinical practice. Clinical instructor effectiveness and the effect of anxiety on student learning have direct links to the sources of self-efficacy beliefs and as such, provide a unique setting for research.

The exploration of self-efficacy beliefs in nursing students is valuable to increase the body of clinical education knowledge. Effective clinical instructors will benefit from identifying students' clinical self-efficacy in relation to their anxiety in order to be intentional toward helping them learn in the clinical area. This research study will inform clinical nursing education and improve outcomes for the next generation of nursing students.
CHAPTER THREE

METHODOLOGY

This chapter delineates the design, setting, and sample for the study. Procedures for recruitment of participants, instrumentation, data collection, data analysis, and methods for human subject protection are discussed.

Research Design

This convergent mixed method study examined the sources students use to develop clinical self-efficacy beliefs and to explore relationships among trait anxiety, clinical instructor effectiveness, clinical self-efficacy beliefs, and clinical practice anxiety. Mixed method research allowed the researcher to quantitatively measure variables and also gather qualitative data to validate and explain the phenomenon being studied. This method, rooted in pragmatism, focuses on the practical application of research (Creswell & Plano Clark, 2011). Mixed methods research should be undertaken with specific reasons. Participants provided perceptions of teaching behaviors from their entire clinical education experience, thus offering a rich description of clinical instructor and student interaction. A one phase, mixed method design was used because the researcher desired to compare and contrast data. The quantitative and qualitative strands were collected concurrently, analyzed separately, and then examined together to see whether the qualitative data validated the quantitative findings.
Setting

A private, baccalaureate school of nursing in a large, southern, metropolitan city was the setting for the study.

Sample

The population for this study was pre-licensure baccalaureate nursing students enrolled in a clinical nursing course. The inclusion criteria for the sample were clinically experienced (CE) students enrolled in at least their second clinical nursing course of a BSN program. Exclusion criteria included being enrolled in an RN to BSN program.

Clinically experienced (CE) nursing students were chosen as the population of interest because they have completed at least one semester of clinical nursing education and were able to accurately reflect upon their experiences in the clinical setting (Usher & Pajares, 2008). Additionally, the stress of the first clinical experience may overshadow a student’s capacity to accurately appraise his or her own clinical practice, anxiety levels, and clinical teacher effectiveness.

Instrumentation

Four instruments were used to operationalize the variables for this study: the Sources of Student Clinical Self-Efficacy, developed by the researcher; Spielberger’s State-Trait Anxiety Scale; Knox and Mogan’s Nursing Clinical Teacher Effectiveness Inventory; and the Self-Efficacy in Clinical Performance instrument (Cheraghi, Hassani, Yaghmaei, & Alavi-Majed, 2009). Author permissions were obtained (Appendix A) to use each instrument in the research and copies of the instruments can be found in Appendix B. Along with the quantitative instruments, one open-ended question was included in the study packet to obtain qualitative data about participants’ perceptions of
their clinical experiences as they relate to their clinical instructor and self-efficacy beliefs. A description of all instruments including psychometric information, as applicable, follows.

Demographic Form

Demographic data including age, gender, race, ethnicity, semester of school, previous degrees awarded, previous experience in the health care environment, and type of institution was collected for the sample. In addition, participants were asked to identify their clinical instructor's employment status. Participants were given the option of indicating if their instructor was a full-time educator with clinical and classroom responsibilities or part-time educator with only clinical teaching responsibilities. Information about the employment status of the clinical instructor, while not central to the quantitative data, was obtained as employment status may have influenced participants' perceptions and provided options for comparisons between types of instructors within the collected data.

Sources of Clinical Self-Efficacy

Sources of clinical self-efficacy were operationalized with the Sources of Student Clinical Self-Efficacy instrument (SSCSE). The SSCSE was developed by the researcher for this study. Instrument development, including item generation, was anchored in self-efficacy theory and Bandura's (2006) seminal work in constructing self-efficacy scales. Additionally, the work of Usher and Pajares (2006) was foundational to building an instrument to identify sources of self-efficacy. Face validity was obtained through review of experts in clinical nursing education and feedback from students not involved as participants. Wording and order of items were changed after expert and student
review and revised accordingly. The tool consisted of 24 questions, three items for mastery experiences source, seven for vicarious experiences source, six for verbal persuasion source, and eight for physiologic/affective source. Participants rated each item on a Likert scale of 1 (strongly disagree) to 7 (strongly agree). Each source was measured individually with higher scores indicating the greater importance participants placed on the source to form self-efficacy beliefs. The mastery experiences source score range was 3-21, vicarious experiences source score range was 7-49, verbal persuasion source score range was 6-42, and physiologic/affective source score was 8-56.

Items designed to measure mastery experiences included, “clinical experiences in prior semesters affect my clinical performance” and “I have been successful in clinical.” Vicarious experiences were measured using items such as, “watching a staff nurse who is a recent graduate makes me think about how I will perform in new clinical situations.” Verbal persuasion, as a source of self-efficacy, was explored using items such as, “positive feedback from my clinical instructor affects my clinical performance,” and “negative feedback from my clinical instructor affects my clinical performance.” Physiological/affective states used items, “I routinely worry about my clinical performance,” and “when faced with a new clinical skill, my nervousness affects how I perform the skill.” It is important to note, higher scores indicated nursing students had an affinity for using the source to form self-efficacy beliefs, both positively and negatively. For example, a student who relies on mastery experiences would most likely build self-efficacy beliefs when completing a successful mastery experience. However, the same student might have a decrease in self-efficacy beliefs if the mastery experiences on which he or she relied on were unsuccessful.
Trait Anxiety

Trait anxiety was operationalized with the trait subscale of the State-Trait Anxiety Inventory (STAI) Form Y. The STAI Form Y was developed and revised by Spielberger, Gorsuch, Lushene, Vagg, and Jacobs (1983). It has been widely used in educational, psychological, nursing, and medical research. The STAI T-anxiety scale measured trait anxiety which was conceptualized as a broad, stable description of disposition. Trait anxiety used 20 statements concerning how the subject generally felt and used a four point Likert scale ranging from (1) almost never to (4) almost always. When both tools are used in the same research, as was the case with this study, Spielberger et al. recommended the state anxiety scale be given first, followed by the trait anxiety scale.

Spielberger et al. (1983) reported the test-retest reliability coefficient for the STAI T-anxiety scale was .86 for college males and .76 for college females. The median reliability coefficient for the STAI T-anxiety scale for college students was .765. The median alpha coefficient for the trait anxiety scale was .90. Internal consistency correlations are also higher than .30 for all items. Along with correlations between the STAI T-anxiety and STAI S-anxiety scales, other anxiety scales and a contrasted group approach found the STAI T-anxiety scale to be a valid measure of trait anxiety.

The STAI T-anxiety scale has been used in nursing clinical research to measure student’s general anxiety level. Melo, Williams, and Ross (2010) used the STAI Y-form to study both trait and state anxiety in students exposed to traditional learning and students receiving problem-based learning. Warning (2011) used the STAI T-anxiety scale to compare trait anxiety to life orientation scores of nursing students. She found
optimistic students had lower trait anxiety scores which strengthen the content validity of
the STAI T-anxiety scale in nursing research.

Perceived Clinical Instructor Effectiveness

The Nursing Clinical Teacher Effectiveness Inventory (NCTEI) was used to
measure perceived clinical instructor effectiveness. The NCTEI was developed in 1985
by Judith Mogan and Janet Knox after a qualitative study. In their qualitative study
Mogan and Knox identified effective clinical teacher behaviors and used those behaviors
to develop the NCTEI. Participants rated the 47 items of the NCTEI on a 7-point Likert
scale where 1 is “not at all descriptive” and 7 is “very descriptive.” The inventory rated
instructors on five teaching behaviors; teaching ability, nursing competence, evaluation,
interpersonal relations, and personality (Knox & Mogan, 1985). Possible range of scores
was 47 to 329 with higher scores indicating more effective clinical teaching. Permission
to use the inventory and modify the instructions was given via email in July, 2012 by
Judith Knox and documented in appendix A.

Knox and Mogan (1985) reported reliability and validity statistics as part of their
tool development process. Internal consistency reliability was established and reported
with Cronbach’s alphas of $\alpha = .89$ for Teaching, $\alpha = .84$ for Nursing Competence, $\alpha = .82$
for Evaluation, $\alpha = .86$ for Interpersonal Relationships, and $\alpha = .83$ for Personality. Test-
retest reliability ranged from $r = 0.76$-0.93, content and face validity was also reported as
adequate (Knox & Mogan, 1985). Validity was established through diligent tool
development after an exploratory qualitative study and from the literature. Additionally,
Knox and Mogan used faculty, administrators, and students to establish content validity.
Face validity, defined by the developers as the appearance of the tool, was also established through expert review.

Lee, Cholowski, and Williams (2002) replicated Knox and Mogan's (1985) research in Australia. Their study compared the perceptions of effective clinical teaching from both the student and faculty perspective. Allison-Jones and Hirt (2005) used the NCTEI to compare the teaching effectiveness of part-time clinical faculty to full-time clinical faculty. Students ranked full-time faculty significantly higher than part-time faculty in all five categories. The differences between part-time and full-time faculty's scores on the NCTEI were not statistically significant, suggesting the instructors did not share the students' perceptions of differences based on employment status. Kube (2010) used the NCTEI to examine teaching behaviors which enhance student learning. The NCTEI was administered with a researcher developed tool examining the frequency clinical instructors used the teaching behaviors.

Clinical Practice Anxiety

Clinical practice anxiety was measured using the STAI S-anxiety scale, which is the state form of the Spielberger trait anxiety measure described previously. State anxiety “refers to a palpable reaction or process taking place at a given time and level of intensity” (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). The instructions for the state anxiety measure can be modified to narrow the respondent to a particular time frame, while the instructions for the trait anxiety measures must remain verbatim. For this study, the STAI S-anxiety scale instructions informed the student the questions referred to the current semester of clinical education and the clinical instructor currently teaching them. Spielberger et al. suggested the inventory to be given face to face to build
a rapport with participants and reinforce the confidentiality of results. As mentioned previously, to maintain reliability of both measurements, the STAI-S anxiety scale is given prior to the T-anxiety scale. Additionally, in this study neither of the instruments were referred to as measures of anxiety to reduce respondent bias.

The state anxiety measure used 20 statements related to the intensity of feelings “right now” using a four point Likert scale ranging from (1) not at all to (4) very much so. The internal consistency measures of reliability for the state anxiety scale for college aged students were reported as .91 (males) and .93 (females). For college aged students, the reliability coefficients for the trait anxiety scale were .90 and .91, male and female respectively.

Construct validity was reported through comparisons of subjects during stressful conditions compared with other groups in similar circumstances and comparison to group without stress. The STAI S-anxiety scale was able to differentiate between contrasted groups of subjects with psychological conditions and differing groups under opposite conditions. For example, military recruits under stress earned higher anxiety scores than their college aged peers under conditions of no stress. The STAI’s ability to differentiate between divergent groups strengthens the construct validity of the tool. Correlations with other anxiety measures demonstrate convergent validity and divergent validity was established by comparing scores to measures of personality, multi-personality disorder, and depression. The STAI was discriminant of similar concepts and displayed convergence with other anxiety measures thus leading the tool’s authors to conclude adequate construct validity. Content validity has been established through years of development and refinement of the tool along with numerous research studies using the
Interestingly, and applicable to this research is the validity testing done under stressful conditions. Spielberger et al. (1983) found the S-Anxiety scale to be well suited in quantifying state anxiety over a range of stressful conditions.

The STAI S-anxiety scale was used by Cook (2005) to measure students’ anxiety in the clinical area. She found students who perceived faculty as inviting demonstrated lower state anxiety and vice versa. Gore, Hunt, Parker, and Raines (2011) used the STAI S-anxiety scale to measure differences in clinical practice anxiety in groups participating in simulation prior to their first, actual clinical experience. They found a significant decrease in the state anxiety level of students who participated in simulation from the control group who started clinical in the practice area. Melo, Williams, and Ross (2010) also used the STAI S-anxiety scale in their research with problem based learning versus traditional learning practices. Since the S-anxiety data were consistent between the groups, any change in anxiety or clinical effectiveness was not attributed to students’ clinical practice anxiety.

Clinical Self-Efficacy Beliefs

Participants’ clinical self-efficacy beliefs were measured with the Self-Efficacy in Clinical Performance (SECP) tool. The SCEP was developed by Iranian nursing researchers to measure self-efficacy as the first step toward predicting future success in clinical performance. Cheraghi, Hassani, Yaghmaei, and Alavi-Majed (2009) used Bandura’s theory of self-efficacy as the foundation for building the quantitative tool. Phase one consisted of focus groups and narrowing of items to include in the final measurement instrument. After interviews and expert review, the tool was designed with 69 Likert items using a scale of 0-100. Items were placed in the five subscales based on
the five steps of the nursing process. The five subscales included attaining clinical skill, assessment of patients, planning care plan, implementation of care plan, and evaluation of care plan (Cheraghi, Hassani, Yaghmaei, & Alavi-Majed, 2009). Psychometric testing was conducted using 207 fourth year nursing students enrolled in major universities in Iran.

Cheraghi et al. (2009) asked 20 nursing experts to review the instrument using a rating system and narrative feedback on the SECP. After revisions were made, another group of six nursing experts and a small (n=13) group of nursing students reviewed the tool for readability, clarity, and accuracy of self-efficacy statements. This process deleted or merged 27 items leaving the instrument with 42 items. After exploratory factor analysis, the subscales diagnosis and planning were merged leaving four subscales, assessment, diagnosis and planning, implementation, and evaluation. Additionally, concurrent validity was established using the General Self-Efficacy Scale (GSES). The GSES was developed by Sherer et al. (1982) and is designed to measure a generalized self-efficacy belief which is applied in differing situations. Bandura (2006) encouraged researchers to narrow the focus of self-efficacy, however the GSES has been in wide use and was used as a comparison in the Cheraghi et al. (2009) study to establish concurrent validity. The researchers found a significant positive correlation (r=0.73, P=0.01) between the two scales. Because the GSES measures a generalized belief of self-efficacy and the SECP a distinct belief in clinical nursing education, the researchers concluded the positive correlation strengthened the reliability of the measure.

Reliability of the SECP was established using internal consistency reliability coefficients. The 42-item scale was revised to 37 items, and the final scale demonstrated
an overall Cronbach’s α of .96. Each subscale demonstrated a Cronbach’s α within the range of 0.92 – 0.98. For the 37 item instrument used in this study, the possible range of the total score was 0 to 3700 with higher scores indicating greater self-efficacy beliefs. Possible range of scores for each of the subscales was as follows; assessment 0-600, diagnosis and planning 0-1500, implementation 0-1000, and evaluation 0-600. For data analysis in this study, the total score was used as the dependent variable in the regression analyses rather than the subscale scores. Permission to use the tool was obtained via email from the study’s primary author.

Tyler et al. (2012) used the SECP to measure clinical self-efficacy in registered nurses chosen to preceptor graduate nurses. Tyler hypothesized preceptors with higher levels of perceived clinical competency, clinical self-efficacy, and job satisfaction would be more effective in helping the new graduate assimilate into a professional role. This is the only published research in the United States to use the SECP and no reliability statistics were reported.

Experiences with Clinical Instructors

To obtain qualitative data, within the packet of quantitative questionnaires, a sheet was included where participants responded in writing to the following open-ended question: *Think about the experiences you have had in clinical within your baccalaureate nursing program. Describe a situation or situations where a clinical instructor increased or decreased your confidence in clinical. Give as much detail as possible.*
Procedures

Following IRB review and approval from Mercer University and the institution where the research was conducted, participants for this study were recruited. After administrative approval, the researcher either attended post conference at the clinical site or the group clinical post conference depending on instructor preference. Due to the sensitive nature of the NCTEI and student evaluation of clinical instructors, the researcher, rather than clinical instructor, obtained written informed consent and collected data from the student. Data collection occurred in a group setting where the student investigator explained the nature of the study, answered any questions, and then distributed a study packet to each student interested in participating. The study packet included two copies of the informed consent and the study questionnaires. Students who consented to participate signed and dated one of the consents and then, completed and returned the study forms to the investigator. The additional informed consent was kept for the participant’s own records. The investigator remained in the room until data collection was completed. Students who participated in the study were given a $5.00 Starbuck’s gift card as they returned the study packet and exited the room.

Data Analysis

Creswell and Plano Clark’s (2011) framework for mixed method research was the analytic approach utilized to address the research questions. This framework has six steps which reflect the concurrent, yet separate collection and analysis of quantitative and qualitative data. The steps include: Step 1) preparing all raw data for analysis, Step 2) exploring the quantitative and qualitative data, Step 3) analyzing the quantitative and qualitative data, Step 4) representing the quantitative and qualitative analysis, Step 5)
interpreting the analysis, and Step 6) validating the quantitative and qualitative data (Creswell & Plano Clark, 2011). Quantitative data from the instruments were reviewed for missing data and then entered directly into SPSS 20.0 for data cleaning and analysis. All nominal and ordinal level variables were described with frequencies and percentages. Interval and ratio level data were described using measures of central tendency and evaluated with respect to whether they were normally distributed and assessed for outliers. Prior to conducting major quantitative data analyses, assumptions related to the inferential statistics were examined and data transformation performed as appropriate. Qualitative data were examined for recurrent themes. Validity and trustworthiness were ensured through the use of the Creswell and Plano Clark’s (2011) mixed method framework as well as the use of Lincoln and Guba’s (1985) evaluative criteria.

Data Analysis Plan for Research Questions

The first research question asked “What are the types and strength of clinical self-efficacy among clinically experienced baccalaureate nursing students? To address this question a score was calculated for each of the four sources of self-efficacy beliefs; mastery experiences, vicarious experiences, verbal persuasion, and physiologic/affective states. Descriptive statistics, including mean, mode, and standard deviations were used to characterize sources and their strength.

The second research question asked “Do trait anxiety, sources of clinical self-efficacy, and students’ perceptions of clinical instructor effectiveness significantly predict clinical self-efficacy beliefs of clinically experienced baccalaureate nursing students?” Multiple linear regression was used to address this question. There were six independent
variables in the analysis, the scores for each of the four sources of self-efficacy from the SSCSE, the STAI T-anxiety scale score and the total clinical instructor effectiveness score from NCTEI. The dependent variable, clinical self-efficacy beliefs, was measured with the total score from the SECP. All independent variables were entered simultaneously. A statistically significant $R^2$ was used to indicate if, as a set, the independent variables significantly predicted clinical self-efficacy beliefs. The direction and significance of the beta weights of the individual predictors were examined to describe the nature of the relationship between individual independent variables and the outcome.

The third research question asked "Do trait anxiety, sources of clinical self-efficacy, and students' perceptions of clinical instructor effectiveness significantly predict clinical practice anxiety of clinically experienced baccalaureate nursing students?" Consistent with the analysis for research question two, multiple linear regression was used to address this question. There were six independent variables in the analysis, the scores for each of the four sources of self-efficacy from the SSCSE, the STAI T-anxiety scale score and the total clinical instructor effectiveness score from the NCTEI. The dependent variable, clinical practice anxiety, was measured using the STAI S-anxiety scale score. All independent variables were entered simultaneously. A statistically significant $R^2$ was used to indicate if the independent variables, as a set, significantly predicted clinical practice anxiety. The direction and significance of the beta weights of the individual predictors were examined to describe the nature of the relationship between individual independent variables and the outcome.
The fourth research question asked "Do trait anxiety and students' perceptions of clinical instructor effectiveness moderate the effects of sources of clinical self-efficacy on clinical self-efficacy beliefs of clinically experienced baccalaureate nursing students?"

Hierarchical multiple regression augmented with stepwise linear regression was used to examine moderator effects. Prior to beginning the analysis, interaction terms were created between the four self-efficacy sources and trait anxiety. A similar set of interaction terms were created between the four self-efficacy sources and clinical instructor effectiveness. Consequently, there were eight interaction terms examined. The analysis proceeded as follows. At the first step of the regression analysis, the 4 sources of self-efficacy scores, trait anxiety, and clinical instructor effectiveness were entered as a set. Because of the exploratory nature of this research, stepwise regression was used to examine which of the interaction terms significantly contribute to $R^2$. With stepwise regression, the SPSS software examined each of the interaction terms and only included those that significantly increase $R^2$ in the final regression model. Once the full model was been obtained, those interaction terms that entered the regression equation were examined to determine how the moderator(s) worked in modifying the relationship between sources of clinical self-efficacy and clinical self-efficacy beliefs.

The fifth research question asked "Do trait anxiety and students' perceptions of clinical instructor effectiveness moderate the effects of sources of clinical self-efficacy on clinical practice anxiety of clinically experienced baccalaureate nursing students?"

Similar to research question four, hierarchical multiple regression augmented with stepwise linear regression was used to examine moderator effects. The eight interaction terms created for the analysis for question four were also used in this analysis. The
analysis proceeded as follows. At the first step of the regression analysis, the four sources of self-efficacy scores, trait anxiety, and clinical instructor effectiveness were entered as a set. Because of the exploratory nature of this research, stepwise regression was used to examine which of the interaction terms significantly contribute to $R^2$. With stepwise regression, the SPSS software examined each of the interaction terms and only included those that significantly increase $R^2$ in the final regression model. Once the full model was obtained, those interaction terms that entered the regression equation were examined to determine how the moderator(s) worked in modifying the relationship between sources of clinical self-efficacy and clinical practice anxiety.

The sixth research question was “What are students’ perceptions of how clinical instructor behaviors influence their clinical self-efficacy beliefs?” This research question was addressed with qualitative data obtained from the open-ended item within the participant packet. Data were analyzed using Creswell and Plano Clark’s (2011) recommended process which was described earlier, and also relying on Lincoln and Guba’s (1985) methods for ensuring rigor and trustworthiness. Specifically, the researcher transcribed the participants’ handwritten qualitative data verbatim into Microsoft Word and checked the transcription for accuracy. First cycle coding used in vivo coding, using participants’ exact words to begin to group data around emerging themes. Second cycle coding involved grouping themes into broader categories. Exemplar data were chosen to represent and provide detail for each category.

The seventh research question was “Do the qualitative data support the quantitative findings?” This research question was addressed with the qualitative data obtained which were then used to validate the quantitative findings. This question lends
support to the trustworthiness of data. Trustworthiness is the degree with which the results of a qualitative study are reliable and worthy of dissemination and use.

Trustworthiness, according to Lincoln and Guba (1985) includes credibility, transferability, dependability of results, and confirmability. Credibility was established through triangulation of results and peer debriefing. Triangulation of results, in this study, was achieved through the use of complementary data collection procedures. The comparison of qualitative findings with quantitative data will allow future consumers of this research the opportunity to evaluate the qualitative findings for credibility.

Additionally, peer debriefing with an experienced qualitative researcher, the researcher’s second committee member, strengthened the credibility of the qualitative results, explored researcher assumptions and clarified interpretations.

Transferability was established through thick descriptions of the data. Transferability is a construct which is only achieved when the consumer of research reads the descriptions, evaluates results in the context of their own practice, and then decides the results will be applied to their own situations and practice. Dependability, according to Lincoln and Guba (1985) is established through the process of research and the product of the research. A qualitative researcher must be clear in the process of research design and execution and the results must be trustworthy and supported by data. These two interrelated functions add to the dependability of results. Finally, confirmability was obtained through the use of an audit trail. A record was kept by the researcher detailing all aspects of research planning, data collection and analysis, and results dissemination. The audit trail allows for reflexivity and feedback, identify assumptions, and assisting the researcher in clear data analysis, triangulation, and results dissemination.
In the final phase of the data analysis, the qualitative themes identified in the qualitative data were compared to the quantitative results for similarities and differences. It was noted whether the qualitative data were consistent with the distinct self-efficacy sources identified quantitatively and if the impact of clinical instructor effectiveness on clinical self-efficacy was congruent in the quantitative and qualitative data.

Justification for Sample Size

The power analysis for the study was based on the most complex quantitative research questions which were questions five and six. Within these regression analyses, there were six predictor variables (four self-efficacy sources, trait anxiety, clinical instructor effectiveness) and eight additional variables as interaction terms (mastery experiences X trait anxiety, vicarious experiences X trait anxiety, verbal persuasion X trait anxiety, physiologic/affective states X trait anxiety, mastery experiences X clinical instructor effectiveness, vicarious experiences X clinical instructor effectiveness, verbal persuasion X clinical instructor effectiveness, physiologic/affective states X clinical instructor effectiveness). This involved a potential for 14 predictor variables. However, this study was exploratory and the researcher felt it was unlikely all eight interaction terms will enter the regression equation as it would indicate all would significantly increase $R^2$. A conservative estimate was two of the interaction terms would be statistically significant, consequently, the power analysis was based on eight predictors (six independent variables and two interaction terms). According to Warner (2008), using a medium effect size of 0.15 and a two tailed alpha of 0.05, the minimum number required to test for the significance of multiple $R$ was $N$ greater than $50 + 8k$, where $k$ equals the number of predictors, and the minimum number to test the significance of
single predictors is $N$ greater than $104 + k$. The larger of the two calculated values was recommended. In this study, $k = 8$, therefore a sample of 114 participants was targeted.

Protection of Human Subjects

The study was approved by the Mercer University Institutional Review Board (IRB) as well as the institution where the study was conducted. Written, informed consent was obtained prior to data collection. Participants were free from coercion and were allowed to withdraw at any time during the data collection process. Data were coded with unique identifiers, allowing participants to remain anonymous. Participants read the informed consent and were given the opportunity to ask questions before completing the instruments. Participants were assured their responses remain confidential and their responses would be reported in the aggregate.

Summary

This chapter summarized the methodology for the proposed study of relationships between trait anxiety, sources of clinical self-efficacy, clinical self-efficacy beliefs, clinical instructor effectiveness, and clinical practice anxiety. The measurement and statistical analyses for each proposed research question were also delineated. The study quantified students’ clinical self-efficacy beliefs and identified factors influencing the development of those beliefs. Recruitment of participants, instrumentation, data collection, data analysis, and methods of human subject protection were conducted with confidentiality and respect for the participants and the research process.
CHAPTER FOUR
RESULTS

The results of this convergent mixed method study are presented in this chapter. The characteristics of the sample are presented, the psychometrics of the collection tools are detailed, and methods for cleaning data are delineated. The quantitative and qualitative results and data analysis will also be presented for each research question.

Management and Preparation of Data Analysis

Quantitative data analysis was conducted using SPSS version 20.0. The researcher entered the raw data into SPSS. Data were scanned for errors by reviewing range of scores, identifying out of range entries, and returning to the questionnaires to correct data entry errors. Participants’ responses were mined for missing data and only one participant did not complete at least 80% of each collection instrument. This participant’s data were deleted from the quantitative and qualitative analysis. Scores on the data collection instruments were then imputed if the respondent had missing data but had completed at least 80% of each instrument. Mean substitution was used to impute the participant’s score. Data were examined for normality. The scores of participants who were extreme outliers for a specific variable were addressed via the process of winsorization as described by Warner (2008). Data transformation was used to meet the statistical assumptions of normal distribution of variables in the quantitative analyses (Pallant, 2013). Quantitative data analyses were conducted with untransformed data and then replicated with transformed data. In instances where the results obtained yielded
identical conclusions, the untransformed data were reported. Qualitative data were
transcribed into a word document for analysis of themes. The qualitative data analysis
process will be described in the discussion of research question six.

Description of the Sample

A total of 136 students from one nursing program were approached. All provided
informed written consent, and there were no refusals. However, as described previously,
one participant was removed from the dataset because of missing data. Consequently, the
final sample consisted of 135 clinically experienced (CE) baccalaureate nursing students
in a large, Southern metropolitan area. Participants, as reported in Table 1 were
predominantly white females without a prior degree. All were second semester juniors.
The majority reported having clinical experiences with part time clinical instructors, in
groups of 8 to 10 students, and within a traditional medical/surgical setting.
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<td>0.7</td>
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<tr>
<td>Previous Degree</td>
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<td></td>
</tr>
<tr>
<td>None</td>
<td>73</td>
<td>54.0</td>
</tr>
<tr>
<td>Associate Degree of Nursing</td>
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<td>0.7</td>
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<tr>
<td>Associate Degree of Science</td>
<td>12</td>
<td>8.9</td>
</tr>
<tr>
<td>Other than Nursing Associate’s Degree</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>Other than Nursing Bachelor’s Degree</td>
<td>43</td>
<td>31.9</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Previous Experience in Healthcare</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 3 years experience</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Less than 3 years experience</td>
<td>46</td>
<td>34</td>
</tr>
<tr>
<td>None</td>
<td>75</td>
<td>56</td>
</tr>
<tr>
<td>Employment Status of Clinical Instructor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part-time instructor, only teaches clinical</td>
<td>68</td>
<td>51</td>
</tr>
<tr>
<td>Full time faculty, has classroom and clinical</td>
<td>61</td>
<td>47</td>
</tr>
<tr>
<td>Unknown to students</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Number of Students in Clinical Group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 8 students</td>
<td>58</td>
<td>43</td>
</tr>
<tr>
<td>8-10 students</td>
<td>77</td>
<td>57</td>
</tr>
<tr>
<td>Content Focus of Clinical</td>
<td></td>
<td></td>
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<tr>
<td>Adult Medical/Surgical Nursing</td>
<td>128</td>
<td>94.9</td>
</tr>
<tr>
<td>Other Adult Specialty Nursing</td>
<td>4</td>
<td>3.0</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Note: M = mean, SD = standard deviation
Descriptive Statistics and Psychometric Properties of Study Instruments

The researcher-developed tool, Sources of Student Clinical Self-Efficacy (SSCSE) was used for the first time in this study, consequently the instrument’s psychometric properties were examined and optimized. The 24 items measured the students’ reliance on each of the four sources of self-efficacy within the clinical setting: mastery experiences, vicarious experiences, verbal persuasion, and physiologic/affective states. Cronbach’s alpha was used to determine the internal consistency reliability of the measures. A negative item to total correlation was found with item 15, “positive feedback from my clinical instructor is not important to my clinical performance,” and the item was reversed coded.

Cronbach’s alpha was used to determine the internal consistency reliability of the remaining instruments and data were assessed for outliers and normality. First, scores for all subscales were converted to z-scores and outliers assessed. Outliers were identified in the distributions of scores for the mastery experiences subscale of the Sources of Student Clinical Self-Efficacy instrument (SSCSE), the Self-Efficacy in Clinical Performance (SECP) total score, and the State-Trait Anxiety Inventory (STAI) T anxiety scale. These variables had one to two outliers each which were addressed with the process of winsorization (Pallant, 2008). Following winsorization, instrument subscale and total scores were assessed for normality and data transformations were performed as indicated. All scales had near normal distribution after data transformation.

Main quantitative variables were the four sources of self-efficacy, mastery experiences, vicarious experiences, verbal persuasion, physiologic/affective states, along with trait anxiety and the perceived clinical instructor effectiveness. Dependent variables
were clinical practice anxiety and clinical self-efficacy beliefs. Table 2 summarizes the
descriptive statistics and internal consistency reliability of each variable.

**Table 2 Summary of Descriptive Statistics and Internal Consistency Reliability for Study Variables (N=135)**

<table>
<thead>
<tr>
<th>Measure: Variable</th>
<th>M(SD)</th>
<th>Possible Range</th>
<th>Observed Range</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSCSE: Mastery Experiences</td>
<td>16.9 (2.2)</td>
<td>3-21</td>
<td>9-21</td>
<td>.47</td>
</tr>
<tr>
<td>SSCSE: Vicarious Experiences</td>
<td>35.2 (5.9)</td>
<td>7-49</td>
<td>21-49</td>
<td>.70</td>
</tr>
<tr>
<td>SSCSE: Verbal Persuasion</td>
<td>33.3 (4.7)</td>
<td>6-42</td>
<td>21-42</td>
<td>.69</td>
</tr>
<tr>
<td>SSCSE: Physiologic/Affective</td>
<td>35.6 (8.5)</td>
<td>8-56</td>
<td>17-54</td>
<td>.79</td>
</tr>
<tr>
<td>STAI S Anxiety: Clinical Practice Anxiety</td>
<td>39.6 (11.1)</td>
<td>20-80</td>
<td>20-73</td>
<td>.93</td>
</tr>
<tr>
<td>NCTEI : Perceived Clinical Instructor Effectiveness</td>
<td>252.5 (56.1)</td>
<td>47-329</td>
<td>88-329</td>
<td>.98</td>
</tr>
<tr>
<td>STAI Trait anxiety: Trait Anxiety</td>
<td>36.4 (9.4)</td>
<td>20-80</td>
<td>20-65</td>
<td>.90</td>
</tr>
<tr>
<td>SECP: Clinical Self-Efficacy Beliefs</td>
<td>3035 (347.2)</td>
<td>0-3700</td>
<td>1670-3690</td>
<td>.98</td>
</tr>
</tbody>
</table>

Note: Sources of Student Clinical Self-Efficacy (SSCSE), State-Trait Anxiety Inventory (STAI), Nursing Clinical Teacher Effectiveness Inventory (NCTEI), Self-Efficacy in Clinical Performance (SECP)

The Cronbach’s alphas overall were satisfactory with the exception of mastery experiences was .47 and vicarious experiences was .69, which were below the acceptable .7 for internal consistency reliability (Nunnally & Bernstein, 1994). However, Cronbach’s alpha for scales such as mastery experiences which contained only three items will often be low because of the small number of items (Pallant, 2013). Because the SSCSE was a new scale, and in consultation with an experienced statistician, the
The decision was made to retain SSCSE mastery experiences and vicarious experiences subscales in the analyses.

The Cronbach's alpha for the STAI T anxiety and STAI S anxiety scales were .90 and .93 respectfully. These coefficients are consistent with those reported by Spielberger et al. (1983) as part of tool development. The Cronbach's alphas for male college students was .91 for the STAI S anxiety scale and .90 for the STAI T anxiety scale. For college-aged females, the reported alphas were .93 and .91 for state and then trait anxiety respectively. Knox and Mogan (1985) reported reliability coefficients ranging from .79 to .89 for the NCTEI. In this study, the Cronbach's alpha for the variable perceived clinical instructor effectiveness was .98. Lastly, the SECP Cronbach’s alpha of .98 was higher than the previously reported reliability coefficient of .86 (Cheraghi, Hassani, Yaghmaei, & Alavi-Majed, 2009).

Data Analysis by Research Question

Prior to conducting the main analyses to address the research questions, the data were evaluated to assure they met statistical assumptions for parametric analyses. This process involved procedures to address normality as discussed previously, along with regression diagnostics.

Research question one asked, “What are the types and strength of sources of clinical self-efficacy among clinically experienced (CE) baccalaureate nursing students?” Psychometrics and descriptive statistics for the SSCSE were reported previously in Table 2 of this chapter. In order to compare which of the sources of self-efficacy participants reported as having the most impact on their clinical performance, the subscale scores were brought back to scale, meaning the subscale sores were divided by the number of
items within each subscale. Therefore, all subscale mean scores reflected the item level scoring from 1 "strongly disagree" to 7 "strongly agree." The means and SD for the subscales when brought back to scale were: mastery experiences (M 5.66, SD .71), verbal persuasion (M 5.54, SD .78), vicarious experiences (M 5.03, SD .85), and physiologic/affective states (M 4.45, SD 1.07). Participants reported a moderate to high affinity for all the sources. Participants indicated the highest affinity for mastery experiences and the least affinity for the physiologic/affective source. Verbal persuasion as a source of self-efficacy had a slightly lower impact on clinical performance than mastery experiences, while vicarious experiences was third in order of strength.

Correlations between the four sources of self-efficacy were also examined and revealed statistically significant positive relationships between vicarious experiences and verbal persuasion, vicarious experiences and physiologic/affective states, and verbal persuasion and physiological/affective states. Table 3 reports these correlations. Perceptions of mastery experiences affecting clinical performance was not significantly related to any of the other sources of self-efficacy. However, the other three sources were significantly and positively associated with each other. Greater perceptions of verbal persuasion affecting clinical performance was associated with greater perceptions of vicarious experiences and physiologic/affective sources affecting performance. Greater perceptions of verbal persuasion affecting clinical performance was associated with greater perceptions of physiologic/affective sources affected clinical performance.
Table 3 Pearson Correlations among the Sources of Self-Efficacy (N=135)

<table>
<thead>
<tr>
<th></th>
<th>Mastery Experiences</th>
<th>Vicarious Experiences</th>
<th>Verbal Persuasion</th>
<th>Physiological Affective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mastery Experiences</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vicarious Experiences</td>
<td>.17</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Persuasion</td>
<td>.05</td>
<td>.39**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Physiological Affective</td>
<td>-.15</td>
<td>.323**</td>
<td>.46**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: *Two tailed significance p< .05; **Two tailed significance p<.001

Because mastery experiences are difficulty to obtain for every skill, a final question on the SSCSE asked participants to indicate which of the remaining sources of self-efficacy would be most helpful in performing a clinical skill they had not performed previously. Nine participants left the question unanswered (6.7%). The majority (n=87, 64.4%) indicated a preference for verbal feedback by “ask(ing) an experienced nurse to coach me through the skill.” Slightly over 25% (n=35, 25.9%) preferred a vicarious experience by “watching someone else perform the skill.” Only a small percentage (n=4, 3.0%) preferred actions to address physiologic/affective responses through “using relaxation techniques to calm myself before attempting the skill.”

Research question two asked, “Do trait anxiety, sources of clinical self-efficacy, and students’ perceptions of clinical instructor effectiveness significantly predict clinical self-efficacy beliefs of CE baccalaureate nursing students?” Multiple linear regression was used to analyze research question two. The independent variables were trait anxiety, sources of clinical self-efficacy, and students’ perceptions of clinical instructor effectiveness. The dependent variable for research question two was clinical self-efficacy beliefs. Trait anxiety was measured using the STAI T scale, the sources of clinical self-
efficacy were measured using the SSCSE, and perception of clinical instructor
effectiveness was measured using the NCTEI. The independent variable was measured
using the SECP. Table 4 summarizes multiple regression analysis predicting clinical
self-efficacy beliefs.

Table 4 Multiple Linear Regression Analysis Predicting Clinical Self-Efficacy Beliefs
(N=135)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>t</th>
<th>$F(df)$</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prediction of Clinical Self-Efficacy</td>
<td>3.57</td>
<td>2.37</td>
<td></td>
<td>.143</td>
</tr>
<tr>
<td>Mastery Experiences</td>
<td>0.21</td>
<td>2.37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vicarious Experiences</td>
<td>-0.10</td>
<td>-1.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Persuasion</td>
<td>0.09</td>
<td>0.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiological/Affective</td>
<td>-0.06</td>
<td>-0.60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td>-0.21</td>
<td>-2.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Instructor Effectiveness</td>
<td>0.05</td>
<td>0.56</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05; **p<.01, ***p<.001. Table reflects results of analysis of untransformed data. Adjusted $R^2 = 10.3\%$

The multiple linear regression analysis demonstrated 14.3% of the variance in
clinical self-efficacy beliefs was explained by the predictor variables and this amount was
statistically significant. Mastery experiences and trait anxiety were significant predictors
of clinical self-efficacy beliefs. Conceptually, greater perceptions of mastery experiences
as a source of clinical self-efficacy and lower trait anxiety were associated with more
positive clinical self-efficacy beliefs. Clinical instructor effectiveness was not a
significant predictor of clinical self-efficacy beliefs.

Research question three asked, “Do trait anxiety, sources of clinical self-efficacy,
and students’ perceptions of clinical instructor effectiveness significantly predict clinical
practice anxiety of CE baccalaureate nursing students?” Multiple linear regression was
used to address this research question. The independent variables were trait anxiety,
sources of clinical self-efficacy, and students’ perceptions of clinical instructor
effectiveness. The dependent variable was clinical practice anxiety. Trait anxiety was
measured using the STAI T scale, the sources of clinical self-efficacy were measured
using the SSCSE, and perception of clinical instructor effectiveness was measured using
the NCTEI. The dependent variable was measured using the STAI S scale. Table 5
summarizes multiple regression analysis predicting clinical practice anxiety.

Table 5 Multiple Linear Regression Analysis Predicting Clinical Practice Anxiety
(N=135)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>t</th>
<th>F(df)</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prediction of Clinical Practice Anxiety</td>
<td>25.61 (6, 128)**</td>
<td>.546***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastery Experiences</td>
<td>-0.14*</td>
<td>-2.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vicarious Experiences</td>
<td>-0.04</td>
<td>-0.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Verbal Persuasion</td>
<td>-0.07</td>
<td>-0.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physiological/Affective</td>
<td>0.42***</td>
<td>5.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trait Anxiety</td>
<td>0.33***</td>
<td>4.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Instructor Effectiveness</td>
<td>-0.23***</td>
<td>-3.67</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *p<.05; **p<.01, ***p<.001. Table reflects results of analysis of untransformed data.
Adjusted R² = 52.4%
For research question three, analysis showed 54.6% of the variance in clinical practice anxiety was explained by the predictor variables. Mastery experiences, physiological/affective sources, trait anxiety, and clinical instructor effectiveness were significant predictors of clinical practice anxiety. Specifically, participants who reported a greater importance of mastery experiences, lower importance of physiological/affective sources of self-efficacy, lower trait anxiety, and greater perceptions of clinical instructor effectiveness also reported lower clinical practice anxiety. Conceptually, the student who used mastery experiences as a method to form self-efficacy beliefs, who also ascribed a lower importance to the physiological/affective source of self-efficacy, demonstrated lower trait anxiety, and who perceived their clinical instructor as effective reported lower clinical practice anxiety. In the clinical area, this student would arrive with lower, inherent anxiety, rely on mastery experiences not physiological/affective feelings, and have an effective clinical instructor.

Research questions four asked, “Do trait anxiety and students’ perceptions of clinical instructor effectiveness moderate the effects of sources of clinical self-efficacy on clinical self-efficacy beliefs of CE baccalaureate nursing students?” Hierarchical multiple linear regression augmented by stepwise multiple regression was used to analyze the data addressing research question four. First, within SPSS, four interaction terms were created between the NCTEI total score and the four sources of clinical self-efficacy from the SSCSE. Then four more interaction terms were created between the STAI T anxiety score and the four sources of clinical self-efficacy from the SSCSE. The dependent variable was clinical self-efficacy beliefs, measured with the SECP. Research question four was not supported. None of the interaction terms entered the regression
when the stepwise regression procedure was implemented. Trait anxiety and perceptions of clinical instructor effectiveness did not moderate relationships between the sources of clinical self-efficacy and clinical self-efficacy beliefs.

Research question five asked, “Do trait anxiety and students’ perceptions of clinical instructor effectiveness moderate the effects of sources of clinical self-efficacy on clinical practice anxiety of CE baccalaureate nursing students?” Hierarchical multiple linear regression augmented by stepwise multiple regression was used to analyze the data for research question five. The interaction terms created to conduct the analysis for research question 4 were also used in this analysis.

Table 5 presents the first step of the hierarchical regression analysis prior to the stepwise procedure. At the second step, one interaction term entered the regression model. Results indicated perceptions of clinical instructor effectiveness moderated the effect of verbal persuasion on clinical practice anxiety. The interaction term significantly increased $R^2$ by 2.6%. To further characterize the nature of the moderating effect, verbal persuasion and clinical instructor effectiveness were dichotomized into low and high scores for these variables using median splits. The dichotomized variables were then entered into an analysis of covariance as predictor variables. State anxiety, mastery experiences, vicarious experiences, and physiologic/affective sources were entered as covariates. Figure 2 depicts a graph of the adjusted means for clinical practice anxiety for the four groups: high verbal persuasion/high clinical instructor effectiveness (adjusted mean 36.1, SE 1.4), high verbal persuasion/low clinical instructor effectiveness (adjusted mean 43.6, SE 1.5), low verbal persuasion/high clinical instructor effectiveness
(adjusted mean 38.6, SE 1.4), and low verbal persuasions/low clinical instructor effectiveness (adjusted mean 40.4, SE 1.3).

Figure 2 Interaction of Perceived Clinical Instructor Effectiveness and Verbal Persuasion on Clinical Practice Anxiety

Participants who valued verbal persuasion as an important source of their clinical self-efficacy and perceived their clinical instructor as ineffective reported higher clinical practice anxiety scores. Lower clinical practice anxiety scores were found in participants who valued verbal persuasion and perceived their clinical instructor as effective. Conceptually, this means participants who value verbal persuasion as a source of self-efficacy are negatively impacted when they perceive their clinical instructor as ineffective. These participants had an increase in clinical practice anxiety. However,
participants who did not value verbal persuasion as a source of clinical self-efficacy and perceived their clinical instructor effective reported similar clinical practice anxiety scores to those participants who did not value verbal persuasion as a source of clinical self-efficacy and perceived their clinical instructor as ineffective. Thus, if a participant does not value verbal persuasion as a source of clinical self-efficacy, the effectiveness of their clinical instructor has a smaller effect on their clinical practice anxiety.

Research question six asked, “What are students’ perceptions of how clinical instructor behaviors influence their clinical self-efficacy beliefs?” Qualitative data were obtained through an open-ended question at the end of the NCTEI. Participants were asked, “Think about the experiences you have had in clinical within your baccalaureate nursing program. Describe a situation or situations where a clinical instructor increased or decreased your confidence in clinical. Give as much detail as possible.”

The convergent, mixed method design of this study used the data analysis steps outlined by Creswell and Plano Clark (2011). The first step was preparing the data. Written responses to the open-ended question were transcribed verbatim to a word processing program by the researcher. Only the researcher had access to the raw qualitative data. The text data was printed and organized in a manner which permitted codifying and categorizing of qualitative data. Each entry was identified by participant identification number and each line numbered for ease of analysis. One hundred twenty five participants provided data for the open-ended question. Ten participants did not write any narrative response, 52 responses were three sentences or less, and 83 participants provided responses which were extensive in length and detail. During transcription, a qualitative code book was developed to identify the use of pseudonyms to
maintain the confidentiality of data. Only the researcher had access to this qualitative code book. Instructor names, clinical areas, course levels, or other identifying names were changed to ensure anonymity of participant's responses.

Once the transcribed data were typed into a document file on the researcher's computer, the review process was initiated. Confidentiality was maintained throughout the process by incorporating researcher-initiated numbering for faculty names, clinical facilities, areas of clinical placement, level of curriculum, and other identifying names identified in the narrative responses. All documents were kept in research files on the researcher's password protected computer. As the responses were transcribed in the word processing program, the coding process was initiated. During this phase of research, the two selected first cycle coding methods, as delineated in Saldaña (2013) were utilized. According to Saldaña (2013), "coding is the transitional process between data collection and more extensive data analysis" (p. 5). Descriptive coding, often called topic coding, was used to summarize the essence or topic of the qualitative data. Additionally, in vivo coding was used to code the responses to the qualitative question. According to Saldaña (2013), in vivo coding is considered the verbatim or literal coding. The actual words, phrases, and terms utilized by the participants are utilized by placing them in quotation marks. In vivo coding permits an understanding of the participants' perceptions of how their clinical instructor's behaviors influenced their clinical self-efficacy beliefs.

After the first coding cycle was completed, the researcher created a document with the narratives and initial coding and sent this document to the dissertation chair and internal committee member for review. The internal committee member is an expert in
qualitative research. To enhance study rigor and trustworthiness, peer debriefing was implemented during the analytic phase. Communications between the researcher and internal committee member were established to review the evolving identified codes and discuss pertinent issues related to qualitative data analysis.

Through analysis of the narratives, the most salient themes and subthemes were identified. This coding process produced four themes and ten subthemes. The four themes were: Belittling, Destructive feedback/evaluation, Constructive feedback/evaluation, and Encouraging. Each theme and supporting subthemes will be discussed and illustrated with verbatim quotes and illustrations. Listed below is an outline of the themes and their subthemes which emerged from the analysis of the qualitative question participants were asked to answer.

Themes and Subthemes

1. Belittling
   a. embarrassing me/feeling stupid
   b. decreasing confidence

2. Destructive feedback/evaluation
   a. inconsistent with grading
   b. delay in providing feedback
   c. judgmental

3. Constructive feedback/evaluation
   a. helpful critiquing
   b. verbal/nonverbal persuasion
4. Encouraging
   a. calming and reassuring
   b. building up
   c. helping/coaching/seeking

Belittling

Participants reported feelings of being belittled in the clinical area by their clinical instructors. Belittling was described by participants as feelings of inferiority. Clark (2008) described it as faculty “exerting superiority” and “students feeling inadequate, inferior, and lacking confidence” (p. 285). This theme was constituted by the two subthemes of embarrassing/feeling stupid and decreasing confidence. Illustrating the theme of belittling and its subtheme of embarrassing/feeling stupid, one participant described her experience:

She proceeded to scold me in front of the patient for making a minor mistake. Afterwards, she scolded me more in the hallway and I broke down and cried. She then pulled me into the nurses’ break room and said “you can’t be doing that here [crying].” She then asked me a bunch of questions about the mistake I had made, and I felt so embarrassed.

Another student wrote her clinical instructor, “Made me stressed, anxious, depressed. Was belittling. Pushed me to the edge of quitting nursing.” Clinical instructors who corrected students in public elicited strong emotions in participants. One participant wrote, “When she publically yelled or “scolded” me, it made me feel really stupid.” Decreasing confidence emerged as a subtheme and often followed an embarrassing or belittling experience. Another participant stated:

Being overly critical and providing a poor story from one’s [clinical instructor’s] past that is not relevant to the situation is not helpful. It simply decreases the confidence of the individual rather than building them up. Hurting the confidence of a new student should not be done rather a positive critique should be given.
Yet another participant recalled:

My clinical teacher was in a bad mood and expected me to properly perform something I had never done before. She became frustrated and told me that I needed to attend open lab before the semester was over. I felt belittled and unconfident.

Another participant wrote about her unwillingness to ask questions, “I lost a great deal of confidence in myself and tried to do as little as possible in fear of making a mistake and being judged by my instructor.”

Similar experiences and similar themes were discovered in research conducted by Clark (2008) and her work with incivility in nursing education. Clark (2008) studied the impact of student and faculty incivility on the learning environment of nursing students. Her research found “faculty making demeaning and belittling remarks,” (Clark, 2008, p. 286) were perceived by students as uncivil faculty behaviors. Belittling remarks were further described as “making condescending remarks and putdowns, exerting superiority and rank over students, and making rude gestures and behaviors” (Clark, 2008, p. 286). Her research was foundational to identifying uncivil behaviors in faculty. Melincavage (2011) in her study of student nurses’ perceptions of anxiety in the clinical area also found themes consistent with the themes identified in this current study. Feelings of “being demeaned” and “being exposed” were expressed by students as increasing their anxiety in the clinical area. Participants in this current study explained clinical instructors who used belittling language left participants feeling anxious. These behaviors has a clear impact on students in the clinical area. Additionally, Melo, Williams, and Ross (2010) in their research of clinical practice anxiety found intimidation was a strong subtheme within the theme of interpersonal relationships. The interaction between instructor and student has far reaching implications, “students are
particularly anxious about interacting with faculty” (Melo, Williams, & Ross, 2010, p. 776). Participants in this current study, also delineated anxiety provoking situations within the interpersonal relationship between instructor and student. Faculty comments perceived as being embarrassing or perceived as derogatory and “feeling stupid” had a negative impact on students’ perceptions of their clinical experience.

Destructive Feedback and Evaluation

The second theme which emerged from the data was destructive feedback and evaluation. Participants wrote of situations where verbal or written feedback was perceived as negative, overly critical, or delayed. Melo, Williams, and Ross (2010) in their study comparing problem-based learning curriculum and traditional lecture-based curriculum also discussed the anxiety surrounding evaluation. They found higher mean scores on their anxiety measure related to the evaluation process. Evaluation, by its very nature, indicates an instructor will offer feedback, however in this current study the method, timing, and consistency of the feedback affected students’ perceptions of their clinical instructor. This theme of destructive feedback and evaluation captured the experiences of participants who had clinical instructors provide inconsistent grading methods, delayed feedback, and were judgmental. These behaviors became the subthemes for this second theme. Participants explained the effects of destructive feedback and evaluation on their clinical experience. “Decreased, inconsistency in paperwork. Expectations/learning contracts versus constructive feedback ↓confidence.” Yet another wrote, “This semester I felt like I was not graded on my performance only but whether or not the instructor liked me or not. I felt like I was competing more for that than my actual work.” Delayed feedback was another subtheme. Participants felt ill-
prepared to make necessary changes to clinical performance and/or paperwork when feedback was delayed. One wrote:

   My only decrease in confidence is because we don’t get any feedback about where we stand in the class. I don’t know if I will end with an ‘A’ or a ‘C’. I get a few instructions and a couple ways to improve, but nothing solid about my current performance.

Similarly, another participant noted, “my instructor was very vague about her grading process and I wasn’t sure about where I needed improvement with paper work.”

Interestingly, one participant noted the effect of receiving little verbal feedback:

   This semester my clinical instructor has given very little feedback at all about clinical performance in person. I feel as though that is worse than getting negative feedback because as a student you don’t know what kind of judgements (sic) are being made about you and don’t learn how to improve.

Being judgmental is another subtheme within destructive feedback and evaluation.

Clinical nursing education is closely intertwined with clinical evaluation. The clinical experience in inherently anxiety provoking due to students being evaluated as they learn.

One student described an experience with her clinical instructor:

   When I made a mistake in not reporting vital sign readings that were abnormal, my clinical instructor made note of it and always reminded me how dangerous it was throughout all my weeks at clinical. It affected a specific part of my grade evaluation and so each time she talked about it I felt very incompetent and misjudged as her student.

Yet another participant recalled, “Whenever an instructor is always criticizing and never acknowledges good work or skills it greatly decreases my confidence.” These data indicate student’s strong negative feelings toward belittling and destructive feedback/evaluation.

Several authors have conducted research which yielded findings congruent with the narratives provided by these participants. Similar experiences and similar themes
were discovered in research conducted by Clark (2008) and her work with incivility in nursing education. Subjectivity displayed in gender bias, assignments, and grading practices were perceived as uncivil faculty behaviors. In her research, Clark found gender bias in each of the male participants. This was not evident in this current research study, however, participants did identify subjective grading practices and inconsistent grading were anxiety provoking. In research conducted by Tang, Chou, and Chiang (2005), differences between perceived effective and ineffective clinical instructors were attributed to interpersonal relationships specifically, “treats students sincerely and objectively” (p. 191).

Constructive Feedback/Evaluation

While the prior themes suggested some clinical instructors had a negative impact on students’ clinical experiences, there was great potential for positive impact when instructors provided constructive feedback and evaluation. Gaberson and Oermann (2010) described feedback in clinical evaluation as having five principles. Feedback should be precise, feedback should consist of verbal and visual components, feedback should be immediate, individual students need individualized amount of feedback and positive reinforcement, and finally, feedback should be diagnostic. These principles were also noted by participants in this study. The third theme of constructive feedback and evaluation had two subthemes of helpful critiquing and verbal/nonverbal persuasion. Participants reported positive interactions with clinical instructors can increase their confidence in their abilities in the clinical area. One participant interestingly noted how a negative evaluation on her paperwork actually improved her performance. She wrote, “After receiving negative feedback in paperwork I expected to have a decreased self-
confidence. However, it helped me to focus my interventions and led to an exponentially better process in paperwork.” Constructive, timely feedback was also valued by a participant who described, “My clinical instructor increased my confidence by constant feedback whether it was positive or negative feedback.” Participants valued caring-in-action and positive feedback. One student wrote:

My instructor increases my self-confidence every clinical rotation. She does so by providing positive feedback. Makes comments and suggestions in a non-belittling way. Encourage group work. Attentive and caring. Jokes with us and shows interest in her profession and her student.

Another subtheme within the theme of constructive feedback and evaluation was verbal and nonverbal persuasion. One participant wrote, “My clinical instructor asked me a question to which I didn’t know the answer. Instead of making me feel dumb, she gave me more information and helped lead me to the correct answer.” Another participant recalled how her clinical instructor encouraged her critical thinking:

My clinical instructor would ask me what my patients case was reviewed the paperwork I did the night before during that shift, and then made corrections to the paperwork on the spot and focused my prioritization. She questioned why I reasoned what I did for the problem list and constructively redirected my efforts if I was way off, and complimented me if I was spot on. The onsite corrections made me feel confident I was doing what I should have been.

Nonverbal persuasion was received and reported by a participant:

The first time I gave a subcutaneous injection, I was standing outside of the patient’s room and was very nervous. My instructor came up behind me, put a hand on my shoulder and said she could tell that I was nervous but that she would be by my side. In the room, she walked me through it for exact precision and then commended me afterward privately. The therapeutic communication and touch, hands-on approach and positive reinforcement she displayed helped calm my nerves and made my first injection successful.

Providing constructive feedback in clinical learning are not new. Kube (2010) studied the effects of faculty behaviors on student learning. She found students’
perceived greater learning when their clinical instructor was approachable, organized, supportive, encouraging, and provided frequent feedback. Nelson (2011) also reported clinical instructor knowledge and interpersonal skills as effective characteristics of clinical instructors. The themes of encouraging students, building up, and constructive feedback were noted in the early research done by Mogan and Knox (1987) when they were constructing the NCTEI. “Best teachers were perceived by students as those who were best able to reduce their anxiety, those whose personality was warm and who could relate well to them” (Mogan & Knox, 1987, p. 336). In addition, their study showed nursing competence and teaching ability as valuable traits. These effective teaching behaviors have been well recognized themes in nursing literature for decades (Billings & Halstead, 2009; Clark, 2008; Tang, Chou, & Chiang, 2005; Gaberson & Oermann, 2010; Mogan & Knox, 1987; O’Connor, 2006).

Encouraging

The concept of encouraging was discussed by participants as a positive attribute of clinical instructors. Cook (2005) studied the similar concept of invitational teaching behaviors and stated, “inviting communication conveys to students that they are valuable, able, and responsible” (p. 157). In the current study, students used the word encouraging to convey behaviors which built up their confidence. This fourth theme of encouraging included three subthemes, calming and reassuring, building up, helping/coaching/seeking opportunities. The subtheme of calming and reassuring was noted by students to be helpful in their clinical learning. One participant wrote, “one instructor was very relaxed and really walked me through a procedure with ease, and was calm the whole way
through.” Another participant succinctly summarized a clinical instructor’s influence by writing:

My instructors have increased my confidence when providing me with positive feedback and being supportive. It can completely change my day and performance depending on feedback from my instructor. My confidence is decreased when they get angry about something I mess up on or don’t encourage me when I am nervous. I love when an instructor is comforting and calming. I do much better.

Building up was another subtheme identified by students as helpful in clinical learning.

One student described a situation where she found a medication error and reported it to her clinical instructor. She wrote:

She praised me for the catch! She taught me to call pharmacy to verify and the physician. Pharmacy and the physician resolved the issue by DC [ing] the injection and both praised me for the catch. This positive feedback gave me confidence that I was competent with medication administration to always speak up when there is any doubt, do not be shy about it.

In another situation, a clinical instructor supported a student in the face of criticism from a staff nurse on the floor. The participant gratefully noted:

During my XX clinical a nurse asked me to hang an IV medication by myself. I explained to the nurse I could not do that without my instructor. After clinical was over the nurse told my instructor that I was lazy and didn’t want to do any skills. My instructor re-assured me that I was not lazy and my care was very good. I did the right thing by not hanging the IV med without her. Made me appreciate my instructor a lot more. I was glad she noticed my work ethic.

In cases like this, the clinical instructor has the opportunity to demonstrate confidence in the student who is navigating unchartered waters within the professional health care team. The instructor’s actions positively contributed to this student’s self-confidence.

Another student wrote:

I felt an increase in confidence when on a day that I was not scheduled to do meds, my clinical instructor allowed me to do something I had not done. When the opportunity came up, she told me she knew I could do this, even though I had never done it outside of lab. I appreciated her confidence.
Helping/coaching/seeking out opportunities was another subtheme. Participants reported instances where their instructors looked for learning opportunities, coached them through difficult situations, and helped them be successful. One participant wrote:

My current clinical instructor was adamant about making sure we were able to practice as many skills as possible. I personally felt I got so much exposure in the health care setting, I appreciated this b/c of my lack of experience in health care. I enjoyed the hands on learning, which motivated me to want to do more.

Coaching students through tasks also improves clinical confidence and learning:

This semester my clinical instructor was very different. She was strict and had high expectations but was respectful and genuinely interested in teaching us. She encouraged us to jump at every opportunity to practice our skills and coached me through new skills I felt uneasy about.

Yet another participant described her clinical instructors’ effective method for skill attainment, “Whenever I got a chance to perform a new skill, she always was available and walked me through step-by-step at a good pace while explaining the reasoning at the same time. This was very helpful to me.” Participants in this current study, appreciated the one-on-one coaching and teaching clinical instructors gave during clinical learning.

Knox and Mogan (1985) in their seminal work with the NCTEI researched instructor behavior and their relation to anxiety in clinical nursing students. They found high levels of anxiety among nursing students, however, this anxiety could be decreased by instructor behavior. “Students want a teacher who can make them feel at ease, a teacher to whom they can turn for reassurance” (Knox & Mogan, 1985, p. 29). The concept of intentional teaching behaviors was studied by Cook (2005). In her work comparing students’ perceptions of inviting and disinventing teacher behaviors, she wrote:

When students perceived faculty to convey inviting messages, such as showing respect for students, expressing pleasure with a clinical group, selecting appropriate patient assignments, and acting friendly and trustful of students, their state anxiety levels were reportedly lower. (p. 160)
The intentional use of encouraging behavior can have a profound impact on clinical nursing students. As the participants noted:

My clinical instructor last semester was always really encouraging and helpful. When I gave my first injection she knew I could do it on my own without assistance. She observed me but let me do it on my own and I ended up doing really well and she encouraged me and made me feel good.

Bandura (1997) wrote, "it is easier to sustain a sense of efficacy, especially when struggling with difficulties, if significant others express faith in one’s capabilities than if they convey doubts" (p. 101). The encouraging behaviors of clinical nursing instructors can be powerful motivators for future success.

Other qualitative data obtained which were different from these themes included participant’s identification of system issues such as size of clinical groups, issues with student discipline within the clinical experience, negative comments about the university’s grading scale, and the clinical paperwork itself. Because these essences and perspectives were not directly related to the clinical instructor effectiveness or the sources of clinical self-efficacy, they are not included within this discussion of qualitative results.

Sources of Clinical Self-Efficacy and Qualitative Themes

Qualitative data revealed interesting contrasts in terms of the sources of self-efficacy. For example, one participant wrote, “Rather than demonstrating/walking me through a new skill, she would explain it to me outside the patient room and expect me to go in and perform in correctly” which suggested this student wanted the instructor to demonstrate a skill rather than simply talk through the skill. This is an example of a student wanting a vicarious experience (demonstrating/walking through a new skill) rather than a clinical instructor using verbal persuasion to talk the student through the skill. Interestingly, another participant when faced with a similar situation wrote, “I do
like when instructors kind of make you visualize what you’re about to do in the room first before even entering, so you can get a better idea of what to do & have more confidence.”

Yet another student noted the effectiveness of her instructor, “My clinical instructor increased my confidence about giving an injection by practicing with a pen in the hallway to show me how to prevent a needle injury.” Interestingly, yet another student wrote:

There was a situation where my instructor asked me to perform a new skill last minute. I did not have an opportunity to mentally prepare for it. She did talk it through with me before going into the patient’s room, and was there the whole time. I feel that I could have been more successful if I was given more notice.

This participant’s experience with verbal persuasion before attempting the skill suggests she was affected by the stress of the situation and was unable to perform correctly. The sources of self-efficacy are complicated and each student has a personal set of tools they use to build self-efficacy (Bandura, 1997). Clinical learning can be enhanced by identifying the student’s source(s) of self-efficacy and developing learning opportunities tailored to meet their needs.

Verbal persuasion was a powerful motivator and barrier in clinical learning. One student wrote, “My clinical instructor increased my confidence by affirming my ability to perform a skill I had learned, but hadn’t yet performed on the unit before.” The instructor’s affirming verbal persuasion resulted in a positive outcome for this participant. Similarly another student noted:

My two semesters of clinical have been amazing. I believe having a tough instructor who expected a lot out of us made me so prepared. Both clinical instructors drilled me on my meds and the patients patho [sic]. I knew what expectations they had going into clinical each day. Therefore I was prepared and was able to understand my patient better and provide better care. This made me more confident in my practice and it showed to the other nurses.
This student was challenged and motivated toward goal attainment by the verbal persuasion provided by her clinical instructor. However, the same verbal persuasion with a student who is more attuned to the physiological/affective source of self-efficacy might perceive the “drilling on meds” as a difficult challenge to overcome rather than as a method to build self-efficacy.

Mastery experiences are considered the strongest of the sources of self-efficacy. These experiences can be positive and build self-efficacy for the next situation or negative and sow the seeds of doubt. One student described a positive mastery experience:

Today I was able to start an IV for the first time. My instructor guided me through the process the entire time and didn’t try to take over when I struggled with my first attempt at a vein. She calmly allowed me to try again after suggesting a new vein. She did not belittle me in front of the patient or act anxious about my not being successful during the first stick. She verbally affirmed my ability to use my skills to get it right the second time. She calmly intervene when necessary but allowed me the experience which gave me to confidence to be successful on my second attempt.

And another participant described a negative mastery experience and the effect it has on future attempts at a new skill:

With my previous instructor I did not feel as confident. There was one time when I was giving a subQ injection. While giving the injection she grabbed the needle and kind of took over the situation. I would have benefitted more if she would have talked me through the situation instead of taking over.

Because mastery experiences are such strong motivators for future success, clinical instructors must be intentional in their actions to assist students to build positive mastery experiences. Bandura (1997) wrote, “successes build a robust belief in one’s personal efficacy. Failures undermine it, especially if failures occur before a sense of efficacy is firmly established” (p. 80). Clinical nursing students are certainly in the beginning stages
of developing clinical self-efficacy. It is imperative clinical instructors remain mindful of the mastery experiences offered to students and encourage them toward success.

Research question seven asked, “Do the qualitative data support the quantitative findings?” The qualitative data analysis supports the quantitative data analysis, thus supporting research question seven. Quantitatively the sources of verbal persuasion and vicarious experiences, verbal persuasion and physiologic/affective states, and vicarious experiences and physiologic/affective states were significantly correlated. Qualitative data lend support to all three of these correlations. Participants reported the verbal persuasiveness of their clinical instructors affected their success in clinical and their anxiety. Likewise, the sources of verbal persuasion, vicarious experiences, and even physiological/affective states are a large part of the clinical learning and are largely within the influence of the clinical instructor.

The clinical instructor’s effectiveness significantly impacted participants’ clinical practice anxiety. The best scenario consisted of students who valued the verbal persuasions of others as an important source of their own self-efficacy. These students, when paired with an effective clinical instructor who demonstrated effective teaching behaviors, experienced a decrease in their clinical practice anxiety. Conversely, students who valued verbal persuasion but who was paired with clinical instructors they perceived were ineffective, experienced high clinical practice anxiety.

Clinical self-efficacy was difficult to predict. As the qualitative data reflected, participants used varying degrees of each source to build personal self-efficacy beliefs. As was noted earlier, similar situations, such as reviewing or role playing a skill before performing, were viewed as a positive situation by one student and a negative by another.
Self-efficacy beliefs and the sources participants relied on to increase their self-efficacy beliefs are complicated and individualized.

Summary

This chapter reported the quantitative and qualitative findings for each research question. In addition the chapter reported descriptive statistics on all data collection tools, as well as describing the sample used for this study. Results of this convergent, mixed methods study indicated most findings were consistent with the literature. Additionally, the quantitative findings were validated by the qualitative data.
CHAPTER FIVE
DISCUSSION AND RECOMMENDATIONS

This chapter discusses the results, limitations of the current study, and recommendations for further research. This discussion will focus on the sources of self-efficacy in clinical nursing education and influences on student’s perceived clinical self-efficacy as well as clinical practice anxiety. In addition, implications for nursing theory and education are also discussed.

Discussion of Findings

Sources of Student Self-Efficacy

Bandura (1997) identified mastery experiences, vicarious experiences, verbal persuasion, and physiologic/affective states as sources individuals rely on to form self-efficacy perceptions. Bandura believed people use different combinations of sources to construct self-efficacy perceptions. Mastery experiences, according to Bandura, were the strongest source. Confronting a tough situation and accomplishing the task, skill, or behavior builds self-efficacy for further actions. Self-efficacy, to a great extent, is a self-fulfilling construct. Success builds self-efficacy which encourages success for the next encounter. In this current study, sources of student self-efficacy were explored using the new, researcher-developed instrument, Sources of Student Clinical Self-Efficacy (SSCSE). Participants in this study assigned greater importance to mastery experiences,
followed by verbal persuasion, vicarious experiences, and then physiologic/affective states as sources influencing self-efficacy.

A great deal of research concerning the sources of self-efficacy has been done in K-12 education, specifically math and science self-efficacy (Andrew, 1998; Margolis, 2005; Muretta, 2004; Phan, 2012; Scherbaum, 2006; Schunk, 1995; Usher & Pajares, 2006, 2008, 2009). Recently, Chen and Usher (2013) studied science self-efficacy among middle and high school students. These researchers’ primary purpose was to “explore the different configurations of the sources of self-efficacy” (p. 12) in relation to science self-efficacy and to compare self-efficacy scores to actual end of course science grades (Chen & Usher, 2013). They found four different configurations, the multi-source group, the mastery group, the moderate group, and the at risk group. The multi-source configuration mirrors the results of this current study. Students in the multi-source configuration identified greater reliance on mastery experiences, then verbal persuasion, vicarious experiences, and finally physiologic/affective as their sources of self-efficacy. In addition, this group demonstrated the highest science test scores indicating this configuration of sources increased their end-of-course measurements. The group with the next highest end-of-course grade was the primarily mastery experience group who derived most of their sense of self-efficacy from mastery experiences and much lower scores on the other three sources. The moderate group did not have one strong source, and rather weak affinity for all four. The at-risk group identified the physiologic/affective source as an important influence on their self-efficacy. While the multi-source configuration had the highest science test scores, the at-risk group had the lowest. It is also important to note the configuration with the smallest number of subjects
was the mastery group followed by the multi-source. Therefore, even though these configurations improved test scores, they were also the smallest subsets leaving a great deal of the sample in the other categories with less successful source configuration.

This current study explored the types and strengths of sources of self-efficacy. The results showed an affinity for mastery, then verbal persuasion, vicarious experiences, and then physiologic/affective sources. Also, in the absence of a mastery experience to build self-efficacy, participants chose verbal persuasion techniques as the preferred method when confronting a new skill or situation. Interestingly, mastery experiences did not correlate with the other sources and it is unclear whether mastery is uniquely different from the other sources or if the correlation was attenuated because of the low reliability of the mastery experience score. However the other three sources were positively and significantly correlated with each other. This is consistent with Chen and Usher’s (2013) research which suggested some students prefer mastery experiences to construct self-efficacy beliefs and yet others use the other three sources in various combinations.

Joët, Usher, and Bressoux (2011) studied the sources of self-efficacy in relation to language and math self-efficacy in elementary students in France. They investigated the predictive value of the sources as well as gender differences and the predictive value of the sources of self-efficacy on self-regulated learning. They wrote, "educational approaches that reduce negative affect when they approach difficult learning tasks would help redirect youngster’s cognitive resources to skill building rather than self-doubt" (Joët, Usher, & Bressoux, 2011, p. 659). In the context of this current research, reducing negative affect when clinical nursing students are faced with a difficult task would be an effective clinical instructor behavior. This researcher recommends clinical instructors
would be wise to attend to their students’ sources of self-efficacy early in the clinical
learning experience. Early intervention and support has the potential to redirect the
student’s resources to building up self-efficacy rather than tearing down these beliefs.

The sources of self-efficacy are an important facet of self-efficacy beliefs,
especially in clinical nursing education. Students in the clinical learning environment
must incorporate didactic knowledge into action at the bedside. This transfer, or
integration of knowledge, is imperative for effective clinical education. Student’s
personal fortitude, coupled with their ability to interpret successes and failures during
skill attainment are especially important. Bandura (1997) wrote about contextual
influences, situational nuances, and reliance on different sources of self-efficacy,
“performances at early and intermediate phases of development, when skills have not yet
been fully organized and refined, are especially vulnerable to such influences” (p. 85).
Students in their early professional development are especially vulnerable to wide swings
in their self-efficacy beliefs. It is this researcher’s assertion that by attuning to a student’s
personal configuration of sources, clinical faculty have the potential to influence clinical
self-efficacy development and maintenance.

Clinical Self-Efficacy Beliefs.

The current research also asked if clinical self-efficacy beliefs were predicted by
the sources of self-efficacy, trait anxiety, and perceived clinical instructor effectiveness.
An affinity for mastery experiences and lower trait anxiety did significantly predict
clinical self-efficacy beliefs. Thus, students who relied on mastery experiences to build
self-efficacy beliefs and demonstrated lower trait anxiety also reported higher clinical
self-efficacy. Rather than serving as a moderator, trait anxiety had a direct effect on
clinical self-efficacy. These data support that the formation of clinical self-efficacy beliefs is complicated. Bandura (1997) discussed the complex integration of the four sources writing, “efficacy beliefs are the product of cognitive processing of diverse sources of efficacy information conveyed enactively, vicariously, socially, and physiologically” (p. 115).

Interestingly, while mastery experiences and trait anxiety were significant predictors, clinical instructor effectiveness did not predict clinical self-efficacy beliefs. Trait anxiety, the inherent anxiety the student brings with him/her to the clinical area, and a reliance on mastery experiences as a source would have the least to do with clinical instructor effectiveness and more to do with the sheer number and quality of mastery experiences provided in the clinical experience. As further discussion will illuminate, clinical instructor effectiveness had greater influence on clinical practice anxiety than on clinical self-efficacy beliefs.

Clinical Practice Anxiety

The presence of clinical practice anxiety within nursing clinical education has been well documented (Conner, 2006; Cook, 2005; Edwards, Burnard, Bennett & Hebden, 2010; Gibbons, Dempster, & Moultray, 2011; Goff, 2011; Gore, Hunt, Parker, & Raines, 2011; Kliehammer, Hart, & Keck, 1990; Melincavage, 2011; Moscaritolo, 2009; Rambo, 1997; Timmons & Kaliszer, 2002; and Warning, 2011). In this current study, a reliance on mastery as a source of self-efficacy, lesser reliance on the physiologic/affective as a source for self-efficacy, lower trait anxiety, and perceptions of an effective clinical instructor were all predictors of lower clinical practice anxiety.
Conceptually, these relationships are consistent with the literature. Melo, Williams, and Ross (2010) studied the effects of problem-based learning on clinical practice anxiety. As part of their research design, they asked participants an open-ended question focused on descriptions of the most anxiety provoking aspect of clinical practice. Their results showed poor relationships with clinical faculty, a lack of support from faculty, fear of evaluation, and a low confidence in skill performances added to students' clinical practice anxiety. These findings are consistent, although inverse, with the current study. The students in the Melo, Williams, and Ross (2010) study were asked to identify factors contributing to increased clinical practice anxiety. The current study suggests students with inherently lower levels of trait anxiety who do not attune to the physiologic/affective source and who have an effective clinical instructor will demonstrate lower clinical anxiety in the clinical area.

In addition to predicting clinical practice anxiety, the current study asked if clinical instructor effectiveness and trait anxiety moderated the sources of self-efficacy on the clinical practice anxiety of students. Interestingly, clinical instructor effectiveness was found to significantly moderate the verbal persuasion source of self-efficacy on clinical practice anxiety. Conceptually, this is consistent with prior research. If a student relied on verbal persuasion as a source to construct self-efficacy beliefs the perception of an effective clinical instructor would decrease the clinical practice anxiety and the presence of negative perceptions of clinical instructor effectiveness would raise anxiety. Again, the Melo, Williams, and Ross (2010) research supported these relationships. Their research found generally high levels of anxiety across their sample. The open-ended question elicited qualitative data supporting the effect of negative clinical
instructor effectiveness, specifically "students are particularly anxious about interacting with faculty" (Melo, Williams, & Ross, 2010, p. 776). Decreased clinical instructor effectiveness can potentiate a situation with a student already in a high anxiety state. Data from the current study also revealed perceptions of the clinical instructor had little effect on students who did not value verbal persuasion as a source of self-efficacy. The difference in anxiety scores was minimal between the effective and ineffective clinical instructor within the low verbal persuasion group. The effectiveness of the clinical instructor was stronger, both positively and negatively, on the student who valued verbal persuasion as a source.

Clinical Instructor Behaviors

Effective clinical teaching is an integral part of nursing education. Students, when given the opportunity to express their feelings, are detailed in their assessment of effective and ineffective clinical instructors. Clark and Springer (2007) and Clark (2008) in their research regarding incivility between faculty and students found themes similar to the themes in this current study. Among their most often reported faculty incivility behaviors were "belittling or taunting students, being distant or cold toward students, being inflexible" (Clark & Springer, 2007). Incredibly, Clark and Springer also identified "behaviors considered beyond uncivil" including faculty challenging other faculty in front of students, which was not identified in this current research study, and taunts and disrespect to students which was identified in this current research study.

Students who identified belittling and destructive feedback experienced situations similar to those identified in prior research. Clark (2008) furthered her research and described "treating students unfairly or subjectively" as a theme in her qualitative study on faculty
incivility. Participants in the current study used the words “judgmental” and “inconsistent” when describing their clinical instructor. Additionally, Clark (2008) noted students who experienced uncivil behavior felt powerless, depressed, fearful, angry, and spoke of their desire to leave the program. These behaviors have no room in nursing education in general, but certainly not in clinical nursing education. “Faculty are role models for students. Setting a positive example for students is a faculty imperative” (Clark & Springer, 2007, p. 13).

Melincavage (2011) interviewed a small sample of nursing students, asking them to describe a day where they felt anxious in the clinical setting. She found themes consistent with the current research study. Being demeaned, exposed, uncertain of ability were all reported by students. Melincavage noted, “anxiety affects student learning and hinders the development of trusting relationships with faculty, physicians, and staff making student feel unaccepted in the community of practice” (2011, pp.787-788). These should be exact opposites of the goals clinical instructors set for their students and their clinical experience. Stokes and Kost (2012) writing in Teaching and Learning: A Guide for Faculty wrote:

Faculty and staff should provide an environment in which caring relationships are evident. The clinical practice environment should be a place where students feel that they are accepted and that their contributions are appreciated by individuals with whom they interact. (p. 315)

Killam and Heerschap (2013) recently researched challenges students confront when learning in the clinical environment. Again, consistent themes emerged of inability to focus on learning, exhaustion, fear, uncertainty, conflict between theory and practice, intimidation due to poor relationships, educators approach in clinical, subjective evaluations, among others. The researchers, once again, emphasized the importance of
supportive relationships with students, mutual respect, honesty, good communication
techniques, and a proactive approach to identify at risk students.

The current study identified positive clinical instructor behaviors as constructive
feedback, encouraging, calming, building up, and helping/coaching/seeking out
opportunities. Hanson and Stenvig (2008) uncovered consistent concepts in their
research of effective clinical instructors. Knowledge of theory and clinical practice was
an identified theme, specifically, “One commented on the importance of ‘someone [who]
can give you those experiences that are going to happen in real life’” (Hanson & Stenvig,
2008, p. 40). This theme speaks directly to the mastery experiences as a source of self-
efficacy and the importance of positive mastery experiences. Another theme, knowledge
of the student, was described as “one participant believed ‘a clinical instructor should
know her students and where they’re at, what they’re capable of doing, what they feel
comfortable doing’” (Hanson & Stenvig, 2008, p. 40). This comment supports the
current research as a method of understanding the specific learning needs of students in
clinical. By the end of the clinical experience, good clinical instructors have a better idea
of where students are on their learning trajectory. This current study has the potential to
assist instructors in identifying individual needs in order to craft a more effective clinical
learning environment. Other positive instructor behaviors identified by Hanson and
Stenvig were positive/supportive attitude, encouraging demeanor, organized, and timely
feedback. Clinical faculty must be intentional in conveying encouragement, constructive
feedback, building up students, and encouraging them for future practice.
Recommendations for Nursing Theory and Education

The results of this study described the influences of the sources of self-efficacy on self-efficacy beliefs and clinical practice anxiety. In addition, the presence of effective clinical instructor perceptions and trait anxiety affected the clinical practice anxiety of students to varying degrees. The literature is replete with examples of positive and negative clinical instructor behavior and nursing education practice has been firm in espousing positive student-educator relationships (Billings & Halstead, 2009; Clark, 2008; Cook, 2005; Gaberson & Oermann, 2010; O'Connor, 2006). It is time to move the profession toward intentional clinical education. Mentoring new and old faculty in current educational practice will fall to the current generation of nursing education scholars. Educators must stop ‘teaching like we were taught’ and realize the next generation of nurses demand caring, positive, competent, and sincere educators. Nursing theory embraced Watson’s (1988) theory of caring decades ago, but the caring curriculum described by Bevis and Watson (1989/2000) was implemented inconsistently. This current study emphasized the importance of understanding student’s specific learning needs and methods students use to construct their self-efficacy beliefs, and the importance of effective clinical educators.

Recommendations for Future Research

The concept of self-efficacy has special importance to clinical nursing education. The development of self-efficacy beliefs propels students toward goal attainment. Future research into the influences each source has on self-efficacy beliefs will be beneficial in continued tool refinement. Self-efficacy beliefs are complicated and searching for concise methods to identify a student’s personal configuration of sources on which they
rely will be useful in constructing effective clinical learning environments. Since self-efficacy is a self-reported construct and has significant connection with affective processes in verbal persuasions, vicarious experiences, and physiologic/affective sources further research of moderating effects of anxiety, clinical instructor behaviors, as well as contributing factors of the clinical area itself, staff and nurses associated with the clinical learning environment will add to the knowledge base for effective clinical education. In addition, a longitudinal study to examine changes in sources and self-efficacy over time will be helpful in future research.

Strengths of the Study

Strengths of the study include the chosen method of mixed method design. Qualitative data provided the rich descriptions necessary to understand how the sources of self-efficacy are viewed in the clinical education environment. The study was from one institution with a homogenous sample which decreased the variability between clinical placement sites and types of students. Finally, an a priori power analysis was conducted and the targeted sample size was obtained. The study was adequately powered to address the quantitative research questions which reduced the risk of Type II error.

Limitations of the Study

The current study is also limited by its cross sectional design. Data were gathered one time and effects over time were not studied. The low internal consistency reliability of the mastery subscale of the Sources of Clinical Self-Efficacy Scale may have attenuated relationships between this source and other sources of self-efficacy, clinical self-efficacy beliefs, and clinical anxiety. Qualitative data were collected anonymously, consequently, the researcher was unable to ask clarifying questions. Further research
could be strengthened by interviews with participants. The use of only one site limits the
generalizability of results outside the population of the institution. Further research with
multiple sites and varying types of clinical may provide insight into the development of
clinical self-efficacy beliefs across the curriculum.

Summary

This chapter discussed the major findings of the research study, recommendations
for nursing theory and education as well as discussed strengths and limitations and future
research recommendations. The continued study of self-efficacy in clinical education,
specifically quantifying the sources of self-efficacy has the potential to improve clinical
education for the next generation of students.
REFERENCES


APPENDIX A

STAI, SECP, AND NCTEI AUTHOR PERMISSIONS
State-Trait Anxiety Inventory
for Adults
Instrument (Adult Form)
and Scoring Guide

Developed by Charles D. Spielberger
in collaboration with R.L. Gorsuch, R. Lushe, P.R. Vagg, and G.A. Jacobs

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RE: Re: Author Search
f_cheraghi [f.cheraghi@umsia.ac.ir]

To: f.cheraghi@umsia.ac.ir

Dear Beth

Hi,

I am in vacation. I send you another e-mail. It’s my pleasure that you want to use Self Efficacy in Clinical Performance (SCCP) scale. If you need more information, please contact me.

With best regards,

Dr. Cheraghi

Good morning. My name is Beth Hultquist and I am in PhD of Nursing studies at Georgia Baptist College of Nursing at Mercer University in Atlanta, Georgia. I am interested in researching clinical self-efficacy in senior nursing students and would like to use your Self Efficacy in Clinical Performance (SCCP) scale. I am interested in senior nursing students' level of self-efficacy in relation to their clinical success.

I look forward to hearing from you,

Beth Hultquist
beth.hultquist@mercer.edu

From: Ali Cheraghi [cheraghi@2000@yahoo.com]

Subject: Re: Author Search

Dear Beth,

Dr. Beth is searching you to have contact with you on your published paper. Please have a contact to him.

Good luck

Dr. Mohammad Ali Cheraghi
PhD, Assistant Professor
School of Nursing and Midwifery
Tehran University of Medical Sciences,

https://chilp0102.outlook.com/cowa/?ae format=IPM.Record&sid RgAAAAAhjHwJc8bL .. 12/31/2011
RE: NCTEI

Knox, Janet [JKnox@avdha.nsheaft.ca]
Sent: Wednesday, January 11, 2017 4:01 AM
To: Beth.Hufquist

Thank you for your request. We would be pleased to have you use this instrument in your research. It is great to see the continued interest in this work so many years later. I spent many years teaching nursing students and believe you have an interesting topic. I wish you much success in your studies.

J a n e t 
Knox, RN, MN, MBA, CNE
AVH

Healthy people, caring communities and valued healthcare teams and partners

From: Beth L. Hufquist [mailto:Beth.L.Hufquist@mercer.edu]
Sent: Tuesday, January 10, 2012 6:55 PM
To: Knox, Janet
Subject: NCTEI

Dr. Knox,

My name is Beth Hufquist and I am a PhD in Nursing student at Georgia Baptist College of Nursing of Mercer University in Atlanta, Georgia. I am entering the dissertation phase and am interested in measuring clinical self efficacy in nursing students and the effects of teacher behaviors. I have read about your Nursing Clinical Teacher Effectiveness Inventory and I would like to use the tool in my research. I realize you developed the tool with Dr. Mogan, do you allow the tool to be used?

I would appreciate any help/advice you could offer!

Thank you
Beth L. Hufquist MSN, RN, CNE

https://outlook.com/owa/?url=4PM.NoaRid=RgAAAAAlkHwJckbf... 10/20/2012
APPENDIX B

DISSERTATION STUDY SURVEY
Clinical Self-Efficacy of Nursing Students

The purpose of this mixed methods study is to describe the influences which affect student’s clinical learning.

Please read the Informed Consent form carefully. If you wish to continue with the study, please sign one consent form and keep it within the booklet. The second consent form is for you to take with you for your records. Please follow the directions and answer each of the surveys completely.

Thank you for your time,

Beth L. Hultquist MSN, RN, CNE

Demographic Form

In this section, the questions are intended to collect information about you. Please indicate the option that best describes you.

1. What is your age in years? _________

2. What is your gender?
   - Male
   - Female

3. What is your race/ethnicity? (Choose all that apply)
   - Asian
   - Native Hawaiian
   - Other Pacific Islander
   - Black or African American
   - American Indian
   - White
   - Hispanic Latino
   - Not Hispanic Latino
   - More than one race

4. Please indicate which semester of school in which you are currently.
   - 1st Semester, Junior Year
   - 2nd Semester, Junior Year
   - 1st Semester, Senior Year
   - 2nd Semester, Senior Year

5. Please indicate if you have a previous degree in nursing or in another field.
   - Associate Degree of Nursing
   - Associate Degree of Science
   - Other than Nursing Associate Degree
   - Other than Nursing Bachelor’s Degree
   - Master’s Degree
   - Higher than a Master’s Degree
6. **Do you have previous experience in any healthcare environment?**
   
   - Yes, more than 3 years experience
   - Yes, less than 3 years experience
   - No experience

   This survey will ask you questions about your clinical experiences in nursing school. Think about your current clinical experience and answer the following two questions.

7. **Which of the following categories describes your current clinical instructor?**
   
   - Part-time instructor, only teaches clinical
   - Full-time faculty, has classroom and clinical responsibilities
   - I don’t know

8. **How many students are in your clinical group?**
   
   - Less than eight (8) students
   - Eight to ten (8-10) students
   - More than ten (10) students

9. **Which of the following best describes your university or school of nursing?**
   
   - Four year public university
   - Four year private university
   - Other
   - I don’t know

10. **What is the content focus for your current clinical?**
    
    - Adult Medical/Surgical Nursing
    - Adult Maternity Nursing
    - Other Adult Specialty Nursing
    - Psychiatric Nursing
    - Pediatric Nursing
    - Other
Developing Your Clinical Practice

The purpose of this questionnaire is to learn more about your thoughts and feelings related to your clinical experiences while in your nursing program. Rate the extent to which you disagree or agree with the following statements by circling the appropriate number after each statement with "1" indicating you strongly disagree to "7" indicating you strongly agree. While you may have had several clinical courses already, we would like your thoughts and feelings about the clinical experience you are currently in or just completed. This tool is designed to measure the development of your clinical practice this semester.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Strongly Disagree</th>
<th></th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Negative feedback from my peers affects my ability to perform in clinical.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I experience feelings of nervousness such as an upset stomach, sweating, and/or heart racing most clinical days.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am successful when I attempt a skill for the first time.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Positive feedback from my clinical instructor affects my clinical performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Watching my clinical instructor perform clinical skills affects how I perform in new clinical situations.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8. Watching a staff nurse who is a recent graduate makes me think about how I will perform in new clinical situations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Unfamiliar clinical situations affect my emotions in clinical.</td>
<td></td>
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<tr>
<td>10. When my peers share their clinical experiences my performance changes.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. Watching an experienced staff nurse affects my ability to perform in new clinical situations.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. When faced with a new clinical skill, my nervousness affects how I perform the skill.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Strongly Disagree</td>
<td></td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>---</td>
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<td>------------------</td>
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</tr>
<tr>
<td>13. Stories from my clinical instructor affect my confidence when faced with new situations.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Unfamiliar clinical skills affect my emotions in clinical.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Positive feedback from my clinical instructor is not important to my clinical performance.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Feedback from my peers helps me evaluate my own clinical performance.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Positive feedback from my assigned nurse affects my self-confidence in clinical.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Stress in clinical affects my clinical performance</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. My feelings of anxiety affect me in clinical.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Watching a staff nurse who is similar to my age affects my confidence in new clinical situations.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. I have been successful in clinical</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Stories from experiences nurses affect my confidence when faced with new situations.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Negative feedback from my clinical instructor affects my clinical performance.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. I experience feelings of excitement most clinical days.</td>
<td></td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most students learn best by performing a skill, however it is difficult to provide actual experience for every skill needed to be a nurse. When faced with the opportunity to perform a new clinical skill during clinical (one you have not previously performed in the clinical area), which of the following is the most helpful? (Circle one answer)

A. Watching someone else perform the skill.
B. Ask an experienced nurse to coach me through the skill.
C. Using relaxation techniques to calm myself before attempting the skill.
SELF-EVALUATION QUESTIONNAIRE
Please provide the following information:

DIRECTIONS:
A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel right now in your clinical learning environment, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1. I feel calm ................................................................. 1 2 3 4
2. I feel secure .................................................................. 1 2 3 4
3. I am tense ...................................................................... 1 2 3 4
4. I feel strained ............................................................... 1 2 3 4
5. I feel at ease .................................................................. 1 2 3 4
6. I feel upset ..................................................................... 1 2 3 4
7. I am presently worrying over possible misfortunes .......... 1 2 3 4
8. I feel satisfied .................................................................. 1 2 3 4
9. I feel frightened ............................................................ 1 2 3 4
10. I feel comfortable ......................................................... 1 2 3 4
11. I feel self-confident ....................................................... 1 2 3 4
12. I feel nervous .............................................................. 1 2 3 4
13. I am jittery ...................................................................... 1 2 3 4
14. I feel indecisive ............................................................ 1 2 3 4
15. I am relaxed ................................................................... 1 2 3 4
16. I feel content .................................................................. 1 2 3 4
17. I am worried .................................................................. 1 2 3 4
18. I feel confused ............................................................. 1 2 3 4
19. I feel steady .................................................................... 1 2 3 4
20. I feel pleasant ............................................................. 1 2 3 4

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Clinical Teacher Survey

The following statements describe clinical teacher behaviors. Please rate your current clinical teacher from one (1) "No, does not describe by teacher at all, to seven (7) "Yes, describes my teacher very well."

<table>
<thead>
<tr>
<th>Teaching Behaviors</th>
<th>No, does not describe my teacher at all</th>
<th>Yes, describes my teacher very well</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explains clearly</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>2. Emphasizes what is important</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>3. Stimulates student interest in the subject</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>4. Remains accessible to students</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>5. Demonstrates clinical procedures and techniques</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>6. Guides students’ development of clinical skills</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>7. Provides specific practice opportunity</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>8. Offers special help when difficulties arise</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>9. Is well prepared for teaching</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>10. Enjoys teaching</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>11. Encourages active participation in discussion</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>12. Gears instruction to students level of readiness</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>13. Quickly grasps what students are asking or telling</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>14. Answers carefully and precisely questions asked by students</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Teaching Behaviors</td>
<td>No, does not describe my teacher at all</td>
<td>Yes, describes my teacher very well</td>
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<tr>
<td>-----------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>15. Questions students to elicit underlying reasoning</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>16. Helps students organize their thoughts about patient problems</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>17. Promotes student independence</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>18. Demonstrates clinical skill and judgment</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>19. Demonstrates communication skills</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
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<tr>
<td>20. Reveals broad reading in his/her area of interest</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>21. Discusses current development in his/her field</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>22. Directs students to useful literature in nursing</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>23. Demonstrates a breadth of knowledge in nursing</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>24. Recognizes own limitations</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
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<tr>
<td>25. Takes responsibility of own actions</td>
<td>1  2  3  4  5  6  7</td>
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<tr>
<td>26. Is a good role model</td>
<td>1  2  3  4  5  6  7</td>
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<tr>
<td>27. Makes specific suggestions for improvement</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>28. Provides frequent feedback on students’ performance</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>29. Identifies students’ strengths and limitations objectively</td>
<td>1  2  3  4  5  6  7</td>
<td></td>
</tr>
<tr>
<td>Teaching Behaviors</td>
<td>No, does not describe my teacher at all</td>
<td>Yes, describes my teacher very well</td>
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<tr>
<td>--------------------</td>
<td>----------------------------------------</td>
<td>---------------------------------</td>
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<tr>
<td>30. Observes students’ performance frequently</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>31. Communicates expectations of students</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>32. Gives students positive reinforcement for good contributions, observations, or performance</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>33. Corrects students’ mistakes without belittling them</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>34. Does not criticize students in front of others</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>35. Provides support and encouragement to students</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>36. Is approachable</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>37. Encourages a climate of mutual respect</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>38. Listens attentively</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>39. Shows a personal interest in students</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>40. Demonstrates empathy</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>41. Demonstrates enthusiasm</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>42. Is a dynamic and energetic person</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>43. Self-confidence</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>44. Is self-critical</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>45. Is open-minded and non-judgmental</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Teaching Behaviors</td>
<td>No, does not describe my teacher at all</td>
<td>Yes, describes my teacher very well</td>
</tr>
<tr>
<td>--------------------</td>
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</tr>
<tr>
<td>46. Has a good sense of humor</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
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<tr>
<td>47. Appears organized</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>

Please answer the following question about any of your previous or current clinical instructors.

Think about the experiences you have had in clinical within your baccalaureate nursing program. Describe a situation or situations where a clinical instructor increased or decreased your confidence in clinical. Give as much detail as possible.

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
Clinical Confidence

The following are typical clinical activities. In the column Confidence, rate how confident you are you can do these activities today.

Rate your degree of confidence by recording a number from 0 – 100 using the scale:

<table>
<thead>
<tr>
<th>Cannot do at all</th>
<th>Moderately certain can do</th>
<th>Highly certain can do</th>
</tr>
</thead>
</table>

1. Collect significant data by physical assessment
2. Collect relevant data by taking patient's history
3. Collect patient data efficiently
4. Collect data by organizing time available
5. Collect objective data related to patient health condition
6. Collect subjective data related to patient health condition
7. See relationships among pieces of data that were collected from a variety of sources
8. Document collected data based on patient's health condition
9. Analyze collected data based on patient's health condition
10. Identify patient's strengths in the care process
11. Identify patient's health concerns in the care process
12. Set priority of patient's problems based on patient's medical diagnosis
13. Formulate nursing diagnoses based on collected data
14. Formulate nursing diagnoses based on contributing factors of patient's problems
15. Arrange nursing diagnoses based on setting priorities
16. Formulate overall goals for patient's care plan
17. Formulate short-term goals for patient's care plan
18. Formulate long-term goals for patient's care plan
19. Formulate measurable outcomes based on goals
Clinical Confidence

The following are typical clinical activities. In the column Confidence, rate how confident you are you can do these activities today. *Rate your degree of confidence by recording a number from 0 – 100 using the scale:*

<table>
<thead>
<tr>
<th>Cannot do at all</th>
<th>Moderately certain can do</th>
<th>Highly certain can do</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

20. *Develop patient’s daily care plan based on goals*  
21. Develop patient’s daily care plan based on setting priorities  
22. *Follow the patient’s care plan to achieve setting goals*  
23. Provide care of patient based on setting priorities  
24. *Carry out patient’s care plan based on available resources*  
25. Explain each nursing intervention to patient or family members before carrying it out  
26. *Collaborate with patient or family members in implementation of daily care plan*  
27. Make decisions based on my previous experiences in similar situations  
28. *Seek help of mentor or staff in difficult situations*  
29. Improve my skills based on mentor and staff feedback  
30. *Design teaching strategies for discharge of patient*  
31. Document and report daily clinical work  
32. *Evaluate whether patient’s desired results were achieved*  
33. Evaluate how nursing interventions are carried out  
34. *Find the point of breakdown in the steps of nursing process*  
35. Decide about continuing or modifying care plan based on patient status  
36. *Decide about changing outcomes based on patient status*  
37. Decide about adjusting priorities based on patient status
SELF-EVALUATION QUESTIONNAIRE

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you generally feel.

1. I feel pleasant ................................................................. 1 2 3 4
2. I feel nervous and restless ................................................ 1 2 3 4
3. I feel satisfied with myself ................................................... 1 2 3 4
4. I wish I could be as happy as others seem to be ............... 1 2 3 4
5. I feel like a failure ............................................................ 1 2 3 4
6. I feel rested ........................................................................ 1 2 3 4
7. I am “calm, cool, and collected” ......................................... 1 2 3 4
8. I feel that difficulties are piling up so that I cannot overcome them .. 1 2 3 4
9. I worry too much over something that really doesn’t matter .... 1 2 3 4
10. I am happy ........................................................................ 1 2 3 4
11. I have disturbing thoughts ................................................ 1 2 3 4
12. I lack self-confidence ........................................................ 1 2 3 4
13. I feel secure ........................................................................ 1 2 3 4
14. I make decisions easily ...................................................... 1 2 3 4
15. I feel inadequate ............................................................... 1 2 3 4
16. I am content ...................................................................... 1 2 3 4
17. Some unimportant thought runs through my mind and bothers me .. 1 2 3 4
18. I take disappointments so keenly that I can’t put them out of my mind . 1 2 3 4
19. I am a steady person ........................................................ 1 2 3 4
20. I get in a state of tension or turmoil as I think over my recent concerns and interests .................................................. 1 2 3 4

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Please return your signed informed consent form and the questionnaire to the proctor in the room.

Thank you for your time!
APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL
23-Aug-2013

Ms. Beth L. Hultquist
Georgia Baptist College of Nursing
3001 Mercer University Drive
Atlanta, GA 30341

RE: A Mixed Methods Study of the Sources of Clinical Self-Efficacy Beliefs in Baccalaureate Nursing Students (H1308217)

Dear Ms. Hultquist:

Your application entitled: A Mixed Methods Study of the Sources of Clinical Self-Efficacy Beliefs in Baccalaureate Nursing Students (H1308217), was reviewed on behalf of Mercer University's Institutional Review Board for Human Subject Research, and is Exempt from further review at this time, in accordance to federal regulations set forth at 46 CFR 101(b) Category(ies) 2.

Any changes to the approved protocol must be re-submitted for IRB review to insure that risks to the subject have not changed.

Respectfully,

It has been a pleasure to work with you and much success with your project!! If you need any further assistance, please feel free to contact our office.

Mercer University IRB & Office of Research Compliance

Phone (478) 301-
4101 Fax (478)
301-2329

ORC_Research@Mercer.Edu
Respectfully,

[signature]

Ava Chambliss-Richardson, M.ED, CIM, CIP

Member

Institutional Review Board