PREDICTING ACADEMIC SUCCESS IN A GRADUATE NURSING PROGRAM:

A PILOT STUDY

A Thesis

Presented to the faculty of the School of Nursing

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AUTHOR: Toni Ann Locke

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JoAnn Daugherty, Ph.D., RN, CNL
THESIS COMMITTEE CHAIR   SIGNATURE   3/26/14
                                                                  DATE

Nancy Coffin-Romig , DNSc., PMHCSN-BC
THESIS COMMITTEE MEMBER   SIGNATURE   3/26/14
                                                                  DATE

Patricia Hinchberger, Ed.D., GCNS, RN
THESIS COMMITTEE MEMBER   SIGNATURE   3/26/14
                                                                  DATE

Student: Toni Ann Locke

I certify that this student has met the School of Nursing format requirements, and that this thesis is suitable for shelving in the Library and credit is to be awarded for the thesis.

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California State University San Marcos

Abstract

of

Predicting Academic Success in a Graduate Nursing Program:

A Pilot Study
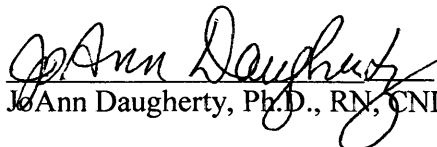
by

Toni Ann Locke

Statement of Problem
The rising demand for advanced practice nurses has created a demand in graduate nursing programs with limited capacities. Cognitive variables such as GPA, GRE, and nursing experience have been explored as predictors of academic success. Intuition, a non-cognitive variable, also plays an important part of the nursing process (McEwan & Goldenberg 1999). There are no prior studies that examined intuition and/or years of clinical experience predicting academic success in graduate nursing school that have been published.

Sources of Data
Data were collected using a convenience sample of all nursing students currently enrolled in a Master's in Nursing Program at California State University, San Marcos. Students completed an online survey that included demographic data and The Smith (2007) 18-Item Intuition Instrument.

Conclusions Reached
In this pilot study with an alpha level .20, the independent variables, high intuition score (p=.185) and years of experience as a RN (p=.031) were statistically significant predictors of the dependent variable, cumulative GPA.

, Committee Chair
JoAnn Daugherty, Ph.D., RN, CNL

3/26/14
Date

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CHAPTER ONE: INTRODUCTION

Intuition is an integral component in nursing. It is an observable, direct perception that when cultivated benefits nursing and mankind. The use of intuition in nursing in regards to its usefulness in guiding clinical decisions has long been debated. "Nursing has historically devalued intuitive ways of knowing in an attempt to align itself with the power and status accorded traditional scientific epistemology" (Christy, 1969; Reverby, 1987 as cited by Leners, 1992, p. 137). This may be due in part to a lack of acknowledgement that intuition is a valid phenomenon for scientific investigation due to its lack of clarity regarding the concept's definition and importance (Rew, 1988). "Instead, it has been viewed as the basis for irrational acts or guessing, as unfounded knowledge, or even as supernatural inspiration" (Benner & Tanner, 1987, p. 23). Proponents assert that experts' intuition is not a magical sixth sense, but a sophisticated form of reasoning (Pretula & Simon, 1996 as cited by Effken, 2000, p. 246).

There is mounting evidence that intuition is a valuable component of the nursing process and when nurse's act on their intuition the result is that, the patient benefits in some way (McCutcheon & Pincombe, 2001; Rew, 1988). This study was designed to determine if intuition and/or years of experience as a practicing registered nurse predicts academic success in a Masters of Nursing program as measured by cumulative grade point average (CGPA).

This research study was based upon the theoretical framework of Benner's *From Novice to Expert* (1982) which is based upon the Dreyfus Model of Skill Acquisition (1980). The Dreyfus Model of Skill Acquisition (1980) is based upon five levels of proficiency. According to this theory, it is only when the nurse reaches the fifth level that one becomes intuitive. This theorem will be discussed more thoroughly in Chapter 2.

Background and Significance

"The rising demand for nurses with graduate degrees to fill expanding roles within a changing health care system has created a high demand for admission into graduate nursing programs with limited capacities" (Brown, 2011, p.1). Therefore, it is important that universities admit students who have the academic capabilities necessary to complete the program requirements. "The importance of being able to predict success in nursing education has implications for students and educators, as well as for nursing programs, the nursing profession, and health care practice" (McEwan & Goldenberg, 1999, p. 420).

> Identifying qualified students who are most likely to be successful in their graduate nursing studies is the goal of the admission process. Student attrition and provision of remedial learning opportunities to students who are struggling academically have been and continue to be costly to universities, not only financially but also relative to time and human resources (Ainslie et al., 1976; Utzamn, Riddle, & Jewell, 2007 as quoted by Brown, 2011, p. 2).

Available studies that explored factors necessary or important to academic success in a master's of nursing program looked at cognitive variables such as undergraduate grade point average, Graduate Examination Record, and clinical nursing experience (Gieske 1995, McEwan & Goldenberg 1999, Tripp & Duffey 1981). Intuition, a non-cognitive variable, also plays an important part of the nursing process and academic performance (McEwan & Goldenberg, 1999).

There is an abundance of research that has explored intuition in the experienced, novice and student nurses as well as research that explored predictors of success in graduate nursing students. (Benner, 1982; Benner & Tanner, 1987; Brown, 2011; Effken, 2000; Eyres & Ersek 1992; Gieske, 1995; Green, 2012; Leners, 1992; Lyneham & Denholm, 2008; McCutcheon & Pincombe, 2001; McEwan & Goldenberg, 1999; Rew, 1986, 1987, 1988; Rew & Barrow, 2007; Ruth-Sahd & Hendy, 2004; Tripp & Duffey, 1981). However, there are no studies examining intuition and years of clinical experience as a registered nurse (RN) as predictors of academic success in graduate nursing school as measured by CGPA. Thus, a gap in the literature was identified.

The Problem

Intuition has been recognized as natural, mental, human faculty, a key aspect in discovery, a problem-solving and decision-making process, a source of creative ideas, and a source of true knowledge (Goldberg, 1983). Intuition is a non-cognitive process and is an innate personality trait. However, "Studies on non-cognitive variables in predicting academic success are limited, regardless of the recognized influence of

personality traits on academic performance" (Adams 1990, Chacko & Huba 1991, Farley 1972, Horner 1972 as quoted by McEwan & Goldenberg, 1999, p. 420).

Predictors of success in a Masters of Nursing (MSN) program typically include baccalaureate grade point average (BGPA) and Graduate Record Examination (GRE) as the gold standard (Gieske 1995, McEwan & Goldenberg 1999, Tripp & Duffey 1981). At this writing, there are no studies that investigate intuition and/or years of experience as a practicing RN predicting success in a Masters of Nursing program.

Purpose of the Research

The purpose of the study was to determine if intuition and/or years of experience as a practicing RN would predict academic success (measured as CGPA) in students enrolled in a master's of nursing program at a local university.

Research Question

The research questions for this study were as follows: 1: "Are years of experience and/or intuition correlated with CGPA and 2: How much of the variability in success (CGPA) in a graduate nursing program is predicted by years of experience and/or intuition"?

Research Variables

The dependent variable in this study was the students' CGPA as reported by the university's Office of the Registrar's. The independent variables were intuition and years of experience as a practicing registered nurse.

CHAPTER TWO: LITERATURE REVIEW

Introduction

The databases reviewed for this literature review included CINAHL, PubMed and Google Scholar. One hundred and thirty-two (132) article abstracts were reviewed for inclusion. From that list, forty-three (43) were selected for further review, and twenty-two (22) were included in this thesis. Literature search terms included intuition, undergraduate nursing student, Bachelors of Nursing student, second-degreed nursing student, Masters of Nursing student, graduate nursing student, experienced nurse, ways of knowing, predictors of success in nursing graduate school, predictors of success in advanced practitioner school, admission selection criteria, education, academic success, APN, nurse anesthetist graduate program, and predictors of success masters of nursing program. The search was limited to English, peer-reviewed articles published after 1980, theses, and dissertations after 2010. Due to a lack of recent literature, all literature dating back to the 1980s was reviewed. Nurse anesthesia programs are nursing programs at the master's level and therefore are also included in this literature review.

Intuition in Nursing

In 1986, Rew published *Intuition: Concept Analysis of a Group Phenomenon* that sought to clarify the concept of intuition through the identification of defining attributes, antecedents and consequences, case studies and empirical referents utilizing Walker & Avant's (2011) analytical process. According to Rew (1986), "Intuition should be considered a respectable cognitive skill characteristic of the science of nursing" (p. 27).

Rew & Barrow (2007) published a systematic review of 45 research articles published between 1981 and 2006 to determine the state of intuition in nursing. The inclusion criteria were research reports about nurses and nursing; published in a nursing journal; published in English and contained "intuition in the title and/or abstract. The review encompassed qualitative descriptive (*n*=16), grounded theory (*n*=8), phenomenological (*n*=8), ethnographic (*n*=4), methodological (*n*=2), Delphi (*n*=2) and correlational studies (*n*=2). A little over half of the studies provided a variety of definitions of intuition, cited defining attributes published by Rew (1986) or provided a description of intuitive grasp. Almost half of the studies did not define intuition or define the concept of intuition. The majority of the studies included in this systematic review were qualitative in design utilizing small convenience samples. The studies focused on the use of intuition in a variety of clinical settings, how nurses defined intuition and how intuition guides clinical decisions. According to Rew & Barrow (2007), "Overall, our analysis shows that studies of intuition in nursing have remained primarily at a descriptive, exploratory level for more than 20 years" (p. E24).

In 2012, Green published, *Nursing Intuition: A Valid Form of Knowledge*. This paper integrated philosophic underpinnings and neurophysiology to argue that nursing intuition is a valid form of knowledge. A description of important terms as they relate to the concept of intuition are provided as well as a brief history of intuition in nursing to included Benner's (1982) account of intuition as a hallmark characteristic of the experienced nurse countered with English's (1993) argument that intuition is subjective therefore it cannot be scientifically explained. Green (2012) postulates that intuition is

composed of characteristics comprised of embodied knowledge; sensory perceptions; conceptual knowledge and the intention of achieving the best outcomes for patients and is therefore a scientifically sound form of knowledge.

Leners (1992) ethnographic study (*n*=40) of mostly females nurses in a 350 bed hospital that sought to answer (a) How is intuition a way for you to know things about clients? (b) Describe an experience where you used intuition in caring for a client? (c) Where would I most likely learn about intuition in everyday nursing care practice? (d) What kinds of rewards or frustration have you experienced as a result of using intuition in your practice? (Leners 1992). Three domains or themes of nursing intuition emerged after data analysis. The domains are as follows: Domain 1: The process of nursing intuition, Domain 2: Mediators of nursing intuition and Domain 3: The significance of intuition in nursing. This study demonstrated that the use of intuition in nursing practice was more apparent in experienced nurses than in novice nurses. The conclusion of which supports Benner's (1982) *From Novice to Expert* theory and validates the importance of intuition in nursing as well as a key variable in determining success in a graduate nursing program.

In 1982, Patricia Benner, a grand theorist, published her seminal work, *From Novice to Expert* in which she theorized that intuition is acquired based upon skills acquisition in the experienced nurse. Her work was based upon the Dreyfus Model of Skill Acquisition (1980). The Dreyfus model is comprised of five levels: novice, advanced beginner, competent, proficient and expert. Benner (1982) theorized that as the nurse moves through the five levels he or she becomes intuitive based upon the

recognition of learned patterns in patient presentation. Benner (1982) postulated that the

acquisition of intuition is a hallmark characteristic of the experienced nurse that is seen in

only in the fifth stage of the Dreyfus Model of Skill Acquisition (1980).

In 2000, Effken published a study that discussed the dispute surrounding intuition

as an 'art' or 'science' and examined the perceptions and assumptions of intuition in

nursing. Effken,(2000) states that, "Proponents assert that expert's intuition is not a

magical sixth sense, but a sophisticated form of reasoning (Preitula & Simon 1989) that is

acquired through years of deliberate practice (Ericsson 1996)" (p. 246). Whereas others

have argued that intuition is subjective, unmeasurable and unscientific with limited

application in the nursing profession (Effken 2000). Several definitions as well as

traditional theories of intuition are provided. Effken concluded that intuition is a direct

perception that is observable, measurable and potentially teachable through education and

extensive, deliberate practice. Effken's findings are similar to Benner's (1982) *Novice to

Expert* theory that intuition is acquired in the expert nurse through patient pattern

recognition and skills acquisition.

Benner and Tanner (1987) published a qualitative study, *using* expert nurses (n =

21). The nurses were interviewed a total of three or more times and were observed in

their clinical settings. The results of the study described six themes of intuition: pattern

recognition; similarity recognition; commonsense understanding; skilled know-how;

sense of salience and deliberative rationality. The study also discussed the perceived

devaluing of intuitive judgment by fellow nurses and physicians. In 2001, McCutcheon

and Pincombe, published a grounded theory, mixed- method methodological study

(*n*=262) that evaluated the role of intuition in nursing clinical practice as well as to examine nurses' understanding and perceptions of their utilization of intuition and to assess intuitions impact on nursing practice. The outcome of which showed that experienced nurses do not believe that novice nurses are intuitive and that female nurses are more intuitive than male nurses. Another result of this is study was the emergence of a theory regarding intuition.

> The theory of intuition that emerged was that knowledge; expertise and experience are mutually dependent and have mutual and reciprocal effects, as well as interacting to yield an effect greater than their sum, referred to as 'synergy'. The synergy that occurs through the interaction of knowledge, experience and expertise results in intuition and the core category that links the other categories (McCutcheon & Pincombe, 2001, p. 345).

It should be noted that several limitations in this study exist and are as follows: the questions used in the Delphi questionnaires are not provided; the intuition survey, utilized a 5-point Likert scale, which generated both quantitative and qualitative data. However, the data were not provided. Therefore, it is impossible to determine if the results of this study are valid or reliable. Due to lack of report regarding internal consistency and authenticity, the theoretical outcomes of this study require further consideration.

Rew (1987) published an article reviewing her previous studies and conclusions regarding the use of intuition in experienced nurses. The Rew (1987) concluded that the

nurses who listened to and acted upon their intuition when caring for their patients provided better patient care and that further research could help nurses to find ways to cultivate the innate ability of intuition.

Intuition in Undergraduate Nursing Students and Novice Nurse

In 2004, Ruth-Sahd & Hendy conducted a stratified randomized multiple regression study (*n*=323) study that looked at the use of intuition by baccalaureate nursing students by comparing personal, interpersonal, and professional experiences to answer the question as to what types of past experiences are the most powerful predictors of novice nurses' use of intuition. Findings from this study suggested that the use of intuition by baccalaureate nursing students was significantly associated with older age, number of hospitalizations, and social support (*p. <.000*). The instruments utilized for this study were the Miller (1995), 18-item Willingness to Act on Intuition Subscale (Cronbach's alpha = 0.93); Rosenberg (1965), 10-item Rosenberg Self-Esteem Scale (Cronbach's alpha = 0.86); Koenig, Parkerson, & Meador, (1997) 5-item Duke Religion Index (Cronbach's alpha = 0.92); and Procidamo & Heller, (1983) 40-item Social Support from Family and Friends Scale (Chronbach's alpha = 0.94).

Eyres, Loustau & Ersek (1992) published a qualitative study (*n*=21) that examined nursing students in their first quarter of nursing school to determine the usefulness of Belenky's et al., (1986) typology for ways of knowing in order understand cognitive development; epistemological perspectives and forces that encourage developmental transitions. In looking at the younger nurses (19-22 years old) patterns of

knowing came from authority figures or from an inner intuitive voice. The results were not transferable to the male nurses as Belenky's (1986) typology was devised for women.

Intuition in the Experienced Nurse

Rew (1988) conducted an exploratory, qualitative study *(n=56)* of nurses in clinical practice with regards to their experience and use of intuition in the nursing and clinical decision-making process. "The majority of nurses stated that they use intuition in various steps of the nursing process but added that they did not rely on this skill all the time or in all the steps of the nursing process" (Rew, 1988, p. 152). Rew (1988) goes on to say, "The majority claimed that they experienced the phenomenon primarily during assessment or implementation/intervention" (p. 153).

Lyneham, Parkinson, & Denholm (2008) used a hermeneutic phenomenological methodology (*n*=14) and focused on exploring intuition in emergency nursing and how it relates to Benner's fifth stage of "Expert". The results of this study were the reconstruction of Benner's fifth stage into three stages: cognitive intuition; transitional intuition, and embodied intuition. Cognitive intuition was defined as the ability to process large amounts of information both unconsciously and consciously and rationalizing interventions after the event. Transitional intuition was defined as a phase where a gut feeling is sensed and enters the nurses' awareness. This sensation occurs between the cognitive and embodied intuition (Lyneham et, al, 2008). The third and final stage is Embodied stage. According to Lyneham and colleagues (2008), "Embodied

intuition occurs at a time when there is complete trust in the experience of knowing and serves to build confidence in one's expert status" (p. 384).

Rew (1991) published a descriptive study (*n*=16) to investigate the use of intuition in mental health nurses and how those nurses define intuition. The study also identified supports and barriers to the use of intuition in clinical practice. "Nurses in this sample defined intuition as knowledge based on a strong feeling, sense, or perception, but not necessarily based in objective data" (Rew 1991, p. 112). Instrumentation was not utilized.

In a series of studies between 2004 and 2008, Anita J. Smith published three studies in 2004, 2006 and 2008 that explored several factors of intuition in nursing students.

In 2007, Smith published, *Measuring The Use of Intuition by Registered Nurses in Clinical Practice* (*n*=79). The study was cross-sectional in design. The aim of which was to administer both the 27-item intuition instrument and a subscale of the Miller Intuitiveness Instrument (Miller 1993) (*n*=18), *The Willingness to Act on Intuition*, in a sample of RNs in order to clarify the intuition factors and to examine convergent validity (Smith, 2007). Cronbach'a alpha for the 18-item Miller subscale was 0.93(Smith 2007). According to Smith (2007):

> "Initial results for the 27-item instrument extracted six factors that explained 71.4% of the cumulative variance. Nine items were dropped because of factor loadings being less than 0.50, secondary loadings, items

did not capture essence of factor, or because there were less than three

items for the factor (p.38).

Analysis of the remaining 18-itmes extracted four factors (Spiritual connections,

reassuring feelings, physical sensations and bad feelings) explained 70.8 % of the

cumulative variance. As a result of this study, Smith (2007) developed and subsequently

published The Smith 18-Item Intuition Instrument that is comprised of the

aforementioned four subscales.

The Cronbach's alpha for the 18-item instrument was 0.896. The

reliability for each factor is as follows: 0.886 for factor 1, spiritual

connections; 0.892 for factor two, reassuring feelings; 0.829 for factor 3,

physical sensations; and 0.806 for factor 4: bad feelings (Smith, 2007, p.

39).

The cronbach's alpha for the Miller18-item subscale in this population was 0.96 (Smith

2007). Pearson's correlation was utilized to determine convergent validity between the

Smith (2007)18-item Intuition Instrument and the Miller (1993) 18-Item subscale,

Willingness to Act on Intuition. The result of which was r=0.520 (p <0.01). (Smith,

2007) (Appendix A).

Predictors of Success in Graduate Nursing School

In 1999, McEwan and Goldenberg published *Achievement, Motivation, Anxiety*

and Academic Success in First Year Master of Nursing Students. This descriptive

correlational design study (n=41) sought to identify the influence of achievement,

motivation, and anxiety on academic success on first year master of nursing students. Instruments used for this study were a demographic questionnaire, the Mehrabian Achieving Tendency Scale (Mehrabian, 1994) and the State-Trait Anxiety Inventory (Spielberger et al., 1983). The research indicated that "While state anxiety was negatively correlated, trait anxiety was the only valid predictor of academic success" (McEwan & Goldenberg, 1999, p. 419). One recommendation from this study was to assess both cognitive and non-cognitive contributors to master level nursing success in future research (McEwan & Goldenberg, 1999).

Gieske (1995) conducted a regression analysis (n=289) to determine the strength and significance of the relationships between student demographics and predictors of academic success such as Graduate Record Examination (GRE) scores, undergraduate grade point average (UGPA) and completion of a masters of nursing program. "The number of subjects who completed programs for the group was 212 (73%)" (Gieske, 1995, p. 283).

> Several significant relationships at p =.05 were found for subjects who completed programs. These relationships were age (n =159) at r = .0084, female gender (n = 152) of r = .0124, race (n = 150 Caucasians) of r = .0068, and in-state resident status was significant for completers at r = .0111. The minimal time that elapsed between awarding of the baccalaureate degree and admission to a master's degree program in nursing was also significant at r = .0091 (Gieske, 1995. P. 283).

In regards to academic predictors, the UGPA of those individuals who completed a program compared to those individuals who did not complete a program was $t = -1.99$, ($p=<.05$) GRE-V, GRE-Q and GRE-A was $t = -2.4$, ($p=<.05$) $t = 2.03$, ($p=<.05$) and $t = -2.32$ ($p=<.05$) respectively and therefore demonstrated non-significance. (Gieske, 1995). "The variables of race and GRE scores were significant the $p < .05$ level ($n=159$)" (Gieske, 1995, p. 283). However when looking at race and UGPA statistical significance was not achieved ($n = 159$, $p = .0619$) (Gieske, 1995). In looking at the relationship between combinations of selected academic such as UGPA and demographic variables such as age, race, and years of professional experience in those individuals who completed the program was statistically significant at $p. < .013$ (Gieske, 1995). This is significant, as this study has demonstrated that years of experience as a practicing nurse is correlated to successful completion of a master's in nursing program. According to Benner's (1982) theory, *From Novice to Expert,* the more experienced the nurse the more intuitive he/she becomes which ultimately impacts patient outcomes. Therefore, intuition should be considered as a variable when predicting academic success in a master of nursing program.

In 1981, Tripp and Duffey's conducted a cross-validation study with 270 master's degree students using, BGPA, GRE-verbal scores and GRE-quantitative scores to predict graduation or non-graduation from the nursing program. The researchers concluded that BGPA $f=39.554$ (p=<.0001); GRE-verbal $f=17.564$ (p=<.0001) and GRE-quantitative scores were $f=13.820$ (p=<.0001) statistically significantly predicts success in graduating from a master's degree in nursing.

Brown (2011) published a retrospective thesis that examined predictors of academic success in students in a graduate nursing program (n= 292) at Kirkhof College of Nursing at Grand Valley State University. Brown found that GRE scores were not significant between those who completed a master's program and those who failed to complete the program. Brown (2011) reviewed admission data such as UGPAs, GRE scores and exit data to determine if UGPAs and GRE scores predict academic success and to determine if GRE scores are more predictive of academic success than UGPAs. Brown (2011) found that UGPAs (*r*=.383) (*p*=.01) (*n*=256) are more predictive of academic success than GRE scores and that GRE scores were not significantly different between those who completed a master's program and those who failed to complete the program. This research is similar to Tripp and Duffey's (1981) findings that UGPA is more predictive than GRE scores. However, in contrast to Brown (2011), Tripp and Duffey's (1981) study found that both UGPA and GRE-verbal and quantitative scores could not predict failure to complete the program.

Burns (2011) published a quantitative correlational study to determine if a relationship existed between admission criteria (GPA, science grade point average (SGPA), GRE scores and years of critical care experience) and academic progression (current academic status and GPA) of 21 nurse anesthesia programs. Nurse anesthesia programs are nursing programs at the master's level and therefore are included in this literature review. The results indicated a positive statistically significant relationship between admission GPA and the current GPA (r=.313) (p=.001) (n=914). Science GPA also demonstrated a significant positive correlation between admission SGPA and current

GPA (r=.279) (p=.001) (n=914) as did GRE and GPA (r-.153) (p=.001) (n=914). "A statistically significant inverse relationship was found between the years of critical care nursing experience and the current GPA. The result suggests that as the number of years critical care experience increases, the current GPA will decrease" (Burns, 2011). Burns (2011) reported the correlation between years of critical care experience and current GPA as r= -.135 (p=.001) (n=914). Burns (2011) goes on to further say that, "No studies exist supporting or contrasting with the result of the current study for SRNAs" (p. 197).

Ortega, Burns, Hussey, Schmidt and Austin (2013) published a systematic review of 19 research articles published between 1985 and 2011 in order to review admission criteria that would predict success in nurse anesthesia programs and national certification exam (NCE). The inclusion criteria included English-language sources that were published in peer-reviewed journals that addressed student success in graduate nursing programs as well as nurse anesthesia educational programs (NAEPs). According to Ortega et al (2013), "Overall, the evidence was of low quality and usually contained small sample sizes from retrospective observational studies (p. 84) Ortega et al (2013) goes on to say that "There was no evidence from systematic reviews with meta-analysis. The evidence, recognizing the overall low quality, somewhat supported commonly used admissions criteria in predicting successful outcomes in NAEP" (p. 84). Common admission criteria reviewed is as follows: Bachelor of Science (BSN); undergraduate GPA (UGPA); GRE scores; applicant essay; critical care experience and applicant age. "Overall, UGPA and undergraduate science or nursing GPA are best supported by the evidence to predict success in nurse anesthesia and graduate nursing programs" (Burns,

2011; Hansen & Pozehl, 1995; Katz, Chow, Motzer & Woods, 2009; Munro, 1985; Newton & Moore, 2006; Suhayda, Hicks & Fogg, 2008 and Zaglaniczny, 1995 as stated by Ortega et al. 2013, p. 188). According to Ortega et al (2013), "The GRE is supported by some investigators, (Hansen & Pozehl, 1995; Munro, 1985 and Wilson, 1999), but the most recent investigation, (Burns, 2011), found it to be less predictive, and that the author suggested discontinuing this requirement" (p. 188). "Although age is not an admission criterion, overall NCE score and success in NAEPs were reported to have an inverse relationship with age, perhaps due to the length of time since the student had been in a formal education program" (Burns 2011 & Zaglaniczny 1992 as quoted by Ortega et al. 2011, p. 188).

Major Variables Defined:

    Demographic Variables. The variables are defined as follows. The type of nursing student refers to which nursing cohort the participant was currently enrolled in a local university. The semester refers to which the participant was enrolled in. The semesters varied from six to eight. Gender was defined as self-reported male or female. Age refers to the chronological age of the participant. Marital status signifies the legal relationship status of the participant as defined by the state of California. Employment status refers to whether the participant was employed outside the home. Cultural background indicates the participants' self-identified ethnic background.

    Intuition Variable. Intuition was defined as an unwavering sense of what is to come based upon a complex interaction between experience and knowledge coupled with

an innate personality trait, a personal belief of what will be the truth and trust in inner feelings that benefits the patient. (Locke, 2011). This definition is based on Benner's (1982) theory, *From Novice to Expert* in which Benner (1982) proposes that intuition is acquired over time and is a characteristic of the experienced nurse through skills acquisition. Historically, intuition is hard to quantify using traditional scientific methods and has been associated with a "strange" or "uncomfortable feeling" or "knowing" It is a phenomenon without explanation and is therefore vague (Rew 1986, 1987, 1988, 1991; McCutcheon & Pincombe 2001; Leners 1992; Benner & Tanner 1987).

Bad Feelings Variable: Defined as sensory perceptions such as a "bad or uneasy" feeling which is reflective of intuition

Experienced Nurse Variable. Experienced nurse was defined as a registered nurse with three or more years of clinical experience as a practicing nurse (Benner, 1982; Rew1988).

Cumulative GPA Variable. The CGPA was defined as the student's current CGPA on a 4-point scale listed in the student's transcript (Brown, 2011).

Theoretical Framework

This research study was based upon the theoretical framework of Patricia Benner's *From Novice to Expert* (1982) as noted in chapter one. Benner's theory is based upon the Dryfus Model of Skill Acquisition (1980). According to Benner (1982), "Briefly, the Dreyfus model posits that, in the acquisition and development of a skill, one passes through five levels of proficiency: novice, advanced beginner, competent,

proficient, and expert" (p. 402). Benner proposed that sophisticated reasoning is intuitiveness that is acquired through skills acquisition and patient pattern recognition in the experienced nurse. "Experience, in addition to formal education preparation, is required to develop this competency since it is impossible to learn ways of being and coping with an illness solely by concept of theorem (Benner, 1982, p. 406). Benner theorizes that intuition is only achieved when the nurse reaches the fifth level. Therefore, a novice nurse, because of lack of experience, is unable to recognize patterns in patient situations and is therefore not intuitive.

Summary

This chapter reviewed the abundance of research that has explored intuition as a valid form of knowledge in nursing. The link between intuition and expert nursing care is attributed to Benner's (1982) qualitative research and the resulting novice to expert model" (Smith, 2009, p. 36). Predictors of success in graduate nursing program have also been well documented in the literature review. However, these studies examined undergraduate GPA and GRE scores as predictors of success. To date, there are no studies that take into consideration intuition and years of experience as predictors of academic success in a graduate of nursing program. Therefore, this study examined intuition and years of experience as an RN as predictors of academic success in a graduate of nursing program as measured by CGPA.

CHAPTER THREE: METHODOLOGY

Introduction

Prior research looking at predictors of academic success in a graduate nursing program focused on cognitive variables such as baccalaureate GPA and GRE were plentiful (McEwan & Goldenberg, 1999; Gieske, 1995, Tripp and Duffey, 1981 and Brown, 2011). Intuition or "Ways of Knowing" in nursing in particular in experienced nurses is also documented (Rew, 1988; Lyneham, 2008; Parkinson, & Denholm Rew (1991). Research examining predictors in the student nurse and/or novice nurse was scarce (Ruth-Sahd & Hendy, 2004 and Eyres, Loustau & Ersek, 1992). At the time of this writing, there was no research that looked at years of experience as a RN and/or intuition predicting academic success in a graduate program as measured by CGPA.

The Smith (2007) 18-Item Intuition Instrument was chosen for this research as it was tested in nursing students and was found to be both reliable and valid. Additionally, Benner's (1982) theory, *From Novice to Expert* was utilized as the theoretical framework for this study. The relationships between demographics will be examined as well as the relationships between the independent variables, (Years of Experience and/or Intuition) and the dependent variable, (CGPA) will be explored using inferential methods.

Research Question

The research questions for this study were as follows: 1: "Are years of experience and/or intuition correlated with CGPA and 2: How much of the variability in success

(CGPA) in a graduate of nursing program is predicted by years of experience and/or intuition"?

Hypothesis

The associated hypotheses for this study are as follows: 1: Years of experience and intuition are correlated with CGPA and 2: "Intuition and or years of experience as a practicing registered nurse will predict academic success in a master of nursing program as measured CGPA".

Description of Setting

The site for this research study was a master's of nursing program at a local 4-year university located in San Diego County, California and the university's satellite campus located in Riverside County, California.

In the Fall of 2012, the total enrollment of the university was 10,610 students comprised of male (n=4154) (39%) and female (n=6,456) (61%). Undergraduate age was distributed as follows: 17-22 (65%); 23-25 (19%); 26-35 (13%) and 36 or older (3%). Graduate age was distributed as follows: 17- 22 (1%); 23-25 (16%); 26-35 (52%) and 36 or older (31%). Ethnicity included Native American/American Indian (n= 61) (0.6%); African American (n=287) (2.7%); Asian/Pacific Islander (n=995) (9.4%); Latino/a (n=3,352) (32%); Caucasian (n=4,205) (39.6%); other (n=1,232) (11.6%) and multiple ethnicities (n=486) (4.6%). ("CSUSM Stats," 2013).

Research Design

A cross-sectional survey design was used with the intent of trying to determine the relationship between intuition and years of experience as an RN and success in graduate nursing school as measured by CGPA. An online survey (Appendix B) was utilized in order to collect self-reported information on participants' demographics and CGPA and to administer the 18-item Smith Intuition Instrument (Smith, 2007). Participant's CGPA was verified through the university's Office of the Registrar's for accuracy.

Population and Sample

The participants were recruited using convenience sampling. Masters of Science in Nursing (MSN) students currently enrolled in cohorts three, four and five during the Spring and Summer semesters of 2013 were approached by the principle investigator at the end of their didactic class for recruitment. Approval from the university's Institutional Review Board was obtained prior to any recruitment efforts. All students enrolled in MSN cohorts three, four and five were over the age of 18 and proficient in English.

Using G*Power 3.0, the required sample size for this research study was calculated to be 20 out of 49 students who were enrolled in the Spring and Summer 2013 semesters in order to achieve a power of 0.50 (Faul, Buchner, Erdfelder, & Lang, 1992-2012, figure 1). When performing a pilot study with small sample sizes, it is common for a researcher to set the significance level higher than usual in order to compensate for the

small sample size. For example, a conventional significance level is $P < 0.05$; whereas, a

pilot study might use a *P*-level of 0.10 or even 0.20. In doing so, a higher significance

level in a pilot study avoids abandoning what might otherwise be a promising line of

research. (Windsor, Baranowski, Clark, & Cutter, 1994). Therefore, the calculated

sample size (n=20) provided for an effect size of 0.15 using multiple regression analysis

with a significance level of 0.20. An additional 20% was added for loss factors (e.g.

failing to complete the questionnaire). Therefore, the desired number of participants was

set at 24.

Figure 1. Power analysis prior to data collection
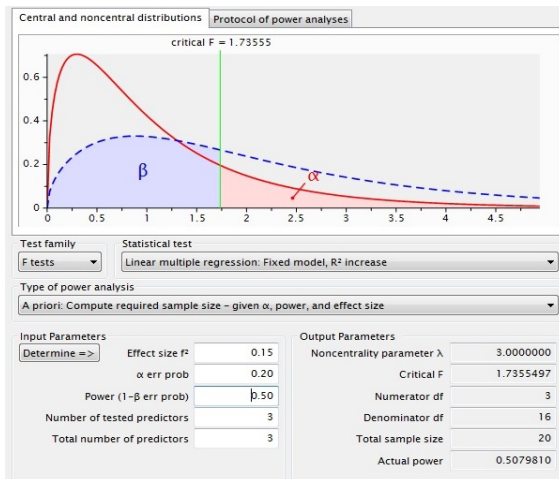
(Faul, et al, 2012).

Measurement Methods

      Data were collected via an online survey that covered the following demographic

information: gender, age, university email address, race, CGPA, employment status,

marital status, cohort currently enrolled in (three, four, or five), length of program

currently enrolled in (full-time 6 semesters; part-time 8 semesters or part-time 9

semesters), years providing direct patient care as a registered nurse (RN). Data regarding

intuitiveness obtained via The Smith Intuition Instrument (Smith, 2007). The Smith

Intuition Instrument (Smith, 2007) is an 18-item questionnaire that provides a way to

measure intuition in nursing students. The instrument is comprised of four factors:

spiritual connections; reassuring feelings; physical sensations and bad feelings. "The

response format utilizes a five-point scale ranging from 1 to 5: (1) never, (2) rarely, (3)

sometimes, (4) often and (5) always" (Smith, 2007, p. 38).

"The Smith Intuition Instrument was tested in three separate samples of nursing

students (n=349), (n=326) and n=421). Both exploratory factor analysis (Smith et al.,

2004, Smith, 2006) and confirmatory factor analysis resulted in factors that demonstrated

construct validity" (Smith, 2007, p. 36). Cronbach's alpha was 0.896. Therefore, The

Smith Intuition Instrument (Smith, 2007) has been tested to provide evidence in support

of its validity and reliability as a tool for measuring nurses' use of intuition in clinical

practice. Permission to use the instrument in this pilot study was obtained from the

author (Appendix C).

Data Collection Process

Approval from the Institutional Review Board (IRB) was requested and granted

prior to beginning data collection (Appendix D). Didactic instructors for MSN students

in cohorts three, four and five were contacted and permission to recruit participants was

obtained (Appendix E). The researcher visited MSN students in cohorts three, four and

five students during the last 15 minutes of class. An information sheet (Appendix F) was

supplied to each participant as to provide information regarding an explanation of the

study, associated risks and benefits as well as how to obtain the results of the study. Ten

minutes was allowed for questions and answers. This time frame provided ample time

for questions and answers. Written informed consent was obtained at which time the

participant was given a URL address so that the participant could access the online

survey at their convenience. No personal identifiable information was obtained.

Coding and Scoring

The Smith Intuition Instrument (Smith, 2007) is comprised of four factors. The

factors are coded as follows: Factor 1: spiritual connections comprised of questions 3, 8,

10, 13, 16 and 18; factor 2: reassuring feelings is comprised of questions 5, 11, 14, 15 and

17; factor 3: physical sensations consists of questions 1, 4, 6 and 12 and factor 4: bad

feelings consists of questions 2, 7, and 9.

At the time of this writing, The Smith Intuition Instrument (Smith, 2007) did not

have a standardized scoring guideline in place. The author was contacted regarding

scoring guidelines for the instrument. She agreed with the plan to sum the scores for

each item thereby creating summation scores. These scores were used to create the

variable Total Intuition Score (TIS) for this study.

The TIS summation scores ranged from 18 to 90. To determine if a participant's

level of intuition might predict CGPA, it was necessary to identify those participants who

had high scores and those who had low scores on the intuition scale. After data were

collected, statistics for the 25th, 50th and 75th percentiles were reviewed. A score of less

than or equal to 50 was deemed as low score (25th percentile) and a score of greater than

or equal to 51 were deemed as a high score (75th percentile). However, this eliminated

participants who scored at the 50th percentile from being included in the final analysis.

Due to the small number of subjects in the study, it was determined to include all subjects

in the analysis. Therefore, the 50th percentile was the cutoff for high and low scores. A

summation score of less than or equal to 60 was deemed as a low score and a summation

score of greater than or equal to 61 was deemed as a high score.   Each subject was then

assigned a number based on his or her score. Low scorers were coded with zero and high

scorers were coded with a one.

Data Analysis

IBM SPSS Statistics 20 software (SPSS Inc., 2012) was used to perform the data

analysis. The analysis consisted of descriptive statistics, frequency distributions,

bivariate correlation and multiple regression analysis using the *F*-test. The level of

significance was set at $p \leq .20$.

Descriptive statistics were used to describe the sample and analyze data in order

to determine the mean, median and mode as appropriate in order to quantifiably answer

questions such as correlation between two variables. (Polit & Tatano-Beck (2012).

Nominal and ordinal data were collected from the demographic data. Ordinal data were

collected from the 5-item Likert scale that was used to measure intuition. Although

ordinal, the data were considered interval level data for this analysis as this is common in survey analysis (SPSS Inc., 2001, 2003, 2006).

Frequency distribution was performed to determine if the data were normally distributed, unimodal, bimodal or skewed. This study seeks to not only determine if experience and/or intuition are correlated but also to determine how much variability in academic success (CGPA) is predicted by years of experience and/or intuition. The variables were analyzed using Pearson's correlation to determine if the data was correlated. In order to make these predictions, the relationship between the groups of independent variables, in this case, intuition and years of experience as a RN and the dependent variable, CGPA, must be measured. Therefore, a multiple regression analysis utilizing the *F*-test was performed.

Bias

A source of possible bias was the use of a convenience sample. Therefore, the sample may not be representative of the target population. However, the following statistics (Table 1) illustrates that the sample group is similar to the population of graduate of nursing students at CSUSM and therefore, is representative of the sample.

Table 1

Comparison of Demographics of Sample and Population

Demographics		Sample	Population
Gender			
	Female	87.5%	86.7%
	Male	12.5%	13.3%
Age			
	25-30 Years	20.83%	28.33%
	31-35 Years	16.67%	13.33%
	36-40 Years	25.00%	20.00%
	41-45 Years	12.50%	13.33%
	46-50 Years	12.50%	15.00%
	51-Over	12.50%	10.00%
Ethnic or Cultural Background			
	Caucasian	54.17%	43.33%
	African-American	4.17%	13.33%
	Asian/Pacific Islander	16.67%	20.00%
	Latino	12.50%	10.00%
	Other/Unknown	8.33%	10.00%
	Multi-Race	4.17%	3.33%

Another source of bias was that all students were encouraged to participate in the research on several occasions by their didactic instructors. An additional source of bias may have occurred because the principle investigator is also a graduate nursing student at California State University San Marcos. In order to mollify this source of bias, the principle investigator provided the participants with the web address in order for the participants to complete the online survey at their convenience as to ensure that the participants were not influenced or pressured to participate.

Ethical Considerations

Approval from the Institutional Review Board was obtained and the approval number is IRB # 2013-060. No participants under the age of 18 were included in the study. None of the participants were considered to be part of an at-risk population and informed written consent was freely given. In addition, participants' agreed to have their CGPA accessed by the principle investigator at the university's Office of the Registrar's. The participants' university email address was utilized in order to access the participant's CGPA as well as to cross-reference the participant's CGPA to the respective online survey. Participants were given an informational sheet along with a URL address upon receipt of the informed consent in order to participate in the online survey.

Summary

The independent variables selected for this study were intuition and years of experience as an RN. The dependent variable was CGPA. The Smith (2007) 18-Item Intuition Instrument was selected to measure intuition and the Office of the Registrar's

provided the student's CGPA. An online survey was developed in *Survey Gizmo* to collect demographic variables and administer the Smith (2007) 18-Item Intuition Instrument. The power analysis determined that a minimum of 24 subjects was needed. IRB approval was sought and obtained. Data collection occurred over a four-month period

CHAPTER FOUR: RESULTS

Introduction

The purpose of this study was to determine if 1: "Are years of experience and/or intuition correlated and 2: How much of the variability in success (CGPA) in a graduate of nursing program is predicted by years of experience and/or intuition"? Chapter Four presents the results of this study.

A post hoc power analysis was performed using GPower (Faul, & et al., 2012) to include the total number of participants. The actual sample size (n=24) provided for a .15 (R^2) effect size in a multiple regression analysis with a significance level of .20 and power of .567.

Figure 2

Power analysis post hoc.
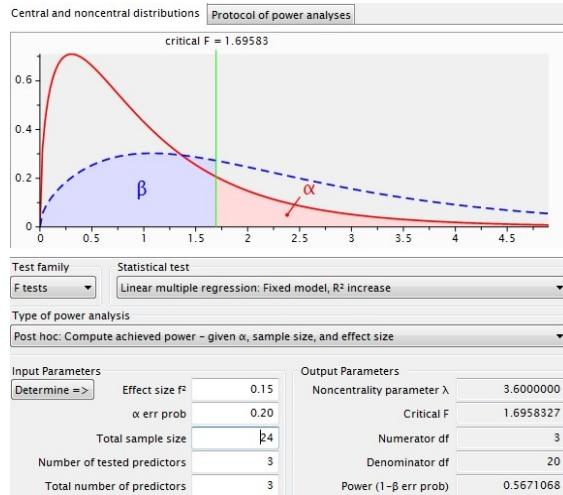
(Faul, et al, 2012).

The data were examined using IBM SPSS Statistics 20 software (2012) for frequency, mean, median, mode and distribution. The data were then analyzed for correlations using Pearson's correlation after which a regression analysis was performed in which all independent variables were entered into the model.

Sample

Because this study focused on years of experience as a practicing RN and/or intuition as predictors of academic success in a graduate nursing program, this study was limited to graduate nursing students who were currently enrolled in the school of nursing. Participants were enrolled in cohorts three, four and five and were recruited prior to the start of their clinical rotations during the Spring and Summer 2013 semesters.

All continuous variables were examined for normality using mean, median and mode and categorical variables were described using frequency distribution. The majority of participant's were Caucasian (*n*=13) (54.2%). The participant's gender was reported as female (*n*=21) (88%) and male (*n*=3) (12%). The participant's age ranged between 27-61years of age, with a mean age of 40 and a median age of 38 years. The majority of participants' marital status was described as married (*n*=14) (58%). The participants' employment status most frequently reported was full time (*n*=12) (50%). The participants' years of experience (Table 2) providing direct patient care as a RN was reported as greater than 10 years (*n*=12) (50%) with a mean of 4.08 and a median of 4.5 years.

Table 2

Frequency of Participants by Experience

Years of Experience	Frequency	Percent
< 3 Years	1	4.2
4 Years	2	8.3
5-6 Years	3	12.5
7-8 Years	6	25
>10 Years	12	50
Total	24	100

The majority of participants were enrolled in cohort 3 (*n*=10) (42%). The majority of participants were enrolled in the 8 semester (part-time) program (*n*=16) (67%) followed by participants enrolled in the 6 semester (full-time) program (*n*=6) (25%). Participants reported as being in the third semester (*n*=12) (50%). The most frequently reported CGPA was 4.0 (*n*=3) (13%) with a mean CGPA of 3.74 on a 4 point scale.

Data Collection and Preparation

Data were collected from April 2013 until August 2013 during the Spring and Summer semesters. Once informed consent was obtained, the participants were provided with a link to access the survey via *Survey Gizmo* an online survey tool. Subjects were allotted ten days to respond to the survey. Reminder letters were emailed to the subjects on days 9 and 10 if they had not responded. The survey was then closed to participants at midnight of the 10th day. The subjects' CGPA was accessed and provided by the Office of the Registrar's. Each subject's CGPA were then matched to the respondents' surveys. The data were exported into an Excel spreadsheet where all nominal and ordinal data were converted to numerical values for analysis in SPSS 20. The data were double-checked for accuracy and the data analysis was performed. Two participants omitted one item on their questionnaire. As a result, Cronbach's Alpha was performed on the remaining 22 participants. Cronbach's Alpha for this sample was .775

Results by Research Question

This study explored two research questions and are as follows: 1: "Are years of experience and/or intuition correlated and 2: How much of the variability in success (CGPA) in a graduate of nursing program is predicted by years of experience and/or intuition"?

A bivariate correlation analysis (Pearson's R) was performed to determine if years of experience as a RN and total intuition score, (TIS) were correlated. The strength for the correlation (Table 3) was $r=.244$ and not statistically significant ($p=.250$) ($n=24$). Therefore, years of experience as a RN was not correlated with TIS.

Table 3

Correlation of Total Intuition Score (TIS) with Years of Experience

Correlations		Years of Experience	TIS
Years of Experience	Pearson Correlation	1	.244
	Sig. (2-tailed)		.250
	N	24	24
TIS	Pearson Correlation	.244	1
	Sig. (2-tailed)	.250	
	N	24	24

As previously discussed in Chapter 3, The Smith Intuition Instrument (Smith, 2007) did not have a standardized scoring guideline in place at this time of the writing. The author was contacted and it was agreed that in order to score the instrument the scores for each factor could be summed thereby creating a summation score. The

summation scores ranged from 18 to 90. After data were collected, statistics for the 25th,

50th and 75th percentiles were reviewed. A score of less than or equal to 54.75 was

deemed as low score (25th percentile) and a score of greater than or equal to 64.25 were

deemed as a high score (75th percentile). However, the majority of subjects scored at the

50th percentile and would thereby be excluded from the final analysis (Figure 3). Due to

the small number of subjects in the study, it was decided to include all subjects in the

analysis. Therefore, the 50th percentile was the cutoff for high and low scores. A

summation score of less than or equal to 60 was deemed as a low score and a summation

score of greater than or equal to 61 was deemed as a high score (Table 4).

Table 4

TIS Scoring

Statistics TIS		
N	Valid	24
	Missing	0
Mean		60.6667
Median		61.0000
Mode		61.00
Std. Deviation		7.82230
Skewness		.451
Std. Error of Skewness		.472
Kurtosis		1.087
Std. Error of Kurtosis		.918
Range		36.00
Minimum		45.00
Maximum		81.00
Percentiles	25	55.2500
	50	61.0000
	75	65.0000

Figure 3.

Histogram TIS
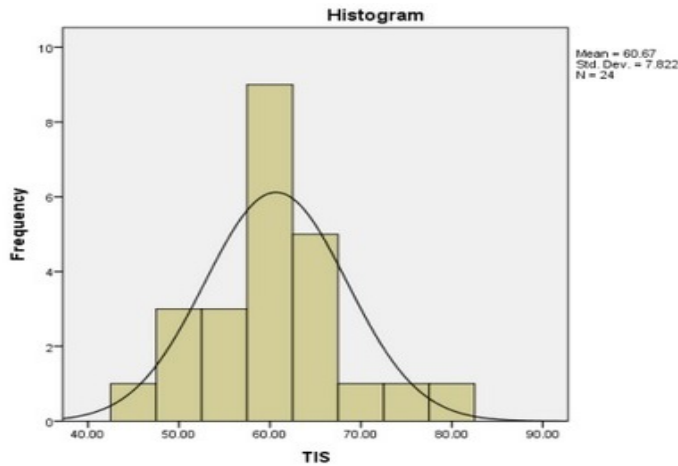
The Smith Intuition Instrument (2004, 2005, 2006) was developed and tested in undergraduate nursing students. Therefore, some of the factors in the instrument may not pertain to experienced RNs. In 2007, Smith tested the instrument with registered nurses and identified the four factors used in this study. The four factors (physical sensations, bad feelings, reassuring feelings and spiritual connections) were analyzed using Pearson *R* in order to determine if all four TIS factors lacked any correlation with years of experience. Both the "Physical Sensations" factor ($r = -.006$) ($p=.757$) ($n=24$) and the "Bad Feelings" factor ($r = -.062$) ($p=.773$) ($n=24$) demonstrated extremely low correlations that were non-significance (Table 5). These findings for these two subscales reflect Smith's own findings in her instrument development. These two subscales have the lowest factor loadings in the revision of the tool based on registered nurses responses. (Smith, 2007).

In reviewing the items on the questionnaire for the physical sensation factor, phrases such as "I get nauseous" and "I get a lump in my throat" when the patient has a problem may reflect the student nurse experience but not the experienced nurse. Given the extremely weak, non-significant correlation in this sample and Smith's own writings about challenges with defining physical sensations in the instrument, the "Physical Sensations" factor was removed from the model as it demonstrated a weak correlation and therefore, may not reflect experienced nurses. Since "bad feelings" reflects definitions of intuition including sensory perceptions such as a "bad" or "uneasy" feelings, this factor was not removed from the model. A new variable was created without the "Physical Sensation" factor and was referred to as "New Total Intuition Score New" (New TIS). More discussion will follow in chapter 5. "New TIS" was comprised from the three remaining factors bad feelings, spiritual connections and reassuring feelings. To determine if New TIS would meet the assumptions for the Pearson correlation test, measures of central tendency (Table 6) and a histogram (Figure 4) were repeated using this new variable. The assumptions of normal distribution were met and New TIS was used in an analysis with Pearson R in order to determine if years of experience as an RN, New TIS and CGPA were correlated. Years of experience and New TIS (Table 7) were correlated ($r=.329$) and was statistically significant ($p=.116$) ($n=24$). CGPA and New TIS (Table 7) were negatively correlated ($r=-.396$) and was statistically significant ($p=.055$) ($n=24$). Years of experience as a RN and CGPA (Table 7) were negatively correlated ($r=-.468$) and statistically significant ($p=.021$) ($n=24$).

Table 5

Correlations Intuition Instrument Factors

Correlations		CGPA	Yrs. of Exp.	Physical Sensation	Spiritual Connection	Bad Feeling	Reassuring Feelings
GCPA	Pearson Correlation	1	-.468[*]	.163	-.361	.198	-.464[*]
	Sig. (2-tailed)		.021	.445	.083	.353	.022
Years of Experience	Pearson Correlation	-.468[*]	1	-.066	.280	-.062	.340
	Sig. (2-tailed)	.021		.758	.185	.773	.104
Physical Sensation	Pearson Correlation	.163	-.066	1	.160	.472[*]	.436[*]
	Sig. (2-tailed)	.445	.758		.454	.020	.033
Spiritual Connections	Pearson Correlation	-.361	.280	.160	1	-.145	.163
	Sig. (2-tailed)	.083	.185	.454		.498	.445
Bad Feelings	Pearson Correlation	.198	-.062	.472[*]	-.145	1	.414[*]
	Sig. (2-tailed)	.353	.773	.020	.498		.044
Reassuring Feelings	Pearson Correlation	-.464[*]	.340	.436[*]	.163	.414[*]	1
	Sig. (2-tailed)	.022	.104	.033	.445	.044	

*. Correlation is significant at the 0.05 level (2-tailed).
N = 24.

Table 6

New TIS Scoring

Statistics New TIS		
N	Valid	24
	Missing	0
Mean		50.3333
Median		50.5000
Mode		51.0
Std. Deviation		6.32226
Skewness		.164
Std. Error of Skewness		.472
Kurtosis		.151
Std. Error of Kurtosis		.918
Range		26.00
Minimum		38.00
Maximum		64.00
	25	46.0000
Percentiles	50	50.5000
	75	54.5000

Figure 4

Histogram NEW TIS

Mean = 50.33
Std. Dev. = 6.322
N = 24
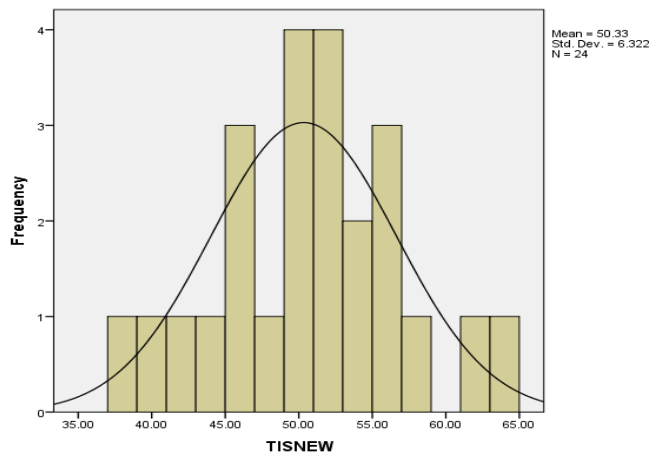
Table 7

Correlations CGPA, Years of Experience and New TIS

Correlations		CGPA	Years of Experience	NEW TIS
CGPA	Pearson Correlation	1	-.468[*]	-.396
	Sig. (2-tailed)		.021	.055
	N	24	24	24
Years of Experience	Pearson Correlation	-.468[*]	1	.329
	Sig. (2-tailed)	.021		.116
	N	24	24	24
New TIS	Pearson Correlation	-.396	.329	1
	Sig. (2-tailed)	.055	.116	
	N	24	24	24

*. Correlation is significant at the 0.05 level (2-tailed).

Due to the inverse relationship between years of experience as a RN and CGPA, a post hoc analysis was performed to determine if age and CGPA also showed an inverse relationship since age and experience tend to co-vary. Age and CGPA (Table 8) demonstrated a negative correlation ($r=-.468$) and was statistically significant ($p=.126$) ($n=24$). This suggests that as age increases CGPA decreases.

Table 8

Correlations Age and CGPA

Correlations		Age	CGPA
Age	Pearson Correlation	1	-.321
	Sig. (2-tailed)		.126
	N	24	24
CGPA	Pearson Correlation	-.321	1
	Sig. (2-tailed)	.126	
	N	24	24

As previously discussed in Chapter 3, The Smith Intuition Instrument (Smith, 2007) did not have a standardized scoring guideline in place at the time of this writing. It was agreed that in order to score the instrument the scores for each factor could be summed thereby creating a summation score. The summation scores ranged from 18 to 90. After data were collected on TIS New, statistics for the 25th, 50th and 75th percentiles were reviewed. The 50th percentile was the cutoff for high and low scores. A summation score of less than or equal to 50 was deemed as a low score and a summation score of greater than or equal to 51 was deemed as a high score. High summation scores on New TIS were transformed into New TIS High as described in Chapter Three and were analyzed using Spearman's rho (Table 9) to determine if CGPA, years of experience as a RN and New TIS High were correlated. CGPA and years of experience were correlated. The strength for the correlation was strong (r=-.481) and demonstrated an inverse relationship and was statistically significant (p=.017) (n=24). New TIS High and CGPA was inversely correlated (r=-.327) and was statistically significant (p=.119) (n=24). New

TIS High and years of experience demonstrated a weak correlation (r=.46) and was not

statistically significant (p=.832) (n=24).

Table 9

Correlations CGPA, Years of Experience and New TIS High

Correlations			CGPA	Years of Experience	New TIS High
Spearman's rho	CGPA	Correlation Coefficient	1.000	-.481[*]	-.327
		Sig. (2-tailed)		.017	.119
	Years of Experience	Correlation Coefficient	-.481[*]	1.000	.046
		Sig. (2-tailed)	.017		.832
	New TIS High	Correlation Coefficient	-.327	.046	1.000
		Sig. (2-tailed)	.119	.832	

*Correlation is significant at the 0.05 level (2-tailed).
N=24

A linear regression analysis was performed on New TIS High and years of

experience providing patient care as a RN in order to determine if there was an effect on

the dependent variable, CGPA. Both variables New TIS High (p=.185) (n=24) and years

of experience providing care as a RN (p=.031) (n=24) were found to statistically

significantly affect the dependent variable, CGPA (Table 12). For the regression model

that included New TIS High and years of experience providing care as a RN, the R or

Pearson's Product Moment Correlation was highly correlated (R= .532) (Table 10). This

value suggests that there is a strong correlation between the sample values and the

predicted values for dependent variable, CGPA. The effect size (Adjusted R-*squared*) for

the model was .215 (F=4.143) (p =.030) (Table10). This suggests that the model explains

that 21.5 % of the variance in CGPA can be predicted by the two independent variables

(New TIS High and years of experience providing care as a RN). This means that 78.5 %

of the CGPA was explained by other factors.

Table 10

Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.532[a]	.283	.215	.15503

a. Predictors: (Constant), New TIS High,
Years of Experience

When the analysis of variance was performed (Table 21), the *F* statistic was

significant at .030. This result indicated that the independent variables entered into the

model predicted the CGPA.

Table 11

ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.199	2	.100	4.143	.030[b]
	Residual	.505	21	.024		
	Total	.704	23			

a. Dependent Variable: Cummulative_GPA
b. Predictors: (Constant), NewTISHigh, Years of Experience

The standardized coefficients (*b*) for the independent variables New TIS High

was -.256 (*t* -1.372) (*p*=.185) and for years of experience providing care as a RN was -

.432 (*t* -2.315) (*p*=.031). This suggests that for every one unit the New TIS High

increased the CGPA decreased by .256 units and for every one unit the years of

experience providing patient care as an RN increased the CGPA decreased by

.432 units (Table 12).

Table 12

Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	4.047	.118		34.262	.000
1	Years of Experience	-.064	.028	-.432	-2.315	.031
	New TIS High	-.088	.064	-.256	-1.372	.185

a. Dependent Variable: Cummulative_GPA

Summary

The linear regression model predicts 21.5 % of the variance in CGPA could be

predicted by the two independent variables and was statistically significant using the *f*-

test (*p*=.030). The independent variables, New TIS high (*p*=.185) and years of

experience providing care as a RN (*p*=.031), were significant predictors of the dependent

variable, CGPA.

CHAPTER FIVE: DISCUSSION

Introduction

CGPA and Years of Experience consistently demonstrated an inverse relationship throughout all of the analyses. A post hoc analysis revealed that age and CGPA also demonstrated an inverse relationship. TIS and CGPA did not demonstrate a correlation. Of the four factors that comprised the Smith (2007) Intuition Instrument, the "Physical Sensations" factor was removed as it resulted in an extremely weak and non-significant correlation and may not reflect experienced nurses. This created a new variable, New TIS. New TIS and Years of Experience were correlated. Summation scores were derived from the 50$^{\text{th}}$ percentile creating high and low scores. High summation scores were transformed into a new variable, New TIS High. New TIS High and CGPA demonstrated an inverse relationship. New TIS High and Years of Experience resulted in a weak relationship. New TIS High and Years of Experience as a RN demonstrated a statistically significant effect on the dependent variable, CGPA.

Major Findings

The research questions for this study were as follows: 1: "Are years of experience and/or intuition correlated with CGPA and 2: How much of the variability in success (CGPA) in a graduate nursing program is predicted by years of experience and/or intuition"?

1: "Are years of experience and/or intuition correlated with CGPA?" This study found that years of experience as a RN and CGPA consistently demonstrated an inverse

relationship throughout all of the analyses. This suggests that as years of experience increases GPA decreases. Several previous studies have demonstrated that years of experience as a RN and CGPA are correlated and is often times listed as an admission criterion for graduate programs (Ainslie 1976 and Gieske 1995). However, a study by Burns (2011) demonstrated a negative correlation between years of experience as a RN and CGPA. Half of the total subjects in this study have been providing direct patient care for 10 years or more. However, the full range of possible scores for years of experience greater than 10 years were placed in one category. Therefore, this limited the ability to fully measure the possible relationship between CGPA and experience in nurses who had practiced more than 10 years. Three possible explanations for this relationship are role transition, age and length of time returning to school.

Role transition is a possible explanation for the negative correlation between years of experience and CGPA. Role transition is well documented and occurs when an individual is an expert in their current role and are entering a new role in which they are a novice. This transition is a source of stress related to feelings of under preparedness, feeling "out of place", unfamiliarity with the new role and uncertainty in regards to expectations while trying to balance commitments such as work and personal life (Steiner, McLaughlin, Hyde, Brown, & Burman, 2008; Brown and Olshansky 1998; Heitz, Steiner and Burman 2000). Examples of role transition include that of a nursing student transitioning to a practicing RN; an experienced RN going back to school to obtain a MSN and a MSN student transitioning to a novice FNP.

Age and length of time of out of school may also explain the negative correlation between years of experience and CGPA in graduate nursing school. The mean age for subjects in this study was 40 years. Numerous studies have suggested that older students returning to school face a more difficult time adjusting and performing well in a graduate program (Burns 2011; Springer et al., 2009; Richardson & King, 1998) similarly, a study by Ortega (2013) that looked at age and academic success in nurse anesthesia educational programs reported an inverse relationship. Ortega (2013) concluded that the negative correlation between age and success may due to the length of time since the student had been in a formal education program. As previously mentioned, half of the total subjects in this study have been providing direct patient care for 10 years or more. As a result, the subjects in this study may have been out of school for 10 years or more and therefore, may be "out of practice" to the demands of academia. The subjects in this study were recruited during the first year of the program, which tends to be more rigorous and could also explain the negative correlation between years of experience and CGPA. Therefore, younger nurses with less experience who may have been more recently in school, have a higher CGPA.

CGPA and TIS did not demonstrate a correlation. As previously mentioned in chapter 4, the Smith (2007) 18-item Intuition Instrument was developed for nursing students. The subjects in this study were experienced nurses with the majority of subjects reporting 10 or more years of experience providing direct patient care. Therefore, some of the factors in the instrument may not pertain to experienced RNs. According to Smith (2007), " Administering the instrument to the novice, the advanced beginner, the

competent nurse, the proficient nurse and the expert may reveal that there are certain factors of intuition favoured at each experience level" (p. 41). The four factors (physical sensations, bad feelings, reassuring feelings and spiritual connections) were analyzed and the "Physical Sensations" factor was removed from the model as it demonstrated non-significance and may not apply to experienced nurses. A possible explanation is that experienced RNs are more confident when compared to student or novice RNs. Experienced may be more confident because of positive experiences with intuition use" (Smith 2007). Therefore, experienced RNs may not experience "bad feelings" or "physical sensations" to the same degree as student or novice RNs. For example, perhaps a student or novice nurse may have a "physical sensation" of being ill and experience "bad feelings" over a procedure that had to be performed but the experienced RN could perform the same procedure and not have a "physical sensation" or experience "bad feelings. Furthermore, The Smith Intuition Instrument (Smith, 2007) does not define what is considered a "bad feeling or "physical sensation" and therefore is left open to interpretation. This new variable was referred to as "New Total Intuition Score" (New TIS).

New TIS was positively correlated with years of experience. As stated in the chapter 4, half of the total subjects have been providing direct patient care for 10 years or more, with 75% of the participants working for a minimum of 7 years in the field of nursing. This finding reflects Benner's (1982) theory *From Novice to Expert.* Benner's (1982) theory postulated that intuition is acquired overtime based upon skills acquisition in the experienced nurse.

As previously mentioned in Chapter 4, The Smith Intuition Instrument (Smith, 2007) did not have a standardized scoring guideline in place at the time of this writing. TIS High scores were derived from the 50th percentile. A summation score of less than or equal to 50 was deemed as a low score and a summation score of greater than or equal to 51 was deemed as a high score. The high summation scores were transformed into New TIS High.

New TIS High and CGPA demonstrated an inverse relationship. This suggested that as intuition increases CGPA decreases. In this study, the subjects reported having 10 or more years of clinical experience, which according to Benner's theory describes these subjects as *"Experts"* and therefore will be more intuitive. However, these subjects may have been out of school for 10 or more years. Therefore, as previously discussed, the subjects may have a lower CGPA compared to younger nurses with less experience who may have been more recently in school. In this model, New TIS High and Years of Experience demonstrated a non-significant relationship. This would seem to contradict Benner's theory, as one would expect those with more years of experience to score high on the intuition scale. This non-significance may be due the selection of the 50th percentile as the cut off between high and low scorers. This was done to accommodate the small sample size. However, it may have produced too narrow a margin between the high and the low scorers to detect differences. Therefore, this limited the ability to fully measure the possible relationship between New TIS High and Years of Experience.

2: How much of the variability in success (CGPA) in a graduate nursing program is predicted by years of experience and/or intuition"? The data indicated that

approximately 21.5% of CGPA could be explained by New TIS High and by years of

experience as a RN. This means that 78.5 % of the CGPA was explained by other

factors. Both independent variables, New TIS High and years of experience as a RN,

resulted in a moderately strong correlation and predicted the dependent variable, CGPA.

This research is similar to previous research that also demonstrated a correlation between

years of experience as a RN and CGPA (Ainslie 1976; Gieske 1995; Ortega, Burns,

Hussey, Schmidt, & Austin, 2013) and predicted academic success as measured by

CGPA. To date there were no studies that looked at intuition as a predictor of CGPA.

Limitations

An important limitation of this study was that The Smith Intuition Instrument

(Smith 2007) did not have a standardized scoring guideline in place at the time of this

writing.

Another limitation to note was that The Smith Intuition Instrument (Smith 2007)

measured intuition in nursing students and had not been tested in experienced nurses.

Finally, a larger sample size may allow for statistical significance for the variables

that were close to significance such as TIS with CGPA and TIS with Years of

Experience. Likewise, with a larger sample, NewTIS High could be recalculated with a

broader range of scores that may better differentiate between high and low scorers.

Generalizability

The research generalizability is limited to graduate nursing students with similar

demographic characteristics as those who are attending this master of nursing program.

Recommendations for Future Research

At the time of this writing, no other studies have reported results discussing a relationship between years of experience and intuition as predictors of academic success in a graduate nursing program as measured by CGPA. Further research that looks at both cognitive and non-cognitive variables such as intuition predicting academic success is warranted. A future study with a larger sample size may provide for statistical significance. Another recommendation is to interview experienced nurses to validate interpretation results of this study. A fourth recommendation for future research is to use an intuition instrument where reliability and validity has been demonstrated in experienced nurses. Another recommendation is the development of a research project that looks at graduate students who also obtained their BSN at the same university to determine if familiarity with faculty, the program and culture influence academic performance. It is also recommended that the Smith (2007) Intuition Instrument be developed further for use in experienced nurses. Lastly, further research into the individual factors that comprise the Smith (2007) Intuition Instrument to determine the effect of each individual factor on CGPA.

Summary

In conclusion, New TIS High and Years of Experience as a RN predicted academic success in a graduate nursing program as measured by CGPA. "The importance of being able to predict success in nursing education has implications for students and educators, as well as for nursing programs, the nursing profession, and

health care practice" (McEwan & Goldenberg, 1999, p. 420). Intuition, a non-cognitive

variable, also plays an important part of the nursing process and academic performance

(McEwan & Goldenberg, 1999). Graduate nursing programs should take into

consideration not only cognitive variables but also non-cognitive variables when looking

at admission criteria for prospective students.

Appendix A

The Intuition Instrument

Directions: Please check the response that best reflects the frequency of the following behaviors as they apply to your clinical experiences and life experiences.

Intuition Items:	Never 1	Rarely 2	Sometimes 3	Often 4	Always 5
1. I get a shiver down my spine when I think something is wrong with my patient.					
2. I get an uneasy feeling about a patient's condition.					
3. I connect with my patients at the soul level.					
4. I get nauseous when something is wrong.					
5. I get a calm feeling when I know things will be okay.					
6. The hair on my arms and neck stand up when something is wrong with my patient.					
7. I get a bad feeling about a patient's condition.					
8. I sense a spiritual connection with my patient.					
9. I get a nagging feeling about a patient's condition.					
10. I experience a deep connection with my patient.					
11. I get a peaceful feeling when I know my patient is stable.					
12. I get a lump in my throat when something is wrong with my patient.					
13. I sense an energy field around my patient.					
14. I experience good feelings when my patient is okay.					

Intuition Items:	Never 1	Rarely 2	Sometimes 3	Often 4	Always 5
15. I feel encouraged when my patient is stable.					
16. I do not need verbal communication to sense a spiritual connection with my patient.					
17. I feel relieved when my patient is stable.					
18. I sense energy coming from my patient.					

Intuition Instrument (18 items): This is based on the findings of study with RNs (December 2005)

Four Factors:

Intuition Item	Factor Label based on EFA study with RNs
1. I get a shiver down my spine when I think something is wrong with my patient.	Physical sensations
2. I get an uneasy feeling about a patient's condition.	Bad feelings
3. I connect with my patients at the soul level.	Spiritual connections
4. I get nauseous when something is wrong.	Physical sensations
5. I get a calm feeling when I know things will be okay.	Reassuring feelings
6. The hair on my arms and neck stand up when something is wrong with my patient.	Physical sensations
7. I get a bad feeling about a patient's condition.	Bad feelings

Intuition Item	Factor Label based on EFA study with RNs
8. I sense a spiritual connection with my patient.	Spiritual connections
9. I get a nagging feeling about a patient's condition.	Bad feelings
10. I experience a deep connection with my patient.	Spiritual connections
11. I get a peaceful feeling when I know my patient is stable.	Reassuring feelings
12. I get a lump in my throat when something is wrong with my patient.	Physical sensations
13. I sense an energy field around my patient.	Spiritual connections
14. I experience good feelings when my patient is okay.	Reassuring feelings
15. I feel encouraged when my patient is stable.	Reassuring feelings
16. I do not need verbal communication to sense a spiritual connection with my patient.	Spiritual connections
17. I feel relieved when my patient is stable.	Reassuring feelings
18. I sense energy coming from my patient.	Spiritual connections

Factors:

Factor 1: Spiritual Connections: 6 items: (# 3, 8, 10, 13, 16, 18)

Factor 2: Reassuring Feelings 5 items: (# 5, 11, 14, 15, 17)

Factor 3: Physical Sensations: 4 items: (# 1, 4, 6, 12)

Factor 4: Bad Feelings: 3 items: (#2, 7, 9)

Anita Smith, PhD, RN   Intuition Instrument 18 items (Tested in RNs)

anitasmith@usouthal.edu

Appendix B

MSN Survey Expertise
Page One

Information Sheet and Directions

Predicting Academic Success in a Graduate Nursing Program as Measured by GPA: A Pilot Study

By clicking on the "Yes" below you are acknowledging review of your consent to participate in this study as well as your rights as a research subject.

You are being asked to complete a demographic form and the 18-Item Smith Intuition Survey. The time to complete the online forms will take approximately 10 minutes. As a reminder, you need to complete and submit your responses in one online session as the ID and password can only be used once. You will not be able to save and return at a later time.

It is your right to stop the survey at any time and withdraw from the study at any time. You may skip any questions that you may find uncomfortable. The risk related to loss of confidentiality of data is minimal. To avoid loss, your data will be available to the research team for analysis purposes only. All electronic records are kept on a biometrically secured computer belonging to the principal investigator.

Although your participation will yield no direct benefit to you, we believe that the benefits from this pilot study have implications for not only students but for educators and healthcare institutions.

You have been asked to log into Survey Gizmo and complete an online survey and demographic information. You will be asked to provide your school email address on the demographic page so that your online answers may be correlated with your GPA provided by the MSN Academic Advisor.

If you do participate and experience stress or emotional discomfort, a mental Health professional will be made available to you at no charge. If you experience emotional distress with this study and would like to speak with a mental health professional, Dr. Nancy Romig can be reached at 760-750-7550.

Questions/Contact Information:

If you have any questions about the study, you may contact the researcher, Toni Locke MSN(c),BSN RN PHN at Locke004@cougars.csusm.edu, 619-757-4564. You may also reach the researcher's faculty advisor, JoAnn Daugherty PhD, RN, CNL, jdaugher@csusm.edu, 760-750-7550.

This study has been approved by the California State University San Marcos Institutional Review Board (IRB). You may direct questions to the researcher, or the researcher's faculty advisor, JoAnn Daugherty PhD, RN, CNL, jdaugher@csusm.edu, 760-750-7550. The Institutional Review Board (IRB) is the committee at CSUSM that is charged with protecting the rights of the participants in any study conducted on the campus. If you have any questions about your rights as a research participant, you may contact our IRB at (760) 750-4029.
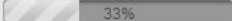
1. I agree to participate in this study. I have reviewed the consent page described above *

    ○ Yes. Click on "next page" to continue survey

    ○ No. Click on "next page" to exit survey.

MSN Survey Expertise
New Page

2. Directions: Please check the response that best reflects the frequency of the following behaviors as they apply to your clinical experiences and life experiences.

	Never	Rarely	Sometimes	Often	Always
I get a shiver down my spine when I think something is wrong with my patient.	○	○	○	○	○
I get an uneasy feeling about a patient's condition.	○	○	○	○	○
I connect with my patients at the soul level.	○	○	○	○	○
I get nauseous when something is wrong.	○	○	○	○	○
I get a calm feeling when I know things will be okay.	○	○	○	○	○
The hair on my arms and neck stand up when something is wrong with my patient.	○	○	○	○	○
I get a bad feeling about a patient's condition.	○	○	○	○	○
I sense a spiritual connection with my patient.	○	○	○	○	○
I get a nagging feeling about a patient's condition.	○	○	○	○	○
I experience a deep connection with my patient.	○	○	○	○	○
I get a peaceful feeling when I know my patient is stable.	○	○	○	○	○
I get a lump in my throat when something is wrong with my patient.	○	○	○	○	○
I sense an energy field around my patient.	○	○	○	○	○
I experience good feelings when my patient is okay.	○	○	○	○	○
I feel encouraged when my patient is stable.	○	○	○	○	○
I do not need verbal communication to sense a spiritual connection with my patient.	○	○	○	○	○
I feel relieved when my patient is stable.	○	○	○	○	○
I sense energy coming from my patient.	○	○	○	○	○

Back   Next

33%

MSN Survey Expertise
New Page

Demographic Survey

3. What is your gender?

○ Male

○ Female

4. What is your age in years?

[_____]

5. Please provide your CSUSM email address

[_____]

6. What is your race? (select all that apply)

☐ Asian/Pacific Islander

☐ Black/African-American

☐ Caucasian

☐ Hispanic

☐ Native American/Alaska Native

☐ Other/Multi-Racial

☐ Decline to Respond

7. Current employment status

○ full time

○ part time

○ per diem

○ not employed

8. What is your marital status?

- ○ single/never been married
- ○ married
- ○ separated
- ○ divorced
- ○ widowed
- ○ Other [_____]

9. What semester are you currently enrolled in?

- ○ Third
- ○ Fourth
- ○ Fifth
- ○ Sixth

10. What cohort are you currently enrolled in?

- ○ 3
- ○ 4
- ○ 5

11. Are you going to school full-time (6 semesters); part-time (8 semesters) or part-time (9 semesters)?

- ○ Full –time (6 semesters)
- ○ Part-time (8 semesters)
- ○ Part-time (9 semesters)

12. How many years have you been providing direct patient care as an RN?

- ○ Less than 3 years of recent experience
- ○ 3-4 years of recent experience
- ○ 5-6 years of recent experience
- ○ 7-8 years of recent experience
- ○ 9-10 years of recent experience
- ○ > 10 years of recent experience

Appendix C
Application Smith Intuition Instrument

Thank you for considering the use of the Smith Intuition Instrument in your project/study. In order to keep track of its use and the data generated from your study, I request the following information and a $25 refundable fee. The $25.00 fee is returned when the results are shared.

Name:	Toni Locke
Mailing Address:	1505 Cypress Avenue
Email:	tonialocke@hotmail.com
Phone:	619-757-4564
University or Institution	California State University San Marcos
Purpose of Study/Project:	To determine if intuition and years of experience as an RN predicts academic success in an advanced practitioner program as measured by GPA
Research Questions:	Does intuition and years of experience as a practicing RN predict academic success in an advanced practitioner program as measured by GPA?

Anticipated Outcomes:	Intuition and years of experience as a practicing RN will predict academic success in an advanced practitioner program as measured by GPA
Projected Completion Date:	Spring 2014
Please send application and fee to:	Anita Smith, PhD, RN 10558 Eastern Shore Blvd #726 Spanish Fort, AL 36527

Appendix D

California State University
SAN MARCOS

Institutional Review Board for the Protection of Human Subjects (IRB)   California State University San Marcos
Tel: 760-750-4029   irb@csusm.edu   www.csusm.edu/irb

Human Subjects Research Approval Form

IRB #: 2013-060

To: **JoAnn Daugherty**

      Toni Locke

Project Title: **Predicting Academic Success in a Graduate Nursing Program: A Pilot Study**

This letter certifies that the above referenced project was reviewed and approved by the University's Institutional Review Board in accordance with the requirements of the Code of Federal Regulations on Protection of Human Subjects (45 CFR 46), including its relevant subparts.

Continuing Review
This approval is valid through the expiration date shown below. If this research project will extend beyond that date, a continuing review application must be submitted at least 30 days before this expiration using the Continuing Review form available on the IRB website. (www.csusm.edu/irb)

Modifications to Research Protocol
Changes to this protocol (procedures, populations, locations, personnel, etc.) must be submitted and approved by the IRB prior to implementation using the Minor Modification Form available on the IRB website.

Unanticipated Outcomes/Events
The CSU San Marcos IRB must be notified immediately of any injuries or adverse conditions.

☑ *Approved Information Sheet or Consent Form(s) are attached. Only approved consent forms may be used to obtain participant consent.*

Approval Date: 4/19/2013
Expiration Date: 4/18/2014

Susan Thompson
IRB Chair

The California State University

Bakersfield • Channel Islands • Chico • Dominguez Hills • East Bay • Fresno • Fullerton • Humboldt • Long Beach • Los Angeles • Maritime Academy • Monterey Bay
• Northridge • Pomona • Sacramento • San Bernardino • San Diego • San Francisco • San Jose • San Luis Obispo • San Marcos • Sonoma • Stanislaus

Appendix E
Sample of Didactic Instructor Email Request

Dear (Name of Instructor)

I am conducting research on years of experience as a practicing registered nurse and intuition as predictors of academic success in a graduate nursing program as measured by GPA as part of my Master's research project. I would like to request 15 minutes at the end of your (name) class on (day and time) in (location). If you are agreeable, I would like to present my project, obtain consents and provide the URL for participants in order to complete the online survey. The survey does not need to be completed during class time. The total time required would be less than 15 minutes. Please let me know if this is acceptable.

Well Wishes,

Toni Ann Locke MSN © BSN RN
CSUSM School of Nursing
Locke004@cougars.csusm.edu
619-757-4564

Appendix F

Information Sheet

Predicting Academic Success in a Graduate Nursing Program as Measured by GPA:
A Pilot Study

Invitation to Participate:

My name is Toni Locke BSN RN PHN and I am affiliated with CSU-San Marcos. I am recruiting cohorts 3, 4 and 5 MSN students currently enrolled at CSU-San Marcos and CSU-Temecula to participate in a pilot study that seeks to determine if intuition and/or years of clinical experience will predict academic success in a graduate nursing program.

Requirements to Participate:

In order to participate in this pilot study you must be at least 18 years of age, and currently enrolled in the Masters of Nursing program at CSU-San Marcos or CSU-Temecula. You must also have internet access and be proficient in reading and writing in the English language. Participants must have 3 or more years of recent, direct patient care to participate. Recent experience is defined as direct patient care that has been provided within the last 2 years at a minimum. You agree to have your GPA accessed by your faculty academic advisor at Extended Learning.   You will be emailed a link to Survey Gizmo, a secure website where you will be asked to complete a demographic form and the Smith 18-Item Intuition questionnaire. The time to complete the online forms will take approximately 5 minutes to complete. You will have 10 days from today to complete and submit your responses. You may receive up to 3 email reminders to participate in the survey if you have not done so already. You will have to complete and submit your responses in one online session. You will not be able to save and return at a later time.

Risks:

A potential risk is inconvenience related to the time required to complete the consent and questionnaire. The demographic and survey questions are generally non-threatening and there is a low likelihood of a negative emotional response. The risk related to loss of confidentiality of data is minimal.

Safeguards:

The survey will take no more than 10 minutes to complete. You may stop the survey at any time and you may withdraw from the study at any time. You may skip any question that you may find uncomfortable. Dr. Nancy Romig, a mental health professional, will be available should you experience stress. You may contact her at nromig@csusm.edu. Your name, demographic information, GPA and email address will be kept in a locked file cabinet in the faculty advisors secured office on campus.

Only the research team will have access to the information that you provide. That information will be kept in a locked file cabinet in the faculty advisor's secured office at the CSU-San Marcos School of Nursing and will be destroyed no later than June 1, 2014.

Benefit:

There are no direct benefits to participation. The benefits from this pilot study have implications for not only students but for educators and healthcare institutions. As the demand for advanced practitioners increases, the demand for admission into graduate nursing programs with limited capacities also increases. Therefore it is important to be able to predict academic success.

<u>Voluntary Participation</u>:

Your agreement to participate in this pilot study, *Predicting Academic Success in a Graduate Nursing Program: A Pilot Study* is completely voluntary. You can withdrawal your participation at any time without consequences.

<u>Contact Information</u>:

Primary Investigator:
Toni Locke
Locke004@cougars.csusm.edu
Phone: 619-757-4564

Faculty Advisor:
JoAnn Daugherty
jdaugher@csusm.edu
Phone: 760-750-7550

If you do decide to participate in this study please complete your consent to participate and to release your GPA. After which you will be given a link to Survey Gizmo via your CSUSM email so that you may complete

Appendix G

Consent to Participate in Research
Predicting Academic Success in a Graduate Nursing Program as Measured by GPA:
A Pilot Study

Invitation to Participate:

Toni Locke BSN RN PHN, a graduate student in the Masters of Nursing/ Family Nurse Practitioner program at California State University San Marcos is conducting a study that seeks to predict academic success in a graduate nursing program. You are being contacted because you have been identified as an MSN student who is currently enrolled in either cohorts 3, 4 or 5 at CSU-San Marcos or CSU-Temecula.

Requirements to Participate:

In order to participate in this pilot study you must be at least 18 years of age, and currently enrolled in the Masters of Nursing program at CSU-San Marcos or CSU-Temecula. You must also have internet access and be proficient in reading and writing in the English language. Participants must have 3 or more years of recent, direct patient care to participate. Recent experience is defined as direct patient care that has been provided within the last 2 years at a minimum. You agree to have your GPA accessed by your faculty academic advisor at Extended Learning.   You will be emailed a link to Survey Gizmo, a secure website where you will be asked to complete a demographic form and the Smith 18-Item Intuition questionnaire. The time to complete the online forms will take approximately 5 minutes to complete. You will have 10 days from today to complete and submit your responses. You may receive up to 3 email reminders to participate in the survey if you have not done so already. You will have to complete and submit your responses in one online session. You will not be able to save and return at a later time.

Risks:

There are minimal risks to participate in this study. These include:

1: Inconvenience due to loss of personal time necessary to participate in the online survey
2: Fatigue or emotionally stressed
3. Potential loss of anonymity
4: Potential loss of confidentiality

Safeguards:

Safeguards put in place to minimize risk include:

1: The survey will take no more than 10 minutes to complete.
2. You may skip any question that you may find uncomfortable. You may stop the survey at any time and
     withdraw from the study at any time. Dr. Nancy Romig, a mental health professional, will be available
     should you experience stress. You may contact her at nromig@csusm.edu.
3: Your personal information will be de-identified and assigned a case ID number
4: Your data will be kept confidential, available to the research team for analysis purposes only.

Only the research team will have access to the information that you provide. That information will be kept in a locked file cabinet in the faculty advisor's secured office at the CSU-San Marcos School of Nursing and will be destroyed no later than June 1, 2014.

Benefit:

Although your participation will yield no direct benefit to you, we believe that the study has the potential to positively affect nursing education and determining predictors of success for prospective students, graduate nursing schools and healthcare institutions.

Voluntary Participation:

Your participation is completely voluntary and may be withdrawn at any time without any consequences. In particular, your grade will not be affected if you decide not to participate.

Questions/Contact Information:

If you have any questions about the study, you may direct those to the researcher, Toni Locke MSN(c) BSN RN PHN, Locke004@cougars.csusm.edu, 619-757-4564 or the researcher's faculty advisor , JoAnn Daugherty PhD, RN, CNL, jdaugher@csusm.edu, 760-750-7550. Questions about your rights as a research participant should be directed to the IRB at 760-750-4029. You will be given a copy of this form to keep for your records.

☐   I agree to participate in this research study.
☐   I agree to have my GPA accessed

_____ _____
Participant's Name   Date

_____
Participant's Signature

_____
Researcher's Signature

References

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