MENTORING, SELF-EFFICACY

AND

NURSE PRACTITIONER STUDENTS:

A MODIFIED REPLICATION

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Abstract

Graduate nursing education is a combination of didactic and clinical instruction. Clinical instruction is achieved primarily by pairing a student with either an experienced physician or certified nurse practitioner (NP) who will serve as a preceptor. The student/preceptor relationship may be initiated by nursing faculty or by the student.

The quality of clinical instruction is crucial to the professional development of the NP. During this time of intense clinical instruction, students learn the process of applying the principles of diagnostic reasoning in a real world setting. Socialization into the role of the NP is an important component of the clinical education and may be impacted by the relationship established between the student and the preceptor.

Multiple factors may have an impact on the resulting experience and relationship. Attitudes of both student and preceptor define and shape the relationship that develops throughout the clinical rotation. The student’s perception of the quality of the clinical experience may impact the outcome of the experience including the student’s sense of self-efficacy and confidence in practice skills and socialization into the role.

This study focuses on the student’s perception of self-efficacy and confidence based on whether a mentoring relationship was established with at least one preceptor during the clinical experience. The study, a modified replication of Hayes’ 1997 study, demonstrated a strong sense of mentoring, self-efficacy and self-confidence in students enrolled in the final clinical course of a nurse practitioner program. The single most predictive factor for self-efficacy and self-confidence is length of time the student works with the preceptor as measured by months of clinical rotation.
Other predictors of self-efficacy and self-confidence included the students’ perception of a mentor and how that mentorship was instrumental in the development of the skills and abilities necessary for transition into the role of the nurse practitioner. Self-efficacy was found to correlate highly with feelings of self-confidence in beginning skills such as physical assessment as well as higher level skills of diagnostic reasoning.

As the students neared the end of clinical courses in the nurse practitioner program, most felt prepared to begin practice and cited traits similar to those attributed to preceptors as indicators of preparedness.
# Table of Contents

## CHAPTER I  INTRODUCTION
- Statement of the Problem ............................................... 1
- Significance of the Problem ............................................... 2
- Purpose of the Study ..................................................... 4
- Research Questions ....................................................... 7
- Study Assumptions ....................................................... 9
- Definition of Terms ..................................................... 10
- Study Limitations ....................................................... 11
- Summary ........................................................................ 11

## CHAPTER II  REVIEW OF LITERATURE
- Theoretical Framework .................................................... 14
- Preceptor vs. Mentor ...................................................... 17
- Definition of Preceptor ................................................... 18
- Definition of Mentor ...................................................... 28
- Role of Preceptors as Mentors .......................................... 31
- Relationship between Preceptor, Mentor and Student .......... 33
- Self-Efficacy and Mentoring ............................................ 35
- Summary ........................................................................ 42

## CHAPTER III  METHODOLOGY
- Research Design ............................................................. 43
- Context of the Study ....................................................... 43
- The Sample ..................................................................... 45
- Survey Instrument .......................................................... 46
- Data Analysis .................................................................. 52
- Timeline ......................................................................... 53
- Summary ........................................................................ 53

## CHAPTER IV  RESULTS
- Introduction .................................................................... 54
- Results ............................................................................ 56
- Hypothesis 1 ................................................................. 56
- Hypothesis 2 ................................................................... 60
- Hypothesis 3 ................................................................... 64
- Research question 1 ...................................................... 66
- Research question 1b .................................................... 69
- Research question 2a ..................................................... 70
- Research question 2b ..................................................... 74
- Research question 3 ...................................................... 78
- Examination of Qualitative Findings ............................... 80
- Summary of Findings ...................................................... 89

## CHAPTER V  CONCLUSIONS AND RECOMMENDATIONS
- Introduction ................................................................. 91
# List of Tables

1. Frequencies and Percents for School Attended ...........................................47
2. Frequencies and Percents for Years of Experience as an RN ..........................57
3. Frequencies and Percents for Clinical Preceptor Most Significant to Role Transition and How Relationship Began .................................................................57
4. Frequencies and Percents for the Length of Time Involved in the Preceptor Relationship ...........................................................................................................58
5. Frequencies and Percents for Preceptor's Years of Clinical Experience .................. 59
6. Frequencies and Percents for Preceptor's Years of Experience as a Preceptor ............ 59
7. Frequencies and Percents for Preceptor's Primary Worksite .................................. 60
8. Correlation Coefficients between Freeman Mentoring Scale Questions 1-33 and Self-Efficacy Scale (SES) Questions 1-12 .........................................................61
9. Correlation Coefficients between Mentoring Questions 1-33 and CS Questions 1-10 .............................................................65
10. Correlation Coefficients between SES Questions 1-12 and CS1 Questions 1-5 and CS2 Questions 1-5 .................................................................67
11. Thirteen Regressions on Time Spent per Week with Significant Preceptor Predicting SES Q1-Q12 and SES Composite ..............................................................69
12. Thirteen Multiple Regression on Length of Time Spent with Significant Preceptor Predicting SES Q1-Q12 and SES Composite ......................................71-72
13. Eleven Regressions on Time Spent per Week with Significant Preceptor Predicting CS Q1-Q10 and CS Composite .........................................................74
14. Eleven Multiple Regression on Length of Time Spent with Significant Preceptor Predicting CS Q1-Q10 and CS Composite ...........................................76-77
15. Frequencies and Percents for Mentoring Questions ...........................................79
16. Mentoring characteristics ......................................................................................82
17. How did your preceptor help you build self-confidence? ..................................86
18. Student strengths to begin NP practice .............................................................88
19. Weaknesses that might inhibit NP practice .......................................................90
CHAPTER I

Introduction

The nurse practitioner profession has flourished since the 1970s. “Nurse practitioners (NP) are registered nurses (RN) with advanced education and clinical experience” (Green, 1996, p.36). The American College of Nurse Practitioners (ACNP) further defined the NP as an RN with advanced academic and clinical experience, which enables the advanced practice nurse (APN) to diagnose and manage most common and many chronic illnesses, either independently or as part of a health care team (American College of Nurse Practitioners [ACNP], 2006b). The NP provides health care across the lifespan in multiple practice arenas including primary care, acute care, pediatrics, women’s health as well as specialty areas such as cardiology or gastroenterology. The NP may be found in rural areas where health care may be scarce or in urban areas working with prominent physicians in busy medical practices.

Regardless of the practice setting, nurse practitioners generally are awarded a Master of Science (MS) degree in nursing. While a master’s degree has not always been the educational entry to practice of the NP, the MS is currently the accepted entry level for practice. In the year 2000, Medicare began to require NPs to have a minimum of a master’s degree to seek reimbursement. A current movement within the profession is a requirement for the clinical doctorate as the entry level for practice. This requirement is anticipated to be in place by 2015.
"A national survey conducted in 2000 revealed that Indiana had 722 nurse practitioners, equal to 11.9 nurse practitioners per 100,000 citizens, which was significantly lower than the national rate of 33.7. In fact, Indiana has the lowest per capita ratio of nurse practitioners in the country" (U.S. Department of Health and Human Services [USDHHS], 2000). The most recent Indiana Registered Nurse Survey (2001) identified 1,060 nurse practitioners with prescriptive authority in Indiana, an increase of 32% since 1997. In spite of this increase, a 2006 USDHHS report indicated 45 counties in Indiana as being medically underserved. The resultant shortage of health care providers affects the lives of Indiana residents, as well as the nation, on a daily basis. NPs have been recognized as a means of meeting the shortage of health care providers in underserved areas (Gibson & Hauri, 2000). The educational preparation of nurse practitioners is a key factor in meeting health care needs.

**Statement of the Problem**

The education of Nurse Practitioners is comprised of academic as well as extensive clinical experiences (American Academy of Nurse Practitioners [AANP], 2006; ACNP, 2006a). Key components include instruction in nursing theory as well as an intensive preceptorship under the supervision of an experienced physician or nurse practitioner. The American Association of Colleges of Nursing (AACN) has established *The Essentials of Master’s Education for Advanced Nursing Practice Education*, a document denoting a minimum of 500 clinical hours in the clinical program (AACN, 1998).

Preceptors are essential to clinical education. While preceptors are generally expert clinicians, preceptors are not necessarily expert teachers (National Organization of
Nurse Practitioner Faculty [NONPF], 1995). Most programs require the preceptor to have a minimum of 1 year of clinical experience. Preceptors may be physicians, nurse practitioners, or physician assistants (Stark, 2004).

Clinical hours may be obtained in a variety of practice settings and are established in a variety of ways. While some NP programs assign students to a clinical preceptor, other programs require students to obtain the preceptor independently. Gibson and Hauri (2000) recognized the contribution of the preceptor to the preceptee as central to the growth and development of the student. The preceptor is instrumental in aiding the student to bridge the gap between clinical practice and academia. Preceptors are generally the most clinically expert individuals with whom students interact (NONPF, 1995).

In many areas of the country, a paucity of preceptors creates a difficult situation for students in locating preceptors (Stark, 2004). No research has been identified to answer the question of why preceptors might be difficult to locate. Little research has been done regarding the attitudes and beliefs of preceptors. In addition, little research has been identified that investigates how a preceptor might evolve from clinical practitioner to an educator of student nurse practitioners.

All of these factors mitigate a significant issue in nurse practitioner preparation. Because the clinical preparation of a student nurse practitioner is essential to socialization to the role, a stellar clinical rotation is imperative. Research has documented a correlation between the relationship established between student and preceptor and the student’s perception of self-efficacy and confidence in assuming the role of a nurse practitioner (Hayes, 1997). The current study will re-examine the significance of the
relationship between students and preceptors to determine if a relationship truly exists as evidenced by students’ perceptions of self-efficacy and confidence.

Significance of the Problem

The American Academy of Nurse Practitioners (AANP) recognizes 850 NP specialty tracks available at over 300 institutions in the United States (AANP, 2006). Although the specific number of NP students per institution has not been calculated, the obvious number of students would be in excess of 300. While some programs may be small with a minimal number of students, others have enrollments as high as 200 students in various stages of the program. The resultant intensive number of students who might be participating in clinical experiences is daunting in most areas. Merely providing an adequate number of preceptors can be quite challenging, but providing expert preceptors who might develop a mentoring relationship with students can be a nearly impossible task. The cadre of preceptors in most areas is grossly insufficient to meet the demand. Students often are forced to travel to neighboring communities to locate a preceptor appropriate for the clinical experience.

The criteria for selection of preceptors and clinical hours required is fairly uniform across most nurse practitioner programs. All preceptors must be licensed health care providers with a minimum number of years of experience. Generally, licensed healthcare providers are identified as medical doctors (MD), doctors of osteopathic medicine (DO), certified nurse practitioners (NP), and/or physician assistants (PA). Most institutions have a requirement for a minimum of one year of clinical experience for all preceptors. While each nurse practitioner program delineates the number of clinical hours required for students, the national standard established by the Association of
American Colleges of Nursing (AACN) is 500 actual hours of clinical experience. Most institutions exceed this number generously.

The desired outcome of the clinical experience is for the graduate NP to become a confident, competent provider of direct patient care including multiple role responsibilities such as “research, consultation, case management, quality assurance, teaching, counseling, and influencing health policy” (Hayes, 1999, p. 335). Hayes (1998) further indicated that “how well NP preceptors mentor their students may impact on student self-efficacy, the development of role competence, and potential patient care outcomes” (p. 53). Hayes and Harrell (1994) further declared, “the clinical preceptor holds the key to student socialization into the NP role by facilitating direct clinical learning and development of student confidence and clinical competence” (p. 220). Andrews and Wallis (1999) suggested an underlying rationale in clinical education that “by working alongside practitioners students will learn from experts in a safe, supportive and educationally adjusted environment” (p. 201).

Beres (2002) suggested that novice nurse practitioners “lack the confidence of using trial and error” (p. 70). Beres further indicated that learning for the novice NP is accomplished by direction from others. Rather than assuming the initiative to seek out new learning experiences, the novice will often wait until someone else directs the learning needs, while expert NPs will generally be more self-directed and constructive in learning. The mentoring experience during the clinical practicum is the primary source of knowledge acquisition during academic preparation for NP practice. The preceptor is the key director of knowledge for the student as the preceptor guides the student toward learning experiences throughout the practica.
The SNP must have some perception of efficacy in order to become acclimated to the nurse practitioner (NP) role. The student must first psychologically perceive the ability to practice as a health care provider before socialization to the role can begin. The transition from nursing, a role in which the nurse follows orders, to the nurse practitioner, a role in which the NP is responsible for writing the orders is directly related to the SNP’s ability to believe in personal self-efficacy. If the SNP does not begin the role transition during the educational phase of preparation, the likelihood of pursuing the transition to practitioner following graduation is minimal. Hayes (1998) states, “The power of belief, followed by increasing freedom and responsibility promotes the enhancement of self-efficacy and a sense of competence” (p. 54).

Differences in methods of educational delivery from 1997 to 2008 pose a different type of significance to the problem. In 1997 NP programs were delivered in an onsite format. Students were required to physically appear in the classroom according to the course schedule. Students living in areas too far from a university offering an NP program had to move to the vicinity of the program or not participate. In 2008 most NP programs are offered in an online or hybrid format. A hybrid format would require students to physically appear in the classroom periodically but not as often as required in the previous format. Often universities provide a site off campus for class sessions to make program attendance more feasible for students.

The replicated study does not propose to evaluate differences in online and onsite learning, but the difference in delivery modes must be recognized as a significant variable in the study. Differences in delivery methods could represent a difference in student attitudes to the clinical experience.
Purpose of the Study

The proposed study will be a modified replication of Hayes’ 1997 study, *Mentoring, Self-Efficacy and Nurse Practitioner Students*. The descriptive, correlation study explored the relationship between perceptions of mentoring and self-efficacy of NP students within the student/preceptor relationship. The study confirmed a positive correlation between mentoring and self-efficacy in NP students as well as positive correlations between two mentoring scales and two self-efficacy scales. Since Hayes’ (1997) study, relatively little research has been conducted to determine if application of the findings have been recognized and/or followed. A replicated study will improve the generalizability of the findings by expanding the student population to include Midwest universities.

The primary predictor of increased mentoring scores was length of time in the practicum coupled with preceptor experience. Higher mentoring scores were related to student-selected preceptors rather than faculty-assigned preceptors. Variables that did not impact mentoring scores were age, gender, NP preceptor education, and student years of experience prior to the graduate program, clinical setting, and preceptor discipline. Hayes’ study confirmed that “mentoring is a substantial investment by a competent, confident nurse practitioner preceptor teacher concerned with the nurse practitioner student’s learning” (p. 101). Hayes further posited:

The preceptor’s investment of “spending time, energy and resources in meeting the student’s learning needs, being willing to provide opportunity, having a capacity to trust and to be confident in the student’s abilities, providing humanistic feedback, being open to friendship and to sharing knowledge and self,
and modeling empathetic patient care that validates patient concerns including negotiating a plan of care contributed to the concept of mentoring as perceived by the student. (p. 101)

NP students in the study believed mentoring was essential to self-efficacy in patient care in assuming the NP role. Students who perceived preceptors as non-mentors reported low self-efficacy scores.

A qualitative component of the study further confirmed the questionnaire data. Students who indicated either high mentoring scores or very low mentoring scores were interviewed. Open-ended questions gave students the opportunity to elaborate on personal perceptions of what mentoring meant as well as the importance of mentoring characteristics.

Recommendations were made for further research for ongoing development of the conceptual model of mentoring and self-efficacy. Future study to examine the mentoring relationship to determine whether mentoring enhances self-efficacy, or if self-efficacious NP students are more likely to be mentored, was suggested. Sampling from a wider geographical area, as well as randomization in the sample selection, was also recommended to improve generalizability. The proposed study will be conducted in a different geographic region from the original study adding to the database of findings. Because the proposed study will be completed 11 years after the original study, differences in nurse practitioner education, preparation of preceptors and student preparation may present variables that alter the original findings.

The following hypotheses were modified from the original study:
H₁ = Nurse Practitioner students' mentoring scores will be positively related to self-efficacy scores.

H₂ = Nurse Practitioner students' mentoring scores will be positively related to confidence scores.

H₃ = The Self-Efficacy Scale will be positively correlated to the Confidence Scale.

Research Questions

The research questions for the current study have been modified from the original study. In addition to the three hypotheses, open-ended questions will be included in the questionnaire to further explore the significance of the NP student/NP preceptor relationship.

1. Do number of clinical hours with a preceptor relate to self-efficacy of NP students?
2. Do number of clinical hours mentored relate to confidence of NP students?
3. What are the perceptions of the students of a mentoring relationship?

Study Assumptions

The research is based on the following assumptions:

1. Mentoring may or may not occur in relationships between NP students and NP preceptors.
2. Mentoring is a positive process with potentially constructive outcomes.
3. Ultimately, mentoring might have positive outcomes that impact on role transition and on NP students' self-efficacy and confidence in providing primary patient care.
Definition of Terms

*Nurse Practitioner* - “Nurse practitioners (NP) are registered nurses (RN) with advanced education and clinical experience” (Green, 1996, p.36). The American College of Nurse Practitioners (ACNP) further defines the NP as an RN with advanced academic and clinical experience, which enables him or her to diagnose and manage most common and many chronic illnesses, either independently or as part of a health care team” (ACNP, 2006).

*Nurse Practitioner Education* – An educational program with the objective of providing instruction and training to registered nurses enabling the graduate to diagnose and manage most common and many chronic illnesses, either independently or as part of a health care team

*Clinical Experience* – The component of nurse practitioner education in which the student works one-on-one with an experienced healthcare provider within the clinical setting.

*Preceptee* – The nurse practitioner student who is engaged in a clinical experience.

*Preceptor* - “An experienced physician or nurse practitioner who facilitates and evaluates student learning in the real world of the clinical area, fosters independence and skill development, provides role models, and promotes socialization, development of a positive role concept, confidence, and competence” (Hayes & Harrell, 1994, p. 220-221).

*Mentor* - Mentoring is a voluntary, committed, dynamic, extended, intense and
supportive relationship characterized by trust, friendship and mutuality between an experienced, respected person, such as an NP preceptor, and an NP student for the purpose of socializing the student and promoting student self-efficacy in taking on the advanced practice role (Hayes, 2001, p. 111).

*Self-efficacy* - “A personal belief or conviction in one’s ability to carry out a behavior that will produce a particular outcome, a sense of confidence that one can organize and complete a behavior competently” (Hayes, 1998).

*Confidence* – “being sure of one’s ability” (Grundy, 1993).

**Study Limitations**

The current study will be limited to the nurse practitioner programs in Indiana. As noted in the original study, the current study will be limited by the sample size. The findings can be generalized only to the programs included in the sample and/or the geographic region studied. A larger sample size from multiple areas of the country would further enhance the findings of the study.

**Summary**

The nurse practitioner movement has rapidly progressed in the past 30 years and promises to continue growth in the future. The educational preparation of nurse practitioners is a key factor in supplying needed health care providers in the future. Teaching methodology has evolved significantly in the past 10 to 15 years as online education has become more popular. In an effort to address the shortage of nursing faculty, online education in graduate nursing programs has increased (Fearing & Riley, 2005). Online learning opportunities have increased the accessibility of graduate level education to students juggling family and work responsibilities (Anderson & Mercer,
While the literature reveals a large amount of research related to online teaching and learning, little research has been done involving graduate nursing students (Fearing & Riley). The effects of online learning in a nurse practitioner program could have an impact on the perception of student self-efficacy and confidence levels.

Ryan, Hodson-Carlton and Ali (2005) recognized an unprecedented growth in online education. A deficit in the process of faculty teaching online was noted by Ryan et al. Johnson (2008) suggested a true paradigm shift in the perception of the role of the educator as well as the philosophy of teaching with the introduction of online teaching. Positive as well as negative responses to online teaching have been recognized (Ryan et al.). For effective faculty transition to online teaching to occur, Ryan et al. recommended the development of an infrastructure including policies, technology partnerships, support systems for faculty, and faculty development prior to initiation of the transition.

Rounds and Rappaport (2008) recommended a problem based learning (PBL) approach to online education. "PBL is described as independent, self-directed learning where faculty members function as facilitators rather than content experts" (p. 12). Students are presented with problems or cases to solve. While faculty help guide the exercise through questions and exploration of student rationale, the students actually direct the learning process. Application of acquired knowledge is the goal of PBL.

While the original research done by Hayes (1997) reflected on totally onsite educational systems, the current study will include programs providing a variety of teaching modalities. Some programs are offered totally online, while others are offered totally onsite. Still other programs are offered in a hybrid mix of onsite and online...
courses. The mix of educational delivery systems will add a new dimension to the current study.

Mentoring has been associated with positive outcomes in self-efficacy of nurse practitioner students. The replication of Hayes' study will further illuminate the importance of the relationship between preceptors and students. The preceptor is an integral component in the education of NP students. If a mentoring relationship increases the confidence and self-efficacy of graduating NP students, it will behoove the nursing profession to continue research in this arena. Identifying methods of developing mentoring relationships between preceptors and students will contribute toward significant improvement in the education of NP students. As students assume the role of practicing NPs, improved self-efficacy and confidence could provide impetus for these practitioners to become mentors to future students.
CHAPTER II

Literature Review

Theoretical Framework

Self-efficacy is the belief in one’s ability to make change. Change in behavior is “the result of the experience of mastery arising from effective performance” (Bandura, 1977, p. 191). Cognition is a primary factor in the acquisition and regulation of behavior. Motivation is concerned with activation and persistence of behavior. Reinforcement of the behavior becomes a motivational device. Goal setting and self-evaluative reactions become a second source of motivation. When an individual is successful in a new behavior, the behavior is likely to be repeated leading to increased self-efficacy. When negative feedback occurs, the individual may be less inclined to repeat the behavior (Bandura).

Outcome expectancy is defined as a person’s belief that a given behavior will lead to certain outcomes. Efficacy expectation is the conviction that one can execute the behavior required to produce the outcome (Bandura, 1977). An important factor is the individual’s belief in the personal ability to affect change or the outcome. “Efficacy expectations determine how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences. The stronger the perceived self-efficacy, the more active the efforts” (p. 194).
Efficacy expectations have important performance implications and differ in magnitude, generality and strength. The magnitude of the outcome may limit the individual to attempt only simple tasks rather than more difficult tasks. Some experiences rely on the mastery of technique while others are more generalized. Weak expectations may be easily extinguished while the strength of the expectation will be more likely to persevere in the face of difficulties. Efficacy expectations are based on four major sources of information: performance accomplishments, vicarious experience, verbal persuasion and physiological states (Bandura, 1977). Figure 1 depicts the major sources of efficacy information.

Performance accomplishment is based on personal mastery experiences. While successes raise mastery performance, failures lower performance. Occasional failures will be tolerated better after a long period of successful performances. Often a success following a failure strengthens the perception of efficacy as the ability to overcome the failure has been a success in itself. Fearful and defensive behavior occurs less frequently after multiple successful mastery of the skill has been experienced.

Vicarious experiences become a factor in developing self-efficacy and confidence when an individual observes others perform threatening activities without adverse consequences. The individual begins to believe that if others can be successful in the behavior, personal success can be anticipated as well.

Verbal persuasion also provides a means to self-efficacy. "People who are socially persuaded that they possess the capabilities to master difficult situations and are provided with provisional aids for effective action are likely to mobilize greater effort than those who receive only the performance aids" (Bandura, 1977, p. 198).
Finally, emotional arousal is a constituent of perceived self-efficacy. High arousal often debilitates performance. Individuals are more likely to perform well when less agitated or tense. Fear of failure may produce elevated levels of anxiety that exceed the fear of the situation. Experienced mastery will tend to diminish emotional arousal and enhance performance.

Bandura and Schunk (1981) posited self-motivation is a result of "goal setting and self-evaluative reactions to one’s own behavior" (p. 586). Self-satisfaction or self-efficacy is conditional on a prescribed level of performance. Individuals will then create self-inducements to persist in an effort to perform according to internal standards. Incentives for self-directed actions are produced by both anticipated satisfaction for attaining the level of performance desired as well as the dissatisfaction with insufficient attainment of goals.

Self-efficacy is concerned with judgments about how well one can organize and execute courses of action required to deal with prospective situations containing many ambiguous, unpredictable, and often stressful elements. Self-percepts of efficacy can affect people’s choice of activities, how much effort they expend, and how long they will persist in the face of difficulties. (Bandura & Schunk, p. 587)

Bandura (1982) recognized perseverance as a key factor in attaining self-efficacy and high performance levels. Behavior change may be predicted by the strength of self-efficacy. People who have a strong perception of self-efficacy are more likely to persist in the behavior until success is achieved. However, Bandura also emphasized that while self-doubt may enhance learning to a degree, self-doubt might also be a deterrent to
optimum performance. "In applying existing skills strong self-efficaciousness intensifies and sustains the effort needed for optimal performance, which is difficult to realize if one is beleaguered by self-doubts" (Bandura, 1982, p. 123).

In a later publication, Bandura (1983) stated, "the type of outcomes people expect depend largely on their judgments of how well they will be able to perform in given situations" (p. 464). Bandura further posited that "expected consequences are heavily rooted in judgments of performance efficacy" (p. 464). The ability to perform skills well is not the only factor in good performance. Perceived self-efficacy is more of a judgment of what one can do with a skill rather than the ability to perform the skill.

Goal-setting has been cited as a factor in achieving self-efficacy (Bandura, 1983b). Important components of goal-setting include internal standards and self-evaluative reactions to one's performances (Bandura). Discouragement and goal abandonment are possible reactions to overt performance failures. Moderate failure in performance, however, is more likely to result in an increased effort to perform well as the goal is considered attainable. Self-satisfaction and positive inducement for further pursuits are the result of attainments that match or surpass personal standards (Bandura, 1983b). Both personal standards and knowledge of the level of one's performance are required to create a self-evaluative process (Bandura, 1983b).

Preceptor vs Mentor

A dilemma identified by multiple educators and practitioners is the lack of an adequate definition of preceptor and mentor. In fact, authors have noted this dilemma as the "definition quagmire" (Armitage & Burnard, 1991; Anforth, 1992). In reviewing the
literature, some general definitions for preceptor and mentor have been agreed upon. The terms are often used interchangeably.

**Definition of Preceptor**

Ammon-Gaberson (1987) noted a need for adult learning principles in preceptor programs. Although the article is dated, the information remains germane for today's programs. The author acknowledged six principles as a basis for a successful preceptor program.

1. Learning is a normal adult activity. Preceptors can enable students to do this by removing obstacles to learning such as allowing students to learn at their own pace, reduce threats in the learning environment and helping students focus on learning rather than obligations.

2. Adults with a positive self-concept and high self-esteem are more responsive to learning. Learning should be conducted in a safe environment where the student feels respected.

3. Adults learn best when they value the role of adult learner and possess skills for managing their own learning. The preceptor and student can become collaborative learners.

4. Immediate, descriptive feedback is essential if adult learners are to modify their behavior.

5. Success reinforces changes already made and provides a motive for further learning.

6. Adults tend to begin learning programs with some anxiety, and further stress can interfere with learning. (p. 962)
Donovan (1990) suggested the preceptor may be “characterized by a relationship
in which one individual teaches, supervises or coaches another” (p. 295). Armitage and
Burnard (1991) utilized the definition: “an individual teaching/learning method in which
each student is assigned to a particular preceptor…so that she can experience day to day
practice with a role model and resource person immediately available within the clinical
setting” (p. 226).

Hagopian, Ferszt, Jacobs, and McCorkle (1992) identified a preceptor as tutor,
teacher, and instructor. Three phases of the preceptorship were identified by the authors.
The first phase, orientation, focuses on establishing the preceptor relationship and the
foundation on which student experiences will develop. Secondly, the working phase
assists the student in meeting the clinical objectives. The final phase focuses on
termination of the relationship. The authors also recognized the difficulty of the
preceptor in transitioning from an expert in clinical practice to a novice role in teaching.

In answer to this dilemma, the program sought and received a grant to improve
the clinical preceptor program. A needs assessment was distributed to 40 preceptors with
a return rate of 31 (77%). The assessment indicated the preceptors wanted more
information about: “curriculum; preceptor role and responsibilities; preceptor model and
phases of preceptorship; evaluation of student’s objectives, log, and clinical experience;
placement of students; clinical teaching, including principles of adult learners; and
benefits for the preceptor” (Hagopian et al., p. 298).

A series of four half-day seminars were offered to preceptors. The seminars
focused on: the preceptor role, phases of the preceptor relationship’ principles and
practices of adult education; strategies to implement with challenging students; and the
process of student and preceptor evaluations. A preceptor manual was developed and distributed to all preceptors. The program was evaluated at the end of the first year with recommendations for improvements. The process was beneficial to faculty, preceptors and students. While this particular program was directed toward clinical nurse specialists, the same outcomes could be anticipated in NP programs (Hagopian et al, 1992).

Gioiella (1993) identified the need for clinical teaching resources for socialization into the role of teaching or precepting. Just as nurses cannot transition to a higher level of nursing practice without further clinical education, preceptors should not be expected to transition into a new role without instruction or training. In order to maintain high standards, quality control of NP preceptors is required. Preceptor evaluation by both students and clinical faculty are required for continued improvement in preceptor teaching skills which will result in improvement in the clinical program.

Hayes and Harrell (1994) defined a preceptor as: “an experienced nurse who facilitates and evaluates student learning in the real world of the clinical area, fosters independence and skill development, provides role models, and promotes socialization, development of a positive role concept, confidence, and competence” (p. 220-221). Hayes (1994) further defined the preceptorship as a “one-to-one relationship between an experienced and novice practitioner which is time-limited with well-delineated objectives and has well-defined beginning, working and termination phases” (p. 62). Hayes further implied that the preceptor helps to provide experiences in the real world in a protected environment while the student learns to bridge the gap between theory and practice.
Preceptors may have various roles in the continuing education of nurse practitioner students. The preceptor generally is the first contact for the student in an actual clinical setting. The preceptor may act as host to the student, orienting the student to the facility layout as well as policies and procedures. The preceptor may be a sponsor for the student in generating introductions to key people within the facility who may become an integral player in the student’s success. Ultimately, the preceptor will be teacher, matching objectives of the course with experiences, demonstrating the daily functions of the nurse practitioner, and providing a clinical experience conducive to learning while limiting the stressors that may adversely affect the student. The preceptor will also provide feedback to the student. Finally, the preceptor may serve as role model to the student (Hayes, 1994).

The National Organization of Nurse Practitioner Faculties (NONPF) acknowledges preceptors as expert clinicians who are not generally expert teachers (NONPF, 1995) and recommends that NP programs provide initial orientation and subsequent continuing education to enable the preceptor to become a capable instructor. Initial orientation should include:

1. the overall philosophy and goals of the program;
2. expectations of preceptors including feedback about students;
3. how preceptors can reach faculty;
4. what to expect from students at various levels of the program in terms of knowledge and skill;
5. objectives for clinical practice;
6. what preceptors can expect from student (e.g., anxiety, preparation);
7. expectations that preceptors should have of faculty;

8. an overview of teaching strategies with an emphasis on principles of adult learning; and

9. an introduction to evaluation of students, including the format used by the program. (p. 106-113)

A replication study conducted by Kotzabassaki, Panou, Dimou, Karabagli, Koutsopoulou, and Igonomou (1996) evaluated nursing students’ and faculties’ perceptions of the best and worst clinical teachers. The Nursing Clinical Teacher Effectiveness Inventory (NCTEI) was utilized for data collection. The findings were consistent with two previous studies indicating being a good role model and encouraging a climate of mutual respect were distinguishing characteristics between best and worst clinical teachers. The best clinical instructor was noted:

   to enjoy nursing, is self-confident, is a dynamic, energetic person, and one who encourages a climate of mutual respect and takes responsibility for her/his own actions. She/he listens attentively, understands students’ questions, answers carefully and precisely, while demonstrating clinical skill and judgment, is organized and also accessible to students. (Kotzabassaki et al., p. 820)

The worst clinical instructor was noted to be one who:

   is not a good role model and is unable to direct them to useful literature. She/he cannot use self-criticism constructively or correct students’ mistakes without belittling them. She/he cannot demonstrate empathy, provide constructive feedback or stimulate the student’s interest. She/he is judgmental, not open-
minded, a person who criticizes students in front of others and who is unable to support and encourage them adequately. (Kotzabassaki et al., p. 820-821)

Benor and Leviyof (1997) recognized “clinical instruction to be of crucial importance to the shaping of the professional identity of the neophyte, as well as the prime source of learning and professional attitudes, values and norms” (p. 206). The researchers further suggested that students often determine the effectiveness of a clinical instructor by comparing the instructor to a former teacher who had made a favorable impression. Benor and Livyof completed a study to determine the best and poorest clinical instructors. Nursing competencies were perceived as the most important characteristics of competent clinical instructors. Student evaluation procedures ranked second. The least important trait of competent instructors was personality. A small sample size limits the generalizability of the study. Although the study was based on the perceptions of students, clear indications of how the professional role model transitioned from practice to education was not addressed.

Andrews and Wallis (1999) pointed out that although students work with preceptors to learn clinical skills, learning is not guaranteed when students are placed with recognized professionals. Subsequent continuing education should elaborate on student evaluation and methods of incorporating critical thinking into teaching activities, how to identify personal teaching styles, developing listening skills, or balancing the needs of students and patients simultaneously. No research has been discovered that elaborates on how, when or if programs actually follow through with these recommendations.
Gibson and Hauri (2000) completed a descriptive mail survey of 46 NP preceptors. The surveyed preceptors were comprised of 22 NPs and 24 medical and osteopathic (MD and DO) physicians. The survey asked “what level of student they preferred to precept, their opinions regarding student prerequisites for clinical training, their need for faculty support, and their interest in becoming actively involved in NP advisory boards for curriculum revision” (p. 361). The authors concluded that preceptors prefer advanced students who had completed pathophysiology, pharmacology, health assessment and diagnostic reasoning courses, a high level of faculty support, and some interest in serving on the advisory board for the program. While the study does answer questions regarding the preferences of experienced preceptors, no questions were asked regarding the transformation from clinician to educator/preceptor.

Similar issues have been noted in hospital nursing. While reviewing a hospital incentive program for preceptors of novice registered nurses (RN), Jackson (2001) noted that as the nursing shortage continued, novice nurses were assigned to units that previously only hired experienced nurses. Some hospitals had developed preceptor programs for novice nurses to improve nurse satisfaction and retention as well as clinical patient outcomes. Experienced nurses were provided continuing education to serve as preceptors.

Of significant importance in the preceptor program was continued work between a single preceptor and the preceptee “enabling a strong relationship between to develop” (Jackson, 2001, p. 24c). Conflicting schedules sometimes forced the novice nurse to work with multiple preceptors for short periods of time resulting in “fragmented learning
experiences…with considerable dissatisfaction” (p. 24c). The preceptor was defined as a role model to the intern who possessed:

1. the experience sufficient to mentor an intern with confidence and competence
2. excellent communication skills exercised with peers, medical staff, and patients
3. the ability to successfully use mechanisms for coping with stress and conflicting priorities
4. excellent teaching and mentoring skills
5. the ability to identify and assess alternatives for the solving of problems
6. the willingness to share knowledge and experience
7. experience in evaluating job performance objectively
8. the ability to recognize bad habits in herself and others and the willingness to make efforts to correct them promptly (p. 24c)

While the study referred specifically to staff nurses, the same qualities could easily apply to nurse practitioner preceptors. A specific program of preparing the preceptor for the act of precepting has lead to a successful mentoring program.

Several types of teachers are recognized as “good teachers” in the literature. “Organized teachers, caring teachers, practical teachers, and creative teachers” (Galbraith, 2004, p. 6) are all attributes that could be applied to clinical preceptors. However, being authentic is considered to be more important than any other characteristics of a teacher. Teaching style is not related to content.

One graduate program developed a study whereby specific information regarding program expectations was disseminated to preceptors in an effort to improve student
clinical experiences. Program administrators recognized that physician preceptors often
did not understand NP roles or practice activities. As a result, inappropriate student goals
and objectives resulting in poor student preparation often occurred. To remedy the
problem, an introductory packet of materials including a copy of clinical theory and
practice syllabi, an explanation of the school’s expectations of a preceptor, a description
of NP roles, NP scopes and standards of practice, and an evaluation form that itemized
competencies that students had to meet to pass the clinical practice course was sent to
each preceptor at the beginning of a clinical course (Stark, 2004). Preceptors were asked
to evaluate students at mid-term and then again near the end of the course. Faculty site
visits rounded out the student evaluation process. Improvement was noted in student
preparation. However, the transition from clinician to educator/preceptor had still not
been addressed.

Weber (2005) reviewed criteria that identify quality nursing programs. Under
supervision of clinical educators, he noted a good program will:

1. Include instructors who are clinically competent, proficient, and credentialed
   in their field;
2. Provide instructors and mentors who model professionalism;
3. Use clinical educators who are able to use teaching methods that result in
   mastery of clinical skills;
4. Provide a clinical educator-to-student ratio that facilitates optimum student
   outcomes for learning and safe, effective, and efficient service delivery; and
5. Require that clinical educators have the resources needed to provide high-
   quality instruction and ensure individual student outcomes. (p. 243-244)
No indication of how the clinical preceptor is to develop these characteristics is revealed.

Stokes and Kost (2005) recognized a preceptor as a clinical expert who “provides one-on-one teaching, guidance, and support and serves as a role model” (p. 338) to students. In addition, “preceptors are expected to be clinical experts, be willing to teach, and be able to teach effectively” (p. 339). Of primary importance to the process is orientation of the preceptor to the role.

The benefits of becoming a preceptor are limited. Generally, no monetary compensation is provided. Students often become a hindrance to productivity as time to teach and answer questions infringes on the preceptor’s time. Hayes (1994) noted that a balancing act often takes place between client-student-faculty-agency expectations. Conflict in any of these areas can occur increasing the difficulty in being a preceptor. Preceptors may not be adequately prepared for the position. Feelings of inadequacy may become overwhelming. If the preceptor is expected to assign a grade to the student’s clinical performance, the pressure may become even more overwhelming.

However, some benefits to precepting have been identified. Many practicing providers enjoy the experience of sharing knowledge with students. Preceptors derive personal enjoyment from watching students grow professionally. Some preceptors are challenged by the questions students ask and personal professional knowledge may as the preceptor constantly strives to substantiate the instruction given to students with evidence based research (Dolan, 1990). Hayes (1994) recognized the potential for added interest and renewal for the preceptor as well as recognition from superiors. The benefit of continuing education credit to be applied to recertification for the precepting NP is also an advantage.
Definition of Mentor

An area of preceptorship that has not been studied significantly is mentorship. Interestingly, the topic was discussed modestly in the literature during the 20th century, but little has been published about mentoring in the interim. The definition of mentoring is elusive according to the literature. Caine (1989) associated successful role transition with effective mentoring. Caine stated,

It is of prime importance that the novice clearly understand the roles she or he is expected to fulfill within the given environment. This understanding is best acquired from others who are familiar with the varied role expectations in the clinical setting. Clarification of the roles may be achieved through mentoring. (p. 76)

Donovan (1990) cited "an intense relationship calling for a high degree of involvement between a novice in a discipline and a person who is knowledgeable and wise in that area" (p. 294) as the preferable definition. Donovan further suggested a mentoring relationship might develop from a preceptorship and depicted the mentoring relationship as one initiated by an attraction to the mentor by the student. The student recognizes behaviors and practices worthy of emulation. The mentor, in return, recognizes potential within the student and has a desire to participate in the student’s professional development. Donovan (1990) compared the process of mentoring to Erickson’s generativity stage of development in which a psychosocial need of the mentor is met by fostering a deep interest in the welfare of a less developed individual.

Armitage and Burnard (1991) delineated the role of mentor and preceptor by stating, "The mentor role seems to be more about ‘looking after’ the learner nurse, whilst
the preceptor role seems to be more concerned with enhancing clinical competence through direct role-modeling" (p. 228). Anforth (1992) preferred the English National Board (ENB) Circ 89 definition of mentor: “a person selected by the student to assist, befriend, guide, advise and counsel who will not normally be involved in the formal supervision or assessment of that particular student (p. 299). Scott (1992) stated mentoring relationships positively impact the graduate student/mentee’s pre-doctoral productivity and initial job placement. Scott acknowledged the contributions of mentoring to the development of leaders throughout history.

Mentoring has been utilized in professions outside of nursing. In academics, the concept of mentor may be synonymous with that of advisor. A mentor might be the student’s advisor, another faculty member, a fellow student, or any person with experience in the discipline (What Is a mentor, 1997). A more complete definition is offered in What Is a Mentor?

Mentors are advisors, people with career experience willing to share their knowledge; supporters, people who give emotional and moral encouragement; tutors, people who give specific feedback on one’s performance; masters, in the sense of employers to whom one is apprenticed; sponsors, sources of information about and aid in obtaining opportunities; models of identity, of the kind of person one should be to be an academic. (¶ 5)

Klein and Dickenson-Hazard (2000) also reflected on the comparison of the mentor to the generativity stage of development. Klein and Dickenson-Hazard further indicated that mentors may contemplate the future of the student and claim a part of that future as a personal achievement. “Like a forest that grows from a single seed, mentors
recognize that by nurturing one person’s life, they will affect the lives of many” (Klein & Dickenson-Hazard, p. 21). The researchers further acknowledged that mentoring “requires a high degree of involvement, commitment, and energy and demands an acceptance, an amicability, respect, trust and confidence in self and others” (p. 22).

An agreed upon concept is that mentoring is derived from Greek mythology. Athena, the Greek goddess of wisdom, disguised as a man named Mentor became the surrogate parent of Telemachus while his father, Odysseus, was away during the Trojan War. Mentor nurtured, socialized, and prepared the youth for future role responsibilities (What is a mentor, 1997; Hayes, 2001; Kilcullen, 2007). Hayes adopted the definition of mentoring found most often in the literature of nursing, education and business:

Mentoring is a voluntary, committed, dynamic, extended, intense and supportive relationship characterized by trust, friendship and mutuality between an experienced, respected person, such as an NP preceptor and an NP student for the purpose of socializing the student and promoting student self-efficacy in taking on the advanced practice role. (2001, p. 111)

Controversy is noted within the literature in the delineation between preceptor and mentor. Many educators regard the roles as overlapping (Hayes & Harrell, 1994). Hayes (1998) indicated little guidance has been provided to preceptors who desire a transition to mentor.

Hayes and Harrell (1994) suggested one difference might be the time involved in the relationship. While the preceptor is generally involved with a student for a limited period of time, the mentoring relationship is developed over time even beyond the scope of the educational program. The authors also indicated that many times a student is
assigned to a preceptor while mentors are more often chosen by the student. Klein and Dickenson-Hazard (2000) suggested that “a protégé, when encouraged by a mentor, will be able to engage in an inquiry that calls a person to find his own clarity; to discover the part of him that knows and understands the path he must take and to discern his inner jewel” (p. 20).

Haley-Andrews (2001) recognized mentoring as “a professional responsibility as well as an opportunity for growth and professional development” (p. 147). Mentoring may be accomplished in various ways and may be formal or informal, organized or free-flowing. Fawcett defines the mentor as “people who help those less experienced in their field learn about the field and advance their careers” (p. 950).

Important roles for the mentor have been identified as “role model,” “teacher,” “coach,” “provider of tips of the trade,” and “confidante” (Supporting Interns, 2006). Participants in a 2006 study identified some benefits to mentees as “emotional support,” “all kinds of advice,” “safe, non-evaluating relationship,” “cheerleader,” and “validation of my abilities” (Support Interns).

Role of Preceptors as Mentors

Hayes (1999) developed a list of characteristics attributed to mentors based on the responses of students who believed they had been mentored. Those characteristics include:

1. Took a personal interest in the students

2. Loved to teach

3. Gave opportunities to students by trusting them and demonstrating confidence in their ability even when the students did not feel much confidence
4. Provided feedback in a positive manner

5. Demonstrated openness which allowed preceptors and students to learn about each other

6. Permitted the development of friendship

7. Provided a safety net to get them through the worst parts of the program

8. Demonstrated patience, kindness and valued the beginner

9. Provided job advice and recommendations

10. Modeled confident, competent, empathetic patient care (p. 340)

Hayes also compiled a list of characteristics based on responses of non-mentored students:

1. Never connected...never sensed a personal interest

2. Not competent as teachers

3. Unrealistic expectations for the students; did not know what the students needed

4. Relentless inquisition; constant questioning

5. Not letting go; would not allow students to do anything

6. Power and control

7. Did not give positive feedback

8. Disappointment and betrayal

9. Not feeling safe

10. Dumped patients on the student

11. Not helpful in resolving issues

12. Competitiveness with the student for the same job (p. 342-343)
In reviewing the literature, an exact method of transition from preceptorship to mentorship cannot be identified. While significant study has been carried out regarding mentoring relationships, the development of mentors has not yet been determined. By the same token, a topic of minimal research has been the relationship between mentoring relationships and self-efficacy of emerging nurse practitioner graduates (Hayes, 1997).

Fawcett (2002) differentiated the role of the preceptor from that of the mentor. The preceptor role was identified as “a teaching relationship that ends when the novice is considered educated and able to perform independently” (p. 950). The length of the relationship is pre-determined. The mentor role was identified as a longer term relationship extending over a longer, undetermined period of time. Mentors were described as role models who are emulated by less experienced nurses. Important mentor characteristics include patience, enthusiasm, knowledge, a sense of humor and respect (Fawcett). Fawcett also recognized that mentors are more often selected by the mentee rather than being assigned by a third party.

Kilcullen (2007) identified several roles of the mentor including socialization roles, support in learning, role model, assessors, challenger, and problem solver. From a study conducted in 2000, Kilcullen concluded that “the mentor and the quality of the clinical learning environment played a major role in enhancing students’ learning” (p. 105).

Relationships between Preceptors, Mentors and Students

No single formula for mentoring styles has been identified. The methods of delivery are as varied as human relationships (What Is a Mentor?, 1997). Students are often unaware of what questions to ask or even what the options might be. A good
Mentor will help alleviate the confusion felt by students and help students overcome feelings of inadequacy, intimidation or shyness.

Mentoring involves mutual sharing, learning, and growth (Haley-Andrews, 2001). Other descriptors recognized by Haley-Andrews included counselor, teacher, advocate, confidante and advisor. Fawcett (2002) cited mutual respect as a key factor to a successful mentor/mentee relationship. Commitment to the professional growth of the mentee is required by both the mentor and mentee. The mentor must also be an advocate for the mentee. While the mentee may be more prone to making mistakes, if the opportunity to try new activities is not made available, the mentee may feel intimidated and less likely to demonstrate new skills.

The delivery method of mentoring is crucial to a successful relationship. Gallo and Siedow (2003) recognized two principles to successful mentoring relationships: a nurturing environment and orientation to the novice nurses' needs, not the needs of the facility. A nurturing environment is optimal for learning as the risk for humiliation is minimized. The student or novice can practice in an environment that is less stressful and more conducive to learning. The assessment phase of the relationship is utilized to learn about the student/novice knowledge base and comfort level. The learning experience is rounded out by learning patient care routines, developing prioritization skills, and becoming more familiar with policies and paperwork. Little is expected of the novice in the beginning stages of the relationship. As time progresses, so do the responsibilities of the novice. Less and less dependence on the mentor should be realized.

Student evaluations by preceptors and mentors was addressed by Seldomridge and Walsh (2006). Preceptors are often required to provide formative as well as summative
evaluation of student performance, while mentors generally do not perform summative evaluation. Formative feedback given to students as an ongoing evaluation often occurs informally between the student and the preceptor. However, communication with course faculty is generally more sporadic. Unclear standards, limited experience in summative evaluation and lack of confidence in recommending a rating are a few of the drawbacks of the evaluative abilities of preceptors.

Self-efficacy and Mentoring

In 1997, Hayes completed a dissertation entitled, *Mentoring, Self-Efficacy, and Nurse Practitioner Students*. The descriptive, correlation study explored the relationship between nurse practitioner students’ perceptions of mentoring by preceptors and self-efficacy as perceived by the graduate nurse practitioner. The study demonstrated a positive correlation between mentoring and self-efficacy.

Mentoring was measured through the use of two tools, Freeman’s Mentoring Survey and Caine’s Quality of Mentoring Tool. Throughout the literature review, Hayes processed the use of mentoring throughout history and the positive benefits associated with mentoring. Hayes further stated, “Mentoring ... is often equated with successful role socialization, development of leadership style, and self-efficacy in carrying out role functions” (p. 15). However, Hayes also admitted that mentoring does not always produce positive results.

Self-efficacy is recognized as “a personal belief or conviction in one’s ability to carry out a behavior that will produce a particular outcome, a sense of confidence that one can organize and complete a behavior competently” (Hayes, 1998). A moderate positive correlation between mentoring and nurse practitioner student self-efficacy was identified
in Hayes’ 1997 study. Significant factors predicting higher scores included length of time in the practicum, the preceptor’s experience and student choice of preceptor.

Self-efficacy, defined by Bandura, refers to “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” as cited in (Miller, Coombs, & Fuqua, 1999, pg. 186). Bandura’s theory further posits that individuals who feel capable of accomplishing a task are more likely to attempt and successfully complete that task. According to Allison-Jones and Hirt (2004), “the relationship between the student and faculty is an important component of teaching effectiveness. A strong relationship enhances enjoyment of the educational experience for both parties, improves student evaluations..., and enhances student learning” (p. 239). As student learning is enhanced, it would follow that self-efficacy would also be enhanced.

Fletcher and Banasik (2001) defined self efficacy as “the belief and conviction that one can successfully perform a given activity” (p. 390). The authors further indicated that “self-efficacy determines whether an individual attempts to perform a given task and how persistent he or she is when difficulties are encountered” (390). Perceptions of self-efficacy affects decisions on whether to perform behaviors, how much effort to expend on behaviors, and how long to maintain the effort (Jenkins, Shaivone, Budd, Waltz, & Griffith, 2006).

Self-efficacy is related to goal setting as well as self-regulation (Harrison, Rainer, Hochwarter, & Thompson, 1997). Hayes (1997) further recognized self-efficacy as “the confidence in one’s ability to achieve a goal” (p. 13). Hayes indicated a plethora of research of self-efficacy to predict health promoting and protective behaviors, including
weight control, smoking cessation, pain control, alcohol abstinence, exercise, cardiac rehabilitation, management of chronic illness, and attainment of personal, developmental, professional, and education milestones (1997). However, the study of self-efficacy theory in the social sciences, at that time, was somewhat limited. In conducting a literature review for the current project, while more research regarding self-efficacy in education was identified, the availability of research in the social sciences continues to be sparse.

Bandura's work focused on social modeling in human motivation, thought and action. Bandura posited that modeling was not simply an act of mimicry but that people generate new behavior patterns based on what they have seen or heard. Behavioral outcome expectations alter motivation. Modeling is inherent in creativity by exemplifying diversity for novel syntheses and fresh perspectives that weaken conventional mind sets (Pajares, 2004). The current model of nurse practitioner education incorporates this model via the association of students with preceptors who are experienced nurse practitioners or physicians. Short term, one-on-one relationships are established between the nurse practitioner student and the preceptor. A mentoring relationship has been viewed as a “strategy for enhancing leadership development, professional socialization, and competence and confidence in education and business” (Hayes, 1998, p. 53).

Bandura wished to create a division for his theory. He depicted people as: self-organizing, proactive, self-reflective, and self-regulative in thought and action rather than as merely reactive to social environmental or inner cognitive-affective forces. Moreover, the theory addressed how people motivate and
regulate their behavior and create social systems that organize and structure their lives. In the more fitting appellation as the social cognitive theory, the social portion of the title acknowledges the social origins of much human thought and action; the cognitive portion recognizes the influential contribution of cognitive processes to human motivation, affect, and action. (Pajares, 2004, p. 5)

A second feature of the Social Cognitive Theory is the capacity for self-directedness and forethought. People adopt personal standards and then regulate personal motivation and behavior by the positive and negative consequences produced. Just as individuals may repeat actions that bring satisfaction, actions that evoke self-devaluation may cause an individual to refrain from repeating the behavior.

As a student nurse practitioner (SNP) begins the experience in the clinical setting, the student frequently fears suggesting a diagnosis or treatment option, fearing mistakes or reprisals from the preceptor. As the SNP continues the practicum experience and subsequently gains experience in successfully selecting diagnoses and treatment plans, the SNP will gain confidence and become more willing to risk suggestions to the preceptor. Inversely, when mistakes are made in the clinical setting, the SNP may be more loathe to spontaneously suggest possibilities to the preceptor. Beres (2002) recognized the impact of fear, mistakes, and the need for validation as key components to learning.

Beres (2002) suggested that novice nurse practitioners “lack the confidence of using trial and error” (p. 70). Beres further indicated that learning for the novice NP is accomplished by direction from others. Rather than assuming the initiative to seek out new learning experiences, the novice will often wait until someone else tells them what
they need to learn, while expert NPs will generally be more self-directed and constructive in their learning. The mentoring experience during the clinical practicum is the primary source of knowledge acquisition during academic preparation for NP practice. The preceptor is the key director of knowledge for the student as (s)he guides the student toward learning experiences throughout the practica.

King (2006) supported Bere’s supposition by recognizing differences in diagnostic reasoning between novice and expert NPs. King asserts the importance of diagnostic reasoning is due to implications of billing, quality assurance and standards of care. Diagnostic reasoning in the novice NP would naturally be much less sophisticated than that of the expert NP. A direct link between practiced diagnostic reasoning throughout the clinical experience would be reflected in perceived self-efficacy for the novice.

A third human attribute noted in the social cognitive theory is the capability for self-reflection concerning one’s functioning and personal efficacy to produce effects. In 1997, Bandura published *Self-Efficacy: The Exercise of Control*. One of Bandura’s research projects studied peoples’ perceptions of ability to control what was perceived as threats to affect the release of neurotransmitters and stress-related hormones into the bloodstream. Using guided mastery, participants were able to overcome within a few hours, phobias that had caused torment for decades. This finding was pivotal as people learned to regulate physiological activation through belief in self-efficacy or belief in personal capabilities. As SNPs actively perceive prudent practice possible, so will actual practice become more prudent.
Of prime concern to Bandura’s theory are people’s perceptions of self-efficacy to exercise influence over the events that affect are life altering and how this affects psychological functioning.

We find that people’s beliefs about their efficacy affect the sorts of choices they make in very significant ways. In particular, it affects their levels of motivation and perseverance in the face of obstacles. Most success requires persistent effort, so low self-efficacy becomes a self-limiting process. In order to succeed, people need a sense of self-efficacy, strung together with resilience to meet the inevitable obstacles, and inequities of life (Pajares, 2004, p.7).

The SNP must perceive self-efficacy in order to become acclimated to the nurse practitioner (NP) role. He must first psychologically believe in his ability to practice as a health care provider before he can socialize to the role proficiently. The transition from nursing, a role in which the nurse follows orders, to the nurse practitioner, a role in which the NP is responsible for writing the orders is directly related to the SNP’s ability to believe himself capable. The SNP who does not begin this transition during the educational phase of preparation is more likely to decline the practitioner role following graduation.

Hayes (1998) stated, “The power of belief, followed by increasing freedom and responsibility promotes the enhancement of self-efficacy and a sense of competence.” Pajares (1996) compared the student’s knowledge and action through self reflection. Pajares posited that “knowledge, skill and prior attainments are often poor predictors of subsequent attainments because the beliefs that individuals hold about their abilities and about the outcome of their efforts powerfully influence the ways in which they will
behave” (p.543). Pajares further postulated that thought patterns and emotional reactions are influenced by efficacy beliefs. A person with low self-efficacy may believe a task to be more difficult than it actually is “which fosters stress, depression and a narrow vision of best to solve a problem” (p. 544). However, a person with high self-efficacy will perceive the task as possible and pursue it willingly, leading to an increased sense of competence. Beres (2002) also recognized the novice NPs inability to adequately self reflect which leads to other directed learning rather than self directed learning.

Latham and Fahey (2006) identified a lack of self-confidence and hesitation in students transitioning into an expanded role as an advanced practice nurse. Increased responsibility and accountability for patients’ health was recognized as a deterrent for novice NPs moving into the professional role. Skill development and learning transferability were most enhanced by SNPs who felt they were really working in the role and believed their actions to directly impact their patients’ health. Latham and Fahey further indicated self-reflection as a key strategy to assist in self development.

In a qualitative study completed by Heitz, Steiner, and Burman, (2004), NP graduates acknowledged experience as a factor in self-efficacy. The more clinical time that was required, the more self-efficacious students felt. Some even recognized the transition of the role evolving during the clinical practica for the program. Optimistic self-talk was a second reinforcement toward confidence and self-efficacy. The study also cited previous experience as an RN as a precursor to self-efficacy. Complete transition into the role, while initiated during the educational experience, did not occur for most NPs until 6 months to 2 years into practice.
Summary

The perception of self-efficacy is generated by experience, self reflection and educational support. Measurement of self-efficacy does not appear to be a quantitative concept so much as qualitative. Positive role development is the primary outcome of positive self-efficacy. As mentoring by preceptors has been directly related to students' perceptions of self-efficacy and self-confidence, NP programs must evaluate the clinical experiences of students. A better understanding of ways to improve the student/preceptor relationship will improve role transition into actual practice for the graduate NP. As program managers review literature related to successful role transition, curricular changes may be implemented as well as methods of clinical instruction. If the number of clinical hours is correlated with self-efficacy and self-confidence, programs may develop criteria for the clinical experience to meet the need. Students' perceptions of mentoring relationships will provide groundwork further development of the clinical program.
CHAPTER III

Methodology

Research Design

The descriptive, correlation study is a modified replication of Hayes’ (1997) dissertation, *Mentoring, Self-Efficacy and Nurse Practitioner Students*. The study investigated nurse practitioner (NP) students’ perceptions of mentoring and the relationship between mentoring and self-efficacy. Students enrolled in the final clinical course of a nurse practitioner program were asked to complete a questionnaire to measure mentoring and self-efficacy. Correlations were then calculated between mentoring and self-efficacy scores on Freeman’s Mentoring Survey (FMS) (1989), Grundy’s Confidence Scale (CS) (1992), and the Self-Efficacy scale (SES) (Coppel, 1980).

At the end of the quantitative survey, open-ended questions were presented to participants discussing student perceptions of mentoring, self efficacy and confidence. A descriptive analysis of the answers was completed.

Context of the Study

A convenience sample was comprised of students enrolled in the final clinical course of a nurse practitioner program in the state of Indiana. According to an Internet search, 10 colleges in the state of Indiana offer various types of nurse practitioner programs. The directors of the NP programs were first contacted via email or phone. Program directors were asked to complete a form that indicated the type of programs
offered, the number of students enrolled in the final clinical course and to indicate if IRB approval at the university would be required before survey submission. The University Contact Form can be found in Appendix B.

One of the program directors informed the principle investigator that an NP program was not yet functional. A second program director replied that graduation dates for the NP program are in December only. Because the data was collected during the spring semester, no students in that program were enrolled in the final clinical course of the program during that time period. The eight remaining programs reported students enrolled in the final clinical course of the program. One of the programs with only four students enrolled never responded to the initial email. That program was deleted from the population leaving only seven programs in the study.

Permission to distribute surveys to measure mentoring and self-efficacy to all NP students enrolled in the final clinical course of the program during a regularly scheduled class was requested. The letter sent to the program directors is included in Appendix B. Some of the programs are offered in an online format only, while other schools offer onsite programs or hybrid programs which are comprised of both online and onsite classes.

Initially all programs, including programs with onsite delivery, requested that surveys be distributed to students in an online format due to a lack of classroom time that could be allotted for survey presentation. Therefore, arrangements were made for all students enrolled in the programs to complete the survey in an online format.

Because all of the students were enrolled in the final clinical course of an NP program, each student had been exposed to multiple preceptors. While no specific
number of preceptors is required by NP programs, generally students will be exposed to several preceptors as the primary focus of each clinical course is limited to specific populations. For example, one course may focus on adult populations while another will focus on pediatric populations. The type of program will determine the type of population for the clinical courses. The students were instructed to choose the preceptor who had been most influential during any clinical course of the program. All of the questions were then directed toward the chosen preceptor.

The Sample

Emails were sent to the eight participating universities in Indiana. One of the programs never responded to the initial email and was deleted from the population. Each of the remaining university program directors had submitted the University Contact Form indicating the number of students enrolled in the program (N=194). The directors were asked to submit the survey URL (Survey Share) to all students enrolled in a final clinical course for any type of NP program in early spring semester. Participant Instructions were sent as an attachment to the email. Participants were advised of the purpose of the research and that participation was totally voluntary. No benefits or risks were identified related to participation in the study. Anonymity was preserved as the survey was distributed to students by the program directors. Names were never identified in the study. Information about the rights of research participants was included. A copy of the Participant Instruction sheet has been placed in Appendix B.

Surveys were disseminated electronically for all but one of the programs. Only one program permitted the principle investigator to present the opportunity for participation in the research during an onsite class session. Nine students were present
during the class session, and all participated in the survey voluntarily for a 100% return rate. Emails were sent directly to the students enrolled in the program in which the principle investigator was the primary care coordinator. Anonymity was preserved as the surveys returned were in no way linked to the email address. For that particular group of students, the return rate was 92%.

For the remaining five programs, reminder emails were sent to the program directors and/or course facilitators every 3-4 weeks. It is unknown how many original emails or reminders were actually sent to students. Because the principle investigator did not have direct access to the student emails, dependence on the coordinators/facilitators was essential. It is unknown how many students actually received the email with instructions for access to the survey. Furthermore, it is unknown whether students were encouraged to participate in the survey or not. Table 1 describes the frequency and percent of returned surveys according to university. University names have been omitted to protect confidentiality.

One hundred ninety-four students were enrolled in the final clinical course of a nurse practitioner program in the 7 participating programs. With a return of 93 surveys, the return rate was 48%.

**Survey Instrument**

In Hayes' original study, the following instruments were used: Freeman's Mentoring Survey (FMS), which measured NP students' mentoring perceptions; Caine's Quality of Mentoring Tool, (CQM), which measured perceived quality of the mentoring experience; the Self-Efficacy Scale (SES), which measured generalized efficacy
Table 1. Frequencies and Percents for School Attended

<table>
<thead>
<tr>
<th>School Attended</th>
<th>Enrollment</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>University A</td>
<td>15</td>
<td>9</td>
<td>9.7</td>
</tr>
<tr>
<td>University B</td>
<td>36</td>
<td>33</td>
<td>35.5</td>
</tr>
<tr>
<td>University C</td>
<td>54</td>
<td>36</td>
<td>38.6</td>
</tr>
<tr>
<td>University D</td>
<td>20</td>
<td>8</td>
<td>8.6</td>
</tr>
<tr>
<td>University E</td>
<td>9</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>University F</td>
<td>44</td>
<td>5</td>
<td>5.4</td>
</tr>
<tr>
<td>University G</td>
<td>16</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>194</td>
<td>93</td>
<td>100</td>
</tr>
</tbody>
</table>

expectations; and The Confidence Scale (CS), which measured specific efficacy expectations related to an advanced practice function (Hayes, 1997). Specific characteristics, activities, and relationship descriptors which comprised the essential attributes of mentor, mentor functions, and mentoring, as derived from consensus in the literature of nursing, business, and education were measured by items in the mentoring surveys. The concepts of mentor, mentor functions and mentoring were measured separately, not interchangeably.

Originally, the FMS (Freeman, 1989) consisted of 27 open- and closed-ended questions that were adapted from the literature on mentoring and the elicited responses related to perceptions and experiences of mentoring among nurse practitioner students.
Content validity was established by a panel of six master-prepared NP experts who were also faculty members at a large southern university. Modifications were made following the trial, and a second trial was performed. The resulting 24 items that five of the six judges could agree on were included in the tool.

Reliability was not reported for the original tool. Therefore, Hayes tested the FMS at the University of Massachusetts, Amherst NP graduate program. The sample included a sample of first year NP students (n=22) at the school. A re-test took place two weeks after the original test. Reliability was reported at 0.93, with internal consistency reliability at 0.95.

Hayes then modified the original survey by deleting the open-ended questions based on instructions provided by Freeman (Hayes, 1997). The open-ended questions formed the basis for the in-depth interviews conducted with participants whose scores on the mentoring and self-efficacy scales were higher or lower than mean scores by one standard deviation. In addition, the format of the FMS was modified from a “yes” or “no” checklist to a more precise five-point Likert Scale that allowed quantification and measurability of NP students’ perceptions of mentoring from “not at all” to “very much.”

To re-evaluate the reliability of the adapted survey, a Cronbach alpha test was run. Cronbach alpha is a numerical coefficient of reliability (Santos, 1999). Alpha coefficient ranges from 0-1 and describe the reliability of dichotomous and/or multipoint scales including Likert Scales. The higher the score, the more reliable the scale is. An accepted reliability coefficient has been indicated at 0.7, although lower thresholds are used in the literature (Santos). The Cronbach alpha for the FMS is 0.951, an acceptable
level. The item mean for the scale was 3.817 with item variance at 0.226 and SD of 0.148.

The CQM (1989) is a 14-item Likert Scale designed to investigate quality of mentoring for advanced practice nurses. Participants were asked to identify attributes and functions of a person who had been most important to personal development in career growth and guidance as well as the development of a significant relationship. Validity for the CQM was established by a panel of expert advanced practice nurses and reliability was reported at 0.93. At the recommendation of Hayes, the CQM was removed from the replicated survey as the findings were duplicative of the FMS without adding significant findings.

The Self-Efficacy Scale (SES) included in Hayes’ study was one component of the Carolina Adolescent Health Project Survey (CAHPS) developed in 1990 (Hayes, 1997). The SES measures generalized self-efficacy expectations and consists of 12 items in a Likert Scale format revised and adapted from Coppel’s SES. The SES was designed to examine participants’ belief about one’s ability to produce desired outcomes. Coppel reported an internal consistency reliability of 0.91 in the original study, and Hardin et al. found an internal consistency of 0.90. A Cronbach alpha of 0.866 was noted for the current study. The item mean was 3.235 with an item variance of 0.430 and SD of 0.247.

The Confidence Scale (CS) measured self-efficacy related to the skill of performing physical assessment as an advanced practice nurse. The scales consisted of five items in a Likert Scale format. Validity was established for the scale by a panel of expert nurses. Grundy (1992) reported high reliabilities for the CS with internal consistency at 0.84. In 1993 Grundy conducted further study on the reliability and
validity of the CS. The CS was correlated with a 100-mm confidence visual analogue scale (C-VAS) and also a confidence verbal descriptor scale (C-VDS). The correlation coefficients for the CS with the C-VAS ranged from .58-.80 and with the C-VDS from .73 to .77 demonstrating the same significant increases at the end of the semester and comparable test-retest reliabilities. Internal consistency was evaluated, and the Cronbach alpha for the CS ranged from .84 to .93 (Grundy, 1993). A repeated Cronbach alpha for the CS for the current study was 0.898 supporting internal consistency. The item mean was 3.176 with item variance of 0.340 and SD 0.101.

A second CS was incorporated into the survey to determine students' self-confidence in diagnostic reasoning based on patient history, presentation and assessment on an adult or child in the clinical setting. Diagnostic reasoning is a higher level skill than that of performing a physical assessment. Cronbach alpha was 0.888. The item mean was 2.971 with an item variance of 0.3 and SD 0.11.

For the current study, a review of the literature was performed in search of the original instruments cited in Hayes' study. Three of the four original instruments were located. Coppel's 1980 self-efficacy scale could not be obtained. The three remaining instruments were compared to the instrument utilized by Hayes. No significant alterations were noted among the instruments other than format changes.

Hayes' questionnaire opened with questions regarding demographic information including: age of student at the time of entrance into the NP program, gender, years of experience as an RN, how the preceptor/student relationship was initiated, currency of the relationship, frequency of contact during the preceptor/student relationship as well as after termination of the relationship, length of time involved in the relationship, role of
the preceptor, preceptor's highest level of education, preceptor's approximate age, preceptor's years of clinical experience, preceptor's years of preceptor experience, preceptor's gender and preceptor's primary worksite.

A few variations in the instrument for the current study were incorporated. The age of the preceptor was omitted as this demographic information was not deemed significant to the study. The five-point Likert scale was changed to a four-point scale, and the headings were changed to rarely, sometimes, frequently and consistently in an effort to provide clarity for student understanding. Restricting the scale to fewer choices was thought to simplify the process for students.

Two sections were added to the original questionnaire. The original survey questioned students regarding confidence levels in performing physical assessment skills. While self-efficacy in physical assessment is only one aspect of the NP role, assessment is a basic skill that is performed frequently. A lack of self-efficacy in performing physical assessment may be related to lack of self-efficacy in role taking and ultimately patient care. In addition to physical assessment, the current study applied the five-item CS to a question regarding diagnostic reasoning. Diagnostic reasoning based on history, assessment and patient presentation is a higher level skill than simple physical assessment alone. The results of the CS based on a diagnostic reasoning skill will enhance the findings of the study.

In addition to the second Confidence Scale, several questions were added to the end of the survey asking students to render personal opinions of mentoring, self-efficacy and confidence. Three of the questions were closed-ended, and four questions were open-ended. The closed-ended questions were:
1. Would you describe your most significant preceptor as a mentor?

2. Did your preceptor help you build your self-confidence?

3. Do you believe you are prepared to begin practice as a nurse practitioner after graduation?

The open ended questions were:

1. Describe the qualities of a good mentor.

2. How did your preceptor help you build self-confidence?

3. What strengths do you believe you have to practice as an NP?

4. What weaknesses do you believe may inhibit your practice as an NP?

The electronic survey was created on Surveyshare.com, a private web-based company that allows for the development and dissemination of survey tools. Following the purchase of the survey tool, the questions from the original questionnaire were incorporated into a survey tool. The tool was evaluated for completeness and was ready for dissemination to the seven universities included in the study.

Email addresses for 36 students were directly embedded into the survey system. The student email addresses were available to the principle investigator as the coordinator for one of the NP programs. The survey URL (surveyshare.com/survey/take/?sid=67416) was then sent to the program directors for dissemination to students. The original survey was sent out on February 12, 2008. Reminders were then sent out every 3-4 weeks to program directors. The survey was closed on June 4, 2008.

Data Analysis

Mean scores, ranges, and standard deviations were calculated from the FMS, SES, and CS, with results displayed in table form. Results of multiple correlations between
mentoring scales and self-efficacy scores were reported. The variables related to mentoring including age, gender, NP preceptor education and NP student/NP preceptor experience, clinical setting, NP students’ choice of preceptor, and length of time in the practicum were subjected to analysis of variance and step-wise multiple regression analysis to determine any significant differences in mentoring scores related to the variables, as well as to determine which of these variables are most predictive of increases in mentoring scores. The results will be discussed in Chapter 4 and are displayed in summary table form.

A descriptive review of the open-ended questions was compared to the data elicited from the survey instrument. Emerging themes are presented in the narrative as well as in table form.

Timeline

The first email was sent to program directors on February 12, 2008. Program directors were asked to disseminate the surveys to students enrolled in the final clinical course of any type of NP program. Reminders were emailed to directors every 3-4 weeks. Survey completion was anticipated for mid to late May 2008 but was finally closed on June 4, 2008. Analysis followed data collection.

Summary

Seven NP programs were included in the replicated study in an internet-based format. After agreeing to disseminate the survey to students, program directors submitted the Participant Information to students with instructions to complete the survey. Reminder emails were sent to program directors in an effort to improve the survey return rate. Ninety-three respondents completed the survey for a 48% return rate.
CHAPTER 4

Results

Introduction

Nurse Practitioner (NP) education is a culmination of classroom didactics and clinical instruction. Clinical experiences consist of a one-on-one relationship between the student and a preceptor. While the preceptor position is not compensated, the preceptor accepts the role of teaching the student how to interact with clients and how to apply the lessons learned from didactic studies such as history taking, assessment, diagnostic interpretation, and diagnostic reasoning which includes the development of treatment plans for patients based on the data collected. The length of the preceptor/student relationship generally varies and may be determined by the student, the preceptor or the faculty. Students may have one or more preceptors for each clinical course.

While some nursing programs assign the student to preceptors, others require the student to establish the preceptor/student relationship. Criteria for preceptor selection are standard and include a license as either a physician or a certified nurse practitioner. Preceptors must have a minimum of one year of clinical experience.

This study focuses on the student’s perception of self-efficacy and confidence based on whether a mentoring relationship was established with at least one preceptor during the clinical experience. The study is a modified replication of a study conducted
by Hayes in 1997. No similar studies were identified in the literature during the interim between the first study and now.

Mentoring has been discussed in the literature without coming to a consensus of a solidified definition. The most commonly accepted definition of a mentor is:

- a voluntary, committed, dynamic, extended, intense and supportive relationship characterized by trust, friendship and mutuality between an experienced, respected person, such as an NP preceptor, and an NP student for the purpose of socializing the student and promoting student self-efficacy in taking on the advanced practice role. (Hayes, 2001, p. 111)

While all preceptors accept the role of teaching, not all preceptors develop a mentoring relationship with students. How a mentoring relationship develops has yet to be determined. The study evaluates the perception of self-efficacy and confidence of students enrolled in the final clinical semester of an NP program and the students’ perception of whether a mentoring relationship was developed with a significant preceptor at any point throughout the program.

The following hypotheses are modified from the original study:

\[ H_1 = \text{Nurse Practitioner students' mentoring scores will be positively related to self-efficacy scores.} \]

\[ H_2 = \text{Nurse Practitioner students' mentoring scores will be positively related to confidence scores.} \]

\[ H_3 = \text{The Self-Efficacy Scale will be positively correlated to the Confidence Scale.} \]
The research questions for the current study have been modified from the original study. In addition to the three hypotheses, several open-ended questions were included in the questionnaire to further explore the significance of the NP student/preceptor relationship.

1. Do number of clinical hours with a preceptor relate to self efficacy of NP students? 
2. Do number of clinical hours mentored relate to confidence of NP students? 
3. What are the perceptions of the students of a mentoring relationship? 

Results

Thirty (32.3%) participants’ ages prior to entering the nurse practitioner program were between 25-30, 16 (17.2%) were between 31-35, 10 (10.8%) were between 36-40, 13 (14.0%) were between 41-45 and 24 (25.8%) were older than 45. Frequencies and percents for years of experience as an RN are presented in Table 2.

Sixteen (17.2%) participants worked with 1-3 preceptors throughout the NP program, 48 (51.6%) utilized 4-6 preceptors, 22 (23.7%) worked with 7-10 preceptors. Two students (2.2%) worked with 11-15 preceptors, and 5 (5.4%) used more than 15 preceptors.

Frequencies and percents for how the student came to work with the clinical preceptor who was considered the most significant preceptor to role transition are presented in Table 3; 31 (33.3%) participants answered that this person is a current preceptor and 62 (67.7%) answered their former preceptor. At the time 6 (6.5%) worked with the significant preceptor less than 8 hours a week, 14 (15.2%) worked 8
### Table 2. Percentages for Years of Experience as an RN

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>6-10</td>
<td>27</td>
<td>29.0</td>
</tr>
<tr>
<td>11-15</td>
<td>20</td>
<td>21.5</td>
</tr>
<tr>
<td>16-20</td>
<td>14</td>
<td>15.1</td>
</tr>
<tr>
<td>More than 20</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>Total</td>
<td>N=93</td>
<td>100</td>
</tr>
</tbody>
</table>

### Table 3. Percentages for Clinical Preceptor Most Significant to Role Transition

<table>
<thead>
<tr>
<th>How Students and Preceptors Met</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>The person was assigned to work with me.</td>
<td>14</td>
<td>15.1</td>
</tr>
<tr>
<td>I sought out this person.</td>
<td>47</td>
<td>50.5</td>
</tr>
<tr>
<td>The person asked me to work with him or her.</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>The relationship happened by chance.</td>
<td>14</td>
<td>15.1</td>
</tr>
<tr>
<td>I knew this person previously</td>
<td>17</td>
<td>18.2</td>
</tr>
<tr>
<td>Total</td>
<td>N= 93</td>
<td>100</td>
</tr>
</tbody>
</table>
hours a week and 72 (78.3%) worked more than 8 hours a week. Currently 15 (17.6%) of participants never see the significant preceptor, 37 (43.5%) see the preceptor occasionally and 33 (38.8%) see the preceptor frequently. Frequencies and percents for the length of time involved in the preceptor relationship are presented in Table 4.

<table>
<thead>
<tr>
<th>Length of Time</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 month</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>1-3 months</td>
<td>27</td>
<td>29.0</td>
</tr>
<tr>
<td>3-6 months</td>
<td>34</td>
<td>36.6</td>
</tr>
<tr>
<td>6-9 months</td>
<td>10</td>
<td>10.7</td>
</tr>
<tr>
<td>9 months or more</td>
<td>18</td>
<td>19.4</td>
</tr>
<tr>
<td>Total</td>
<td>N=93</td>
<td>100</td>
</tr>
</tbody>
</table>

Sixty-one (65.6%) answered the significant preceptor was a nurse practitioner and 32 (34.4%) answered physician. Frequencies and percents for preceptor's years of clinical experience are presented in Table 5. Three (3.2%) participants had a bachelors degree in nursing, 56 (60.2%) had a masters degree, 4 (4.3%) doctorate graduates and 30 (32.3%) were physicians. Frequencies and percents for preceptor's years of experience as a preceptor are presented in Table 6. Twenty-nine (31.5%) of participants' significant preceptor were male, and 63 (68.5%) were female. Frequencies and percents for preceptor's primary worksite are presented in Table 7.
Table 5. Frequencies and Percents for Preceptor’s Years of Clinical Experience

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>11</td>
<td>12.0</td>
</tr>
<tr>
<td>6-10</td>
<td>30</td>
<td>32.6</td>
</tr>
<tr>
<td>11-15</td>
<td>20</td>
<td>21.7</td>
</tr>
<tr>
<td>16-20</td>
<td>15</td>
<td>16.3</td>
</tr>
<tr>
<td>20 or More</td>
<td>16</td>
<td>17.4</td>
</tr>
<tr>
<td>Total</td>
<td>N=92</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 6. Frequencies and Percents for Preceptor’s Years of Experience as a Preceptor

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>1-5</td>
<td>41</td>
<td>44.1</td>
</tr>
<tr>
<td>6-10</td>
<td>20</td>
<td>21.5</td>
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<tr>
<td>10 or More</td>
<td>16</td>
<td>17.2</td>
</tr>
<tr>
<td>Total</td>
<td>N=93</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 7. Percentages for Preceptor's Primary Worksite

<table>
<thead>
<tr>
<th>Worksite</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambulatory Care</td>
<td>6</td>
<td>6.5</td>
</tr>
<tr>
<td>Hospital Setting</td>
<td>15</td>
<td>16.3</td>
</tr>
<tr>
<td>Clinic</td>
<td>35</td>
<td>38.0</td>
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<tr>
<td>Private Office</td>
<td>36</td>
<td>39.2</td>
</tr>
<tr>
<td>Total</td>
<td>N=92</td>
<td>100</td>
</tr>
</tbody>
</table>

Hypothesis 1

Three-hundred ninety-six Spearman Rho correlations were conducted to examine if relationships exist between the Freeman Mentoring Scale (FMS) questions 1-33 and the Self-Efficacy Scale (SES) questions 1-12. The results are presented in Table 8, where SES Q1 (Once I know what I need to do, I can do it.) revealed significant positive relationships with FMS Q4 (The preceptor taught me well), and Q5, (The preceptor shared knowledge and experience with me willingly), Q12, (The preceptor valued me as a colleague), Q29 (The preceptor provided valuable learning experiences while we worked) and Q33 (The preceptor gave me the opportunity to be a teacher as well as a learner). These correlations suggest that as the student believed he could perform a skill once he knew what needed to be done increased the belief that the preceptor was a good teacher, willingly shared knowledge and experience, valued the student as a colleague, provided valuable learning experiences and gave the student opportunities to teach also increased. SES Q2 (In a new situation, I expect I can handle things) revealed a significant positive relationship with mentoring Q33 (gave me the opportunity to be a teacher as well
Table 8. Correlation Coefficients between Freeman Mentoring and Self-Efficacy

<table>
<thead>
<tr>
<th>Mentoring</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
<th>Q6</th>
<th>Q7</th>
<th>Q8</th>
<th>Q9</th>
<th>Q10</th>
<th>Q11</th>
<th>Q12</th>
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</thead>
<tbody>
<tr>
<td>Q1</td>
<td>.16</td>
<td>.12</td>
<td>.06</td>
<td>.05</td>
<td>.01</td>
<td>.01</td>
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<td>.10</td>
<td>.07</td>
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<tr>
<td>Q2</td>
<td>.17</td>
<td>.02</td>
<td>-.08</td>
<td>-.03</td>
<td>.01</td>
<td>.25*</td>
<td>.04</td>
<td>.02</td>
<td>.11</td>
<td>.22*</td>
<td>.18</td>
<td>.05</td>
</tr>
<tr>
<td>Q3</td>
<td>.04</td>
<td>.03</td>
<td>.05</td>
<td>.11</td>
<td>-.09</td>
<td>.08</td>
<td>-.06</td>
<td>-.09</td>
<td>.06</td>
<td>-.08</td>
<td>.01</td>
<td>.14</td>
</tr>
<tr>
<td>Q4</td>
<td>.26*</td>
<td>-.01</td>
<td>-.08</td>
<td>-.09</td>
<td>-.11</td>
<td>.02</td>
<td>-.09</td>
<td>-.03</td>
<td>-.01</td>
<td>-.06</td>
<td>-.04</td>
<td>.04</td>
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<td>.02</td>
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<td>Q6</td>
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<td>.14</td>
<td>.05</td>
<td>-.03</td>
<td>-.14</td>
<td>.10</td>
<td>.05</td>
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*Note. *p < .05, **p < .01.*
as a learner, suggesting that as SES Q2 increases Q33 increases. SES Q6 (The good things that happen to me are largely my own doing) revealed a significant positive relationship with mentoring Q2 (The preceptor is committed to the profession) and Q29 (The preceptor provided valuable learning experiences while we worked), suggesting that as SES Q6 increases mentoring Q2 and Q29 also increased. SES Q6 also revealed a significant inverse relationship with mentoring Q11 (The preceptor was willing to share professional attitudes and values), suggesting that as the students’ belief that good things occurred based on their own actions increases, the perception that the preceptor was willing to share professional attitudes and values decreased and vice versa.

SES Q7 (I’m proud of myself) revealed a significant positive relationship with mentoring Q32 (The preceptor provided the opportunity for a friendship), suggesting that as the student’s self-pride increases the preceptor’s willingness to provide the opportunity for a friendship also increases.

SES Q9 (I believe I use my skills to their best advantage) revealed a significant positive relationship with mentoring Q28 (The preceptor presented the opportunity for counseling on professional issues), suggesting that as the student’s confidence in skills increases, opportunities for counseling on professional issues also increase. SES Q10 (I am responsible for the ways I have grown as a person) revealed a significant positive relationship with mentoring Q2 (The preceptor is committed to the profession.) and Q29 (The preceptor provided valuable learning experiences while we worked), suggesting that as the students’ belief in personal responsibility for growth increases, the belief that the preceptor is committed to the profession and provides valuable learning experiences also increase. SES Q11 (I can influence the people in my life) revealed a significant positive
relationship with mentoring Q2 (The preceptor is committed to the profession) and Q33 (The preceptor gave me the opportunity to be a teacher as well as a learner), suggesting that as the students’ belief in personal influence over others increases mentoring Q29 and Q33 also increase.

SES Q12 (I am not afraid to make mistakes) revealed a significant positive relationship with mentoring Q20 (The preceptor had empathetic understanding of my concerns.), Q21 (The preceptor presented the opportunity to learn helpful hints of the profession), Q23 (The preceptor introduced me to important people who could help my career), Q30 (The preceptor helped with skill development.), Q31 (The preceptor provided opportunities for me to grow professionally.) and Q32 (The preceptor provided the opportunity for a friendship.) suggesting that as students’ lack of fear of making mistakes increases mentoring Q20, Q21, Q23, Q30, Q31 and Q32 also increase.

SES Q3 (I am a confident person.), Q4 (I am very effective at solving problems.), Q5 (I rely on my inner strength to deal with problems.) and Q8 (I have a high opinion of my abilities.) revealed no significant relationships exist with mentoring Q1-Q33, and no other significant relationships exist between SES Q1, Q2, Q6, Q7, Q9, Q10, Q11 and Q12 mentoring Q1-Q33.

A Pearson correlation efficient was also calculated to determine if a relationship existed between mentoring and self-efficacy. The mean score of the FMS was 3.7 with a SD of 0.46, and the mean score of the SES was 3.17 with a SD of 0.57. Statistical significance was noted at $p < 0.01$ with $r = 0.271$.

Based on the findings, hypothesis 1 is supported in that many of the attributes of mentoring as identified by students were associated with high rankings of self-efficacy.
Only SES Q3, Q4, Q5 and Q8 were not significantly related to any of the mentoring questions. Each of the SES questions not related to mentoring are closely related perceptions of self-worth that may have been present before the mentoring experience began. An area not studied was student attitudes prior to the clinical experience. Previous feelings of self-confidence in personal abilities could be separated from self-confidence in clinical skills learned during the educational experience.

**Hypothesis 2**

Three hundred thirty Spearman Rho correlations were conducted to examine if relationships exist between mentoring questions 1-33 and Confidence Scales (CS) 1 and 2 questions 1-5. CS1 is related to students' perceptions of confidence in performing physical assessment skills in adult and pediatric populations. CS2 is related to students' perceptions of self-confidence in diagnosing illness based on history, presentation and assessment on an adult or child in the clinical setting. The results are presented in Table 9, where CS 1, Q1 (I am certain that my performance is correct.) revealed significant positive relationships with mentoring Q32 (The preceptor provided the opportunity for a friendship), suggesting that student confidence in performance skills increases as the opportunity for developing friendships with the preceptor also increases.

CS2 Q2 (I feel that I perform the task without hesitation) revealed significant positive relationships with mentoring Q29 (The preceptor provided valuable learning experiences while we worked) and Q33 (The preceptor gave me the opportunity to be a teacher as well as a learner.), suggesting that as student task performance without hesitation increases, the perception of valuable learning experiences and opportunities for student teaching also increases. CS 2 Q4 (I feel sure of myself as I perform the task.)
Table 9. Correlation Coefficients between Mentoring Questions and Confidence

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<td>-.11</td>
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<td>-.05</td>
<td>.03</td>
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<td>.03</td>
<td>.15</td>
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Note. * p < .05.
revealed significant positive relationships with mentoring Q22 (The preceptor presented the opportunity to learn how to behave in my new role) and Q29 (The preceptor provided valuable learning experiences while we worked), suggesting that as confidence in task performance increases mentoring role socialization and valuable learning experiences also increase. CS2 Q5 (I feel satisfied with my performance) revealed significant positive relationships with mentoring Q29 (The preceptor provided valuable learning experiences while we worked.) and Q30 (The preceptor helped with skill development.), suggesting that as student performance satisfaction increases mentoring learning experiences and skill development also increases.Q4 and Q5 with mentoring Q1-Q33. Although CS2 is positively related to several CS1 Q2, Q3, Q4, Q5, and CS2 Q1 and Q3 revealed no significant relationships exist with mentoring Q1-Q33 and that no other significant relationships exist for CS1 Q1, CS2 Q2, items on the mentoring scale, CS 1 does not appear to be significantly related to the mentoring scale.

A Pearson $r$ coefficient was calculated to establish further information related to an association between mentoring and student self-confidence. The mean for CS1 was 3.11 with a SD of 0.51, and the mean for CS2 was 2.92 with a SD of 0.49. No statistical significance was noted for either CS1 or CS2. Hypothesis 2 was not supported by the results.

_Hypothesis 3_

One hundred twenty-two Spearman Rho correlations were conducted to examine if relationships exist between CS1 questions 1-5, CS2 questions 1-5 and SES questions 1-12. The results are presented in Table 10, where SES Q1 (Once I know what I need to do,
Table 10. Correlation Coefficients between SES Questions 1-12 and CS1 Questions 1-5 and CS2 Questions 1-5

<table>
<thead>
<tr>
<th>SES</th>
<th>Q1</th>
<th>Q2</th>
<th>CS1 Q3</th>
<th>Q4</th>
<th>Q5</th>
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<th>Q2</th>
<th>CS2 Q3</th>
<th>Q4</th>
<th>Q5</th>
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<td>.41**</td>
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<td>.38**</td>
<td>.35**</td>
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<td>.41**</td>
<td>.44**</td>
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<td>.28**</td>
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<td>.49**</td>
<td>.45**</td>
<td>.36**</td>
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<td>.39**</td>
<td>.39**</td>
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<td>.35**</td>
<td>.44**</td>
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<td>.33**</td>
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<td>.35**</td>
<td>.37**</td>
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<td>.40**</td>
<td>.41**</td>
<td>.25*</td>
<td>.31**</td>
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<td>.28**</td>
<td>.27*</td>
<td>.31**</td>
<td>.36**</td>
</tr>
<tr>
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<td>.42**</td>
<td>.40**</td>
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<td>.51**</td>
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<td>.43**</td>
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<td>.42**</td>
<td>.56**</td>
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<tr>
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<tr>
<td>Q11</td>
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<td>.35**</td>
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<td>.26*</td>
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<td>.25*</td>
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<td>.07</td>
<td>.21*</td>
<td>.33**</td>
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</tbody>
</table>

Note. * p < .05, ** p < .01.

I can do it.), Q2 (In a new situation, I expect I can handle things.), Q3 (I am a confident person.), Q4 (I am very effective at solving problems.), Q7 (I'm proud of myself.), Q8 (I have a high opinion of my abilities.), Q9 (I believe I use my skills to their best advantage.) and Q10 (I am responsible for the ways I have grown as a person.) revealed
significant positive relationships with all elements of both confidence scales, suggesting that as self-efficacy as described in Q1, Q2, Q3, Q4, Q7, Q8, Q9 and Q10 increase, confidence in physical assessment skills as well as diagnostic and treatment skills also increase.

SES Q5 (I rely on my inner strength to deal with problems) revealed significant positive relationships with CS1 Q1, Q2, Q3, and Q5 and CS2 Q1, Q2, Q3, Q4 and Q5; suggesting that as personal reliance of inner strength in dealing with problems increases CS1 Q1, Q2, Q3, and Q5 and CS2 Q1, Q2, Q3, Q4 and Q5 also increase.

SES Q6 (The good things that happen to me are largely my own doing.) revealed significant positive relationships with CS1 Q2 (I feel that I perform the task without hesitation.), Q3 (My performance would convince an observer that I am competent at this task.), and CS2 Q3, suggesting that as self perpetuation increases assessment skill performance and diagnostic reasoning performance also increase including the illusion of competence by the observer. SES Q11 (I can influence the people in my life.) revealed significant positive relationships with CS1 Q2, Q3, Q4, and CS2 Q2, Q3, Q4 and Q5, suggesting that as personal influence increases CS1 Q2, Q3, and Q4, and CS2 Q2, Q3, Q4 and Q5 also increase. SES Q12 (I am not afraid to make mistakes) revealed significant positive relationships with CS1 Q2 (I feel that I perform the task without hesitation.), Q4 (I feel sure of myself as I perform the task.), Q5 (I feel satisfied with my performance.), and CS2 Q1, Q4 and Q5, suggesting that as the lack of fear of making mistakes increases performing physical assessment tasks without hesitation and with self-assurance and satisfaction increases. In addition certainty, surety, and satisfaction of
performance of diagnostic reasoning skills also increase. No other significant relationships exist between SES 1-12, CS1 1-5 and CS2 1-5.

A Pearson correlation co-efficient was calculated to determine an association between self-efficacy and self-confidence. High correlations were noted. The means and SD for the SES, CS1, and CS2 scales have been previously noted. With a \( p < 0.01 \), \( r = 0.493 \) for CS1 and 0.491 for CS2. Hypothesis 3 is strongly supported indicating an positive association between the SES and CS1 as well as between SES and CS2.

Research Question 1a

Thirteen regressions were conducted to assess if time spent with the significant preceptor per week (up to 8 hours vs. more than 8 hours) predicts SES Q1-Q12 and SES

<table>
<thead>
<tr>
<th>SES</th>
<th>F</th>
<th>R^2</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
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<tbody>
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<td>.15</td>
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<td>.04</td>
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<td>.03</td>
<td>0.23</td>
<td>.816</td>
</tr>
<tr>
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<td>2.3</td>
<td>-.24</td>
<td>.16</td>
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<td>.147</td>
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<td>.16</td>
<td>-.11</td>
<td>-1.06</td>
<td>.293</td>
</tr>
<tr>
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<td>0.2</td>
<td>-.06</td>
<td>.16</td>
<td>-.04</td>
<td>-0.41</td>
<td>.686</td>
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<td>.18</td>
<td>-.13</td>
<td>-1.20</td>
<td>.234</td>
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<td>-.17</td>
<td>.16</td>
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<td>.22</td>
<td>.05</td>
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<td>Composite</td>
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<td>1.5</td>
<td>-.12</td>
<td>.11</td>
<td>-.12</td>
<td>-1.17</td>
<td>.246</td>
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composite. Results of the regressions, presented in Table 11, indicate that time spent with preceptor per week does not significantly predict SES Q1-Q12 or SES composite.

*Research Question 1b*

Thirteen multiple regressions were conducted to assess if length of time spent with their preceptor (1-3 months, 3-6 months, 6-9 months and 9 or more months vs. other) predicts SES Q1-Q12 and SES composite. Results of the regressions are presented in Table 12 where no significant F values were revealed on SES Q1 (Once I know what I need to do, I can do it.), Q3 (I am a confident person.), Q4 (I am very effective at solving problems.), Q5 (I rely on my inner strength to deal with problems), Q6 (The good things that happen to me are largely my own doing.) or Q12 (I am not afraid to make mistakes.)

SES Q2 (In a new situation, I expect I can handle things.) revealed a significant F value exists on length of time spent with the preceptor and suggesting that participants who tended to spend 3-6 months with the preceptor, SES Q2 increased by 0.74 units and also participants tended to spend 9 or more months with the preceptor increased by 0.72 units. Overall the length of time spent with the preceptor accounted for 12.3% of SES Q2 variance.

SES Q7 (I'm proud of myself.) revealed a significant F value exists on length of time spent with the preceptor, however, no significant individual predictors were revealed. Overall the length of time students spent with the preceptor accounted for 13.0% of SES Q7 variance.

SES Q8 (I have a high opinion of my abilities.) revealed a significant F value exists on length of time students spent with the preceptor and suggesting that participants who tended to spend 1-3 months with their preceptor, SES Q8 increased by 0.38 units.
Table 12  Multiple Regressions on Length of Time Spent with Significant Preceptor

<table>
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<tr>
<th>SES</th>
<th>F</th>
<th>R²</th>
<th>Sig.</th>
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<th>SE</th>
<th>β</th>
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<tr>
<td>1-3 months</td>
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<td>0.24</td>
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<td>0.49</td>
<td>.628</td>
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</tr>
<tr>
<td>Q6</td>
<td></td>
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<tr>
<td>1-3 months</td>
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<tr>
<td>3-6 months</td>
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<td>0.38</td>
<td>-0.07</td>
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<td>6-9 months</td>
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<td>.167</td>
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<tr>
<td>9 or more months</td>
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<td>Q7</td>
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</tr>
<tr>
<td>1-3 months</td>
<td>-0.21</td>
<td>0.32</td>
<td>-0.16</td>
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<td>0.16</td>
<td>0.76</td>
<td>.452</td>
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</table>
Table 12. Multiple Regressions on Length of Time Spent with Significant Preceptor continued

<table>
<thead>
<tr>
<th>SES</th>
<th>F</th>
<th>R²</th>
<th>Sig</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q8 1-3 months</td>
<td>0.38</td>
<td>0.17</td>
<td>0.25</td>
<td>2.19</td>
<td>.031</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6 months</td>
<td>-0.24</td>
<td>0.25</td>
<td>-0.11</td>
<td>-0.96</td>
<td>.338</td>
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</tr>
<tr>
<td>6-9 months</td>
<td>3.60</td>
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<td>.017</td>
<td>0.43</td>
<td>0.21</td>
<td>0.24</td>
<td>2.08</td>
<td>.041</td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.38</td>
<td>0.17</td>
<td>0.25</td>
<td>2.19</td>
<td>.031</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Q9 1-3 months</td>
<td>0.37</td>
<td>0.28</td>
<td>0.31</td>
<td>1.34</td>
<td>.184</td>
<td></td>
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</tr>
<tr>
<td>3-6 months</td>
<td>0.59</td>
<td>0.27</td>
<td>0.52</td>
<td>2.16</td>
<td>.034</td>
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<tr>
<td>6-9 months</td>
<td>4.13</td>
<td>15.8</td>
<td>.004</td>
<td>-0.10</td>
<td>0.31</td>
<td>-0.06</td>
<td>-0.33</td>
<td>.744</td>
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<td>Q10 1-3 months</td>
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<td>0.31</td>
<td>-0.23</td>
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<td>3-6 months</td>
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<td>-0.04</td>
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<td>6-9 months</td>
<td>4.10</td>
<td>15.7</td>
<td>.004</td>
<td>-0.85</td>
<td>0.34</td>
<td>-0.43</td>
<td>-2.48</td>
<td>.015</td>
</tr>
<tr>
<td>9 or more months</td>
<td>-0.14</td>
<td>0.32</td>
<td>-0.09</td>
<td>-0.43</td>
<td>.666</td>
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<tr>
<td>Q11 1-3 months</td>
<td>0.19</td>
<td>0.32</td>
<td>0.14</td>
<td>0.60</td>
<td>.550</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3-6 months</td>
<td>0.19</td>
<td>0.32</td>
<td>0.15</td>
<td>0.60</td>
<td>.551</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6-9 months</td>
<td>3.29</td>
<td>13.0</td>
<td>.015</td>
<td>-0.55</td>
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<td>-0.27</td>
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<td>0.33</td>
<td>0.09</td>
<td>0.42</td>
<td>.679</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Q12 1-3 months</td>
<td>0.56</td>
<td>0.46</td>
<td>0.29</td>
<td>1.22</td>
<td>.225</td>
<td></td>
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</tr>
<tr>
<td>3-6 months</td>
<td>0.63</td>
<td>0.45</td>
<td>0.35</td>
<td>1.41</td>
<td>.163</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-9 months</td>
<td>1.85</td>
<td>7.8</td>
<td>.127</td>
<td>-0.05</td>
<td>0.50</td>
<td>-0.02</td>
<td>-0.10</td>
<td>.921</td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.69</td>
<td>0.47</td>
<td>0.32</td>
<td>1.48</td>
<td>.143</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite 1-3 months</td>
<td>0.14</td>
<td>0.21</td>
<td>0.15</td>
<td>0.65</td>
<td>.517</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6 months</td>
<td>0.38</td>
<td>0.20</td>
<td>0.45</td>
<td>1.88</td>
<td>.063</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-9 months</td>
<td>4.85</td>
<td>18.4</td>
<td>.001</td>
<td>-0.13</td>
<td>0.23</td>
<td>-0.10</td>
<td>-0.59</td>
<td>.560</td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.37</td>
<td>0.21</td>
<td>0.35</td>
<td>1.72</td>
<td>.090</td>
<td></td>
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</tr>
</tbody>
</table>

For participants that tended to spend 3-6 months with the preceptor, SES Q8 increased by 0.41 units and also participants tended to spend 9 or more months with the preceptor, SES
Q8 increased by 0.38. Overall the length of time spent with the preceptor accounted for 10.8% SES of Q8 variance. SES Q9 (I believe I use my skills to their best advantage.) revealed a significant F value exists on length of time spent with the preceptor and suggesting that participants who tended to spend 3-6 months with the preceptor, SES Q9 increased by 0.59 units. Overall the length of time spent with the preceptor accounted for 15.8% of SES Q9 variance.

SES Q10 (I am responsible for the ways I have grown as a person.) revealed a significant F value exists on length of time spent with the preceptor and suggesting that as participants tended not to spend 6-9 months with the preceptor, SES Q10 increased by 0.85 units. Overall the length of time spent with the preceptor accounted for 15.7% of SES Q10 variance.

SES Q11 (I can influence the people in my life.) revealed a significant F value exists on length of time spent with the preceptor however no significant individual predictors were revealed. Overall the length of time spent with the preceptor accounted for 13.0% of SES Q11 variance.

SES composite revealed a significant F value exists on length of time spent with the preceptor, however, no significant individual predictors were revealed. Overall the length of time spent with the preceptor accounted for 18.4% of SES composite variance.

The level of significance was not reported in the statistical analysis for Table 12 or subsequent tables presenting an F value. According to Jekel, Katz and Elmore (2001), the alpha level for the F value is difficult to calculate. However, if the F ratio is close to 1.0, the two estimates of variance are similar, and the null hypothesis is not rejected. If the ratio is larger than 1.0, the null hypothesis of no difference is rejected.
Research Question 2a

Eleven regressions were conducted to assess if time with spent a significant preceptor per week (up to 8 hours vs. more than 8 hours) predicts CS Q1-Q10 and CS composite. Results of the regressions are presented in Table 13. The results indicate that time spent with the preceptor per week does not significantly predict CS Q1-Q12 or CS composite.

Table 13. Eleven Regressions on Time Spent per Week with Significant Preceptor Predicting CS Q1-Q10 and CS Composite

<table>
<thead>
<tr>
<th>CS</th>
<th>F</th>
<th>R²</th>
<th>B</th>
<th>SE</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>0.94</td>
<td>1.1</td>
<td>-0.14</td>
<td>0.14</td>
<td>-0.10</td>
<td>-0.97</td>
<td>.764</td>
</tr>
<tr>
<td>Q2</td>
<td>0.09</td>
<td>0.1</td>
<td>0.04</td>
<td>0.14</td>
<td>0.03</td>
<td>0.30</td>
<td>.767</td>
</tr>
<tr>
<td>Q3</td>
<td>0.33</td>
<td>0.4</td>
<td>0.09</td>
<td>0.15</td>
<td>0.07</td>
<td>0.57</td>
<td>.569</td>
</tr>
<tr>
<td>Q4</td>
<td>0.21</td>
<td>0.2</td>
<td>0.07</td>
<td>0.16</td>
<td>0.05</td>
<td>0.46</td>
<td>.650</td>
</tr>
<tr>
<td>Q5</td>
<td>0.42</td>
<td>0.5</td>
<td>0.10</td>
<td>0.15</td>
<td>0.07</td>
<td>0.65</td>
<td>.517</td>
</tr>
<tr>
<td>Q6</td>
<td>2.72</td>
<td>2.9</td>
<td>-0.20</td>
<td>0.12</td>
<td>-0.17</td>
<td>-1.65</td>
<td>.102</td>
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<tr>
<td>Q7</td>
<td>1.30</td>
<td>1.4</td>
<td>-0.16</td>
<td>0.14</td>
<td>-0.12</td>
<td>-1.14</td>
<td>.257</td>
</tr>
<tr>
<td>Q8</td>
<td>0.41</td>
<td>0.5</td>
<td>-0.09</td>
<td>0.15</td>
<td>-0.07</td>
<td>-0.64</td>
<td>.525</td>
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<tr>
<td>Q9</td>
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<td>0.5</td>
<td>-0.10</td>
<td>0.15</td>
<td>-0.07</td>
<td>-0.66</td>
<td>.509</td>
</tr>
<tr>
<td>Q10</td>
<td>0.00</td>
<td>0.0</td>
<td>-0.01</td>
<td>0.16</td>
<td>0.00</td>
<td>-0.04</td>
<td>.970</td>
</tr>
<tr>
<td>Composite</td>
<td>0.03</td>
<td>0.0</td>
<td>-0.02</td>
<td>0.11</td>
<td>-0.02</td>
<td>-0.18</td>
<td>.859</td>
</tr>
</tbody>
</table>

Research Question 2b

Eleven multiple regressions were conducted to assess if length of time spent with the preceptor (1-3 months, 3-6 months, 6-9 months and 9 or more months vs. other) predicts CS Q1-Q12 and CS composite. Results of the regressions are presented in Table 14 where no significant F values were revealed on CS Q1, Q3, Q4, Q5, Q6 or Q12.
CS1 Q2 (I feel that I perform the task without hesitation.) revealed a significant F value exists on length of time spent with the preceptor, however no significant individual predictors were revealed. Overall the length of time spent with the preceptor accounted for 12.3% of CS Q2 variance.

CS2 Q2 (I feel that I perform the task without hesitation.) revealed a significant F value exists on length of time spent with the preceptor suggesting that participants that tended to spend 3-6 months with the preceptor, CS2 Q2 increased by 0.56 units and also participants tended to spend 9 or more months with the preceptor, CS2 Q2 increased by 0.67 units. Overall the length of time spent with the preceptor accounted for 13.0% of CS 2 Q2 variance.

CS2 Q3 (My performance would convince an observer that I am competent at this task.) revealed a significant F value exists on length of time spent with the preceptor suggesting that participants that tended to spend 3-6 months with the preceptor, CS2 Q3 increased by 0.88 units and also participants tended to spend 9 or more months with their preceptor, CS Q8 increased by 0.74 units. Overall the length of time spent with the preceptor accounted for 10.8% of CS2 Q3 variance.

CS2 Q4 (I feel sure of myself as I perform the task.) revealed a significant F value exists on length of time spent with the preceptor suggesting that participants that tended to spend 3-6 months with the preceptor, CS2 Q4 increased by 0.35 units and also participants tended to spend 9 or more months with the preceptor, CS2 Q4 increased by 0.37 units. Overall the length of time spent with the preceptor accounted for 15.8% of CS2 Q4 variance.
Table 14. Eleven Multiple Regression on Length of Time Spent with Significant Preceptor Predicting CS Q1-Q10 and CS Composite

CS 1: How do you feel about a skill which best describes how you perceive your current ability to perform a physical assessment on an adult or child in the clinical setting.

<table>
<thead>
<tr>
<th>Q1</th>
<th>I am certain my performance is correct.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 months</td>
</tr>
<tr>
<td></td>
<td>3-6 months</td>
</tr>
<tr>
<td></td>
<td>6-9 months</td>
</tr>
<tr>
<td></td>
<td>9 or more months</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q2</th>
<th>I feel that I perform the task without hesitation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 months</td>
</tr>
<tr>
<td></td>
<td>3-6 months</td>
</tr>
<tr>
<td></td>
<td>6-9 months</td>
</tr>
<tr>
<td></td>
<td>9 or more months</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q3</th>
<th>My performance would convince an observer that I am competent at this task.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 months</td>
</tr>
<tr>
<td></td>
<td>3-6 months</td>
</tr>
<tr>
<td></td>
<td>6-9 months</td>
</tr>
<tr>
<td></td>
<td>9 or more months</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q4</th>
<th>I feel sure of myself as I perform the task.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 months</td>
</tr>
<tr>
<td></td>
<td>3-6 months</td>
</tr>
<tr>
<td></td>
<td>6-9 months</td>
</tr>
<tr>
<td></td>
<td>9 or more months</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q5</th>
<th>I feel satisfied with my performance.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 months</td>
</tr>
<tr>
<td></td>
<td>3-6 months</td>
</tr>
<tr>
<td></td>
<td>6-9 months</td>
</tr>
<tr>
<td></td>
<td>9 or more months</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CS 2: How do you feel about a skill which best describes how you perceive your current ability to diagnose illness based on history, presentation and assessment on an adult or child in the clinical setting.

<table>
<thead>
<tr>
<th>CS2</th>
<th>F</th>
<th>$R^2$</th>
<th>Sig</th>
<th>B</th>
<th>SE</th>
<th>$\beta$</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. I am certain my performance is correct.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 months</td>
<td>0.39</td>
<td>0.25</td>
<td>0.37</td>
<td>1.58</td>
<td>.117</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6 months</td>
<td>0.53</td>
<td>0.24</td>
<td>0.54</td>
<td>2.18</td>
<td>.032</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-9 months</td>
<td>1.66</td>
<td>7.0</td>
<td>.167</td>
<td>0.20</td>
<td>0.27</td>
<td>0.13</td>
<td>0.74</td>
<td>.463</td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.61</td>
<td>0.25</td>
<td>0.51</td>
<td>2.41</td>
<td>.018</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2. I feel that I perform the task without hesitation.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 months</td>
<td>0.32</td>
<td>0.28</td>
<td>0.26</td>
<td>1.13</td>
<td>.263</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6 months</td>
<td>0.56</td>
<td>0.28</td>
<td>0.49</td>
<td>2.03</td>
<td>.046</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-9 months</td>
<td>3.30</td>
<td>13.0</td>
<td>.014</td>
<td>0.00</td>
<td>0.31</td>
<td>0.00</td>
<td>0.00</td>
<td>1.000</td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.67</td>
<td>0.29</td>
<td>0.48</td>
<td>2.31</td>
<td>.023</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3. My performance would convince an observer that I am competent at this task.</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 months</td>
<td>0.54</td>
<td>0.29</td>
<td>0.43</td>
<td>1.83</td>
<td>.071</td>
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<tr>
<td>3-6 months</td>
<td>0.88</td>
<td>0.29</td>
<td>0.75</td>
<td>3.04</td>
<td>.003</td>
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<tr>
<td>6-9 months</td>
<td>3.60</td>
<td>10.8</td>
<td>.017</td>
<td>0.61</td>
<td>0.33</td>
<td>0.32</td>
<td>1.85</td>
<td>.068</td>
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<tr>
<td>9 or more months</td>
<td>0.74</td>
<td>0.31</td>
<td>0.50</td>
<td>2.41</td>
<td>.018</td>
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</tr>
<tr>
<td>Q4. I feel sure of myself as I perform the task.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>1-3 months</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-6 months</td>
<td>4.13</td>
<td>15.8</td>
<td>.004</td>
<td>0.35</td>
<td>0.14</td>
<td>0.29</td>
<td>2.54</td>
<td>.013</td>
</tr>
<tr>
<td>6-9 months</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.37</td>
<td>0.16</td>
<td>0.26</td>
<td>2.27</td>
<td>.026</td>
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<tr>
<td>Q5. I feel satisfied with my performance.</td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>1-3 months</td>
<td>0.32</td>
<td>0.31</td>
<td>0.24</td>
<td>1.03</td>
<td>.306</td>
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<tr>
<td>3-6 months</td>
<td>0.56</td>
<td>0.30</td>
<td>0.45</td>
<td>1.86</td>
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<td>6-9 months</td>
<td>4.10</td>
<td>15.7</td>
<td>.004</td>
<td>-0.10</td>
<td>0.34</td>
<td>-0.05</td>
<td>-0.30</td>
<td>.768</td>
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<tr>
<td>9 or more months</td>
<td>0.56</td>
<td>0.32</td>
<td>0.37</td>
<td>1.76</td>
<td>.082</td>
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</tr>
<tr>
<td>CS Composite</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 months</td>
<td>0.46</td>
<td>0.22</td>
<td>0.49</td>
<td>2.12</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3-6 months</td>
<td>0.70</td>
<td>0.22</td>
<td>0.77</td>
<td>3.26</td>
<td>.002</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-9 months</td>
<td>4.64</td>
<td>18.1</td>
<td>.002</td>
<td>0.37</td>
<td>0.24</td>
<td>0.25</td>
<td>1.51</td>
<td>.136</td>
</tr>
<tr>
<td>9 or more months</td>
<td>0.74</td>
<td>0.23</td>
<td>0.67</td>
<td>3.30</td>
<td>.001</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
CS2 Q5 (I feel satisfied with my performance.) revealed a significant F value exists on length of time spent with the preceptor however no significant individual predictors were revealed. Overall the length of time spent with the preceptor accounted for 15.7% of CS2 Q5 variance.

CS composite revealed a significant F value exists on length of time spent with their preceptor suggesting that participants that tended to spend 1-3 months with their preceptor, CS composite increased by 0.46 units. For participants that tended to spend 3-6 months with their preceptor, CS composite increased by 0.70 units and participants that tended to spend 9 or more months with their preceptor, CS composite increased by 0.74 units. Overall the length of time spent with their preceptor accounted for 18.1% of CS composite variance.

**Research Question 3**

Descriptive statistics were conducted to explore which best describes students' perceptions about the most significant preceptor (mentoring Q1-Q33). The results are presented in Table 15 and aggregated mentoring questions revealed that 21 (0.07%) of participants answered rarely, 77 (2.5%) answered sometimes, 322 (10.5%) answered frequently and 2639 (86.3%) answered consistently. Eighty-nine (95.7%) participants answered yes to describing the preceptor as a mentor and 4 (4.3%) no. Ninety-one (97.8%) participants answered yes to that the preceptor helped build self-confidence and 2 (2.2%) no. Eighty (87.0%) participants answered yes to feeling prepared to begin practice as a nurse practitioner after graduation and 12 (13.0%) no.
Table 15. Frequencies and Percents for Mentoring Questions 1-33

<table>
<thead>
<tr>
<th>Mentoring Questions</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Consistently</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Q1</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1.1</td>
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<tr>
<td>Q2</td>
<td>--</td>
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<td>--</td>
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<tr>
<td>Q3</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1.1</td>
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<tr>
<td>Q4</td>
<td>--</td>
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<tr>
<td>Q5</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Q6</td>
<td>--</td>
<td>--</td>
<td>1</td>
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</tr>
<tr>
<td>Q7</td>
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<tr>
<td>Q9</td>
<td>--</td>
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<td>2.2</td>
</tr>
<tr>
<td>Q10</td>
<td>--</td>
<td>--</td>
<td>3</td>
<td>3.2</td>
</tr>
<tr>
<td>Q11</td>
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<tr>
<td>Q12</td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>2.2</td>
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<tr>
<td>Q13</td>
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<td>--</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Q14</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Q15</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Q16</td>
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<td>Q17</td>
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<tr>
<td>Q18</td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Q19</td>
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<td>1.1</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Q20</td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Q21</td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>2.2</td>
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<tr>
<td>Q22</td>
<td>--</td>
<td>--</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Q23</td>
<td>6</td>
<td>6.6</td>
<td>14</td>
<td>15.4</td>
</tr>
<tr>
<td>Q24</td>
<td>3</td>
<td>3.2</td>
<td>9</td>
<td>9.7</td>
</tr>
<tr>
<td>Q25</td>
<td>3</td>
<td>3.2</td>
<td>7</td>
<td>7.5</td>
</tr>
<tr>
<td>Q26</td>
<td>1</td>
<td>1.1</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Q27</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Q28</td>
<td>1</td>
<td>1.1</td>
<td>4</td>
<td>4.3</td>
</tr>
<tr>
<td>Q29</td>
<td>1</td>
<td>1.1</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Q30</td>
<td>--</td>
<td>--</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Q31</td>
<td>--</td>
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<td>3</td>
<td>3.2</td>
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<tr>
<td>Q32</td>
<td>2</td>
<td>2.2</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Q33</td>
<td>3</td>
<td>3.4</td>
<td>6</td>
<td>6.7</td>
</tr>
</tbody>
</table>
Examination of the Descriptive Findings

The students were asked to describe the qualities of a good mentor. All but eight students gave at least one descriptor, but most students gave multiple descriptors. As common themes emerged, the descriptors were divided into categories of personal characteristics, professional characteristics and attitude toward students.

The most common personal characteristics were caring or nurturing and patience (18.82% each). Other frequently noted personal characteristics included honesty, calmness or gentleness, kindness, and confidence (7.1%); enthusiasm, energy, intelligence and compassion (4.7%); ethical, not afraid to ask questions, open and thoughtful (2.35%); and flexible, good sense of humor, good value system, humble, reliable and responsible (1.18%).

One student stated, “My mentor believes in teaching. She mentors many people besides her NP students. She is experienced, smart, caring, encouraging, energetic, not afraid to ask questions herself, not intimidating and has a value system second to none.” Another student described a mentor as one who is “patient, kind, points out mistakes with an edge toward educating, not criticizing.”

Another definition offered was “patience, understanding, good communication, willing to find you good learning experiences and honest in evaluation.” Another student described a mentor as “has good communication skills and willingness to teach, gives positive and negative feedback, willingness to point out strengths and weaknesses, give input for improvement, encourage independence and is able to give alternative methods in a professional and respectable way.”
The highest ranking professional characteristics included being knowledgeable and a skilled, competent provider (16.47% and 14.12% respectively). Other characteristics included: being professional (7.1%); dedicated or committed (4.7%), respected professionally (3.53%). Other terms included being consistent in practice, experienced, respectful to patients, and inclusion of the patient in treatment planning. One student described her preceptor as one who “comes along side and helps with both the clinical skills and knowledge as well as helping with navigating the systems, helping to build professional bridges, and being there to talk and share concerns with.” Another student stated,

My preceptor is an excellent teacher and role model. He takes time to talk with patients and really cares about his patients’ well being. He knows what medications his patients can afford and places them on medications he thinks will treat their problems and keep them compliant. He knows some medications may work better, but if the patient is not able to pay for them, why prescribe them. He is kind and treats all of his patients with the utmost respect.

Students were most descriptive about preceptor attitudes toward the student with constructive feedback as the most common response (22.35%). One student responded, “A mentor pushes you to learn, gives constructive criticism and is able to point out mistakes in a positive way.” Other comments included being willing to share knowledge and experience without hesitation (18.82%), good teacher/educator (17.65%), encouraging (16.47%, good listener (15.29%, and supportive (12.94%). Less frequently cited characteristics included: not intimidating or overbearing and good communicator (9.41%); allows student freedom and encourages student independence (7.06%);
Table 16 continued

<table>
<thead>
<tr>
<th>Attitude Toward Students</th>
<th>Helps student build on her own abilities, helps student navigate the system, available to student, empathetic, generous with time</th>
<th>Inspiring, not critical, provides comfortable environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructive feedback (+/-)</td>
<td></td>
<td>Quizzes student</td>
</tr>
<tr>
<td>Willing to share knowledge and experience without hesitation</td>
<td></td>
<td>Wants student to succeed</td>
</tr>
<tr>
<td>Good teacher/educator</td>
<td></td>
<td>Attentive to student, honest evaluation, creates learning experiences out of mistakes, follows through on commitments</td>
</tr>
<tr>
<td>Encouraging</td>
<td></td>
<td>Does not assume student knows skills</td>
</tr>
<tr>
<td>Good listener</td>
<td></td>
<td>Motivator, good resource</td>
</tr>
<tr>
<td>Supportive</td>
<td></td>
<td>Gives input for improvement, gives tips/learning tools, gives rationale for decisions</td>
</tr>
<tr>
<td>Not intimidating/overbearing, good communicator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allows student freedom, encourages independence, challenges student</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respects/trusts students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding, provides learning opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demands a high standard, good role model, guides student, interested in student, pushes student to excel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The second open-ended question asked students if the preceptor helped build self-confidence. Ninety-one students (97.85%) answered yes, while 2 students (2.15%) answered no. The most commonly reported answer was encouragement of student independence or autonomy (42.17%) followed by constructive feedback (22.9%), trust in student clinical decision making (10.84%), open praise of student performance (10.84%) and reassurance regarding role transition and ability to perform (9.64%). Other cited descriptors include: concurred with student diagnosis and treatment plan (6.02%), available for support and (4.82%); demonstrated proper techniques (3.61%).

Students made comments such as “She kept putting me in with patients, even when I was unsure of what I was doing” and “He frequently let me know that I came up with the same diagnosis and care plan that he would have. He also gave me positive feedback on my written evaluations throughout the semester.” Another student commented,

She was always encouraging me to take the plunge at a task without being like nurse Ratchet. She knows I want to do this work, and she is there with me as I blunder through dictations, helping me correct my mistakes (thank God for the reverse mode). We laugh a lot and she lets me know that mistakes are normal and I will get better. She is also exposing me to new situations like hospital rounding. She is my cheerleader, and at the same time is honest about things that I need to work on as well as qualities that I have that are assets.

Another student stated,

Although I am not confident in my abilities, she constantly reassures me that I am both capable and competent in practice. She has observed my lack of self-confidence and
encourages me often, both by her own observation and when communicating with other practitioners I am working with.

Many students indicated that preceptors who were not overbearing or intimidating helped to increase levels of confidence. One student stated,

She informed me on a continual basis of both my strengths and weaknesses as a student NP. B. was protective, honest, hard core, and down to earth. I never felt threatened by her knowledge and expertise in this field of emergency medicine. I learned every day from my clinical experience with her.

Students were asked if they believed they are ready to begin practice as a NP following graduation. Eighty-six students (92.47%) answered yes, while 6 students (7.53%) answered no (N=93). Students were then asked to describe both strengths and weaknesses for beginning work as an NP. Eight students did not give a response regarding strengths, and ten students did not give a response regarding weaknesses. Other citations of descriptors are displayed in Table 17.

As in previous questions, the descriptors were divided into separate categories of personality and professional characteristics. The most commonly listed personality characteristic was a good listener (14.12%). Other characteristics included: good learning skills and likeable person (5.88%); strong work ethic (3.53%); caring personality and compassion (2.35%). One student’s response was,

I listen well and find it easy to develop a good working relationship with patients. I am willing to take the time to learn. I am not afraid to ask questions, and I remind myself that this is entry level and no one probably feels really prepared.
Table 17. How did your preceptor help you build self-confidence?

- Encouraged student autonomy
- Positive/constructive feedback
- Trusted student with assessment, diagnosing, interpretations and treatment
- Praised student openly
- Provided reassurance to student re: role transition, abilities
- Concurred with diagnosis and treatment plan when accurate
- Demonstrated proper technique when necessary, acknowledged student skills/successes, made student feel like part of the team/profession/critical/judgmental
- Provided learning experiences
- Encouraged excellence, accountability and integrity, honest in evaluation of student abilities, informed student of strengths and weaknesses,
- Encouraged questions, allowed student to think through the issue to improve practice, allowed student to work at her own pace, created learning opportunities out of mistakes, discussed areas needing improvement
- Accepted student, faith in student’s abilities, helped student correct mistakes, held student accountable,

Another student cited, “being a hard worker and having a willingness to learn” as her most significant strengths. These and other descriptors are included in Table 18.

The highest ranking professional characteristic was good assessment skills (27.06%),
previous nursing experience (16.47%), and self-confidence (15.29%). A good knowledge base and being resourceful at finding answers to questions (12.94%) were equal in ranking. Additional descriptors include: knowing when to ask questions or for help (11.76%), understanding that learning is lifelong (10.59%), good communication skills (8.24%), not being afraid to ask questions (7.06%), good health history taking skills and good clinical experiences (5.88). One student stated,

>The biggest strength that I have is knowing that I don’t have to know everything, that there are resources available and knowing when to use them. I am not afraid to ask for help or get someone else’s opinion. I think my best asset is that I know my boundaries.

Other students cited similar strengths such as “I am a hard worker and willing to learn. I am confident in my RN skills and hope that will encourage my NP skills.” Another stated, “I know when to ask questions and when I need to get more help.” Additional descriptors of strengths are included in Table 18.

Student reports of weaknesses were just as diverse. Ten students did not answer the question (N=83). The highest ranking answers were: lack of confidence in abilities to work as an NP (19.28%), lack of knowledge in pharmacology which included decisions regarding treatment medications (18.07%), and lack of experience in the NP role (16.87%). Less frequently reported characteristics included: lack of knowledge regarding procedures such as suturing, joint injections, etc. (7.23%), lack of knowledge regarding diagnostic skills (6.02%), and fear of making a mistake (4.82). One student stated, “I am moving from an expert position in Critical Care bedside nursing to a novice again in the NP world.” Another
<table>
<thead>
<tr>
<th>Personality characteristics</th>
<th>Professional characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Good listener</td>
<td>• Empathetic</td>
</tr>
<tr>
<td>• Good learning skills</td>
<td>• Easy to talk to, likes to help people, motivated, positive attitude, mature, takes responsibility seriously,</td>
</tr>
<tr>
<td>• Personable/likable person</td>
<td>• Enjoys learning, enthusiastic,</td>
</tr>
<tr>
<td>• Caring personality, compassionate</td>
<td>• Honest, kind, independent, intelligent</td>
</tr>
<tr>
<td>• Strong work ethic/works hard</td>
<td>• Unassuming attitude</td>
</tr>
<tr>
<td>• Organization</td>
<td>• Good critical thinking skills</td>
</tr>
<tr>
<td>• Patience</td>
<td>• Networking, good people skills</td>
</tr>
<tr>
<td>• Recognize limitations and weaknesses</td>
<td>• Belief in the education process, good educator</td>
</tr>
<tr>
<td></td>
<td>• Ability to stay calm in tense situations</td>
</tr>
<tr>
<td></td>
<td>• Good clinical skills, diagnostic skills, clinical judgment, team player</td>
</tr>
<tr>
<td></td>
<td>• Can recognize when I don't know the answer</td>
</tr>
<tr>
<td></td>
<td>Belief in ability to make role transition</td>
</tr>
</tbody>
</table>
student admitted fear related to “lack of experience and confidence as an NP, moving from the role of RN to an Advanced Practice Nurse, getting in my own way by becoming overwhelmed/anxious and going into freeze mode.” One student stated,

I cannot remember all I need to remember. Sometimes it feels as if my knowledge is like alphabet soup in my brain, like a big jumble. I have problems accessing what I know that I have learned and should know at this point.”

Additional weaknesses are noted in Table 19.

Summary of Findings

Students have diverse thoughts and opinions regarding what a mentor actually is and how a mentor conducts the clinical experience. The majority of students (96.7%) described the most significant preceptor as a mentor. Likewise, 97.85% of the students believed the preceptor helped build self-confidence. Most students (92.47%) felt prepared to begin practice as an NP following graduation.

None of the comments made by students were negative. This is probably a result of the wording of the open-ended questions. A better indicator of students’ true beliefs and perceptions might be elicited by questions allowing negative as well as positive feedback. In addition, students were asked to choose the most significant preceptor of their clinical experiences on which to report. While this instruction could indicate the most significantly bad preceptor as well as the most significantly good, students chose to report on good experiences rather than bad. An important component of reliable findings is that students have the opportunity to report both the good and the bad. This is recognized as a limitation of the study.
Table 19. Weaknesses that might inhibit NP practice

- Lack of confidence in abilities as an NP
- Lack of knowledge re: pharmacology
- Lack of experience in NP role
- Lack of knowledge re: procedures
- Lack of knowledge re: diagnostic skills
- Fear of making a mistake, lack of knowledge (unspecified), moving from a field in which I am expert to a field in which I am a novice, spending too much time with patients/too slow, weak physical assessment skills
- Fear of not remembering all I have learned, fear of unknown situations, fear of failing, lack of knowledge re: dermatology, poor educational preparation, licensure/collaboration, pathophysiology
- Autonomy, belief that I should know everything, biases against chronic pain patients, difficulty in making decisions, fear of becoming overwhelmed/anxious, fear of new career, fear of not being recognized as an equal professionally, fear what I do not know/what I have yet to learn,
- Inability to confront people
- Lack of: exposure to more abnormals, coding, geriatrics, internal medicine, orthopedic assessment, pediatrics, prior nursing experience, knowledge re: role expectations, theoretical foundations, treatment options, women’s health
CHAPTER V
Discussion of Results and Recommendations

Introduction

Graduate nursing education is a combination of didactic and clinical instruction. Clinical instruction is achieved primarily by pairing a student with a preceptor. The preceptor is a physician, physician assistant or a certified nurse practitioner. Regardless of the educational preparation of the preceptor, a minimum of one year of clinical experience is required. The student/preceptor relationship may be initiated by the nursing faculty or by the student.

The importance of clinical instruction cannot be over emphasized in the professional development of the nurse practitioner. During this period of intense clinical instruction, students learn the process of applying the principles of diagnostic reasoning in a real world setting. Socialization into the role of the nurse practitioner is an important component of the clinical education and may be impacted by the relationship established between the student and the preceptor.

Unfortunately, not all student clinical experiences are equal. Attitudes of both student and preceptor will define and shape the relationship that develops throughout the clinical rotation. Multiple factors may have an impact on the resulting experience and relationship. The student’s perception of the quality of the clinical experience may significantly impact the outcome of the experience including the student’s sense of self-efficacy and confidence in practice skills as well as socialization into the role.
This study focused on the student's perception of self-efficacy and confidence based on whether a mentoring relationship was established with at least one preceptor during the clinical experience. The study is a modified replication of a study conducted by Hayes in 1997.

Mentoring has been discussed in the literature without coming to a consensus of one single definition. The most commonly accepted definition of a mentor is:

- a voluntary, committed, dynamic, extended, intense and supportive relationship characterized by trust, friendship and mutuality between an experienced, respected person, such as an NP preceptor, and an NP student for the purpose of socializing the student and promoting student self-efficacy in taking on the advanced practice role. (Hayes, 2001, p. 111)

While all preceptors accept the role of teaching, not all preceptors develop a mentoring relationship with students. How a mentoring relationship develops has yet to be determined. The study evaluates the perception of self-efficacy and confidence of students enrolled in the final clinical semester of an NP program and the students' perception of whether a mentoring relationship was developed with a significant preceptor at any point throughout the program.

The assumption has been made that a close working relationship or mentoring experience may enhance student learning. As the student develops respect for the preceptor, and the preceptor treats the student with respect, anxiety is lessened, and the student is better able to process the information being shared. If the student then spends an extended length of time with the preceptor and feels encouraged by the preceptor, fear
of the unknown and initiative to take chances in voicing opinions regarding interpretation
diagnostic findings and treatment options could be heightened.

*Findings of the Study*

Hypothesis 1, Nurse Practitioner students' mentoring scores will be positively
related to self-efficacy scores, is supported in that many of the attributes of mentoring as
identified by students were associated with high rankings of self-efficacy. Only four of
the questions presented in the Self-Efficacy Scale were not significantly related to any of
the mentoring questions. Bandura (1977) recognized vicarious experiences as a means to
self-efficacy. Individuals who observe others performing a threatening activity without
adverse consequences are more likely to fell capable of performing the activity. Students
who perceive a preceptor to be positive may develop a sense of self-efficacy based on
perceptions of preceptor efficacy. Verbal persuasion is a second strong inducement to
self-efficacy. People who have a strong perception of self-efficacy are more likely to
persist in the behavior until success is achieved (Bandura, 1982).

Hypothesis 2, Nurse Practitioner students' mentoring scores will be positively
related to confidence scores, was not supported by the findings. Confidence in the skill
of performing physical assessment was not at all related to any of the items of mentoring.
However, confidence in diagnostic reasoning skills was positively related to several items
on the mentoring scale. This might indicate that students are already highly skilled in
physical assessment based on years of experience as a registered nurse (RN). The more
advanced skill of diagnostic reasoning, however, is a skill that was more recently learned
during the clinical courses and, thus, possibly more significantly related to preceptor
mentoring. Self-satisfaction and positive inducement for further pursuits are the result of attainments that match or surpass personal standards (Bandura, 1983b).

Multiple significant findings supported hypothesis 3, the self-Efficacy Scale was positively correlated to the Confidence Scale. Most of the significance was at the $p < .01$ level. Confidence in both physical assessment skills and diagnostic reasoning skills increased as self-efficacy increased.

Length of time spent with a preceptor per week did not significantly predict self-efficacy. However, length of time spent with a preceptor in terms of months was more predictive of self-efficacy. Students who were with a single preceptor for 9 months or more expressed greater self-efficacy than those who were with a preceptor for shorter periods of time. Likewise, students who worked with a preceptor for longer periods of time reported higher levels of self-confidence.

Students' perceptions of mentoring relationships varied. When asked if students would describe the significant preceptor as a mentor, 95.7% of students answered yes while 2.2% answered no. Descriptive answers divided into categories of personal characteristics, professional characteristics and attitude toward students. Benor and Leviyof (1997) emphasized the importance of clinical instruction to shaping the professional identity of new practitioners.

Ninety-seven percent of participants believe the preceptor helped build self-confidence while 2.2% did not. Encouragement of independence and autonomy as well as constructive feedback was the most frequently cited answers for this question. Latham and Fahey (2006) recognized lack of confidence and hesitation as a detriment to role
transition. Increased responsibility and accountability for patients’ health were additional deterrents to role socialization. Students who perceive themselves as actually working in the role of an NP during clinical rotations were more likely to develop skills and transition into the professional role more easily.

When participants were asked if they believed they were ready to begin professional practice as a nurse practitioner, 87% stated yes. Thirteen percent answered no. Personal strengths were divided into categories of personality and professional characteristics. Jenkins, Shaivone, Budd, Waltz, and Griffith (2006) noted that self-efficacy affects decisions on whether to perform behaviors, how much effort to expend on behaviors and how long to maintain the effort. Based on this thought, self-efficacy at the time of program termination is an essential component to the graduate’s success in practice.

Weaknesses were most commonly cited as lack of confidence and knowledge. According to the literature, lack of confidence, if significant enough, may limit the individual to attempt only simple tasks rather than more difficult tasks (Bandura, 1077). If individuals are successful in simple tasks, however, more difficult tasks may be attempted. By the same token, if a student is unsuccessful in an initial attempt, the student may flounder and refuse to work through the difficulties. Beres (2002) discussed the inhibitions students have in even using a trial and error approach. This, too, could have a negative impact on the process of socialization into the role of the NP for the new graduate.
While SNPs already have a base of medical knowledge gleaned from nursing experience, a vast amount of information is encountered during the NP program. As a nurse, the student was responsible for following orders written by the physician. The nurse was responsible for a basic knowledge of medications and side effects and could refuse to follow orders that might seem inappropriate; however, most nurses follow the orders explicitly. In the role of the NP, the nurse will no longer follow orders but is responsible for writing the orders that others will carry out. A deeper knowledge of anatomy, physiology, assessment and pharmacology are required for the NP. The neophyte NP often fears the consequences of making a mistake in writing orders. A common cause of that fear is a lack of knowledge about making decisions as important as diagnostic interpretation and treatment modalities. According to the study findings, student precepted by a mentor for a minimum of 3 months has less fear of making mistakes which could be founded on a more secure belief in knowledge acquired during the NP program and clinical experience.

Significance in time worked with a mentor was a finding not recognized in previous literature. The finding is important to NP programs as student clinical experiences are created based on criteria developed by program administrators. Directors of NP programs must evaluate the current criteria for clinical experiences to determine if adequate instruction and time has been provided to direct students to the most productive clinical rotation possible. Further research to validate the findings must also be pursued to fully equip directors, students and preceptors in defining the basic criteria for maximal clinical experiences.
Comparison to Original Study

Demographic variables were compared between the original study and the replication. The replicated study population was younger than that of the original participants. Whereas the original study was comprised of 16% 25-30 year olds, the replication population was 32.26% in the same age category. However, 23% of the original population was > 45 while 25.81% of the replication population was in the same age group. Very minor differences in percentages were noted in years of clinical experience as RNs prior to the studies.

More students in the replication study were precepted by physicians (34.41%) than in the original study (16%). Educational preparation was similar between the studies with 60% master’s prepared preceptors in the replication study and 73% in the original study. Although the percent was still comparatively low (4.3%:2%), more than twice as many doctorally-prepared preceptors were counted in the current study. The increase in doctorally-prepared preceptors could be due to the higher percentage of physicians utilized as preceptors. Preceptor clinical experience was nearly identical between the studies.

Directly opposite findings were noted in the initiation of the relationship between the studies. Fifty-eight percent of students were assigned to a preceptor in the original study while 50.5% of students in the replication study chosen their own preceptor. Mentoring scores of NP students who chose a preceptor known to them from previous experiences were higher than those of students who were assigned to preceptors by faculty, but this variable was not significant in the final analysis of either study.
Differences in type of clinical setting, while not significant to any findings were noted between studies. While 16% of the students completed clinicals in an HMO setting, no students utilized an HMO in the replication. Sixteen percent of the students were in a hospital setting in the current study while the hospital setting is not even an option in the original study. However, 15% of students in the original study selected "other" as the clinical setting which may or may not have been in a hospital setting.

Hayes (1997) original study found NP students to be highly mentored (mean mentoring score = 4.3 based on a Likert Scale of 5) and highly self-efficacious (mean self-efficacy score = 4.15 based on a Likert Scale of 5). A positive correlation between mentoring and self-efficacy was confirmed. Furthermore, the most predictive correlations were length of time in the practicum coupled with NP preceptors experience in precepting. Age, gender, NP preceptor education, student years of experience prior to the graduate program, clinical setting and preceptor discipline were not significant indicators of mentoring.

Hayes (1997) posited the study confirmed mentoring as:

a substantial investment by a competent, confident nurse practitioner preceptor teacher concerned with the NP student’s learning. The investment includes spending time, energy and resources in meeting the student’s learning needs, being willing to provide opportunity, having a capacity to trust and to be confident in the NP student’s abilities, providing humanistic feedback, being open to friendship and to sharing knowledge and self, and modeling empathic patient care that validates patient concerns including negotiating a plan of care. The NP
students felt safe in such a learning environment, and they developed self-efficacy in patient care. The NP students in the study believed that mentoring was essential to their self-efficacy in patient care as they took on the NP role. (p. 101)

Likewise, Hayes’ study demonstrated that NP students who did not believe mentoring had occurred during the clinical experience reported lower scores for self-efficacy. Students described non-mentoring preceptors as critical and characterized the experience with terms such as “fear, dread and disappointment” (p. 102).

In the replicated study, students likewise had perceptions of feeling highly mentored (mean 3.817 on a Likert Scale of 4) as well as highly self-efficacious (mean 3.235 on a Likert Scale of 4). Higher levels of self-efficacy were noted by students who perceived preceptors as “good teachers” who “willingly shared knowledge and experience” with the student. Mentoring preceptors were also more likely to “provide valuable learning experiences” during the clinical rotation and “provided the student with opportunities to teach as well as to learn.” Students also enjoyed a collegial relationship with the mentoring preceptor.

The single most predictable variable in the replication study was length of time spent with the preceptor. Students who worked with a preceptor for 6-9 months reported higher scores in self-confidence than students who worked with a preceptor for shorter periods of time. No other variables demonstrated significance to confidence levels.

A difference between the studies that was not specifically addressed in the study was educational delivery methods. All of the programs studied by Hayes were onsite programs. The majority of programs in the current study were online or hybrid programs
with a combination of online and onsite instruction. Graduate students are especially inclined to prefer online instruction as the flexibility and convenience often meet social and family needs (LaPointe & Reisetter, 2008). The preference for online instruction has caused a proliferation of online programs in recent years.

While the purpose of the current study is not to evaluate the efficacy of online learning, differences in delivery methods could have an impact on the findings of the study. Of particular significance is the return rate for the current study. Because the original investigator had access to the classroom setting, the survey was delivered personally and completed while the investigator was still in the classroom. While students had opportunity to declines participation, declination was less likely. The online delivery format of the current study created an opportunity for students to ignore the request for completion that was not afforded the original participants. In addition, the investigator did not have physical access to the students or email access for personal instruction delivery. The investigator has no knowledge of how persistent program directors or facilitators were in encouraging students to complete the survey.

**Limitations**

The current study findings can only be extrapolated to similar populations. Differences in program delivery as well as geographic locations may limit the findings of the study. A comparison of students across a larger geographic area would broaden the validity of the study.

As noted previously, the survey prompted students to discuss only good experiences in clinical learning. A better indicator of how a good or bad preceptor
performs would be to encourage negative comments as well as positive. The addition of questions regarding students’ worst preceptors would elicit information that is lost to this study.

Neither the current study nor the original study addressed the process of becoming a mentor. Perhaps if educators could better analyze the process, students would be more likely to become engaged with a mentor. Current research does not separate student attitudes and motivations from those of the preceptor. Logic would indicate that student attitude might have some bearing on the development of a mentoring relationship. A study including input from preceptors as well as students might bridge the gaps in the mentoring literature.

Recommendations

Further research regarding how a mentoring relationship develops would help to broaden the understanding of mentoring. A more longitudinal approach that begins with the students’ clinical experiences and follows through the successive clinical courses might paint a different picture. Inclusion of tools to elicit negative feedback regarding preceptor performance as well as positive feedback would provide additional information. Incorporation of input from preceptors and educators in addition to input from students might also clarify the concept of mentoring.

The findings of the current study describe the benefit of mentoring preceptors to SNPs. Program directors may apply the findings to the clinical experiences included in NP programs. Because students perceive greater self-efficacy when the clinical experience occurred with a mentoring preceptor for longer periods of time, students
should be encouraged to find a primary preceptor for a minimum of 3 months. While
time with specialty preceptors can be invaluable to students, better learning and higher
expectations of self-efficacy and self-confidence are achieved with lengthier
relationships.

The findings of the study can also be applied to the development of Doctorate of
Nursing Practice recommended by national NP organizations. Because more credit hours
are required for the doctorate, a better opportunity for implementing more clinical hours
with longer clinical experiences is available.

Summary

The clinical experience is a crucial segment of the educational preparation of
nurse practitioner students. Mentoring by clinical preceptors is associated with increased
self-efficacy of students completing the final clinical course of the program. Mentoring
is not as closely related to self-confidence in basic skills such as performing physical
assessment but is associated with self-confidence in performing a higher level skill such
as diagnostic reasoning. Self-efficacy and self-confidence are significantly associated
characteristics. Confidence in both physical assessment skills and diagnostic reasoning
increased as self-efficacy increased.

Extended student/preceptor relationships are associated with increased self-
efficacy and self-confidence. Students coupled with a preceptor for a minimum of 3
months reported high levels of self-efficacy than students working with preceptors for
shorter lengths of time.
Students do not always feel prepared for practice at the time of graduation. Benner (1984) recognized common perceptions of graduating nurses in the early months of clinical practice. Lack of confidence and knowledge were cited as the most common weakness of students nearing graduation. A positive mentoring relationship with preceptors is one method of enhancing self-efficacy and self-confidence in the neophyte nurse practitioner.
References


United States Department of Health and Human Services (2000). Division of Nursing, Bureau of Health Professions, Health Resources and Services Administration.

Appendix A

Approvals

Ball State University IRB exemption

Indiana Wesleyan University IRB exemption

Indiana University letter of consent

Letter of consent from original study author

Participant Information
Institutional Review Board

TO: Terry Neal
   Educational Studies

FROM: Institutional Review Board
      Leonard Kaminsky, Chair
      Melanie L. Morris, Coordinator of Research Compliance

DATE: April 19, 2005

RE: Human Subjects Protocol – IRB # 06-333

TITLE: Mentoring, Self-Efficacy and Nurse Practitioner Students: A Replication

The Institutional Review Board reviewed your protocol on April 18, 2005 and has determined the procedures you have proposed qualify as "exempt." Projects determined to be exempt on or after March 3, 2005 are no longer required to be actively monitored by the IRB. As such, there will be no further review of your protocol, and you are cleared to proceed with the procedures outlined in your protocol. As an exempt study, there is no requirement for continuing review. Your protocol will remain on file with Academic Research and Sponsored Programs as a matter of record.

Editorial notes: Please submit a copy of all revised documents for your file. This will not delay the beginning of your study.

1. Your study was determined to be exempt under the second exemption category, as you propose to conduct surveys and interviews with adults either in an anonymous fashion or on a topic that will not reveal sensitive information about the participants that could place the participants at risk. As your study has been determined to be exempt, you may revise the informed consent document into an introductory letter to your participants to inform them of the nature of the study. An introductory letter should contain all relevant information from an informed consent document but without the signature block for the participant. Therefore, you are not required to retain signed informed consent documents from each participant unless you choose to do so.

2. Please list your faculty advisor for this study as Key Personnel on page 2 of the application form and include a description of his/her responsibilities with regard to this study.

3. On page 2 of the application form, please complete the "Description of subject population" section.

4. Please clarify what survey service (inQsail, SurveyMonkey, etc.) will be used to conduct the study online for the university(ies) that have online programs.

5. As you have indicated you will conduct the survey during normal class time (for most programs), please ensure that an alternate activity is available for those who do not wish to participate (i.e., students may work on other activities if not participating) or give the survey at the end of a (possibly truncated) class so that those students who do not wish to participate are not required to remain in the classroom. Also, please ensure that the instructors for the courses will not know which of their students have chosen to participate, in order to reduce the possibility that students may feel undue pressure to participate.
6. Please consult with the department chair, IRB, or research compliance office at the non-BSU institutions to
determine if this study should be reviewed by their IRB and for additional information regarding their IRB
review process. Please keep the IRB at BSU apprised of any actions and communications regarding your
study that involve these institutions’ IRBs. Remember that, if IRB review of this study is required by these
institutions, you are not authorized to conduct any study-related activities (including recruitment) at their
institutions until approval or exemption has been granted by their IRB. Once you have received any
necessary approvals or exemptions from these institutions, you may begin your study. Please submit a copy
of any approval or exemption letters from these institutions for your file once you have received them, if
review was required.

7. In Section IV of the narrative, you state that anonymity will be provided for all participants. However,
participants will not be anonymous if they provide contact information to participate in the interview.

8. Please clarify if the interviews will be recorded (audio or video). If so, please address in Section V of the
narrative and inform potential participants what will happen with the recordings in terms of transcription,
secure storage, and ultimate disposition or retention.

9. In the letter to Graduate Program Directors, please include a contact information for the Principal Investigator
and the faculty advisor for this study.

10. In the introductory letter, please inform potential participants that they may be invited to participate in an
interview. Please disclose to participants the anticipated time commitment for participation in this study.
Please also include contact information for the faculty advisor for this study. Please include a statement to
the effect of “For questions about your rights as a research subject, please contact Melanie L. Morris,
Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State
University, Muncie, IN 47306, (765) 285-5070, irb@bsu.edu.”

While your project does not require continuing review, it is the responsibility of the P.I. (and, if applicable, faculty
supervisor) to inform the IRB if the procedures presented in this protocol are to be modified or if problems related to
human research participants arise in connection with this project. Any procedural modifications must be evaluated
by the IRB before being implemented, as some modifications may change the review status of this project.
Please contact Melanie L. Morris in Academic Research and Sponsored Programs (mmorris@bsu.edu; 765-285-5070)
if you are unsure whether your proposed modification requires review. Proposed modifications should be addressed in
writing to the IRB at Academic Research and Sponsored Programs (2100 W. Riverside Avenue). Please reference
the above identification number (IRB #) in any communication to the IRB regarding this project.

Reminder: Even though your study is exempt from the relevant federal regulations of the Common Rule (45 CFR 46,
subpart A), you and your research team are not exempt from ethical research practices and should therefore employ
all protections for your participants and their data which are appropriate to your project.

pc: Joseph Armstrong, Educational Studies
INDIANA WESLEYAN UNIVERSITY
HUMAN SUBJECTS REVIEW

DIVISION CHAIR RESPONSE

A Modified Replication

Title of Research Topic

Terry Neal

Investigator

I have reviewed your research proposal and have determined that:

Check One:

XX 1. Your proposal is exempt.

2. Your proposal is not exempt and must be forwarded to the Chair of the University Human Subjects Review Board.

The reason your proposal is not exempt is:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

________________________________________________________________________

James O. Fulk
IRB Chair Signature/Department Chair Signature

1/29/08
Date
February 25, 2008

Terry Neal, MS, APRN-BC, FNP  
Primary Care Coordinator  
Indiana Wesleyan University  
1900 W. 50th Street  
Marion, Indiana 46953

RE: IRB Approval

To Whom It May Concern:

Please consider this letter as confirmation that the research conducted by Terry Neal which has been approved as Exempt research by Ball State University does not require further approval by the IUPUI/Clarian IRB based upon the description provided regarding the activity that will occur at this site. The IRB has been notified regarding the work that will be conducted at this site and requires no further action at this time.

Sincerely,

Anita Camic, BSPh, CIP  
Research Compliance Coordinator—Team Leader  
Research Compliance Administration, IUPUI  
Union Building, Room 631  
620 Union Drive; Indianapolis, IN 46202
Terry Neal, MS, APRN, BC, FNP  
Primary Care Coordinator  
Indiana Wesleyan University  
Graduate Nursing Education  
1900 W 50th Street  
Marion, Indiana  

January 28, 2008  

Dear Terry,  

Please feel free to use the instruments from my study on mentoring and nurse practitioner self-efficacy. I am eager to hear the results of your work. I suggest using one instrument for measuring mentoring, my survey derived from the Freeman mentoring checklist. I think the other scale derived from the Caine mentoring instrument was conceptually complicated, and both instruments were essentially measuring the same things. The Freeman derivative is easier to use and interpret, I think, and may be less burdensome on the research participant. It may be a more reliable instrument as well.  

Hope this is helpful, and best wishes on completing your dissertation.  

Warm wishes,  

Eileen Hayes, PhD, APRN, BC, FAANP  
Associate Professor  
Coordinator, FNP Concentration  
School of Nursing  
University of MA, Amherst
**Participant Information**

You are being asked to participate in a research study being carried out by Terry Neal, EdD (c), APRN-BC, FNP as part of her dissertation in the School of Adult and Community Education at Ball State University in Muncie, Indiana. Participation is voluntary, and refusal to participate will not be held against you in any way. The purpose of the research is to increase knowledge about Nurse Practitioner (NP) preceptor/student relationships. Participation involves filling out a questionnaire dealing with background information about you and your preceptor, how you perceive your relationship with your preceptor, and how you perceive your abilities at the present time.

You will not be identifiable by name or in any other way in the dissertation or related reports. The results of the study will be used in the dissertation and, at some point, may be published in a nursing journal. The results will be made available to you upon request. There are no foreseeable risks in participation in the study, and direct benefits are not proposed. You have the right to withdraw from the study at any time before submitting the questionnaire without loss of any benefits and services to which you might otherwise be entitled. If you have any questions, you can contact the investigator via email at terry.neal@indwes.edu.

For questions about your rights as a research subject, please contact Melanie L. Morris, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765)285-5070, irb@bsu.edu.

The survey may be found online at http://www.surveymonkey.com/survey/take/?sid=67416. Please complete the survey before May 15, 2008 for inclusion in the study.

Terry Neal, EdD (c), APRN-BC, FNP
Phone: 765-677-2173
Email: terry.neal@indwes.edu
Doctoral Student in Adult and Community Education
Ball State University
Muncie, Indiana
Appendix B

Sample Forms

University Contact Form

Program Director Letter
University Contact Form

Name of university: ____________________________________________

Director: ___________________________________________________

Email: _______________________________________________________

Phone: _______________________________________________________

Type of Program:  FNP  ANP  GNP  WHNP  PNP  other

Program is:  online only  onsite only  combination online/onsite

IRB approval from your university required:  yes  no

# of students in final clinical course: ____________________________

Permission to contact faculty to arrange access to students:  Yes  No

Faculty name: _______________________________________________

Contact info: ________________________________________________

Faculty name: _______________________________________________

Contact info: ________________________________________________

Faculty name: _______________________________________________

Contact info: ________________________________________________

Faculty name: _______________________________________________

Contact info: ________________________________________________
Graduate Program Director Letter

January 10, 2008

Dear Graduate Program Director,

I am beginning work on my doctoral dissertation at Ball State University. My study, "Mentoring, Self-Efficacy and Nurse Practitioner Students: A Modified Replication," will examine the relationships developed between students and preceptors and the effects of that relationship on graduate NP self-efficacy and confidence. The study is a modified replication of a study done in 1997 which indicated an important link between preceptors who "mentor" students and self-efficacy and confidence.

I will plan to distribute a survey to nurse practitioner students who are in their final clinical course. I will visit the classroom, with the faculty's permission, while students complete the survey. My goal is to include all universities in the state of Indiana that offer a nurse practitioner program. I am seeking permission to include your program in my study. I anticipate that it will take 20-30 minutes to complete the questionnaire. If your program is offered online, I would like to email the questionnaire to students.

I plan to begin data collection in Spring 2008. I am asking for your support in helping me reach faculty in your program who might be willing to have me visit their classes briefly for data collection. I would like for all graduating students to have the opportunity to complete the questionnaire. Please advise me if IRB approval for collecting data in your institution will be required. The project has been exempted for IRB approval at Ball State University.

I look forward to hearing from you, and I hope that faculty will be as excited about the potential implications of this research as I am. I may be contacted at terry.neal@indywes.edu with any questions regarding the study. My faculty advisor is Dr. Joseph Armstrong who may be contacted at jarmstrong@bsu.edu.

Sincerely,

Terry Neal, EdD (c), APRN-BC, FNP
Doctoral Candidate
Ball State University
Muncie, Indiana
Appendix C

Instrument
Mentoring, Self-Efficacy and Nurse Practitioner Students: A Modified Replication

You are being asked to participate in a research study being carried out by Terry Neal, EdD (c), APRN-BC, FNP as part of her dissertation in the School of Adult and Community Education at Ball State University in Muncie, Indiana. Participation is voluntary, and refusal to participate will not be held against you in any way. The purpose of the research is to increase knowledge about Nurse Practitioner preceptor/student relationships. Participation involves filling out a questionnaire dealing with background information about you and your preceptor, how you perceive your relationship with your preceptor, and how you perceive your abilities at the present time. You will not be identifiable by name or in any other way in the dissertation or related reports. The results of the study will be used in the dissertation and, at some point, may be published in a nursing journal. The results will be made available to you upon request. There are no foreseeable risks in participation in the study, and direct benefits are not proposed. You have the right to withdraw from the study at any time before submitting the questionnaire without loss of any benefits and services to which you might otherwise be entitled. If you have any questions, you can contact the investigator via email at terry.neal@indwes.edu. For questions about your rights as a research subject, please contact Melanie L. Morris, Coordinator of Research Compliance, Office of Academic Research and Sponsored Programs, Ball State University, Muncie, IN 47306, (765) 285-5070, irb@bsu.edu. Terry Neal, EdD (c), APRN-BC, FNP Phone: (765) 662-3171 Email: terry.neal@indwes.edu Doctoral Candidate in Adult and Community Education Ball State University Muncie, Indiana 47306

In the field below, please type your e-mail address
- preferably the one used in the request that you may have received to participate in this survey:

E-mail Address: __________________________

This is an anonymous survey. This survey's creator will not be able to tell which responses are associated with your e-mail address.

Survey Share will not use e-mail addresses collected when you respond to a survey in any way, other than in the administration of that survey. Your e-mail address will not be shared or sold to others. It will not be used for any Marketing purposes, and you will not receive any e-mail from Survey Share, Inc.
The questionnaire is designed to elicit perceptions related to relationships with your clinical preceptors while you have been a nurse practitioner student. It will take about 30 minutes to complete the survey.

1) Age prior to entering the nurse practitioner program
   - 25-30
   - 31-35
   - 36-40
   - 41-45
   - >45 years of age

2) Years of experience as an RN:
   - 1-5
   - 6-10
   - 11-15
   - 16-20
   - >20 years

3) How many preceptors have you had throughout the NP program?
   - 1-3
   - 4-6
   - 7-10
   - 11-15
   - >15

4) What type of nurse practitioner program are you enrolled in?
   - Family Nurse Practitioner
   - Adult Nurse Practitioner
   - Geriatric Nurse Practitioner
   - Neonatal Nurse Practitioner
Pediatric Nurse Practitioner
Women's Health Nurse Practitioner
Acute Care Nurse Practitioner

Other: 

5) What school do you attend?
- Ball State University
- Indiana Wesleyan University
- Indiana University
- Purdue University at Calumet
- University of Indianapolis
- University of Southern Indiana
- University of St. Francis
- Valparaiso University

In your career transition to advanced practice, please think about the clinical preceptor who has been most significant to you in your transition.

6) How did you begin your relationship with this person?
- This person was assigned to work with me.
- I chose to enter the relationship and sought out this person.
- This person asked me to work with him or her.
- The relationship happened by chance.
- I knew this person from a previous work or personal relationship.

7) This person is:
- my current preceptor.
- my former preceptor.

8) What (is) was your frequency of contact with this person at the time he or she (is) was your preceptor?
- weekly, but less than 8 hours per week
- eight hours per week
- more than 8 hours per week
9) What is the frequency of contact with this person now?
- never
- occasionally
- frequently

10) What (is) was the length of time involved in the preceptor relationship with this person?
- less than one month
- one to three months
- three to six months
- six to nine months
- nine months or more

11) The preceptor is a:
- nurse practitioner
- physician
- physician assistant

12) What is this preceptor's highest level of education?
- Baccalaureate Degree in Nursing
- Master Degree
- Doctorate
- Physician

13) Preceptor's years of clinical experience, approximately:
- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- > 20 years

14) Preceptor's years of experience as a preceptor, approximately:
- Less than 1 year
- 1-5 years
15) Preceptor's gender:
- Male
- Female

16) Preceptor's primary worksite:
- Ambulatory care
- Hospital setting
- Clinic
- Private office
- HMO

Please choose the response which best describes your perceptions about your most significant preceptor.

17) The preceptor:

<table>
<thead>
<tr>
<th></th>
<th>rarely</th>
<th>sometimes</th>
<th>frequently</th>
<th>consistently</th>
</tr>
</thead>
<tbody>
<tr>
<td>is respected in the organization</td>
<td></td>
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<tr>
<td>where he or she works.</td>
<td></td>
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<tr>
<td>is committed to the profession.</td>
<td></td>
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<tr>
<td>is competent, confident, caring in</td>
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<tr>
<td>patient relationships.</td>
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<tr>
<td>taught me well.</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>shared knowledge and experience</td>
<td></td>
<td></td>
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<tr>
<td>with me willingly.</td>
<td></td>
<td></td>
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<tr>
<td>modeled the professional role</td>
<td></td>
<td></td>
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<tr>
<td>effectively.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>followed through on commitments</td>
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<td></td>
<td></td>
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<tr>
<td>to me.</td>
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<td></td>
<td></td>
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<tr>
<td>cared about my progress.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>counseled me in my professional</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>development.</td>
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</tbody>
</table>
was willing to assist me in my career growth.

was willing to share professional attitudes and values.

valued me as a colleague.

trusted me.

respected me.

believed in my potential.

encouraged me.

inspired me.

challenged me.

protected me, even when I made mistakes.

had empathetic understanding of my concerns.

presented the opportunity to learn helpful hints of the

presented the opportunity to learn how to behave in my new role.

introduced me to important people who could help my career.

guided me through organizational politics.

helped with career direction and career decision making.

supported me in my career growth.

helped me increase my belief and confidence in my ability to function as an NP.

presented the opportunity for counseling on professional issues.

provided valuable learning experiences while we worked.
helped with skill development.

provided opportunities for me to grow professionally.

provided the opportunity for a friendship.

gave me the opportunity to be a teacher as well as a learner.

18) The next part of the questionnaire is about how you feel about your abilities in general. Please choose the response that best describes you.

rarely  sometimes  frequently  consistently

Once I know what I need to do, I can do it.

In a new situation, I expect I can handle things.

I am a confident person.

I am very effective at solving problems.

I rely on my inner strength to deal with problems.

The good things that happen to me are largely my own doing.

I'm proud of myself.

I have a high opinion of my abilities.

I believe I use my skills to their best advantage.

I am responsible for the ways I have grown as a person.

I can influence the people in my life.

I am not afraid to make mistakes.

19) This part of the questionnaire is about the way you feel about a skill
utilized in advanced practice. Please choose the response which best describes how you perceive your current ability to perform a physical assessment on an adult or child in the clinical setting.

<table>
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<th>frequently</th>
<th>consistently</th>
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<tr>
<td>I am certain that my performance is correct.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel that I perform the task without hesitation.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My performance would convince an observer that I am competent at this task.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel sure of myself as I perform the task.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I feel satisfied with my performance.</td>
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</table>

20) The final part of the questionnaire is about the way you feel about a skill utilized in advanced practice. Please choose the response which best describes how you perceive your current ability to diagnose illness based on history, presentation and assessment on an adult or child in the clinical setting.

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21) Would you describe your most significant preceptor as a mentor?
- Yes
- No
22) Describe the qualities of a good mentor.

23) Did your preceptor help you build your self-confidence?
   - Yes
   - No

24) How did your preceptor help you build self-confidence?

25) Do you believe you are prepared to begin practice as a nurse practitioner after graduation?
   - Yes
   - No

26) What strengths do you believe you have to practice as an NP?

27) What weaknesses do you believe may inhibit your practice as a nurse practitioner?