

**EXAMINING NURSING FACULTY CREDENTIALS AND NCLEX-RN PASS RATES
IN PRE-LICENSURE NURSING PROGRAMS**

by

Tiffany Nicole Cole

JOBETH PILCHER, EdD, Faculty Mentor and Chair

JULIA BRONNER, PhD, Committee Member

PAXSON BARKER, PhD, Committee Member

J. Heather Welzant, PhD, Dean

School of Public Service and Education

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Capella University

June 2021

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Abstract

The healthcare industry has registered nurses from various academic and clinical backgrounds. With nurses accounting for a significant number of healthcare professionals, there is a continued need for nursing students to be successful on the National Council Licensure Examination (NCLEX). One role of nursing faculty members is to promote student success on the NCLEX. Nursing faculty members may have varied educational backgrounds, with the most common being master's and doctoral degrees. There is a gap in nursing education literature regarding if specific faculty credentials are predictive of NCLEX-RN® pass rates in pre-licensure nursing programs. A cross-sectional correlational retrospective quantitative study was conducted to address the gap in the literature. Data were collected from publicly available records from 88 nursing programs in the Northeastern region of the United States and included two-year associate degrees and four-year bachelor's degree programs, consisting of private and public institutions. Simple linear regression was used to analyze if nursing faculty credentials were predictive of NCLEX-RN® pass rates of pre-licensure nursing programs. The results indicated that the sample did not provide statistically significant evidence that nursing faculty credentials played a role in students' success on the NCLEX-RN®. Future recommendations for research include investigation of nursing faculty perceptions of the credentials and NCLEX-RN® pass rates from a qualitative approach.

Dedication

I would like to dedicate this dissertation to several people. First to my Father, I read you a letter during your funeral, and I wanted to let you know I kept my promise, continue resting in peace. I could not have completed this dissertation without the support of my family (Mom, my daughter Kiana, and son Lawrence Jr.). Thanks for putting up with the demands of my dissertation. I would also like to take a moment to say a special thank you to a few friends/sisters that pushed and encouraged me along the way, LaKeita, Syntyia, and Shamika, you guys rock, love you guys.

Acknowledgments

I would like to take a moment to acknowledge a few of faculty members from Capella. First, I would like to thank my mentor and chair Dr. Jobeth Pilcher, whose unwavering guidance helped me complete this dissertation. Secondly, I would like to also acknowledge Dr. Michael Worthington, for taking my phone call and assisting me in the early stages of my dissertation process with research methods. Lastly, I would also like to thank my committee members, Dr. Bronner and Dr. Barker.

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CHAPTER 1. INTRODUCTION

Healthcare is a multifaceted industry that is responsible for the overall well-being of the community. Encompassed within the healthcare industry lies healthcare professionals from various academic and clinical backgrounds, all with the common goal of maintaining the health of the individual. The nursing profession remains one of the most significant sectors in the workforce in the United States (Altman et al., 2015). Nurses account for nearly 3,000,000 healthcare workers throughout the healthcare community; so, the need for the continued success of nursing students' outcomes is paramount to ensure a sufficient amount of replacement nurses as seasoned nurses retire from the profession (Altman et al., 2015).

Pre-licensure nursing programs provide nursing education about caring for patients across a lifespan (National Council of State Boards of Nursing [NCSBN], 2018b). Through didactic coursework and clinical practice, nursing students prepare to take the National Council Licensure Examination of Registered Nurses (NCLEX-RN®; NCSBN, 2018b). Pre-licensure nursing programs have a minimum faculty academic preparation requirement of a master's degree or higher for didactic coursework and bachelor's degree or higher for clinical instruction, in associate degree programs (NCSBN, 2018b). The National League of Nursing (NLN, 2017) recommended nursing faculty have graduate preparation of either a Master's in the Science of Nursing (MSN), Doctor of Philosophy (PhD), Doctorate of Nursing Practice (DNP), or Doctor of Education (EdD) to enhance the facilitation of learning through research and evidence-based practice.

The topic of this study was to examine if nursing faculty credentials were predictive of NCLEX-RN® pass rates in pre-licensure nursing programs. Chapter 1 begins with background information followed by the problem and purpose statements for the study. The chapter also includes the significance of the study, research questions, definition of terms, and the research design. The chapter concludes with a description of the assumptions and limitations of this study.

Background of the Problem

There is minimal literature on nursing faculty credentials with relationship to outcomes of the nursing student. Nardi and Gyurko (2013) found that institutions of higher learning have less than an optimal number of graduate prepared nursing faculty. The inadequate number of qualified nursing educators led to decreased admissions of nursing students (Nardi & Gyurko, 2013). The notion of less than the optimal amount of qualified nursing faculty to educate nursing students induces the probability of less than equitable measures being utilized by nursing programs to ensure favorable pass rates on the NCLEX-RN®. The NLN (2013) promoted standards of practice for nurse educators. The standards of practice outlined by the NLN consist of the presence of graduate prepared nursing faculty in nursing programs as a method of ensuring optimistic program outcomes for nursing students (NLN, 2013). Administrators of nursing programs seek to understand factors that ultimately improve outcomes for the student, the program, and the healthcare community.

Nursing Faculty

There is an enhancement of overall program outcomes and improvement of pedagogy development when graduate and doctorally prepared nursing faculty are involved in nursing

programs (NLN, 2017; Oliver et al., 2018). Fitzpatrick (2019) suggested that understanding the differences in nursing academic degrees and credentials is essential for increasing understanding in the field of nursing education as well as the public health community. Fitzpatrick (2019) explained that by thoroughly understanding the difference in academic degrees of nursing faculty offers insight on correctly placing nurse educators in the appropriate educational settings, levels, and courses.

Research on the nursing faculty's academic credentials revealed shortages in properly credentialed educators (Daw et al., 2018). Aquino et al. (2018) explained full-time nursing faculty with either a PhD or DNP, expressed feelings of emotional exhaustion and depersonalization in their career in academia and ultimately attributed to their decision to leave academia. Aquino et al. (2018) stated as graduate prepared nursing faculty leave academia, there will be a decline of nursing programs accepting students. The decrease in the number of available entry-level nurses to enter the healthcare field would further increase the projected need of nurses (American Association of Colleges of Nursing [AACN], 2020). Nurses with primary intentions of teaching in academia must have training in education pedagogies to ensure proper qualifications for educational engagement (Bednash et al., 2014). Bullin (2018) explained academic nurse educators who seek a PhD or a doctoral degree primarily lack the skills necessary pedagogical educational foundation to provide high-quality education for nursing students.

NCLEX-RN®

NCLEX-RN® pass rates continue to be paramount in nursing education research as one of the primary indicators of successful program outcomes (Taylor et al., 2014). The implementation of testing policy, utilization of Health Education Systems Incorporated (HESI) scores and balancing of the nursing curriculum have been used to improve NCLEX scores (Koestler, 2015; Young et al., 2013). Due to the ongoing need to improve outcome scores on NCLEX-RN®, administrators are applying improvement approaches through a plan-do-study-act methodology (Oliver et al., 2018).

Mager et al. (2017) proposed a 10- step remediation plan that increased NCLEX scores by 10% in one year. The 10-step plan included changes in organizational structures, curriculum and examination review, gap analysis, focus groups, and test-taking strategies (Mager et al., 2017). Czekanski et al. (2018) focused on post-graduate interventions to increase NCLEX scores. After a sharp decline in NCLEX scores from 85.71% to 64.86% over two years, the authors created post-graduate intervention of content review, test-taking strategies, and cognitive-behavioral techniques (Czekanski et al., 2018). Similar to Czekanski et al. (2018), Opsahl et al. (2018) also employed measures to improve NCLEX pass rates through coaching methods incorporating emotional intelligence in educational strategies. As the nursing education field continues to search for answers to enhance outcomes and NCLEX scores for students, administrators explore students' perceptions of facilitators for the success on the NCLEX (Blozen, 2017). Outlined within various research studies on NCLEX were supporting techniques to improve NCLEX; however, those studies failed to inquire about the role of nursing faculty in

academic preparation in response to NCLEX pass rates. Although there is an abundance of research on NCLEX pass rates, the nursing education community lacks the exact measures to improve NCLEX pass rates (Hanna et al., 2016).

Nursing Faculty and Student Outcomes

Feldman et al. (2015) established retention strategies to maintain faculty, recruitment strategies to acquire new faculty, and provided techniques to diversify nursing faculty, with the primary goal of improving overall student outcomes. Nguyen et al. (2018) explained that nurse educators in the clinical role are invaluable to the success of nursing students' overall program outcomes and require appropriate academic preparation to facilitate clinical learning. The authors acknowledged the valuable role of the clinical nurse educator; however, research failed to offer effective preparation methods for the clinical nurse educator role (Nguyen et al., 2018). One attempt to provide adequate foundational practice was for nurse educators to obtain additional certifications in academics to supplement educational learning (Lundeen, 2018; Ortelli, 2016).

An example of nursing faculty certifications is the certified nurse educator (CNE) exam, which test competencies of the nurse educator (Lundeen, 2018; Ortelli, 2016). The successful passing of the CNE is indicative of the educator having proper knowledge and foundational pedagogy to properly educate nursing students (Lundeen, 2018; Ortelli, 2016). There is a recommendation of doctoral educational preparation before taking the CNE examination, to promote success on the examination (Lundeen, 2018; Ortelli, 2016). The premise for this study was formed through the gaps in the research literature on nursing faculty credentials, as it relates to NCLEX-RN® pass rates.

Theoretical Framework

Behaviorist learning theories provide a framework for educators creating a student-centered curriculum (Murtonen et al., 2017). The behaviorist view of learning has a premise that learners respond to what is immediately observable and by a stimulus in the environment (Barbaranelli, 2016). The theoretical framework guiding this study was Bandura's social learning theory. Specifically, outlined within the social learning theory is a four-step modeling process for learning; attention, retention, reproduction, and motivation (Bandura, 1977). Social factors affect a learner and his/her attitude towards learning, through the behaviorist approach of learning (Bandura, 1977). The learner develops a professional practice based on modeling behavior (Barbaranelli, 2016). The underpinning of this research aligned with the aspects of modeling behavior outlined within the social learning theory and student outcomes. The goal was to understand if nursing faculty achieving academic excellence in professional practice through degree attainment correlates in a modeling way of nursing students obtaining academic and professional excellence through passing the NCLEX. The theory of modeling outlined within the social learning theory is reflective in practice for nursing students' outcomes.

Statement of the Problem

As the educational model shifts to focus more on outcomes, profession leaders suggested nursing faculty be more academically prepared (Higgins, 2015). The call for action for more academically qualified nursing faculty is evident in publications from NCSBN (2018), and NLN (2017). Prior researchers focused on NCLEX pass rates related to strategic plans for

improvement, but failed to offer solid follow-up evaluation plans, which leads to inadequate outcome measures (Hadenfeldt, 2012).

According to Hanna et al. (2016), interactive and collaborative testing is a method to improve NCLEX scores. Libner and Kubala (2017) proposed remediation practices and programmatic tool development for nursing programs as measures for improvement of NCLEX scores. Davis (2016) offered that nursing faculty played a pivotal role in the growth of NCLEX scores for nursing students, but only regarding interpersonal relationships, not faculty academic preparation. While much of the literature focused on strategies to improve NCLEX pass rates, limited data was present regarding the relationship of nursing faculty credentials to NCLEX pass rates.

Purpose of the Study

The purpose of this correlational retrospective quantitative study was to examine if a relationship existed between nursing faculty credentials and NCLEX-RN® pass rates in pre-licensure nursing programs in one northeastern state. NCLEX-RN® first-time pass rates are necessary measures for evaluating the effectiveness of nursing programs (NCSBN, n.d.-a). The lack of success of nursing students on the NCLEX-RN® increases the overall need for nursing professionals in the healthcare workforce and the global healthcare community.

Significance of the Study

Registered nurses of various credentials account for 3,000,000 of the healthcare professionals in the United States and outnumber physicians three to one, which provides implications for enhancement of nursing educational practices (AACN, 2020). The differences in

academic preparation/credentials of nursing faculty (MSN, PhD, DNP, EdD) and pass rates in pre-licensure nursing programs on the NCLEX-RN® provide significance and relevance for the nursing education specialty (Lindell & Poindexter, 2015). AACN (2017) explained the shortage of registered nurses by 2024 will exceed 1,000,000. The expected shortage in nurses demonstrates the inherent need for nursing students to be initially successful on the NCLEX-RN®; therefore, research with implications of improvement of pass rates is vital. Lack of new graduate nurses leads to a more massive gap in the projected need of nurses (AACN, 2020).

Research in nursing education is essential to the development of practice standards and outcome measures. One of the critical practices of a nurse educator is to be a leader with the foundation of scholarship and advancement in the commitment to excellence of outcome measures for nursing students and the healthcare community (Fitzpatrick, 2019). However, without nursing research on pertinent matters in nursing education, factors to enhance outcomes within nursing education would lack substance (NCSBN, 2018b). The focus on this dissertation was on examining NCLEX pass rates, which are outcome measures and a practice standard within the nursing education community. Fang and Kesten (2017) offered there's an inherent need to develop younger nursing faculty through degree attainment to address the projected demand of nursing education faculty and the nursing workforce. The pursuit to build the nursing workforce and nursing educational community are compounded by the need to ensure positive outcomes for nursing students. Within this study, there was analyzation of the attainment of nursing faculty educational credentials with the nursing students' outcome measures, which is significant to the nursing education and health care community.

Research Questions

Research Question 1

What is the correlation between nursing faculty with master's degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state?

Research Question 2

What is the correlation between nursing faculty with doctoral degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state?

Definition of Terms

Nursing education incorporates both medical terminology and traditional vocabulary words in attempts to provide clarity to functions within the profession. The terms of interest of this quantitative research study offer further clarity.

Doctoral Degree

A doctoral degree is a graduate degree, which may either be a DNP, PhD, or EdD (Bednash et al., 2014; NLN, 2013). In their seminal report regarding nursing degrees, AACN (2011) identified the DNP and PhD to be terminal degrees, with the primary differences being the PhD has a focus of research, and the DNP has a clinical practice focus on outcomes for the graduates. Conversely, there is a significant difference in the timeframe in completion of each terminal degree the PhD takes approximately 3 to 4 years, whereas the DNP takes approximately 1 to 3 years (Canady, 2021).

Master's Degree

AACN (2011) suggested the attainment of a master's degree in nursing concludes that a graduate has ascertained the nine essentials of master's education. The nine essentials of master's education precluded graduates promote (a) background for practice from sciences and humanities, (b) organizational and systems leadership, (c) quality improvement and safety, (d) translating and integrating scholarship into practice, (e) informatics and healthcare technologies, (f) health policy and advocacy, (g) interprofessional collaboration for improving patient and population health outcomes, (h) clinical prevention and population health for improving health, (i) master's-level nursing practice (AACN, 2011).

NCLEX-RN®

The NCLEX-RN® is a candidate adaptive timed examination with a minimum of 75 and a maximum of 265 questions (NCSBN, 2018a). Successful candidates of the NCLEX-RN® have mastered items in the four categories (a) safe and effective care environment, (b) health promotion and maintenance, (c) psychological integrity, (d) physiological integrity (NCSBN, 2018a).

NCLEX-RN® Pass Rates

NCLEX-RN® pass rates are the first-time pass rates of nursing students in pre-licensure nursing programs, which are provided by the National Council State Board of Nursing (Chen & Bennett, 2016).

Research Design

The research study was a cross-sectional, correlational retrospective study to examine if nursing faculty credentials were predictive of NCLEX-RN® pass rates in a northeastern state. The required numerical data of nursing faculty credentials and NCLEX-RN® pass rates were compiled to complete the statistical analysis for the two research questions. Conducting research requires six sequential steps to provide continuity in conclusions: identifying the research problem, literature review, classifying a purpose for research, gathering data, analyzing and interpreting the data, and evaluating and reporting the data (Creswell, 2015). The initial research and research problem inform the research methodology (Creswell, 2015).

In quantitative research, a researcher has the flexibility to describe, collect, and evaluate many variables at one time (Mertier, 2016). Correlational research has aspects of relational concepts between variables (Mertier, 2016). These variables are measured from an observational standpoint and have no consequences on cause-and-effect relationships (Mertier, 2016). The use of a correlational design in nursing education research aids in the conjecturing of events (Curtis et al., 2016). The concepts measured in this study were the percentages of nursing faculty credentials and percentages of NCLEX-RN® pass rates. Each research question was examined using simple linear regression analysis (Altman & Krzywinski, 2015). Simple linear regression is used to assess if the independent (predictor) variables of nursing faculty with master's degree and doctoral degrees predict the dependent (outcome) variable of NCLEX-RN® pass rates (Altman & Krzywinski, 2015).

Assumptions and Limitations

Researchers must address the assumptions and limitations of their study as a method of providing validity. The conceptual framework addresses how (methodology), what (ontology), and why (epistemology) (Berman & Smyth, 2015). General assumptions and limitations in research impinge on the inferences drawn from the study (Ross & Bibler, 2019). The following paragraphs include a detailed description of the assumptions, limitations, and the delimitations for the study.

Assumptions

Assumptions in quantitative research undertake postpositive approach in which knowledge assertions determines outcomes and effects (Creswell, 2015). Knowledge advancement occurs through observation and measurement of reality leading to numerical measures and research study methods (Creswell, 2015). There is an understanding of the innate world by analyzing and validating theories and laws that provide regulations for the world (Creswell, 2015).

Ontological Assumptions

Within ontological assumptions there is a focus on fundamental concepts and relationships between those concepts (Gopinath, 2015). Tanlaka et al. (2019) suggested logical positivism has a methodological assumption that correlation study is one acceptable method to presume adequate knowledge. Hamilton and Hamilton (2015) proposed human knowledge is ascertained through factual, empirical knowledge that is observable and defined through scientific analytics. The following section includes the philosophical assumptions of the study.

Philosophical Assumptions

One assumption is clinical instructors provide expertise at the clinical level (Rowbotham & Owen, 2015). There are gaps in teaching knowledge or effective teaching techniques, which have inherent problems for nursing students' outcomes (Rowbotham & Owen, 2015). Another assumption is nursing faculty that taught didactic courses have a successful immersion of academic preparation. Other philosophical assumptions included in this study were nursing faculty were current with educational premises of accrediting organizations and are responsible for understanding and abiding by all laws and policies by governing and accrediting agencies within the nursing program and educational institution. The final philosophical assumption was nursing faculty obtained their academic preparation in the United States. In the United States, nursing faculty must have either a bachelor's, master's, or doctoral degree to teach in nursing (NLN, 2017). However, there is not a stipulation where and how academic preparation was obtained (NLN, 2017). Nurse educators noted differences in pedagogical training, which led to gaps in perceived teaching knowledge and content mastery (Souza et al., 2018).

Additional philosophical assumptions of this study were nursing faculty have different teaching styles, and skill level based on courses taught and years of experience. Stirling (2017) proclaimed nursing faculty teaching styles aligned with students learning techniques and influenced course outcomes. Teaching in nursing requires faculty to be flexible in learning methods to compliment the potential learning styles of auditory, visual, or kinesthetic nursing students to enhance student success (Madu et al., 2019). Depending on various factors, nursing faculty might be responsible for teaching didactic courses, clinical courses, or a combination of

both individually and team (Flood & Robinia, 2014; Madu et al., 2019). Each teaching technique requires a different teaching skillset for optimal outcomes (Flood & Robinia, 2014; Madu et al., 2019).

Additional assumptions of this study were differences in nursing faculty based on nursing program type (associate or bachelor). The profession of registered nursing has an entry-level educational requirement of an associate degree. However, many educational institutions in the United States have restructured their nursing programs to support the bachelor's degree as the prelicensure requirement (Perfetto & Orsolini, 2019). Educational needs for nursing faculty teaching in associate degree programs are minimally master's education (NCSBN, 2018b). In baccalaureate degree nursing programs, nurse educators must minimally have a doctoral degree (NCSBN, 2018b).

Methodological Assumptions

General methodological assumptions in quantitative research permit the researcher to describe, collect, and evaluate many variables at one time (Mertier, 2016). Another assumption was that correlational research has aspects of relational concepts between variables that are measured from an observational standpoint and have no consequences on cause-and-effect relationships (Mertier, 2016). Data were collected on nursing faculty credentials without regard to the length of time of attainment of academic credentials. Other methodological assumptions included were that data obtained through records search were accurate and current.

Theoretical Assumptions

General theoretical assumptions were, people are social beings who learn by observations, and those observed behaviors are imitated based on rewards and punishment system (Bandura, 1977). Theoretical assumptions related to nursing students would mimic positive actions of nursing faculty to seek the reward of successful passing of the NCLEX-RN®. Cognitive processes are imperative in learning, and learning can occur without behavior modifications (Bandura, 1977). By studying the relationship between nursing faculty credentials and NCLEX pass rates, the theoretical implications of using the social cognitive theory could also provide insights into identifying methods to enhance pass-rates on the NCLEX. There is a series of operations, both dependent and independent, that occur in the steps of learning that assist in ascertaining and understanding new knowledge (Barbaranelli, 2016). Other theoretical assumptions were that as nursing students observe nursing faculty obtain academic excellence in degree attainment, nursing students would in turn seek academic excellence through the successful first-time passage of the NCLEX-RN®. This study was anticipated to add to the theory that nursing students who are supported through positive behaviors of nursing faculty are more likely to pass the NCLEX-RN® on the first-time attempt.

Limitations

Data collection from the accrediting source was a limitation outlined due to the time restraints of the delivery of the requested information. Requesting public data also creates the potential for errors of reporting. One barrier was the use of a convenience sampling method (Kandola et al., 2014). Convenience sampling provides the researcher with readily accessible

participants (Kandola et al., 2014). There is a potential for misrepresentation of the sample population, with convenience sampling (Kandola et al., 2014). Nursing students' individualized efforts of academic success were not delineated, such as tutoring, multiple course attempts, or NCLEX preparation courses outside of the academic institution which the student attended.

Delimitations

The generalizability of the results of this study was limited by the sampling methodology. The research study included only data from prelicensure nursing programs from one northeastern state. There is an indication that admission standards and program criteria were identical throughout that northeastern state, which poses generalizability issues with other nursing programs in other states. This research study only used quantifiable data regarding percentages of nursing faculty with appropriate qualifying variables of master's or doctoral degrees; however, the data did not account for certifications of nursing faculty, which might enhance academic credentials. Although each nursing program had the same criteria of being a pre-licensure program, courses outlined within each program were not identified and posed barriers in generalizability to other nursing programs. Nursing students identified were not delineated by previous academic degree achievements or failures, age, gender, socioeconomic status, which again pose generalizability problems.

Organization of the Remainder of the Study

Chapter 1 began with brief introduction to the study regarding the critical components. The chapter included the background, statement of the problem, as well as the purpose and significance of the study. The remaining concepts addressed in this chapter were the research

questions, definitions of key terms, the research design, and finally, the assumptions and limitations.

Chapter 2 consists of the theoretical foundation of the study and alignment with the beliefs of the research. Also included in this chapter is a review of concepts through literature synthesis relevant to this study. There is a discussion of the differentiation of nursing faculty credentials and NCLEX-RN® pass rate enhancements and barriers. The chapter also provides background on the nursing faculty and nursing shortages, with implications on the healthcare community.

Chapter 3 consists of the methodology approach of the dissertation research study. Also discussed in this chapter is the research approach, questions, sampling technique, population, data collection, and analysis methods. Ethical considerations and measures are taken to protect and promote the validity of the research. Chapter 4 includes a description of the sample population and concludes with the hypothesis testing and a summary of the research. In Chapter 5, there is an interpretation of the results of this study in the context of the research questions. There is an evaluation of how well the study addressed the identified gap in the literature and demonstrated the importance of the findings to nursing education and the nursing practice in general.

CHAPTER 2. LITERATURE REVIEW

The research topic addressed if nursing faculty credentials were predictive of pass rates on National Council Licensure Examination for Registered Nurses (NCLEX-RN®) in one northeastern state. A scholarly literature review is the cornerstone of professional practice and offers concepts to inform the profession, expand current ideas, or disprove current practice measures. Within this chapter, there is an explanation of search methods used to locate scholarly literature, including databases and search terms identified. There is also a discussion of the theoretical orientation used for the study, with a critical analysis of how the theory supports the research study. The chapter also includes a thorough review of the literature with a synthesis of the content. The chapter concludes with a critique of previous research methods.

Methods of Searching

The primary premise for the method of search for the appropriate design had a base for quantifying opinions, behaviors, attitudes, and other characteristics of variables, through a quantitative approach (Wells & Stage, 2015). There are unique characteristics identified in the use of quantitative research such as the use of data to be representative large-scale outcomes, methodical disparities, and instructive processes (Wells & Stage, 2015). Also, the use of the quantitative research approach provides varying models, measures, and investigative procedures through an analytic approach that facilitates the explanation of the experiences of those who have the potential to be underrepresented (Wells & Stage, 2015).

The incorporation of theory and theoretical concepts in research defines the analytical, philosophical, operational, and epistemological stance, which is the foundation for this study

(Grant & Osanloo, 2014). Selecting appropriate theoretical framework in research is initiated by the review of the literature and compounded by potential answers to investigation questions, which suggest that despite the familiarity of theoretical frameworks, researchers will align study with said frameworks to enhance the validity of findings (Lederman & Lederman, 2015).

Following the design method's selection, the next step was to search the current literature for nursing faculty credentials and NCLEX-RN® pass rates. The databases used for this study were the Cumulative Index of Nursing and Allied Health Literature (CINAHL), Complete, Dissertations and Theses Global, Education Database, and Education Research Complete databases and the key terms *nurse faculty credentials*, *quantitative*, *NCLEX-RN® pass rates* and *barrier and facilitators of NCLEX-RN® pass rates* in different combinations to obtain existing literature. The next step involved utilizing the above-listed databases in a multilayered process to examine narratives that discussed barriers and facilitators of NCLEX-RN® pass rates and nursing faculty credentials. Key terms for this search include *nursing faculty*, *NCLEX-RN® strategies*, *nursing faculty academic preparation*, and combinations of these terms.

Theoretical Orientation for the Study

Theories, in general, provide a foundational guide to endorse the profession through scholarly aspects. Theoretical frameworks support pathways in research and notional paradigms to provide a secured ideology of social promotion (Adom et al., 2018). Theoretical frameworks stimulate an understanding of knowledge and afford scholars' pathways to expand on knowledge through research and scholarly inquiry (Adom et al., 2018). There is a consensus among scholars that investigations yielded by the theoretical framework to ensure the direction for research,

provide validity for research findings, and assist in answering investigative items (Lederman & Lederman, 2015). The theoretical framework guiding this research was Bandura (1977) social learning theory.

Social Learning Theory

Bandura's (1977) social learning theory's original premise was that learning occurs in a social context in which the learner models' behaviors are both ascertained and observed, through reciprocal exchanges of ideas from environmental factors. Further expanding on his theory, Bandura's later works refer to social learning theory as the social cognitive theory. Bandura promulgated that his social cognitive theory explains both anticipated and unanticipated behaviors of individuals by observation, and individuals will replicate actions for self-gratification (Bandura, 1977). It is also suggested that entities can influence their environment and be influenced by their environment, which precludes that people will only reproduce self-promoting behaviors (Bandura, 1977). Components of the social cognitive theory include processes, self-regulation, self-reflection, forethought, vicarious, and symbolization capabilities that further explain the intricacies of learning (Bandura, 1977).

Components of Social Learning Theory

Bandura (1977) elucidated that the vicarious and symbolization components within his theory suggest that individuals learn both directly and indirectly of visual stimulation and utilize symbolic modalities to exceed predisposed environmental factors. Self-regulation, self-reflection, and forethought offer authenticity in learning that are unique capabilities of human beings as these processes require intellect to restraint and direct, provide insight and illuminate

both perceived positive and negative objects that constitute learning (Bandura, 1977). The social cognitive theory is capitalized by one's ideas of the importance of valued experience to promote self-wellbeing.

Bandura's social learning theory promotes people's ability to be self-determining through goal attainment. Bandura (2020) suggested that social cognitive theory is a direct result of a person's ability to use one's environment as a catalyst for self-preservation or self-destruction. It is within the social cognitive theory that a person would apply efforts of change based on the gratification of perceived behavior. Bandura (2015) social cognitive theory discusses motivational factors of a person, as a means of internal conflict that propels a person to excellence.

Social Cognitive Theory Applied

Bandura's (1977) social cognitive theory has the litness to be applicable in various research modalities and disciplines, as both the social and cognitive concepts within the theory cross different spectrums of thought. Lent et al. (2016) examined social cognitive theory as a model to improve academic and career development. Lent et al. (2016) proposed the social cognitive theory has concepts that encourage change, flexibility, and adaptability, which are ideal characteristics for career and academic development. Lent et al. (2016) highlighted Bandura's definition of self-efficacy within the social cognitive theory that suggests people will be self-determining and focus on those activities that are self-gratifying, which further expands upon this theory as an appropriate foundation for career and academic development.

The application of the social learning theory in nursing education provides practical application for learned behaviors and enhanced when there is an acknowledgment of the communication between a stimulus and a response (Aliakbari et al. 2015). Based on the primary premise of inquiry of the research topic of nursing faculty credentials and pass rates on the national licensure examination for registered nurses, Bandura's behavior theory is appropriately applicable for theoretical grounding. Koo et al. (2017) used the social cognitive theory as a model to help understand cognitive factors that facilitated the career preparation of Korean nursing students. Furthermore, Thungjaroenkul et al. (2016) examined the social cognitive theory to promote nursing excellence through visual stimulation in the promotion of the nurse educator role.

Particularly outlined in the social cognitive theory, people have inherited belief in their ability to influence their goals, and the higher the self-efficacy the higher the goal (Bandura, 2015). The social cognitive theory concludes there is a reciprocal relationship between the environment and behavior, which bridges concepts of memory, attention, and motivation (Bandura, 2015). This primary component outlined within the social learning theory framework assist in explaining the relationship between nursing faculty credentials and first-time pass rates on the NCLEX-RN®. Nursing students model their behavior after faculty in the promotion of success.

Social cognitive theory within the context of this study eludes the use of self-efficacy as a tool to promote positive behaviors that increase the individual's overall professional development. Highlighting nursing students' self-efficacy ensures positive outcomes reflective of

improved first- time pass rates on the NCLEX. Henderson et al. (2018) offered nursing students utilizing self-efficacy increased learning experiences superseding course objectives. Correlation of nursing faculty attainment of doctoral and graduate degrees promotes professional excellence and career advancement, which provides nursing students with tools for achievement (Fogel et al. 2015).

Review of the Literature

There is an extended reliance on the results of the NCLEX-RN® with implications for nursing students, educators, and the health care community with regards to patient safety. The lack of success on the NCLEX-RN® inhibits educational development and career advancement for nursing students while jeopardizing the accreditation of nursing programs. A review of the literature provides insight into this research topic while providing reliability on concepts discussed throughout. The primary focus of the literature review was ideas to further understand NCLEX-RN®, nursing faculty credentials, nursing students and outcomes, and tools to enhance pass rates on NCLEX. The final section of the literature addresses methodological choices in designing this study.

NCLEX-RN®

NCLEX-RN® is a licensing examination for all registered nurse graduates in the United States (NCSBN, n.d.-b). The primary outcome for the NCLEX-RN ® is to test the candidate on various concepts to ensure that their safe entry-level practitioners (NCSBN, n.d.-b). The NCLEX-RN® is a computer adaptive test (CAT) in which the number and difficulty of the questions are determined by the ability of the test taker to stay above a certain level of passing

designated by the National Council State Board of Nursing (NCSBN, n.d.-b). CAT matches the candidate abilities based on each item scored, and the exam is beyond correctly answering right or wrong, the technology within the CAT selects items to administer based on the test plan and level of difficulty (NCSBN, n.d.-b). The utilization of CAT provides each candidate a customized exam to satisfy the NCLEX-RN® test plan (NCSBN, n.d.-b). The passing standard on the NCLEX-RN® is different for each qualified candidate with 75 being the minimum number of questions and 265 being the maximum, 15 items within these questions are not scored and are used as pretest items (NCSBN, n.d.-b). Candidates of the NCLEX-RN® have a maximum time limit of six hours, which includes any sample questions, tutorials, and breaks if desired (NCSBN, n.d.-b). The NCLEX-RN® was developed to ensure that nurses that enter the field are safe effective practitioners (NCSBN, n.d.-b). The following paragraphs include detailed description of the NCLEX, impacts on accreditation, student perception on NCLEX, and the relationship of NCLEX to program outcomes.

NCLEX Content

The NCLEX examines candidates in four major content areas: safe and effective care environment, health promotion and maintenance, physiological integrity, and psychological integrity (NCSBN, 2019). The categories of health promotion, maintenance, physiological integrity, and psychological integrity outlined within the NCLEX-RN® supports the concepts of a safe, effective nurse, which is the outcome of licensure (NCSBN, 2019). The content area of safe and effective care environment on the NCLEX-RN® has two corresponding subdivided categories of management of care and safety and infection control (NCSBN, 2019). There is a

further division in the content area of physiological integrity, which has sub-categories of basic care and comfort, reduction of risk potential, physiological adaptation, and pharmacological and parenteral therapies (NCSBN, 2019).

The testing items within the NCLEX focus on the nursing process, caring, teaching/learning, and communication and documentation, which are integrated processes essential to nursing practice (NCSBN, 2019). The NCLEX category of safe and effective care environment, test the nurse on the promotion of client achievements through the care delivery systems (NCSBN, 2019). Psychological and physiological integrity assess the nurse's ability to promote emotional, mental, and social well-being while managing a client's physical health and reduction of risk potential (NCSBN, 2019). The NCLEX testing items focus on the client's needs over a lifespan in various healthcare settings (NCSBN, 2019).

Impact on Accreditation

Grossly influencing the nursing program's national and continued regional accreditation is the ability of nursing students to successfully pass the NCLEX-RN® on the first attempt (Foreman, 2017). It is essential to know that accreditors have different percentages of acceptable ranges of pass rates on the NCLEX-RN®, however, whether the accreditor is The National League of Nursing (NLN) or The American Association of the Colleges of Nursing (AACN), both agree that it is the responsibility of the nursing program to prepare the nursing student through program measures for success on the NCLEX-RN® (NCSBN, 2016). The attribution of low pass rates on the NCLEX-RN® programs links to the poor academic quality of nursing

programs (O'Lynn, 2017). Furthermore, underperforming nursing programs decrease the number of prepared nurses for the healthcare workforce.

Nursing program accreditation reflects self-assessment, overarching goals in the interest of public health and accountability (Billings & Halstead, 2015). Accreditation of nursing programs ensures the quality and standards of education provided through the program. Accreditation also promotes continuous quality improvement and enhancement of program outcomes through a proportionate rigor matrix. Although accreditation is a voluntary process by the institution of higher learning, The National Council of State Boards of Nursing (NCSBN) restricts nursing candidates' NCLEX eligibility from unaccredited programs (NCSBN, 2021). The inability of nursing students to receive state and federal funding are some of the financial implications for unaccredited nursing programs (NCSBN, 2021). Nursing programs that are accredited are current with curricula and practice standards.

Primary indicators of nursing program success are reflective of NCLEX pass rates, which continue to be a principal concern in nursing education research (Taylor et al., 2014). However, nursing programs across the United States have varying percentages of NCLEX pass rate standards. Foreman (2017) found that NCLEX pass rate standards changed from 75% to 100%, with some states using data from either first-time test takers or the percentage data from all NCLEX test takers. The NCLEX pass rate differences amongst the states pose concerns about the validity of the nursing programs accreditation and NCLEX due to the unlevelled standard of practice. With the unanswered questions regarding the validity of pass rate standards of the

NCLEX across the United States, understanding student perceptions of the NCLEX would prove to be valuable information for nursing programs.

Student Perception of NCLEX

Hall et al. (2016) examined Canadian nursing students' perception of the NCLEX preparation as an entry-level modality to the profession of nursing. The authors concluded that the 69.7% first-time pass rate on the NCLEX for Canadian students, which was significantly lower than the average of 85% on the Canadian Registered Nurse Examination (CRNE) were attributed to various factors one being content and context of the examination (Hall et al., 2016). Previously, the utilization of the CRNE measured competencies of the graduate nurse, through a paper-based exam which was offered three times annually (Hall et al., 2016). Nursing regulatory bodies agreed to change the licensure examination from the CRNE to the NCLEX in January of 2015, related to the psychometrically sound qualities of the NCLEX (Hall et al., 2016). As the NCLEX is now the standard for entry into the nursing profession for Canadian registered nursing students, it is essential to understand measures to pass the NCLEX successfully.

Relation to Program Outcomes

Nursing programs have alluded to the importance of the NCLEX as a measure of program outcomes, citing the NCLEX as a critical indicator of program quality (Brussow & Dunham, 2018). Failure on the NCLEX by nursing students negatively impacts both the student and the nursing program, financially and psychosocially (Brussow & Dunham, 2018; Glasgow et al., 2019). Approximately 10% to 18% of graduate nurses are unsuccessful on the NCLEX-RN® the first time (Glasgow et al., 2019). Standardized testing provides programs the opportunity to

identify weak or less than optimal content areas of nursing students (Glasgow et al., 2019). Nurse educators must use the information from standardized testing to enhance courses and program measures to provide students with evidence-based measures for improvement (Glasgow et al., 2019).

Randolph (2017) conducted a study to analyze 34 nursing programs use of the standardized test HESI in relation to the program outcomes of first-time NCLEX pass rates, on-time graduation rates, and the program index outcome measures (Randolph, 2017). The Arizona board of nursing suggested combination of NCLEX pass rates, and on-time graduation are healthier predictors of program outcomes (Randolph, 2017). The researcher concluded nursing programs that did not require a cut score in their standardized testing posted higher outcome measures than the programs with the requirement (Randolph, 2017). The author proposed that the decline in nursing skills and potential harm to patients resulted in delays in graduation based on standardized testing policies and advises careful thought and consideration before the implementation of such program measures (Randolph, 2017).

Koestler (2015) suggested gaps in nursing curriculum accounts for student failure on the NCLEX as a program outcome. Koestler (2015) identified misalignment in course content and evaluation tools with AACN recommendations attributed to poor outcomes on the NCLEX. Another study conducted by Hall et al. (2016) examined the experiences of Canadian graduate nursing students taking the NCLEX for the first time. The study revealed concerns of the American content and context of the examination, lack of resources for French translation, and communication issues with examination regulators, which ultimately led to poor results on the

exam (Hall et al., 2019). While Foreman (2017) offered after reviewing NCLEX-RN® data from 2,157 nursing programs across 45 states over six years, there were extreme variations in pass rates score suggesting inconsistencies with reliability and validity of the state board of nursing pass standards as a program outcome.

Predictor Exams

Further analysis of NCLEX pass rates revealed several measures to improve NCLEX pass rates and performance, such as implementing the testing policy and utilizing predictor exams such as the Health Education Systems Incorporated (HESI) (Young et al., 2013). HESI is a computer-based standardized exam that tests critical thinking and evaluates student knowledge through a series of adaptive-based content reviews and scenarios (Nibert & Morrison, 2013). It is significant to mention that although implementation of testing policies such as adaptation of HESI as a means to improve program outcomes, there are currently only two states, New York and Texas, where the state board of nursing (BON) have a policy on the utilization of high stakes testing (NY State BON, 2017; TX BON, 2018). Embedded within the testing policies of high stakes testing, BON agreed that no more than 10% of the students' overall grade could be attributed to such an examination (NY State BON, 2017; TX BON, 2018). Nibert and Morrison (2013) examined nine studies on HESI and determined that nursing programs utilizing HESI as an exit exam displayed predictive pass rates on the NCLEX of 96.36% to 99.16%. Kaddoura et al. (2017) and Robert (2018) found nursing students with higher HESI scores had an increased chance of passing the NCLEX-RN®.

Although several researchers found that the utilization of HESI, improved outcomes on the NCLEX, the examination of HESI scores, emotional intelligence, and critical thinking to enhance student success did not statistically correlate with student success (Strickland & Cheshire, 2017). Johnson et al. (2017) offered nursing students completing HESI examinations in sequence with high scores, had a higher chance of passing the NCLEX on the first time. Conversely, despite the reliability and validity of HESI examinations, gaps exist in the use and evidence supporting best practice measures for nursing education (Sosa & Sethares, 2015). HESI offered strong predictors of student success on the NCLEX, however it failed to predict students' likelihood of failure, further compounding issues within the use of HESI as a preparation method (Cox-Davenport & Phelan, 2015). The various measures in utilization of HESI from state to state as an enhancement for the NCLEX ultimately leads to the unreliability of HESI as an accurate indicator of potential passing of the NCLEX.

Meyers and Karpinski (2018) used the American College Testing (ACT) scores as a predictor of the NCLEX-RN®. Traditionally, the (ACT) is used as a method for screening before admission into college; however, recent studies have examined the validity of the ACT scores as means to predict pass rates on the NCLEX-RN®. Meyers and Karpinski (2018) conducted a large study of 1,176 participants and examined the relationship between socioeconomic status (SES), ACT scores and NCLEX pass rates. The authors concluded that there is a shared variance in SES and ACT scores, students with higher SES had a greater possibility to pass the NCLEX (Meyers & Karpinski, 2018). Meyers and Karpinski's (2018) study reflected various variables that assist in the success of nursing program and nursing students. Other predictor models

employed to examine positive results on the NCLEX involved the use of Assessment Technologies Institute (ATI) nursing aptitude program, pre-nursing program Grade point Average (GPA) and the Test of Essential Academic Skills (TEAS) (Meyers & Karpinski, 2018). The authors proposed the combination of various predictor models, GPA, ACT scores, ATI, and TEAS all have a positive correlation to improvement in NCLEX pass rates (Meyers & Karpinski, 2018).

In a quantitative retrospective longitudinal study, Chen and Bennett (2016) used a decision-tree analysis to predict the first-time pass/fail rates for the NCLEX-RN® in nursing students in associate degree nursing programs. Chen and Bennett (2016) used a convenience sample of 453 student participants expanding over 11 cohorts and attending an associate's nursing program in the United States, the authors used the Chi-square Automatic Interaction Detector (CHAID) analysis to establish the decision tree. The authors used the predictor variables of student demographics, age of participants at entry into the nursing program, and English as a native language; pre-admission GPA; TEAS scores; each semester's cumulative GPAs for nursing courses; and ATI's RN Comprehensive Predictor test taken two weeks before graduation to develop the decision-tree model. In this study, a total of 420 (92.7%) of 453 ASN students admitted from fall 2008 to fall 2013 and taking the NCLEX-RN® succeeded in passing on the first attempt, and 33 (7.3%) failed. The decision-tree model developed in the study presented that only one independent variable-ATI's RN Comprehensive Predictor test scores taken two weeks before graduation-significantly predicted NCLEX-RN® success or failure (Chen, & Bennett, 2016). The results of Chen and Bennett (2016) study further assist educators

in appropriately recognizing potentials for failure on the NCLEX. In a retrospective regression analysis, the authors examined predictors of success of NCLEX (Havrilla et al., 2018). The study concluded that overall GPA and a comprehensive review of NCLEX content were strong predictors of success on the NCLEX (Havrilla et al., 2018).

Preparation for NCLEX

Adequate preparation for the NCLEX improves the nursing student's overall success on the NCLEX and in professional practice. Researchers have used gameshow themed games to facilitate preparation of NCLEX through a coach-led gamification approach (Victor et al., 2019). After performing a needs assessment, 220 student participants were included in the implementation of the preparatory program which included multiple choice NCLEX questions in a coach-led gamification approach (Victor et al., 2019). The results of the study were an improvement in first-time pass rates from 75.4% to 87.2% in the first year of implementation and 92.7% for the second, 89.2% for the third and 93.9% for the fourth year (Victor et al., 2019). To improve the confidence and readiness for the NCLEX, senior nursing students self-assessed risk factors, strength and challenges to NCLEX preparation, while paired with a faculty member for the last six weeks of the semester, developed a success plan, utilizing individual success strategies, which highlight the importance of preparation for the NCLEX (Schlairet & Rubenstein, 2019).

Several concepts have accounted for low NCLEX pass rates, such as gaps in curriculum content, delays in taking the examination, decreased preparation for the standardized test, and inappropriate and ineffective exit examinations (Koestler, 2015). To facilitate bridging the gap

between clinical practice and course work, the Quality and Safety Education for Nurse (QSEN) recommended nursing curriculums be more conceptual, with the enhancement of web-based opportunities and promotion of theoretical approaches to facilitate learning (Lewis et al., 2016). Throughout the nursing curriculum, there is a requirement for students to take assessments of knowledge; however, writing flaws and decreased item complexity have also contributed to a lack of preparation for nursing students on the NCLEX. Hijji (2017) examined 98 teacher-constructed multiple-choice questions on nursing examinations from three universities. The researchers concluded that 91.8% of the items reviewed contained an error in writing such as the plausibility of the distractors being utilized in the questions (Hijji, 2017). Majority of nursing examinations are in multiple-choice format as a means for assessment and evaluation, problems in construction of examination items further compounds lack of preparation for nursing students for NCLEX (Birkhead et al., 2018; Hijji, 2017).

NCLEX preparation begins well before the enrollment process for some students in a nursing program. Historically, nursing education research has been conducted at predominantly white colleges and failed to identify minority specific barriers, which led to improper measures for NCLEX preparation (Sosa & Sethares, 2015). AACN (2019) has encouraged schools of nursing to diversify their nursing programs to accommodate the future healthcare needs, which suggests the need to identify methods for success on the NCLEX for minority students. Reviewing demographic and nonacademic predictor models, along with tailored assessments, are vital components for NCLEX-RN® preparation outcomes for minority students (Banks et al.,

2018). Understanding the role of culture and learning, for critical thinking, has been outlined as a crucial marker to facilitate NCLEX preparation for diverse nursing students (Sommers, 2018).

The review of literature on NCLEX previously mentioned outlined research supporting preparation methods for the NCLEX; however, limited data is present regarding nursing faculty academic preparation in response to NCLEX pass rates. Nurse educators are responsible for the promotion and facilitation of learning for nursing students; investigation should consider contributing factors to the impact of the development of future nurses. Nurse educators' obligation extends past nursing students, and it precludes to a global response to the future of healthcare. Identifying and critiquing the academic preparation of nurse educators promotes understanding of the critical facets outlined within the educational curriculum of nurse educators.

Nursing Academic Degrees

Understanding the differences in nursing academic degrees and credentials is essential for increasing understanding in the field of nursing as well as the public health community (Fitzpatrick, 2019). Interpreting the difference in academic degrees of nursing faculty would offer insight on correctly placing nurse educators in appropriate educational settings, levels, and courses (Fitzpatrick, 2019). Faculty in nursing have various degrees and certifications, including and are not limited to Bachelors in the Science of Nursing (BSN), Master's in the Science of Nursing (MSN), Doctor of Nursing Practice (DNP), Doctor of Philosophy (PhD), or Certified Nurse Educator (CNE), each having their inherent regard. The various academic degrees and certifications allow for the facilitation of learning of nursing students at different levels of

education. The following paragraphs include details on the bachelor's, master's, and doctoral prepared nurse.

Baccalaureate Degree Nurse

In their seminal work the AACN (2008) proposed one goal in nursing education is to be innovative and a change agent, while using evidence-based research to alter clinical practice to improve health care outcomes. There are specific knowledge-based concepts that are critical for graduates of that educational level at each academic level in nursing education. There is an expectation for graduates of the BSN degree to be leaders in the healthcare community and advocate for change through assumed roles as a provider of care, designer, manager, care coordinator, and member of the profession (AACN, 2008). There are nine essentials identified for baccalaureate education in nursing that approach healthcare in an integrated approach and patient-center care (AACN, 2008). Essentials I-III responds to the graduate obtaining an education to promote knowledge and skills, through quality improvement and scholarship (AACN, 2008). Essentials IV-VI discusses the use of information management and patient care technology to inform healthcare policy, finance, and the environment through interprofessional communication and collaboration (AACN, 2008). The remaining essentials VII-IX focuses on the development of professionalism and professional values while advocating for patients and individuals across a healthcare spectrum, with the promotion of health and disease prevention (AACN, 2008).

Demand for Baccalaureate Prepared Nurse. Entry-level into the nursing profession begins at the associate degree level; however, there is a push nationally to have 80% of the

nursing workforce have their bachelor's degree by 2020 (McEwen, 2015). Nurses that have obtained a baccalaureate degree in nursing are leaders of clinical practice that reduce mortality and morbidity of patients through collaboration, decision-making, and caring interventions (McIntosh et al., 2016). Studies have shown that although there is a significant increase in the number of nurses obtaining the baccalaureate degree, the amount falls short of the goal of 80% of the workforce (Hewitt, 2016; Ma et al., 2018). The shortfall of bachelor's prepared nurses has a higher consequence with an overall reduction of qualified nursing faculty to address the projected need for nurses. Nurse leaders must understand and address nursing students' concerns to improve and help the profession with regards to bachelor's preparation.

Role of Baccalaureate Prepared Nurse. The bachelor's prepared nurse curriculum promotes active clinicians and prepares them to take on leadership roles in case management (Weierbach & Stanton, 2018). The case management role for nurses adds a continuum of care from the acute setting to the home setting for patients, bachelors prepared nurses to utilize educational training to enhance overall outcomes (Van der Plas et al., 2015). Another role often alluded to for the bachelor's prepared nurse is a clinical nurse instructor. The clinical nurse instructor has an essential role in the development of the nursing student's clinical practice (Collier, 2018). One of the most critical traits of successful clinical instructors in nursing is the use of interpersonal relations with nursing students, which is directly reflective of the educational training obtained by the bachelor's prepared nurse (Collier, 2018; Deane & Fain, 2016). The bachelor's prepared nurse is an essential step in nursing students' professional development and the academic development of future nurse leaders.

Master's Degree Nurse

The master's prepared nurse plays a pivotal role in nursing education, as a bridge from clinical practice to advancing nursing knowledge through higher-level leadership roles (AACN, 2011). Differing from the bachelor's prepared nurse, the master's prepared nurse has a primary focus of education to promote change in healthcare. There are presumptions made of qualities and characteristics essential to nurses that have obtained master's level education. In their seminal report regarding nursing degrees, AACN (2011) offered:

Graduates of master's degree programs in nursing are prepared with broad knowledge and practice expertise that builds and expands on baccalaureate or entry-level nursing practice. This preparation provides graduates with a fuller understanding of the discipline of nursing in order to engage in higher-level practice and leadership in a variety of settings and commitment to lifelong learning (p.5).

Nurses that obtain their master's degree have also entered the workforce in clinical roles as advanced practitioners, not just educators. In the role of a nurse practitioner, the primary level of the entrance is the master's level; however, the academic preparation focus is shifted more towards a clinically driven modality (Li et al., 2019).

Essentials of Master's Education. Comparatively to the bachelor's degree, AACN (2011) provided nine essentials of master's educational outcomes expected from the nurse graduates. Essentials of master's education I-III gives a foundation for the master's prepared nurse to integrate scientific findings while promoting organizational and system leadership skills that improve critical decision-making that is reflective of quality improvement and safety

measures (AACN, 2011). Essentials IV-VI recognizes the master's prepared nurse's role in integrating research outcomes and using technology to create change in policy development that stimulates healthcare decisions (AACN, 2011). The remaining essentials VII-IX of master's education concentrates on interprofessional collaboration to improve population health outcomes, with an understanding of nursing interventions that directly or indirectly affect the nursing practice (AACN, 2011).

Role of a Master's Prepared Nurse. Master's prepared nurses in the clinical role have a high level of clinical attributes but lack professional academic growth with a graduate degree (Massimi et al., 2017). AACN (2011) provided the expectations of master's education, however, many nurses that have obtained their master's degree with a clinical focus lack job satisfaction with the quality of work associated with the degree, which ultimately led to poor outcomes and shifts from the clinician role to the educator role, without appropriate preparation (Brayer & Marcinowicz, 2018). Master-prepared nurse educators ultimately expressed that their degree of attainment enhanced the profession through student learning and achievement (Laurencelle et al., 2016). It is essential to understand master's prepared nurses in the role of education to address the need for nursing faculty and the projected nursing shortage (Auerbach et al., 2017).

Motivations and Barriers of Master's Prepared Nurse. There is an abundance of studies on motivations and barriers of master's prepared nurse educators. Several authors offered nursing faculty motivators were flexibility of work and family life, administrative support, student success, collegiality and mentorship from knowledgeable nursing faculty (Laurencelle et al., 2016; Roughton, 2013; Yedidia et al., 2014). Nurse educators are encouraged to change the

trajectory for nursing faculty and students and use their educational preparation to influence, empower, and transform nursing through leadership (Evans, 2018). Master's prepared nursing faculty acknowledged the continued pursuit of excellence in professional development and lifelong learning; however, many pursuing doctoral degrees experienced financial instability, difficulty balancing teaching obligations, and doctoral program inconsistencies (Wheeler & Eichelberger, 2017).

Doctoral Prepared Nurse

In 2018, AACN reported that 10,788 qualified master's applicants and 2,909 qualified doctoral applicants were turned away due to a lack of clinical sites and faculty, further compounding the issue of nursing faculty shortage (AACN, 2019). The final degrees discussed through literature with regards to nurse educators are the PhD and DNP, which are both doctoral terminal degrees for the profession. One quintessential difference between the two degrees is the DNP is a clinical doctorate while the PhD is a research doctorate (Travers et al., 2018). The two degrees offer the nurse the opportunity of different educational preparation to collaborate to improve health outcomes with the integration of research and clinical practice (Travers et al., 2018). The rudimentary curriculum of the DNP and the PhD does not prepare the graduates for nursing faculty roles; however, additional certifications and educational tracks can facilitate learning for the faculty role through educational pedagogy (Travers et al., 2018).

Doctoral Degree Effectiveness. Further compounding the issues associated with the PhD and DNP, there is a lack of research surrounding the effectiveness of these two doctoral degrees in nursing education despite being the preferred entry point to academia (AACN, 2011).

Oermann et al. (2016) surveyed 482 administrators across the United States from associate degree and bachelor of science degree programs, to identify themes and factors related to hiring intentions, roles and responsibility faculty, and perspective of doctoral faculty. There was a 45.7% and 50.3% response rate from administrators from NLN and AACN approved schools, using a stratified random sampling method, the final sample size was 253 out of 554 ADN programs and 229 out of 455 BSN programs. The purpose of their study was to examine the administrators' hiring intentions of DNP and PhD graduates, explore administrators' perspectives related to DNP and PhD prepared faculty meeting their responsibilities as faculty members. The researchers found that the majority of those surveyed indicated a preference to hire PhDs versus DNPs (Oermann et al., 2016). Furthermore, the results indicated that DNP-prepared faculty members faced challenges in meeting role and promotion expectations, especially related to the scholarship component, which coincides with the initial intent of the DNP as a clinical doctorate (Oermann et al., 2016).

Attitudes of Doctoral Prepared. Staffileno et al. (2017) conducted a descriptive qualitative study to explore the factors and attitudes for the active collaboration of doctorally prepared PhD and DNP nursing faculty. Highlighted was the uncertainty and lack of data exists related to this topic. Attainment of a doctoral degree and teaching in either (or both) PhD and DNP programs was one of the requirements for the participants. Four focus groups conducted interviews to explore organizational, interpersonal, and systemic determinants of collaboration between PhD and DNP faculty. After content analysis, five themes emerged (a) DNP not well understood, (b) confusion surrounding the research, (c) opportunities for collaboration, (d) lack

of structural support, and (e) personal characteristics and attitudes. The authors proposed intentional strategies such as organizational support for collaborative scholarship, collaborative teaching, and shared governance to promote collaboration among the DNP and PhD faculty (Staffileno et al., 2017). The NLN's (2018) document, *Doctoral Faculty Collaboration in Nursing Education*, also emphasizes the need to address the tension, competition, and misunderstandings between the practice and research doctorates. The Board of Governors proposed a national dialogue to work toward a collaborative community of research and practice doctorally prepared nursing faculty (NLN, 2018). There are further recommendations on strategies that aim towards collaboration between the DNP and PhD to promote a positive impact on nursing education and the health of the nation (NLN, 2018).

Nurse Educators

NLN (2018) recommended nursing faculty should have graduate level educational pedagogical training and courses should include concepts in curriculum development and implementation as well as clinical practice. Nurse educators must obtain skills in curriculum development, evaluative methods, and facilitation of learning, lacking in the core curriculums of DNP and PhD programs (Frank, 2015). Although many nurse educators are expert clinicians, many require formal faculty training for educational roles. NLN (2018) proposed that doctorally qualified nursing faculty are best able to teach BSN students.

Nurse Educator Shortage

Research on outcomes for nursing faculty revealed shortages in properly credentialed educators (Byrne & Martin, 2014). There are various barriers to the attainment and retention of

academic nurse educators (Daw et al., 2018). The authors explained full-time nursing faculty with either a PhD or DNP, expressed feelings of emotional exhaustion and depersonalization were factors contributing to burnout and overall career dissatisfaction, which ultimately led to educators leaving academia (Daw et al., 2018). As graduate prepared nursing faculty leave academia, there will be a decline of nursing programs accepting students (Aquino et al., 2018). There is a decrease in the number of available entry-level nurses entering the field, which would further increase the projected need for nurses (AACN, 2020).

Nurse Educator Preparation

Nursing faculty with primary intentions of teaching in academia must have training in education pedagogies to ensure proper qualifications for educational engagement (Bednash et al., 2014). Bullin (2018) explained academic nurse educators who seek a either a PhD or doctoral degree lack the necessary pedogeological foundation to provide high-quality education for nursing students. NLN (2018) recommended academic nurse educators have formal pedagogical training and promote the use of mentorship programs in doctoral programs. Nguyen et al. (2018) explained that nurse educators in the clinical role are invaluable to the success of nursing students' overall program outcomes and require appropriate academic preparation to facilitate clinical learning. The authors also concluded that although the role of the clinical nurse educator is instrumental in nursing students' success, research fails to offer effective preparation methods for the clinical nurse educator role (Nguyen et al., 2018).

There is an expectation that nurse educators should provide student-centered education with innovational learning techniques; however, many of those practices require formal

educational training (NLN, 2018). Nursing faculty shortages in the United States have led to nursing programs recruiting nurses with little to no structured educational preparation for academic roles (Gardner, 2014). Lack of formal educational development and training for nursing faculty limits nurse educator's response to threats of failures of nursing students. Poor educational preparation of nursing faculty potentiates poor overall outcomes for nursing students and the healthcare community. The primary goal of nursing education is to build a diverse nursing workforce for the healthcare community while promoting positive patient health and student outcomes (NLN, 2016).

Core Competencies of Nurse Educators

NLN (2020) acknowledged the need for educational competence and expertise for nursing faculty with their development of Competencies for Novice Academic Nurse Educators. The competencies of the NLN are strategic steps to improve nursing students' outcomes, listed within each of the competencies are characteristics of nursing faculty to achieve proficiency of that competency. NLN (2020) core competency I focused on the facilitation of learning through the creation of diverse learning environments that promote the use of cognitive, psychomotor, and affective skills, while competency II promotes learner development and socialization. Competency III and IV of the NLN core competencies for nurse educators directly reflect an assessment, curriculum design, and program outcomes; it is within these two competencies that nurse educators, without formal academic educational preparation, falter. Competencies V through VIII focuses on the nurse educator's responsibility to the profession of nursing through

advocacy, leadership, scholarship, and political promotion, while uplifting the profession of nursing in the community arena (NLN, 2020).

Fitzgerald et al. (2020) used descriptive analysis to examine NLN core competencies for nurse educators and their presence in academic nurse educator programs (Fitzgerald et al., 2020). The inclusion criteria for the study were AACN and ACEN accredited Master of Nursing Education and a post-master's certificate program in the US. There was a review of 576 nursing programs, and 529 met the inclusion criteria for the study. The authors concluded that competency representation of 85% or higher was defined as well represented, while competency representation at or below 50% considered as poorly represented (Fitzgerald et al., 2020). The results of the study revealed that only four of the NLN Core Competencies facilitate learning, participate in curriculum design and program evaluation, use assessment and evaluation strategies, and pursue continuous quality improvement in the nurse educator role had thorough representation in the course descriptions. The first three NLN Core Competencies of facilitate learning, participate in curriculum design and program evaluation and the use of assessment and evaluation strategies had greater than 90% presence, with the expectation of educator skills as recommended by AACN (2011) *Essentials of Master's Education* (Fitzgerald et al., 2020).

Certified Nurse Educators

In attempts to provide adequate foundational practice, nurse educators seek additional certifications in academics to supplement educational learning (Lundeen, 2018; Ortelli, 2016). The CNE was designed to test competencies of the nurse educator, in which successful passing of the CNE indicates that the educator has the proper knowledge and foundational pedagogy to

properly educate nursing students (Lundeen, 2018; Orтели, 2016). The CNE exam helps provide validity to nurse educators whose educational background was not in educational pedagogy (George, 2016). Obtaining the certified nurse educator is a mark of excellence in professional development and career advancement (Barbé & Kimble, 2018).

Nursing Faculty and Student Outcomes

At the time this dissertation was completed minimal studies reviewed the relationship between nursing faculty credentials and NCLEX-RN® pass rates. There was a gap in the literature on nursing faculty's credentials and academic preparation as it relates to the nursing students' outcomes. Prior researchers that focused on nursing faculty credentials and pass rates suggested higher learning institutions have less than an optimal number of master's and graduate qualified nursing faculty, which results in decreased admissions of nursing students (NLN, 2017). Nursing faculty also proclaimed lack of administration support, while providing inequitable salaries, enhances barriers to improvement in NCLEX pass rates, which is a program measure (Feldman et al., 2015). The following paragraphs include retention strategies, facilitation of learning, outcome measures, and enhancing outcome measures.

Retention Strategies

Feldman et al. (2015) established retention strategies to maintain faculty, recruitment strategies to acquire new faculty, and provided techniques to diversify nursing faculty, with the primary goal of improving overall student outcomes. Mentoring, educational, and professional development, along with recruitment of previous graduate students were outlined as effective measures to obtain and retain nursing faculty (Feldman et al., 2015). Other retention strategies

include providing a safe and supportive work environment, which included the balance of teaching workload and the opportunity for shared responsibilities (Jeske et al., 2017; Pendell, 2018). Recognition of scholarly works, performance feedback, and opportunities for team-teaching in courses further potentiated nurse educators to stay in faculty roles, which promoted positive outcomes for nursing students due to consistency in educational approach (Jeske et al., 2017; Kirkham, 2016; Pendell, 2018). Stumpner (2018) conducted a qualitative study of eight full-time nurse educators and concluded that nursing faculty retention is a critical component of nursing student success in program outcomes. The ability for nursing programs to retain and maintain qualified nursing faculty provides an essential component in improving the outcome of successful passing of the NCLEX for nursing students (Davis, 2016).

Facilitation of Learning

As the educational model shifts to focus more on outcomes, professional leaders suggest that nursing faculty be academically prepared to promote student outcomes and NCLEX scores (Higgins, 2015). Lown and Hawkins (2017) suggested nurse educators are responsible for facilitating learning and should understand various learning styles of students to improve overall outcomes. Learning styles vary from visual, auditory, and kinesthetic, which alters how that student learns content (Lown & Hawkins, 2017). Educators should be well versed in learning techniques, facilitate learning in various forms, which in turn improves program outcomes of successful completion of NCLEX on the first attempt (Lown & Hawkins, 2017). Davis (2016) offered nursing faculty played a pivotal role in the improvement of NCLEX scores for nursing students, but only regarding interpersonal relationships, not faculty academic preparation.

DeLorenzo (2016) conducted a phenomenological study on nursing faculty experiences in regards to NCLEX-RN® and concluded nursing faculty relied heavily on student participation in learning for student success. Other results of the study revealed nursing faculty were well versed in teaching practices and integration of knowledge, but uncertain around NCLEX-RN preparation (DeLorenzo, 2016). The author offered understanding nursing faculty lived teaching experiences provides supportive measures for NCLEX-RN ® success (DeLorenzo, 2016). Echoed throughout nursing education literature are sentiments of nursing faculty's importance in the improvement of NCLEX scores, but there is minimal research on nursing faculty credentials as predictors of NCLEX pass rates.

Outcome Measures

Nursing administrators focus on strategic plans for improvement but fail to offer detailed follow-up evaluation plans, which leads to inadequate outcome measures in the transition of student nurses from nursing school to successful practitioners after the NCLEX (Walker, 2016). Bristol (2015) proposed nursing educators used the information put forward by the National Council of State Board of Nursing practice analysis to inform practice measures and content to expand knowledge on students' need for success on NCLEX. NCSBN (2016) exclaimed the NCLEX-RN® has a foundation of clinical practice and clinical learning experiences, activities, and concepts, should have the models of the NCLEX-RN® blueprint embedded within for enhancement of vital concepts. The author suggested that incorporating clinical activities that are concept-based would facilitate nursing students' learning and improve NCLEX-RN® success rates (Bristol, 2015).

Enhancing NCLEX Outcomes

The core of the reviewed literature responded to efforts to understand factors of enhancing NCLEX scores, such as interactive, collaborative testing (CT) (Hanna et al., 2016). Collaborative testing is a technique that uses interactive learning strategies to enhance critical reasoning skills, critical thinking, communication, group interaction, positive interdependence, and interpersonal skills (Hanna et al., 2016). The researchers used a convenience sample of 43 student participants, with an exploratory, descriptive design, the researchers sought to address three research questions (Hanna et al., 2016). In the study, CT was implemented as part of NCLEX-RN® enrichment to determine the effectiveness of the strategy in improving standardized exit examination scores. Students were in their final semester of a BSN program at a public university in the southeastern United States. The questions that guided the study related to students' overall satisfaction with CT, performance attribution with the use of CT and the difference in students individualized test scores versus test scores after the utilization of CT (Hanna et al., 2016). The researchers used the independent-sample *t*-test, which showed that scores from the tests taken collaboratively (mean, 25.74 [SD, = 2.98]) were significantly higher than the scores from the individual tests (mean, 22.55 [SD, 3.80]), $t_{84} = 4.32$, $P < .01$. A 1-way between-groups ANOVA indicated no significant difference among the groups ($F_{6,293} = 1.56$, $P < .158$). There was no significant difference between the standardized exit examination scores after the use of the CT intervention and the scores of students in the previous six semesters, which was consistent with previous studies on CT (Hanna et al., 2016).

Conversely, Libner and Kubala (2017) implemented remediation practices and a programmatic tool to develop nursing programs outlined measures to improve student outcomes on the NCLEX. The Illinois state BON and Nurse Practice Act require first-time NCLEX test-takers pass percentage to be 75%, after a review of years 2010-2013, the licensing department's representatives put forward the development of remediation strategies tool, and the implementation of its use to address low program NCLEX rates through a programmatic approach (Libner & Kubala, 2017). There were four main categories outlined within the tool students, faculty, administrative support, and curriculum and resources (Libner & Kubala, 2017). The category of students, which was the most extensive, focused on admission practices, faculty-student ratio, comprehensive prep for NCLEX, and academic support. The faculty category focused on ratios of qualified full and part-time nursing faculty, professional development, and enhancement of student learning. The curriculum and resources category engrossed programs alignment with the nurse practice act and NCLEX test plan, evaluation/assessment tools, and teaching/learning methodologies. The final category outlined within the tool was administrative, which highlighted the provision of leadership, facilitation of program improvement, and systemic evaluation plans (Libner & Kubala, 2017). Overall, the authors concluded that the incorporation and implementation of a programmatic tool and remediation practices improved student and program outcomes for preparation for the NCLEX (Libner & Kubala, 2017).

Shoemaker et al. (2017) proposed the introduction of digital curricular tools to enhance NCLEX's first-time pass rates. The authors provided a multitude of interventions, for example changing assessments for alignment with accreditors' recommendations, the creation of

remediation plans for at-risk students, incorporation of behavioral workshops for students with anxiety and tutoring to change the pattern of failure rates on the NCLEX (Shoemaker et al., 2017). Initial NCLEX pass rates increased after the incorporation of the interventions; however, it subsequently declined below national standards (Shoemaker et al., 2017). The authors explained that restructuring the nursing curriculum with the incorporation of standardizing computer examinations and requirements of exit program examination with content mastery, improved first-time NCLEX pass rates for the institution (Shoemaker et al., 2017).

Quinn et al. (2018) conducted a systemic review and meta-analysis of 18 articles regarding strategies to improve NCLEX rates. The authors concluded changes in nursing program progression policies, curriculum modifications, faculty development and training, and student success strategies were identified as methods to strengthen NCLEX scores (Quinn et al., 2018). Schlairet and Rubenstein (2019) offered incorporation of Senior NCLEX-RN® coaching model to combat the efforts of improving NCLEX pass rates. The authors proposed that although there is limited information on the integration of a coaching model for enhancement of NCLEX pass rates, their study determined integrating coaching model positively improved NCLEX confidence/readiness scores (Schlairet & Rubenstein, 2019). The overwhelming literature on NCLEX pass rates alludes to the various nursing program and curriculum changes that have been facilitators and barriers to NCLEX pass rates, further providing validity for further research on nursing faculty credentials and NCLEX pass rates.

Methodological Choices in Designing the Study

The purpose of this study was to understand the relationship between nursing faculty credentials and NCLEX pass rates, specifically whether the predictors of nursing faculty with master's degree or nursing faculty with doctoral degree predicted NCLEX-RN® pass rates. Retrospective correlational research has aspects of relational concepts between variables (Mertier, 2016). These variables are measured from an observational standpoint and have no consequences on cause-and-effect relationships (Mertier, 2016). The use of a correlational design in this research was anticipated to aid in the conjecturing of events (Curtis et al., 2016). Secondary data were used to conduct this study. Secondary data is any data obtained by others as primary data (Cohen et al., 2018). Quantitative research facilitates mending the gap between theory and science and assists in determining the relationship between variables (Tavakol & Sandars, 2014).

Researchers used both quantitative and qualitative research methods to seek clarity and understanding in research of any discipline. Quantitative research use data-driven models, hypotheses, and theories to investigate events (Tavakol & Sandars, 2014). Results from quantitative research are generalizable to specific populations or communities and can be applicable to future studies using the same variables (Tavakol & Sandars, 2014). With the assumption of the generalizability of the results of quantitative research, correlation of nursing faculty credentials and NCLEX pass rates may be used in other quantitative studies. For example, Kehm (2013) validated the use of the quantitative method by identifying academic predictors of success on NCLEX-RN®, with a correlational design. Correlational designs include

the examination of relationships between variables, researchers can follow how changes in one variable are reflective in another (Curtis et al., 2016). Beauvais et al. (2014) correlated spiritual well-being and empowerment with academic success. This study used secondary data for information on NCLEX pass rates and the percentages of nursing faculty with master's and doctoral degrees; the use of data collection in this manner is appropriate based on the information being held in national databases.

Nonexperimental data collection occurs from a numerical representation data source that is specific, which reflects the quantitative approach (Cohen et al., 2018). Simple linear regression was used in this study to predict the relationship between the dependent variable of NCLEX pass rates and the independent variables of nursing faculty credentials. Literature review was conducted on research design, and it was determined that the selected methodology and analysis approach was suitable and reasonable for this study, and furthermore would enhance knowledge on nursing faculty credentials and NCLEX pass rates.

Synthesis of Research Findings

Inundation of the research begins with understanding the differences in nursing faculty credentials and understanding the barriers and facilitators that contribute to NCLEX-RN® pass rates. The nursing faculty's academic preparation is a pivotal part of the nursing education community (McNelis et al., 2019). Within the nursing education community, there is an identification of goals and practice standards (O'Connell et al., 2014). McNelis et al. (2019) offered nursing faculty expressed concern in academic preparation and transitioning to the role of nurse educator. Melnyk (2013) suggested there is confusion within the nursing education

community between the academic training of nursing faculty and NCLEX pass rates, which saturate the literature in nursing education. Conklin and Cutright (2019) proposed an individualized NCLEX preparation process as a model for success on the NCLEX. The authors concluded with the implementation of their individualized NCLEX preparation, first-time NCLEX pass rates exceeded the national norms of 5.41% to 11.5%, among baccalaureate test-takers (Conklin & Cutright, 2019). Researchers of another study focused on strategies to improve NCLEX success for students of underrepresented and minority backgrounds (Murray, Pole, Ciarlo, & Holmes, 2016). Nurse educators are always searching for methods to increase outcomes for nursing students on the NCLEX-RN®, patients, and the healthcare community (Davis, 2016). Nurse educators in one study incorporated Peplau's theory of interpersonal relations as a method for NCLEX preparation for nursing students (Davis, 2016). Meyers and Karpinski (2018) studied the relationship between socioeconomic factors, ACT scores, and pass rates on NCLEX. The authors proposed the increased socioeconomic status, led to an increased ACT score, which ultimately reflected an increased NCLEX pass rate percentage (Meyers & Karpinski, 2018). The review of the literature on NCLEX-RN® denotes several measures that enhance outcomes on the NCLEX, yet a gap exists in the literature specifically addressing the relationship between nursing faculty credentials and NCLEX pass rates.

Critique of Previous Research Methods

Previous researchers concentrated on the many influences that improve NCLEX pass rates through a qualitative methodological approach, which emphasized program and curriculum changes (Quinn et al., 2018). Qualitative research focuses on self-reflexivity, context, and thick

description (Tracy & Skillsoft Books, 2012, 2013). Self-reflexivity and contexts are the attitudes and perspectives within a knowledge construct, whereas thick description involves detailed explanations of experiences in which the researcher can explicate patterns (Tracy & Skillsoft Books, 2012, 2013). The following paragraphs include critiques of both qualitative and quantitative studies on NCLEX pass rates and nursing faculty credentials.

NCLEX

Quinn et al. (2018) conducted a systematic review of strategies to improve NCLEX-RN® success and concluded similar themes that existed throughout the studies. The issues identified in the study were faculty training, exit examinations, curriculum changes, and progression policies (Quinn et al., 2018). There is minimal knowledge about the themes and implication methods identified in the systematic review (Quinn et al., 2018). Authors offered a balanced nursing curriculum would improve NCLEX pass rates. Koestler (2015) reviewed one nursing school selection for program outcome enhancement based on one study. Koestler (2015) offered insight on how one school improved their outcomes on NCLEX but failed to offer details on the exact measures the school used for the improvement of the curriculum.

A study conducted in one historically black college university (HBCU) focused on the development of assessment tools for Black/African Americans and other minorities with low-income attending a historically black college to enhance success on the NCLEX-RN® (Banks et al., 2018). This review of literature outlined measures to improve success on the NCLEX-RN® through assessment predictor tools; however, the study failed to be generalizable as the focus

was on one HBCU and several of the studies identified within the review were outdated as being published in 1998 (Banks et al., 2018).

Blozen (2017) conducted a study on methods that improved success on first-time pass rates on the NCLEX -RN®. The author reviewed nursing students' perceptions of the accelerated bachelor's program and their success on the NCLEX-RN® (Blozen, 2017). Although the author queried nursing students about the success on the NCLEX-RN®, the actual measures that increased their success on the NCLEX-RN® could not be generalized as accelerated nursing students comprise a small cohort of all nursing students (Blozen, 2017).

Nursing Faculty Credentials

McNelis et al. (2019) reviewed nursing faculty perceptions of academic preparation in pursuant of nursing faculty positions. The study outlined the importance of educational coursework in PhD and DNP programs for graduates to be nursing faculty (McNelis et al., 2019). The study failed to demonstrate nursing faculty credentials' impact on NCLEX-RN® success, or course outcomes (McNelis et al., 2019). Another study on nursing faculty credentials focused on the impact of DNP education and the aptitude to seek nursing faculty positions (Fang & Bednash, 2017). Although 32% of DNP students plan to obtain nursing faculty status, many feel ill-prepared for teaching nursing informatics or technology courses (Fang & Bednash, 2017). The author highlighted potential nursing faculty are not prepared to handle the task of being nursing faculty, although appropriately credentialed to educate nursing students (Fang & Bednash, 2017). This study further outlined how nurses reflect on their academic credentials but failed to

demonstrate how they relate to nursing student outcomes on the NCLEX-RN® (Fang & Bednash, 2017).

Summary

This chapter began with an inquiry of the methods used for searching concepts for the study. Next, the theoretical framework for the study was identified and discussed. The theoretical orientation reflected Bandura's social learning theory, which indicates modeling behaviors promote positive outcomes (Bandura, 1977). The review of the literature focused on the differentiation of nursing faculty credentials and NCLEX-RN® pass rate enhancements and barriers. There was also a discussion on the background of nursing faculty, nursing shortages, with implications on the healthcare and nursing educational community. The methodology was selected based on the quantitative criticalist approach, which focuses on equity goals and outcomes (Stage & Wells, 2014). The chapter ended with a synthesis and critique of the reviewed literature.

Chapter 3 consists of the methodology approach of the dissertation research study. Chapter 3 also includes the research approach, questions, sampling technique, population, data collection, and analysis methods. Ethical considerations and measures were taken to protect and promote the validity of the research.

CHAPTER 3. METHODOLOGY

This chapter includes a discussion of the methodological approaches used to conduct the study regarding nursing faculty credentials as predictors of the National Council Licensure Examination for Registered Nurses (NCLEX-RN®) pass rates. The chapter begins with purpose of the study, followed by the research questions and hypotheses, research design and target population and sample. In addition, there is a description of the procedures, participant selection, and protection of participants. The final discussions points are data collection and analysis, instruments, and ethical considerations.

Purpose of the Study

The purpose of this correlational retrospective quantitative study was to examine if a relationship exists between nursing faculty credentials and NCLEX-RN® pass rates in pre-licensure nursing programs in one Northeastern state. In this research study, NCLEX-RN® first-time pass rates were registered nursing students' first attempt on the pre-licensure examination. NCLEX-RN® first-time pass rates are necessary for evaluating the effectiveness of nursing programs (NCSBN, 2018a).

Research Questions and Hypotheses

Research Question 1

What is the correlation between nursing faculty with master's degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one Northeastern state?

H₀. The simple regression coefficient $\beta_1 = 0$.

H_a. The simple regression coefficient $\beta_1 \neq 0$.

Research Question 2

What is the correlation between nursing faculty with doctoral degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one Northeastern state?

H₀. The simple regression coefficient $\beta_1 = 0$.

H_a. The simple regression coefficient $\beta_1 \neq 0$.

Research Design

The research study was a quantitative cross-sectional, correlational retrospective study to examine if nursing faculty credentials were predictive of NCLEX-RN® pass rates. A quantitative methodology is the most suitable choice for answering the research questions utilizing numerical data (Watson, 2015). A cross-sectional design in research observes data at a specific timeframe once. In this research, it was NCLEX-RN® pass rates in 2017, along with credentials during the same year. Correlational research was applicable to investigate the relationships between variables (Curtis et al., 2016). In retrospective research designs, the outcome has occurred already, and data collection is from archival records (Ranganathan & Aggarwal, 2018). The measured concepts were percentages of nursing faculty credentials and percentages of NCLEX-RN® pass rates. The constructs for this study were *safe effective care* and *nursing faculty excellence*. The construct safe effective care was related to the measures at which nursing students and programs are expected to achieve an end goal. It is suggested that nursing education programs focus on the promotion of nursing students attaining entry-level skills to provide safe and effective patient care, which is tested through the national council licensure examination (Kaddoura et al., 2017; Quinn et al., 2018). The construct nursing faculty excellence was related

to performance standards placed on nursing faculty as facilitators of learning and the promotion of professional practice, ensuring the continued process of personal growth through advanced education credentialing, and certifications (Adams, 2015; Hagler et al., 2014; Smith et al., 2016). There are numerous degrees and certifications, however this study included an exploration of credentials based on advanced education, specifically the highest degree obtained (masters or doctoral).

The first stage of the research design consisted of creating an Excel worksheet of all nursing programs that had reported NCLEX-RN® pass rates for 2017 from one northeastern state department of education website. The utilization of an Excel worksheet for the data collection of dependent variables of NCLEX-RN® pass rates and the independent variables of percentages of nursing faculty with master's and doctoral degrees facilitated organization. Both the dependent and independent variables were in ratio data. Ratio data has the same characteristics of interval data but has an absolute zero in which a variable is absent (Lakshminarayan, 2013).

The second stage of the research design was data collection. Data collection began after approval from Capella University Institutional Review Board (IRB). The sample was obtained from one Northeastern state in the United States using publicly available information as approved by the IRB. The first data collection required an email to request data for independent variables of nursing faculty with masters and doctoral degrees, along with the number of total faculty. The Excel worksheet tool previously created to capture the dependent variables of NCLEX-RN® pass rates was provided via email to the appropriate official within the

Department of Education, for data input on the independent variables of nursing faculty credentials with master's and doctoral degree. The other data previously inputted on the Excel worksheet tool were the descriptive statistics of private or public schools and two-year versus four-year degree institutions. The third segment of the research design was an analysis of the data. The final step in the research design was to interpret the results.

Target Population and Sample

This section contains information on the target population and sample for this study. There is a description of methods used for selecting the sample from the population resulting in the sample size. Also presented is information on the statistical power analysis used in this study.

Population

The population comprised of all pre-licensure nursing programs in the Northeastern region. There were three types of pre-licensure nursing programs offering either a diploma, associate, or baccalaureate degree at the completion of the curriculum. Within the Northeastern region, there were 117 pre-licensure nursing programs, both private and public institutions (AACN, 2018). Females accounted for 85% of all student nurses in the United States (NLN, 2018c). Nursing students had an average age of 38, of which 80.8% were identified as White 6.2% African American; 7.5% Asian; 5.3% Hispanic; 0.4% American Indian/Alaskan Native; 0.5 Native Hawaiian/Pacific Islander; 1.7% two or more races; and 2.9% other in race and ethnicity (NLN, 2018b). Nursing faculty ages ranged from 30 to 61, where approximately 50% of nursing faculty age ranged from 46 to 60 (NLN, 2018b). Ethnicity of nursing faculty mimicked that of the nursing students where 80.8% of all nursing faculty identified as White

non-Hispanic; 8.8% African American; 3.2% Hispanic; 2.7% Asian; 0.4% American Indian; 0.6% Multiracial (NLN, 2018c).

Sample

The sample included pre-licensure nursing programs that had Registered Nursing (RN) students that took the NCLEX-RN®. Also included in the population were nursing faculty members that taught at pre-licensure nursing programs in one Northeastern state, with the academic credentials of master's and doctoral degrees. A convenience sampling method provided a non-probability sample. Convenience sampling offers the researcher readily accessible participants, unlike random sampling, which would require a sampling plan for the representative sample (Rogelberg, 2017). Disadvantages of convenience sampling are the potential for misrepresentation of the sample population, which may pose generalizability problems (Paik & Shahani-Denning, 2017). The inclusion criteria for the nursing programs were that participants must have graduated pre-licensure RN students in 2017 and had RN students take the NCLEX-RN® in 2017. The exclusion criteria of programs were individuals who did not have pre-licensure RN programs and programs that did not graduate RN students in 2017.

Power Analysis

A- priori size calculator for regression suggests an anticipated effect of 0.15, the statistical power of 0.8, the number of predictor variables of 2, and a probability of 0.05; the projected sample size was 67 (Soper, 2018). Selecting the appropriate sample size and statistical analysis are invaluable to the validity and reliability of research and help negate misrepresentations (Rewell et al., 2017). Improper sample size contributes to the likelihood of

making both Types I (rejection of a true null hypothesis) and Type II (non-rejection of a false null hypothesis) errors (Oakes, 2017).

Procedures

The methods of this study included the selection of participants that met the inclusion criteria, collecting data, and analyzing data. There is a discussion of the detailed procedures for each methodological stage in this section. In the first section, there is an outline on how the participants were selected for this study, followed by the protection of the participants. In the third section, there are details regarding the data collection methods. In the final part, there is a discussion of the data analysis using descriptive statistics and hypothesis testing.

Participant Selection

The sampling strategy was a non-probability convenience sample. Non-probability sampling method was selected because the possibility was a non-factor for participant selection for inclusion by the researcher (Rogelberg, 2017). Using a convenience sample, the names of the nursing programs were obtained from the Department of Education website. Each nursing program selected from one Northeastern state department of education website had recorded scores for NCLEX-RN® for 2017. The chosen participants were two-year associate degrees and four-year bachelor's degree programs, consisting of private and public institutions. The information on nursing faculty credentials for pre-licensure nursing programs that meet the inclusion criteria was obtained by contacting the Department of Education via email to request the information. Recruitment was not required as public records were accessed.

Protection of Participants

There were specific measures employed to protect participants from harm. Capella University IRB provided approval before collecting any data, which provided the initial foundation of protection from harm. This research used a secondary source and archival information that is publicly accessible. Data sets prepared under the premise of public accessibility are not individually identifiable and therefore the data analysis would not include human subjects and not required informed consent as identified by Capella University IRB. Data collected were recoded creating and deidentified with the codes placed in a secured locked file. The data recoding process involved the creation of random 4-digit codes which was placed adjacent to each nursing program in the sample population on the spreadsheet. The data for each program was entered and the spreadsheet was copied in its entirety. Then the nursing program names were removed from the second copy of the spreadsheet leaving the previously created 4-digit code in place of the nursing program names. The first spreadsheet will be kept for seven years and then destroyed by permanently erasing the file.

Data Collection

The data collection was from archival data from the Department of Education website and email request. The independent (predictor) variable included nursing faculty credentials, based on their highest level of education obtained, master's or doctorate. The data for NCLEX-RN® pass rates for 2017 represented the dependent variable. The first step in the data collection process involved identification of the nursing programs that were in the search criteria. After identifying the nursing programs by accessing the Department of Education website, the data

were entered into an Excel worksheet spreadsheet for organization. The data for the nursing programs meeting the criteria were entered into the column labeled nursing programs. The next column was labeled two-year or four-year, and the subsequent column was labeled private or public. The next step included aligning NCLEX-RN® pass rates from each nursing program and inputting the spreadsheet's data in the column labeled pass rates. Next, a subsequent email was sent to Department of Education, requesting the number of nursing faculty with master's and doctoral degrees, along with the total number of nursing faculty from the nursing programs meeting the inclusion criteria. The email sent to Department of Education had an attachment, which included the previously filled in Excel worksheet with the names of the nursing programs and pass rate data, along with blank columns labeled master's, doctoral, and total. A representative from the Department of Education filled in the data for total number of nursing faculty and number of nursing faculty with master's and doctoral degree. The completion of the recoding and deidentification of nursing programs occurred after the form was returned. Empty data sets on the returned form were deleted from the worksheet. The codes were in a separate password-secured file.

Data Analysis

The raw data were organized on a spreadsheet initially with nursing programs identified and listed next to their corresponding NCLEX-RN® pass rates and nursing faculty credentials based on highest degree obtained, master's or doctorate. The variable calculations were documented in percentages. The data were managed and processed using the *Statistical Package for the Social Sciences (SPSS) 24*, (IBM Corp, 2016). Recoding and deidentifying nursing

programs occurred before data analysis input; the codes was kept separate from the analysis spreadsheet.

Simple liner regression analysis facilitated assessment of the independent (predictor) variable and the dependent (outcome) variable for each research question. The independent variable for the first question was nursing faculty who had obtained a master's degree as their highest level of education. The dependent variable was NCLEX RN pass rates. The independent variable for the second research question was nursing faculty who had obtained a doctoral degree as their highest level of education. The dependent variable in the second research question was NCLEX-RN pass rates. Simple linear regression is suitable for analysis because the goal of this study was to assess the relationship between ratio predictor variables on a criterion (outcome) ratio variable (Creswell, 2013). The predictor variable is the independent variable, and the dependent variable is the criterion outcome variable. The data were analyzed using simple linear regression analysis. The following equation: $y = b_1 * x + c$; where $y =$ NCLEX-RN® pass rates, $c =$ constant, $b =$ regression coefficient, and $x =$ percentages of nursing faculty with master's degree or nursing faculty with doctoral degrees. The F -test was used to assess whether nursing faculty with master's degrees and nursing faculty with doctoral degrees predicts NCLEX-RN® pass rates. R -squared was reported and used to determine how much variance in the NCLEX-RN® pass rates could be accounted for by the percentages of nursing faculty with master's or doctoral degree. The t -test determined the significance of the predictor, and beta coefficients determined the magnitude and direction of the relationship. There was an assessment of the assumptions of linear regression, linearity, and homoscedasticity. The assumption of linearity is

the relationship between X and the mean of Y are linear (Stevens, 2016). Homoscedasticity is the variance of residual is the same for any value of X (Stevens, 2016). The final two assumptions of independence and normality demotes the observations are independent of each other and the normal distribution of any fixed value of X, Y (Stevens, 2016).

Instruments

There was no utilization of a formal tool for this research; the Excel spreadsheet served as a tool for the data's organizational purposes from archival information. The Excel spreadsheet contained information on NCLEX-RN® pass rates and the percentages of nursing faculty with master's and doctoral degrees. The Excel spreadsheet had the descriptive statistics of type institution, private, public, two-year, or four-year. No other demographic information was obtained or used for this study. This study was approved with the utilization of public accessible archival data, which demographic data details were not available. The use of instruments in research poses a potential risk to validity and reliability, in which there is a discussion in the next section.

Validity

Validity in research consists of the extent to which the constructs are measured (Heale & Twycross, 2015). The constructs in this study were safe and effective care and nursing faculty excellence. Safe, effective care measures the level in which nursing students and programs achieve an expected end goal. There is a suggestion that nursing education programs focus on the promotion of nursing students attaining entry-level skills to provide safe and effective patient care, the NCLEX-RN® provides the attributes necessary to achieve this goal (Kaddoura et al.,

2017; Quinn et al., 2018). Nursing faculty excellence relates to performance standards placed on nursing faculty as facilitators of learning and the promotion of professional practice, ensuring the continued process of personal growth through credentialing and certifications (Adams, 2015; Hagler et al., 2014; Smith et al., 2016).

Generalizability

Despite no formal tool being used in this study, the Excel worksheet served as a blueprint to organize the data before analysis in SPSS. Reliability in quantitative research delineates to the extent inconsistency is maintained (Heale & Twycross, 2015). In this study, the measured variables were in ratio units of percentages. One way to ensure generalizability is met in research is the proper calculation of sample size. Soper, (2018) A- priori size calculator for regression suggests with an anticipated effect of 0.15, the statistical power of 0.8, number of predictor variables of 2 and a probability of 0.05, the sample size for generalizability is 67. Each independent variable of nursing faculty with a master's degree and nursing faculty with a doctoral degree and the dependent variable of NCLEX-RN® pass rates was computed to 1/10 of a percentage.

Ethical Considerations

Archival data is utilized in research when the principal reason for data collection was not for the purposed research (Turiano, 2014). The use of archival data provides more robust and diverse research in populations that are difficult to measure (Turiano, 2014). Capella University IRB reviewed the research plan and determined that IRB oversight was not required for this study because the data used was archival open-source data. Other ethical concerns are the

potential for misrepresentation of the data due to secondary source data collection techniques. Adhering and addressing ethical guidelines in educational research are critical foundational components of any research as researchers conducting studies have a duty to help not harm participants. Prior to completing this study, the Collaborative IRB Training Initiative (CITI) and CITI module on records based were completed to ensure compliance of ethical protection.

Ethical considerations for this study aligned with the basic ethical principles of the *Belmont Report* (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). The Belmont report was created to protect human participants in scientific research. Outlined in this research was a focus on the ethical principles of respect for persons, beneficence, and justice. There is a requisite in scientific research that the autonomy and freedom of choice of participants are protected (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). In this study, provision of archival data of nursing students NCLEX pass rates and nursing faculty credentials was through the Department of Education. The ethical principle of respect was upheld by removing any identifiable data such as names of nursing programs and replacing with random four-digit numerical codes. The ethical principle of beneficence ensures the benefits of the research are maximized and harm minimized or alleviated to participants (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). The de-identified archival data in this research ensured beneficence was upheld and posed minimal risk to nursing programs and faculty used in the sample. The ethical principle of justice exemplifies the distribution of burdens and benefits of research, it also has implications on the exploitation of

vulnerable populations (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). Although this study did not include vulnerable populations, justice was upheld by ensuring that results of the research are made available to all interested populations with explanations of benefits to the nursing profession, healthcare community, and nursing students. Furthermore, the de-identification process of the archival data furthers promotes the ethical principle of justice, by removing potential bias and conflicts of interest. Data used in quantitative studies unlike qualitative studies have a reduced interpretation risk due to the objective and statistical thresholds required in the decision-making process, which decreases the possibility for bias (Lash et al., 2021). There was no increased risk to participants as there were no active participants in this study.

Summary

Chapter 3 included a description of the methodology used in this study. There was also a review of the primary purpose of this study, echoed from Chapter 1, but there was an emphasis applied to the specifics of answering the two research questions. The two research questions and subsequent null and alternate hypotheses provided the foundation for addressing the research problem. Chapter 3 also provided a discussion about the research design, target population, sample, and power analysis. Within the procedures section, there was a review of how participants were selected and protected and how the data were collected and analyzed. The final section of Chapter 3 concluded with a discussion of ethical considerations and strategies. Chapter 4 includes a presentation of the results of the research.

CHAPTER 4. RESULTS

The purpose of this correlational retrospective quantitative study was to examine if a relationship exists between nursing faculty credentials and NCLEX-RN® pass rates in pre-licensure nursing programs in one northeastern state. In the study, NCLEX-RN® first-time pass rates were registered nursing students' first attempt on the pre-licensure examination. NCLEX-RN® first-time pass rates are necessary for evaluating the effectiveness of nursing programs (NCSBN, 2018a). The data were obtained from archival data and public accessible information. Data were analyzed with SPSS 23 for Windows. This chapter is organized by a description of the sample, descriptive statistics, and the research question/hypothesis testing.

Description of the Sample

Archival data were collected from 88 schools, and thus the schools, rather than individuals served as the sample. The majority of the schools were identified as two-year schools, while the remaining were four-year schools as demonstrated in Table 1. Other identifiers of schools represented in the sample were private and public institutions of higher learning. This study included a collection of archival data for the simple linear regression analysis in which other demographics such as race, gender, age, and years of teaching were not available, furthermore the analysis of confounding variables such as different curriculums were not the basis of analysis.

Table 1*Sample Demographics*

Variable	Description	<i>n</i>	%
School Duration	2-Year School	49	55.7
	4-Year School	39	44.3
	Total	88	100.0
School Type	Private	38	43.2
	Public	50	56.8
	Total	88	100.0

Descriptive statistics were used to provide basic information regarding dependent and independent variables. The dependent variable was NCLEX-RN pass rates. As demonstrated in Table 2, the NCLEX-RN® 2017 pass rate ranged from 59.6 to 100.0% ($M = 86.06$, $SD = 9.14$) with a median of 87.50%. The independent variables were related to highest level of education obtained, master's or doctorate. Percentages of nursing faculty with a doctoral degree ranged from 0 to 1.00 ($M = 0.39$, $SD = 0.30$) with a median of 0.40%. Percentages of nursing faculty with master's degrees ranged from 0 to 1.00 ($M = 0.54$, $SD = 0.31$) with a median of 0.51%.

Table 2*Descriptive Statistics*

Variable	<i>Minimum</i>	<i>Maximum</i>	<i>M</i>	<i>SD</i>
NCLEX-RN 2017 Pass Rate	59.6	100.0	86.06	9.14
Percentages of Nursing Faculty with a Doctoral Degree	.00	1.00	0.39	0.30
Percentages of Nursing Faculty with a Master's Degree	.00	1.00	0.54	0.31

Research Questions/Hypothesis Testing

This study included two research questions, with each addressing the independent (predictor) variable and the dependent (outcome) variable. The dependent variable for both questions was NCLEX RN pass rates. The independent variable for the first question was nursing faculty who had obtained a master's degree as their highest level of education. The dependent variable was NCLEX RN pass rates. The independent variable for the second research question was nursing faculty who had obtained a doctoral degree as their highest level of education. The dependent variable was NCLEX RN pass rates. The research questions and hypotheses are presented in the following section. Analysis for both research questions included simple linear regression. The upcoming content also includes analysis of the assumptions with chart presentation.

Research Question 1

What is the correlation between nursing faculty with master's degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state?

H₀. The simple regression coefficient $\beta_1 = 0$.

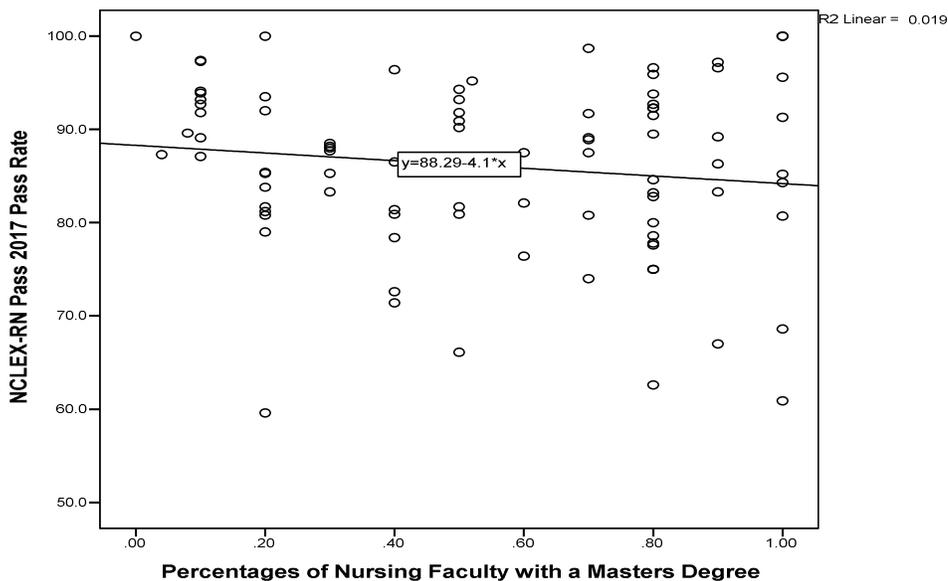
H_a. The simple regression coefficient $\beta_1 \neq 0$.

Prior to the analysis, the assumptions of simple linear regression were tested.

Assumption 1. Linear Relationship

Simple linear regression assumes that there is a linear relationship between the independent and dependent variable. This was tested with a scatterplot. The slope in the regression line suggests that there is some linear relationship between the two variables as indicated in Figure 1.

Figure 1. Scatterplot of Percentages of Nursing Faculty with Master's Degrees and NCLEX-RN® 2017 Pass Rates.



Assumption 2. Independence of Residuals

Linear regression assumes that the residuals are uncorrelated or independent. This assumption was tested with the Durbin-Watson statistic. Values below 1 and above 3 are cause for concern. The value should be close to 2. The Durbin-Watson statistic for Research Question One = 1.73. Therefore, the independence of residuals assumption was met as indicated in Table 3.

Table 3

Durbin-Watson Statistic for Research Question 1

Model	<i>R</i>	<i>R</i> ²	Adjusted <i>R</i> ²	Std. Error of the Estimate	Durbin-Watson
1	.187 ^a	.035	.024	8.63	1.73

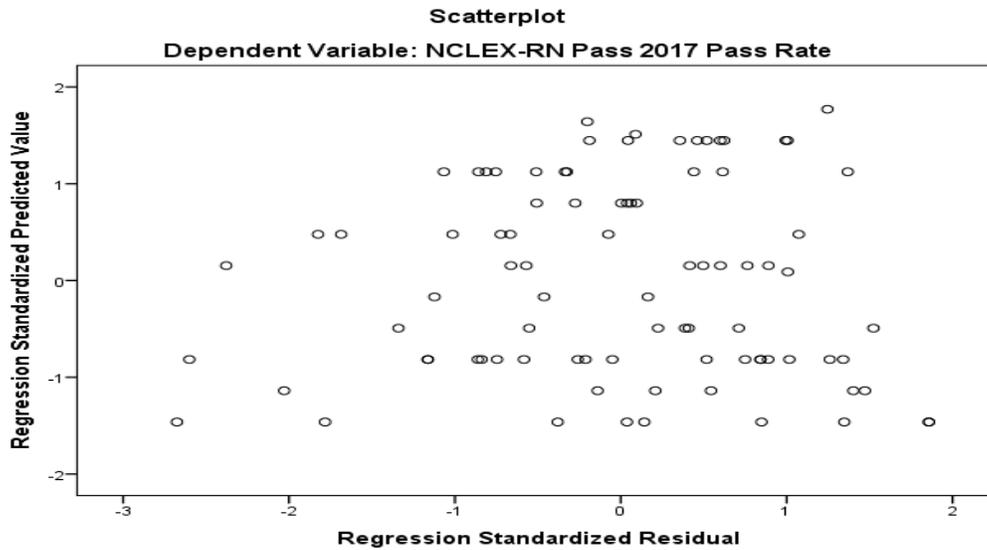
a. Predictors: (Constant), Percentages of Nursing Faculty with a Master's Degree

b. Dependent Variable: NCLEX-RN Pass 2017 Pass Rate

Assumption 3. Homoscedasticity

Linear regression assumes that the variance of the residuals is constant across all levels of the independent variables. This is known as the assumption of homoscedasticity. The variation of residuals should be approximately similar and random. This is illustrated in Figure 2.

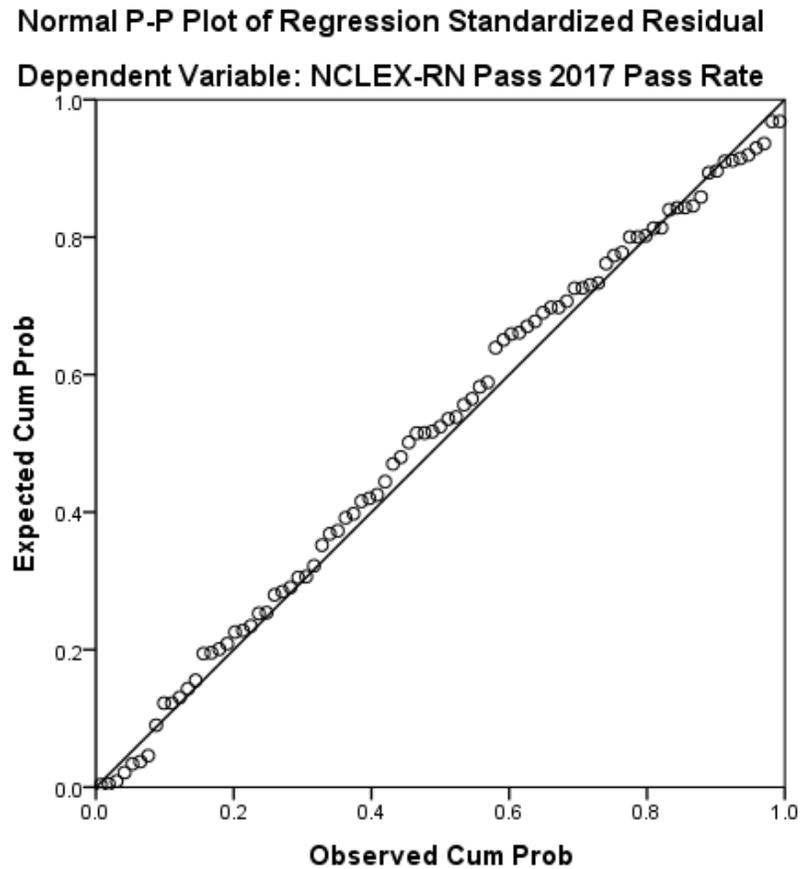
Figure 2. Scatterplot of Regression Standardized Residuals by Standardized Predicted Values for NCLEX-RN Pass Rates for Research Question 1



Assumption 4. Normality of Residuals

Linear regression assumes that the residuals are normally distributed. This assumption was assessed by generating and visually inspecting a Normal P-P Plot for the model. The closer the dots are to the 45-degree line, the closer to normal the residuals are distributed. Several points are touching the 45-degree line, which suggests that the residuals are approximately normally distributed. This is illustrated in Figure 3.

Figure 3. Normal P-P Plot of Standardized Residuals for Research Question 1



The residuals were also analyzed. Standardized residuals that exceeded ± 3 were candidates for exclusion. Standardized residuals initially ranged from -3.06 to 1.74. One residual was excluded. The remaining residuals ranged from -2.68 to 1.86 and were, therefore, within normal limits. The model was not statistically significant, $F(1, 85) = 3.08, p = .083; R^2 = .04$. The ANOVA Summary Table is presented in Table 4.

Table 4*ANOVA Summary Table for Research Question 1 Regression Results*

Model	Sum of Squares	df	Mean Square	F	p
Regression	229.13	1	229.13	3.08	.083 ^b
Residual	6325.16	85	74.41		
Total	6554.30	86			

a. Dependent Variable: NCLEX-RN Pass 2017 Pass Rate

b. Predictors: (Constant), Percentages of Nursing Faculty with a Master's Degree

Percentages of nursing faculty with a master's degree was not statistically significantly related to the NCLEX-RN 2017 pass rate ($\beta = -.19, t = -1.75, p = .083$). Regression coefficients are presented in Table 5.

Table 5*Regression Coefficients for Research Question 1*

Variable	B	SE B	B	t	p
(Constant)	89.25	1.89		47.26	.000
Percentages of Nursing Faculty with a master's degree	-5.28	3.01	-.19	-1.75	.083

a. Dependent Variable: NCLEX-RN ® Pass 2017 Pass Rate

H₀₁ stated that the simple regression coefficient $\beta_1 = 0$. The constant variable in research question one were percentages of nursing faculty with master's degree. There was no statistically significant predictive relationship between percentages of nursing faculty with a master's degrees to the NCLEX-RN® 2017 pass rate ($\beta = -.19, t = -1.75, p = .083$). Therefore, the null hypothesis was not rejected.

Research Question 2

What is the correlation between nursing faculty with doctoral degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state?

H₀. The simple regression coefficient $\beta_1 = 0$.

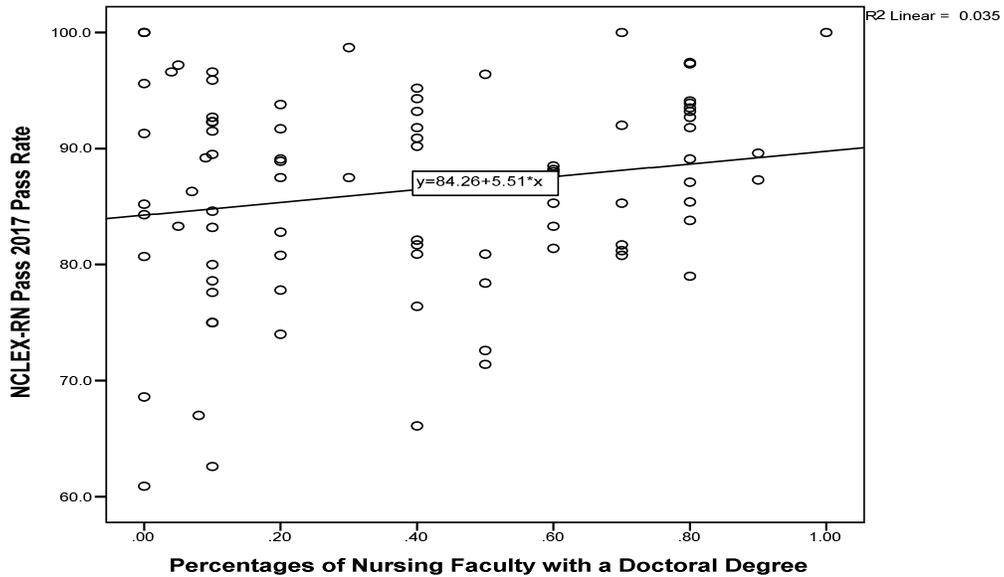
H_a. The simple regression coefficient $\beta_1 \neq 0$

Research Question 2/Hypothesis 2 was tested with simple linear regression. The independent variable was percentage of nursing faculty with doctoral degrees. The dependent variable was NCLEX-RN® pass rate. Prior to the analysis, the assumptions of simple linear regression were tested.

Assumption 1. Linear Relationship

Simple linear regression assumes that there is a linear relationship between the independent and dependent variable. This was tested with a scatterplot. The slope in the regression line suggests that there is a linear relationship between the two variables as indicated in Figure 4.

Figure 4. Scatterplot of Percentages of Nursing Faculty with Doctoral Degrees and NCLEX-RN® 2017 Pass Rates.



Assumption 2. Independence of Residuals

The Durbin-Watson statistic for Research Question 2 = 1.73. Therefore, the independence of residuals assumption was met as indicated in Table 6.

Table 6

Durbin-Watson Statistic for Research Question 2

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Durbin-Watson
1	.188 ^a	.035	.024	8.62	1.73

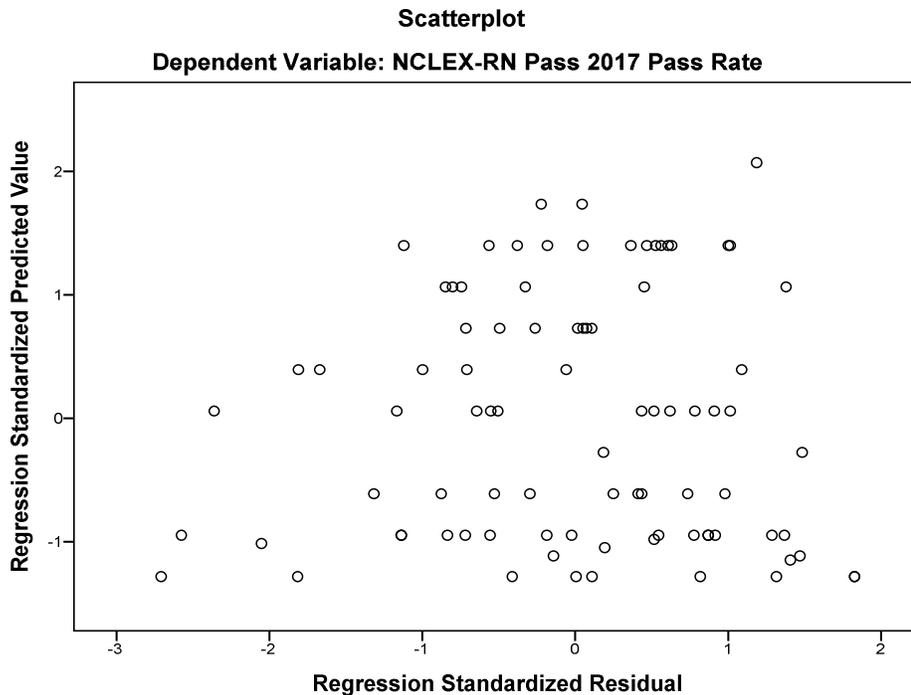
a. Predictors: (Constant), Percentages of Nursing Faculty with a Doctoral Degree

b. Dependent Variable: NCLEX-RN® Pass 2017 Pass Rate.

Assumption 3. Homoscedasticity

Linear regression assumes that the variance of the residuals is constant across all levels of the independent variables. This is known as the assumption of homoscedasticity. In the research question number 2, nursing faculty with a doctoral degree is the independent variable. The variation of residuals should be approximately similar and random. In research question number 2, the random disturbance in the relationship between the number of nursing faculty with doctoral degree and NCLEX-RN® pass rates in 2017 is the same across of the values of the number of nursing faculty with doctoral degree. This is illustrated in Figure 5.

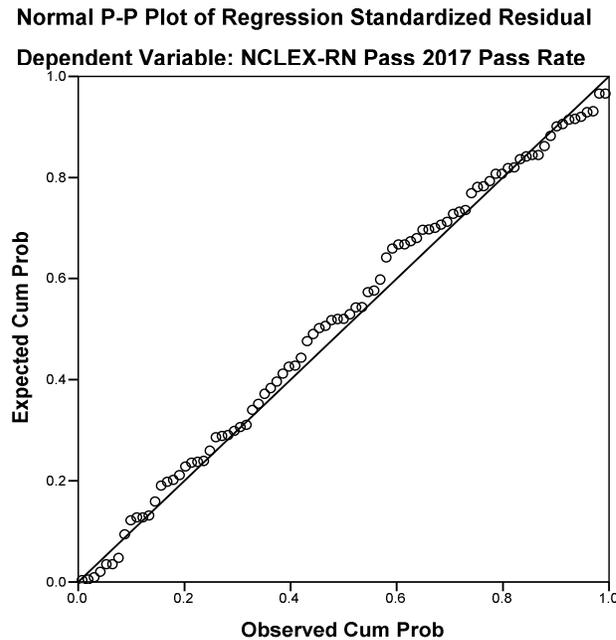
Figure 5. Scatterplot of Regression Standardized Residuals by Standardized Predicted Values for NCLEX-RN Pass Rates for Research Question 2



Assumption 4. Normality of Residuals

Linear regression assumes that the residuals are normally distributed. The closer the dots are to the 45-degree line, the closer to normality the residuals are distributed. Several points are touching the 45-degree line, which suggests that the residuals are approximately normally distributed. In Research Question 2, the unexplained variance in the relationship between the dependent variable of NCLEX-RN® pass rates and the independent variable of nursing faculty with doctoral degree are normally distributed. This is illustrated in Figure 6.

Figure 6. Normal P-P Plot of Standardized Residuals for Research Question 2



The residuals were also analyzed. Standardized residuals that exceeded ± 3 were candidates for exclusion. Standardized residuals initially ranged from -3.06 to 1.72. One residual was excluded. The remaining residuals ranged from -2.71 to 1.83 and were, therefore, within normal limits. The model was not statistically significant, $F(1, 85) = 3.13, p = .081; R^2 = .04$. The ANOVA Summary Table is presented in Table 7.

Table 7

ANOVA Summary Table for Research Question 2 Regression Results

Model	Sum of Squares	Df	Mean Square	F	p
1 Regression	232.53	1	232.53	3.13	.081 ^b
Residual	6321.77	85	74.37		
Total	6554.30	86			

a. Dependent Variable: NCLEX-RN® Pass 2017 Pass Rate

b. Predictors: (Constant), Percentages of Nursing Faculty with a Doctoral Degree

Percentages of nursing faculty with a doctoral degree was not significantly related to the NCLEX-RN® 2017 pass rate ($\beta = .19, t = 1.77, p = .081$). Regression coefficients are presented in Table 8.

Table 8*Regression Coefficients for Research Question 2*

Variable	<i>B</i>	SE <i>B</i>	<i>B</i>	<i>t</i>	<i>p</i>
(Constant)	84.26	1.51		55.82	.000
Percentages of Nursing Faculty with a doctoral degree	5.51	3.12	.19	1.77	.081

a. Dependent Variable: NCLEX-RN® Pass 2017 Pass Rate

H₀₂ stated the simple regression coefficient $\beta_1 = 0$. The constant variable in research question two was percentages of nursing faculty with doctoral degree. There was no statistically significant predictive relationship of nursing faculty with doctoral degrees to the NCLEX-RN® 2017 pass rate ($\beta = .19, t = 1.77, p = .081$). Therefore, the null hypothesis was not rejected.

Results are summarized in Table 9.

Table 9*Summary of Hypotheses and Outcomes*

Hypothesis	<i>B</i>	<i>P</i>	Outcome
H ₀₁ : The simple regression coefficient $\beta_1 = 0$.	.19	.83	Null Not Rejected.
H ₀₂ : The simple regression coefficient $\beta_1 = 0$.	.19	.81	Null Not Rejected

Summary

Chapter 4 presented the results of the study examining nursing faculty credentials and NCLEX-RN pass rates in pre-licensure nursing programs. Two research questions and associated hypotheses were originated for investigation. Research Question 1 investigated the predictive relationship of nursing faculty with master's degrees to NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state. The null hypothesis was not rejected. In Research Question 1 the p-value was 0.083, indicating there was no significant predictive relationship between percentages of nursing faculty with a master's degrees and the NCLEX-RN® 2017 pass rates. Research Question 2 investigated the predictive relationship of nursing faculty with doctoral degrees to NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state. It was also determined that there was no statistically significant relationship between percentages of nursing faculty with doctoral degrees and the NCLEX-RN® 2017 pass rate, therefore the null hypothesis was also not rejected indicated by a p-value of greater than 0.05 at 0.081. Implications and recommendations are discussed in Chapter 5.

CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

The topic of this study was regarding nursing faculty credentials and NCLEX-RN® pass rates in pre-licensure nursing programs. A summary of this dissertation is presented in Chapter 5. The chapter begins with a summary of the results followed by discussion of the results. Next, there is a discussion of the conclusions surmised from the analysis of the results in relation to the theoretical framework and prior literature. The chapter also includes discussion of the limitations of the study, followed by implications for practice. The next discussion regards recommendations for future research and ending with the conclusion of the dissertation.

Summary of the Results

The purpose of this correlational retrospective quantitative study was to examine if a relationship exists between nursing faculty credentials and NCLEX-RN® pass rates in pre-licensure nursing programs in one northeastern state. The general problem that provided foundation was how to improve NCLEX-RN® pass rates. The specific problem addressed in this study was the gap in the literature on nursing faculties credentials as it relates to outcomes of the nursing student on the NCLEX-RN®. The focus was to examine if nursing faculty with advanced degrees was predictive of NCLEX-RN® pass rates. The specific problem addressed in this dissertation is significant to current and future nursing faculty, nursing program directors, current and future nursing students, institutional leaders, theorist, and the general community. The theoretical framework was based on Bandura's Social Learning theory (Bandura, 1977). The review of the literature revealed the NCLEX-RN® evaluates a candidate's ability to provide safe and effective nursing care upon entry into the profession and nursing programs regional and

national accreditation is considerably influenced on nursing students' ability to pass on the first attempt (NCSBN, 2019). Cited throughout the literature were methods that improved NCLEX pass rates through the use of American College Testing (ACT), Assessment Technologies Institute (ATI), predictor models, and testing policies (Meyers & Karpinski, 2018; Randolph, 2017; Young et al., 2013). Lastly, nurse educators have various academic degrees with different pedagogical training, understanding the differences in nursing faculty credentials facilitates proper placement of nurse educators in academic settings (Fitzpatrick, 2019).

A simple linear regression model was used to analyze the two research questions. The research questions asked if there was a predictive relationship between nursing faculty credentials and pass rates on the NCLEX-RN®. A quantitative, nonexperimental cross-sectional methodology approach was used to answer each research question. The results indicated no statistically significant relationship between faculties credentials and outcomes of the nursing student on the NCLEX-RN®.

Discussion of the Results

The first research question addressed if there was a relationship between nursing faculty with master's degree and NCLEX-RN® pass rates in 2017. The null hypothesis stated that there is no relationship between the percentages of nursing faculty with master's degree and pass rates on NCLEX-RN®. The alternative hypothesis was there is a relationship between the percentages of nursing faculty with master's degree and pass rates on NCLEX-RN®. The results revealed there was not a statistically significant predictive relationship between nursing faculty with

master's degree and NCLEX-RN® pass rates in 2017 ($p=0.083$) respectively. Therefore, the null hypothesis was not rejected.

The second research question addressed if there was a relationship between nursing faculty with doctoral degree and NCLEX-RN® pass rates in 2017. The null hypothesis stated that there is no relationship between the percentages of nursing faculty with doctoral degrees and pass rates on NCLEX-RN®. The alternative hypothesis stated there is a relationship between the percentages of nursing faculty with doctoral degrees and pass rates on NCLEX-RN®. The results revealed there was not a statistically significant predictive relationship between nursing faculty with doctoral degree and NCLEX-RN® pass rates in 2017 ($p=0.081$) respectively. Therefore, the null hypothesis was not rejected.

The sample in this study included 88 pre-licensure nursing programs that had recorded NCLEX-RN® pass rates for 2017 from one northeastern state. Furthermore, the sample consisted of two-year and four-year, private, and public institutions. The graduates of the two-year pre-licensure nursing program receive their associate degree at the completion of the program, whereas graduates of the four-year institution receive their baccalaureate degree at the completion of the program (Matthias & Kim-Godwin, 2016). Students at two-year nursing programs have a propensity to be non-traditional and less academically prepared than nursing students attending a four-year institution (Cohen, Brawer, & Kisker, 2014). Furthermore, nursing students in two-year institutions also have employment and family commitments that add further obstacles to meeting educational requirements and program outcomes such as the successful passing of the National Council Licensure Examination (Cohen et al., 2014). The sample also

included nursing faculty that their highest degree obtained was either their master or doctoral degree. The bulk of associate degree prelicensure nursing programs faculty are master's prepared, while the majority of bachelors prelicensure nursing programs faculty members are doctorally-prepared (AACN, 2011; IOM, 2010).

Conclusions Based on the Results

The focus of this research was centered on the predictive relationship of nursing faculty credentials and pass rates on the NCLEX-RN®. Results of the study indicated the null hypothesis of Research Question 1 suggested no statistically significant predictive relationship of nursing faculty with master's degree and NCLEX-RN® pass rates. Results of the study also indicated the null hypothesis of Research Question 2 suggested no statistically significant predictive relationship of nursing faculty with a doctoral degree and NCLEX-RN® pass rates. The results indicated that the sample did not provide statistically significant evidence that nursing faculty academic preparation played a role in students' success on the NCLEX-RN®. Examination of the underpinning theoretical framework of Bandura (1977), plus comparison of existing research findings in the literature are addressed in the upcoming content.

Comparison of the Results with the Theoretical Framework

Bandura (1977) offered learning in a social context is ascertained by observations of behaviors that prove beneficial to the learner. Entities influence and are influenced by their environment, which is reflective for nursing students' success in academia (Bandura, 2017). In an explanation of the social cognitive theory as a model to improve academic and career development, it was found to promote change, flexibility, and adaptability which are optimal

characteristics for academic and career development (Lent et al., 2016). An additional component of the social learning theory is self-regulation through direct and indirect visual stimulation and symbolic modalities that alludes to learners such as nursing students' use of environmental factors to enhance learning and success (Bandura, 2015). The premise of the underpinning use of the social cognitive theory for this research concludes that the results of this study is affirmed, as multiple variables account for nursing students' success on the NCLEX-RN® including the presence of properly academically prepared nursing faculty that have either their master's or doctoral degree.

The results of the study did not have a direct implication or reflection of Bandura (1977) social cognitive theory. Bandura (1977) offered learning occurs in a social context in a reciprocal manner with the person, environment, and behavior. Another concept within the social cognitive theory concludes that people observe behaviors of others and models behaviors based on expected outcomes (Bandura, 1977). However, the results illuminated nursing student's positive outcomes on the NCLEX-RN® have the attributing factor of properly prepared nursing faculty.

Comparison of the Results with the Previous Literature

Prior research with the focus of correlating nursing faculty attainment of master's and doctoral degrees illuminated the promotion of professional excellence and career advancement, which provides nursing students with tools for academic and program achievement (Evans, 2018). In a descriptive study, 940 nurse educator's motivation and retention strategies were examined (Evans, 2018). The results of that descriptive study illuminated nurse educators had a perception and responsibility to achieve academically in both their personal and professional

career to help increase success for nursing students (Evans, 2018). Master's-prepared nurse educators offered that their accomplishment of their academic degree enhanced the profession of nursing through student learning outcomes and achievement (Laurencelle et al., 2016). In a phenomenological study, the researchers interviewed 15 participants and analyzed the data using opening coding to document the themes and subthemes that emerged from the interviews (Laurencelle et al., 2016). Some of the themes emerged from the study were: *seeing students learn, flexibility, opportunities, and contributions to the profession* (Laurencelle et al., 2016).

Leslie (2016) conducted a correlational study between clinical curriculum and first time NCLEX-RN® success. The results of the study revealed that a significant correlational relationship exist between NCLEX-RN® success and accreditation standards and recommendations on the design of the clinical curriculum, and clinical faculty competency (Leslie, 2016). Nursing clinical faculty have various academic degrees including masters and doctoral degree and play an essential role in bridging course content and clinical practice to facilitate critical thinking which is a major content area of the NCLEX-RN® (Collier, 2018; Leslie, 2016). Stumpner (2018) conducted a qualitative study of eight full-time nurse educators and concluded that nursing faculty retention is a vital component of nursing student success in program outcomes. The ability for nursing programs to retain and maintain qualified nursing faculty provides a crucial component in improving the outcome of successful passing of the NCLEX for nursing students (Davis, 2016). Although the presented research studies offered some insight on how nursing faculty academic preparation, certifications of faculty, and

administrative provisions supports nursing students' academic achievement such as successful passing of the NCLEX-RN®, the exact impact is still not known.

Interpretation of the Findings

The findings of the study revealed no statistically significant evidence that nursing faculty academic preparation played a role in students' success on the NCLEX-RN®. Multiple previous researchers identified the importance of nursing faculty credentials and crucial impact nurse educators have on nursing students and program outcome measures such as the NCLEX-RN® (AACN, 2011; Bullin, 2018; Evans, 2018; Yancey, 2020). Nurse educators are responsible for evaluation of assessments, curriculum design, evaluation of program outcomes, function as change agents, as well as engage in scholarship (NLN, 2013). Furthermore, nursing educators are crucial components in all prelicensure programs and are accountable for facilitation of learning for nursing students and the creation of learning opportunities based on course and program outcomes (Billings & Halstead, 2015; Finkelman, 2017).

Limitations

There are several limitations to this study. The study was conducted using archived secondary data from one northeastern state for one specific year. Criteria and program outcomes vary state to state; therefore, the study cannot be generalized to other programs in other states. Another limitation to this study was the use of a convenience sampling method (Kandola et al., 2014). Convenience sampling provides the researcher with readily accessible participants (Kandola et al., 2014). There is a potential for misrepresentation of the sample population, with convenience sampling (Kandola et al., 2014). Nursing students' individualized efforts of

academic success were not delineated, such as tutoring, multiple course attempts, or NCLEX preparation courses outside of the academic institution which the student attended.

The data for nursing faculty master and doctoral degrees were compiled by one northeastern state Department of Education. Therefore, the data could have been entered incorrectly in the Excel worksheet. Further inquiry of nursing students' academic preparation (i.e. previous college preparation, course load) would have provided more substantive data. Investigation in nursing faculty academic preparation, excluding the academic degree, such as length of teaching, course load, and demographics would also present additional data.

Implications for Practice

Understanding what factors enhance prelicensure nursing program outcomes of successful passing of the NCLEX-RN® for nursing students will provide guidance for professional practice. The practical implication for nursing as a profession would help with the nursing shortage by understanding factors that promote success on the NCLEX-RN®. Nursing programs accreditation is based on several overlapping factors, but the ability of the students within the program to effectively complete the academic requirements and successfully pass the NCLEX-RN® on the first attempt is paramount. Other practical implications for this study revolve around promotion of graduate degrees for nursing faculty.

Recommendations for Further Research

Following the completion of this study, multiple recommendations developed from the results. The first recommendation is to investigate nursing faculty perceptions of their academic credentials on outcomes on the NCLEX-RN® specifically using a qualitative approach.

Secondly, expanding research to include multiple states and Canada could provide more robust information for data analysis. Additionally, this study utilized the variables of nursing faculty with master's and doctoral degree; however, including other demographic data such as age, gender, teaching experience would provide more analytical data to support the research. Research using a mixed method approach would be useful in understanding correlations or contradictions in between quantitative results and qualitative findings. Lastly, research comparing master's and doctoral prepared nursing faculty and NCLEX-RN® pass rates would enhance knowledge regarding nursing faculty credentials and its correlation to outcomes on the NCLEX-RN®.

Conclusion

This dissertation included an investigation of the predictive relationship between nursing faculty credentials and pass rates on the NCLEX-RN® using Bandura's (1977) social cognitive theory. A systematic review of literature revealed three themes: NCLEX-RN®, nursing faculty credentials and nursing faculty and student outcomes. However, there was a gap in the literature regarding the relationships between nursing faculty credentials and pass rates on the NCLEX-RN®. Using a quantitative cross-sectional, correlational retrospective approach, this dissertation attempted to answer the following questions: What is the correlation between nursing faculty with master's degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state? What is the correlation between nursing faculty with doctoral degrees and NCLEX-RN® pass rates in prelicensure nursing programs in one northeastern state? The results of the study failed to find a statistically significant relationship between nursing faculty with

master's or doctoral degree and pass rates on the NCLEX-RN®. Although the results of the study failed to find a statistically significant relationship the results would add the breadth of knowledge regarding nursing faculty credentials and pass rates on the NCLEX-RN®. Design limitations, such as the sampling process, or the lack of incorporation of more variables for nursing students and nursing faculty could account for the lack of statistically significant relationship between nursing faculty with master's and doctoral degree and NCLEX-RN® pass rates. Although, the results of this study added to the breadth of knowledge regarding nursing faculty credentials and success on the NCLEX-RN®, there needs to be more research conducted on these topics.

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