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Predicting success for nontraditional students in an afternoon and evening/weekend associate degree in nursing program

Hernani Luison Ledesma

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PREDICTING SUCCESS FOR NONTRADITIONAL STUDENTS

IN AN AFTERNOON AND EVENING/WEEKEND

ASSOCIATE DEGREE IN NURSING PROGRAM

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctorate of Education in Organizational Leadership

by

Hernani Luison Ledesma Jr.

May 2012

Farzin Madjidi: Dissertation Chairperson

This dissertation, written by

Hernani Luison Ledesma Jr.

under the guidance of a Faculty Committee and approved by its members, has been submitted to and accepted by the Graduate Faculty in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

Doctoral Committee:

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TRIBUTE

This document is a tribute to two fathers; my earthly dad Hernani Deocampo Ledesma Sr. who has been with my heavenly Father since 1996. Both have been with me my whole entire life, sharing this rite of passage with them is an indescribable feeling. Each step in the course of this sojourn I was supported with their love and encouragement, their teachings echoed in the readings, reflections, and enterprise I accepted during this doctoral program. Through this entire process, during the most trying of times, I was truly blessed with strength and inspiration from both of them.

Growing up with my dad on earth for the 26 years I had him, was filled with unbelievable memories. Pouring through photos of my childhood always brings a huge grin on my face because of the amazing beauty he showed me that life is. His example made an indelible impression on who I was, who I am, and who I want to be. A long time ago, dad sacrificed the opportunity to attend Pepperdine University so he could be more than just my father. Dad was my role model, my hero, and most of all, my inspiration. I know he is looking down on his namesake with a smile and a firm belief that all his hard work was worth it.

"The Lord is my shepherd; I shall not want. He maketh me to lie down in green pastures: he leadeth me beside the still waters. He restoreth my soul: he leadeth me in the paths of righteousness for his name's sake. Yea, though I walk through the valley of the shadow of death, I will fear no evil: for thou art with me; thy rod and thy staff they comfort me." This scripture from Psalm 23 embodies the life journey I have traveled with my Father in heaven. During my time at Pepperdine University, He facilitated

moments of discovery, times of enlightenment, and flashes of illumination…all of them

in preparation for His plan.

DEDICATION

I would like to dedicate this final document to Karen Marie Ledesma. Throughout this journey she has been a source of strength and encouragement that I truly appreciate. When I was down and felt a bit overwhelmed, Karen was so good at making me smile and focusing my attention on what is truly important in this world. Her strong and faithful relationship with the Lord has been a reminder of what I strive to be. She has been open and understanding, as I have chased after my dreams, standing steadfast by my side and feeding me spiritually, emotionally, and physically.

Mom has been my number one cheerleader, the ultimate believer in everything I have endeavored to accomplish. She has always made me see the world as opportunities and a gift from God that I should not squander. Mom has been the example of a loyal servant to God and showed me that giving was a calling and a vocation I should keep answering in every aspect of my life. I cannot begin to thank her enough for her prayers and well wishes when I was pursuing a goal; they were instrumental in guiding my thoughts and heart in the right direction.

Manong is the brother that everyone should have. The amount of happiness and laughter we share as siblings is something to be experienced. He is one of my role models that raise the bar each and everyday. His generosity and thoughtfulness cannot be rivaled. Manong is my 'first round draft pick' on my life's all-star team, and would definitely be a first ballot hall of fame inductee in heaven. I cannot imagine how boring life would have been if I did not have him as my brother.

My family has been the core of who I was, who I am, and who I am going to be. They have been the most influential people in my life who have supported me in every way imaginable. I love them all with each passing day.

ACKNOWLEDGEMENTS

This exposition would not have been possible without Dr. Farzin Madjidi as my dissertation chair. His simpatico nature with me was something I truly valued during this process. When I was unsure of myself, Dr. Farzin's voice would echo in my mind and push me further along my path. His humor and wit were always a welcome break from taking myself too seriously. Dr. Farzin will always hold a special memory for me during my days at Pepperdine. Trusting the *process* and *accepting that as my belief* have been mantras that somehow gave me a lightning bolt to ride and a touchstone to find inspiration. Thank you for those words, their meanings, and the friendship.

I am forever grateful that Dr. L. Hyatt was one of my mentors during my time in this doctoral program. Her guidance and counsel always had great timing and allowed me the opportunity to succeed. Dr. Laura had a way of communicating with me that set me at ease and gave me the confidence to climb that mountain, push that boulder, and give it everything I had. Thank you for keeping the bar high and attainable, but most of all for showing me the tools to reach it and surprise myself.

The example of Dr. Tori Canillas-Dufau inspired me to pursue my doctoral education. It has truly been a blessing interacting with her as an instructor, a classmate, a colleague, and a mentor. With her presence during this journey, I remembered to enjoy it, appreciate the experience, and breathe. Dr. Tori has been a source of strength and encouragement during all levels of my nursing career. I hope one day to be a role model for someone the way she has been one for me.

I owe my deepest gratitude to Christie Dailo who was always willing to take time and guide me towards the right way to do things. She always had a kind word and

invaluable advice on how to navigate this dissertation process. I could not have wished for a more nurturing person to show me the way. Thank you for all of those chit-chats and emails that were so calming in this tumult called Pepperdine University.

It is a pleasure to thank Dr. Rebecca Otten for her unwavering faith in me. She instilled a love for nursing and a passion for education that will stay with me for the rest of my life. I know without Dr. Becky my life as a Registered Nurse would not have ever been realized. You will always be a part of my 'think tank', and I can never thank you enough for being there from the beginning.

From the deepest part of my heart, I want to recognize Dr. Marsha Sato for her incredible gifts that filled my imagination with the hope of what I could become. She has been a mentor and colleague for whom my admiration will never wane. Dr. Marsha always sought to challenge me and create opportunities for me to grow. I will always be grateful for the confidence, trust, and assurance she has in me.

I also owe an immense debt of appreciation to Regina Meister and the Writing Support Center for the important resource they provided for me while in the program. Regina was a constant support system that I used quite frequently and received with all humility. The feedback she imparted was something I respected, valued, and welcomed.

I wish to send fond wishes to my classmates in the Educational Doctorate in Organizational Leadership program. Those countless hours of discussion, teamwork, and assignments were all worth it. You will forever be my friends and part of my family.

Finally, I want to acknowledge all of those who aspire to become a Registered Nurse. This document is written with the desire to elevate your learning to a level that

meets your dreams. I was once in your shoes and firmly believe with the right balance

you can also attain your hopes, dreams, and aspirations.

VITA

Hernani Luison Ledesma Jr.

ACADEMIC BACKGROUND

Doctor of Nursing Practice; Western University of Health Sciences	July 2014
Doctorate of Education-Organizational Leadership; Pepperdine University	May 2012
Master of Science-Nursing Education; Mount St. Mary's College	December 2007
Associate of Arts-Nursing; Mount St. Mary's College	May 2006
Master of Science-Healthcare Administration; National University	May 2000
Bachelor of Science-Economics; California State Polytechnic University	August 1997

ACADEMIC TEACHING EXPERIENCE

Mount St. Mary's College-Los Angeles, California	*Master of Science in Nursing Program*
Alumni Ambassador/Special Projects Assistant	May 2008-Present
Nursing 290: Nursing Research & Methodologies	Assist. to the Professor: Spring 2008, 2010
Nursing 208: Curriculum Development and Evaluation	Assist. to the Professor: Summer 2008
Nursing 296: Thesis Project Seminar	Assist. to the Professor: Fall 2008
Mount St. Mary's College-Los Angeles, California	*Associate Degree in Nursing Program*
Nursing 20: Adaptation Model Nursing Theory	Instructor: Fall 2007, Spring 2008
Nursing 23/23L: Principles and Practice of Nursing Skills	Instructor: Spring 2008
Nursing 24: Adult Adaptation Nursing I	Instructor: Fall 2007, Spring 2008
Nursing 24A/L: Med-Surg Principles & Practice of Skills I	Instructor: Fall 2007, Summer 2008
Nursing 26A/L: Med-Surg Principles & Practice of Skills II	Instructor: Fall 2006-08, Spring 2007-08
Nursing 30: Pharmacology	Instructor: Spring 2008
California State University-Fullerton, California	*RN to BSN Distance Program*
Nursing 353: Alterations in Health Status	Adjunct Faculty: Spring 2009
California State University-Fullerton, California	*Entry Level Master of Nursing Program*
Nursing 403: Foundations of Nursing Practice	Adjunct Faculty: Fall 2008

HONORS, GRANTS, & AWARDS

Re-Creation Summer Camp Service Award: 5, 10, 15, 20 years	1995, 2000, 2005, 2010
Advance for Nurses (article): A Nurse's Life	June 23, 2008
Press Enterprise 2007 Caring Spirit Awards: Community Service	2007
DHHS: Health Resources and Services Administration-Grant Recipient	2006, 2007
Sr. Anne Joachim Moore Award-Outstanding Clinical Student (MSMC)	2006
Computer Marketing Games National Champions-Pi Sigma Epsilon	1993
Archdiocese of Los Angeles Christian Service Volunteer of the Year	1988

HONOR SOCIETIES & ORGANIZATIONS

Kappa Gamma Pi-the National Catholic College Graduate Honor Society
Phi Delta Kappa International-the Professional Association in Education
Pi Sigma Epsilon-National Professional Fraternal Organization in Sales, Marketing, and Management
Sigma Theta Tau International-the Honor Society of Nursing

PROFESSIONAL LICENSES & CERTIFICATIONS

Registered Nurse-State of California	Active	September 2010-2012
Physical Therapist Assistant-State of California	Active	August 2011-2013
Nursing Home Administrator-State of California/Federal	Inactive	
American Nurses Credentialing Center-Nursing Professional Development		February 2012-2017
Advanced Cardiac Life Support		April 2012-April 2014
Basic Life Support-Healthcare		April 2012-April 2014
Pediatric Advanced Life Support		April 2012-April 2014

PROFESSIONAL EXPERIENCE

Citrus Valley Health Partners	Clinical Risk Manager	December 2011-Present
Citrus Valley Medical Center	Education Instructor	July 2009-December 2011
Ledesma Consulting Solutions, Inc.	Instructor/Tutor	August 2006-Present
Pomona Valley Hospital Medical Center	Registered Nurse	June 2006-July 2009
Citrus Valley Health Partners	Physical Therapy Assistant	January 2003-July 2009

PROFESSIONAL AFFILIATIONS, COMMITTEES, & MEMBERSHIPS

Alumni Ambassador-Mount St. Mary's College	2007-Present
American Assembly of Men in Nursing-Member	2007-Present
American Diabetes Association-Advocate	2005-Present
American Heart Association-Advocate	2005-Present
American Nurses Association-Subscriber	2005-Present
American Stroke Association-Advocate	2005-Present
Emergency Management Committee-CVMC	2011-Present
Environment of Care/Safety Committee-CVMC	2009-Present
the Sherman Group, Inc.-Executive Board Member	2012-Present

PROFESSIONAL RESEARCH & SCHOLARSHIP

"The Leadership Academy"

Hawaii International Conference on Education	January 2012
National Nursing Staff Development Organization	July 2012

"Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program"

Hawaii International Conference on Education	January 2012

"Distance Education"

Hawaii International Conference on Education	January 2010

"Ethics and the Slow Code"

Society of Educators and Scholars	October 2009

"Using Evidence-Based Practice and Critical Thinking in Research with the Roy Adaptation Model"

Roy Adaptation Association Conference	Spring 2007
The Neuman Systems Model (5th Edition)-Textbook Reviewer	Published 2011
The Roy Adaptation Model (3rd Edition)-Textbook Reviewer	Published 2008

VOLUNTEER & COMMUNITY SERVICE

"Camp Under the Son" Summer Camp-Catholic Charities of Los Angeles	1985-1987
"Re-Creation" Summer Camp-Catholic Charities of Orange County	1988,1992-Present
"Weekend Getaway" Summer Camp-Catholic Charities of Orange County	2002-Present
Pastoral/Spiritual Care Volunteer-Citrus Valley Health Partners	2003-Present
Entertainment Industry Foundation (EIF)-Revlon Run/Walk for Women	2008-Present
Thanksgiving Outreach-Faith Community Church	2004-Present
Habitat for Humanity-Pomona Valley Chapter	2007-Present

LIST OF COURSES

Term	EDOL Course	Title	Units	Professor
Fall 2008	714	Organizational Behavior Theory and Design	4	Kent Rhodes
Fall 2008	729	Information Literacy and Scholarship	1	Kay Davis
Fall 2008	740	Personal Leadership	3	Farzin Madjidi
Spring 2009	700	Leadership Theory and Practice	3	Barbara Lincoln
Spring 2009	724	Ethical Leadership and Social Justice	3	L. Hyatt
Spring 2009	734A	Data Analysis and Interpretation	2	Susan Imholz
Summer 2009	734B	Data Analysis and Interpretation (Inferential)	2	Farzin Madjidi
Summer 2009	754A	Economic and Political Systems	3	Farzin Madjidi
Summer 2009	754B	International Policy Experience	2	Farzin Madjidi
Summer 2009	758A	Consultancy Project	2	Andrew Harvey
Fall 2009	730A	Research Methods and Evaluation	3	Kay Davis
Fall 2009	756	Leading Educational Programs	3	Mark Allen
Fall 2009	758B	Consultancy Project	2	Andrew Harvey
Spring 2010	730B	Qualitative Research and Analysis	2	Kay Davis
Spring 2010	759	Law and Dispute Resolution	3	John Tobin
Spring 2010	762	Transforming Organizations in a Global Community	3	Laura Hyatt
Summer 2010	753A	Management and Policy Development	3	Jack McManus
Summer 2010	753B	National Policy Experience	2	Jack McManus
Summer 2010	757	Entrepreneurship	2	Vance Ceasar
Fall 2010	787	Comprehensive Examination	3	Jack McManus
Fall 2010 to Spring 2012	791	Dissertation Research	2	Farzin Madjidi

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Abstract

Mount St. Mary's College has offered a nontraditional Associate Degree in Nursing (ADN) Program since 1992. The program has an afternoon and evening/weekend format. There has been one previous research study published in 2005 that described the student population that Mount St. Mary's College serves. This present study examined the student population since 2005 because of changes in admission requirements, the National Council Licensure Examination (NCLEX) – Registered Nurse (RN) passing standard, and the persistent nursing shortage.

The purpose of this research study was to predict success for nontraditional adult learners in an Afternoon and Evening/Weekend Associate Degree of Nursing (ADN) program. Success was defined as completion of the nursing program and passing the national board examination on the first attempt. This research study also identified and described the nontraditional adult learners served in an Afternoon and Evening/Weekend Associate Degree of Nursing (ADN) program. Additionally, this research determined if selected admission criteria and other factors such as student characteristics are correlated with both nursing program completion (as measured by exit grade point average) and subsequent passage of the National Council Licensure Examination (NCLEX) – Registered Nurse (RN) on the first attempt.

Chapter 1: Introduction

Students apply for admission to nursing schools in the hope of graduating and passing their national board examination on the way to becoming nurses. There are three phases a prospective nursing students experience by the end of this academic excursion. First, the students must pass prerequisite courses that qualify him to apply to a nursing school with subsequent admission into the program. These courses are determined by the state's Board of Registered Nursing (BRN) to meet entry-level requirements for licensure. Second, the student must graduate from a nursing program and maintain a passing grade throughout. Again, the requirements and standards for the nursing programs are set by the state's Board of Registered Nursing (BRN). Finally, the student will need to attain a passing score on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). For most students, this process is a painstaking journey that ideally ends in successful licensure as an Registered Nurse (RN).

Before licensure, however, the faculty and staff of nursing school programs invest their time, energy, and resources, which need to be spent wisely. In the wake of the recent financial and economic downturn, programs have had to operate more effectively and scrutinize their admission process. As a result, some nursing programs have adopted an entrance examination as a tool to determine the best candidates for admission. Still the national board examination passing rates are not at the level nursing school programs would like them. It would be beneficial to formulate and construct a blueprint on how to predict the likelihood of success.

This need to have nursing students obtain licensure as Registered Nurses (RNs). is magnified by several factors. "In October 1999, California became the first state in the United States to adopt legislation mandating minimum licensed nurse-to-patient ratios per unit in acute care hospitals" (Donaldson et al., 2005, p. 198). Before this monumental event, it was

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precluded by an environment where nurses were overworked, underpaid, and definitely not delivering the highest quality of care. These nurses worked assignments that were clinically unsafe and ultimately led to negative patient outcomes and nursing injury rates (Charney & Schirmer, 2007). Consequently, staffing ratios were developed and implemented with the intent to provide the most reasonable number of patients a nurse could effectively care for during a shift. These ratios have increased the demand for nurses.

Another factor that has increased the need for more nurses is the nursing shortage itself. "The United States is in the midst of a shortage of Registered Nurses (RNs) that is expected to intensify as baby boomers age and the need for health care grows" (American Association of Colleges of Nursing [AACN], 2009, p. 1). This reality creates the obvious need for more nurses are increasingly urgent. The rise in the number of healthcare consumers requires a larger number of registered nurses to deliver services. "Compounding the problem is the fact that nursing colleges and universities across the country are struggling to expand enrollment to meet the rising demand for nursing care" (American Association of Colleges of Nursing [AACN], 2009, p.1).

The responsibility of nursing school administration is to prepare nurses from admission to graduation. In light of a national nursing shortage and a demanding health care environment, the role of administration becomes heightened. Time is of the essence as nursing program enrollment is growing and selection of the most qualified students is ongoing. According to the United States Department of Health and Human Services Health Resources and Services Administration (2009):

This Registered Nurse (RN) shortage will continue to grow if current trends continue, including: a growing and aging United States population; high demand for highest

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quality of care; an Registered Nurse (RN) workforce at or approaching retirement age; difficulties attracting new nurses and retaining the existing workforce. (p.1)

These issues elicit a need to streamline students through the educational system and onto the national board examination. Nursing school programs are responding to budgetary constraints by cutting courses, admission class size, and faculty. The number of classes offered is decreasing; the number of students admitted is less than in the past, and aggregate full-time faculty numbers are trending downward. These cuts have prompted administration to admit students who exhibit the best chance of finishing the nursing program and passing their board exam on the first attempt.

Before licensure is granted multiple steps must be completed before a nurse can safely enter the profession. These steps include: graduating from a recognized nursing program; meeting the specific requirements of the state board of nursing; and passing the National Council of State Boards of Nursing (NCSBN) National Council Licensure Examination Registered Nurse (National Council of State Boards of Nursing [NCSBN], 2010).

Statement of the Problem

It is imperative to predict success factors of nursing school students because of the significant impact that completion has on the students, the nursing school program, and the health care system. Success for a nursing school program is quantified by the passing rate of their students who sit for the national board examination on the first attempt. With these considerations in mind, a method to predict the success factors of nursing students is a logical course of action with benefits for everyone. The nursing student will have a clue about their success, nursing administration will admit students with higher likelihood of completion, and the health care system will receive licensed nurses ready to enter the profession.

Previous studies on student success in nursing schools and on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) are primarily focused on baccalaureate nursing programs (Alexander & Brophy, 1997; Davenport, 2007; Higgins, 2005; Waterhouse & Beeman, 2003). This preceding research may not be applicable to the nontraditional adult learners who enroll in Associate Degree in Nursing programs. Other research shows that recent changes in the economy have sent waves of people to pursue nursing education as a means to a stable means of employment (American Association of Colleges of Nursing [AACN], 2009). This nontraditional student has spelled a boost in applications has made nursing school programs create admission processes that will select the most appropriate students. Predicting the prospect of success in the nursing program and on the national board examination will allow nursing programs the ability to utilized their time, energy, and resources more effectively.

Students in a nursing school need to be given the proper tools to achieve success in the program and on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Prior knowledge of who will need additional resources will support the admission process and remediation program by alerting the nursing school where areas of challenge of their students might arise. This knowledge may be gleaned by investigating the predictors of success using admission criteria and other student characteristics.

Statement of the Purpose

The purpose of this research study was to predict success for nontraditional adult learners in an afternoon and evening/weekend Associate Degree of Nursing (ADN) program. Success was defined as completion of the nursing program and passing the national board examination on the first attempt. This research study also identified and described the

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nontraditional adult learners served in an Afternoon and Evening/Weekend Associate Degree of Nursing (ADN) program. Additionally, this research determined if selected admission criteria and other factors such as student characteristics are correlated with both nursing program completion (as measured by exit grade point average) and subsequent passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

Research Questions

1. What are the demographics and characteristics of the respondents?

2. Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

3. Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

4. Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

5. Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

Significance of the Study

The recent economic downturn has caused nursing school programs to decrease their enrollment numbers (American Association of Colleges of Nursing [AACN], 2009). With decreased funding sources, nursing programs need to be more efficient in their admissions process so they are admitting students who have a higher likelihood of success. If a nursing

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program were to admit 50 students but only graduates 40 students with 30 passing the board examination on the first attempt, then there is a 60% pass rate. But if that same nursing program uses a predictor model to admit 50 students and graduates 45 with 40 passing on the first attempt, the pass rate becomes 80%. Discovering which applicants have a greater propensity to complete the courses of study and pass the boards, will allow schools of nursing to have a greater return on investment. The nursing shortage predicates the enrollment numbers to remain at present levels and increase in the near future (California Board of Registered Nursing [BRN], 2009a). Screening for success will assist nursing programs in structuring an admission process to handle this mounting number of applicants.

The demographics of the nursing profession: aging nurses, aging nurse faculty, fewer new nurse entries into the profession, and baby boomers living longer because of complex medical interventions are painting a bleak future (Joint Commission on Accreditation of Healthcare Organization [JCAHO], 2002). "California ranks next to last in the United States for its per capita number of Registered Nurses (RNs). There must be an adequate supply of qualified Registered Nurses (RNs) in order to protect the health and safety of consumers and to promote quality nursing care" (California Board of Registered Nursing [BRN], 2006, p. 4).

Assumptions of the Study

California is a unique state because of its nurse-patient ratios. This distinctive quality is magnified by its population diversity in comparison to the rest of the country. This variety is reflected in its nursing student population. Many students are choosing nontraditional or private nursing programs because the public state programs have limited spots and long waiting lists. The fact that "California will need to maintain the present number of nursing graduates in order to meet long-term health care needs" is in opposition to the state cuts in

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nursing program funding (California Board of Registered Nursing [BRN], 2009a, p. 26). The profession of nursing is expanding its breadth and depth of education and is looking to increase the number of nurses (American Association of Colleges of Nursing [AACN], 2009).

It was assumed that the administration of the Associate Degree in Nursing (ADN) program is strongly invested in the success of their students. The California Board of Registered Nursing (BRN) measures nursing program success by the results of the school's graduates who pass the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. This direct relationship between student and nursing program success is a symbiotic one.

Finally, the data to be collected was accurate and secure. There is an assumption that the academic institution maintains the integrity of the student records. The students admitted into the Associate Degree in Nursing (ADN) program have met the admission requirements of the nursing program. The data collected from the results of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) are also assumed to be accurate and secure. Reports to the educational institution are forwarded and should mirror the results of the examination.

Limitations of the Study

There were limitations for this research study. These considerations were outside the control of the researcher.

- This was a retrospective study of student records.
- There was only one educational institution being used as the source of the data.
- This Associate Degree in Nursing (ADN) program was a nontraditional program and services a nontraditional student population.

- The only students who were included in the study are those who successfully completed the nursing program and were able to sit for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).
- The body of literature available to the researcher at the time of the research study was mostly focused on baccalaureate nursing programs.

Delimitations of the Study

There were delimitations for this research study. These considerations were within the control of the researcher.

- Students being studied were those who completed a five or six semester Associated Degree in Nursing (ADN) program from Fall 2006 to Fall 2010 at Mount St. Mary's College in Los Angeles, California.
- Those students who do not have all of the variables for examination in this study were not be included.
- Issues of student retention and attrition were not investigated or considered in this study.
- Confounding variables that appear were not investigated or considered in this study.

Theoretical Frameworks

In the literature, there are five theories that intersect at the point where the student and the academic institution have complementary goals. Each one of these frameworks speaks to the journey a student experiences while pursuing licensure to becoming a Registered Nurse. Malcolm Knowles' theory on andragogy enumerates the model of adult learning. Albert Bandura's self-efficacy theory focuses on the belief of the person that they can achieve their goals. Vincent Tinto's student retention theory examines how the person is supported toward

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an outcome of success. Sister Callista Roy's self-concept facet of her adaptation model explains the understanding a student has of himself. Thomas Kuhn's theory of chaos serves as the circular framework that characterizes the dynamic phenomena between the student, the administration, program completion, and the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Exploring each one of these theoretical frameworks will conceptualize the issue at hand.

Andragogy. "Andragogy is any intentional and professionally guided activity that aims at a change in adult persons" (Knowles, Holton, & Swanson, 2005, p. 60). Appreciation of the learning needs of the students in a nursing program is an important step toward understanding how to support them. Andragogy has been an evolving theory since its inception in the 1950s. These following assumptions regarding Andragogy and the adult learner bring about clues on how to address the delivery of the nursing program.

The need to know. The adult learner has a need to know why they are learning. The California Board of Registered Nursing requires nursing programs to meet certain requirements. These requirements are part of the goals and objectives of programs to properly prepare students to take the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Students are distributed syllabus for each course, which lists the class goals and objectives. Expectations are clearly reviewed the first day of class instruction.

The learners' self-concept. These learners have a high level of self-concept that dictated their desire to be part of the program. They no longer wanted decisions to be made for them. Making choices that will affect their destiny is what empowers them to attend courses week in and week out. There is a strong sentiment by the nursing students to create their future and not being limited or defined by previous failures.

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The role of the learners' experience. Life experiences have molded the student's ability to learn. The amount and value of those experiences can have positive and negative effects on the learner. An entrance examination to qualify for enrollment into a nursing program takes some of the student's past experiences into account. The passing scores only factor the minimal amount of didactic knowledge required, but it does not assess what that knowledge means to the learner.

Readiness to learn. Timing has been a crucial consideration in the readiness of the participants to learn. Students who enter a nursing program have met the minimal academic requisites to begin their education. There is an intentional application process that requires a prospective student to engage and take ownership of their decision to pursue the profession of nursing. It is not like some majors in college where you can change your focus by just filling out a form. There are conditions that need to be met which deem a student ready for a nursing program. The readiness to learn is an assumed condition of the application process.

Orientation to learning. Adults differ from the young in their orientation to learning because they realize they would acquire new knowledge, skills, and attitudes. This new skill set would be integral in real world situations. In this case, the newly acquired tools would be used by graduates in their aspiration of licensure as a Registered Nurse (RN) in the state of California. Throughout the nursing program courses build upon one another to reinforce critical thinking and the nursing process so students become graduates who will take the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Motivation. Internal and external motivators are essential concepts for the adult learner. They realize that learning would achieve many of their goals. It would transform their lives and of those around them. The external ones do not have the same lasting affect as the

internal, yet both energize the students to stay focused on this journey. The students in nursing programs have a goal to obtain licensure, which is attainable with successful graduation and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Self-Efficacy Theory. Self-efficacy theory is the belief in one's capabilities to organize and execute the courses of action to manage prospective situations (Bandura, 1986). Bandura's theory on self-efficacy has four sources by which a person draws a belief about himself or herself.

Mastery experience. This is the experience that a person gains from successfully completing a task. Bandura (1986) postulates, "failures that are overcome by determined effort can instill robust percepts of self-efficacy through experience that one can eventually master even the most difficult obstacles" (p. 399).

Social modeling. Observing others achieve a goal can add to a person's self-efficacy, it gives the impression that they are capable of accomplishing things also. Bandura (1986) expands this by saying:

> Although vicarious experiences are generally weaker than direct ones, vicarious forms can produce significant, enduring changes through their effects on performance. People convinced vicariously of their inefficacy are inclined to behave in ineffectual ways that, in fact, generate confirmatory behavioral evidence of inability. Conversely, modeling influences that enhance perceived self-efficacy could weaken the impact of direct experiences of failure by sustaining performances in the face of repeated failure. A given mode of influence can thus set in motion processes that augment its effects or diminish the effects of otherwise powerful influences. (p. 400)

Social persuasion. Having others communicate that you possess the attributes and

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characteristics to succeed increases self-efficacy. This source of self-efficacy, "can contribute to successful performance if the heightened appraisal is within realistic bounds" (Bandura, 1986, p. 400). Feasibility impacts the strength of how social persuasion can increase self-efficacy.

Psychological responses. Bandura (1986) asserts, "treatments that eliminate emotional arousal to subjective threats heighten perceived self-efficacy with corresponding improvements in performance" (p. 401). The way a person feels about the experience of achievement increases self-efficacy and is tied directly to success.

Student Retention Theory. "In the escalating nursing shortage, nursing student retention and success (graduation and licensure) is a priority" (Jeffreys, 2006, p. 406). Nurse educators are interested in identifying the predictability of success of the nursing student so resources can be best utilized. Supporting students from admission to graduation is one of the precepts of Tinto's theory (2007) on student retention.

Tinto (2007) painted the landscape of where student retention theory was, is, and is going. In the past, when students failed they did so because of their own failings. Presently, the environment of diversity is wrought with competing expectations on the student who need additional support from the academic institution to succeed. In the future, financial constraints will be drastically affecting the ability to implement retention programs effectively. The immersion of these programs in the fabric of the institution will dictate whether or not retention is a reality (Tinto, 2007). The success of student retention is influenced by three essential considerations.

*Institutional Commitment to Students. "*One of the most evident features of effective retention programs is their enduring commitment to the students they serve" (Tinto, 2005, p.

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6). Tinto does not see this as a competing desire of the academic institution, but rather an embodiment of their mission. Fulfillment of this mission is always measured in student outcomes.

Educational Commitment. "The secret of effective institutions also reflects the fact that their commitment to students goes beyond the concern for retention per se to that of the education of students" (Tinto, 2005, p. 7). Tinto views this commitment as the key to the effectiveness of a retention program. Focusing on the overall education of the student and not the retention of the student is the spirit of this commitment.

Social and Intellectual Community. "A common feature of effective retention programs, indeed of institutions with high rates of student retention generally, is their emphasis upon the communal nature of institutional life and the importance of educational community, social and academic, in the learning process" (Tinto, 2005, p. 7). Here we see Tinto's emphasis on the integration of the student into the institution in the holistic communal sense.

Self-Concept. Sister Callista Roy's Adaptation Model (2009) is an analogy used to explain the actuality of the relationship between the patient, the nursing professional, the environment, and the pursuit of health. Roy proposed this model in the 1960s while she was a graduate student at the University of California, Los Angeles. Under the esteemed tutelage of Dorothy E. Johnson, Roy saw a need to define nursing. Her perspective has been integrated into the nursing programs at Mount St. Mary's College who have used it as the nursing model of choice since the 1970s. The Roy Adaptation Model (Roy, 2009) explains this paradigm through four adaptive modes of: physiologic, self-concept, role function, and interdependence.

Assumptions. The Roy Adaptation Model (Roy, 2009, p. 31) has three areas of assumptions that lay the foundation of the theory.

Philosophical assumptions are:

- Persons have mutual relationships with the world and a God-figure

- Human meaning is rooted in an omega point convergence of the universe

- God is intimately revealed in the diversity of creation and is the common destiny of creation

- Persons use human creative abilities of awareness, enlightenment, and faith

- Persons are accountable for entering the process of deriving, sustaining, and transforming the universe

Scientific assumptions are:

- Systems of matter and energy progress to higher levels of complex organization

- Consciousness and meaning are constitutive of person and environment integration

- Awareness of self and environment is rooted in thinking and feeling

- Human decisions are accountable for the integration of creative processes

- Thinking and feeling mediate human action

- System relationships include acceptance, protection, and fostering interdependence

- Persons and the earth have common patterns and integral relations

- Person and environment transformations are created in human consciousness

- Integration of human and environment meanings results in adaptation

Cultural assumptions are:

- Experiences within a specific culture will influence how each element of the Roy Adaptation Model is expressed

- Within a culture there may be a concept that is central to the culture and will influence some or all of the elements of the Roy Adaptation Model to a greater or

lesser extent

- Cultural expressions of the elements of the Roy Adaptation Model may lead to changes in practice activities such as nursing assessment

- As Roy Adaptation Model elements evolve within a cultural perspective, implications for education and research may differ from experience in the original culture

Self-Concept Mode. "The basic need underlying the self-concept mode has been identified as psychic and spiritual integrity-the need to know who is so that one can be or exist with a sense of unity and meaning" (Roy, 2009, p. 321). This integrity is an essential component of success that a student needs to complete their nursing education and pass the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Students are struggling in nursing school and are striving to succeed. Understanding the underpinnings of their efforts allows greater insight into the pressures they experience while in the nursing program. The support of educational institutions assists student endeavors with a focus on completion of the nursing program.

There are three processes of the self-concept are the developing self, perceiving self, and focusing self. The two subareas of self-concept are the physical self and the personal self. According to developmental theorists such as Freud (personality), Erikson (lifespan), Piaget (cognitive), and Neugarten (older development) the physical and personal-self have stages and milestones needed to achieve integrity (Roy, 2009).

Within the personal self sub-area, there is a characteristic termed self-ideal. This focuses on what one would like to be or do related to what one is capable of being or doing (Roy, 2009). Students enroll in a nursing program in the hopes of becoming a Registered

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Nurse (RN). After graduation, they will sit for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). These aspirations are an attempt to use their skills and talents in a way that the student feels are most congruent with who they are and who they can be.

Chaos Theory. Thomas Kuhn's theory (1970) was traditionally applied to sciences such as physics and mathematics. Its use was truly effective with the advent of computers that could track complex systems.

These advances enabled scientists to go beyond linear thinking to explain systems' phenomena in their respective specialties. When observed under this new paradigm, the complex systems display patterns, which repeat in every level of the system, but in an unpredictable manner. These repeating patterns create the emergence of spontaneous self-organization. (Coppa, 1993, p. 987-988)

Elements of chaos. Haigh (2002) recognized the following elements of chaos:

- a dynamical system

- identified system parameters

- a specific equilibrium state

- a specified state attractor

Nursing is an ever-changing system that has evolved over a period of time. Beginning as a natural inclination to care for the infirmed, nursing has now advanced to its present state as an art and science. System parameters in nursing are defined by the science of anatomy, physiology, microbiology, and pharmacology. Even with these boundaries, the individualized care of every patient will be different and diverge over time (Haigh, 2002). The homeostatic state of equilibrium is an observable process that nursing professionals are assisting their

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patients to achieve. The point attractor that a patient is traveling towards can be classified as health.

Application to nursing science. This perceived disorganization that can be exemplified in nursing with an electrocardiogram (EKG) of the heart muscle. The heart waves look erratic, but when analyzed by computers there was a repetition that occurred in variable unpredictable intervals (Coppa, 1993). Further research discovered that predictable heart waves were indicative of heart disease.

Another example of how chaos is applied to nursing is seen in the individualized construction of care plans. A patient with a total hip replacement would have several primary issues of pain, immobility, and bowel elimination. Pain would be part of the healing process since tissue and fascia was cut during the surgical procedure. Mobility would be compromised because of range of motion limits: no adduction of the legs past midline, no eversion of the operated limb, and no flexion of the operated extremity past ninety degrees. Bowel elimination would be compromised because of immobility and the implementation of pain management modalities. The general care plan for this type of patient would be outlined this way, but the individual goals would be different for each patient with an emphasis on how they responded to the nursing interventions. Small changes in the treatment regimen of a patient will cause positive and negative ramifications.

Application to nursing education. The application of chaos theory in nursing education derives its use from its definition to explain relational phenomena. Why do students who have similar prerequisites, grades, and graduation goals not have the same outcomes? Chaos theory "offers the opportunity for thinking of humans as individuals, who do not respond identically" (Copnell, 1997, p. 872). Chaos theory has not been previously applied to

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this area of the nursing profession but may explain the phenomena when unpredictable results occur.

Using Haigh's (2002) elements of chaos and applying them to nursing education, conjecture can be raised in this setting. Nursing education is a dynamic system where the relationship between the student, the administration, and success has many ingredients in play. The Board of Registered Nursing (BRN) (requirements for board certification, the educational institution (requirements for graduation), and the National Council on State Boards of Nursing (NSCBN) (examination test plan) defines the system parameters. The nursing student's state of equilibrium would be success in nursing school (graduation) and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). The point attractor a student is journeying in the direction of is licensure as a Registered Nurse (RN).

This research study attempted to find the relationship between predictors for success in nursing school and the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). This notion was supported by chaos theory because it "has the potential to help nurse researchers using quantitative designs to analyze data in situations where a nonlinear system is operating" (Left, 2001, p. 17). This proposed study utilized correlational analysis to find the most significant predictors of success through the collection of quantitative data.

Conceptual Framework

The preceding section explored the theoretical frameworks of Malcolm Knowles, Albert Bandura, Vincent Tinto, Sister Callista Roy, and Thomas Kuhn (Figure 1). They pinpointed the intersection of student success in nursing program completion (graduation) and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. These theories brought a clear understanding of the dynamic relationship the

circumstances students encounter in their endeavor to become a Registered Nurse (RN). The interrelationship of these theories afforded a deeper insight to the challenges, barriers, and obstacles on the road to success for nursing programs and its students. Defining the relevant terms for this research study brought about a stronger comprehension of the issues surrounding this research study.
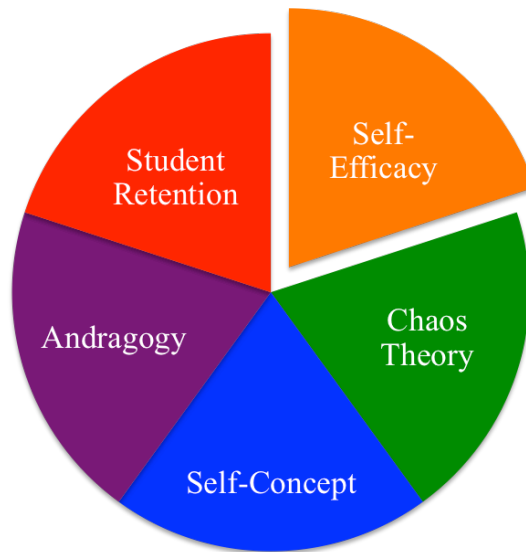
Figure 1. Conceptual Frameworks

Definition of Terms

For the purposes of this research, the following terms were defined. The reviews of literature, professional, and educational organizations provided additional meaning to these terms.

Adaptation. "The process and outcome whereby thinking and feeling people, as individuals or in groups, use conscious awareness and choice to create human and environmental integration" (Roy, 2009, p. 26).

Admission criteria. The California Board of Registered Nursing (BRN) enumerated the admission criteria into nursing school programs. Initial and intermediate site visits by the

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Board of Registered Nursing certified nursing school programs as being congruent with statewide requirements.

American Association of Colleges of Nursing (AACN). "American Association of Colleges of Nursing's [AACN] educational, research, governmental advocacy, data collection, publications, and other programs work to establish quality standards for bachelors and graduate degree nursing education, assist deans and directors to implement those standards, influence the nursing profession to improve health care, and improve public support of baccalaureate and graduate education, research, and practice in nursing-the nation's largest health care profession" (Keeling, Brodie, & Kirchgessner, 2010, para. 5).

Associate Degree in Nursing (ADN). A nursing education program leading to an Associates Degree within the structure of a junior college, community college, or private university (Haase, 1990).

Bachelor of Science in Nursing (BSN). A nursing education program leading to a Bachelors Degree and housed within the setting of a university providing students a liberal arts education and nursing training (Haase, 1990).

Butterfly Effect. "Any small, random even may have major effects. A small event or experience can result in a major life change" (Bussolari & Goodell, 2009, p. 103).

California Board of Registered Nursing (BRN). The California Board of Registered Nursing (BRN) is a state "governmental agency established by law to protect the public by regulating the practice of registered nurses. The Board is responsible for implementation and enforcement of the Nursing Practice Act: the laws related to nursing education, licensure, practice, and discipline" (California Board of Registered Nursing [BRN], 2010a).

Chaos. Lorenz stated "processes that appear to proceed according to chance, even though their behavior is in fact determined by precise laws" (Haigh, 2002, p. 463).

Commission on Collegiate Nursing Education. "The Commission on Collegiate Nursing Education (CCNE) is an autonomous accrediting agency, contributing to the improvement of the public's health. The Commission ensures the quality and integrity of baccalaureate, graduate, and residency programs in nursing" (AACN, 2011b).

Complex Adaptive System. This described as "all living creatures, including humans, which can both adapt to and change their environment so that is further meets their needs" (Bussolari & Goodell, 2009, p. 99).

Computer Adaptive Testing (CAT). "Computerized adaptive testing (CAT) is a method for administering tests that merges existing computer technology with modern measurement theory to increase the efficiency of the testing process" (National Council on State Boards of Nursing [NCSBN], 2010a, para. 1).

Diploma in Nursing. A nursing education program developed with the apprenticeship model and based within the hospital setting (Haase, 1990).

Exit (nursing) Grade Point Average. Harris (2006) found that cumulative grade point average as a significant predictor of National Council Licensure Examination (NCLEX)-Registered Nurse (RN) success. The researcher further found pre-requisite science courses were considerable factors.

Health. "In general, the individual's total well-being; refers to the regular patterns of people and their environments that result in maintaining wholeness and human integrity" (Roy, 2009, p. 3).

Health Care Provider. "An individual authorized (e.g., licensed or certified) to pre-

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scribe and/or administer various aspects of health care" (National Council of State Boards of Nursing [NCSBN], 2006, p. 14).

Limitations. These are "potential weaknesses or problems in quantitative research that are identified by the research" (Creswell, 2005, p. 593).

Master of Science in Nursing. A nursing education program at the graduate level with academic tracks of: Educator, Informatics, Leadership, Public Health, School Nurse and advanced practice nursing of: Clinical Nurse Specialist, Nurse Anesthetist, Nurse-Midwife and Nurse Practitioner (California Board of Registered Nursing [BRN], 2010b).

National Council Licensure Examination (NCLEX)-Registered Nurse (RN). National Council of State Boards of Nursing (NCSBN) develops a licensure examination, the National Council Licensure Examination (NCLEX)-Registered Nurse (RN), which is used by member board jurisdictions to assist in making licensure decisions (National Council of State Boards of Nursing [NCSBN], 2010a). All 59 states and territories in the United States that grants licensure for registered nursing have adopted the exam. The reliability of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) is assessed via a decision consistency statistic, while content validity, face validity, construct validity, predictive validity, and scoring (passing standard) validity are ensured (National Council of State Boards of Nursing [NCSBN], 2010b).

NCLEX-RN success. Candidate performance on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) is reported only as a pass-fail decision; scores are never reported. To make pass-fail decisions, the computer seeks to determine with 95% certainty whether the candidate's true ability is above or below the passing standard. To do this, three pieces of information must be known: the current person ability estimate; the

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precision of that estimate; and the passing standard. After the minimum number of items has been answered, the computer compares the candidate's ability level to the standard required for passing. Candidates clearly above the passing standard pass. Candidates clearly below the passing standard fail. If the candidate's ability level is close enough to the passing standard that it is not clear which side of the passing standard his or her ability falls, the computer continues asking items. As more items are answered, the candidate's ability estimate becomes more precise. After each item, the candidate's ability level is recomputed, using all of the information (answers to all the items asked) available at that point. When it becomes clear on which side of the passing standard the candidate's ability falls, the examination ends. Naturally, some candidates' abilities are very close to the passing standard. For these candidates, all items in the item pool might not provide enough information to be certain their ability is truly above or below the passing standard. These are the candidates who take the maximum number of items. Once the maximum number of items has been administered, the computer waives the 95% certainty requirement and makes a pass or fail decision based upon the candidate's final ability estimate. If the candidate's ability estimate is above the passing standard, the candidate passes. If not, he or she fails. If an National Council Licensure Examination (NCLEX)-Registered Nurse (RN) ends because time runs out, then the computer does not have enough information to make a clear pass-fail decision; if it did, it already would have stopped administering items. However, when the response patterns of people who ran out of time were investigated, it was found that some had been performing consistently above the passing standard and their true ability level appeared to be above passing, although close to it. A mechanism is therefore provided for these candidates to pass. If a candidate's ability estimate has been consistently above the passing standard over the last 60 items, then he or she

will pass, despite having run out of time.

National Council on State Boards of Nursing. "The National Council of State Boards of Nursing (NCSBN) is a not-for-profit organization whose purpose is to provide an organization through which boards of nursing act and counsel together on matters of common interest and concern affecting the public health, safety and welfare, including the development of licensing examinations in nursing" (the National Council of State Boards of Nursing [NCSBN], 2010b).

National League for Nursing (NLN). The National League of Nursing (NLN) is "dedicated to excellence in nursing education, is the preferred membership organization for nurse faculty and leaders in nursing education" (National League for Nursing Accrediting Commission, 2008, p. 1).

Nontraditional Student. The nontraditional student is over 25 years of age, married or in a relationship of more than a year, has family responsibilities, is employed, and did not enroll in college right after high school (Canillas-Dufau, 2005).

Nursing. According to Roy (2009), "nursing is a health care profession that focuses on the life processes and patterns of people with a commitment to promote health and full life-potential for individuals, families, groups, and the global society" (p. 3).

Nursing Program. The three major educational paths to registered nursing are a bachelor's degree, an associate degree, and a diploma from an approved nursing program (United States Department of Labor's Bureau of Labor Statistics, 2009, p. 1).

Pass Rate. This "reflects the results of all graduates who have taken the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) examination for the first time" (California Board of Registered Nursing [BRN], 2010a, p. 1).

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Point Attractor. "This describes a system structured to move toward a single point, place or outcome. The typical physical representation of such a system is a basin or sink in which objects or fluids move or flow toward the bottom or plug hole" (Pryor & Bright, 2007, p. 383).

Prerequisite Courses. The classes required by students before they are admitted into the nursing program. They included:

- Chemistry with lab - 4 Units

- English 101 - 3 Units

- General Psychology - 3 Units

- General Studies Elective (Art, Music, Literature or History) - 3 Units

- Human Anatomy with laboratory - 4 Units

- Human Physiology with lab - 4 Units

- Lifespan/Developmental Psychology - 3 Units

- Microbiology with lab - 4 Units

- Philosophy- Critical Thinking - 3 Units

- Sociology - 3 Units

- Speech 101 - 3 Units

Registered Nurse. "Registered Nurses (RNs), regardless of specialty or work setting, treat patients, educate patients and the public about various medical conditions, and provide advice and emotional support to patients' family members" (United States Department of Labor's Bureau of Labor Statistics, 2009, p. 1).

Self-Concept. "Self-concept is defined as the composite of beliefs and feelings that the individual holds about self at a given time" (Roy, 2009, p. 321).

Scope of Nursing Practice. Nursing is a scientific process founded on a professional body of knowledge; it is a learned profession based on an understanding of the human condition across the lifespan and the relationship of a client with others and within the environment; and it is an art dedicated to caring for others. The practice of nursing means assisting clients to attain or maintain optimal health, implementing a strategy of care to accomplish defined goals within the context of a client centered health care plan and evaluating responses to nursing care and treatment. Nursing is a dynamic discipline that increasingly involves more sophisticated knowledge, technologies and client care activities (National Council of State Boards of Nursing [NCSBN], 2006, p. 3).

Traditional Student. The traditional student is under 25 years of age, unmarried, usually without children, unemployed, and enrolled in college right after high school (Canillas-Dufau, 2005).

Study Design

The retrospective correlational analysis was utilized to investigate the relationship between independent variables of student characteristics (demographic and academic) and dependent dichotomous variables (graduation and examination success). Previous research studies have used this study design in the analysis of the data.

Retrospective correlational research design. This research design has been chosen by past researchers to examine the topic of student success in nursing school and then on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Looking back upon the events of student success and drawing conclusions about the relationships of the variables characterizes this type of research design (McMillan & Schumacher, 2010).

Independent variables. The following independent variables were found in previous research (Canillas-Dufau, 2005) to be of importance when examining academic and non-academic factors of nursing program and National Council Licensure Examination (NCLEX)-Registered Nurse (RN) success.

- Admission semester

- Admission probation

- Age

- Anatomy grade

- Anatomy grade (age)

- Chemistry grade

- Chemistry grade (age)

- Days between graduation and NCLEX-RN

- English as a second language

- Gender

- Grade point average-overall

- Grade point average-science

- Math entrance exam score

- Math remediation

- Microbiology grade

- Microbiology grade (age)

- Physiology grade

- Physiology grade (age)

- Previous degree achieved

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Dependent Variables. The California Board of Registered Nursing (BRN) regards the following dependent variables as requirements for licensure.

- Nursing program completion (graduation) as measured by grade point average-nursing

- Passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt

Organization for the Remainder of the Study

Chapter 1 presented an introduction, statement of the problem, state of the purpose, research questions, significance of the study, assumptions of the study, limitations of the study, delimitations of the study, theoretical frameworks, definition of terms, study design, and conclusion. The remainder will be divided into four sections. Chapter 2 reviews the literature and present research regarding student success in nursing program completion (graduation) and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. Chapter 3 will explain the methodology of the research study, restatement of the problem, significance of the study, study design, setting, population and sample, description of variables, research methods, data collection procedures, data collection tool, data collection procedures, design validity, human subjects protection, ethical conduct, risk, exempt research and conclusion. Chapter 4 will present the findings with analysis while Chapter 5 will offer a summary, conclusions and recommendations.

Summary

The nursing profession presently finds itself in a precarious position. The nurse-patient ratios, an increased number of consumers of healthcare services, the nursing shortage, decreased funding for educational programs, and the changing demographics of nurses are

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factors that place importance on this research. An assessment of the students entering the nursing program will allow more effective and efficacious coordination of resources to increase student success.

Chapter 2 will be a review of the literature.

Chapter 2: Review of the Literature

Although "the United States healthcare system is pinched by a persistent nursing shortage that threatens the quality of patient care, tens of thousands of people are turned away from nursing schools" (Dunham, 2009, p. 1). This statement addresses the underlying issue that is plaguing the nation's healthcare system. Since Registered Nurses (RNs) deliver the majority of the care in this country, it comes as no surprise that nursing is central in maintaining quality of patient care. The nursing shortage should be addressed before any healthcare reform can be constructed. The nursing labor shortage has a direct impact on the quality of care delivered. As previously discussed, the significance of predicting student success in nursing programs has far reaching implications.

The Nursing Profession

A Registered Nurse (RN) is "a graduate trained nurse who has been licensed by a state authority after qualifying for registration" (Merriam-Webster, 2009). The Royal College of Nursing defines nursing as "the use of clinical judgment in the provision of care to enable people to improve, maintain, or recover health, to cope with health problems, and achieve the best possible quality of life, whatever their disease or disability, until death" (Royal College of Nursing, 2003, p. 3). Roy (2009) defines nursing as "a health care profession that focuses on the life processes and patterns of people with a commitment to promote health and full life-potential for individuals, families, groups and the global society" (p. 3). "As caregivers, nurses promote health and wellness for people from birth to death. To plan and provide holistic and individualized care, the nurses must understand typical growth and development characteristics, tasks, and needs for the clients of all ages" (Basavanthappa, 2009, p. 42). These different definitions illustrate the point that the nursing profession has undergone many

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transitions during its existence. Exploring the different facets of the nursing line of work will bring a better understanding of it.

Nature of Work. According to the United States Bureau of Labor Statistics (2009), Registered Nurses (RNs), "regardless of specialty or work setting, treat patients, educate patients and the public about various medical conditions, and provide advice and emotional support to patients' family members" (p. 1). Care plans are another defining characteristic of nursing that is different than other health care occupations. These care plans are the blueprints by which nursing professionals deliver care to their patients. There are various types of settings that nurses are able to work: the bedside, in the classroom, and in the office. Specialization is another attribute of the profession with additional education and certification to characterize their practice.

Training and Education. Presently, the entry-level education required to become a Registered Nurse (RN) has three avenues: a Diploma, an Associates Degree, or a Bachelors Degree. In 2006, there were 70 Diploma programs, 850 Associate Degree in Nursing (ADN) programs, and 709 Bachelor of Science in Nursing (BSN) Degree programs (United States Bureau of Labor Statistics, 2009). All of these programs have varying degrees of length: Diploma programs (in the hospital setting) last about three years, Associate Degree in Nursing (junior, community, and private colleges) take about two to three years, BSN (colleges and universities) approximately four years. Regardless of the initial training, licensure is obtained after successful passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) (United States Bureau of Labor Statistics, 2009).

Masters of Science in Nursing (MSN) graduate programs and Doctoral programs have been on the rise as evidence-based practice is becoming part of the nursing profession. An

effort to enhance opportunity for entry-level nurses has seen the inception and growth of RN-to-BSN and RN-to-MSN programs. A graduate MSN degree (448 total programs) is required for the advanced practice nursing specialties of nurse practitioners (342), clinical nurse specialists (230), nurse anesthetists (106), and nurse-midwives (39). As of 2006, there were 108 doctoral programs (United States Bureau of Labor Statistics, 2009).

Employment. Registered Nurses (RNs) are the majority of health care clinicians estimated to be 2.5 million in 2006 with hospitals employing 59% of these positions. The opportunity for Registered Nurses (RNs) is forecasted to grow 23% in the time period from 2006 to 2016. The issues with the nursing shortage will augment these prospects. "The median annual earnings of Registered Nurses (RNs) were $57,280" (United States Bureau of Labor Statistics, 2009, p. 5). These earnings are projected to increase in the future and will vary according to the different clinical settings.

Registered Nursing Data. Intermittently, the California Board of Registered Nursing conducts studies to aggregate data regarding the current state of the profession. The following information concerning Registered Nurses points out several facts about California nursing programs (California Board of Registered Nursing [BRN], 2011, p. 4-9; California Board of Registered Nursing [BRN], 2010c, p. 5-17; Spetz, 2010, p. 9-10).

California RN pass rates are increasing parallel to that of the national rates. California nursing program enrollment numbers and graduation rates are increasing. National enrollment numbers and graduation rates are beginning to decrease. California nursing programs are increasing steadily since 2000. California nursing programs new student enrollments are greater than spaces available. California student admission applications are increasingly *not accepted*. California new student enrollment is increasing in all entry-level nursing programs.

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California current student enrollment is generally increasing since 2001. California newly enrolled nursing students are increasingly in the ethnic minority group. California newly enrolled nursing students are generally four to one, female to male. California newly enrolled nursing students average age is in the 26-30 years range. California student completions are steadily increasing since 2000. California nursing students completing programs are mostly in the ethnic minority group. California nursing students completing programs are generally four to one, female to male. California nursing students completing programs are generally ages 26-30 for Associate Degree in Nursing (ADN), Licensed Vocational Nurse (LVN) to Associate Degree in Nursing (ADN), and Entry-Level Masters (ELM); and < 26 years old for Bachelor of Science in Nursing (BSN).

California nursing program retention/attrition rates are generally constant since 2000. California nursing program attrition rates are generally constant across types since 2000. California nursing student factors impacting attrition is led by academic failure. California full-time faculty is on the decrease while part-time faculty is on the increase. California nursing faculty is mostly of white ethnicity. California nursing faculty is mostly female. California nursing faculty is mostly between 40-59 years of age. California nursing faculty normally holds a master's degree. California newly hired nursing faculty are hired with the following characteristics. California nursing faculty are hired for various reasons. California nursing faculty are leaving the profession for various reasons. California nursing faculty are difficulty to recruit for various reasons.

History of Medicine, Nursing, and Hospitals

The history of nursing as a profession is steeped in the history of ancient civilizations. The first nurses were mothers who cared for their children and expanded their concern to those

who were sick in the family. As towns and cities grew, so did the number of sick who required attention for ailments. The first nurses were primarily women who discovered an aptitude for the caring art. Reviewing the rich history of the nursing profession will bring forth an appreciation of its place and effect on the world. The following is a cursory look at the first through twentieth centuries using the hallmarks and milestones of medicine, nursing, and hospitals (Dock & Stewart, 1920, p. 374-378).

First to Fifth Century. Christianity opens new careers for women; deaconesses, widows, virgins in visiting nursing. In Eastern church homes of Christians open to sick. Houses of deacons and deaconesses become hospitals called Diakonia. Xenodochia established in Eastern church dioceses; take all classes of poor as well as sick. Great pestilence over whole empire. Deaconess orders spread – attain high point in Eastern church. Important Roman women take up nursing hospital organizations and charitable work. Decline of learning, no medical leaders. St. Ephrem opens hospital wards at Edessa for sick only. Basilias Xenodochium Fabiolo house first Christian hospital in Rome. Nestorians found medical school at Edessa. Great activity in building hospitals and abbeys. Development of nursing and charitable work in monasteries (Dock & Stewart, 1920, p. 374-378).

Sixth to Tenth Century. Practice of medicine confined to monks and nuns**.** Travelers and sick persons received in monasteries and inns on mountain passes. Monks and nuns both serve as nurses. Scientific medical schools in Persia. Anglo-Saxon and Irish nuns go to Germany to spread Christianity. Paris first nurse by volunteers who became order. Charlemagne encourages medical study. Monastic nursing orders flourish. Many beautiful and well-organized hospitals in Arabia, Persia, and Spain. Monasteries center of charitable

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work. Feudal chivalry brings nursing careers to high-born women outside of monasteries. Ladies learn first aid, surgical dressings, etc. (Dock & Stewart, 1920, p. 374-378).

Eleventh to Fifteenth Century. Important medical school at Salerno where women study. Hildegarde writes medical books. Early English hospitals founded; St. John orders found two hospitals in Jerusalem. University of Bologna becomes important medical center. Military nursing orders. Many royal women patrons of nursing. Roger Bacon and others revive studies in natural sciences. Sanitary measures attempted after Black Death. Teutonic Knights found St. Barbara hospital at Strassburg. Leprosy dying out of Europe. Hospitals disorganized by Black Death. City hospitals overcrowded and dirty. Great extension of nursing by secular orders. Queen Isabella of Spain founds ambulance service and field hospitals for army (Dock & Stewart, 1920, p. 374-378).

Sixteenth to Twentieth Century. Servetus pioneer in physiology. Catholic orders bound to enclosure by Council of Trent. Mexican hospitals founded. Inventions of microscope and thermometer. Leeuwenhoek discovers micro-organisms. Bellevue hospital founded by West India Company. Discoveries in chemistry and physics. Innoculation for smallpox by Jenner. Dark ages of hospital nursing. Dorothea Dix begins reform in asylums for the insane. Stethoscope invented. Various anesthetics experimented with and used. Pasteur announces germ theory. Lister reform in surgery. First medical women in England and America. Roentgen rays discovered. Anglican nursing orders. Florence Nightingale born; serves in Crimea; founds first training school for nurses at St. Thomas hospital. First law for nurse registration. Advanced course for nurses at Teachers College. Society of Superintendents for Training formed. First training schools in Japan and China open. Marked advances in preventative medicine. American Journal of Nursing founded. First state

association founded in New York. Army Nursing Bill passed. First Registration Bill passed in United States. School Nursing started in New York. Hospital social service started in Boston. National Organization of Public Health Nursing organized. Rapid increase in hospitals and training schools (Dock & Stewart, 1920, p. 374-378).

History of Nursing in the United States

The world's view of the history of nursing is uniquely tied to the development of civilizations, innovation, religion, and war. In the United States, the history of nursing is also coupled with the development of our society. Judd, Sitzman, and Davis (2010) divide the history of nursing in the United States into different topics (society, education, licensure, workforce, and licensure) across nine eras.

1600 to 1700s. This time in history still had colonial influence with eventual freedom with the American Revolution. At this time, nursing education was not a formalized system with knowledge passed down in the oral tradition with scant amounts of reference material available. The nursing workforce was still embedded in the monastic orders similar to Europe but required more recruits with the advent of the Revolutionary War. Since training was not regulated or supervised by any governing body licensure was not a concern at this time (Judd, Sitzman, & Davis, 2010).

Florence Nightingale. The life of Florence Nightingale signaled the beginning of nursing's transformation into a profession. She affected change throughout the world with her writings on nursing and the care of the patient. After her service during the Crimean War, Nightingale opened a nursing training school in London. Nightingale's curriculum became the pattern most schools would use. During this time period, nursing became a more respected occupation with standards and guidelines starting to be generally accepted. Schools began to

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certify the education of nurses and keep registers of graduates with licensure drawing closer to formalization (Judd, Sitzman, & Davis, 2010).

1800s to 1900s. This age was characterized with economic tumult in the United States, which was ravaged in the aftermath of the Revolutionary War and five wars, fought during the 1800s. Hospital-based nursing training programs began to spring up using the Nightingale model as its design. A progressive movement in nursing education started that included men and minorities throughout the United States although it was mostly reserved for Caucasian, conservative, middle-class women. With increased nursing training programs, the number of nurses began to meet the need of hospital beds being constructed. The previous practice of nurse registries kept at the educational training programs was still being followed (Judd, Sitzman, & Davis, 2010).

1900s to 1920s. Cities were unprepared to adequately manage the influx of immigrants that flooded the shores of the United States. It was recommended that nursing training programs be part of universities with an emphasis on various clinical experiences. The increased need for nurses predicated the acceptance of men and minorities into nursing. The burgeoning profession of nursing began to feel the effects of its growth with concerns growing about discrimination, women's suffrage, and working conditions. Licensure began to emerge as an issue since recognition from the medical profession was not forthcoming. The National League of Nursing (NLN) has become the governing body that determines the goals of nursing education and curriculum. The development of the American Nurses Association (ANA) established the guidelines for scope of practice, licensure, and legislation (Judd, Sitzman, & Davis, 2010).

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1920s to 1940s. The United States experienced a tremendous amount of change during this period. The country became a provider of social relief and simultaneously a world power with influence around the globe. Social matters such as the Klu Klux Klan, Prohibition, and the women's suffrage were at the forefront of many people's minds. Clinical experiences became the focus of nursing schools with standardization of curriculum being made by the National League of Nursing (NLN). With the Great Depression forcing many private duty nurses out of work and into unemployment, debate began regarding the quality of student nurse being educated. Licensure and regulation was concentrating on standardizing the educational programs with a need to start addressing accreditation of schools (Judd, Sitzman, & Davis, 2010).

1940s to 1960s. The world was devastated as the result of World War II; the United States bracing for an impending economic depression. The Nurse Training Act supplied resources for military and civilian nursing programs to answer the need for more registered nurses. After World War II, not all nurses returning home returned to the role, instead opting for other careers or marriage. This deficiency brings about the creation of nursing aid personnel. The birth of more nursing organizations identified the necessity for rules and regulations to develop the profession further (Judd, Sitzman, & Davis, 2010).

1960s to 1980s. The Vietnam Ware, the Cold War, the Civil Rights Movement, and the Space Race characterize these decades. The American Nurses Association (ANA) pushed for standards for the educational programs of Diploma, Associates, and Bachelors degrees. The National League of Nursing (NLN) issued the first document that would be revised intermittently to address the Registered Nurse (RN) scope of practice. The quality of health care delivery was directly impacted by the scarcity of qualified nurses. In response, the

government took a proactive approach to increase the nursing workforce through legislation. At this point, licensure became a requirement for all nurses. The State Board Test Pool Exam (SBTPE) was the precursor to the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) that developed into the standard in determining minimal competency (Judd, Sitzman, & Davis, 2010).

1980s to the Present. This area of United States history was wrought with mistrust as the public was healing over the Watergate scandal, reeling from the hostages in Iran, recovering from the recession during the Reagan administration, and rebuilding after the tragedy of the World Trade Center. Associate Degree in Nursing (ADN) programs increased to meet the call for more nurses and started the discussion as to what should be considered entry-level education for Registered Nurses (RNs). Increased life expectancy of the American population and medical advancement are adding to the requirement for more nurses to care for these patients. Specialization in nursing saw the development of the American Nurses Credentialing Center (ANCC), which certifies expertise in areas of expertise. Health care facilities could seek magnet status that deemed them an organization of safety and positive work environments for nurses (Judd, Sitzman, & Davis, 2010).

The Future. Presently, our country is wrestling with concerns of the War in Iraq, a growing populace of uninsured and underinsured, and a rising obesity epidemic. Evidence-based practice and research is becoming an integral part of nursing education. Nursing education is demanding nurses are knowledgeable in health care policy, professionalism, and organizational behavior. The nursing workforce is on the verge of another transformation as the labor pool is graying and not being replenished and the projections for a large scale nursing shortage looms in the near future. Licensure and regulation is still evolving and addressing the

challenges of state oversight and standardization of rules and guidelines across the country (Judd, Sitzman, & Davis, 2010).

The Nursing Process

The nursing process is the framework that nurses use to organize their knowledge and skills to effectively deliver the highest quality care to the patient. "The nursing process is a special way of thinking and acting. It is a systematic, creative approach used to identify, prevent, and treat actual or potential health problems; to identify patient strengths; and to promote wellness" (Wilkinson, 2007, p. 10). There are many nursing theories that present different perspectives of nursing but the foundation for all of them is the nursing process. This practice is cyclic and requires constant attention to the patient and subtle responses they may exhibit.

Wilkinson (2007) lists the following steps of the nursing process:

- Assessment-Collect, organize, validate, and record data about the patient's current health status. Obtain data by examining patients, talking to them and their families, and reading charts and records.

- Diagnosing-Sort, cluster, and analyze the data in order to identify the patient's present health status (actual and potential health problems and strengths). Write a precise statement describing the patient's present status and factors contributing to it. Prioritize the diagnoses. Decide which diagnoses will respond to nursing care and which must be referred to another health care professional.

- Planning outcomes-Work with the client to choose the desired outcomes. Decide exactly how you want the client's status to change and within what period of time.

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The outcomes chosen in this phase are the criteria you will use in the evaluation phase.

- Planning interventions-Choose interventions for promoting wellness or preventing, correcting, or relieving health problems. Plan specific interventions for the outcomes associated with each nursing diagnosis.

- Implementation-Communicate the plan of care to other members of the health care team and carry out the interventions indicated on the plan or delegate them to others. Record the care given and the client's responses.

- Evaluation-Compare the patient's health status with the desired outcomes identified in the planning outcomes phase. Determine which interventions were or were not helpful in achieving desired outcomes and revise the care plan as needed.

Nursing Regulation

Nursing is regulated by six entities that are striving to safeguard the public and protect the profession. As discussed in the history of the nursing profession, standardization and practice guidelines were tremendous obstacles to overcome. Through the history of nursing regulation was viewed as a way to create a safe environment for the patient and a means to ensure the competency of the nurse. These regulatory bodies were integral in elevating the profession by solidifying the standards and practice guidelines as the foundation of nursing.

American Association of Colleges of Nursing (AACN). "The American Association of Colleges of Nursing (AACN) is the national voice for baccalaureate and graduate nursing education" (American Association of Colleges of Nursing [AACN], 2011a, para. 1). This association strives to set the standards for quality nursing education. In turn, the administration

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of schools work to implement these standards into their curriculum with the final resulting in improved healthcare.

The following are the strategic plan, goals and objectives of the association (American Association of Colleges of Nursing [AACN], 2011d).

Goal 1: Provide Strategic Leadership That Advances Professional Nursing Education, Research And Practice

Objective 1: Lead innovation in baccalaureate and graduate nursing education that promotes high quality health care and new knowledge generation.

Objective 2: Establish collaborative relationships and form strategic alliances to advance baccalaureate and graduate nursing education.

Objective 3: Increase the visibility and participation of nursing's academic leaders as advocates for innovation in nursing.

Goal 2: Develop Faculty And Other Academic Leaders To Meet The Challenges Of Changing Healthcare And Higher Education Environments

Objective 1: Provide opportunities for academic leaders to strengthen leadership and administrative expertise.

Objective 2: Expand initiatives that recruit and develop a diverse community of nurse educators throughout their academic careers.

Objective 3: Increase opportunities for all members of the nursing academic unit to participate in American Association of Colleges of Nursing [AACN] programs and initiatives.

Goal 3: Leverage American Association of Colleges of Nursing's [AACN] Policy And Programmatic Leadership On Behalf Of The Profession And Discipline

Objective 1: Serve as the primary voice for baccalaureate and graduate nursing

education through media outreach, advocacy, policy development, and data collection.

Objective 2: Respond to the needs of a diverse membership and external stakeholders.

Objective 3: Implement initiatives to increase diversity among nursing students,

faculty, and the workforce.

American Nurses Association (ANA). The American Nurses Association (ANA) has

served as the voice of Registered Nurses (RNs) for over 100 years. The association has been at

the forefront of discussions and debate that affects the nursing profession. As the leader and

expert in such matters, the American Nurses Association (ANA) has collaborated with other

authorities in the health care industry to bring about best practice while elevating the image

and stature of the Registered Nurse (RN).

History. The history of the American Nurses Association (ANA) is inherently attached

to the evolution of the nursing profession. Regulation of the standards of nursing education

and the pre-licensure examination has both had the influence of the American Nurses

Association (ANA) on them. According to the National Council of State Boards of Nursing

(NCSBN, 2010b):

The Nurses Associated Alumnae of the United States and Canada organized in 1896.

The name of this organization was changed by the deletion of the words 'and Canada'

when the Canadian association withdrew in 1901 so that the organization could be

incorporated in the United States, and in 1912 the name was changed again to the

American Nurses Association. (p. 14)

Presently, the American Nurses Association (ANA) is an organization that advocates for over

3.1 million Registered Nurses (RNs).

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Mission and Purpose. The American Nurses Association (ANA) political and legislative program "has taken firm positions on a range of issues including Medicare reform, patients rights, appropriate staffing, the importance of safer needle devices, whistleblower protections for health care workers, adequate reimbursement for health care services and access to health care" (American Nurses Association, 2010, p. 1). This organization is an active advocate for safety in the workplace, collective bargaining, and the advancement of the nursing profession. The American Nurses Association (ANA) publishes research and communicates its findings to the health care community through its website, conferences, newsletters, and the sponsorship of legislation.

National League for Nursing (NLN). "The American Society of Superintendents of Training Schools, was formed in 1894. This organization later became the National League of Nursing Education (NLNE) and in 1952 merged with other groups to become the National League for Nursing" (Dorsey & Schowalter, 2008, p. 14). The National League of Nursing (NLN) is "dedicated to excellence in nursing education, is the preferred membership organization for nurse faculty and leaders in nursing education" (National League for Nursing [NLN], 2008, p. 1). The National League of Nursing (NLN) is comprised of a cross-section of nurse educators, health agencies, education organizations, and the public at large.

History. The American Society of Superintendents of Training Schools for Nurses was the predecessor of the National League of Nursing (NLN). In the early 1900s the organization published curriculum standards for nursing schools to institute in their training. These standards have been subjected to several rounds of revision and scrutiny in response to changes in the patient population and subsequent quality requirements of the nursing student. The

National League of Nursing (NLN) will continue to be part of the evolution and improvement of standards that is still needed.

Mission and purpose. The mission of the National League of Nursing (NLN) is to "support the interests of nursing education, nursing practice, and the public by the functions of accreditation" (National League for Nursing [NLN], 2008, p. 1). Although accreditation is voluntary, it us supported with products and services that assist a nursing program with quality improvement. The purpose of the National League of Nursing (NLN) "is to provide specialized accreditation for programs of nursing education, both postsecondary and higher degree, which offer either a certificate, a diploma, or a recognized professional degree (clinical doctorate, masters, baccalaureate, associate, diploma, and practical) " (National League for Nursing [NLN], 2008, p. 1).

Accreditation standards. The following are the accreditation standards of the National League of Nursing (National League for Nursing [NLN], 2008, p. 10):

- Mission and administrative capacity - The nursing education unit's mission reflects the governing organization's core values and is congruent with its strategic goals and objectives.

- Faculty and staff - Qualified faculty and staff provide leadership and support necessary to attain the goals and outcomes of the nursing education unit.

- Students - Student policies, development, and services support the goals and outcomes of the nursing education unit.

- Curriculum - The curriculum prepares students to achieve the outcomes of the nursing education unit, including safe practice in contemporary health care environments.

- Resources - Fiscal, physical, and learning resources promote the achievement of the goals and outcomes of the nursing education unit.

- Outcomes - Evaluation of student learning demonstrates that graduates have achieved identified competencies consistent with the institutional mission and professional standards and that the outcomes of the nursing education unit have been achieved.

California Board of Registered Nursing (BRN). The California Board of Registered Nursing (BRN) is a state "governmental agency established by law to protect the public by regulating the practice of registered nurses. The California Board of Registered Nursing (BRN) is responsible for implementation and enforcement of the Nursing Practice Act: the laws related to nursing education, licensure, practice, and discipline" (California Board of Registered Nursing [BRN], 2010a, para. 1). The California Board of Registered Nursing (BRN) is the organization, which issues licensure and certification to Registered Nurses (RNs). These nurses can be foreign educated, educated in the state of California, or educated outside the state of California. All applicants for licensure are required to meet the minimum level that qualifies them to sit for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

History. The history of the California Board of Registered Nursing (BRN) began in 1905 when the University of California Board of Regents "was given power by the legislature to set standards, administer exams, approve educational programs, issue certificates, and revoke certificates of Registered Nurses (RNs)" (California Board of Registered Nursing [BRN], 2010b, para. 1). This was the first time that the misuse of the title Registered Nurse

(RN) without proper certification was considered a misdemeanor. The following were significant milestones in the history of the California Board of Registered Nursing (BRN).

In 1913, the state legislature formed Bureau of Registration of Nurses under the State Board of Health. The Bureau was charged with administering the exam, registering qualified Registered Nurses (RNs), accrediting nursing schools, and revoking licenses of nurses found to be unsafe in practice. In 1927, the Bureau of Registration of Nurses was placed within the Department of Health under the State Board of Public Health. Board of Nurse Examiners was created by legislation in 1939. The mandatory Nursing Practice Act was established, regulating nursing through licensure of a defined scope of practice. In 1946, the State Board Test Pool Exam (SBTPE) was instituted. The Board's name was changed to Board of Nursing Education and Nurse Registration in 1961 (California Board of Registered Nursing [BRN], 2010b).

In 1975, the Board's name was changed to current Board of Registered Nursing (BRN). The Nursing Practice Act was amended significantly to provide the current description of nursing. Certification of nurse midwives was established. International applicant licenses were no longer accepted for reciprocity, and were required to pass the State Board Test Pool Examination for licensure in 1976. In 1977, the Board member composition was established: three public members, three direct patient care Registered Nurses (RNs), one Registered Nurse (RN) educator, one Registered Nurse (RN) administrator, and one physician. Voluntary certification of nurse practitioners established. Continuing education became mandatory for license renewal in 1978. Certification of nurse anesthetists was established in 1984. In 1987, the furnishing numbers for nurse practitioners established (California Board of Registered Nursing [BRN], 2010b).

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In 1990, finger printing was implemented for all applicants. Furnishing number for nurse midwives established in 1992. In 1993, certification of public health nurses transferred from Department of Health Services to Board of Registered Nursing (RN). The last pencil and paper test was given as Computer Adaptive Testing (CAT) came into existence while a cost recovery program was implemented in 1994. In 1996, a Citation and Fine program was implemented. The first sunset review completed before the California Legislature resulted in extension of sunset date for six years; the Board replaced paper licenses with tamper-resistant plastic card licenses; and the Board developed an honorary certificate for retiring registered nurses all in 1997. In 1998, certification of Clinical Nurse Specialists established. The Board's web page went live in 1999 (California Board of Registered Nursing [BRN], 2010b).

In 2000, the Board implemented Live-Scan procedures for fingerprinting applicants. National Council of State Boards of Nursing (NCSBN) initiated a new computer system to exchange discipline information between states. The Board became the first California licensing agency to offer online professional license renewal services and offered online license verification in 2001. Also in 2001, registered nurses became able to change their addresses; request a duplicate license; and renew advanced practice certificates online, while streamlining the processing of out-of-state endorsements. In 2002, collaboration with the Department of General Services, the Board developed an online application system for registered nurses endorsing to California from other states. The second sunset review completed before the California Legislature resulted in extension of sunset date for four years in 2003. In 2006, the board member composition restructured: four public members, three direct patient care Registered Nurses (RNs), one Registered Nurse (RN) educator, and one

Registered Nurse (RN) administrator. The Board launches redesigned website in 2007

(California Board of Registered Nursing [BRN], 2010b).

Application requirements. According to the California Board of Registered Nursing

(California Board of Registered Nursing [BRN], 2010d), applicants have several requirements

to meet when applying for licensure in the state of California:

- Appropriate fees.

- Completed application for licensure by examination.

- Completed fingerprints using either the Live Scan (electronic fingerprinting)
  process or the applicant fingerprint card (hard card) processing method as directed.
  Submit the appropriate nonrefundable total fee as directed.

- One recent 2" x 2" passport-type photograph.

- Completed request for accommodation of disabilities form(s), if applicable.

- Request for transcript form(s) completed and forwarded directly from the nursing
  school(s) with certified transcripts.

- If applicable, documents and/or letters explaining prior convictions or disciplinary
  action and attesting to your rehabilitation as directed.

For international graduates additional requisites are:

- Send breakdown of educational program for international nursing programs form to
  their school with the request for transcript form. Also, provide the certified English
  translation form to their certified translator if their transcript is not in English.

- Submit a copy of their license or diploma that allows them to practice professional
  nursing in the country where they were educated. If they do not hold a license, a
  written explanation is required. Also, provide copies of their certificates for

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midwifery and psychiatric nursing, if applicable.

Commission on Collegiate Nursing Education (CCNE). "The Commission on Collegiate Nursing Education (CCNE) is an autonomous accrediting agency, contributing to the improvement of the public's health. CCNE ensures the quality and integrity of baccalaureate, graduate, and residency programs in nursing" (American Association of Colleges of Nursing [AACN], 2011b). The CCNE accreditation process serves the public interest by assessing the nursing programs with initial and continual visits. The effectiveness of the nursing programs is examined with evidentiary documents provided by the administration. The following are the essentials for the different nursing programs.

Baccalaureate (American Association of Colleges of Nursing [AACN], 2008, p. 3-4).

1. Liberal Education for Baccalaureate Generalist Nursing Practice -- A solid base in liberal education provides the cornerstone for the practice and education of nurses.

2. Basic Organizational and Systems Leadership for Quality Care and Patient Safety Knowledge and skills in leadership, quality improvement, and patient safety are necessary to provide high quality health care.

3. Scholarship for Evidence Based Practice -- Professional nursing practice is grounded in the translation of current evidence into one's practice.

4. Information Management and Application of Patient Care Technology Knowledge and skills in information management and patient care technology are critical in the delivery of quality patient care.

5. Health Care Policy, Finance, and Regulatory Environments - Healthcare policies, including financial and regulatory, directly and indirectly influence the nature and

functioning of the healthcare system and thereby are important considerations in professional nursing practice.

6. Interprofessional Communication and Collaboration for Improving Patient Health Outcomes -- Communication and collaboration among healthcare professionals are critical to delivering high quality and safe patient care.

7. Clinical Prevention and Population Health -- Health promotion and disease prevention at the individual and population level are necessary to improve population health and are important components of baccalaureate generalist nursing practice.

8. Professionalism and Professional Values -- Professionalism and the inherent values of altruism, autonomy, human dignity, integrity, and social justice are fundamental to the discipline of nursing.

9. Baccalaureate Generalist Nursing Practice -- The baccalaureate graduate nurse is prepared to practice with patients, including individuals, families, groups, communities, and populations across the lifespan and across the continuum of healthcare environments. The baccalaureate graduate understands and respects the variations of care, the increased complexity, and the increased use of healthcare resources inherent in caring for patients.

Masters (American Association of Colleges of Nursing [AACN]c, 2011, p 4-5).

1. Background for Practice from Sciences and Humanities -- Recognizes that the master's-prepared nurse integrates scientific findings from nursing, biopsychosocial fields, genetics, public health, quality improvement, and organizational sciences for the continual improvement of nursing care across diverse settings.

2. Organizational and Systems Leadership -- Recognizes that organizational and systems leadership are critical to the promotion of high quality and safe patient care. Leadership skills are needed that emphasize ethical and critical decision-making, effective working relationships, and a systems-perspective.

3. Quality Improvement and Safety -- Recognizes that a master's-prepared nurse must be articulate in the methods, tools, performance measures, and standards related to quality, as well as prepared to apply quality principles within an organization.

4. Translating and Integrating Scholarship into Practice -- Recognizes that the master's-prepared nurse applies research outcomes within the practice setting, resolves practice problems, works as a change agent, and disseminates results.

5. Informatics and Healthcare Technologies -- Recognizes that the master's-prepared nurse uses patient-care technologies to deliver and enhance care and uses communication technologies to integrate and coordinate care.

6. Health Policy and Advocacy -- Recognizes that the master's-prepared nurse is able to intervene at the system level through the policy development process and to employ advocacy strategies to influence health and health care.

7. Interprofessional Collaboration for Improving Patient and Population Health Outcomes -- Recognizes that the master's-prepared nurse, as a member and leader of interprofessional teams, communicates, collaborates, and consults with other health professionals to manage and coordinate care.

8. Clinical Prevention and Population Health for Improving Health -- Recognizes that the master's-prepared nurse applies and integrates broad, organizational, client-centered, and culturally appropriate concepts in the planning, delivery, management, and

evaluation of evidence-based clinical prevention and population care and services to individuals, families, and aggregates/identified populations.

9. Master's-Level Nursing Practice -- Recognizes that nursing practice, at the master's level, is broadly defined as any form of nursing intervention that influences healthcare outcomes for individuals, populations, or systems. Master's-level nursing graduates must have an advanced level of understanding of nursing and relevant sciences as well as the ability to integrate this knowledge into practice. Nursing practice interventions include both direct and indirect care components.

Doctorate (American Association of Colleges of Nursing [AACN], 2006, p. 8-16).

1. Scientific Underpinnings for Practice -- The practice doctorate in nursing provides the terminal academic preparation for nursing practice. The scientific underpinnings of this education reflect the complexity of practice at the doctoral level and the rich heritage that is the conceptual foundation of nursing.

2. Organizational and Systems Leadership for Quality Improvement and Systems Thinking Organizational and systems leadership are critical for DNP graduates to improve patient and healthcare outcomes. Doctoral level knowledge and skills in these areas are consistent with nursing and health care goals to eliminate health disparities and to promote patient safety and excellence in practice.

3. Clinical Scholarship and Analytical Methods for Evidence-Based Practice -- Scholarship and research are the hallmarks of doctoral education. Although basic research has been viewed as the first and most essential form of scholarly activity, an enlarged perspective of scholarship has emerged through alternative paradigms that involve more than discovery of new knowledge

4. Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care -- DNP graduates are distinguished by their abilities to use information systems/technology to support and improve patient care and healthcare systems, and provide leadership within healthcare systems and/or academic settings.

5. Health Care Policy for Advocacy in Health Care Health care policy -- Whether it is created through governmental actions, institutional decision-making, or organizational standards-creates a framework that can facilitate or impede the delivery of health care services or the ability of the provider to engage in practice to address health care needs.

6. Interprofessional Collaboration for Improving Patient and Population Health Outcomes -- Today's complex, multi-tiered health care environment depends on the contributions of highly skilled and knowledgeable individuals from multiple professions.

7. Clinical Prevention and Population Health for Improving the Nation's Health -- Clinical prevention is defined as health promotion and risk reduction/illness prevention for individuals and families. Population health is defined to include aggregate, community, environmental/occupational, and cultural/socioeconomic dimensions of health. Aggregates are groups of individuals defined by a shared characteristic such as gender, diagnosis, or age.

8. Advanced Nursing Practice -- The increased knowledge and sophistication of healthcare has resulted in the growth of specialization in nursing in order to ensure competence in these highly complex areas of practice.

National Council on State Boards of Nursing (NCSBN). The National Council on State Boards of Nursing (NCSBN) was created to entrust a separate entity from the

organization representing professional nurses. The National Council of State Boards of Nursing (NCSBN) "is a not-for-profit organization whose membership comprises the board of nursing in the 50 states, the District of Columbia, and four United States territories-American Samoa, Guam, Northern Mariana Islands and the Virgin Islands" (National Council of State Boards of Nursing [NCSBN], 2010b, p. 6). In an effort to preserve the public safety, the National Council of State Boards of Nursing (NCSBN) constructed a nurse licensure examination that would reflect nursing practice. This examination has gone through much iteration and is reviewed and revised every three years. The National Council of State Boards of Nursing (NCSBN) views the purpose of nursing education standards is to:

- Ensure that graduates of nursing education programs are prepared for safe and effective nursing practice.

- Provide criteria for the development, evaluation and improvement of new and established nursing education programs.

- Assure candidates are educationally prepared for licensure and recognition at the appropriate level.

History. The National Council of State Boards of Nursing (NCSBN) was "founded in 1978 as an independent, 501(c)(3) not-for-profit organization, the National Council of State Boards of Nursing (NCSBN) can trace its roots to the American Nurses Association (ANA) Council on State Boards of Nursing" (National Council of State Boards of Nursing [NCSBN], 2010b, p. 1). The following are the milestones achieved by the National Council of State Boards of Nursing (NCSBN).

In 1978, the first NCSBN Delegate Assembly called to order. NCSBN office opened in Madison, Wisconsin. Delegates adopted plan to revise National Council Licensure

Examination (NCLEX)-Registered Nurse (RN). Test Plan First Licensed Practical Nurse (LPN) voting member recognized in 1979. In 1981, criterion-referenced scoring for National Council Licensure Examination (NCLEX)-Registered Nurse (RN) examination implemented. First National Council Licensure Examination (NCLEX)-Registered Nurse (RN) administered under new test plan. First LPN appointed to the Board of Directors in 1982. In 1983, Nursing Practice Act and Model Administrative Rules developed. National Council Licensure Examination (NCLEX)-Registered Nurse (RN) computer adaptive testing (CAT) implemented in 1994. In 1996, the NCSBN website launched. The NCLEX, NCLEX-RN, and NCLEX-PN registered while the Nurse Licensure Compact (NLC) adopted in 1997. In 1999, uniform licensure requirements adopted. Utah became first state to adopt the NLC in 2000. In 2002, public access to Nursys implemented. The first Institute of Regulatory Excellence (IRE) held; first international testing sites selected; and Utah adopts Advanced Practice Registered Nurse (APRN) Compact in 2004. In 2005, the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) testing begins in London, England; Seoul, South Korea; and Hong Kong; the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) testing begins in Australia, Canada, Germany, India, Japan, Mexico and Taiwan in 2006; and the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) testing begins in Manila, the capital city of the Philippines in 2007. In 2008, the NCSBN celebrates 30th anniversary (National Council of State Boards of Nursing [NCSBN], 2010b).

Nursing education standards. According to the National Council on State Boards of Nursing (NCSBN) the following are the basic nursing education standards (National Council of State Boards of Nursing, 2006, p. 53):

- The purpose and outcomes of the nursing program shall be consistent with the Nurse Practice Act and Boards of Nursing-promulgated administrative rules, regulations and other relevant state statutes.

- The purpose and outcomes of the nursing program shall be consistent with generally accepted standards of nursing practice appropriate for graduates of the type of nursing program offered.

- The input of consumers shall be considered in developing and evaluating the purpose and outcomes of the program.

- The nursing program shall implement a comprehensive, systematic plan for ongoing evaluation that is based on program outcomes and incorporates continuous improvement.

- The curriculum shall provide diverse didactic and clinical learning experiences consistent with program outcomes.

- Faculty and students shall participate in program planning, implementation, evaluation and continuous improvement.

- The nursing program administrator shall be a professionally and academically qualified RN with institutional authority and administrative responsibility for the program.

- Professionally, academically and clinically qualified nurse faculty shall be sufficient in number and expertise to accomplish program outcomes and quality improvement.

- The fiscal, human, physical, clinical and technical learning resources shall be adequate to support program processes, security and outcomes.

- Program information communicated by the nursing program shall be accurate, complete, consistent and readily available.

The Nursing Shortage

The nursing shortage is a subject that has been discussed for over 40 years now. The United States is experiencing a shortage of Registered Nurses (RNs) is not new. It has been going on since the 1960s and has been described as a supply and demand issue. According to the Department of Health and Human Resources: Health Resources and Services Administration:

> This Registered Nurse (RN) shortage will continue to grow if current trends continue, including: a growing and aging United States population; high demand for highest quality of care; an Registered Nurse (RN) workforce at or approaching retirement age; and difficulties attracting new nurses and retaining the existing workforce. (Department of Health and Human Resources: Health Resources and Services Administration [HRSA], n.d.)

"The Nurse Reinvestment Act (H.R. 3487) was passed by unanimous consent first in the Senate, and then House of Representatives on July 22, 2002. On August 1, 2002, President George W. Bush signed the bill into law creating P.L. 107-205" (American Association of Colleges of Nursing [AACN], 2005, para. 6). The law authorized loan repayment programs and scholarships for nursing students, a public service announcement to encourage interest in the nursing profession, career ladder programs, best practice grants, long-term care training grants and fast track faculty loan repayment programs. This legislation is a step in the right direction. If President Obama's health care policies "raise the number of Americans with

access to medical care, more nurses will be needed to help accommodate them" (Dunham, 2009, para. 16).

Persistent Shortages. Long, Goldfarb, and Goldfarb (2008) propose there are empirical explanations for persistent nursing shortages. The authors posit there are three other reasons for shortages or Registered Nurses (RNs). First, some hospitals budget vacancies for permanent staff nurses where temporary contract nurses are used to fill positions. The primary way to staff is with permanent nurses although temporary ones lend flexibility when census fluctuations require administration to decrease staffing. Economists would not view this as a true shortage but needs to be part of the conversation when discussing the cyclical nature of them. Second, competing organizations may have different financial viability. Since one will be able to leverage a higher wage scale to attract more Registered Nurses (RNs), the other one will experience a shortage of readily available labor. Lastly, a shortage of nurses maybe experienced because an organization could be instituting professional standards, which are excluding the majority of the nursing labor force from even applying. Hospitals pursuing Magnet status are not hiring from the larger pool of Associate Degree applicants but from Bachelors Degree candidates (Long, Goldfarb, & Goldfarb, 2008).

The Nursing Labor Market. An adequate supply of nurses is essential to achieving the Nation's goals of ensuring access to affordable, high-quality healthcare (Dall, 2007). The adequacy of nurse supply varies geographically throughout the United States, with a general consensus that at the national level currently a moderate shortage of Registered Nurses (RNs) exists. The findings of the HRSA study imply that the nursing shortage will continue and worsen with respect to current trends. In addition, some states will have a greater shortage than others. "The growth and aging of the population, along with the Nation's continued

demand for the highest quality of care, will create a surging demand for the services of Registered Nurses (RNs) over the coming two decades" (Dall, 2007, p. 1).

According to HRSA, "the nursing labor supply will be short approximately 400,000 in 2010, 680,000 in 2015, and 1,000,000 nurses in 2020" (Dall, 2007, p. 27). Three major issues will affect the nursing labor supply: the ability to attract nursing faculty, the shrinking budget for nursing school programs, and the aging of the present nursing faculty.

HRSA also indicates "the nursing labor demand will be greater than the supply by 17% in 2010, 27% in 2015, and 36% in 2020" (Dall, 2007, p. 27). The demand is being influenced directly by the *graying of America* that are projected to consume 40% of the healthcare dollars (Miller, Benjamin, & North, 2008). Proposed healthcare reform by President Obama may increase this demand on the system and in turn require more nurses to deliver the care accessed.

Nursing Unemployment and Employment. Healthcare organizations analyze recruitment and retention rates on a constant basis. With nursing labor representing over 60% of your budget, it is in an organization's best interest to remain ahead of any fluctuations in the labor market (R. Martinez, personal communication, June 2009). The national nursing turnover rate for 2007 was 8.1% for hospitals, according to American Hospital Association (2007). Some organizations have to be creative in attracting and retaining their nursing staff. Each clinician who leaves takes with them approximately $50,000 of training investment. Growing our own is a philosophy where hospitals hire employees who are in nursing school and has completed their first medical surgical clinical rotation. They are then eligible for the organization's tuition forgiveness program with the understanding of staying on after

graduation for three years with the hospital. This would constitute a win-win situation for all involved (Dunham, 2009).

The current economy has pushed many second-degree students into nursing. These are students who may have had an occupation in a different industry, but have chosen to enter the healthcare profession, most notably nursing. There are many financial incentives to pursue this avenue (Department of Health and Human Resources: Health Resources and Services Administration [HRSA], n.d.).

Another method to address the nursing shortage is with overseas recruitment. In 2007, approximately 25% of the nurses who earned their licenses were educated internationally (Commission on Graduates of Foreign Nursing Schools [CGFNS], 2009). Nurses from abroad must have a visa screen and must pass the Commission on Graduates of Foreign Nursing Schools (CGFNS) prior to being employed in the United States. The exam has a high failure rate for our foreign nursing graduates. Many healthcare organizations are tapping into this supply of Registered Nurses (RNs).

An aspect of the shortage issue to examine is unemployment. There are three forms of which the nursing profession is presently experiencing. "Cyclical unemployment is due to a recession, when the rate of unemployment is above the natural rate of unemployment" (Taylor & Weerapana, 2009, p. 576). Presently the bulk of nurses who fall into this category are newly graduated Registered Nurses (RNs). At a recent hiring fair for Huntington Hospital in Pasadena, California, there were twenty positions available. There were over five hundred Registered Nurses (RNs); only new graduates were invited, vying for these spots. "Frictional unemployment arises from normal turnover in the labor market, such as when people change occupations or locations, or are new entrants" (Taylor & Weerapana, 2009, p. 576). These

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nurses are now feeling greater pressure because of the financial crisis to relocate to areas of lower costs of living. California is expensive and has driven many Registered Nurses (RNs) out of the labor market. "Structural unemployment is due to structural problems such as poor skills, longer-term changes in demand, or insufficient work incentives" (Taylor & Weerapana, 2009, p. 576). This group of nurses is those who earn higher wages as contract or traveling clinicians. The present economic crisis has decreased the need for using this type of nurse.

The Impact. "The latest studies published in the journals Health Services Research in August 2008 and the Journal of Nursing Administration in May 2008 confirm the findings of several previous studies which link education level and patient outcomes" (American Association of Colleges of Nursing [AACN], 2009, p. 5). This shows the need to prepare nurses with bachelor degrees and in turn increase access to high quality, safe patient care.

"In March 2007, a comprehensive report initiated by the Agency for Healthcare Research and Quality (AHRQ) was released on Nursing Staffing and Quality of Patient Care" (American Association of Colleges of Nursing [AACN], 2009, p. 5). The shortage of Registered Nurses (RNs), in combination with increased workload, impacts the quality of care in a negative manner. Deficient staffing practices will compromise safety. The American Association of Colleges of Nursing (AACN) stated:

> A comprehensive analysis of several national surveys on the nursing workforce found that majority of nurses reported that the RN shortage is negatively impacting patient care and undermining the quality of care goals set by the Institute of Medicine and the National Quality Forum. (American Association of Colleges of Nursing [AACN], 2009, p. 5)

The Solutions. The Congress is enacting legislation that is laying the groundwork for increasing nursing faculty and nursing students. The American Association of Colleges of Nursing (AACN), stated that:

In February 2009, Senator Richard Durbin (D-IL) introduced the Nurse Education, Expansion and Development Act (NEED Act). If passed, the NEED Act would amend Title VIII to authorize Capitation Grants (formula grants) for nursing schools to increase the number of faculty and students. (American Association of Colleges of Nursing [AACN], 2009, p. 7)

"In February 2009, academic and healthcare leaders from 47 states gathered in Baltimore for the 2009 Nursing Education Capacity Summit to help identify and advance strategic solutions to the nursing shortage" (American Association of Colleges of Nursing [AACN], 2009, p. 7). This collaborative effort is what will set the stage for healthcare reform. With the nursing shortage held at bay, access and delivery of patient care can be given more appropriate scrutiny.

"The United States Department of Labor in 2005 awarded more than $12 million in grant-funding through the President's High Growth Job Training Initiative, $3 million of which will help to address the nurse faculty shortage" (American Association of Colleges of Nursing [AACN], 2009, p. 8). This exhibits the commitment and foresight of the administration to increase the number of nursing school faculty.

"Johnson & Johnson launched the Campaign for Nursing's Future in 2002, a multimedia initiative to promote careers in nursing and polish the image of nursing" (American Association of Colleges of Nursing [AACN], 2009, p. 8). This media campaign is still a large recruitment and retention program with its aim to increase awareness of the nursing profession.

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History. Throughout the history of nursing, shortages have occurred at various times and for an assortment of reasons. There are external and internal barriers that the nursing profession has been besieged with concerning shortages. Both of these barriers were reasons why nursing was not an attractive option as a career selection. The shortages additionally were in response to war, economic crisis, and shifts in societal conditions.

External barriers. Traditionally, nursing was perceived as caring for the dying, terminal patients, which takes it toll on the clinician. Advances in technology also required a more intelligent labor force that could utilize these tools effectively. The health care field was primarily controlled by the medical profession that viewed nursing as a secondary profession to that of the physician. The medical advancements made accentuated the clout of physicians and oppressed the nursing profession. Nursing was a female dominated vocation that has only seen an infusion of males in the last few decades. The repressive educational system of early nursing training was characterized by cheap labor for the hospital. The change from the rural community area to the urban setting robbed nursing professionals of the independence they had enjoyed with public health (West, Griffith, & Iphofen, 2007).

Internal barriers. The stressful work environment of the Registered Nurse (RN) along with negligible compensation has hampered recruitment and retention efforts throughout history. Short-term solutions to produce nurses were seen during times of war but did not address how to keep them in the profession when they returned home. Financial incentives were used as a way to attract nurses yet questions surfaced as to the quality of person that was drawn because of monetary enticement. A disturbing trend of workplace violence is on the rise (West et al., 2007).

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Nursing Faculty Shortage

The lack of nursing faculty is another component of the nursing labor shortage. "One reason for the faculty squeeze is that a nurse with a graduate degree needed to teach can earn more as a practicing nurse, about $82,000, than teaching, about $68,000" (Dunham, 2009). This income disparity has been a difficult problem to solve, and in light of the budget cuts in California, the problem will only get more complicated. According to the National League of Nursing's report on nursing programs (Nally & Ream, 2008), there was an increase in student applications. An alarming finding of the report was that qualified applicants were turned away with the lack of nursing faculty as the main reason.

Schools of nursing have been experiencing shortages of qualified faculty for many years (Siela, Twibell, & Keller, 2009). The aging of nursing faculty is a primary facet of the shortage with the average faculty age of 46.8 years, doctorate prepared faculty age of 55.7 years, and those younger than 34 years comprising only 12% of the total faculty. Impending retirement of the current faculty is projected to limit the amount of productive instructional years (Siela et al., 2009).

The Problem. The "demand for newly educated nurses influences demand for faculty" (Yordy, 2006, p. 2). This need is increasing as the population is getting older and the life expectancy is extending. The numbers of faculty needed to instruct this student group is anticipated to fall short at the present rate of growth. The educational preparation of nurse faculty is calling to raise the standard to the doctoral level because of the complexity of the health care environment that new Registered Nurses (RNs) are facing when they graduate. Addressing non-productive time of nurse faculty may lighten the workload of office hours, course preparation, and meetings. Productivity is measured in several ways: faculty to student

ratio, scholarly publications, professional presentations, and grant support. "These demands on instructors contribute to the nursing faculty shortage" (Yordy, 2006, p. 2).

Factors. There is a generally accepted truth in the nursing profess that there is more financial compensation for nurses in clinical practice than there is in the academic setting. Nursing programs are not supplying enough potential nurse educators to replace the ones who will be retiring soon. The career trajectory of nurse educators has a natural lag time; there is a gap in time between initial licensure and graduate education. "Another factor influencing the nursing faculty shortage is that historically nurses were encouraged to work rather than continue their education" (Allen, 2008, p. 37). If a clinical nurse enters the profession with an Associates Degree, pursuing a Bachelors Degree can be delayed because of marriage, family, and clinical practice. After a Bachelors Degree, a Masters Degree is required to be an educator in the college or university (Siela et al., 2009).

Solutions. Answering the question on how to solve the nurse faculty shortage has come in many different forms. Funding from government and private sectors to support academic institutions is one solution. Convincing nurses to consider an additional role as a faculty instructor will alleviate some of the shortage need. Educating potential faculty about the requirements, expectations, and responsibilities will prepare them for their new position. Informing prospective faculty of the different faculty positions (clinical, laboratory, and classroom) and their respective duties will lead to a more suitable selection (Siela, Twibell, & Keller, 2009). Both short-term and long-term strategies to address the nursing faculty shortage are listed.

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Associate Degree in Nursing

"In response to a critical nursing shortage following World War II, a sociologist, Dr. Esther Lucille Brown, was commissioned by the Carnegie Foundation to study nursing education" (Orsolini-Hain & Waters, 2009, p. 266). The results of this study recommended the education of nurses be relocated to colleges and universities. At this point in time, the hospital-based training of diploma programs was found to be misguided since students were viewed as free labor in this environment instead of learners.

History. Technological innovations and medical discoveries directly affected the increase in the demand for nursing. The nursing programs at the time were not prepared to handle the influx of new students. Also, in 1946 Congress passed the Hill-Burton Act, which was the catalyst for hospitals springing up across the United States. After World War II, nurses were not flocking back to their positions as nurses but sought other career choices that higher education offered. The hospital diploma programs were seen as oppressive by graduates and eventually led to decreased enrollment. Russell states, "a national Commission on Higher Education, appointed by President Harry Truman, urged the expansion of community junior colleges, arguing that the nation needed to increase the number of people prepared at the technical or semiprofessional level" (Orsolini-Hain & Waters, 2009, p. 267).

The new Associate Degree in Nursing (ADN) programs were constructed to be completed in three years including prerequisite, nursing, and general studies courses. Instruction of nursing in this amount of time brought the realization that not everything could be taught. The focus of clinical experiences in hospitals was to thread the theoretical and the practical knowledge together instead of its previous use as unpaid labor (Haase, 1990).

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The affordability, brevity of the program, and geographic accessibility of junior colleges attracted a new demographic to the nursing profession. The true measure of the Associate Degree in Nursing (ADN) Program success would be the passing rates on the pre-licensure examination. "Graduates of Associate Degree in Nursing (ADN) programs averaged more than 90% examination passing rate on their first attempt, and 80% of the graduates were employed in nursing, primarily in hospital settings" (Orsolini-Hain & Waters, 2009, p. 268). These factors fueled the growth of programs that sees it accounting for 63% of the Registered Nurse (RN) graduates annually.

The Associate Degree in Nursing (ADN) program was initially intended to be a technical preparation and not a competitor to the professional instruction of the Bachelor of Science in Nursing (BSN). The impetus of the nursing shortage blurred this line and found Associate Degree in Nursing (ADN) prepared nurses in management and leadership positions. Presently, the Bachelor of Science in Nursing (BSN) is seen as the professional development destination of Registered Nurses (RNs) and an expansion of their career opportunities. An ongoing discussion still rages as to the differences in practice even though both types of graduates hold the same Registered Nurse (RN) licensure.

Associate Degree in Nursing Program. Mount St. Mary's College is an academic community committed to continuing exploration of our relationship to God, to other persons, and to nature. This exploration takes the form of programs devoted to excellence in the liberal arts and career preparation with a special focus on educating women for participation and leadership in our society and our time. The Catholic tradition of the college offers a value orientation for the student's personal and professional life, giving the motivation for a Christian commitment that views professional life as service.

Nursing is a service to humanity. It is a profession committed to: the promotion and restoration of health; the prevention of illness of individuals, families, groups, and communities; and support for a dignified death. It is the science whose main concern involves the life processes that positively affect the health status and integrity of persons, families, and groups. These life processes involve physiological, psychological, sociological, and spiritual life components. A focus on the interaction of these components delineates nursing science.

The Department of Nursing functions within the philosophy of the college and has developed a curriculum on the Roy Adaptation Model of Nursing (Mount St. Mary's College, 2011). The Adaptation Model recognizes that a person is a bio-psycho-social-spiritual being in constant interaction with a dynamic and complex world. Humans possess both innate and acquired mechanisms, which, in health, enable coping with the complex internal and external environment. In times of stress, these coping mechanisms may be disrupted. The ability to adapt to the internal and external environment at this time affects the person's position on the health-illness continuum. The promotion of adaptation in the direction of health depends upon an educational program which prepares the student to understand the person as a total being, to recognize and respect human values, and to utilize a scientific process within the framework of the adaptation model.

Each student enters the nursing program with a unique background for potential growth. Students are active learners. Learning progresses from novice to beginning level practitioner in a variety of settings from simple to complex. Because each student is unique with different learning potentials and different critical thinking skills, the expectation is that the student will seek assistance and demonstrate growth at all stages of learning. The extent to

which this distinct potential is achieved is determined by behavioral changes, which are observed and evaluated in the context of the expected outcomes of the learning process.

The faculty believes the program has different levels of competencies for students to achieve their distinct potential. Options to select entry levels to promote career mobility are offered. The faculty believes providing a supportive environment enhances learning at each level of the program. The faculty act as role models and therefore must be clinically competent and professionally active. In addition, they assume responsibility for individual advisement of nursing majors and provide opportunities for assistance in the event of academic difficulties.

Staffing Ratios

Another consideration in the conversation related to the nursing shortage is staffing ratios. In response to patient safety issues with overworked health care providers, "legislation signed into law on October 10, 1999 in California (AB-394) sets minimum nurse-to-patient staffing ratios in general acute care, psychiatric and specialty hospitals and limits the nursing related duties of unlicensed personnel" (Office of Health Care Access, 2000, p. 29). The nursing shortage complicates the ability of health care organizations to delivery quality care because the mandated staffing ratio sets a standard of care that was not previously considered. Of course the public safety is of the utmost importance, but the nursing shortage becomes a more critical concern because these ratios make it obvious for the need for more Registered Nurses (RNs). The entities in California with competing interests and perspectives of staffing ratios are the California Healthcare Association (state affiliate of the American Hospital Association), California Nurses Association (CNA), Service Employees International Union (SEIU), and the California Department of Health Services (DHS).

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History. California was the first state to have mandated minimum nursing staffing levels. In 1976, the legislature began the debate by stipulating that hospitals must have a minimum ratio of one licensed nurse per two patients in intensive care units and coronary care units (Coffman, Seago, & Spetz, 2002). Proposition 216 was rejected by the California voters in 1996 which would have established staffing standards for licensed health care facilities. Since 1999, there have been many research studies conducted by the California Department of Health Services to establish the implementation of the ratios. When the legislation was initially passed, there were no numbers associated with the different nursing units. The California Nursing Outcomes Coalition (CalNOC) performed research and development of the required ratios by unit type. The retrospective studies and surveys provided much needed data as to how the ratios would affect the quality of care and the financial impact it would bring.

National Council Licensure Examination (NCLEX)-Registered Nurse (RN)

As part of the qualifications to be an entry-level Registered Nurse (RN), applicants must pass the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). This examination measures the minimal competency to be safe in the practice environment. "The major purpose of the National Council on State Boards of Nursing (NCSBN) was to develop valid, reliable, and legally defensible licensing examinations" (Dorsey & Schowalter, 2010, p. 183). This expertise in creating the most effective and efficacious examination was honed over a period of decades.

History. "In May 1941, the National League for Nursing Education (NLNE) Committee on Nursing Tests, using volunteer assistance and loans from private sources, saw to the administration of the first pre-nursing examinations" (Dorsey & Schowalter, 2010, p. 183).

State board test pool. The National League for Nursing Education (NLNE) Committee on Nursing Tests designed the Achievement Test Service, which would become the State Board Test Pool (SBTP) Service. All fifty states were using the service as the pre-licensure examination from 1944 to 1982. During this time, the National Council on State Boards of Nursing (NCSBN) was collecting data to address the challenges of the examination concerning security, content, and accommodations for those with disabilities. This time frame was marked with a series of meetings and reports that kept track of these concerns; rulings and guidelines following with a consensus of how to proceed (Dorsey & Schowalter, 2010).

National council licensure examination: paper and pencil. The result of data collection and discussion brought about the change in name of the State Board Test Pool (SBTP) Service to the National Council Licensure Examination (NCLEX). The administration of the examination was performed through the paper and pencil format. This incarnation of the pre-licensure test was still utilizing a single passing number as the standard for success. The National Council on State Boards of Nursing (NCSBN) was continuing their efforts to improve the examination and was monitoring issues with security, content, accommodations, and the possible integration of technology into the testing process (Dorsey & Schowalter, 2010).

National council licensure examination: computer adaptive testing. This manifestation of the examination utilizes a well-researched method of computer adaptive testing. The issues of the paper and pencil format were mitigated because of the inherent nature of the computer modality. Remote site administration would increase access by prospective applicants and start to address the concern of test security. The sites allowed better test conditions since a smaller location could provide better ventilation, lighting, and noise moderation that larger settings did not afford the examination. The current version of the

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National Council Licensure Examination (NCLEX)-Registered Nurse (RN) is administered and proctored by Pearson VUE. Presently, the examination is multiple choice and alternate format items. "These formats may include but are not limited to multiple responses, fill-in-the-blank, drag and drop, and/or hot spots. All Item types may include multimedia such as charts, tables, graphics, sound and video" (National Council on State Boards of Nursing, 2010a, p. 7).

Test Plan. Guaranteeing the entry-level Registered Nurse (RN) possesses the knowledge to enter practice is the main intent of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). In doing so, a test plan structure is used to define the nursing competencies required to meet client needs in all health care settings. The "percentage of test questions designated to areas of the examination" is the most updated (National Council on State Boards of Nursing [NCSBN], 2010f, p. 3).

Each applicant taking the examination will have a minimum of 75 test items and a maximum of 265 during a six-hour period. In the initial 75 questions, there are 15 items that are being examined for validity and reliability for future inclusion in the examination. There is a pool of 1700 to 2000 questions that are used during a 90-day span. When this time frame is over, another set of questions are entered into the pot of possible test items (National Council on State Boards of Nursing [NCSBN], 2010g).

Pass/Fail Rules. The following are the guidelines set by the National Council on State Boards of Nursing (NCSBN) that determine passing and failing scores on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) (National Council on State Boards of Nursing [NCSBN], 2010g, p. 13):

Scenario # 1: The 95% confidence interval rule. This scenario is the most common for National Council Licensure Examination (NCLEX)-Registered Nurse (RN) examination

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candidates. The computer will stop administering items when it is 95% certain that the candidate's ability is either clearly above or clearly below the passing standard.

Scenario #2: Maximum-length exam. Some candidate's ability levels will be very close to the passing standard. When this is the case, the computer continues to administer questions until the maximum number of items is reached. At this point, the computer disregards the 95% confidence rule and considers only the final ability estimate:

- If the final ability estimate is above the passing standard, the candidate passes.
- If the final ability estimate is at or below the passing standard, the candidate fails.

Scenario #3: Ran-out-of-time rule (R.O.O.T.). If a candidate runs out of time before reaching the maximum number of items and the computer has not determined with 95% certainty whether the candidate has passed or failed, an alternate criteria is used.

- If the candidate has not answered the minimum number of required items, the candidate automatically fails.
- If at least the minimum number of required items were answered, the computer looks at the last 60 ability estimates:
  - If the last 60 ability estimates were consistently above the passing standard, the candidate passes.
  - If the candidate's ability estimate drops below the passing standard even once over the last 60 items, the examinee fails.

Computer Adaptive Testing. "Computerized adaptive testing (CAT) is a method for administering tests that merges existing computer technology with modern measurement theory to increase the efficiency of the testing process" (National Council on State Boards of Nursing [NCSBN], 2010a, p. 1). This is a stark difference than traditional paper and pencil,

which has a constant level of difficulty throughout the examination. With computer adaptive testing, each test is unique because it is interactive and based on the performance of the test taker. With each question, the computer recalculates the person's ability and then draws another test item from the pool of questions that matches their level of performance at that particular time of the examination. Using the test plan requirements as a guide, content knowledge and ability are assessed during computer adaptive testing.

A description of examination decisions regarding ability states:

NCLEX examination decisions are not based on the number or percentage of items answered correctly, but rather on the difficulty of the items that a candidate can answer correctly 50% of the time. CAT administers test items with difficulty levels such that each candidate will answer about half correctly; these items provide the most information. Thus, all candidates answer about 50% correctly. Passing candidates answer 50% of more difficult items correctly, and failing candidates answer 50% of easier items correctly. (National Council on State Boards of Nursing [NCSBN], 2010a, p. 1)

The distinguishing characteristic of the examination is to separate the test takers into categories of low ability and high ability. The National Council Licensure Examination (NCLEX)-Registered Nurse (RN) does not waste precious time asking the wrong level of question to a candidate. Level of ability eliminates a perennial issue the examination had with guessing when the level of question did not equate to the ability of the test taker.

Nontraditional Student

The National Center for Education Statistics (NCES) defines a nontraditional student as one who has any of the following characteristics (2002, para. 8-14):

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- Delays enrollment (does not enter postsecondary education in the same calendar year that he or she finished high school)

- Attends part time for at least part of the academic year

- Works full time (35 hours or more per week) while enrolled

- Is considered financially independent for purposes of determining eligibility for financial aid

- Has dependents other than a spouse (usually children, but sometimes others)

- Is a single parent (either not married or married but separated and has dependents)

- Does not have a high school diploma (completed high school with a GED or other high school completion certificate or did not finish high school)

The NCES (2002) estimates that 73% of all college undergraduates had nontraditional characteristics (para. 3). The NCES further identified that nontraditional students were more likely to drop out in their first year than traditional students. This supports the need for nursing programs to identify predictors of student success and avoid the susceptibility of nontraditional students to leave the course of study.

Student Success

Nursing student success will be measured in two ways. Completion of the Associate Degree in Nursing (ADN) program will be one while the other is receiving a passing result on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Student success is currently a focus of concern with nursing programs because of several issues. The nursing shortage has emphasized the need for educational programs to properly assess the challenges of their students. The determination of nursing program success is the result of the

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National Council Licensure Examination (NCLEX)-Registered Nurse (RN) by their nursing graduates on the first attempt.

Kuh, Kinzie, Buckley, Bridges, and Hayek (2006) have identified five perspectives (sociological, organizational, psychological, cultural, and economic) that "contribute to the understanding of student success in college" (p. 11). Tinto's theory (2007) on student retention addresses the commitment that is fostered between an academic institution and the student when social integration is present. The organizational considerations speak to the infrastructure that supports the learning environment. When a student feels fairly treated and adequately presented with necessary tools, they will persevere through a program. The psychological point of view encompasses the theories of self-efficacy and self-concept. A strong sense of these creates an attitude by the student to seek out "challenging learning tasks and take advantage of the skill-improvement opportunities that come their way" (Kuh et al., 2006, p. 14). The cultural factor deals with the possibility that home and school settings are different posing possible conflicts for the student. Students usually use a cost-benefit assessment between foregoing work and attending class to justify their career choice. Prospective employment attained through the acquisition of knowledge skills, and attitudes are what hang in the balance when students make economic decisions.

Predictors

Literature that examined predictors for success on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) was initially focused on Bachelor of Science in Nursing (BSN) Programs. In the last five years, there have been an increased number of research studies investigating Associate Degree in Nursing (ADN) program completion and success on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

These research studies were scanned for themes and common threads that would allude to the change in student predictors of success. The predictors that were examined by Canillas-Dufau (2005) will be identical to those included in this research study.

Predictors of student success need to be reviewed, revised, and explored in their usefulness by nursing program administration. Academic requirements have changed through the years, the passing standard for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) has changed, and the nursing student demographic has adjusted to changes in the global environment. The National Council Licensure Examination (NCLEX)-Registered Nurse (RN) was a paper and pencil test offered only a few times a year. This has been modified to a computer adaptive test that is readily available and assesses performance. All of these changes will require constant vigilance by nursing administration to ensure student success in nursing programs and on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). There are several research studies that focused on student success in associate degree nursing programs.

Nursing Program Success. Grade point average was found to be a significant predictor of program completion (Gilmore, 2006; Horton, 2006; Peer, 2005; Rogers, 2009; Samra, 2006,) while it was not in one study (Jackson, 2010). The Test of Essential Academic Skills (TEAS), Nursing Entrance Test (NET), and Exit Exams were noteworthy predictors of nursing program success (Czubatyj, 2010; Horton, 2006; Manning, 2007; Preston, 2007; Rogers, 2009) but not for all research (Miles, 2006; Peer, 2005). Preston (2007) found that previous health care experience was a positive predictor of success in a nursing program while Peer (2005) did not agree with this finding. One study presented English as a primary language, older individuals, and Caucasian ethnicity to be associated with program completion

(Samra, 2005). Three qualitative studies discovered the perception of professors (Bernard, 2010), student engagement with the academic environment (Sall, 2009), and student experiences (Kreitner, 2007) to have a significant correlation with nursing program completion. Nontraditional students looked to have a greater chance of success (Rogers, 2009).

National Council Licensure Examination (NCLEX)-Registered Nurse (RN)

Success. Several research studies (Canillas-Dufau, 2005; Gilmore, 2006; Hardin, 2005; Horton, 2006; Humphreys, 2008; Kline, 2010; Lea, 2006; Marshall, 2006; Matos, 2007; Milow, 2005; Rogers, 2009;) identified grade point average as a significant predictor on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) with only two studies not in agreement (Baker, 2008; Wacks, 2005). The Test of Essential Academic Skills (TEAS), Nursing Entrance Test (NET), and Exit Exams were seen as positive predictors of first time passage on the nursing board examination (Canillas-Dufau, 2005; Hardin, 2005; Hedderick, 2009; Horton, 2006; Humphreys, 2008; Kline, 2010; Lea, 2006; Matos, 2007; Milow, 2005; Stalf, 2006; Thompson, 2006; Yoho, 2006) but did not hold true for Baker (2008). The nonacademic factors of age (Humphreys, 2008; Milow, 2005), ethnicity (Wacks, 2005), and critical thinking (Thompson, 2006; Wacks, 2005) were found to be significant predictors of success on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Summary

The rich history of nursing is tied to the development and growth of the United States. The growth of nursing is directly intertwined with world events, which impacted the path of nursing education. The inception and expansion of Associate Degree in Nursing (ADN)

programs eventually led to the establishment of one at Mount St. Mary's College in Los Angeles, California. This educational institution is unique in its design targeted for the nontraditional student as an afternoon, evening/weekend design.

Student success was defined as graduation from the nursing program and a passing result on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. The predictors for success have been studied in previous research and give a foundation of knowledge that will be used in this one. Student demographic information has been shown to be strong predictors when using a correlational analysis to draw relationships between the independent variables and their effect on the dependent ones.

Chapter 3 will be a discussion about the methodology utilized for this research study.

Chapter 3: Methodology

The purpose of this retrospective study was to determine which student characteristics of nontraditional nursing students in an afternoon and evening/weekend Associate Degree of Nursing (ADN) program are most significantly related to successful licensure. The intention of this chapter was to describe the design of the research study. The discussion enumerated the methods and procedures used for data collection in the hopes of answering the research questions.

Restatement of the Problem

Previous studies and research regarding student success in nursing schools and on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) are primarily focused on baccalaureate nursing programs (Alexander & Brophy, 1997; Davenport, 2007; Higgins, 2005; Waterhouse & Beeman, 2003). The students who enroll in baccalaureate nursing programs are principally traditional students. These traditional students were identified as being different than the nontraditional student. The aforementioned research studies focused on the traditional student, and are not applicable to the nontraditional adult learners who enroll in associate degree nursing programs. Because of recent changes in the United States economy, the number of nontraditional students is markedly growing (American Association of Colleges of Nursing [AACN], 2009). The increase in nontraditional students and the lack of research with this population supports the need for this study.

Restatement of the Purpose

The purpose of this study was to determine which student characteristics of nontraditional nursing students in an afternoon and evening/weekend Associate Degree of Nursing (ADN) program are most significantly related to successful licensure. The student

characteristics of the nontraditional student were obtained from student records that comprised 22 pre-admission variables. Successful licensure has two components: graduation from an accredited nursing program and first-time passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Significance of the Study

The recent economic downturn in the United States has prompted nursing school programs to decrease their enrollment numbers (American Association of Colleges of Nursing [AACN], 2009). With decreased funding sources, nursing programs need to be more efficient in their acceptance process so they are admitting students who have a higher likelihood of success. The nursing shortage calls for the enrollment numbers of students to remain at present levels and increase in the near future (California Board of Registered Nursing [BRN], 2009a). The California Board of Registered Nursing (BRN) measures student passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt as one of the considerations of nursing school program success. These nursing school program success rates are posted on the California Board of Registered Nursing (BRN) website as a matter of public record. The academic institutions, the government, and the whole of society are vested in the success of nursing students.

Study Design

Burns and Grove (2007) identified the descriptive correlational research design as most appropriate to utilize when trying to find interrelationships between variables. There was no attempt to manipulate or control the variables. This research design was chosen by past research studies to examine the topic of student success in nursing school and on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Looking back upon the

events of student success and drawing conclusions about the relationships of the variables characterizes this type of research design (McMillan & Schumacher, 2010).

The main focus of this study was to examine the relationship between nontraditional student characteristics, nursing program completion, and National Council Licensure Examination (NCLEX)-Registered Nurse (RN) success. The intent of this correlational study was to establish whether changes in one variable (independent) correspond to changes in another variable (dependent).

This retrospective study will be designed to answer the questions:

1. What are the demographic characteristics of the respondents?

2. Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

3. Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

4. Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

5. Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

Setting

The setting of this research study was Mount St. Mary's College at the Doheny Campus located in Los Angeles, California. A racially and ethnically diverse community surrounds this historic area, situated south of Downtown Los Angeles (Canillas-Dufau, 2005). The office of

the Associate Degree of Nursing (ADN) program was the place where data collection was conducted since that is where they are maintained by the nursing program administration.

Mount St. Mary's College. Mount St. Mary's College is a Catholic liberal arts college that was originally founded for undergraduate studies for women. It has grown into an institution for the professional preparation of both men and women. (Mount St. Mary's College, 2012a).

History. Founded in 1925 by the Sisters of St. Joseph of Carondelet, the College had its original campus at St. Mary's Academy at Slauson and Crenshaw Boulevards in downtown Los Angeles. After the purchase of property in the Santa Monica Mountains in 1928, the College built its Chalon Campus, which is home to its traditional baccalaureate degree program (Mount St. Mary's College, 2012a).

The College's historic Doheny Campus near downtown Los Angeles opened in 1962 on what was once the Doheny Family estate. The campus houses the Mount's graduate degree programs, associate in arts programs, education credential program, and the Weekend College, which offers a baccalaureate degree program to working adults. Many of the other programs at the Doheny Campus are also offered in evening and weekend formats (Mount St. Mary's College, 2012a).

The Mount's academic programs place a strong emphasis on social and ethical values consistent with the Catholic view of compassionate community involvement-both in Southern California and around the world. The College also prides itself on the diversity of its student body and faculty, who have included a wide variety of religious, cultural, and ethnic backgrounds. Indeed, this diversity greatly enhances students' preparation for involvement and leadership in our increasingly complex world (Mount St. Mary's College, 2012a).

Mission and Purpose. Mount St. Mary's College offers a dynamic learning experience in liberal arts and sciences to a diverse student body. As a Catholic college primarily for women, we are dedicated to providing a superior education enhanced by an emphasis on building leadership skills and fostering a spirit to serve others. The Mount's measure of success is graduates who are committed to using their knowledge and skills to better themselves, their environments, and the world (Mount St. Mary's College, 2012b).

The Catholic commitment of the College manifests itself in many ways. It is found in opportunities for worship, academic programs, and the way the College functions. Above all, it is found in the whole environment in which inquiry and learning take place. Thus, the College embodies Christian convictions supportive of lives of commitment and Christian concern in a secular society (Mount St. Mary's College, 2012).

Goal. The undergraduate Learning Goals are a unified statement of the outcomes of a Mount St. Mary's College education. This education is guided by the Catholic Intellectual Tradition, which embraces the liberal arts, sciences, and humanities to educate the whole person – mind, body, and spirit. The outcomes represent the College's commitment to helping our students become reflective individuals who use their knowledge, skills, and imagination to serve their communities and our world (Mount St. Mary's College, 2007).

A Mount St. Mary's graduate will demonstrate depth of learning through being proficient in the content and methods of her/his discipline or field. The graduate will demonstrate breadth of learning through mastery of the liberal arts and sciences as appropriate to the degree. At Mount St. Mary's College (2007), a graduating student will be: a complex thinker, a clear communicator, an informed and participatory citizen, an effective leader and contributor, and a life-long learner.

Table 1

Characteristics of Mount St. Mary's Graduate

Complex Thinker	Clear Communicator	Informed and Participatory Citizen	Effective Leader and Contributor	Life-Long Learner
applies investigation, critical thinking, and analytic and decision-making skills to identify and solve problems effectively	effectively conveys ideas, opinions, and facts in written and oral form	with a commitment to service and an appreciation for the environment in which she/he lives	takes initiative, functions as a team member, makes sound moral judgments, and works in a global context	appreciates and is curious about the world in which she/he lives

Population and Sample

The target population of the study was Associate Degree of Nursing (ADN) graduates from the afternoon and evening/weekend program of Mount St. Mary's College. The sample was students who were granted acceptance into the afternoon and evening/weekend Associate Degree in Nursing (ADN) program from the semesters Spring 2003 (graduating Fall 2004) to Fall 2008 (graduating Spring 2010). Spring acceptance follows a 6-semester curriculum, while Fall acceptance has a 5-semester curriculum. The sample included graduates (only those who completed the program) from Mount St. Mary's College Associate Degree in Nursing (ADN) program who sat for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) by June 30, 2010.

There are a projected nine cohorts who will have been admitted into the Associate Degree in Nursing (ADN) program during that timeframe, with a probable 50 students per cohort completing the graduation requirements. A non-random sample of students was chosen. A predicted total of 450 (*N*) student admission records along with official nursing department files were reviewed for this study.

Inclusion. The sample for this study was comprised of students who completed a five or six semester Associate Degree in Nursing (ADN) program from Fall 2006 to Fall 2010 at Mount St. Mary's College in Los Angeles, California. The estimated number of students in this population is 450, biannual graduation of historically 50 students per class. Those students who entered the program in the first semester and graduate were included in the research study; however, there may be instances of incomplete data in the student records. Complete tabulation of all variables, both independent and dependent, merited inclusion of the student into the research study.

Exclusion. Missing or incomplete data warranted exclusion from the research study. Attrition of the subjects in the study means that their demographic data, academic records, or the reports from the California Board of Registered Nursing (BRN) were incomplete. Students transferring in from other nursing programs were not included in the research study. Historically at Mount St. Mary's College, Licensed Vocational Nurses (LVN) are administered a placement test to grant credit for clinical experience. If a Licensed Vocational Nurses (LVN) places into the second semester of the Associate Degree in Nursing (ADN) program, they were not included in the research study.

Description of Variables

Independent variables. The following independent variables were found in previous research studies to be of importance when examining academic and non-academic factors of nursing program and National Council Licensure Examination (NCLEX)-Registered Nurse (RN) success.

- Admission probation – This attribute indicates whether or not the student was admitted under a probationary status, and was coded as 0 for no and 1 for yes.

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- Admission semester – This attribute indicates the admission semester for the student.

- Age – These demographic data were interval level variables and were derived from the date of birth given on the student application.

- Anatomy grade – This interval level denoted the grade earned in college level anatomy. The letter grade was coded using the score on the 4.0 scale.

- Anatomy grade (age of) – This interval level variable determined the number of years since the anatomy course was completed with a "C" grade or better.

- Chemistry grade – Satisfactory completion ("C" or better) of a chemistry course with a lab is required for admission to the Associate Degree in Nursing program.

- Chemistry grade (age of) – This interval level variable determined the number of years since the chemistry course was completed with a "C" grade or better.

- Days between graduation and National Council Licensure Examination (NCLEX)-Registered Nurse (RN) – This numerical value indicated the number of days between the graduation date and the date for the first attempt on the national licensure examination.

- Employment related to healthcare – This variable denoted whether employment, if applicable, was Nursing/Other nursing or Other non-nursing related. For the descriptive analysis, data was categorized as 1 for Licensed Vocational Nurse (LVN), 2 for Other nursing related employment such as: Certified Nurse Assistant (CNA), Patient Care Technician (PCT), Medical Assistant (MA), Emergency Medical Technician (EMT), Psychiatric Technician (PT), Respiratory Therapist (RT), and 3 for Other non-nursing related employment. For the correlational

analysis, the categories were condensed to become dichotomous and coded as 0 for Other non-nursing related employment and 1 for Nursing/Other nursing related employment.

- Employment status – This variable reflected the status of employment categorized as either 1 for full-time, 2 for part-time, or 3 for no employment.

- English as a second language – This dichotomous variable reflected whether or not English is the second language for the subject, and was coded as 0 for no and 1 for yes.

- Ethnicity – Data on this nominal level variable was categorized as African American/Black, Asian, Caucasian, Filipino/Pacific Islander, Hispanic, or Other. They were coded 1, 2, 3, 4, 5, and 6 respectively for descriptive statistical analysis. For the correlational analysis, the categories were condensed to become dichotomous, and the coded as 0 for subjects identified as non-Caucasian and 1 for those identified as Caucasian.

- Gender – This dichotomous variable was coded 0 for female and 1 for male.

- Grade point average: overall – This interval variable represented the average of all high school and/or college level coursework, if any, completed at the time of admission. A minimum 2.50 overall grade point average was required for admission to the Associate Degree in Nursing (ADN) program.

- Grade point average: nursing – This interval variable represented the average of all science course work completed at the time of admission to the Associate Degree in Nursing (ADN) program.

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- Math entrance exam score – This interval level variable represented the score earned on the math entrance exam (a minimum score of 84% is required for admission to the Associated Degree in Nursing [ADN] program). This test was administered to determine if math remediation was necessary.

- Math remediation – This dichotomous variable was coded for 0 for no and 1 for yes. A score of less than 84% on the Math entrance exam resulted in remediation that required enrollment in a formal math course.

- Microbiology grade – This interval level denoted the grade earned in college level microbiology. The letter grade was coded using the score on the 4.0 scale.

- Microbiology grade (age of) – This interval level variable determined the number of years since the microbiology course was completed with a "C" grade or better.

- Physiology grade – This interval level denoted the grade earned in college level physiology. The letter grade was coded using the score on the 4.0 scale.

- Physiology grade (age of) – This interval level variable determined the number of years since the physiology course was completed with a "C" grade or better.

- Previous education/degree earned – This variable reflected whether or not a previous degree has been earned prior to admission into the nursing program. Data was categorized as 1 for none, 2 for an Associate of Art/Science degree, 3 for a Bachelor of Art/Science degree, and 4 for a Master of Art/Science degree.

Dependent Variables. The California Board of Registered Nursing (BRN) regards the following dependent variables as requirements for licensure.

- Nursing program completion (graduation) – This was measured as successful graduation from the Associate Degree in Nursing (ADN) program.

- Passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) – This was measured as successful passage of the examination on the first attempt.

Research Methods

The following is a step-by-step process of how the study will be completed.

- Conducted preliminary review of literature.

- Candidate for chairman of dissertation committee interviewed.

- Discussed dissertation topic with chairman of dissertation committee.

- Selected dissertation committee (Appendix C).

- Conducted secondary review of literature.

- First draft of chapter 1 (introduction) completed.

- First draft of chapter 2 (review of literature) completed.

- First draft of chapter 3 (methodology) completed.

- Conducted follow-up review of literature.

- Preliminary oral defense scheduled (Appendix D)

- Preliminary oral defense completed (Appendix E).

- Contacted Mount St. Mary's College Institutional Review Board (Appendix F, G, H)

- Received permission from Mount St. Mary's College IRB (Appendix I, J).

- Contacted Pepperdine University IRB (Appendix K, L)

- Received permission from Pepperdine University IRB (Appendix M).

- Collected and analyzed data.

- Conducted follow-up review of literature.

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- First draft of chapter 4 (findings and analysis) completed.

- First draft of chapter 5 (conclusions and recommendations) completed.

- Conducted follow-up review of literature.

- Final draft of chapters 1-5 completed.

- Final oral defense scheduled (Appendix N).

- Final oral defense conducted.

Data Collection Procedures

The data was collected over the span of an eight-day period. The researcher was the only investigator with access to the student files. Data was entered into a spreadsheet that could be imported to a variety of statistical analysis software. The collection and management of data was a planned process. Potential subjects were selected from Mount St. Mary's College Associate Degree in Nursing (ADN) program that consisted of nine graduating cohorts and would have taken the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Permission to conduct the study was obtained from the Institutional Review Board (IRB) of Mount St. Mary's College and Pepperdine University. Data was collected using a researcher-developed form (Appendix A). The sources of data were the student files and the official reports issued to the academic institution by the California Board of Registered Nursing (BRN) displaying the results of their graduates on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Data Collection Tool

Data was collected utilizing a researcher-designed form and coded in a style that will ensure confidentiality of information (Appendix A). This form guided the systematic review

of each individual student record as well as the official department reports issued by the California Board of Registered Nursing (BRN). Data was counted and recorded. Results were tabulated for frequency and ranked according to the most frequent occurrences of the responses. Tables and figures will be presented in Chapter Four to discuss the findings of this research study.

Data Analysis Procedures

The data collected were analyzed utilizing the statistical power and analysis software program NCSS. Correlational analysis has been found to be the most utilized data analysis procedure used in other studies examining predictors of National Council Licensure Examination (NCLEX)-Registered Nurse (RN) success. This analysis was used to measure the relationship among two interval level dependent variables (National Council Licensure Examination [NCLEX]-Registered Nurse [RN] success and Associate Degree in Nursing [ADN] program completion) and 22 independent variables.

The following statistical analysis will be applied to address the research questions:

1. What are the demographic characteristics of the respondents?

- Descriptive statistics such as Mean, Median, and Standard Deviation were applied to variables measured numerically (Interval and Ratio) and Frequency Distribution was used to summarize categorical data.

2. Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

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- Correlation Matrix was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

3. Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

- Correlation Matrix was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

4. Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

- Correlation Matrix was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

5. Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

- Chi square statistic was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

Design Validity

McMillan and Schumacher (2010) identify the following four areas of design validity. These types are looking at the extent to which the research study results can explain reality.

They can also be posited by asking questions that should be considered in the complete overview of "findings and conclusions" (McMillan & Schumacher, 2010, p. 105).

Analysis of Variance (ANOVA) is an inferential statistical technique that compares means of one or more dependent variables across one or more independent variable. Mean and Variances provide for calculation of a significance levels. Application of Analysis of Variance, as any other inferential statistics technique, requires that the data obtained come from a random sample. This study employed a purposeful data set and seeks to compare means of two dependent variables across a number of classifier independent variables using ANOVA. While comparison of means calculated in ANOVA is appropriate here. However, implication of generalizability using the significance levels and p-value to imply applicability to other groups may have utility limited to directing others interested in the topic as to a possible hypothesis in future research.

Statistical conclusion validity. Is there a relationship among the variables? "In quantitative research, statistics are used to determine whether a relationship exists between two or more variables" (McMillan & Schumacher, 2010, p. 107). After the statistics are run, the statistical conclusion validity can be determined. Shadish, Cook, and Campbell (as cited in McMillan & Schumacher, 2010), list nine hazards to this type of validity. The first seven will be scrutinized after the data has been tabulated and analyzed.

Internal validity. Is there a causal relationship between the intervention and the dependent variable? McMillan and Schumacher (2010) identify eleven possible threats to internal validity; history, selection, statistical regression, pretesting, instrumentation, attrition, maturation, diffusion of intervention, experimenter effects, intervention replications, and subject effects. The following are the foreseeable dangers this research study faced.

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This study had a number of limitations. The procedure for selection was a threat. The subjects were from a defined group and therefore were a convenient sample, not randomly selected. Students who were admitted into the first semester of the program were included while other students transferring in from another program, were not included in the research study. Licensed Vocational Nurses (LVN) placed into the second semester of the program and students who transferred into the program from another college or university were excluded from this study.

External validity. What is the generalizability of the results? One of the limits of this study is due to the fact that it examined data from only one school of nursing. However it provided a model for this specific school's admission process into the Associate Degree in Nursing (ADN) program and hold high external validity for the university, which also has a Bachelor of Science in Nursing (BSN) and an Accelerated Bachelor of Science in Nursing (ABSN) program.

The study was limited to pre-licensure students who sat for and passed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) between 2005 and 2010. This data was not representative of the entire population of students in pre-licensure programs during these years. The results acquired from this study should not be generalized to the population of nursing students who are just entering pre-licensure nursing programs.

Human Subjects Protection

This research study involved data collection and analysis from the examination of existing data, documents, and records found in student files only. There was no interaction with human subjects. Permission to conduct the study was obtained from the Institutional Review Board (IRB) of Mount St. Mary's College and Pepperdine University. Data were

collected using a researcher-developed form (Appendix A). The sources of data were the student files and the official reports issued to the academic institution by the California Board of Registered Nursing (BRN) displaying the results of their graduates on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Further protection of the subjects was taken by coding the data collection sheets. This preserved anonymity of the subjects. No identifying data, such as student name, date of birth, social security number, student identification number (SID) were collected that can be associated with the subjects.

Permission to perform this study was granted by the Institutional Review Board (IRB) of Mount St. Mary's College and from of Pepperdine University. Written informed consent to participate in this study was obtained from the administrators of the studied institution while anonymity was preserved (Appendix I). Confidentiality was maintained for individual student data, which was kept in a secure site and viewed by only the researcher.

In regards to the type and extent of the research being proposed, an exempt review by the Institutional Review Boards (IRBs) of both institutions was determined. There is no known physical, social, psychological, or legal risk involved with this study. This was an analysis of data that already exists and did require consent by the subjects. Under the United States Department of Health and Human Services: Office for Human Research Protections, 45 CFR 46.101(b)(4) states:

Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. (p. 3)

Ethical Conduct

In 1979 (Department of Health and Human Services [DHHS], 1979), the National Commission drafted the Belmont Report Identified three principles that are critical to the ethical conduct of research that concern human subjects. All of these concepts have been carefully integrated into this research study.

Respect for Persons. The issue of respect for persons can be separated into two fundamental ideas. This research study did not pose any immediate harm to the students of the target population. The potential harm that could be experienced by the subjects is miniscule in scale, but since they are graduates of the Associate Degree in Nursing (ADN) program they are no longer a student of the educational program. There were no perceived repercussions by the human subjects of granting permission to be included in the research study. The administration of the Associate Degree in Nursing (ADN) program of Mount St. Mary's College is in legal possession of the student records. None of the student records were taken from the offices of the nursing program; only codified data were collected with no personal identifiable information. No attempts to coerce or compensate the administration of the Associate Degree in Nursing (ADN) program of Mount St. Mary's College were made.

Beneficence. There are two areas of this principle that were utilized during this research study. The spirit to do no harm included maintaining the anonymity and confidentiality of the data that were derived from the student records. Maximizing possible benefits and minimizing possible harms encompassed the effort to produce the most comprehensive and thorough research study. Both of these aspects of beneficence were upheld throughout the study.

Justice. Fair and equitable treatment of the target population ensured justice distributes the encumbrance and benefits of this research study. Inclusion and exclusion criteria of human subjects are clearly delineated and not based on mere availability. These criteria were based upon previous research studies that investigated predictors of success on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). The positive effect of this study heightened the awareness of nursing program administrators to assess the potential for student success. This prediction allowed the administration to identify the learning needs of those students admitted into their program. In the nursing education community, this research built upon the existing research studies that have been conducted on Associate Degree in Nursing (ADN) programs.

Risk

According to the Department of Health and Human Services Office of Human Research Protections (Department of Health and Human Services [DHHS], 1979), there are five types of potential risk. All types of risk were minimized or eliminated when this research study was conducted. The risks to be avoided were physical, psychological, social, legal, and economic.

In many situations, physical risks in research can be minimized by carefully and skillfully following protocols, by having trained individuals conduct research procedures, through careful monitoring of research participants' health status, by recruiting appropriate populations, and by providing clinical care when needed. Possible ways to protect against psychological risks include reminding participants of their right to withdraw from research or limit their participation if they become uncomfortable, providing counseling or psychological support for participants who experience distress, or thoroughly debriefing research participants after research sessions are completed. Often, minimizing social risks to participants involves

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protecting confidential data, including not only the data collected, but also the fact of participation in the research project itself. Protections against legal risks often involve protecting the confidentiality of research data. For studies conducted in the United States, investigators can apply for a Certificate of Confidentiality, which are intended to prevent investigators from being forced to disclose data that can be linked to identifiable research participants in legal proceedings. Protecting confidentiality of data is one method for protecting against economic risks, such as those to employability and insurability. The investigator elected to keep research data separate from information used to identify subjects, and thus could put the participants at risk. There was no contact with human subjects. All data was extracted from student records. No names were recorded in the initial data collection. The researcher utilized sequential numbers (e.g. 001, 002, 003) and initials of the subjects only. At the conclusion of the study, even this data was shredded.

Exempt Research

The proposed research study was submitted to the Institutional Review Boards (IRBs) of Mount St. Mary's College and Pepperdine University for exempt status using the following rationale. There was no interaction with human subjects in the course of this study. However, all of the subjects whose records are to be included in the study were over the age of 18 years old. There was no involvement of a special minority (e.g. hearing impaired, blind). Though the study does not intend to involve pregnant women, the researcher had no way of measuring whether or not this was the case. Nevertheless, all of the subjects included in the study were graduates of the program and have no current relationship with the Associate Degree in Nursing program at Mount St. Mary's College. There was no probing information which an individual might consider personal or sensitive (e.g. use of drugs or alcohol). There was no

administration of physical stimuli. There were no materials utilized which might be considered offensive or degrading. There was no manipulation of psychosocial variables (e.g. social isolation). There was no deprivation of psychological requirements (e.g. nutrition, sleep). There was no physical exertion required.

Summary

Chapter 3 discussed the methodology utilized for this research study. It communicates the specifics of restatement of the problem, significance of the study, study design, setting, population and sample, description of variables, research methods, data collection procedures, data collection tool, data collection procedures, design validity, human subjects protection, ethical conduct, risk, exempt research and conclusion.

Chapter 4 will be a summary of the findings, analysis and interpretation of the data will be presented.

Chapter 4: Findings and Analysis

Based on the aforementioned review of the literature, the purpose of this research study was to discover what traits characterize the student population of nontraditional adults enrolled in the evening/weekend Associate Degree in Nursing (ADN) Program at Mount St. Mary's College. Another facet of this study was to examine admission criteria and applicant demographics to investigate their relationship with program completion (exit nursing grade point average) and National Council Licensure Examination (NCLEX)-Registered Nurse (RN) success (first attempt). The findings and analysis of this research will be presented in this chapter.

The purpose of chapter 4 was to present the quantitative results from the data collected in this research study. The organization of this section is primarily guided by research question with tables to exhibit the results. This chapter begins with a review of the study purpose, data collection procedures, data analysis, results of the study (by research question), and summary. Methods of data analysis and interpretation are discussed in this chapter.

Data Collection Procedures

The study was a retrospective descriptive correlation design that used a convenience sample of 458 student admission records and department reports from the California Board of Registered Nursing. The sample was derived from Mount St. Mary's College, located in Los Angeles, California, which boasts a populace of nearly 3.7 million people. The student data were collected from records of students who graduated from the Associate Degree in Nursing program between Fall 2006 to Fall 2010, comprising 9 cohorts.

Permission to conduct this research study was obtained through the Human Subjects Committee of Mount St. Mary's College and the Institutional Review Board of Pepperdine

University. The admission records of students and department reports were archived in the department offices of the Associate Degree in Nursing program at Mount St. Mary's College. Access to the data was made available through the Associate Degree in Nursing Department Director and the administrative assistant. The administrative assistant was the contact person for the researcher during the data collection procedure with the Department Director serving as the liaison if any questions arose. The Chair of the Human Subjects Committee was also available if the Department Director had any issues or concerns regarding the research study. In addition, the Dissertation Committee Chair was readily accessible if there were any other further discussions needed regarding the data collection process or the research study.

The database for the research study consisted of data collected from admission records of students who were admitted to the Associate Degree in Nursing program at Mount St. Mary's College. If admission was granted to the student during a Fall semester, then the length of the curriculum was five semesters. If the student was accepted into the program during the Spring semester, then the duration of the curriculum was six semesters. The data from the admission records were identical in nature, regardless of the admission semester of the student.

The data were collected using a spreadsheet created by the researcher. Data elements were then coded so they could be entered into a statistical analysis program. Coding was also used to maintain confidentiality without any identifiable information collected. For this research study, NCSS was employed to analyze the data.

Data Analysis

This research study was focused on assessing the relationship between demographic characteristics and admission criteria of students to outcome variables. The data collected were

analyzed utilizing the statistical power and analysis software program NCSS. A database was created using the data, which allowed analysis to be performed.

The following statistical analysis was applied to address the research questions:

1. What are the demographic characteristics of the respondents?

- Descriptive statistics such as Mean, Median, and Standard Deviation were applied to variables measured numerically (Interval and Ratio) and Frequency Distribution was used to summarize categorical data.

2. Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

- Correlation Matrix was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

3. Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

- Correlation Matrix was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

4. Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

- Correlation Matrix was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

5. Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

- Chi square statistic was applied to numerically measured and coded data while Analysis of Variance (ANOVA) was used to analyze the categorical independent variables.

Statistical inference (tests of significance) is typically used to determine the degree to which findings from a random sample can be generalized to the population where the sample was drawn. This study investigated the population of students who attended Mount St. Mary's College from the Fall of 2003 to the Spring 2009, graduating in Fall 2006 to Fall 2010. As such, application of significance testing in this study was not required, but can be used to guide future researchers.

Analysis of Variance (ANOVA) is a statistical test that measures the effect of one variable (independent) on another variable (dependent). ANOVA was implemented when the independent variable was an attribute (nominal or ordinal) and the dependent variable was a numeric value. Significance and findings will be discussed.

Chi-square analysis tests measure the effect of one variable (independent) on another variable (dependent). Chi-square was implemented when the independent variable was an attribute (nominal or ordinal) and the dependent variable was an attribute (nominal or ordinal). Correlation coefficient, variance, significance and strength of correlation will be discussed.

Correlation Matrix displays the correlation coefficients of the columns of a matrix for dependent and independent variables (Creswell, 2005). The diagonal elements of the

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correlation matrix will be 1 since they are the correlation of a column with itself. The values of interest are the correlation coefficient and p-value.

"The p-value is the probability (p) that a result could have been produced by chance if the null hypothesis were true" (Creswell, 2005, p. 188). In comparison to the significance level (alpha), the p-value guided the determination if the relationship between the independent variables and dependent variables were statistically significant.

Pearson correlation coefficient (r) examines the relationship present between variables, positive or negative and its strength. The correlation coefficient $r > 0$ is a positive relationship, while $r < 0$ indicates a negative relationship, and $r = 0$ means there is no relationship and the variables are not related. A correlation coefficient of $r = 1$ is a perfect positive relationship and $r = -1$ is a perfect negative relationship. Strong correlations will be shown with $r = -1$ to -0.5 or 1 to 0.5, moderate correlations will have $r = -0.5$ to -0.3 or 0.5 to 0.3, weak correlations will display $r = -0.3$ to -0.1 or 0.3 to 0.1, and lastly very weak correlations will exhibit $r = -0.1$ to 0.1.

Results of the Study

The collection of data were planned and performed by the researcher in collaboration with the administration of Mount St. Mary's College. The data were housed in the offices of the Associate Degree in Nursing Program and review of the student files was also carried out there. The time frame to collect the data spanned 5 weeks comprised of 7 days with 6 hours each. An administrative assistant allowed access to student files each day since the data were in locked file cabinets.

Students in the Associate Degree in Nursing program who were accepted into the program between Fall 2003 and Spring 2009, graduating between Fall 2006 to Fall 2010 were

included in the research study. Sitting for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) by June 2011. A total of 532 (*N*) student admission files were reviewed with 458 (*n*) furnishing complete records along with the Associate Degree in Nursing department files from the California Board of Registered Nursing. Reasons for incomplete records were: no National Council Licensure Examination (NCLEX)-Registered Nurse (RN) information recorded, the student took the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) in another state, the student has not taken the NCLEX-RN, the student has not registered the National Council Licensure Examination (NCLEX)-Registered Nurse (RN), or was disqualified because of requirements to sit for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

Research Question One: What are the demographic characteristics of the respondents?

The following variables were collected and analyzed to answer this research question:

- Admission probation
- Admission semester
- Age
- Anatomy grade
- Anatomy grade (age)
- Chemistry grade
- Chemistry grade (age)
- Days between graduation and NCLEX-RN
- English as a second language
- Gender
- Grade point average-nursing

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- Grade point average-overall

- Grade point average-science

- Math entrance exam score

- Math remediation

- Microbiology grade

- Microbiology grade (age)

- Passing NCLEX-RN on the first attempt

- Physiology grade

- Physiology grade (age)

- Previous degree achieved

Demographic reporting. The following (Table 2) represented the descriptive reporting for age, anatomy grade, age of anatomy grade, chemistry grade, age of chemistry grade, days between graduation and sitting for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN), nursing grade point average, overall grade point average, science grade point average, math entrance examination score, microbiology grade, age of microbiology grade, physiology grade, age of physiology grade, and previous degree achieved.

Table 2

Descriptive Statistics for Selected Variables

Variable	Mean	Median	Standard Deviation	Range
Age	31.4	31	5.8	29
Anatomy Grade	2.75	3	0.74	2
Anatomy Grade-Age	1.5	1	1.1	5

(table continues)

Chemistry Grade	2.88	3	0.75	5
Chemistry Grade-Age	1.8	1	1.1	7
Days to NCLEX-RN	59.7	56	27.7	407
Grade Point Average-Nursing	3.05	3.02	0.42	2
Grade Point Average-Overall	3.01	2.97	0.35	1.83
Grade Point Average-Science	2.87	2.73	0.56	2.61
Math Entrance Exam Score	86.1	86	7.6	42
Microbiology Grade	2.74	3	0.77	2
Microbiology Grade-Age	1.7	1	1.3	15
Physiology Grade	2.68	2.7	0.73	2
Physiology Grade-Age	1.6	1	1.1	14

The average age of the subjects was 31.62 years with a standard deviation of 5.92. Half of the participants were 31 years of age and older. The oldest and the youngest participants were 29 years apart. The ages of the participants were not normally distributed.

The average anatomy grade point average (GPA) of the subjects was 2.75 on a four-point scale with a standard deviation of 0.74. Half of the participants had an anatomy grade point average of 3.0 and above. The lowest and highest anatomy grade point averages were two grade points apart. The anatomy grade point averages of the participants were not normally distributed. The average anatomy grade age of the subjects was 1.58 years with a standard deviation of 1.09. Half of the participants had an anatomy grade age of one year and older. The lowest and highest anatomy grade ages were five years apart. The anatomy grade ages of the participants were not normally distributed.

The average nursing grade point average of the subjects was 3.05 on a 4-point scale with a standard deviation of 0.42. Half of the participants had a nursing grade point average of 3.02 and above. The lowest and highest nursing grade point averages were two grade points apart. The nursing grade point averages of the participants were not normally distributed.

The average overall grade point average of the subjects was 3.01 on a four-point scale with a standard deviation of 0.35. Half of the participants had an overall grade point average of 2.97 and above. The lowest and highest overall grade point averages were 1.83 points apart. The overall grade point averages of the participants were not normally distributed.

The average science grade point average of the subjects was 2.87 on a four-point scale with a standard deviation of 0.56. Half of the participants had a science grade point average of 2.73 and above. The lowest and highest science grade point averages were 2.61 grade points apart. The science grade point averages of the participants were not normally distributed.

The average chemistry grade point average of the subjects was 2.88 on a four-point scale with a standard deviation of 0.75. Half of the participants had a chemistry grade point average of 3.0 and above. The lowest and highest chemistry grade point averages were two grade points apart. The chemistry grade point averages of the participants were not normally distributed. The average chemistry grade age of the subjects was 1.88 years with a standard deviation of 1.19. Half of the participants had a chemistry grade age of one year and older. The lowest and highest chemistry grade ages were seven years apart. The chemistry grade ages of the participants were not normally distributed.

The average number of days between graduation and sitting for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) was 59.74 with a standard deviation of 27.73. Half of the participants sat for the National Council Licensure Examination

(NCLEX)-Registered Nurse (RN) within 56 days of graduation. The lowest and highest number were 407 days apart. The number of days between graduation and taking the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) of the participants were not normally distributed.

The average physiology grade point average of the subjects was 2.68 on a four-point scale with a standard deviation of 0.73. Half of the participants had a physiology grade point average of 2.7 and above. The lowest and highest physiology grade point averages were two grade points apart. The physiology grade point averages of the participants were not normally distributed. The average physiology grade age of the subjects was 1.60 years with a standard deviation of 1.18. Half of the participants had a physiology grade age of one year and older. The lowest and highest physiology grade ages were 14 years apart. The physiology grade ages of the participants were not normally distributed.

The average math entrance examination score of the subjects was 86.08% with a standard deviation of 7.69. Half of the participants had a math entrance examination score of 86% and above. The lowest and highest math entrance examination scores were 42 percentage points apart. The math entrance examination score of the participants were not normally distributed.

The average microbiology grade point average of the subjects was 2.74 on a four-point scale with a standard deviation of 0.77. Half of the participants had a microbiology grade point average of 3.0 and above. The lowest and highest microbiology grade point averages were two grade points apart. The microbiology grade point averages of the participants were not normally distributed. The average microbiology grade age of the subjects was 1.79 years with a standard deviation of 1.32. Half of the participants had a microbiology grade age of one year

and older. The lowest and highest microbiology grade ages were 15 years apart. The

microbiology grade ages of the participants were not normally distributed.

Frequency reporting. The following represented the frequency distributions for admit

semester (Table 3), admission probation (Table 4), age (Table 5), days between graduation and

sitting for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN)

(Table 6), employment related to healthcare (Table 7), employment status (Table 8), ESL

(Table 9), ethnicity (Table 10), gender (Table 11), nursing grade point average (Table 12),

overall grade point average (Table 13), science grade point average (Table 14), math

remediation (Table 15), passing the National Council Licensure Examination (NCLEX)-

Registered Nurse (RN) on the first attempt (Table 16), and previous degree (Table 17).

The admit semesters (Table 3) of the subjects were Fall 2003 0.2% (*n*=1), Spring 2004

1.9% (*n*=9), Fall 2004 1.7% (*n*=8), Spring 2005 14.6% (*n*=67), Fall 2005 14.1% (*n*=65),

Spring 2006 9.6% (*n*=44), Fall 2006 8.7% (*n*=40), Spring 2007 13.5% (*n*=62), Fall 2007

15.2% (*n*=70), Spring 2008 5.2% (*n*=24), Fall 2008 6.1% (*n*=28), and Spring 2009 8.7%

(*n*=40).

Table 3

Frequency Counts for Admission Semester

Admission Semester	Number *(n)*	Percentage (%)
Fall 2003	1	0.2
Spring 2004	9	1.9
Fall 2004	8	1.7
Spring 2005	67	14.6

(table continues)

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Fall 2005	65	14.1
Spring 2006	44	9.6
Fall 2006	40	8.7
Spring 2007	62	13.5
Fall 2007	70	15.2
Spring 2008	24	5.2
Fall 2008	28	6.1
Spring 2009	40	8.7

Subjects in the study admitted under probation (Table 4) were 5.2% (*n*=24) and those not admitted under probation were 95.7% (*n*=434).

Table 4

Frequency Counts for Admission Probation

Admission Probation	Number *(n)*	Percentage (%)
Yes	24	5.2
No	434	94.7

The age ranges (Table 5) of the subjects fell into four groups. The subject counts for 20-29 years was 37.8% (*n*=200), 30-39 years was 40.5% (*n*=214), 40-49 years was 7.9% (*n*=42), 50 years and older was 0.3% (*n*=2).

Subjects sat (Table 6) for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) in six different ranges of time. The count of subjects who took the examination within 0-29 days was 6.9% (*n*=32), 30-59 days was 46.9% (*n*=215), 60-89 days was 37.3% (*n*=171), 90-119 days was 7.8% (*n*=36), 120-149 days was 0.4% (*n*=2), 150 or more days was 0.4% (*n*=2).

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Table 5

Frequency Counts for Age

Age	Number *(n)*	Percentage (%)
20-29 years	200	37.8
30-39 years	214	40.5
40-49 years	42	7.9
50 years and older	2	0.3

Table 6

Frequency Counts for Days to NCLEX-RN

Days to National Council Licensure Examination (NCLEX)-Registered Nurse (RN)	Number *(n)*	Percentage (%)
0-29 days	32	6.9
30-59 days	215	46.9
60-89 days	171	37.3
90-119 days	36	7.8
120-149 days	2	0.4
150 or more days	2	0.4

Employment of the subjects as it is related to healthcare (Table 7) was: none 84.1% (*n*=385); nursing related 12.1% (*n*=55); Licensed Vocational Nurse (LVN) 3.2% (*n*=15); non-nursing 0.6% (*n*=3).

The employment status (Table 8) for the subjects was: full-time 56.3% (*n*=258); none 36.6% (*n*=168); and part-time 6.9% (*n*=32).

English as a second language (ESL) was spoken (Table 9) by 17.6% (*n*=81) of the subjects while 82.3% (*n*=377) utilized English as their primary language.

Table 7

Frequency Counts for Employment Related to Healthcare

Employment Related to Healthcare	Number *(n)*	Percentage (%)
Licensed Vocational Nurse	15	3.2
None	385	84.1
Non-nursing	3	0.6
Nursing Related	55	12.1

Table 8

Frequency Counts for Employment Status

Employment Status	Number *(n)*	Percentage (%)
Full-time	258	56.3
Part-time	32	6.9
None	168	36.6

Table 9

Frequency Counts for English as a Second Language

English as a Second Language (ESL)	Number *(n)*	Percentage (%)
Yes	81	17.6
No	377	82.3

Ethnic background of the subjects (Table 10) were: 32.1% (*n*=147) Filipino; 24.8% (*n*=114) Caucasian/White; 17.2% (*n*=79) Hispanic/Latino; 11.1% (*n*=51) African-American/Black; 9.3% Asian; and 24% (n=24) Other.

Table 10

Frequency Counts for Ethnicity

Ethnicity	Number *(n)*	Percentage (%)
African-American	51	11.1
Asian	43	9.3
Caucasian	114	24.8
Filipino	147	32.1
Hispanic/Latino	79	17.2
Other	24	5.2

Subjects in the study (Table 11) were 85.8% female (*n*=393) and 14.1% male (*n*=65).

Table 11

Frequency Counts for Gender

Gender	Number *(n)*	Percentage (%)
Female	393	85.8
Male	65	14.1

The nursing grade point averages (Table 12) of the subjects fell into five ranges: 4.0-3.7 at 8.2% (*n*=40), 3.6-3.2 at 31.6% (*n*=145), 3.1-2.5 at 53.7% (*n*=246), 2.4-2.2 at 5.2% (*n*=24), <2.1 at 0.6% (*n*=3).

The overall grade point averages (Table 13) of the subjects fell into five ranges: 4.0-3.7 at 4.5% (n=21), 3.6-3.2 at 27.9% (n=128), 3.1-2.5 at 61.1% (n=280), 2.4-2.2 at 5.4% (n=25), <2.1 at 0.8% (n=4).

Table 12

Frequency Counts for Grade Point Average-Nursing

Grade Point Average (GPA) – Nursing	Number *(n)*	Percentage (%)
4.0-3.7	40	8.2%
3.6-3.2	145	31.6%
3.1-2.5	246	53.7%
2.4-2.2	24	5.2%
< 2.1	3	0.6%

Table 13

Frequency Counts for Grade Point Average-Overall

Grade Point Average (GPA) – Overall	Number *(n)*	Percentage (%)
4.0-3.7	21	4.5%
3.6-3.2	128	27.9%
3.1-2.5	280	61.1%
2.4-2.2	25	5.4%
< 2.1	4	0.8%

The science grade point averages (Table 14) of the subjects fell into five ranges: 4.0-3.7 at 10.4% (n=48), 3.6-3.2 at 18.1% (n=83), 3.1-2.5 at 47.5% (n=218), 2.4-2.2 at 17.6% (n=81), <2.1 at 6.1% (n=28).

Table 14

Frequency Counts for Grade Point Average-Science

Grade Point Average (GPA) – Science	Number *(n)*	Percentage (%)
4.0-3.7	48	10.4%
3.6-3.2	83	18.1%
3.1-2.5	218	47.5%
2.4-2.2	81	17.6%
< 2.1	28	6.1%

Math remediation (Table 15) was required of 36.4% (n=167) of the students while 63.5% (n=291) did not require such assistance.

Table 15

Frequency Counts for Math Remediation

Math Remediation	Number *(n)*	Percentage (%)
Yes	167	36.4
No	291	63.5

Subjects in the study who passed the National Council Licensure Examination (NCLEX)-Registered Nurse on the first attempt (Table 16) were 75.1% (n=344) and those who did not were 24.8% (n=114).

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Previous degree achieved (Table 17): none 68.1% (n=312); Associates 18.7% (n=86); Bachelors 12.6% (n=58); and Masters 0.4% (n=2). There were 94.7% (n=434) of the students admitted without restriction into the program while 5.2% (n=24) were on probation.

Table 16

Frequency Counts for Passing National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on First Attempt

Passing National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on First Attempt	Number *(n)*	Percentage (%)
Yes	344	75.1
No	114	24.8

Table 17

Frequency Counts for Previous Degree Achieved

Previous Degree Achieved	Number *(n)*	Percentage (%)
Associates	86	18.7
Bachelors	58	12.6
Masters	2	0.4
None	312	68.1

Research Question Two: Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

The following variables were collected and analyzed to answer this research question:

- Anatomy grade

- Anatomy grade (age)

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- Chemistry grade

- Chemistry grade (age)

- Grade point average-nursing

- Grade point average-overall

- Grade point average-science

- Math entrance exam score

- Microbiology grade

- Microbiology grade (age)

- Physiology grade

- Physiology grade (age)

Hypothesis. The following hypothesis was associated with research question two.

H_0: There was no relationship between admission criteria and program completion as measured by exit (nursing) grade point average of the respondents.

H_1: There was a relationship between admission criteria and program completion as measured by exit (nursing) grade point average of the respondents.

The following (Table 18) exhibited the findings of running a Correlation Matrix for the independent variables (numeric): anatomy grade, age of anatomy grade, chemistry grade, age of chemistry grade, overall grade point average, science grade point average, math entrance examination score, microbiology grade, age of microbiology grade, physiology grade, and age of physiology grade against the dependent variable (numeric) nursing grade point average. A higher anatomy grade correlated with a higher nursing grade point average ($r=0.33$) and accounts for 10% of the variance in nursing program completion. A higher chemistry grade correlated with a higher nursing grade point average ($r=0.32$) and accounts for 10% of

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the variance in nursing program completion. A higher science grade point average correlated

Table 18

Correlations of Selected Variables with Nursing Grade Point Average

Variable	r	R^2	variance	p-value	strength***
Age	0.04	0.01	1%	0.36	very weak
Anatomy Grade	0.33	0.10	10%	0.00**	moderate
Anatomy Grade-Age	0.02	0.00	0%	0.59	very weak
Chemistry Grade	0.32	0.10	10%	0.00**	moderate
Chemistry Grade-Age	-0.03	0.00	0%	0.45	very weak
Days to NCLEX-RN	-0.15	0.02	2%	0.00**	very weak
Grade Point Average-Overall	0.24	0.05	5%	0.00**	weak
Grade Point Average-Science	0.34	0.11	11%	0.00**	moderate
Math Entrance Exam Score	0.39	0.15	15%	0.00**	moderate
Microbiology Grade	0.40	0.16	16%	0.00**	moderate
Microbiology Grade-Age	-0.05	0.00	0%	0.28	very weak
Physiology Grade	0.41	0.16	16%	0.00**	moderate
Physiology Grade-Age	0.17	0.02	2%	0.00**	weak

Note. NCLEX-RN = National Council Licensure Examination-Registered Nurse; r = correlation coefficient; R^2 = coefficient of determination; * significant at $\alpha = 0.01$ or lower; ** significant at $\alpha = 0.05$ or lower; p = probability. ***Choudhury, A. (2009). *Statistical correlation*. Retrieved September 1, 2011 from Experiment Resources: http://www. experiment-resources.com/statistical-correlation.html.

with a higher nursing grade point average (r=0.34) and accounts for 11% of the variance in

nursing program completion. A higher math entrance examination score correlated with a

higher nursing grade point average (r=0.39) and accounts for 15% of the variance in nursing

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program completion. A higher microbiology grade correlated with a higher nursing grade point average (r=0.40) and accounts for 16% of the variance in nursing program completion. A higher physiology grade correlated with a higher nursing grade point average (r=0.41) and accounts for 16% of the variance in nursing program completion. Age of anatomy grade, age of chemistry grade, overall grade point average, science grade point average, age of microbiology grade, and age of physiology grade did not have strong correlation with nursing program completion.

Research Question Three: Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

The following variables were collected and analyzed to answer this research question:

- Anatomy grade

- Anatomy grade (age)

- Chemistry grade

- Chemistry grade (age)

- Days to NCLEX-RN

- Grade point average-nursing

- Grade point average-overall

- Grade point average-science

- Math entrance exam score

- Microbiology grade

- Microbiology grade (age)

- Passing NCLEX-RN on the first attempt

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- Physiology grade

- Physiology grade (age)

Hypothesis. The following hypothesis was associated with research question three.

H_0: There was no relationship between admission criteria and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

H_1: There was a relationship between admission criteria and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

The following (Table 19) exhibited the findings of running a Correlation Matrix for the independent variables (numeric): anatomy grade, age of anatomy grade, chemistry grade, age of chemistry grade, nursing grade point average, overall grade point average, science grade point average, math entrance examination score, microbiology grade, age of microbiology grade, physiology grade, and age of physiology grade against the dependent variable (attribute) passing National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

Table 19

Correlations of Selected Variables with Passing NCLEX-RN on First Attempt

Variable	r	R^2	variance	p-value	strength***
Age	0.03	0.0	0%	0.42	very weak
Anatomy Grade	0.39	0.15	15%	0.00**	moderate
Anatomy Grade-Age	0.02	0.0	0%	0.60	very weak
Chemistry Grade	0.48	0.23	23%	0.00**	moderate
Chemistry Grade-Age	-0.13	0.01	1%	0.00**	weak

(table continues)

Days to NCLEX-RN	-0.22	0.04	4%	0.00**	weak
Grade Point Average-Nursing	0.36	0.12	12%	0.00**	moderate
Grade Point Average-Overall	0.11	0.01	1%	0.01**	weak
Grade Point Average-Science	0.26	0.06	6%	0.00**	weak
Math Entrance Exam Score	0.37	0.13	13%	0.00**	moderate
Microbiology Grade	0.55	0.30	30%	0.00**	strong
Microbiology Grade-Age	-0.01	0.0	0%	0.78	very weak
Physiology Grade	0.54	0.29	29%	0.00**	strong
Physiology Grade-Age	0.10	0.01	10%	0.02**	weak

Note. NCLEX-RN = National Council Licensure Examination-Registered Nurse; r = correlation coefficient; R^2 = coefficient of determination; * significant at $\alpha = 0.01$ or lower; ** significant at $\alpha = 0.05$ or lower; p = probability. ***Choudhury, A. (2009). *Statistical correlation*. Retrieved September 1, 2011 from Experiment Resources: http://www. experiment-resources.com/statistical-correlation.html.

A higher anatomy grade correlated with a greater likelihood of passing the National

Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt (r=0.39)

and accounts for 15% of the variance in passing the national examination. A higher chemistry

grade correlated with a greater likelihood of passing the National Council Licensure

Examination (NCLEX)-Registered Nurse (RN) on the first attempt (r=0.48) and accounts for

23% of the variance in passing the national examination. A higher nursing grade point average

correlated with a greater likelihood of passing the National Council Licensure Examination

(NCLEX)-Registered Nurse (RN) on the first attempt (r=0.36) and accounts for 12% of the

variance in passing the national examination. A higher math examination score correlated with

a greater likelihood of passing the National Council Licensure Examination (NCLEX)-

Registered Nurse (RN) on the first attempt (r=0.37) and accounts for 13% of the variance in

passing the national examination. A higher microbiology grade correlated with a greater

likelihood of passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt (r=0.55) and accounted for 30% of the variance in passing the national examination. A higher physiology grade correlated with a greater likelihood of passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt (r=0.54) and accounted for 29% of the variance in passing the national examination. Age of anatomy grade, age of chemistry grade, days to National Council Licensure Examination (NCLEX)-Registered Nurse (RN), overall grade point average, science grade point average, age of microbiology grade, and age of physiology grade did not have strong correlation with passing the national examination.

Research Question Four: Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

The following variables were collected and analyzed to answer this research question:

- Admission probation

- Admission semester

- Age

- Employment related to healthcare

- Employment status

- Ethnicity

- English as a second language

- Gender

- Grade point average-nursing

- Math remediation

Hypothesis. The following hypothesis was associated with research question four.

H_0: There was no relationship between demographics, characteristics, and academic variables and program completion as measured by exit (nursing) grade point average of the respondents.

H_1: There was a relationship between demographics, characteristics, and academic variables and program completion as measured by exit (nursing) grade point average of the respondents.

The following (Table 20) exhibited the findings of running an ANOVA test for the independent variables: admission probation, admission semester, gender, employment related to healthcare, employment status, ESL, ethnicity, math remediation, previous degree achieved, and a Correlation Matrix for age (Table 18) against the dependent variable (numeric) nursing grade point average.

There was no difference in nursing grade point average based on admission probation. Students who were admitted during Fall 2004 and Fall 2009 semesters had higher nursing grade point averages than all of the other groups. There was no difference in nursing grade point average based on gender. Caucasian students had higher nursing grade point averages than all of the other groups. Students who had nursing related employment had higher nursing grade point averages than all of the other groups. Part-time employed students had higher nursing grade point averages than all of the other groups. Students who spoke English as their primary language had higher nursing grade point averages than that of the other group. Students who were not required to enroll in a math remediation course had a higher nursing grade point average than those who were required. Students who have achieved a previous

degree (associates, bachelors, or masters) had a higher nursing grade point average than those who did not earn a degree.

Table 20

Analysis of Variance (ANOVA) Table with Selected Variables with Nursing GPA

Variable	p-value	Findings
Admission Probation	0.58	There is no difference in nursing GPA based on admission probation.
Admission Semester	0.02**	Students who were admitted during Fall 2004 and Fall 2009 semesters had higher nursing GPAs than all of the other groups.
Gender	0.99	There is no difference in nursing GPA based on gender.
Ethnicity	0.02**	Caucasian students had higher nursing GPAs than all of the other groups.
Employment Related to Healthcare	0.04**	Students who had nursing related employment had higher nursing GPAs than all of the other groups.
Employment Status	0.00*	Part-time employed students had higher nursing GPAs than all of the other groups.
ESL	0.00*	Students who spoke English as their primary language had higher nursing GPAs than that of the other group.
Math Remediation	0.00*	Students who were not required to enroll in a math remediation course had a higher nursing GPA than those who were required.
Previous Degree	0.04**	Students who have achieved a previous degree (associates, bachelors, or masters) had a higher nursing GPA than those who did not earn a degree.

Note. GPA=grade point average; ESL= English as a second language; p=probability; *significant at α=0.01 or lower; **significant at α=0.05 or lower.

Research Question Five: Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

The following variables were collected and analyzed to answer this research question:

- Admission probation

- Admission semester

- Age

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- Employment related to health

- Employment status

- English as a second language

- Ethnicity

- Gender

- Math remediation

- Passing NCLEX-RN on the first attempt

Hypothesis. The following hypothesis was associated with research question five.

H_0: There was no relationship between demographics, characteristics, and academic variables and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

H_1: There was a relationship between demographics, characteristics, and academic variables and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

The following (Table 21) exhibited the findings of running Chi-Square tests for the independent variables (attribute): independent variables: admission probation, admission semester, gender, ethnicity, employment related to healthcare, employment status, ESL, math remediation, previous degree achieved, and a Correlation Matrix for age (Table 19) against the dependent variable (attribute) of passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

More students than expected who were on probation failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. More students than expected failed the National Council Licensure Examination (NCLEX)-Registered Nurse

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Table 21

Cross Tabulation of Selected Variables and Passing NCLEX-RN on First Attempt

Variable	p-value	Findings
Admission Probation	0.05***	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on admission probation. More students than expected who were on probation failed the NCLEX-RN.
Admission Semester	0.00**	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on admission semester. More students than expected failed the NCLEX-RN in Spring 2005, Spring 2006, and Spring 2008. Fewer than expected students failed the NCLEX-RN in Fall 2006 and Fall 2007.
Gender	0.11	Not reject the null, adopt the null, there are no differences in passing the NCLEX-RN based on gender.
Ethnicity	0.06***	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on ethnicity. More than expected African-American students failed the NCLEX-RN. Fewer than expected Caucasian students failed the NCLEX-RN. More than expected Asian students failed the NCLEX-RN.
Employment Related to Healthcare	0.00**	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on healthcare employment. Fewer than expected students with healthcare related employment failed the NCLEX-RN.
Employment Status	0.00**	Reject the null, adopt the alternative, there are differences in passing the NCLEX based on employment status. More than expected full-time employed students failed the NCLEX-RN. Fewer than expected unemployed students failed the NCLEX-RN.
ESL	0.00**	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on primary language. More than expected ESL students failed the NCLEX-RN.
Math Remediation	0.00**	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on math remediation requirement. More students than expected enrolled in math remediation failed the NCLEX-RN.
Previous Degree	0.00**	Reject the null, adopt the alternative, there are differences in passing the NCLEX-RN based on previous degree. Fewer students than expected who earned a previous degree failed the NCLEX-RN.

Note. NCLEX-RN=National Council Licensure Examination-Registered Nurse; ESL= English as a second language; p=probability; *significant at α=0.01 or lower; **significant at α=0.05 or lower; ***significant at α=0.10 or lower.

(RN) on the first attempt that were admitted into the nursing program in Spring 2005, Spring 2006, and Spring 2008. Fewer than expected students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt who were admitted into the nursing program in Fall 2006 and Fall 2007. Fewer than expected students with healthcare related employment failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. Fewer than expected unemployed students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. More than expected full-time employed students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. More than expected ESL students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). More than expected African-American students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. Fewer than expected Caucasian students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. More than expected Asian students failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. There are no differences in passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt based on gender. More students than expected enrolled in math remediation failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. Fewer students than expected who earned a previous degree failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt.

Summary

Following a review of 532 (*N*) student records, 458 (*n*) were included in this study. Descriptive statistics and frequency reports were used to present the demographic

characteristics of the students. Statistical tests of Correlation Matrix, ANOVA, and Chi-Square were utilized in exploring relationships between the independent and dependent variables. This study sought to answer the following research questions utilizing selected variables (Table 22):

1. What are the demographic characteristics of the respondents?

2. Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

3. Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

4. Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

5. Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

A retrospective examination of student admission files and department records was performed to answer the research questions and evaluate the hypotheses associated with them. According to the analysis of the data using the statistical tests, the strongest variables that correlated with nursing program completion were: anatomy grade, chemistry grade, science grade point average, math entrance examination score, microbiology grade, and physiology grade. After subjecting the data to statistical analysis, the strongest variables that correlated with success on the NCLEX-RN with the first attempt were: anatomy grade, chemistry grade, nursing grade point average, math entrance examination score, microbiology grade, and

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Table 22

List of Variables and Research Questions

Variable	Research Question				
	1	2	3	4	5
Admission Probation	X			X	X
Admission Semester	X			X	X
Age	X			X	X
Anatomy Grade	X	X	X		
Anatomy Grade Age	X	X	X		
Chemistry Grade	X	X	X		
Chemistry Grade Age	X	X	X		
Days to NCLEX-RN	X		X		X
Employment Related to Healthcare	X			X	X
Employment Status	X			X	X
English as a Second Language	X			X	X
Ethnicity	X			X	X
Gender	X			X	X
Grade Point Average-Nursing	X	X	X	X	
Grade Point Average-Overall	X	X	X		
Grade Point Average-Science	X	X	X		
Math Entrance Examination Score	X	X	X		
Math Remediation	X			X	X
Microbiology Grade	X	X	X		
Microbiology Grade Age	X	X	X		
Passing NCLEX-RN on First Attempt	X		X		X
Physiology Grade	X	X	X		
Physiology Grade Age	X	X	X		

Note. NCLEX-RN=National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

physiology grade.

Chapter 5 will be a discourse about the summary, conclusions, and recommendations of this research study.

Chapter 5: Summary, Conclusions, and Recommendations

A summary of the research study, conclusions, and recommendations will be discussed in this last chapter. This concluding section was built upon the findings from the previous chapter.

Overview of the Problem and Purpose

Previous research focused on pre-licensure nursing programs has been primarily concerned with bachelor and not associate degrees. The traditional nursing programs are held during the weekdays and daytime. The changing landscape of the economy, decreased program funding, the increased complexity of the hospitalized patient, the looming nursing shortage, the projected rise of retiring nursing school faculty, and increased numbers of baby boomers reaching the age of 65 augments the issue at hand. There are a growing number of nontraditional students entering the nursing profession. With all of these considerations impacting nursing education, it is imperative that studies be conducted to examine the propensity for success of the nontraditional student.

Since 1992, Mount St. Mary's College has been home to an Associate Degree in Nursing program that serves a nontraditional student population (Canillas-Dufau, 2005). The admission criteria at the college is similar to that used by surrounding 2-year community college programs. These other programs provide nursing education to traditional college students. The California Board of Registered Nursing (BRN) holds both nontraditional and traditional nursing programs to the same standard (California Board of Registered Nursing [BRN], 2009b). This expectation is measured by passage rates of first time takers of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN).

The purpose of this research study was to examine the relationship between the academic variables, admission criteria, demographics, and characteristics of the respondents with success in the nursing program and subsequent passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. Preparing nursing students appropriately for graduation and then to successfully sit for the national examination is the goal of all nursing programs.

This retrospective descriptive correlational study was to determine the relationship between the independent variables and dependent variables (Table 22). This information will be valuable in preparing nursing students to graduate from the program and be successful on the licensure examination. Serving the student population in this way will increase the number of much needed nurses into the profession.

Methodology

The sample population of this study was 458 Associate Degree in Nursing (ADN) program graduates from Mount St. Mary's College. These students were accepted into the nursing program between the Fall 2003 to Spring 2009 semesters and graduated from Fall 2006 to Fall 2010.

During the review of the literature, several variables were identified in previous research that was used to study nursing student success. Student admission files and department records were used as sources for data. Application of descriptive statistical analysis to the data yielded findings (percentages and frequencies) while statistical tests (ANOVA, Chi-Square, and Correlation Matrix) was employed to examine relationships between independent and dependent variables.

The selected variables for this study were utilized (Table 22):

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- Admission semester

- Admission probation

- Anatomy grade

- Anatomy grade (age)

- Chemistry grade

- Chemistry grade (age)

- Days between graduation and NCLEX-RN

- English as a second language

- Gender

- Grade point average-nursing

- Grade point average-overall

- Grade point average-science

- Math entrance exam score

- Math remediation

- Microbiology grade

- Microbiology grade (age)

- Passing NCLEX-RN on the first attempt

- Physiology grade

- Physiology grade (age)

Findings

After the collection of data and subsequent analysis, a demographic sketch of the

nontraditional student enrolled at Mount St. Mary's College Associate Degree in Nursing

program was created. This student is more than likely female, 31 years old, was not on

probation when admitted into the program, was employed but not in healthcare, English was the primary language spoken, was of a minority ethnic group, did not require math remediation support, and passed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt, and did not previously hold a college degree.

This research study showed that a higher anatomy grade, a higher chemistry grade, a higher science grade point average, a higher math entrance examination score, a higher microbiology grade, and a higher physiology grade correlated with a higher nursing grade point average. Age of anatomy grade, age of chemistry grade, overall grade point average, science grade point average, age of microbiology grade, and age of physiology grade did not have strong correlation with nursing program completion.

The findings of this study demonstrated that a higher anatomy grade, a higher chemistry grade, a higher nursing grade point average, a higher math entrance examination score, a higher microbiology grade, and a higher physiology grade correlated with a greater likelihood of passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. Age of anatomy grade, age of chemistry grade, days to National Council Licensure Examination (NCLEX)-Registered Nurse (RN), overall grade point average, science grade point average, age of microbiology grade, and age of physiology grade did not have strong correlation with passing the national examination.

Students who were admitted during Fall 2004 and Fall 2009 semesters; Caucasian; previously employed in healthcare; employed part-time; spoke English as their primary language; not required to enroll in a math remediation course; and graduates from a previous degree program had higher nursing grade point averages than all of the other groups. There was no difference in nursing grade point average based on admission probation or gender.

A disproportionately higher number of students than expected who were on probation; admitted into the nursing program in Spring 2005, Spring 2006, and Spring 2008; employed full-time; spoke English as a second language; African-American or Asian; and enrolled in math remediation failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. A disproportionately lower number of students than expected who were admitted into the nursing program in Fall 2006 and Fall 2007; previously employed in healthcare; Caucasian; and graduates from a previous degree program failed the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. There were no differences in passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt based on gender.

This dissertation research follows in the footsteps of Canillas-Dufau who conducted similar research in 2005, which studied nontraditional students in an Associate Degree in Nursing program (Mount St. Mary's College). Comparing the descriptive statistics of that study with these research findings showed:

1. Age increased from 29.54 to 31.4 years

2. Anatomy grade increased from 2.71 to 2.75 grade points

3. Anatomy grade age decreased from 4.21 to 1.5 years

4. Chemistry Grade increased from 2.77 to 2.88 grade points

5. Chemistry Grade-Age decreased from 4.17 to 1.8 years

6. Grade Point Average-Nursing decreased from 3.18 to 3.05 grade points

7. Grade Point Average-Overall increased from 2.81 to 3.01 grade points

8. Grade Point Average-Science increased from 2.58 to 2.87 grade points

9. Math Entrance Exam Score increased from 80.52% to 86.51%

10. Microbiology Grade increased from 2.67 to 2.74 grade points

11. Microbiology Grade-Age decreased from 2.93 to 1.7 years

12. Physiology Grade decreased from 2.69 to 2.68 grade points

13. Physiology Grade-Age decreased from 3.30 to. 1.7 years

The frequency statistics of the variables illustrated the changes since Canillas-Dufau (2005) in percentages:

1. Admission Probation decreased from 25.2% to 5.2%

2. Age increased from 50% of the students between 20-29 years to 50% between of the students between 30-39 years

3. Days to NCLEX-RN decreased to 50% less than 60 days

4. Employment Related to Healthcare decreased from 90.7% to 15.9%

5. Employment Status changed from 77.6% to 56.4% (full-time); 13.1% to 6.9% (part-time); 9.3% to 36.6% (none)

6. English as a Second Language decreased from 24.3% to 17.6%

7. Ethnicity changed from 28% to 11.1% (African-American); 2.8% to 9.3% (Asian); 14% to 24.8% (Caucasian); 17.8% to 32.1% (Filipino); 34.6% to 17.2% (Hispanic/Latino); 2.8% to 5.2% (Other)

8. Gender changed from 88.8% to 85.5% (female); 11.2% to 14.5% (male)

9. Grade Point Average-Nursing decreased from 50% of the students between 3.6-3.2 to 50% of the students between 3.1-2.5

10. Grade Point Average-Overall remained the same where 50% of the students were between 3.1-2.5

11. Grade Point Average-Science increased from 50% of the students between 2.4-2.2 to 50% of the students between 3.1-2.5

12. Math Remediation decreased from 46.7% to 36.4%

13. Passing National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the First Attempt increased from 72.9% to 75.1%

14. Previous Degree Achieved increased from 29.9% to 31.9%

Conclusions

There were five research questions with four hypotheses that were developed to examine the relationship between these variables. The conclusions of this research study were supported by the answers to these research questions. The implications of these answers proved valuable to Mount St. Mary's College and the nontraditional students they enroll into the nursing program. Understanding the phenomena of students' propensity to succeed in nursing programs and pass the licensure examination on the first attempt allowed school administrators insight into where the efforts for remediation and retention should be directed.

1. What are the demographic characteristics of the respondents?

2. Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

H_0: There was no relationship between admission criteria and program completion as measured by exit (nursing) grade point average of the respondents. This hypothesis was rejected.

H_1: There was a relationship between admission criteria and program completion as measured by exit (nursing) grade point average of the respondents. This hypothesis was accepted.

3. Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

H_0: There was no relationship between admission criteria and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. This hypothesis was rejected.

H_1: There was a relationship between admission criteria and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. This hypothesis was accepted.

4. Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?

H_0: There was no relationship between demographics, characteristics, and academic variables and program completion as measured by exit (nursing) grade point average of the respondents. This hypothesis was rejected.

H_1: There was a relationship between demographics, characteristics, and academic variables and program completion as measured by exit (nursing) grade point average of the respondents. This hypothesis was accepted.

5. Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt?

H_0: There was no relationship between demographics, characteristics, and academic variables and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. This hypothesis was rejected.

H$_1$: There was a relationship between demographics, characteristics, and academic variables and passage of the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. This hypothesis was accepted.

This research study was limited by several factors. This was a retrospective study of student records and departmental files of Mount St. Mary's College. There was only one educational institution being used as the source of the data. This Associate Degree in Nursing (ADN) program is a nontraditional program and services a nontraditional student population. The only students who were included in the study are those who successfully completed the nursing program and were able to attain a passing result on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) on the first attempt. The body of literature available to the researcher at the time of the research study was mostly focused on baccalaureate nursing programs. There were instances of incomplete information either in the student or department files that restricted the entire population from being included in this study.

Recommendations

Recruitment for the Associate Degree in Nursing program at Mount St. Mary's College should reflect the understanding that certain student characteristics will have a greater probability of success. Identifying those students upon admission who may need additional support will assist in their success and the effectiveness of the school in transitioning them to entry-level practice. This approach will also maintain retention efforts for those students who exhibit needs while progressing through the program. Both recruitment and retention efforts should be assembled with a seamless effect to make best use of already dwindling resources.

Practice. Adult education can benefit from this study by evaluating the effectiveness of their nursing programs. There are an increasing number of nontraditional students who are pursuing a career in the nursing profession. The outcomes of program completion and success on the national licensure examination can be applied to other academic institutions. There is a service provided by Mountain Measurement, Inc. that can generate reports that inspect the performance of nursing school graduates on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) These reports can be customized to express the strengths and weaknesses of their graduates and compare them to other programs nationwide, statewide, or locally. A wealth of information is now available that was not being tracked previously.

Preparation for the National Council Licensure Examination (NCLEX)-Registered Nurse (RN) can be supported by providing review classes to students before graduation from the nursing program. Training is available for nursing program faculty to strengthen test-writing skills. Opportunities to collaborate within the nursing program will prove valuable since most of the instructors have adjunct status with years of experience instructing at different institutions. This rich tapestry of diversity needs to be accessed through professional development and mentoring amongst the nursing program faculty.

Collaboration between schools of nursing and service providers should be created and if already in existence reinforced. Advisory committees that are comprised of stakeholders, shareholders, and administration should make up this type of board. Sharing information regarding expectations, concerns, training modalities, as well as support mechanisms for both the nursing school and the healthcare organization will make the shift from student to entry-level nurse an effortless transition.

Policy. Governmental support to increase the number of nurses in the workforce is a critical factor affecting the nursing shortage. Whether it is entry-level nurses, experienced nurses, or potentially retiring nurse faculty government funding plays an integral role in affecting these numbers.

Federal. Continuation of programs that aim to infuse increased education and training for nursing professionals are a desirable funding pathway. The Nurse Reinvestment Act, Nurse Faculty Loan Program, and Advanced Education Nurse Traineeship are all examples of this type of federal government plans. Identifying nurses as public servants on the same level as law enforcement, fire fighters, and physicians will elevate the status of nurses and attract more applicants to the profession.

State. Regional and state efforts to increase the number of nursing professionals can be found in the proliferation of grants from the public sector. Participation in statewide workforce initiatives will sustain healthcare organizations' training programs during this financial crisis where most have chosen to discontinue the hiring of new graduates. Creative ways of preserving the supply of nurses coming out of school will be a way of maintaining the number of clinicians that will offset those approaching retirement. The California Board of Registered Nursing (2009) urges schools of nursing not to decrease enrollment numbers for the foreseeable future because of the looming nursing shortage.

Local. At this level, healthcare organizations should maintain or augment their tuition reimbursement, sign-on bonus, or loan repayment programs. These benefits can also cover those nursing professionals who are pursuing further credentialing beyond the entry-level degree. Further pursuits in nursing can be an Associate Degree in Nursing (AND), Master of Science in Nursing (MSN), or Doctoral degrees. Flexible schedules for those in academic

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programs will assist in successful completion of those types of degrees or credentials. Innovative recruitment methods to attract a diverse student nurse population may need to be used to reflect the surrounding community's demographic. Looking to religious, social, and activity groups may be explored as complementary sources of assistance.

Suggestions for Further Research

Mount St. Mary's College has several pre-licensure nursing programs: Accelerated Bachelor of Science in Nursing, Traditional Bachelor of Science in Nursing, and Associate Degree in Nursing. Replication of this study in the two other programs may provide some additional information that will help create a greater appreciation for the student populations they serve. Other Associate Degree in Nursing programs may also benefit from this study and the results that followed. International nursing programs have shown to have challenges with program completion and passing rates on the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Research into the admission requirements, demographics, characteristics, and academic variables can be an area for further research to be conducted.

Additional investigations can be made to apply this quantitative approach to the courses students progress through while in the nursing program. Which courses are gatekeeper classes may provide a deeper insight as to what challenges the student nurses are facing during their journey towards graduation and the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). Previous research studies examining pre-licensure programs have not looked at in-program courses to determine which ones may be predictors of student success.

Sharing the results of this research with the education community will best serve the students, nurse educators, administrators, and public at-large by adding to the knowledge already gained from previous studies. Publication in peer-reviewed journals, presentations at

professional conferences (Appendix O), and networking with other researchers of the topic will bring about evidence-based change in policy and practice.

Summary

Chapter 5 communicated the summary, conclusions, and recommendations of this dissertation research study. These proposals were influenced by the present economic crisis, financial funding to nursing school programs, supply and demand disparities of nurses, and the suggestions from experts in the field.

This study contributed to the literature of what is known about graduation and passage on the national licensure examination. More specifically, this research added to the body of knowledge regarding nontraditional nursing students. The student characteristics since Canillas-Dufau (2005) have changed with increasing numbers of applicants pursuing a degree in nursing. With this shift in the nontraditional student, this research study was needed to assess the effectiveness of the Associate Degree in Nursing program at Mount St. Mary's College.

The increased number of nursing school applicants had required programs to be more discerning during the admissions process. Selecting the right student is the challenge and crux of the situation facing nursing schools. With decreased funding the resources available to nursing programs become more valuable and allow a narrower margin of error. Admission requirements, remediation, and retention systems will have to support the students who have been identified with challenges to completing the curriculum and passing the National Council Licensure Examination (NCLEX)-Registered Nurse (RN). This dissertation research uncovered the nuances of this dynamic interaction between student, nursing program, and national licensure.

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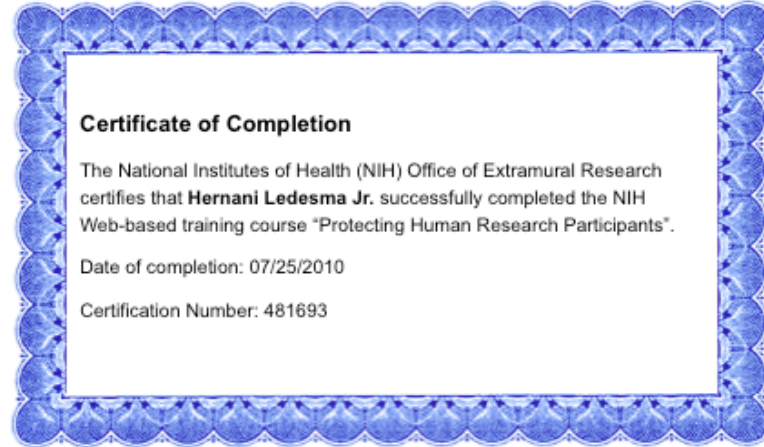
Appendix A

Data Collection Form

Number	Admission Probation	Admission Semester	Age	Anatomy Grade	Anatomy Grade Age	Chemistry Grade	Chemistry Grade Age	Days to NCLEX-RN	Employment Related to Healthcare	Employment Status	English as a Second Language	Ethnicity	Gender	Grade Point Average-Nursing	Grade Point Average-Overall	Grade Point Average-Science	Math Entrance Examination Score	Math Remediation	Microbiology Grade	Microbiology Grade Age	Passing NCLEX-RN on First Attempt	Physiology Grade	Physiology Grade Age
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Appendix B

National Institutes of Health-Certificate of Training Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Hernani Ledesma Jr.** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 07/25/2010

Certification Number: 481693

Appendix C

Pepperdine University-Letter of Committee Formation

PEPPERDINE UNIVERSITY

Graduate School of Education and Psychology

April 19, 2011

Hernani Ledesma

███████████████████

Dear Hernani:

Your petition to constitute a doctoral dissertation committee has been reviewed and approved. I would like to congratulate you on the progress you have made in the program.

Dissertation guidelines, forms, policies and IRB requirements are available at:
http://services.pepperdine.edu/gsep/dissertation/

As you approach completion of your dissertation proposal, please notify Christie Dailo of the date on which you and the chairperson of your committee would like to schedule your preliminary oral.

Sincerely,

███████████████████

June Schmieder Ramirez, Ph.D.
Academic Lead, Ed.D.O.L Program

Appendix D

Memo-Preliminary Oral Defense

MEMO

Graduate School of Education & Psychology

E D O L P R O G R A M

To: All Faculty

From: Dr. June Schmieder Ramirez
        Academic Lead, Ed.D.O.L. Program

Re: Preliminary Oral Examination

Student: Hernani L. Ledesma Jr.

Subject: Predicting Success for Nontraditional Students in
          an Afternoon and Evening/Weekend Associate Degree
          in Nursing Program

Date: Wednesday, May 4, 2011
Time: 1:30 pm
Place: West Los Angeles Graduate Campus – Room 586

        Farzin Madjidi, Ed.D.
        Chairperson

        Laura Hyatt, Ed.D.
        Member

        Tori Canillas-Dufau, Ed.D.
        Member

Appendix E

Pepperdine University-Letter of Doctoral Candidacy

PEPPERDINE UNIVERSITY
Graduate School of Education and Psychology

May 5, 2011

Hernani Ledesma

Dear Hernani:

I am pleased to inform you that having satisfactorily completed all course requirements for the Doctoral Program in Organizational Leadership and passing a dissertation preliminary oral examination on a research proposal under the title:

Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program

you are now granted the status of a doctoral candidate.

Doctoral students are required to continuously register in EDOL 791 Dissertation Research until successful completion of all the dissertation requirements including final approval on Forms F4 and F5 by the committee chairperson and dissertation reviewer. Students failing to register continuously in dissertation must file a formal petition to the Organizational Leadership Doctoral Committee for readmission to the program. Readmission is subject to approval by the committee.

The faculty at the Graduate School of Education and Psychology joins me in congratulating you on the attainment of this important step in your progress toward your doctoral degree

We wish you well in these last phases of your doctoral work.

Sincerely,

June Schmieder Ramirez, Ph.D.
Academic Lead, Ed.D.O.L Program

6100 Center Drive, Los Angeles, California 90045 • 310-568-5600 Fax. 310-568-5700

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Appendix F

Mount St. Mary's College-Provost Cover Letter

From: Hernani L. Ledesma Jr.
        Graduate School of Education and Psychology
        Pepperdine University – West Los Angeles Campus
        6100 Center Drive
        Los Angeles, California 90045

To: Dr. Eleanor Siebert
        Provost and Academic President
        Mount St. Mary's College
        10 Chester Place
        Los Angeles, CA 90007

Date: May 12, 2011

Re: Mount St. Mary's College – IRB Application

I am requesting approval to conduct a research study for a dissertation to complete requirements for a Doctorate in Education with an emphasis on Organizational Leadership at Pepperdine University in Los Angeles, California.

I first contacted Dr. Robin Gordon about my application and was directed to request a letter of college approval. Dr. Gordon indicated that since I will not be in contact with any Mount St. Mary's College students and only reviewing existing records of graduates of the Associate Degree in Nursing program, the letter of college approval will suffice.

The study I am proposing is a replication of Dr. Tori Canillas-Dufau's research that examined predictors of student success in the Associate Degree in Nursing program. Dr. Canillas-Dufau's research was focused on the outcomes of program completion and passing the NCLEX-RN on the first attempt. I will be utilizing the same independent (22) and dependent (2) variables to find significant predictors. The subjects of Dr. Canillas-Dufau's study were accepted into the Associate Degree in Nursing program from Fall 2000 to Fall 2002. This research study will be looking at those students who were accepted into the program from Spring 2003 to Fall 2008 and have graduated by Spring 2010. Following the methodology set forth by Dr. Canillas-Dufau, there will be no contact with MSMC students.

As an alumnus of both the Associate Degree in Nursing and Masters of Science in Nursing programs, I am eager to add to the body of research knowledge. I look forward to hearing back from you and thank you in advance for your time to review this request.

Please find attached documents in support of my application:
Cover Letter
Mount St. Mary's College IRB Application
National Institute of Health – Training Course Certificate of Completion
Researcher-developed Data Collection Tool
Pepperdine Doctoral Candidacy Letter

If you have questions about this study, please email me at hernani.ledesma@pepperdine.edu.
My committee chairman for this study is Dr. Farzin Madjidi and can be reached at fmajidi@pepperdine.edu.

Sincerely,

Hernani L. Ledesma Jr.

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Appendix G

Mount St. Mary's College-IRB Cover Letter

From: Hernani L. Ledesma Jr.
Graduate School of Education and Psychology
Pepperdine University – West Los Angeles Campus
6100 Center Drive
Los Angeles, California 90045

To: Dr. Robin L. Gordon
Department of Education
Mount St. Mary's College
10 Chester Place
Los Angeles, CA 90007

Date: May 5, 2011

Re: Mount St. Mary's College – IRB Application

I am requesting approval to conduct a research study for a dissertation to complete requirements for a Doctorate in Education with an emphasis on Organizational Leadership at Pepperdine University in Los Angeles, California.

Please find attached documents in support of my application:

Cover Letter
Mount St. Mary's College IRB Application
National Institute of Health – Training Course Certificate of Completion
Researcher-developed Data Collection Tool
Pepperdine Letter of Doctoral Candidacy

If you have questions about this study, please email me at hernani.ledesma@pepperdine.edu. My committee chairman for this study is Dr. Farzin Madjidi and can be reached at fmajidi@pepperdine.edu.

Thank you in advance for your time to review this request.

Sincerely,

Hernani L. Ledesma Jr.

Appendix H

Mount St. Mary's College-IRB Application

Mount St. Mary's College, Los Angeles

HUMAN SUBJECTS RESEARCH PROTOCOL
APPROVAL FORM

This Research Protocol Approval Form must be completed for all MSMC faculty and student research that involves human subjects. Additional material(s), as described below, must be attached to this form at the time it is submitted to the Human Subjects Committee.

In ALL cases, RESEARCH MAY NOT PROCEED until authorized by the Committee. You will be notified of the action of the Committee following the receipt of an electronic copy and one original hard copy of this form and all required supplementary information (see below). ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION.

ONLY TYPEWRITTEN FORMS WILL BE ACCEPTED.

1. Title of research   **Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program**

2. Name of Principal Investigator(s)   **Hernani L. Ledesma Jr.**
   Department   **Pepperdine University – Graduate School of Education & Psychology (GSEP)**

3. Address [redacted]   Home phone [redacted]
                                  Email Address

4. Name of Faculty Advisor(s) if PI is a student: **Dr. Farzin Madjidi (Dissertation Chair)**
                                  Pepperdine University
                                  Graduate School of Education & Psychology
                                  6100 Center Drive
                                  Los Angeles, California 90048
                  Faculty Advisor ext. [redacted]
                  Faculty Advisor email [redacted]

5. Duration of Project   From **August 1, 2011** To **October 31, 2011**

6. Check one: ☐ Faculty Research   ☐ Student Thesis   **XX** Other (specify) **Dissertation**

   Course prefix and number **EDOL 791**   Course title **Dissertation Research**

7.   Check one: **XX** Unfunded   ☐ Funded
      If funded, provide the name of the funding agency and the date that it was or will be submitted.

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Funding Agency: _____

Date: _____

8. History of Protocol: **XX** New Application ☐ Renewal of Previously Approved
Application

If this is a renewal, indicate the initial Approval Date _____

9. Does this protocol contain modification(s) from a previously approved protocol?
☐ Yes (explain) **XX** No ☐ N/A

10. Is a Subject Bill of Rights (see appendix A) attached? ☐ Yes **XX** No

If no, please explain.
This study is researching existing records. There will be no contact with the subjects.

11. Are copies of any questionnaire(s), survey instrument(s) and/or interview schedule(s)
referred to in this protocol statement attached? **XX** Yes ☐ No

12. Is a draft of the Informed Consent Form(s) attached?
☐ Yes **XX** No

If no, please explain and/or indicate when they will be sent to the Chair of the IRB as the
committee will not review your application without an appropriate informed consent.
This study is researching existing records. There will be no contact with the subjects.

13. Is a letter of permission attached? *If you are using a facility other than MSMC to*
conduct your project or recruit your subjects (church, hospital, school, etc.), you must obtain a
letter of permission on letterhead from that facility. The letter must be signed by someone who
can authorize these activities, e.g., a principal, director, etc. See attached sample in Appendix
G.

☐ Yes **XX** No

14. SIGNATURES: If you are a student, you must obtain the signature of your faculty advisor
and you must sign the Protocol Approval Form prior to submission to the committee. If you are
a faculty member, please sign the line indicating the signature of Faculty Researcher or Student
Advisor.

Faculty signature on this Protocol Approval Form indicates that:
- You are familiar with the requirements for human subject research.
- You have reviewed this Protocol Approval Form and accompanying documentation.
- You approve of the manner in which human subjects will be involved in this study.

Student Investigator's Signature (specify grad. Or undergrad.)

_____Date_____

Signature of Dissertation Chairman or Student Research Advisor

_____Date_____

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PROJECT INFORMATION

TYPE THIS FORM ON YOUR COMPUTER (HANDWRITTEN FORMS WILL NOT BE ACCEPTED).

- In the spaces below (boxes will expand as needed), please provide a detailed description of your project, including a clear statement of your hypothesis and all procedures and methodology.

- In addition to the abstract, the PI **must** attach any assessment or measurement tool (e.g., survey, interview protocol, tests) that will be given to subjects to collect data. The only exceptions to this are educational measurement tools (such as state mandated achievement tests) that are part of the normal classroom evaluation of subjects.

1. State the problem and purpose of your study/ aims and objectives.

Mount St. Mary's College has offered a nontraditional Associate Degree in Nursing (ADN) Program since 1992. The program has an afternoon and evening/weekend format. There has been one previous research study published in 2005 that described the student population that Mount St. Mary's College serves. This present study will examine the student population since 2005 because of increases in nontraditional student applications to nursing programs, admission requirements, the change in passing standard of the National Council Licensure Examination – Registered Nurse (NCLEX-RN), the nursing shortage, and nurse faculty shortage.

The purpose of this study is to explain the student population of adult learners. Additionally, this study looks to determine if selected admission criteria are effective predictors of student success. Success will be measured by: 1) completion of the nontraditional afternoon and evening/weekend Associate Degree in Nursing (ADN) Program; 2) passing the National Council Licensure Examination – Registered Nurse (NCLEX-RN) on the first attempt.

2. Give a detailed description of the method you will employ / how will the research be conducted? Be very clear regarding what participants will be asked to do. How long will they be involved in the study? How long will interview sessions take?

This study is researching existing records. There will be no contact with human subjects.

Permission to conduct the study will be obtained from the Institutional Review Board of Mount St. Mary's College and Pepperdine University. Data will be collected using a researcher-developed form (Appendix A). The sources of data will be the student files and the official reports issued to the academic institution by the California BRN displaying the results of their graduates on the NCLEX-RN.

The data will be collected over the span of an eight-day period. The researcher will be the only investigator with access to the student files. Data will be entered into the

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Statistical Package for the Social Sciences (SPSS) to make certain that no association can be made between the students and any identifying information.

The collection and management of data will be a planned process. Potential subjects will be selected from Mount St. Mary's College Associate Degree in Nursing (ADN) program that will consist of fourteen graduating cohorts and will have taken the National Council Licensure Examination-Registered Nurse (NCLEX-RN).

3. **Describe the projected outcomes and how they relate to your hypothesis.**

The Statistical Package for the Social Sciences (SPSS) will be utilized for statistical analysis of the data. Multiple regression analysis has been found to be most utilized data analysis procedure used in other studies examining predictors of NCLEX-RN success. This analysis will be used to measure the relationship among two interval level dependent variables (NCLEX-RN success and ADN program completion) and twenty-two independent variables. Simultaneous regression analysis will be performed to determine the contribution of all the independent variables on the dependent variables.

The following research questions will be answered with the collection and analysis of the data:

Research Question #1
What are the demographic characteristics of the respondents?
Descriptive statistics such as Mean, Median, Mode, and Standard Deviation will be applied to variables measured numerically (Interval and Ratio) and Frequency Distribution will be used to summarize categorical data.

Research Question #2
Which admission criteria are predictors of program completion as measured by exit (nursing) grade point average of the respondents?
Correlation Matrix and Multiple Regression will applied to numerically measured and coded data while Analysis of Variance (ANOVA) will be used to analyze the categorical independent variables.

Research Question #3
Which admission criteria are predictors of passage of the National Council Licensure Examination (NCLEX) – Registered Nurse (RN) on the first attempt?
Correlation Matrix and Multiple Regression will applied to numerically measured and coded data while Analysis of Variance (ANOVA) will be used to analyze the categorical independent variables.

Research Question #4
Which demographics, characteristics, and academic variables are predictors of program completion as measured by exit (nursing) grade point average of the respondents?
Correlation Matrix and Multiple Regression will applied to numerically measured and coded data while Analysis of Variance (ANOVA) will be used to analyze the

categorical independent variables.

Research Question #5
Which demographics, characteristics, and academic variables are predictors of passage of the National Council Licensure Examination (NCLEX) – Registered Nurse (RN) on the first attempt?
Correlation Matrix and Multiple Regression will applied to numerically measured and coded data while Analysis of Variance (ANOVA) will be used to analyze the categorical independent variables.

The variables to be studied are:
- Age
- Gender
- Marital status
- Employment status
- Previous nursing/health related work experience
- English as a second language
- Previous education/degree earned
- Overall grade point average upon admission
- Science grade point average upon admission
- Anatomy grade
- Anatomy grade (age of)
- Chemistry grade
- Chemistry grade (age of)
- Microbiology grade
- Microbiology grade (age of)
- Physiology grade
- Physiology grade (age of)
- Math entrance exam score
- Math remediation
- National League of Nursing test score (if applicable)
- Assessment Technologies Institute assessment test score (if applicable)

4. **Describe the significance of your project to your discipline, department, school, university, community, etc.. What are the potential benefits of the study?**

The recent economic downturn has affected nursing school programs to decrease their enrollment numbers (AACN, 2009). With decreased funding sources, nursing programs need to be more efficient in their acceptance process so they are admitting students who have a higher likelihood of success. The nursing shortage predicates the enrollment numbers to remain at present levels and increase in the near future (California Board of Registered Nursing, 2009). The academic institutions, the government, and the whole of society are vested in the success of nursing students.

The demographics of the nursing profession: aging nurses, aging faculty, fewer new entries, and the demographics of society with large aging baby boomers intent on

living longer with complex medical interventions are on a calamitous course (Joint Commission on Accreditation of Healthcare Organization, 2002). "California ranks next to last in the U. S. for its per capita number of RNs. There must be an adequate supply of qualified RNs in order to protect the health and safety of consumers and to promote quality nursing care" (California Board of Registered Nursing, 2006, p. 4).

The goal of nursing education is to provide an adequate number of qualified and competent nurses to care for the public. Knowledge of the predictors for nursing student success will allow an institution to have an idea of how to serve their needs. Retention of students in the nursing program is a concern of nursing programs because of the impact it has on the cost of resources utilized to educate that student.

5. Online Tutorial

All Principal Investigators must take the online tutorial for the protection of human subjects at http://phrp.nihtraining.com/users/login.php and include the certificate of completion with this application. The HSC will not begin review of applications without this certification. The tutorial takes approximately 1-2 hours to complete.

Online tutorial training was completed on July 24, 2010 . Please see attached document for certificate of completion.

6. Subject Population:

A. Do the subjects include any of the following (please check all that apply)?

☐ Minors ☐ Aged ☐ Mentally Disabled

☐ Pregnant Women ☐ Prisoners **XX** MSMC Students

☐ MSMC Employees

Age Range: **estimated at 18 to 60 years of age** Number of Subjects: estimated at **650**

B. Please state the criteria for inclusion as a participant in this research project.

Inclusion. The population for this study will be comprised of students who completed a five or six semester Associated Degree in Nursing program from graduating Fall 2004 to graduating Spring 2010 at Mount St. Mary's College in Los Angeles, California. The estimated number of students in this population is 650, biannual graduation of historically 50 students per class. Those students who entered the program in the first semester and graduate will be included in the research study; however, there may be instances of incomplete data in the student records. Complete tabulation of all variables, both independent and dependent, merits inclusion of the student into the research study.

Exclusion. Missing or incomplete data will warrant exclusion from the research study. Attrition of the subjects in the study means that their demographic data, academic records, or the reports from the California BRN were incomplete. Students transferring in from other nursing programs

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C. How will subjects be initially contacted? State specifically.
This study is researching existing records. There will be no contact with the subjects.

D. Will the subjects receive monetary rewards for the study? Also, attach a flyer if one is being distributed to potential participants. ☐ Yes **XX No**
If yes, please explain.

E. Will the subjects be charged for any research related procedures? ☐ Yes **XX No**
If yes, please explain.

7. **Informed Consent**

Describe the procedures that will be used to obtain informed consent and attach a copy of the consent form, which **must comply with the six elements of informed consent** that are required by Federal regulations (see Appendices B-F in the General Directions). Please also read the Human Subjects Committee's statement on requirements for parent consent of minors in Appendix E. A sample of a consent form is in Appendix F that can be adapted to use with any population.

Please note that subjects in all research studies, both risk and minimal/ risk, must be informed of their participation in a study and of their rights as outlined in *Appendix A*. Therefore, **all Principal Investigators must submit an informed consent letter to the Human Subjects Committee for review.**

Written informed consent must be obtained for all non-exempt research. The fundamental requirements of informed consent are that participants be made aware that they would be involved in research, what the purposes of the research are, the expected duration of the participation, the description of the procedures to be followed, benefits, risks, and the contact information for our office with questions about their rights as research subjects and contact information for the faculty researcher or advisor with questions about the study. Research involving minors (persons under the age of 18) requires written consent of a parent or guardian. A sample parental consent form is attached to the back of this packet. If your project does not involve minors (persons under the age of 18) change the language as necessary. The sample consent form has been provided for your use--please follow the sample format as closely as possible. All elements MUST BE INCLUDED except: 1) Those items marked as optional; and/or 2) Statements regarding video/audio taping, if not applicable.

A Consent Form should include:
• A description of any foreseeable risks or discomforts to subjects

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- A description of any benefits to the subjects or to others which may be expected as a result of the research
- A statement regarding protection of subjects' confidentiality & final disposition of data
- Contact information for questions regarding the research and subjects' rights
- A statement that participation is voluntary, that there will be no penalty due to refusal to participate, and that the subject may discontinue participation at any time without penalty
- A statement requesting permission for video/audio taping or photographing to be conducted, if applicable

ALL PAGES OF CONSENT FORM MUST INCLUDE PAGE NUMBERS IN THE FOLLOWING FORMAT:
"PAGE X OF X"
Consent forms must be translated to the primary language of the reader.

8. **Human Subject Risks:**
    This section will be used to assist in the decision for determining whether or not the subjects involved in the proposed research are at risk (see Appendix B in General Directions for definitions of risk). Please answer the following questions by indicating yes or no.

	Yes	No
Are subjects under 18 years of age involved?	☐	**XX**
Is there involvement of a special minority (hearing impaired, blind)? Please Specify.	☐	**XX**
Is there a possible invasion of privacy of subject or family that includes use of personal records or information?	☐	**XX**
Any probing information which an individual might consider personal or sensitive (use of drugs or alcohol)?	☐	**XX**
Any administration of physical stimuli other than auditory and visual stimuli associated with a normal classroom situation?	☐	**XX**
Are materials presented which might be considered offensive or degrading?	☐	**XX**
Is there manipulation of psychosocial variables (social isolation, psychological stressors)?	☐	**XX**
Is there use of sensory deprivation or physiological stress conditions (sleep deprivation, manipulations of diet, use of strobe lights, stress positions, etc.)?	☐	**XX**
Is there a requirement of physical exertion beyond a normal classroom situation?	☐	**XX**

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Does the research exclude any particular group?
Gender Identity
Racial / ethnic groups
Sexual orientation   ☐   **XX**
    If "Yes" – please explain.

Other: If "Yes" - please describe.   ☐   **XX**

Will the benefits of the research outweigh the potential risks of the research to human subjects?

XX Yes   ☐ No

What precautions have been taken to minimize human subject risk? Describe in detail.

No identifying data such as student name, date of birth, social security number or student ID number will be utilized or even recorded in this research study.

9. **Confidentiality of Data**

		Yes	No
1.	Will any data that identify individual subjects be available to the Principal Investigator?	**XX**	☐
2.	Will any data that identify individual subjects be available in the final report?	☐	**XX**
3.	Will any data that identify individuals be made part of a permanent record?	☐	**XX**
4.	Will whether or not a subject participates in the study be made a part of any permanent record available to an employee or supervisor?	☐	**XX**

A. What steps will be taken to ensure the confidentiality of the data? Check the box for all that apply and explain if necessary.
XX Password protected computer files
XX Locked file cabinets
XX Locked offices.
XX Identification code (i.e., code numbers, pseudonyms) – data will NOT be associated with personal identifiers.
Other – Please explain.

B. What will happen to the research records when the research has been completed?
Stored indefinitely with identifiers removed.
Stored for a length of time required by federal regulations/funding source and then destroyed (minimum of 3 years).
Destroyed after a number of years (minimum of 3 years) – Specify the number of years:_____

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10. Recordings – Audio, Video, Photographs
Will any type of recordings (audio or video) or photographs be made during this study?
Yes   **XX No**

11. Computer / Internet
Will any participant interaction in this study be conducted on the Internet or via email (e.g. on-line surveys, observations of chat rooms or blogs, on-line interview)?
Yes   **XX No**

12.   Minimal Risk

If you answered **no** to ALL questions in sections **8 or 9**, complete this section and sign. This indicates that the Principal Investigator certifies that **minimal risk** is involved.

I certify that the information furnished concerning the risk to human subjects is correct and that the research to be conducted by **Hernani L. Ledesma Jr.** and titled **Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program** presents the participants with no more than **minimal risk**. I will seek and obtain approval from the Human Subjects Committee if modification to the proposal is required. I will report promptly any unexpected or otherwise significant adverse effects in the course of the study. I agree to follow the procedures that safeguard the rights and welfare of human subjects as established my Mount. St. Mary's College.

Signature of Principal Investigator (s):

_____

                                                                        DATE

Signature of Co-Investigator (s):

_____

                                                                        DATE

For student research, the application must be reviewed and signed by the Faculty Advisor.

Signature of Dissertation Chairman(s):

_____

                                                                        DATE

13. Risk: Research *may* qualify as minimal risk or is potential risk.

If you answered **yes** to ANY questions in sections 7 or 8 and/or if the Human Subjects Committee determines that risk in involved, complete this section and sign.

I _____ certify that the information regarding the protection of human subjects is correct. Moreover, I will seek and obtain approval from the Human Subjects Committee if modification to the proposal is required. I will report promptly any unexpected or otherwise significant adverse effects in the course of the study. I agree to follow the procedures that safeguard the rights and welfare of human subjects as established my Mount. St. Mary's College.

Signature of Principal Investigator (s):

_____
                                                                     DATE

Signature of Co-Investigator (s):

_____
                                                                     DATE

For student research, the application must be reviewed and signed by the Faculty Advisor.

Signature of Faculty Advisor (s):

_____
                                                                      DATE

FOR HSC USE ONLY

- ☐ Noted, exempt
- ☐ Noted, minimal risk
- ☐ Approved, expedited review
- ☐ Approved, reasonable risk
- ☐ See attached
- ☐ Not approved

_____   _____
Chair, HSC   Date

Expedited Reviewer(s):

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Appendix I

Mount St. Mary's College-Approval Letter from Provost

May 17, 2011

To Whom It May Concern:

Mr. Hemani L. Ledesma Jr., an alumnus of the A.D.N. and M.S.N. programs at Mount St. Mary's College, is a candidate for the Doctorate in Education with an emphasis on Organizational Leadership at Pepperdine University in Los Angeles, California. He has the College's permission to review existing records of graduates of the A.D.N program for data impacting his research titled: *Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program.*

It is Mr. Ledesma's hope to find significant predictors of student success in passing the nursing licensure examination (NCLEX-RN) on the first attempt. This information will be of value to nursing programs at the College.

Sincerely,

Eleanor D. Siebert, Ph.D.
Provost and Academic Vice President

Mount St. Mary's College-Approval Letter from IRB

Letter of Response Regarding Research Project

May 15, 2011
Name: Mr. Hernani L. Ledesma, Jr.

Faculty Advisor:
Mount St. Mary's College
Doheny Campus
Los Angeles, CA 90007

Dear Mr. Ledesma:

Thank you for submitting your Application for Approval of Human Subjects Research entitled *"Predicting Success For Nontraditional Students In An Afternoon And Evening/Weekend Associate Degree In Nursing Program"* to the Mount St. Mary's College Human Subjects Committee (HSC). Your study has been approved by the Pepperdine IRB; however, we can also approve the study being conducted by you. It does not involve human subjects which means the study falls under the following:

Following the Federal guidelines, the Human Subjects Committee of Mount St. Mary's College has reviewed the above-titled research project, as submitted in the Application for Approval of Human Subjects Research form. We have determined that the policies for the protection of human subjects have been met.

On May 14, 2011 it was also determined that your research study met **Exempt** status criteria under §45 CFR 46.101 (b)(2) or (b)(3) for Tests, Surveys, Interviews, or Public Behavior Observation in which the:

> *Information is recorded in such a manner that human subjects cannot be identified, directly or through identifiers linked to the subjects; and disclosure of the responses outside the research does not place the subjects at risk of criminal or civil liability; and is not damaging to the subjects' financial standing, employability or reputation.*

Please note that your research **must** be conducted according to the proposal that was submitted to the HSC. Any changes to the proposal which involve human subjects must be approved by the HSC prior to implementation.

Good luck in your research!

Sincerely,

Robin Gordon, Ph.D.
Chair, MSMC Human Subjects Committee
rgordon@msmc.la.edu (213) 477-2624

Doheny Campus 10 Chester Place, Los Angeles, CA 90007-2518 tel (213) 477-2620 fax (213) 477-2629 www.msmc.la.edu

Appendix K

Pepperdine University-IRB Cover Letter

May 25, 2011

Jean Kang, CIP
Manager, IRB and Dissertation Support
Graduate and Professional Schools
Pepperdine University

Dear Jean Kang:

As a doctoral student in the Organizational Leadership program, I am requesting Institutional Review Board (IRB) approval of my attached application so that I may begin data collection to complete my dissertation.

Dr. Farzin Madjidi is my dissertation chair. Per departmental requirements, I successfully passed the required Preliminary Oral Defense on May 4, 2011 and have been subsequently advanced to doctoral candidacy. I have also read, and will act in accordance with, the ethical principles for human research protections.

Further, I have not and will not violate any copyright laws in the use of any instruments for the proposed study as I will utilize only researcher developed spreadsheets designed for data collection to be done by this researcher only.

Of additional importance is the fact that this research study carries little to no risk of harm to human subjects as there will be no interaction with human subjects. This study involves only the use of existing student records and files from which no identifying data will be recorded, utilized or published in any way. The chairperson of MSMC's IRB, Dr. Robin Gordon, has reviewed my application and directed me to acquire college approval from the Provost. I obtained college approval from the Provost and Academic Vice-President, Dr. Eleanor Siebert, of Mount St. Mary's College (MSMC) where I plan to conduct my research study.

Attached you will find supplementary documents necessary to complete the IRB review of my application in consideration for its approval.

Thank you in advance for your timely handling of my application and request.

Sincerely,

Hernani L. Ledesma Jr.
Doctoral Candidate
Educational Doctorate in Organizational Leadership
Graduate School of Education and Psychology
Pepperdine University

Appendix L

Pepperdine University-IRB Application

Application for a Claim of Exemption

Date: May 25, 20   IRB Application/Protocol #:

Principal Investigator: Hernani L. Ledesma Jr.

	☐ Faculty	☐ Staff	☒ Student	☐ Other	
School/Unit:	☐ GSBM	☒ GSEP	☐ Seaver	☐ SOL	☐ SPP
	☐ Administration		☐ Other:		

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

Faculty Supervisor: Dr. Farzin Madjidi *(if applicable)*

School/Unit:	☐ GSBM	☒ GSEP	☐ Seaver	☐ SOL	☐ SPP
	☐ Administration		☐ Other:		

▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

Project Title: Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program

Type of Project (Check all that apply):

☒ Dissertation		☐ Thesis	
☐ Undergraduate Research		☐ Independent Study	
☐ Classroom Project		☐ Faculty Research	
☐ Other:			

Is the Faculty Supervisor Review Form attached? ☒Yes ☐No ☐N/A

Has the investigator(s) completed education on research with human subjects? ☒ Yes ☐ No
Please attach certification form(s) to this application.

Investigators are reminded that Exemptions will NOT be granted for research involving prisoners, fetuses, pregnant women, or human in vitro fertilization. Also, the exemption at 45 CFR 46.101(b)(2), for research involving survey or interview procedures or observations of public behavior, does not apply to research with children (Subpart D), except for research involving observations of public behavior when the investigator(s) do not participate in the activities being observed.

1. **Briefly summarize your proposed research project, and describe your research goals/objectives.** Mount St. Mary's College has offered a nontraditional Associate Degree in Nursing (ADN) Program since 1992. The program has an afternoon and evening/weekend format. There has been one previous research study published in 2005 that described the student population that Mount St. Mary's College serves. This present

study will examine the student population since 2005 because of increases in nontraditional student applications to nursing programs, admission requirements, the change in passing standard of the National Council Licensure Examination – Registered Nurse (NCLEX-RN), the nursing shortage, and nurse faculty shortage.

The purpose of this study is to explain the student population of adult learners. Additionally, this study looks to determine if selected admission criteria are effective predictors of student success. Success will be measured by: 1) completion of the nontraditional afternoon and evening/weekend Associate Degree in Nursing (ADN) Program; 2) passing the National Council Licensure Examination – Registered Nurse (NCLEX-RN) on the first attempt.

2. **Using the categories found in Appendix B of the Investigator Manual, list the category of research activity that you believe applies to your proposed study.** CATEGORY IV: MINIMAL TO NO RISK TO SUBJECT (EXPEDITED/EXEMPT)

3. **Briefly describe the nature of the involvement of the human subjects (observation of student behavior in the classroom, personal interview, mailed questionnaire, telephone questionnaire, observation, chart review, etc):** This research involves data collection and analysis from the study of existing data, documents, and records found in student files only. There will be no interaction with human subjects.

4. **Explain why you think this protocol should be considered exempt. Be sure to address all known or potential risks to subjects/participants.** There will be no interaction with HUMAN SUBJECTS in the course of this study. However, all of the subjects whose records are to be included in the study are over the age of 18 years old. There will be no involvement of a special minority (e.g. hearing impaired, blind). Though the study does not intent to involve pregnant women, the researcher has no way of measuring whether or not this was the case. However, all of the subjects to be included in the study are graduates of the program and have no current relationship with the program. There will be no probing information which an individual might consider personal or sensitive (e.g. use of drugs or alcohol). There will be no administration of physical stimuli. There will be no materials utilized which might be considered offensive or degrading. Ther ewill be no manipulation of psychosocial variables (e.g. social isolation). Ther ewill be no deprivation of psychological requirements (e.g. nutrition, sleep). There will be no physical exertion required.

5. **Explain how records will be kept.** Student records will be kept under lock and key in a secured office at the college named in the study. Data collected will be coded and kept in the office of the principal researcher under lock and key with no identifying data present.

6. ☐ Yes ☒ No Are the data recorded in such a manner that subjects can be identified by a name or code? If yes:
   - **Who has access to this data and how is it being stored?** The principal investigator is the only person with access to this data. During the initial data collection no names will be recorded in the initial data collection. The researcher

will utilize sequential numbers (e.g. 001, 002, 003) and initials of the subjects only. The data will be stored for a length of time (3 years) required by federal regulations/funding source and then destroyed at the end of those 3 years.

- **If you are using a health or mental health assessment tool or procedure, what is your procedure for referring the participant for follow-up if his/her scores or results should significant illness or risk? Please describe.** Not applicable
- **Will the list of names and codes be destroyed at the end of the study? Explain your procedures.** The principal investigator is the only person with access to this data. During the initial data collection no names will be recorded in the initial data collection. The researcher will utilize sequential numbers (e.g. 001, 002, 003) and initials of the subjects only. The data will be stored for a length of time (3 years) required by federal regulations/funding source and then destroyed at the end of those 3 years.

7. **Attach a copy of all data collection tools (e.g., questionnaires, interview questions or scripts, data collection sheets, database formats) to this form. Be sure to include in such forms/scripts the following information:**
   - a statement that the project is research being conducted in partial fulfillment of the requirements for a course, master's thesis, dissertation, etc. (if applicable)
   - purpose of study
   - a statement that subjects' responses will be kept anonymous or confidential (explain extent of confidentiality if subjects' names are requested)
   - if audiotaping or videotaping, a statement that subject is being taped (explain how tapes will be stored or disposed of during and after the study)
   - a statement that subjects do not have to answer every question
   - a statement that subject's class standing, grades, or job status (or status on an athletic team, if applicable) will not be affected by refusal to participate or by withdrawal from the study (if applicable)
   - a statement that participation is voluntary

   Please note that your IRB may also require you to submit a consent form or an **Application for Waiver or Alteration of Informed Consent Procedures form.** Please contact your IRB Chairperson and/or see the IRB website for more information.

8. **Attach a copy of permission forms from individuals and/or organizations that have granted you access to the subjects.**

9. ☐Yes ☒No **Does your study fall under HIPAA? Explain below.**

   9.1 If HIPAA applies to your study, attach a copy of the certification that the investigator(s) has completed the HIPAA educational component. Describe your procedures for obtaining Authorization from participants. Attach a copy of the Covered Entity's HIPAA Authorization and Revocation of Authorization forms to be used in your study (see Section XI. of the Investigator Manual for forms to use if the CE does not provide such forms). If you are seeking to use or disclose PHI without Authorization, please attach the **Application for Use or Disclosure of PHI Without**

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Authorization form (see Section XI). Review the HIPAA procedures in Section X. of the Investigator Manual.

I hereby certify that I am familiar with federal and professional standards for conducting research with human subjects and that I will comply with these standards. The above information is correct to the best of my knowledge, and I shall adhere to the procedure as described. If a change in procedures becomes necessary I shall submit an amended application to the IRB and await approval prior to implementing any new procedures. If any problems involving human subjects occur, I shall immediately notify the IRB Chairperson.

	May 25, 2011
Principal Investigator's Signature	_Date_
	May 25, 2011
Faculty Supervisor's Signature (if applicable)	_Date_

Appendices/Supplemental Material

Use the space below (or additional pages and/or files) to attach appendices or any supplemental materials to this application.

An investigator-developed spreadsheet will be utilized to collect the data. (See attached)

This research is being conducted in partial fulfillment of the requirements for the dissertation in the Educational Doctorate in Organizational Leadership program.

The purpose of the study is to:
- identify and describe the nontraditional population of adult learners in the afternoon and evening/weekend Associate Degree of Nursing Program at Mount St. Mary's College; and
- determine if selected admission criteria and student characteristics are correlated with both program completion and subsequent success on the National Council Licensure Examination Registered Nurse (NCLEX-RN) for nontraditional students.

All data related to the subjects will be kept anonymous and confidential.

As data is being collected from existing student records and files only, no consent form will be obtained from the subjects.

See attached college approval from Mount St. Mary's College.

PEPPERDINE UNIVERSITY IRB
Faculty Supervisor Review Form

By my signature as a supervisor on this research application, I certify that **Hernani L. Ledesma Jr.** is knowledgeable about the regulations and policies governing research with human subjects and has sufficient training and experience to conduct this particular study of **Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program** in accord with the proposed application and protocol. In addition,

- I have reviewed this application;

- I agree to meet with the investigator on a regular basis to monitor study progress;

- I agree to be available, personally, to supervise the investigator in solving problems should they arise during the course of the study;

- I assure that the investigator will promptly report significant or untoward adverse effects to the Pepperdine IRB chairperson in writing in accordance with the guidelines stated in Section III.G of the Investigator's Manual; and

- If I will be unavailable (e.g., sabbatical leave or vacation), I will arrange for an alternate faculty supervisor to assume responsibility during my absence, and I will advise the IRB chairperson in writing of such arrangements.

Faculty Supervisor Signature   Date : May 25, 2011
Dr. Farzin Madjidi

Appendix M

Pepperdine University-IRB Approval Letter

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

June 10, 2011

Hernani Ledesma

████████████

Protocol #: E0511D06
Project Title: *Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program*

Dear Mr. Ledesma,

Thank you for submitting your application, *Predicting Success for Nontraditional Students in an Afternoon and Evening/Weekend Associate Degree in Nursing Program*, for exempt review to Pepperdine University's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB appreciates the work you and your faculty advisor, Dr. Farzin Madjici, have done on the proposal. The IRB has reviewed your submitted IRB application and all ancillary materials. Upon review, the IRB has determined that the above entitled project meets the requirements for exemption under the federal regulations (45 CFR 46 - http://www.nihtraining.com/ohsrsite/guidelines/45cfr46.html) that govern the protections of human subjects. Specifically, section 45 CFR 46.101(b)(4) states:

> (b) Unless otherwise required by Department or Agency heads, research activities in which the only involvement of human subjects will be in one or more of the following categories are exempt from this policy:

> Category (4) of 45 CFR 46.101, Research, involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

Your research must be conducted according to the proposal that was submitted to the IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Because your study falls under exemption, there is no requirement for continuing IRB review of your project. Please be aware that changes to your protocol may prevent the research from qualifying for exemption from 45 CFR 46.101 and require submission of a new IRB application or other materials to the GPS IRB.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact me. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

6100 Center Drive, Los Angeles, California 90045 ▪ 310-568-5600

www.manaraa.com

Sincerely,

Jean Kang, CIP
Manager, GPS IRB & Dissertation Support
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cc: Dr. Lee Kats, Associate Provost for Research & Assistant Dean of Research, Seaver College
        Ms. Alexandra Roosa, Director Research and Sponsored Programs
        Dr. Yuying Tsong, Interim Chair, Graduate and Professional Schools IRB
        Ms. Jean Kang, Manager, Graduate and Professional Schools IRB
        Dr. Farzin Madjidi
        Ms. Christie Dailo

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Appendix N

Memo-Final Oral Defense

MEMO

Graduate School of Education & Psychology

E D O L   P R O G R A M

To: All Faculty

From: Dr. June Schmieder-Ramirez
         Academic Lead, EDOL Program

Re: Final Oral Examination

Student: Hernani L. Ledesma Jr.

Subject: Predicting Success for Nontraditional Students in
         an Afternoon/Evening/Weekend Associate Degree
         in Nursing Program

Date: Wednesday, November 2, 2011
Time: 2:00 pm
Place: West Los Angeles Graduate Campus – Room 335

         Farzin Madjidi, Ed.D.
         Chairperson

         Laura Hyatt, Ed.D.
         Member

         Tori Canillas-Dufau, Ed.D.
         Member

Appendix O

Letter of Acceptance-Hawaii International Conference on Education

Co-sponsored by

University of Louisville –
Center for Sustainable
Urban Neighborhoods

New Horizons in
Education – The Journal
of Education, Hong Kong
Teachers' Association

Pepperdine University -
Graduate School of
Education and
Psychology

California State
University, East Bay -
Educational Leadership
Program

Tuesday, September 06, 2011

Hernani Ledesma
Pepperdine University

Dear Hernani Ledesma,

Congratulations! The Hawaii International Conference on Education is pleased to inform you that your submission, "PREDICTING SUCCESS FOR NONTRADITIONAL STUDENTS IN AN AFTERNOON AND

EVENING/WEEKEND ASSOCIATE DEGREE IN NURSING PROGRAM", has been accepted for presentation at the 2012 Hawaii International Conference on Education to be held from January 5 to January 8, 2012 in Honolulu, Hawaii. The decision to accept your submission was based on a peer review process.

The exact time and room of your session will be specified in the final program. The final program will be available at http://www.hiceducation.org/program_edu.htm in early December 2011. Please note that everyone who participates in the conference must register. Therefore, in order to present your submission, you must register or confirm your intention to attend the conference, in writing by **November 22, 2011.**

To register online, or for more information about registration, please visit: http://www.hiceducation.org/reg_edu.htm. For more information about hotel reservations and travel, visit our website at: www.hiceducation.org.

Your submission will be published in the proceedings if you follow the enclosed instructions. We encourage you to purchase your air tickets, reserve your hotel rooms, and submit your registration fee as soon as possible if you have not done so. If you have co-authors, please inform them of this acceptance and the enclosed materials.

Your Submission ID Number is "917". Please refer to this number on all correspondence.

Congratulations on the acceptance of your proposal! Your participation will help make the 2012 Hawaii International Conference on Education a great success.

Joelle Lee

Conference Coordinator
Hawaii International Conference on Education

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Honolulu, Hawaii 96836

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