

NURSING PROGRAM ADMISSION CRITERIA AND NCLEX-RN® FIRST
TIME PASS RATES

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By

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Nursing Program Admission Criteria and NCLEX-RN® First Time Pass Rates

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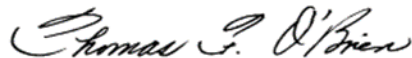


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Abstract

According to a 2010 Institute of Medicine report, the United States is experiencing a shortage of licensed registered nurses due to multiple factors including the aging of baby boomers, the overall shortage of healthcare providers, increasing waves of retiring RNs, and changes within the health care system (Buerhaus, Skinner, Auerbach, & Staiger, 2017; Snaveley, 2017). The current and future need for nurses requires schools of nursing to prepare new graduates who will provide safe, competent patient care (NCSBN, 2017) and who are prepared to successfully pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN[®]). Students who do not pass the NCLEX-RN[®] are not able to practice as an RN in Pennsylvania (Pennsylvania State Board of Nursing Regulations, Registered Nurses, Chapter § 21, 2009a). Such unlicensed graduates do not provide relief for the nursing shortage.

Achieving a passing score on the NCLEX-RN[®] remains the essential outcome of the education of future nurses. This research study examined the criteria used for admission to pre-licensure, collegiate nursing programs in Pennsylvania and their relationship to NCLEX-RN[®] First Time Pass Rates. Lewin's Gatekeeping Theory was used as the overall framework for guiding this study (Deluliis, 2015; Lewin, 1947). A self-report, web-based survey was sent to the 69 ASN, BSN, accelerated, second-degree, and master's level entry nursing programs in PA. The response rate was 50.7% (n = 35) and revealed that the majority of PA nursing programs use admission criteria. Those responding PA nursing programs with NCLEX-RN[®] first time pass rates $\geq 80\%$ also used admission criteria to screen applicants. Inferential analysis indicated neither requiring standardized nursing entrance examinations nor the year of admission maintained an

association with NCLEX-RN[®] FTPRs \geq 80% for AYs 2013-2018. Insufficient data relating to the year of admission criteria change prohibited analysis of any change in NCLEX-RN[®] FTPR as it is associated to specific years. The data obtained from respondents' comments were organized into categories used throughout the study to allow for further analysis. Results suggested no significant statistical relationship between changes in admission criteria and NCLEX-RN[®] FTPRs. Replication of this study with a larger regional and national sample would be valuable.

Keywords: NCLEX-RN[®] first time pass rates, admission criteria, Lewin's Gatekeeping

Theory

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Table of Contents

	Page
Chapter 1: Introduction	1
Overview	1
Statement of the Problem.....	4
Theoretical Framework	4
Purpose	6
Research Hypothesis	6
Research Questions	6
Definition of Terms	7
Significance.....	10
Summary	11
Conclusion	11
Chapter 2: Literature Review	13
Overview.....	13
Pre-College Admission Criteria.....	14
Pre-Nursing College Admission Criteria.....	16
Standardized Nursing Entrance Examinations.....	18
Non-Academic Admission Criteria	26
Gatekeeping Theory	32
Summary	35
Conclusion	36

Chapter 3: Methods	38
Overview	38
Research Design and Setting.....	38
Responding Programs	38
Ethical Considerations.....	39
Instruments.....	40
Pilot Survey	41
Admission Criteria Survey	49
Data Collection Procedure.....	49
Data Analysis and Interpretation.....	50
Data Confidentiality.....	52
Limitations.....	53
Summary.....	53
Chapter 4: Findings	55
Overview.....	55
Data Analysis Plan.....	56
Descriptive Statistics	57
Description of the Population.....	58
Description of Sample	62
Description of Non-responding Pennsylvania Nursing Programs	65
Statistical Analysis of the Research Questions.....	65
Research Question 1a	65
Research Question 1b	67

Research Question 2	68
Research Question 3	72
Summary and Conclusion	75
Chapter 5: Conclusions and Discussion	77
Overview	77
Summary of the Study.....	77
Theoretical Framework.....	79
Summary of the Results.....	80
Limitations	82
Relationship to the Research.....	83
Recommendations for Further Research	85
Recommendations for Practice	86
Conclusion	86
References.....	88
Appendices	107
Appendix A Pilot Survey – Recruitment Email and Survey.....	107
Appendix B Pilot Survey – Reminder Emails	118
Appendix C Admission Criteria Survey - Recruitment Email and Survey	121
Appendix D Admission Criteria Survey – Reminder Emails	132
Appendix E RERB Approval	135

Table of Tables

Table 3.1 Pilot Survey - Responses	47
Table 3.2 Table of Variables	52
Table 4.1 Categories of Returned Surveys	58
Table 4.2 PA Nursing Program NCLEX-RN [®] FTPR for AYs 2013-2018	60
Table 4.3 PA Nursing Programs with NCLEX-RN [®] FTPR \geq 80% for AYs 2013–2018	61
Table 4.4 PA Nursing Programs with NCLEX-RN [®] FTPR \geq 80% for AYs 2016-2018	62
Table 4.5 Responding PA Nursing Programs NCLEX-RN [®] FTPR for AYs 2013-2018	63
Table 4.6 Responding PA Nursing Programs with NCLEX-RN [®] FTPR \geq 80% for AYs 2013-2018	64
Table 4.7 Responding PA Nursing Programs with NCLEX-RN [®] FTPR \geq 80% for AYs (2016-2018)	65
Table 4.8 Admission Criteria Currently Used by PA Nursing Programs	65
Table 4.9 Admission Criteria Used by PA Nursing Programs with NCLEX-RN [®] FTPR \geq 80% for AYs 2016-2018	68
Table 4.10 Chi-Square Analysis of Responding PA Nursing Programs with NCLEX- RN [®] FTPR \geq 80% for AYs 2013-2018 by Admission Criteria	70
Table 4.11 Single Predictor Binary Logistic Regression Analysis of PA Nursing Programs with NCLEX-RN [®] FTPR \geq 80% for AYs 2013-2018 by Admission Criteria	71

Table 4.12 Multivariate Binary Logistic Regression Analysis Examining PA Nursing Programs with NCLEX-RN® FTPR \geq 80% for AYs 2013-2018 by Admission Criteria	72
Table 4.13 Chi-square Analysis of PA Nursing Programs with Changed Admission Criteria Since AY 2013.....	73

Table of Figures

Figure 1.1 Gatekeeping with Admission Criteria	5
Figure 3.1 Predictor and Outcome Variables	50

Chapter One - Introduction

Overview

According to a 2010 Institute of Medicine (IOM) report, the United States is experiencing a shortage of licensed registered nurses (RNs). The nursing shortage is the result of several factors, including aging of baby boomers, the overall shortage of healthcare providers, increasing waves of retiring RNs, and changes within the health care system (Buerhaus, Skinner, Auerbach, & Staiger, 2017; Snaveley, 2016). The National Council of State Boards of Nursing (NCSBN) notes the large numbers of aging baby boomers will require more preventative and acute health care for chronic illnesses, such as diabetes and hypertension (2017). Other factors impacting the nursing workforce are the imbalance between the number of retiring nurses and the number of graduating nurses, the distribution of nurses in the United States, and the rapid changes in healthcare technology (NCSBN, 2017). These factors affect the overall numbers of nurses available to provide high-quality patient care in acute, chronic, and community care settings.

The current and future need for nurses requires schools of nursing to prepare new graduates able to provide safe and competent patient care (NCSBN, 2017). Prior to fulfilling the RN role, new graduates must also be prepared to successfully pass the National Council Licensure Examination for Registered Nurses® (NCLEX-RN®). Students who do not pass the NCLEX-RN® are not able to practice as an RN under the Pennsylvania State Board of Nursing (PA SBON) laws and regulations (PA SBON, 2009a). Such unlicensed graduates do not provide relief for the nursing shortage. An adequate RN workforce is necessary to provide safe, quality patient care (NCSBN, 2017). Aside from the possibility of not being able to pursue the desired goal of practicing

nursing, many unsuccessful NCLEX-RN[®] candidates may be faced with the financial challenge for repayment of federal and private college loans (Bennett, Bormann, Lovan, and Cobb, 2016; Manieri, De Lima, & Ghosal, 2015; McGahee, Gramling, & Reid, 2010). Those who do not pass the NCLEX-RN[®] are burdened with this debt yet unable to earn the professional RN salary to enable them to repay the loans (Manieri et al., 2015). The PA SBON allows eligible candidates to retest multiple times (PA SBON, 2009b). However, the cost of retesting may present an additional financial challenge for the candidate (NCSBN, 2019). Failure to pass the NCLEX-RN[®] on the first attempt has repercussions extending beyond the student (Grossbach & Kuncel, 2011).

There are institutional implications for the nursing program with a low NCLEX-RN[®] first-time pass rate (NCLEX-RN[®] FTPR). The NCLEX-RN[®] FTPR is the indicator monitored by state boards of nursing for initial and continued approval of all levels of pre-licensure nursing programs. The current NCLEX-RN[®] FTPR threshold of 80% NCLEX-RN[®] is identified in the state's legislative code (PA SBON, 2009c). The PA SBON may change the approval status for nursing programs that do not meet the current threshold for the NCLEX-RN[®] FTPR of 80% (PA SBON, 2009d). The Nursing Education Trends Committee of the NCSBN has indicated that nursing programs with low NCLEX-RN[®] FTPRs may have educational quality issues (2017). Moreover, a program may be forced by the state board of nursing to close due to recurring low NCLEX-RN[®] FTPRs (PA SBON, 2009e).

In addition to the PA SBON, NCLEX-RN[®] FTPRs are of concern to a wide-ranging array of constituents across healthcare. Specifically, those constituents include accrediting bodies, students, faculty, higher education administrators, patients, and

healthcare employers (Crow, Handley, Morrison, & Shelton, 2004; Elkins, 2015; Hendricks & Krothe, 2014; McGhee et al., 2010; McKoy, 2016; Newton & Moore, 2009; Odom-Maryon, Bailey, & Solmaz, 2018; Trice & Foster, 2008; Wiggins, 2012). Outside accrediting agencies such as the Accreditation Commission for Education in Nursing (ACEN) (2020), the Commission on Collegiate Nursing Education (CCNE) (2020), and the Commission for Nursing Education Accreditation (CNEA) (2020) monitor NCLEX-RN® FTPRs as benchmarks of educational quality. A valid accreditation from one of these organizations indicates that the nursing program has met educational quality standards (Beeson & Kissling, 2001). Recurring low NCLEX-RN® FTPRs can cause a nursing program to lose state approval and regulatory accreditation. Minimally, low NCLEX-RN® FTPRs may make recruiting new students more difficult (Beeson & Kissling, 2001). Low NCLEX-RN® FTPRs negatively impact students, faculty, administration, and the continued existence of the nursing program.

The National League for Nursing (NLN) recognizes the importance of maintaining a robust system of nursing education programs throughout the United States (2016). The NLN supports research related to nursing education and patient care outcomes. The main emphasis of the 2016 NLN Research Priorities was to link the education of nurses to scientifically supported instructional methods. Nurses educated in this manner provide higher quality, evidence-based patient care (NLN, 2016). To reach this goal, the NLN recommends that nursing research focus on the development of instruments to measure learning outcomes across multiple data collection sites (2016). The NLN also stressed that the results of research studies should be applied to nursing practice and nursing education to improve their outcomes (2016). NCLEX-RN® FTPRs

are a primary outcome measurement for schools of nursing, state boards of nursing, program administration, and accreditation agencies used to evaluate nursing education. Therefore, NCLEX-RN® FTPRs of pre-licensure, collegiate nursing programs in Pennsylvania were used as the outcome for this research.

Statement of the Problem

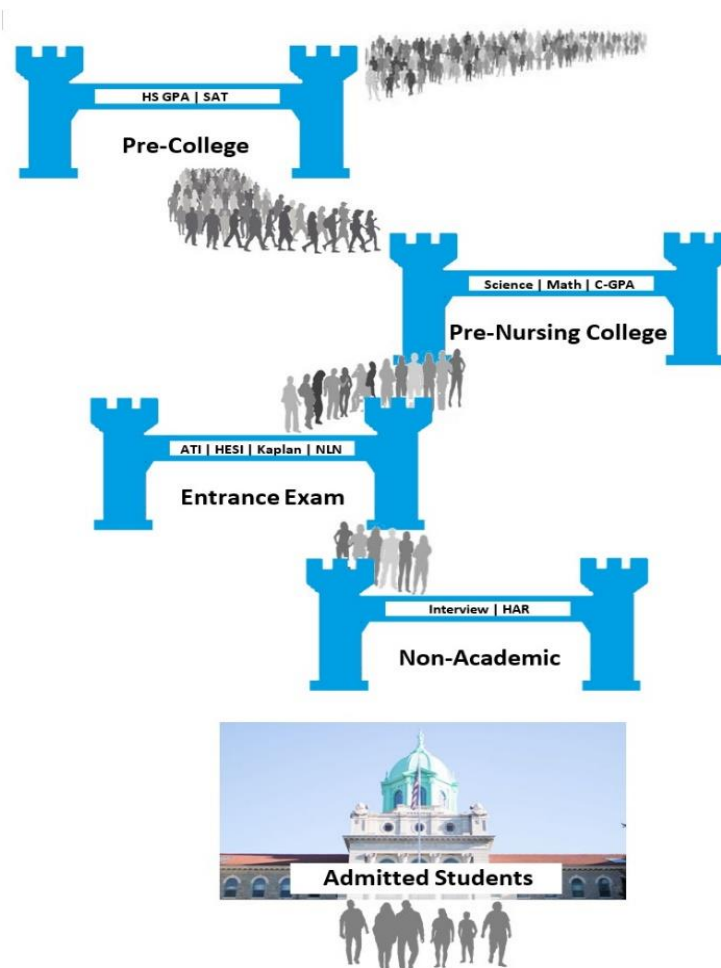
Nursing programs screen candidates for admission in multiple ways. Screening helps to ensure that students have the background knowledge to understand the nursing curriculum. Achieving a passing score on the NCLEX-RN® remains the essential outcome of the education of future nurses. Therefore, an increased understanding of the potential of admission criteria on NCLEX- RN® FTPRs of nursing programs is needed. This research study focused on criteria used for admission to Pennsylvania pre-licensure nursing programs that awarded associate degrees (ASN), traditional bachelors (BSN) degree, the second-degree BSN, accelerated BSN, and masters degrees as the initial nursing degree (MSNE).

Theoretical Framework

Kurt Lewin, a German psychologist, studied social fields and the behavior of individuals and groups (Deluliis, 2015; Lewin 1947)). As Lewin continued his research, he used his theory to describe how teams functioned and responded to external pressures (Deluliis, 2015; Lewin, 1947)). Further development of the theory focused on channels which selectively allowed access to becoming a member of the group (Deluliis, 2015; Lewin, 1947). Lewin identified the opening and closing of these channels as gatekeeping (Deluliis, 2015; Lewin, 1947).

Application of the gatekeeping theory to the education of health professionals focuses on entry into a professional education program, the monitoring of students' academic progress once in the program, and the appropriateness of student behavior and ability in field placement (Brear, Dorrian, & Luscri, 2008; Elpers & FitzGerald, 2013). Brear et al., define educational gatekeeping as “the evaluation of student suitability for professional practice” (2008, p. 93). Nursing programs use admission criteria as a gatekeeping mechanism to screen applicants for readiness and suitability for pre-licensure, collegiate nursing programs (Figure 1.1). The Gatekeeping Theory (Lewin, 1947) guided this study as it focused on admission criteria used by PA nursing programs.

Figure 1.1
Gatekeeping Theory with Admission Criteria



Purpose

The purpose of this study was to examine the use of and relationship between admission criteria for pre-licensure, collegiate nursing programs in Pennsylvania, and the NCLEX-RN® FTPR.

Research Hypotheses

Admission criteria are gatekeeping tools to monitor applicants' admission to pre-licensure, collegiate nursing programs in Pennsylvania. Several hypotheses were developed from a review of the current literature:

- H₁** Pennsylvania pre-licensure, collegiate nursing programs that have consistently met or exceeded the mandatory 80% or higher NCLEX-RN® FTPR use admission criteria in the screening of applicants.
- H₂** There is a relationship between admission criteria and NCLEX-RN® FTPRs of pre-licensure, collegiate nursing programs in Pennsylvania.
- H₃** Pennsylvania pre-licensure, collegiate nursing programs that have not met the mandatory 80% NCLEX-RN® FTPRs have revised their admission criteria.

Research Questions

Multiple criteria are used by nursing programs in Pennsylvania to identify candidates for admission. The identification of admission criteria and their gatekeeping effect on NCLEX-RN® FTPRs require analysis. The questions that were addressed by this research are:

1. What admission criteria are:
 - a. currently used by pre-licensure, collegiate nursing programs in Pennsylvania?
 - b. currently used by pre-licensure, collegiate nursing programs in Pennsylvania that have maintained an 80% NCLEX-RN[®] FTPR for the three most recent years as reported by the PA SBON?
2. What is the relationship between admission criteria and NCLEX-RN[®] FTPRs in pre-licensure, collegiate nursing programs in Pennsylvania that have consistently met the 80% NCLEX-RN[®] FTPR mandated by the PA SBON?
3. What is the relationship between admission criteria and NCLEX-RN[®] FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have changed their admission criteria since the 2013-2014 academic year?

Definition of Terms

National Council Licensure Examination for Registered Nurses First Time Pass Rate (NCLEX-RN[®] FTPR) is the percent of nursing school graduates who pass the NCLEX-RN[®] the first time the test is taken. This outcome benchmark is set by the NCSBN and by individual state boards of nursing (Spector, Hooper, Silvestre, & Qian, 2018). In Pennsylvania, the mandated NCLEX-RN[®] FTPR is 80% or higher (PA SBON, 2009c).

Nursing Program Admission Criteria are the required college entrance examination, pre-requisite courses, entrance examinations, pre-nursing college GPA,

college grades, and interviews identified by each pre-licensure nursing program in Pennsylvania.

Pre-College admission criteria.

- *American College Testing*[®] (*ACT*[®]), a placement test focused on Math and English that are taken by high school juniors and seniors. The scores are used by institutions of higher education to indicate college readiness (American College Testing, 2019).
- *The Scholastic Aptitude Test*[®] (*SAT*[®]) is a standardized test taken in high school to measure the student's abilities in reading, writing, language, and math (The College Board, 2019). In 2016, the essay portion of the *SAT*[®] became optional (College Board, 2020). Institutions of Higher Education use these test results to identify students who will be successful.

Pre-nursing college admission criteria.

- *Pre-nursing college grade point average (C-GPA)* are those grades from college courses completed as a pre-requisite to admittance to a nursing program. Nursing programs identify which courses and minimum C-GPA are required for admittance.
- *Pre-requisite math and or science grade point average (Pre-requisite math or science GPA)* is the average of the student's grades in the pre-requisite college math and or science courses.

Standardized nursing entrance examinations.

- *Assessment Technologies Institute® Test of Essential Academic Skills (ATI® TEAS)* is an examination that assesses the student's readiness for education in nursing programs (ATI®, 2019).
- *Health Education Systems Incorporated Admission Assessment (HESI A2)* is an examination used to identify the student's readiness for entrance into a nursing program (Elsevier, n.d.)
- *Kaplan Nurse Entrance Test (Kaplan NET)* is an aptitude test to evaluate the student's ability to succeed in nursing school (Kaplan, n.d.).
- *National League for Nursing Pre-Admission Examination (NLN PAX-RN)* is a national examination to identify students who have the academic ability to enter and succeed in nursing programs. (NLN, n.d.)

Non-Academic criteria.

- *Holistic Admissions Review (HAR)* is an admission process that considers both academic and non-academic criteria equally. The student is also evaluated for what they will bring to the nursing profession overall. Consideration is given to prior military service, multi-lingual proficiency, and volunteer service in countries outside the United States (Scott & Zerwic, 2015).
- *Interview* is "a formal consultation usually to evaluate qualifications (as of a prospective student or employee)" (Merriam-Webster, Incorporated, 2019). Interviews are used as a criterion to identify

suitable candidates for admission to pre-licensure, collegiate nursing programs.

Gatekeeping is “a mechanism that aims to ensure the health of the profession by controlling entrance to it. It involves the identification of evaluative criteria and process” (Brear et al., 2008, p. 93-94). Brear et al.’s 2008 definition is based on Lewin’s Theory (1947) of channels and forces. Admission criteria are the channels through which applicants are evaluated for entrance into the nursing profession.

Significance

Achieving the mandatory NCLEX-RN[®] FTPR is important for multiple reasons. The 80% NCLEX-RN[®] FTPR is mandated by the PA SBON (§ 21.33b, 2009c). Accrediting agencies, such as the ACEN, CCNE, CNEA, monitor programmatic quality measured in part by the NCLEX-RN[®] FTPRs. Students who do not pass the NCLEX-RN[®] examination cannot enter the nursing workforce and thus do not improve the current nursing shortage, thereby impacting patient care. The inability to work as an RN also negatively impacts the student’s ability to repay federal and private educational loans (Manieri et al., 2015).

Furthermore, the recruitment of new students to any nursing program with a low NCLEX-RN[®] FTPR may become increasingly more difficult. Potential students may prefer to attend a nursing program with a higher NCLEX-RN[®] FTPR. Thus, if the use of admission criteria has a relationship to NCLEX-RN[®] FTPR, then the nursing education community and the profession may benefit from the application of this current research as a guideline for practice. Given the comprehensive nature of the admission criteria required and the inclusion of multiple sites, this research broadens the applicability of and

accessibility to common elements of admission practices related to NCLEX-RN® FTTPR. Nursing programs may be able to use the results of this research focusing on admission criteria and its influence on NCLEX-RN® FTTPR to develop screening policies for potential applicants to their programs.

Summary

Admission criteria are the gatekeeping mechanism for entry into pre-licensure, collegiate nursing programs. Establishing admission criteria assists identifying applicants who are most likely to complete pre-licensure, collegiate nursing programs and attain a passing score on the NCLEX-RN® licensing examination. Nursing program completion and the passing of the NCLEX-RN® examination are priorities for students, parents, faculty, program administration, PA SBON, accreditation agencies, the health care system, and the health care consumer. The evidence available in the literature regarding the relationship between admission criteria and NCLEX-RN® FTTPRs is confusing and contradictory (Crow et al., 2004; Elkins, 2015; Hinderer, Dibartolo, & Walsh, 2014; McGahee et al., 2010; Odom-Maryon et al., 2018; Romeo, 2013; Wiggins, 2012; Zerwic, Scott, McCreary, & Corte, 2018). This study focused on the use and influence of admission criteria in approved pre-licensure, collegiate nursing programs in Pennsylvania (PA SBON, 2019a). A web-based, self-report survey was used to obtain data regarding admission criteria from the 69 pre-licensure, collegiate nursing programs approved by the PA SBON (2019a). Descriptive and inferential statistics were used to analyze the data.

Conclusion

NCLEX-RN® FTTPRs are important benchmarks for students, faculty, nursing programs, state boards of nursing, and accreditation agencies. Ensuring that fulfillment of

the state-mandated NCLEX-RN® FTPR level is imperative. Enrolling students who will be successful in the nursing program and on the first attempt at the NCLEX-RN® (PA SBON 2018b; 2019b) is one step in this process. Identifying admission criteria currently in use in pre-licensure, collegiate nursing programs in Pennsylvania, and the influence these criteria may have on NCLEX-RN® FTPRs may provide valuable information in the screening of applicants for nursing programs.

Chapter Two – Literature Review

Overview

Pre-licensure, collegiate nursing educational programs in Pennsylvania use a variety of criteria to screen applicants for admission. The purpose of this study was to examine the use of admission criteria for pre-licensure, collegiate nursing programs in Pennsylvania in relation to the NCLEX-RN® FTPR. A search of the literature was conducted using the keywords: health profession programs admission criteria, Holistic Admission Review, NCLEX-RN®, NCLEX-RN® first time pass rate, nursing admission interviews, nursing school admission criteria, nursing school admission requirements, and nursing success. The literature search used the keywords alone and in combination. Databases used were Academic Search Complete, CINAHL, Dissertations and Theses @ Immaculata University, EBSCO, Educator's Reference Complete, ERIC, Health & Wellness Resource Center, Health Reference Center Academic, Health Source: Nursing/Academic Edition, JSTOR, Medline, Nursing & Allied Health Collection (InfoTrac), Ovid, PQDT Open, ProQuest, PsycInfo, Pubmed, Sage Premier, Science Direct, Teacher's Resource Center, and WorldCat Dissertations. The NCLEX-RN® first used computerized testing in 1994 (Beeson & Kissling, 2001). Therefore, this review of the literature included research published in English language journals between 1994 and 2020.

The literature search revealed that nursing programs use a wide variety of criteria for admission. These included the high school grade point average (HS-GPA), scores on the SAT®, ACT®, pre-nursing college C-GPA, transfer students versus students at the college since freshman year, the value of a personal statement and letters of

recommendation, interviews, standardized nursing entrance examinations, prior degrees attained, scores on critical thinking tests, writing portfolio results, prior health care experience, holistic admissions review, and individual and group interviews (Crow et al., 2007; DeWitty, 2018; Elkins, 2015; Enfeld & Tabak, 2000; McGahee, 2010; McKoy, 2016; Newton & Moore, 2009; Odom-Maryon et al., 2018; Romeo, 2013; Trice & Foster, 2008; Wiggins, 2012). No one research study used all these admission criteria. Most studies used different combinations of criteria.

Additionally, most of the research studies used a single nursing program as the study sample (Bennett et al., 2016; Elkins, 2015; McGhee et al., 2010; Rome, 2013). This single-site research contains information on only one nursing program. Multisite data collection allows for a sample population with greater diversity, allowing for a better possibility of generalizability and statistical analysis to compare categories of data (Beischel, Hart, & Tutkelson, 2016; Flynn, 2009; Polit & Beck 2018). Therefore, this review of literature is organized according to the following categories: (a) pre-college admission criteria, (b) pre-nursing college admission criteria, (c) standardized nursing entrance examinations, and (d) non-academic admission criteria. The review of literature also outlines how other health professions use admission criteria as a means of gatekeeping into the profession.

Pre-College Admission Criteria

Researchers have used HS academic performance measures such as HS-GPA, SAT[®], and ACT[®] scores as part of the admission criteria for entrance into nursing programs. Specifically, McGahee et al. (2010) used three years of admission data and NCLEX-RN[®] FTPRs in a retrospective correlational study of 153 students in one BSN

program. The admission criteria consisted of HS-GPA and SAT[®] or ACT[®] scores. Their results indicated that HS-GPA and SAT[®] or ACT[®] scores did not have a significant relationship to NCLEX-RN[®] FTPRs (McGahee et al., 2010). Similarly, Crow et al. (2004) conducted a national descriptive correlational survey of 160 BSN programs in the United States looking at the influence of admission, progression, and exit criteria on the NCLEX-RN[®] FTPR. Crow et al. (2004) results found high SAT[®] scores correlated with higher NCLEX-RN[®] FTPRs. Romeo (2013) used SAT[®] scores as the admission criteria in a larger study (N = 182) of multiple variables predicting NCLEX-RN[®] FTPRs. This three-year retrospective study was conducted at a small private ASN nursing program. Romeo's (2013) results indicated that SAT[®] scores were not indicative of nursing program completion and NCLEX-RN[®] success.

Elkins (2015) conducted a two-year retrospective study at an eastern university that included 187 BSN student's HS-GPA, ACT[®] scores, and anatomy course grades. Elkins (2015) found the HS-GPA, ACT[®] scores, and anatomy course grades to be significant in NCLEX-RN[®] FTPRs. Elkins' (2015) research also indicated that the SAT[®] score alone was not a good predictor of success for first time NCLEX-RN[®] test takers.

The majority of the current research does not indicate that the SAT[®] is predictive of NCLEX-RN[®] success (Crow et al., 2004; Elkins, 2015; Romeo, 2013). In summary, research focusing on pre-college admission criteria used multiple criteria and multiple combinations of criteria, making comparison difficult for investigating commonalities across studies.

Pre-Nursing College Admission Criteria

Pre-nursing college admission criteria included pre-nursing college GPA scores, specific pre-requisite course grades, the number of repeated pre-requisite courses, the number of pre-requisites completed, the transfer status of the student, and completion of prior college degrees. Nursing student performance in pre-requisite courses has been discussed and investigated by nursing researchers as an individual variable and in combination with other variables. Crow et al. (2004) also used the pre-nursing C-GPA in combination with SAT[®]/ACT[®] scores to identify predictors of NCLEX-RN[®] FTPRs in BSN programs (N = 169). Their results indicated that the pre-nursing C-GPA and the SAT[®]/ACT[®] scores did not have any correlation with NCLEX-RN[®] FTPRs (Crow et al., 2004).

Wiggins (2012) interviewed 50 BSN program administrators attending the Southern Regional Educational Board meeting. The results indicated all participating programs used pre-nursing C-GPAs as an admission criterion. Approximately one-half of the nursing programs used the pre-nursing C-GPA in combination with a standardized nursing entrance examination. McGahee et al. (2010) found that the science pre-requisite course grades, progression test scores, and grades from nursing fundamentals, health assessment, and pathophysiology courses were predictive of NCLEX-RN[®] FTPR success at a BSN nursing program. Bennett et al. (2016) used pre-nursing C-GPA, pre-requisite science course GPA, and scores on a standardized nursing entrance examination as admission variables for a three-year retrospective study at an upper-division BSN program in Kentucky (N = 341). This study focused on a retention model for predicting successful students in the nursing program and the NCLEX-RN[®]. This model accurately

identified 49.9% of the unsuccessful students and 84% of the successful students (Bennett et al., 2016).

Elkins (2015) conducted a retrospective study at a BSN nursing program in the southeastern United States that focused on student retention and NCLEX-RN® FTTPR success. Elkins (2015) used ACT® scores, pre-nursing C-GPAs, pre-requisite course grades, and standardized exit examinations to determine retention and NCLEX-RN® FTTPR success. This research revealed that pre-college ACT® scores and pre-nursing C-GPA were the best indicators of NCLEX-RN® FTTPR success (Elkins, 2015). The author noted the results of this single-site research were limited to this BSN program due to student demographics. Therefore, Elkins (2015) recommended that future research should include nursing programs having more diversity within the student body.

Landry, Davis, Alameida, Prive, and Renwanz-Boyle (2010) examined the three pre-licensure programs at their western United States university (N = 627). The three programs consisted of two traditional pre-licensure BSN programs and an MSNE pre-licensure program. The traditional pre-licensure BSN programs were located at an urban and a suburban site. These authors found that in the MSNE program, pre-requisite course grades, pre-nursing C-GPA, nursing GPA, and nursing course grades were significant indicators of NCLEX-RN® FTTPRs (Landry et al., 2010). In the traditional main campus BSN pre-licensure program, Landry et al. (2010) found that the pre-nursing C-GPA did not have an impact on NCLEX-RN® FTTPRs, but nursing program GPA and nursing course grades were indicative of NCLEX-RN® success. Grades achieved in certain nursing courses identified NCLEX-RN® success at the alternate pre-licensure program, site (Landry et al., 2010). Limitations of this research are related to the distinctive nature

of this pre-licensure nursing program, which included three separate program sub-types at one institution.

Cunningham, Manier, Anderson, and Sarnosky (2014) developed a statistical model using archived data of 283 students who had attended a BSN program at a public university in the southeastern United States from 2005 to 2013. These authors found that a statistical regression model was superior in predicting success in program completion and NCLEX-RN[®] FTPRs than the point system that was in use at the time of the study. The authors noted that statistical regression models would have the added benefit of freeing the faculty from the time-consuming process of reviewing all the nursing program applications and scoring each candidate's data (Cunningham et al., 2014). The limitation of this single-site study included research conducted at one university with a homogenous student population. It would be valuable to replicate this study at other universities with a more diverse student body, at multiple sites, and including a greater diversity of pre-licensure nursing programs (Beischel et al., 2016; Flynn, 2009; Polit & Beck, 2018).

In summary, the review of literature focused on pre-nursing college admission criteria identified issues similar to the pre-college admission criteria review. These studies were primarily conducted at single sites with limited diversity in the student population, used multiple admission criteria, and varied combinations of admission criteria, making comparison problematic. The current research considered these issues.

Standardized Nursing Entrance Examinations

Currently, there are several standardized nursing entrance examinations available for nursing programs to screen candidates for admission. The standardized examinations

that were used by researchers in this review of the literature included the ATI® TEAS, the HESI A2, the Kaplan NET, and the NLN PAX-RN.

Wiggins (2012) used a qualitative approach to identify practices of BSN programs that consistently met or exceeded the 80% NCLEX- RN® FTPRs benchmark for their graduates. Interviews with nursing program directors that met or exceeded the national NCLEX-RN® FTPR for three consecutive years and who were attending a regional conference (N = 30). All respondents used pre-nursing C-GPA as an admission criterion. Fewer than half of the programs used a standardized nursing entrance examination (Wiggins, 2012). Other data collected focused on program exit testing with or without remediation and the use of computerized practice testing during the entire program.

Crow et al. (2004) included pre-college testing scores (SAT® and ACT®) and standardized nursing examination scores for the admission screening at BSN programs across the United States (N = 160). The remainder of the study focused on identifying students who were at risk of failure, exit criteria, and demographic variables of the research population. The use of a standardized nursing entrance examination was the only individual variable that was predictive of NCLEX-RN® FTPRs (Crow et al., 2004).

In contrast, Odom-Maryon et al. (2018) conducted a national study to analyze the influence of pre-licensure nursing programmatic features on NCLEX-RN® FTPRs. These authors piloted a survey at ten nursing programs in the state of Washington (Odom-Maryon et al., 2018). The final survey included students from all levels of pre-licensure nursing programs in the United States (N = 2,093). Programmatic features identified by this survey included classroom and clinical student-faculty ratio, percent of full-time and

part-time faculty, percent of nursing education, and specialty certified faculty. The survey response rate was 40% (n = 832). The primary focus of the study was on the characteristics of the nursing program. The examination of admission criteria was one small section of the larger study. In this study, admission criteria included cumulative C-GPA, prerequisite course C-GPA, college science GPA, standardized nursing entrance exams, faculty generated entrance exams, previous nurses' aide experience, personal interviews, and letters of recommendation (Odom-Maryon et al., 2018). The results from this study indicated that nursing programs at public institutions with a high percentage of full-time faculty that did not use standardized admission examinations had higher NCLEX-RN[®] FTPRs (Odom-Maryon et al., 2018). The authors noted that a limitation of this study was recall bias since the program directors were required to remember programmatic information. The authors also recommended that future research should focus on longitudinal studies of programmatic attributes, including student characteristics.

The previous section discussed nursing entrance examinations in general. The following section presents studies specific to nursing entrance examinations.

ATI[®] TEAS.

Newton, Smith, and Moore (2007) used pre-nursing C-GPA and the ATI[®] TEAS entrance examination to assess the readiness of two cohorts of nursing students (N = 173) in their midwestern state university BSN program with fall and spring admissions. The researchers found that using pre-nursing C-GPA and the ATI[®] TEAS examination scores as admission criteria were indicative of first-semester student success and decreased attrition. The authors recommended that nursing programs examine student records and

entrance examination results to identify the best candidates for the limited placement opportunities in nursing programs (Newton et al., 2007). Newton and Moore (2009) expanded the previous study to include pre-nursing C-GPA, ATI® TEAS scores, and nursing ability in the first semester as predictors of retention and NCLEX-RN® readiness. This retrospective study examined one cohort of students' (N = 94) nursing program and exit testing success. The results indicated that pre-nursing C-GPA and ATI® TEAS scores were predictive of first-semester success. Success in the first semester was found to be predictive of NCLEX-RN® first attempt success (Newton & Moore, 2009).

Hernandez (2011) also used pre-nursing C-GPA and the ATI® TEAS examination to examine program outcomes of persistence, course completion, graduation, and first attempt NCLEX-RN® success. This retrospective study examined six years of data from one Midwestern BSN program (N = 246). Pre-nursing C-GPA and ATI® TEAS scores were positive indicators of program progression, graduation, and NCLEX-RN® success (Hernandez, 2011).

Cunningham et al. (2014) used statistical models to predict a candidate's academic ability in a mid-sized, southeastern, public BSN program (N = 283). The statistical models considered pre-nursing C-GPA, pre-requisite college science course grade, number of completed pre-requisite courses, and the ATI® TEAS scores to identify potential successful candidates. The results of this eight-year retrospective study indicated that statistical models better identified those candidates who successfully completed the NCLEX-RN® than other previous methods used by administrators and faculty (Cunningham et al., 2014).

HESI A2.

In 2007, Yoho, Young, Adamson, and Britt used the HESI A2 tests to identify students who would be successful in an ASN program. These results were part of a larger study to recognize students who were at risk of failure or who may require remediation to pass the NCLEX-RN[®] on their first attempt. This longitudinal study was conducted at a Texas ASN program (N = 139), where the faculty were interested in adopting the HESI examinations for admission, progression, and exit readiness. The HESI A2 entrance examination, which was administered at the midpoint in the nursing program, predicted success on the exit examination, which was then predictive of first attempt success on the NCLEX-RN[®] (Yoho et al., 2007). The midterm student assessment was also predictive for students requiring remediation for first attempt NCLEX-RN[®] success. Additionally, during the study, there was an increased student attrition within the nursing program. These results began a discussion about the faculty-set HESI A2 benchmarks (Yoho et al., 2007).

Hinderer et al. (2014) examined the HESI A2 entrance examination, pre-nursing C-GPA, and the pre-requisite college science course grade and their impact on timely progression, and the NCLEX-RN[®] FTPR within a rural, mid-sized, mid-Atlantic, public, accredited BSN program. These researchers conducted this pilot study using an exploratory retrospective design over three-years. The researchers' goal was to develop a predictive model for student success in the nursing program and the NCLEX-RN[®]. Their results indicated a possible correlation between pre-nursing C-GPA and NCLEX-RN[®] success. Due to a small sample size (N = 89), generalizations were unable to be made (Hinderer et al., 2014). The authors recommended replicating the study at other

institutions with a less homogenous student population. Bennett et al. (2016) also used the same three variables of pre-nursing C-GPA, pre-requisite college science grade or GPA, and the HESI A2 entrance examination. Bennett et al.'s (2016) results suggested the model positively identified students who would be successful in completing the nursing program as well as those who would not complete the nursing program.

Kaplan Nurse Entrance Test.

Bondmass, Moonie, and Kowalski (2008) examined the relationship between the Kaplan NET scores and NCLEX-RN[®] FTPRs after a curricular change in their BSN program in the western United States. This study used both admission testing and content mastery testing (N = 147). Bondmass et al. (2008) found that students who have higher scores on the Kaplan NET had a higher probability of passing the NCLEX-RN[®].

In 2001 Gallagher, Bomba, and Crane reviewed the admission criteria for their ASN program at a midwestern community college (N = 121). This single-site research included students admitted into the ASN program in the fall of 1995 (Gallagher et al., 2001). The researcher defined success as the achievement of a grade of C in the initial nursing course (Gallagher et al., 2001). This program used the Kaplan NET as a predictor of successful nursing program completion. Their results suggested the Kaplan NET scores were not indicative of passing the first attempt NCLEX-RN[®] successfully (Gallagher et al., 2001).

Sayles, Shelton, and Powell (2003) undertook a study in their ASN program in the southern United States to determine if scores on the Kaplan NET would be predictive of both nursing program completion and NCLEX-RN[®] first-time success (N = 68). Student data were correlated with the students' Kaplan NET scores. The authors also reviewed

data from content mastery tests taken during the students' progression through the nursing courses. The authors' results indicated that the Kaplan NET math and reading sub-scores were predictive of NCLEX-RN® first-time success (Sayles et al., 2003).

In an upper-division BSN program in the southern United States, Symes, Tart, and Travis (2005) instituted a Nursing Success Program (NSP). This program consisted of two student cohorts (N = 369). One group consisted of a pre-NSP while the other contained the post-NSP students. The Kaplan NET was administered to the post-NSP students after admission but before taking the first nursing course. Symes et al. (2005) identified increased retention and increased graduation rates as indicators of success. They also noted there was a correlation between increased reading comprehension test scores and graduation rates. This study also used the Kaplan NET to identify student academic weaknesses. Students received academic assistance within the NSP (Symes et al., 2005). The authors did not use NCLEX-RN® FTPRs as an outcome.

In 2016 McKoy sought to understand the Kaplan NET scores' ability to predict success in a five-semester, upper-division BSN program at a public university located in the southeastern United States. The outcomes identified by McKoy were grades achieved at the end of the first year in the nursing program and completion of the nursing program (2016). Criteria for this study included the Kaplan NET composite score, the sub-scores for math, science, reading and writing, and nursing course grades (McKoy. 2016). McKoy (2016) found based on a single-site nursing program (N = 94), the Kaplan NET score and the Kaplan NET Science Skill sub-score had a weak positive correlation with both grades achieved at the end of the first year of the nursing program and completion of the five-semester BSN program.

NLN PAX-RN.

Czekanski, Hoerst, and Kurz (2018) revised their nursing program's admission, progression, completion, and graduation criteria in response to a decreasing NCLEX-RN[®] FTPR. The authors based the revision plan on data collected at their faith-based, mid-Atlantic, BSN program. At this university, the NLN PAX-RN was used only for transfer students. After completing the program data evaluation, the admission criteria included the NLN PAX-RN and pre-nursing science course C-GPA for all applicants. Additionally, a limitation on the number of times an applicant was allowed to repeat pre-requisite science courses was instituted (Czekanski et al., 2018). Additional program changes in progression criteria included adding the HESI content mastery course examinations as ten percent of the course grade. Follow-up research by the same authors at this one university instituting the changes to admission and progression criteria indicated the NCLEX-RN[®] FTPR increased from 64.86% in 2014 to 96.94 % in 2018 (Elsiever, 2019).

In summary, this review of the current literature relevant to specific nursing admission entrance examinations identified a variety of research studies that used similar variables (Bondmass et al., 2008; Czekanski, 2018; Cunningham et al., 2014; Hernandez, 2011; Hinderer et al., 2014; McKoy, 2016; Newton et al., 2007; Yoho et al., 2007). Few of these studies used the same variables with similar populations. Two national studies used similar variables but obtained conflicting results (Crow et al., 2004; Odom-Maryon et al., 2018). Additionally, Crow et al. (2004) used a population of 160 BSN programs, whereas Odom-Maryon et al. (2018) used all levels of pre-licensure nursing programs (N = 832).

Non-Academic Admission Criteria

Holistic Admission Criteria.

Holistic Admission Review (HAR) represents an example of expanding traditional admission criteria to include individual characteristics of the applicant, such as experience and personal attributes along with the traditional GPA, course grades, and standardized admission examination scores (Glazer et al., 2016; Scott & Zerwic, 2015; Wros & Noone, 2018). The HAR includes non-academic characteristics the applicant brings to the program (DeWitty, 2018). Medicine and other healthcare professions use the HAR as an adjunct to traditional academic criteria (Gay et al., 2017). Nursing has been slow to embrace the HAR process. The addition of the candidate's characteristics fosters diversity in the student population (Gay et al., 2017). Glazer et al. (2016) undertook a qualitative research study to identify the perceived obstacles implementing and incorporating the HAR into the admission process of nursing programs across the United States. The results from focus groups (N = 53) indicated that additional information, support, and training would be needed to begin the process of integrating HAR into nursing program practices and policies. Additionally, Glazer et al. (2016) recommended that nursing programs should evaluate their current admission processes to include the HAR process. Glazer et al. (2016) suggested further research focusing on student characteristics that predict success in nursing program completion, graduation, and on the NCLEX-RN® FTPR.

Zerwic et al., (2018) completed a retrospective analysis of student data before and after the implementation of a HAR process (N = 150) at one nursing program. The results indicated that there was an increase in nursing GPA and NCLEX-RN® FTPRs (Zerwic et

al., 2018). The authors also noted that this program currently implemented additional student support services, which may have impacted the NCLEX-RN® FTPRs (Zerwic et al., 2018). The authors suggest further research to identify student characteristics related to HAR and into the processes of implementing HAR at all types of universities.

Interviews.

Some nursing programs began adding interviews to expand the profile of the applicant beyond the academic grade (Ehrenfeld & Tabak, 2000; Rosenberg, Perraud, & Willis, 2007; Trice & Foster, 2008). The interview can be used to identify the applicant's characteristics, experiences, and attitudes that are seen as an important aspect of a successful student (Lumb, Homer, & Miller, 2010; Rosenberg et al., 2007). Interviews can be in person or via electronic media. Nursing programs choose between group or individual interviews due to time and financial constraints (Hendricks & Krothe, 2014; Rosenberg et al., 2007). Interviews may also be used to increase the diversity of the student population (Lumb, 2010; Trice & Foster, 2008; Roach et al., 2019).

Ehrenfeld and Tabak (2000) at Tel-Aviv University examined the overall merit of individual applicant interviews as part of their admission process. The authors were concerned about the amount of faculty time required and, therefore, the overall cost of the process. Additionally, the researchers questioned the subjective nature of the interviewing. Attrition rates were the benchmark used for student success. The success of the interview was based on the opinions of the faculty and the applicants (Ehrenfeld & Tabak, 2000). Individual interviews occurred between 1989 and 1992 (n = 1154) and consisted of one applicant and three faculty members. (Ehrenfeld & Tabak, 2000). After each interview, the faculty interviewers discussed the applicant's responses. Faculty

agreement was required for admission to the program. A second interview was scheduled when the faculty was unable to come to a consensus (Ehrenfeld & Tabak, 2000). The revised admission process (1993-1994), which included group interviews consisted of questions based on scenarios (N = 450). Approximately five applicants and three faculty members comprised each small group interview. The group interview consisted of a case scenario that required each applicant to choose a role (Ehrenfeld & Tabak, 2000). The opinion of the faculty and applicant was solicited at the end of the interview. The total number of applicants who participated in both the individual and group interviews consisted of 1,604 students (Ehrenfeld & Tabak, 2000).

Ehrenfeld and Tabak (2000) examined attrition rates before using interviews during the individual interview period (1989-1992) and during the group interview period (1993-1994). Their results indicated that the attrition rate was higher when interviews were not part of the admission process. Attrition during all periods at this nursing program was primarily for non-academic, personal reasons (Ehrenfeld & Tabak, 2000). Group interviews were thought to be a good way to manage time, assist students who were stressed by the individual interview process, and enabled faculty members to observe the students' verbal and non-verbal skills (Ehrenfeld & Tabak, 2000). Ehrenfeld and Tabak (2000) recommend a more structured interview format to provide an opportunity for all students to participate fully.

In 2011 a longitudinal study (N = 4,007) was undertaken to review the admission process at a large midwestern BSN program. Hendricks and Krothe (2014) described the process used to identify the impact of interviews on student admissions. A task force used academic achievement and student demographics as outcome criteria. The process of

incorporating interviews as additional admission criteria was reviewed by Hendricks and Krothe (2014), who noted that minor revisions had occurred to the admission criteria since the inclusion of interviewing. The analysis of the data collected between 2007 to 2011 revealed that interviews did not change the gender and ethnic diversity of the admitted student population, the retention rates, and NCLEX-RN® FTPRs remained approximately the same (Hendricks & Krothe, 2014).

Additionally, Hendricks and Krothe (2014) identified the importance of taking into consideration the financial cost of each admission criterion, as well as the expense in changing any criterion. Hendricks and Krothe (2014) cautioned that careful and detailed documentation should be maintained during the process, thus enabling an accurate retrospective review of the process and outcomes. They encouraged nursing programs to adopt new admission criteria to maintain the change for a length of time sufficient to evaluate the impact of the change. Due to the results of Hendricks and Krothe's (2014) research, interviews were discontinued as a part of this program's nursing admission requirements.

McNelis et al. (2010) discussed the implementation of a revised admission process at the same large mid-western university BSN program studied by Hendricks and Krothe (2014). Initially, at this nursing program, C-GPA was the sole criteria used for admission. Faculty became concerned that C-GPA alone was negatively impacting the admitted student population, especially as related to diversity (McNelis et al., 2010). Admission criteria revision at this university included adding interviews, an example of the applicant's writing, and the identification of volunteer activity. The new process used an anonymous survey of the faculty (n = 45) and the applicants (n =165) to evaluate the

interview (McNelis et al., 2010). The authors used a thematic analysis approach to examine the open-ended survey questions. The results of the surveys indicated that both the faculty and students believed this was a positive experience. Students reported they had the opportunity to identify their strengths and goals, which would aid the faculty in the admission decision. The faculty believed that using C-GPA alone did not allow them to have any input into the admission decision. Additional survey results revealed that the new process of scheduling of interviews using an online web page was easy and time-efficient (McNelis et al., 2010). Longitudinal research was recommended by McNeilis et al. (2010) for ongoing monitoring of admitted student demographics, rates of attrition, nursing course grades, graduation rates, and NCLEX-RN® FTPRs.

House, Sturgeon, Garrett-Wright, and Blackburn (2015) researched the addition of group interviews to the admission criteria at a BSN program in a southeastern university. Group interviews included four to five students, two nursing faculty, and one currently practicing nurse from the local community (House et al., 2015). All participating faculty and students completed an anonymous survey consisting of open-ended questions focusing on the interview process. The results indicated that both faculty and students had a favorable view of the interviews (House et al., 2015). Adding interviews had a positive impact on increasing the diversity of the student population at this university. Student candidates believed that the interviews were a way to identify themselves and not be seen as only an academic grade (House et al., 2015). Candidates also enjoyed the opportunity to meet faculty who would teach them in the coming semesters. Unfavorable issues noted by the authors included increased candidate stress levels and the logistical problem of scheduling students, faculty, and local nurses (House

et al., 2015). Additionally, as a result of House et al. (2013) research, the interview process underwent several changes. The interview changes adopted included a decrease in the number of students per group, a random selection of questions by the students, and all questions were based on program-specific topics developed by the faculty (House et al., 2015).

Nursing programs used interviews as one method of selecting suitable candidates for admission. The current literature provides contradictory results on the value of the interview as an admission criterion. Findings from the research indicate that interviews are resource intensive (Ehrenfeld & Tabak, 2000; Hendricks & Krothe, 2014; House et al., 2015).

Summary

Since admission criteria are developed and adopted by individual nursing programs, they, therefore, vary by program. Establishing admission criteria assists in identifying students who can complete nursing educational programs and attain a first-time passing score on the NCLEX-RN[®] is a priority for students, parents, faculty, program administration, PA SBON, accreditation agencies, the health care system, and the health care consumer.

Research examining the relationship between admission criteria and NCLEX-RN[®] FTPRs may provide valuable information for faculty, deans, and program directors in the identification of applicants and the setting of program policies. Boards of Nursing and accreditation standards can incorporate this information along with the NCLEX-RN[®] FTPRs into their program evaluation plan.

Conclusion

Multiple criteria have been used to screen candidates for admission to nursing programs. Previous research has focused on collecting data from single sites and has not used similar admission criteria, leading to confusion and contradictory results. Therefore, the present study focused on identifying admission criteria used by multiple programs with a comparison to NCLEX-RN® FTPrs in pre-licensure, collegiate nursing programs in Pennsylvania.

The next sections of the literature review describe the nature and theory of gatekeeping as related to health profession program admission.

Gatekeeping Theory

Kurt Lewin was a German psychologist who studied the behavior of individuals and groups in the social world (Deluliis, 2015; Lewin 1947). Ongoing advancement of Lewin's theory included the identification of channels that open and close, allowing access to groups and for change or movement to occur (Deluliis, 2015; Erzikova, 2018; Lewin, 1947). The outside forces cause the gates or channels to open or close. Gatekeeping is the mechanism that monitors the channels (Deluliis, 2015). Gatekeepers control the movement into the channels and have the power to allow outsiders access through the channels into the group (Deluliis, 2015).

Gatekeeping Theory has been applied to the education of students in dental hygiene (Rudy et al., 2017), dental school (Allareddy, Howell, & Karimbux, 2012; Carol & Schuster, 2015), psychology (Bodner, 2012), social work (Brear et al., 2008; Elpers & FitzGerald, 2013; Moore, Dietz, & Jenkins, 1998; Moore & Urwin, 1991; Sowbel, 2012), medicine (Bills, VanHouten, Grundy, Chalkley, & Dermody, 2016; Valachovic, 2012),

and music therapy (Hsiao, 2014),). Brear et al. defined educational gatekeeping as “the evaluation of student suitability for professional practice” (2008, p. 93). Professional programs use admissions criteria as a gatekeeping mechanism or tool to screen applicants for suitability for entry into professional practice (Brear et al., 2008; Cole & Lewis, 1993; Sowbel, 2012). Gatekeeping can be an ongoing process that continues through the entire educational program, including during class, field placements, and upon exit from the program (Elpers & FitzGerald, 2013; Moore & Urwin, 1991; Moore et al., 1998).

Miller and Koerin defined gatekeeping as “a process in professional education designed to ensure that those who graduate are capable of interacting with clients, colleagues, and the community in an ethical and competent manner” (2001, p.1). The admission criteria are tools used by gatekeepers to gauge the suitability of an application for passage through the channel. Gatekeeping in the health professions begins with application for entry into a professional program, the supervision of students’ academic progression after admission, the development of the students’ professionalism, and their competence in the field or clinical placement (Brear et al., 2008; Elpers & FitzGerald, 2013). Gatekeeping is the responsibility of those within the profession to monitor individuals admitted into the profession, those completing professional education, and subsequently, ongoing membership within the group (Moore & Urwin, 1991; Sowbel, 2012). Self-monitoring maintains the health of the profession (Brear et al., 2008) and the quality of care provided (Hsiao, 2014).

Dental Hygiene.

In the field of dental hygiene, admission criteria are used to screen for the most qualified candidates who will succeed in the program (N = 121) (Rudy, Singleton, Lewis,

& Quick, 2017). Student undergraduate *ACT* scores, C-GPA, science pre-requisite GPA, pre-requisite course success, personal characteristics, and interviews may also be used to screen students for professional dental hygiene education (Rudy et al., 2017).

Dental school.

Dental schools have been screening applicants for suitability in academic performance and professional ability since 1950 (Carroll & Schuster, 2015). Allareddy, Howell, and Karimbux (2012) identified the higher Dental Admissions Test (DAT) scores predicted higher exit examination scores. The DAT, along with undergraduate C-GPA and undergraduate science GPA, have been used as the screening criteria for admission to dental schools (Carroll & Schuster, 2015).

Medical schools.

Medical schools have used admission criteria as a screening method since 1928 (Bingham, Chanatry, Baffi-Dugan, Childress, & Maxwell, 2012). The Medical College Admission Test (MCAT) is a high stakes test used throughout the United States to evaluate applicants for suitability for medical school (Bills et al., 2016; Bingham et al., 2012; Sesate, Milem, McIntosh, & Bryan, 2017; Valachovic, 2012). Instituting an entrance examination decreased the medical school attrition rate from 50% in the 1920s to seven percent in 1946 (Bingham et al., 2012). The MCAT has been revised over time and has become “a competencies-based examination that tests both knowledge and skills in the natural and social sciences” (Bingham et al., 2012, p. 26). The MCAT acts as a gatekeeping tool that screens applicants for the ability to succeed in medical school (Saguil et al., 2015). In addition to the MCAT, undergraduate C-GPA was considered by

some medical schools (Sesate et al., 2017). More recently, medical schools consider an applicant's experiences and characteristics in a HAR (Valachovic, 2012).

Music therapy.

Hsaio (2014) studied several professional competency problems in music therapy students. Hsaio (2014) surveyed program and internship directors (N = 119) for data on occurrence rates of severe professional competency concerns, which included the inability to take professional critique and feedback, poor interpersonal skills, and performance critique. Data analysis indicated that 93.8% of undergraduate program directors experienced at least one student with severe professional competency concerns within the previous five years (Hsaio, 2014). Hsaio (2014) recommends that music therapy programs should incorporate more rigorous standards and criteria for student course work and internships as a gatekeeping method for professional suitability.

Psychology.

Bodner (2012) advocates that in the field of psychology, the ethical standards set forth by the American Psychological Association should be used to screen students for suitability in all levels of the profession: undergraduate, graduate, and doctoral preparation. Bodner (2012) stressed that suitability screening by both course faculty and field supervisors is extremely important. Bodner (2012) did not address admission criteria, but instead advocates for an ongoing screening approach that evaluates students during each level of professional education.

Summary

The results of recent research focusing on admission variables indicate that a variety of criteria and a variety of variable combinations have been used in research

studies in nursing and other health-related fields. For example, Romeo (2013) used SAT[®] scores only. High school GPA and SAT[®] or ACT[®] scores were used by Elkins (2015) and McGahee et al. (2010). Another variable used by researchers was high school GPA and standardized testing without SAT[®] or ACT[®] scores (Wiggins, 2012). Other researchers used pre-nursing C-GPA, GPA in pre-requisite courses, and standardized entrance tests (Bennett et al., 2016). Furthermore, multiple standardized entrance examinations are available to nursing programs, making comparison difficult.

Additionally, the review of the literature indicated that the majority of the current nursing research was collected at single sites (Bennett et al., 2016; Elkins, 2015; McGhee et al., 2010; Romeo, 2013). There were only two national studies, and these had contradictory results (Crow et al., 2004; Odem-Maryon et al., 2018). Wiggins (2012), in a regional study, found that the participating nursing programs primarily used the pre-nursing C-GPA, but more than half did not require any standardized nursing entrance examination. The diversity of variables, differences in program characteristics, and the large number of single-site studies, makes comparison of data problematic. It also makes the generalization of the results to other nursing programs difficult. The inclusion of non-traditional admission criteria, such as HAR in nursing and other health care fields, adds additional variables into an already complex process. Nursing programs across the United States have not widely adopted non-academic admission criteria.

Conclusion

When applied to nursing education, Lewin's Gatekeeping (1947) channels represent the nursing program's admission criteria, and the outside forces represent the students' ability to meet the admission criteria. Admission committees, faculty, and

administrators verify the student's completion of the admission criteria. They act as gatekeepers for the nursing profession. The gatekeepers act as quality control allowing entrée only to those who are most likely to meet the admission requirements of the program, go on to complete the nursing program, and then successfully pass the NCLEX-RN®. Lewin's Gatekeeping Theory guided this study as it focused on admissions criteria (1947). This study provided a valuable next step in furthering knowledge about admission criteria that are used in pre-licensure, collegiate nursing programs in Pennsylvania. The relationship between admission criteria and NCLEX-RN® FTPRs across these nursing programs was also analyzed.

Chapter Three - Methods

Overview

Most of the research regarding nursing school admission criteria has used multiple variables and single-site data collection. Results across studies were inconsistent and contradictory (Crow et al., 2004; Odom-Maryon et al., 2018). Therefore, the purpose of this study was to examine the relationship between admission criteria and NCLEX-RN® FTPRs in pre-licensure, collegiate nursing programs in Pennsylvania. Pennsylvania pre-licensure, collegiate nursing programs hereafter will be referred to as “all PA nursing programs.”

Research Design and Setting

This study employed a self-report survey to examine the association between admission criteria and NCLEX-RN® FTPRs in PA nursing programs. Cross-sectional research designs collect predictor data at one point in time (Lavrakas, 2008; Levin, 2006; Polit & Beck, 2018). This current cross-sectional study collected program demographic and admission criteria data over a period of four weeks, as reported by program directors. A retrospective approach was used to collect the outcome data consisting of NCLEX-RN® FTPRs from the PA SBON website (2018b, 2019b). The PA SBON publishes the NCLEX-RN® FTPRs for approved programs annually.

The self-report survey was web-based, allowing the nursing program directors to complete it at their convenience. An alternative method of participation was available upon request. No program director requested an alternative format for participation.

Responding Programs

The respondents for the Admission Criteria Survey were recruited from the PA SBON Approved Program list of Pre-licensure Nursing Programs (2019a). Inclusion

criteria of PA nursing programs identified 69 ASN, BSN, and MSNE programs as eligible for this study (PA SBON, 2019a). The PA nursing programs were the potential respondents and were represented by the program director for this study and were contacted by email.

Exclusion criteria were diploma nursing programs (n = 16) and any nursing program not approved by the PA SBON (n = 0). Therefore, they were not included in this research. Diploma nursing programs were excluded as they were hospital-based. Students were also excluded from this research.

Ethical Considerations

Risks to respondents.

Following approval by the Research Ethics Review Board (RERB) of Immaculata University, nursing program directors received written information via email about the purpose of the study, the confidential nature of responses, the potential risks and benefits of the survey, the approximate 15-minute completion time for the survey, and the process of using numerical identifiers and other security measures to maintain confidentiality. Risks to the respondents were minimal and included fatigue. Respondents experiencing fatigue were asked to stop, rest, and resume when rested.

Benefits to respondents.

All respondents were informed of the purpose of the survey. There were not any immediate individual benefits from participating in the study. Schools of nursing may receive future benefits from receiving a summary of the de-identified results, which could be used to assess their program's policies related to admission criteria and NCLEX-RN® FTPRs. Additionally, state boards of nursing and accrediting agencies may find the

results from this survey helpful in evaluating nursing educational programs. The health care system and society, in general, may benefit from nurses who pass the NCLEX-RN® on the first attempt and are subsequently able to join the nursing workforce immediately upon program completion.

Consent.

Respondents for this research were PA nursing programs as represented by their program directors who were over 18 years of age. The first question was an attestation of age (Appendix A). Participation was voluntary, and the respondent's consent to participate was inferred by completion of the survey.

Conflict of Interest.

The researcher did not have any financial conflicts of interest. The researcher was not a faculty member of any pre-licensure, collegiate nursing program in Pennsylvania at the time of the research. The researcher was a former faculty member at a traditional pre-licensure BSN program in Pennsylvania. Although the investigator was a doctoral student in the education department at another university with a traditional pre-licensure, collegiate nursing program, there was no interaction with that nursing program.

Instruments

The comprehensive review of the current literature did not uncover an appropriate instrument to address the research questions. Therefore, the researcher developed a new self-report survey, Admission Criteria Survey, as the instrument for collecting the necessary data. The survey method allowed the researcher to efficiently collect data about the characteristics of the respondents (Creswell, 2014; Polit & Beck, 2018). The survey method is quick, easy, and convenient for respondents to complete (Couper, Traugott &

Lamias, 2001). The survey was designed and implemented using the principles recommended by Dillman, Smyth, and Christian (2014). The Dillman method seeks to improve response rate by using straight forward question phrasing, carefully planning the layout of questions, and regular follow-up (2014).

Content validity of the newly developed survey (Creswell, 2014) was ensured using a three-pronged approach. Initially, the researcher developed survey questions based on a review of the current literature regarding admission criteria (Crow et al., 2004; Elkins, 2015; McGahee et al., 2010; Odom-Maryon et al., 2018; Romeo, 2013). Secondly, a panel of nursing education experts reviewed the survey questions (Creswell, 2014). The panel of experts included a former dean of a nursing program and a current program department head.

Following expert content review and recommended revisions, the pilot survey was finalized. The content validity review and revisions occurred before using the survey for the pilot study. The pilot survey enabled the researcher to test the instrument and ascertain its usability (Benson & Clark, 1982; Creswell, 2014; Kimberlin & Winterstein, 2008; Polit & Beck, 2018;). Problems and process issues were identified before deploying the Admission Criteria Survey.

Pilot Survey.

The pilot study collected information about the nursing program's demographic data, current admission practices, and any changes to the admission criteria since the 2013-2014 academic year (AY). The results of the pilot study were used to revise the Admission Criteria Survey that was sent to the approved PA nursing programs. The

results obtained from the pilot survey were not included in the analysis of the data from the PA nursing programs.

Pilot Survey Data Collection Procedure.

Initially, the pilot survey focused on the pre-licensure, collegiate nursing programs in Delaware. The Delaware Division of Professional Registration, Delaware Board of Nursing (DE BON) (2018) website identified approved program and contact information for each pre-licensure, collegiate nursing program (DE nursing programs). Delaware nursing programs selected for the pilot study included three ASN degrees and three BSN programs as this group was representative of the approved DE nursing programs (DE BON, 2018). The researcher confirmed the director's contact information by accessing individual program websites.

Contact with the Delaware nursing program directors occurred by email. The recruitment letter identified the researcher, study purpose, importance of participation, length of the pilot survey, risks, benefits, confidentiality, embedded link for the web-based electronic survey, end date of the research, researcher's contact information, and a statement of appreciation for participating in the pilot survey (Appendix A). This email was then sent to the six directors of DE nursing programs. All correspondence occurred with the nursing program directors. Consent was implied by the program director's participation in the survey and by answering the first question attesting to age (Appendix A).

A multiple contact email strategy was used (Dillman et al., 2014). This strategy included an initial recruitment email and subsequent weekly reminder email messages (Appendix B) (Dillman et al., 2014). The data collected from the six DE nursing

programs were intended to be collected over four-weeks. After the four-week timeframe, no further reminder emails were sent.

The initial emails sent to the DE nursing programs during the first week of June contained an embedded weblink for returning the completed survey using a Survey Monkey link. This method of sending the surveys became entangled in institutional email filters resulting in the pilot survey going to the recipient's spam folders. Questionable email is treated as junk mail and usually sent to spam or junk mail folders (Greenlaw & Brown-Welty, 2009; Kaplowitz, Hadlock, & Levine, 2004; Schmidt, 1977). The process of sending the emails was altered by the researcher to avoid institutional spam filters.

The new process required the development of individual emails containing a personalized web-link sent from the researcher's Immaculata University email. Each web-link contained a customized, numerical identifier to allow tracking while maintaining confidentiality. Additionally, all subsequent follow-up reminder emails contained the weblink with a customized, confidential, numerical identifier. The individually personalized recruitment emails containing the customized, numerical identifier were sent to the DE nursing program directors during the third week of June. Reminder emails were sent during the last week of June and the first two weeks of July. Only one response was received from these emails. The third reminder email was sent during the first week of August to encourage additional response. No other completed pilot surveys were received.

The limited return from DE nursing programs ($n = 1$) required expansion of the pilot survey. The pilot study was extended to nursing programs in Maryland (MD nursing programs). A similar process of accessing the Maryland Board of Nursing (MBON)

website for approved nursing programs, as described above, was followed (2018). In Maryland, there are 15 ASN degrees, ten BSN, and two MSNE programs (MBON, 2018). Validation of the contact information for the 27 nursing directors occurred before the recruitment email with the embedded web link was sent (Appendix A). The recruitment email and electronic surveys (Appendix A) sent to the MD nursing programs were identical to the electronic survey sent to the DE nursing programs. Recruitment emails were sent during the first week of July and reminder emails were sent to the MD nursing programs during July (Appendices B). The pilot survey concluded in the first week of August.

Initially, it was planned for the pilot survey to remain open to receive results for four weeks (approximately 30 days). The Delaware pilot survey stayed open for results submission for 51 days. This did not include the 17 days in which the emails were being screened out by institutional spam filters. Submission of the pilot survey was available for the MD nursing programs for 33 days. Returns from Maryland program directors (n = 9) were received between day two and day 27 with a mean return of day 13. The combined period the pilot survey was available for submission ranged from 33 to 51 days, with a combined mean of 42 days.

Pilot Survey Response Rate.

The literature demonstrates that acceptable response rates (RR) from surveys vary greatly from between 20.77 % to 52.46% (Balter, Balter, Fondell, & Lagerros, 2005; Cobanoglu, Warde, & Patrick, 2001; Cook, Heath & Thompson, 2000; Couper et al., 2001; Geenlaw et al., 2009; Kaplowitz et al., 2004; Kittleson, 1997; Nulty, 2008; Perkins, 2011; Shannon & Bradshaw, 2002; Tresplacios & Perkins, 2016). Though there

are varying results for RR, there is agreement that personalized emails and follow-up reminder emails improve the rate of return (Cook et al., 2005; Dillman et al., 2014; Trespalacios & Perkins, 2016). This pilot study used an initial personalized recruitment email and three personalized reminder emails, which included a program-specific weblink and a numerical identifier to maximize the RR.

The American Association of Public Opinion Research (AAPOR) (2016) defines the response rate as the number of completed surveys divided by the number of eligible surveys. The calculation of the RR is more complicated than is contained in this simple definition. The AAPOR (2016) identifies standardized formulas for calculation of the RR. The AAPOR (2016) formula for Internet Surveys for Specifically Named Persons was used to calculate this pilot study's response rate since the respondent information was known and obtained from the DE BON (2018) and the MBON (2018) approved programs list. The AAPOR identifies categories of data that are used in the RR calculations.

Definitions of Data Categories (AAPOR, 2016).

Completion of returned surveys.

- *Completed surveys* have all questions answered and have been submitted by the respondents (AAPOR, 2016).
- *Partially completed surveys* have some missing data but have been submitted by the respondents (AAPOR, 2016).

Eligible surveys, but not returned.

- *Refusals* include those respondents who refuse to participate and those that log into the survey but do not answer any questions (AAPOR, 2016).

- *Non-contact* includes respondents who are unavailable to participate in the survey. Included in this category are out of office replies, and those surveys returned after the close date (AAPOR, 2016).

Other.

- *Unknown eligibility* includes those respondents who are eligible but have not completed the survey, but an undeliverable or bounced back email message has not been received by the researcher (AAPOR, 2016).
- *Other unknown* includes any respondents with unknown email addresses (AAPOR, 2016).

The AAPOR (2016) definitions were used to calculate the RR for this pilot survey sent to DE and MD nursing programs. The AAPOR (2016) provides the following formula for Response Rate 1 (RR1):

$$\frac{\# \text{ completed}}{(\# \text{ completed} + \# \text{ partially completed}) + (\# \text{ refused} + \# \text{ non-contact} + \# \text{ other}) + (\text{other})}$$

The second RR (RR2) uses both completed and partially completed surveys in the numerator of the formula as the total number of respondents (AAPOR, 2016).

$$\frac{\# \text{ completed} + \# \text{ partially completed}}{(\# \text{ completed} + \# \text{ partially completed}) + (\# \text{ refused} + \# \text{ non-contact} + \# \text{ other}) + (\text{other})}$$

The pilot survey RR1 and RR2 were 30.3% based on the above formulas using the categories of returned surveys found in Table 3.1. All questions on the returned surveys were answered. The similarity between the RR1 and the RR2 was primarily due to the absence of partially completed surveys. The survey deployment during June and

July may have negatively impacted the response rates, as evidenced by the number of out of office and non-responses.

Table 3.1
Pilot Survey - Responses

Responses	Delaware n = 6	Maryland n = 27	Total n = 33
<i>Surveys emailed to eligible nursing programs</i>	6 18%	27 82%	33
<i>Completion of returned surveys</i>			
Returned completed	1 16.6%	9 33%	10 30%
Returned partially completed			
<i>Eligible but not returned</i>			
Refusals		3 11%	3 9%
<i>Non-contact respondent unavailable</i>			
Out of office message	3 50%	8 30%	11 33%
Returned after the close date			
<i>Other</i>			
Non-response, undeliverable or bounced email	2 33.3%	7 26%	9 27%
<i>RR1</i>	16%	33.3%	30.3%
<i>RR2</i>	16%	33.3%	30.3%

There was a combined total of 10 surveys returned from DE BON and MBON approved nursing programs. The majority of the pilot surveys returned were from ASN programs, which accounted for 70% of the responses. BSN programs accounted for 20%, while MSNE was 10% of the responses. Deployment of the recruitment and reminder emails occurred on Tuesday mornings by 8 AM. Twenty percent of the responses also occurred on Tuesdays. The remaining pilot surveys were returned on Wednesdays and Thursdays. The researcher had estimated that the pilot survey would take less than 30 minutes to complete. The respondents completed the survey in four to 12 minutes.

Pilot survey instrument

The initial email included the purpose of the pilot survey, the importance of the topic under study, confidentiality, and contact information for both the researcher and dissertation supervisor (Appendix A). The pilot survey consisted of 30 questions, which included a consent section, a short nursing program demographic section, and lastly, questions developed from the review of literature focusing on admission criteria (Appendix A). The respondent was not able to continue with the pilot survey if the consent questions were left blank or if the option of under 18 years old was chosen (Appendix A).

The consent question was the only mandatory question in the pilot survey. The respondent was able to skip over or choose not to answer any of the remaining questions. Both page skip logic and question skip logic were used in this pilot survey. Skip logic provided the respondent with an individualized experience with the survey.

Additional Comments

The researcher received emails clarifying the scope of the survey. Specifically, the inquiries from directors centered around the notion of data collection in their state. Further information about the pilot study goal was provided. Subsequently, both program directors completed the pilot surveys.

Summary

The pilot survey results indicate that the instrument was valid. The questions developed for the pilot survey collected the data necessary to answer the research questions. During the process of sending the recruitment emails, it was noted that the email recruitment letter was lengthy. Some information was repeated in the introductory

paragraphs at the beginning of the electronic web-based survey. Changes were made to streamline the recruitment letter and survey introduction for the Admission Criteria Survey.

Additionally, the pilot survey was initially deployed using a weblink through Survey Monkey, which was identified as spam by some institutions. A second invitation was sent that used a weblink embedded in the researcher's email through the Immaculata University webmail system. This method was successful, and pilot survey responses were received. This method was incorporated into the final survey procedure.

There was a limited response to the pilot survey deployed during June and July. This limited return was likely secondary to survey deployment during the summer semester when some academics are out of the office. Therefore, invitation emails for the Pennsylvania Admission Criteria Survey were sent during the regular academic year.

Admission Criteria Survey

Data Collection Procedure.

Information about PA nursing programs was gathered in the same method as was the pilot survey. The PA SBON website identified the name of each educational institution, the name of the program, and the contact information for each state-approved nursing program (2019a). The researcher validated each nursing program's information. An individual, personalized recruitment email with a weblink containing a confidential unique numerical identifier was sent to all PA nursing programs (Appendix C). Customized emails with the numerical identifier were sent weekly for three weeks to encourage survey completion (Appendix D).

Data Analysis and Interpretation.

The outcome variables for this research include the NCLEX-RN[®] FTPR, NCLEX-RN[®] FTPRs \geq 80% AYs 2016-2018, and NCLEX-RN[®] FTPRs \geq 80% for AYs 2013-2018 for Pennsylvania (PA-SBON, 2018b, 2019b) (Figure 3.1). The predictor variables are the admission criteria used by pre-licensure, collegiate nursing programs to screen applicants for admission (Figure 3.1). All statistical analyses were performed using the Statistical Package for the Social Sciences 26 (SPSS) (International Business Machines, n.d.).

Figure 3.1
Predictor and Outcome Variables

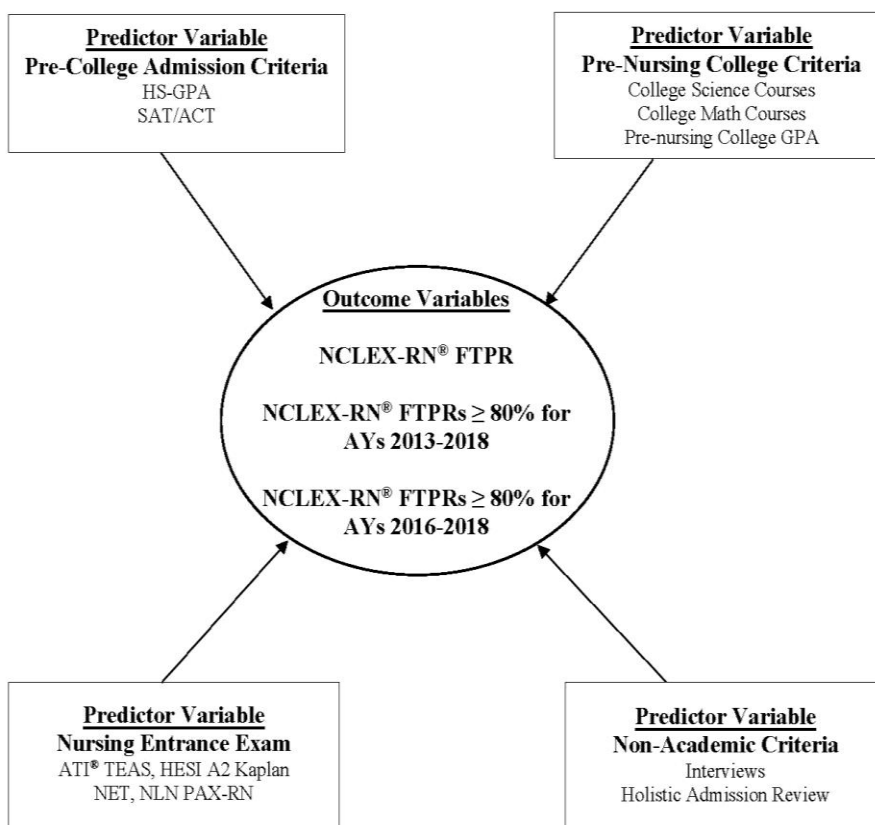


Figure 3.1 Predictor variables for admission criteria include pre-college admission criteria, pre-nursing college criteria, nursing entrance examinations, and non-academic criteria. The outcome criteria include NCLEX-RN[®] FTPR, NCLEX-RN[®] FTPRs \geq 80% for AYs 2013-2018, and NCLEX-RN[®] FTPRs \geq for AYs 2016-2018.

The researcher reviewed, coded, and cleaned all data for accuracy, completeness, and consistency (Bannon, 2013; Pallant, 2001). The researcher created a codebook to identify the coded data and facilitate data analysis in SPSS. All identifying information was removed from the data sets and the confidential numerical identifier was used.

Descriptive statistics for the outcome and predictor variables were used for analysis. Pearson's Chi-Square for Independence was used to determine the presence of a relationship between the predictor and the outcome variables (Bannon, 2013; McHugh, 2013; Pallant, 2016). Table 3.2 presents the statistical analysis used. Univariate and inferential statistics were used to analyze the predictor and outcome variables (Bannon, 2013).

Outcome Variable.

The outcome variable was the NCLEX-RN[®] FTPRs (PA SBON, 2018b, 2019b). The NCLEX-RN[®] FTPRs obtained from the PA SBON was a continuous interval variable with numbers ranging from the lowest to the highest NCLEX-RN[®] FTPR percent (0 -100) for PA nursing programs. Given the nature of the research question, the continuous variable, NCLEX-RN[®] FTPR, was changed to a categorical variable, NCLEX-RN[®] FTPR \geq 80%, for analysis (Table 3.2). Inferential statistics were used to analyze the NCLEX-RN[®] FTPRs \geq 80% categorical variable (Bannon, 2013).

Predictor Variables.

The predictor variables were admission criteria used by PA nursing programs. Additional survey questions asked about the composition of the admission criteria, such as HS-GPA, SAT/ACT, pre-requisite courses, cumulative C-GPA, nursing entrance

examination, interviews, and holistic admissions review. The predictor variables were categorical. NCLEX-RN® FTPRs $\geq 80\%$ for AYs 2013-2018

Table 3.2
Table of Variables

#	Research Question	Predictor Variable	Outcome Variable	Statistical Test
1a	What admission criteria are currently used by pre-licensure, collegiate nursing programs in Pennsylvania?	Pre-College Admission Criteria Pre-Nursing Admission Criteria Nursing Entrance Examinations Non-Academic Admission Criteria		Descriptive Statistics
1b.	What admission criteria are currently used by pre-licensure, collegiate nursing programs in Pennsylvania that have maintained an 80% or greater NCLEX-RN® FTPR for the three most recent years as reported by the PA SBON?	Pre-College Admission Criteria Pre-Nursing Admission Criteria Nursing Entrance Examinations Non-Academic Admission Criteria	NCLEX-RN® FTPRs $\geq 80\%$ for AYs 2016-2018	Descriptive Statistics
2	What is the relationship between admission criteria and NCLEX-RN® FTPRs in pre-licensure, collegiate nursing programs in Pennsylvania that have consistently met or exceeded the 80% NCLEX-RN® FTPR mandated by the PA SBON?	Pre-College Admission Criteria Pre-Nursing Admission Criteria Nursing Entrance Examinations Non-Academic Admission Criteria Admission Criteria	NCLEX-RN® FTPRs $\geq 80\%$ for AYs 2016-2018	Inferential Statistics
3	What is the relationship between admission criteria and NCLEX-RN® FTPRs in pre-licensure, collegiate nursing programs in Pennsylvania that have changed their admission criteria since the 2013-2014 academic year?	Change in Admission Criteria since the AY 2013	NCLEX-RN® FTPRs $\geq 80\%$ for AYs 2013-2018	Descriptive Statistics Inferential Statistics

Data Confidentiality

Confidentiality was maintained by assigning a unique, de-identified, numerical identifier to each PA nursing program. Each PA nursing program's data were only associated with its unique numerical identifier. All results were reported in the aggregate.

Access to the data was limited to the researcher and the dissertation committee. De-identified results will be provided to participating nursing programs after completion of this study. Additionally, analyzed de-identified results may be published.

Data were collected electronically. The data and any copies (electronic or paper) were stored in a locked fire-proof cabinet when not being used by the researcher. Electronic data were stored on a USB drive and on paper, which were maintained in a locked, fire-proof box. These data will be kept for five years, after which time all electronic and paper copies of the data will be destroyed by deleting, shredding, or burning (Patterson & Krouse, 2017).

Limitations

This research used a self-report survey and it was assumed respondents would complete the survey honestly. Since participation in this study was voluntary, nursing programs choosing to complete the survey may not be representative of the overall population and types of PA nursing programs. Additionally, this study did not address issues related to nursing faculty, student characteristics, course progression, identifying at-risk students, or graduation criteria.

Summary

This research study focused on admission criteria used to evaluate entry into pre-licensure, collegiate nursing programs. Additionally, the admission criteria used by PA nursing programs that have met or exceeded the 80% NCLEX-RN® FTPR set by the PA SBON were examined. NCLEX-RN® FTPRs impact nursing programs, students, the health care system, and the public. Research that identifying factors that influence the NCLEX-RN® FTPR may provide programs with data to make changes to admission

criteria. Additionally, facilitating the identification of students who will be successful in the NCLEX-RN® on the first attempt may provide valuable information that can be incorporated into nursing programs current practices. The results of this study may be used by nursing programs to create guidelines and suggestions for admission practices.

Chapter Four - Findings

Overview

The purpose of this study was to examine the relationship between admission criteria and NCLEX-RN® FTPRs in PA nursing programs. Multiple criteria were used by PA nursing programs to identify candidates for admission. The identification and analysis of admission criteria and its gatekeeping effect on NCLEX-RN® FTPRs may be valuable information for PA nursing programs. Three hypotheses were generated from the literature:

- H₁ Pennsylvania pre-licensure, collegiate nursing programs that have consistently met or exceeded the mandatory 80% or higher NCLEX-RN® FTPR use admission criteria in the screening of applicants.
- H₂ There is a relationship between admission criteria and NCLEX-RN® FTPRs of pre-licensure, collegiate nursing programs in Pennsylvania.
- H₃ Pennsylvania pre-licensure, collegiate nursing programs that have not met the mandatory 80% NCLEX-RN® FTPRs have revised their admission criteria.

Three research questions were posed:

1. What admission criteria are:
 - a. currently used by pre-licensure, collegiate nursing programs in Pennsylvania?
 - b. currently used by pre-licensure, collegiate nursing programs in Pennsylvania that have maintained an 80% NCLEX-RN® FTPR for 2016-2018 academic years as reported by the PA SBON?

2. What is the relationship between admission criteria and NCLEX-RN[®] FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have consistently met the 80% NCLEX-RN[®] FTPR mandated by the PA SBON?
3. What is the relationship between admission criteria and NCLEX-RN[®] FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have changed their admission criteria since the 2013-2014 academic year?

A self-report survey was emailed to 69 PA nursing program directors. The email contained a link to a web-based survey. Demographics were collected and an analysis of the survey data was conducted. The analysis presented in this chapter focused on answering the research questions.

Chapter Four discusses the survey response rate, describes PA nursing programs, participating nursing programs, non-participating nursing programs, and describes data analysis. Admission criteria acting as gatekeeping mechanisms by the pre-licensure, collegiate nursing programs were analyzed.

Data Analysis Plan

Statistical Package for the Social Sciences version 26 (SPSS 26.0) was used for all data analysis, which was conducted in three phases (IBM, n.d.). First, the study variables were analyzed using descriptive statistics. This descriptive analysis addressed research questions 1a and 1b. Research questions 2 and 3 were addressed using a series of Chi-Square tests and logistic regression to examine the predictor variables, admission criteria, and their relationship to the outcome variable, NCLEX-RN[®] FTPRs. Statistical significance was set at $p < .05$.

The third phase of data analysis involved multivariate analysis. The analysis suggested a statistically significant relationship between change in admission criteria since AY 2013 and NCLEX-RN® FTPR. Therefore, a binary logistic regression model was used. The model was assessed in terms of statistical significance, model fit, and odds ratio.

The final inferential analysis included an examination for collinearity, which did not reveal any significant problems. The lack of missing data values facilitated a complete statistical analysis. In terms of statistical power, G*power (Faul, Erdfelder, Lang, & Buchner, 2007) software indicated that a large size effect ($w = .50$) for a 2 x 2 crosstabulation Chi-Square with power set at .80 and alpha set at .05, would require a sample size of 32 study respondents. Therefore, this study sample of 35 respondents provided sufficient statistical power for the overall analysis.

Descriptive Statistics

Response Rate.

All PA SBON approved nursing programs ($N = 69$) received an electronic web-based survey via email (2019a). Thirty-five surveys were completed and returned. The calculations of the response rates (RR) were based on AAPOR (2016) formulas. Both the RR1 and the RR2 were 50.7%. The similarity between RR1 and RR2 was likely due to respondents completing all survey questions. Table 4.1 presents the categories of returned surveys.

One program elected not to participate since their first class started in the fall of 2019. Only five out of office messages were received (Table 4.1). The overall RR was higher for the Admission Criteria Survey when compared to the pilot survey. This was

likely due to the timing of the surveys. The pilot survey was sent during the summer months and the Admission Criteria Survey was sent during the mid-fall of the 2019 academic year.

Table 4.1
Categories of Returned Surveys

Categories of Returned Survey	# (%)
Surveys emailed to eligible PA nursing programs	69
Completion of Surveys	
Returned completed	35 (50.7%)
Returned partially completed	
Eligible but not returned	
Refusals	1 (1%)
Non-Contact, respondent not available	
Out of office message	5 (7%)
Returned after close date	
Other	
Nonresponse, undeliverable or bounced mail	28 (41%)

Survey Completion.

This survey was developed to gather data to answer the questions for this research study focused on admission criteria used by PA nursing programs. The pilot survey required four to 12 minutes to complete, with a mean of 7.44 minutes. The Admission Criteria Survey required a similar time frame, with a range of three to 13 minutes with a mean of 7.27 minutes for completion.

Description of the Population

The following sections, including Tables 4.2 to 4.4, provide an overview of demographics and NCLEX-RN® FTPRs across all PA nursing programs to help inform the analysis of the research data. All Pennsylvania nursing programs included ASN, traditional BSN, accelerated BSN, second degree BSN, and MSNE programs (N = 69). All NCLEX-RN® FTPRs are reported in the aggregate on the PA SBON website and are, therefore, in the public domain (2018b, 2019b). The majority of all PA nursing programs

are BSN programs (n = 44; 63.7%). ASN programs are the second-highest program type and comprise 36.2% (n = 25) of PA nursing programs. There are nine (11.6%) accelerated BSN programs. One program had only an accelerated BSN degree. Lastly, there are three (4.3%) MSNE programs in Pennsylvania.

Pennsylvania has multiple types of educational institutions. Public institutions include nursing programs at both community colleges and state universities (n = 31; 44.9%). Faith-based (n = 23; 33.3%) and private (n = 16; 23.2%) institutions account for 56.5% of the PA nursing programs. There is one HBCU in Pennsylvania with a nursing program.

External accrediting agencies monitor nursing programs, ensuring that program quality is maintained (Beeson & Kissling, 2001). The Commission on Collegiate Nursing Education (CCNE) is the accrediting agency used by the majority of all PA nursing programs (n = 38; 55%). The Accreditation Commission for Education in Nursing (ACEN) accredits twenty-eight (40.6%) of PA nursing programs, while one nursing program (1.4%) was accredited by the Commission for Nursing Education Accreditation (CNEA). Two PA nursing programs are in the initial accreditation process with CCNE.

During AYs 2013-2018, the number of approved PA nursing programs increased from 65 to 69 programs (PA SBON, 2019). This increase was due to the addition of four BSN programs during the six-year period. The number of ASN programs remained constant at 25. Therefore 69 programs approved by the PA SBON met inclusion for this study.

The NCLEX-RN® FTPR 80% mandatory benchmark for nursing programs was set by the PA SBON (2009c) and is published annually on their website (2018b, 2019b).

The range of NCLEX-RN® FTPRs was 0% - 100%. Table 4.2 presents the NCLEX-RN® FTPRs for AYs 2013 to 2018. During AYs 2013-2018, the lowest NCLEX-RN® FTPRs was 25% in AY 2015. There was a significant increase in the minimum NCLEX-RN® FTPRs in AY 2016 (41.67%) over the prior AYs (Table 4.2). Overall, the minimum NCLEX-RN® FTPRs increased during AY 2016, with a slight decrease noted in AY 2018 (54.17%).

Table 4.2
All PA Nursing Programs NCLEX-RN® FTPR for AYs 2013-2018

AY	NCLEX-RN® FTPR (%)			
	# of Programs ^a	Min FTPR %	Max FTPR %	Mean %
2013	61	30.00	100.00	82.57
2014	62	38.30	100.00	87.09
2015	63	25.00	100.00	88.12
2016	63	55.56	100.00	90.04
2017	65	66.67	100.00	92.76
2018	66	54.17	100.00	91.29

^aThe nursing programs with reportable NCLEX-RN® FTPRs vary due to the number of PA SBON approved programs with students eligible for NCLEX-RN.

All PA Nursing Programs with NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018.

During AYs 2013-2018, 44.9% (n = 34) of all PA nursing programs maintained an NCLEX-RN® FTPR of \geq 80%. The majority of programs maintaining \geq 80% for AYs 2013-2018 were BSN programs (n = 25; 80.6%) at faith-based institutions (n = 17; 54.8%) and accredited by the CCNE (n = 25; 81%). The report from the PA SBON reveals that in AY 2013, the minimum NCLEX-RN® FTPR was 80%. Three years later, in AY 2016, the minimum NCLEX-RN® FTPRs had increased to 83.02%. In AY 2018, the minimum NCLEX-RN® FTPR had decreased to 80.17% (Table 4.3).

Table 4.3
All PA Nursing Programs with NCLEX-RN® FTPR \geq 80% for AYs 2013-2018

AY	NCLEX-RN FTPRs %			
	# of Programs ^a	Min FTPR %	Max FTPR %	Mean %
2013	34	80.00	100.00	89.55
2014	34	80.17	100.00	92.15
2015	34	80.34	100.00	91.94
2016	34	83.02	100.00	93.29
2017	34	87.18	100.00	94.90
2018	34	80.17	100.00	93.26

^aThe nursing programs with reportable NCLEX-RN® FTPRs vary due to the number of PA SBON approved programs with students eligible for NCLEX-RN.

All PA Nursing Programs with NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018.

During AYs 2016-2018, 53 (76.8%) of all PA nursing programs maintained NCLEX-RN® FTPRs \geq 80%. This is a substantial increase compared to the number of all PA nursing programs with NCLEX-RN® FTPRs \geq 80% during AYs 2013-2018 (n = 34; 44.9%). All Pennsylvania nursing programs for AYs 2016-2018 had similar demographics as all PA nursing programs with NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018. Specifically, those programs with \geq 80% NCLEX-RN® FTPRs for AYs 2016-2018 were BSN programs (n = 38; 71.7%) at faith-based (n = 31; 58.5%) institutions and accredited by the CCNE (n = 38; 72%).

When NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018 were reviewed, the lowest program pass rate was 80% in AY 2016. There was a slight improvement in program pass rates in AY 2017 (81.82%), which was followed by a reduction in the minimum program pass rate in AY 2018 to 80.17% (Table 4.4). This pattern of an increase in the minimum NCLEX-RN® FTPR in either AY 2016 or AY 2017, followed by a decline in AY 2018,

was also noted in the previous PA nursing program NCLEX-RN[®] FTPR, PA nursing program NCLEX-RN[®] FTPR \geq 80% in AYs 2013-2018, and AYs 2016-2018.

Table 4.4

All PA Nursing Program with NCLEX-RN[®] FTPRs \geq 80% for AYs 2016-2018

AY	NCLEX-RN FTPRs			
	# of Programs ^a	Min FTPR %	Max FTPR %	Mean %
2016	54	80.00	100.00	92.35
2017	54	81.82	100.00	94.08
2018	54	80.17	100.00	93.24

^aThe nursing programs with reportable NCLEX-RN[®] FTPRs vary due to the number of PA SBON approved programs with students eligible for NCLEX-RN.

Description of Sample

The following section, including Tables 4.5 to 4.7, provides an overview of the programs participating in this study (n = 35). The Admission Criteria Survey was sent to 69 PA nursing programs. Thirty-five (50.7%) surveys were returned. The majority of the responding programs were BSN programs (n = 20; 34.3%) at faith-based institutions (n = 13; 37.1%) with CCNE accreditation (n = 21; 60%) and admitted students as freshmen (n = 16; 45.7). The demographic data were similar to all PA nursing programs that maintained an \geq 80% NCLEX-RN[®] FTPR for AYs 2013-2018 and AYs 2016-2018.

Responding PA nursing programs' NCLEX-RN[®] FTPRs were similar for AYs 2013-2018 when compared to all PA nursing programs. Responding PA nursing programs' (n = 35) lowest NCLEX-RN[®] FTPRs for AY 2015 was 25% with an increase the following year, AY 2016, to 55.56% (Table 4.5). A drop in the minimum NCLEX-RN[®] FTPR was again noted in AY 2018 (54.17%).

Table 4.5
Responding PA Nursing Programs with NCLEX-RN® FTPR for AYs 2013-2018

AY	NCLEX-RN FTPRs			
	# of Programs ^a	Min FTPR %	Max FTPR %	Mean %
2013	31	30.00	100.00	82.07
2014	32	38.30	100.00	86.69
2015	32	25.00	100.00	85.00
2016	32	55.56	100.00	90.40
2017	32	66.67	100.00	92.83
2018	32	54.17	100.00	91.55

^aThe nursing programs with reportable NCLEX-RN® FTPRs vary due to the number of PA SBON approved programs with students eligible for NCLEX-RN.

Responding PA Nursing Programs with NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018.

Data suggests 48.6% (n = 17) of the responding programs maintained an NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018. Responding PA nursing programs with NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018 were BSN (n = 11; 64.7%), in either a public (n = 7; 41.2%) or a faith-based institution (n = 7; 41.2%), accredited by the CCNE (n = 13; 76.5%), and admitted students as freshmen (n = 8; 47.1%). Additionally, the results of a Chi-Square analysis suggest there were a greater number of responding urban PA nursing programs that maintained an NCLEX-RN® FTPR \geq 80% for AYs 2013-2018 (n = 5; 100%). This was not analyzed further secondary to a zero cell in the data.

Analysis suggests that among the responding PA nursing programs with NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018, the lowest program pass rate was 80% in AY 2013. In AY 2016, the lowest program pass rate had increased to 86.30%, which was followed by a decline to 80.17% in AY 2018 (Table 4.6). This pattern of the lowest program pass rate during AY 2013, an increase in AYs 2016 or 2017, followed by a

subsequent decrease in program pass rates in AY 2018, was also seen across all PA nursing programs that maintained an NCLEX-RN[®] FTPrs \geq 80% for AYs 2013-2018.

Table 4.6
Responding PA Nursing Programs with NCLEX-RN[®] FTPr \geq 80% for AYs 2013-2018

AY	Respondents NCLEX-RN FTPrs \geq 80%			
	# of Programs ^a	Min %	Max %	Mean %
2013	17	80.00	100.00	90.15
2014	17	84.85	100.00	93.25
2015	17	80.34	100.00	92.30
2016	17	86.30	100.00	94.02
2017	17	87.18	100.00	95.58
2018	17	80.17	100.00	93.65

^aThe nursing programs with reportable NCLEX-RN[®] FTPrs vary due to the number of PA SBON approved programs with students eligible for NCLEX-RN.

Responding PA Nursing Programs with NCLEX-RN[®] FTPrs \geq 80% for AYs 2016-2018.

In AYs 2016-2018, 29 (82.9%) of responding PA nursing programs maintained an NCLEX-RN[®] FTPrs \geq 80%. Over half of the pre-licensure, collegiate nursing programs were BSN (n = 15; 51.7%) at a public institution (n = 12; 41.4%), with CCNE accreditation (n = 17; 58.6%), and admitted students to their nursing program as freshmen (n = 13; 44.8%). An examination of the pre-licensure, collegiate nursing program. NCLEX-RN[®] FTPrs \geq 80% for AYs 2016-2018 revealed that in AY 2016, the overall program pass rates were at the lowest 80% benchmark with an increase in AY 2017 to 85.71%, which was followed by a decline in AY 2018 to 80.17% (Table 4.7). This pattern is again similar to those previously discussed for all PA nursing programs and responding PA nursing programs, with a low in AY 2016, followed by a general overall decline in FTPrs in AY 2018.

Table 4.7
Responding PA Nursing Programs with an NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018

AY	Respondents NCLEX-RN FTPRs \geq 80%			
	# of Programs ^a	Min %	Max %	Mean %
2016	29	80.00	100.00	92.55
2017	29	85.71	100.00	94.44
2018	29	80.17	100.00	93.29

^aThe nursing programs with reportable NCLEX-RN® FTPRs vary due to the number of PA SBON approved programs with students eligible for NCLEX-RN.

Description of Non-Responding PA Nursing Programs.

There were 49.3% (n = 34) PA nursing programs that chose not to participate in this study. These non-responding PA programs were BSN programs (n = 19; 55.9%) at public institutions (n = 18; 52.9%) and accredited by the CCNE (n = 19; 55.9%). When non-responding PA nursing programs' NCLEX-RN® FTPRs were scrutinized, the lowest FTPR of 55.91% occurred in AY 2013. An increase in NCLEX-RN® FTPRs was noted in AY 2015 (69.23%) instead of AYs 2016 or 2017, as was seen in other PA nursing programs and responding PA nursing programs. Therefore, increases and decreases in NCLEX-RN® FTPRs scores during AYs 2013-2018 are similar across all PA nursing programs, responding PA nursing programs, and non-responding PA nursing programs

Statistical Analysis of Research Questions

Research Question 1a: What admission criteria are currently used by pre-licensure, collegiate nursing programs in Pennsylvania?

An analysis of admission criteria used by responding PA nursing programs (n=35; 50.7%) indicated that applicants were screened using a variety of admission criteria (Table 4.8). Pre-college admission criteria that were used included SAT scores (n = 27; 77.1%), HS GPA (n = 25; 71.4%), pre-nursing college GPA (n = 20; 57.1%), college

science courses (n =16; 45.7%), and college math courses (n = 11; 31.4%). Forty percent (n=14) of the pre-licensure, collegiate nursing programs used a standardized nursing entrance examination. The majority of programs using a standardized entrance examination used the ATI® TEAS (n = 11; 31.4%). A small number of programs used interviews (n = 2; 5.7%) and HAR (n = 7; 20%). Sixteen (45.7%) of the responding PA nursing programs also indicated students were admitted as freshmen to their respective programs.

In summary, the admission criteria used by pre-licensure, collegiate nursing programs included SAT scores, pre-nursing college GPA, standardized nursing entrance examinations, HAR, and admitted students as freshmen (Table 4.8).

Table 4.8

Admission Criteria Currently Used by Responding PA Nursing Programs

Admission Criteria	n	%
Pre-college Admission Criteria Required ^a	35	100.0
HS GPA Required	25	71.4
SAT Required	27	77.1
College Science Courses Required	16	45.7
College Math Courses Required	11	31.4
Pre-Nursing College GPA Minimum	20	57.1
Standardized Nursing Entrance Examination Required	14	40.0
ATI® TEAS	11	31.4
HESI A2	1	2.9
Kaplan NET	1	2.9
NLN PAX-RN	1	2.9
Non-Academic Criteria		
Interviews Required	2	5.7
HAR	7	20.0
Semester Student Enters Program (Multiple Answer) ^a		
Freshmen	16	45.7
Sophomore	7	20.0
Junior	1	2.9
Second Degree	7	20.0

^a Sum may not equal 100% as respondents may have pre-licensure programs in multiple categories.

Note. ASN = Associate Degree; BSN = Bachelor's Degree; MSNE = Master's Degree Entry; HBCU = Historical Black Colleges and Universities; ACEN = Accreditation Commission for Education in Nursing; CNEA = Commission for Nursing Education Accreditation; CCNE = Commission on Collegiate Nursing Education

Research Question 1b: What admission criteria are currently used by pre-licensure, collegiate nursing programs in Pennsylvania that maintained an NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018?

Overall, 82.9% (n = 29) of responding PA nursing programs with an NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018 used some type of admission criteria to screen applicants. The admission criteria used included SAT scores (n = 22; 75.9%), pre-nursing college GPA (n = 17; 58.6%), standardized entrance examination (n = 11; 37.9%), and HAR (n = 6; 20.7) as depicted in Table 4.9. Responding PA nursing programs also admitted students as freshmen (n = 13. 44.8%). Therefore, the admission criteria used by the majority of PA nursing programs in this study maintaining an NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018 were SAT scores, pre-nursing college GPA, standardized nursing entrance examination, HAR, and freshmen admission. It is interesting to note the similarities of admission criteria used by responding PA nursing programs without the requisite 80% pass rate and those with the \geq requisite 80% pass rate.

The results identified academic criteria used by responding PA nursing programs and responding PA nursing programs maintaining an NCLEX-RN® FTPRs \geq 80% for AYs 2016-2018. Research Questions 1a and 1b were, therefore, answered. The results also supported Hypothesis 1: Pennsylvania pre-licensure, collegiate nursing programs that have consistently met or exceeded the mandatory 80% or higher NCLEX-RN® FTPR use admission criteria in the screening of applicants.

Table 4.9
Admission Criteria Used by Responding PA Nursing Programs with NCLEX-RN® FTPrs \geq 80% for AYs 2016-2018

Admission Criteria	N	%
Admission Criteria (Multiple Answer) ^a	29	82.9
Pre-college Admission Criteria Required		
HS GPA Required	20	69.0
SAT Required	22	75.9
Pre-Nursing College Admission Criteria (Multiple Answer) ^a		
College Science Courses Required	14	48.3
College Math Courses Required	10	34.5
Pre-Nursing College GPA Minimum	17	58.6
Standardized Nursing Entrance Examination (Multiple Answer) ^a		
Standardized Nursing Entrance Examination Required	11	37.9
ATI® TEAS	9	31.0
HESI A2	1	3.4
Kaplan NET		
NLN PAX-RN	1	3.4
Non-Academic Admission Criteria (Multiple Answer) ^a		
Interviews Required	1	3.4
HAR	6	20.7
Semester Student Enters Program (Multiple Answer) ^a		
Freshmen	13	44.8
Sophomore	6	20.7
Junior		
Second Degree	6	20.7

^a Sum may not equal 100% as respondents may have pre-licensure programs in multiple categories
Note. ASN = Associate Degree; BSN = Bachelor's Degree; MSNE = Master's Degree Entry; HBCU = Historical Black Colleges and Universities; ACEN = Accreditation Commission for Education in Nursing; CNEA = Commission for Nursing Education Accreditation; CCNE = Commission on Collegiate Nursing Education

Research Question 2: What is the relationship between admission criteria and NCLEX-RN® FTPr in pre-licensure, collegiate nursing programs in Pennsylvania that had consistently met the 80% NCLEX-RN® FTPr mandated by the PA SBON (AYs 2013-2018)?

Table 4.10 presents a Chi-Square analysis of responding PA nursing programs (n = 35) that have consistently maintained an NCLEX-RN® FTPr \geq 80% for AYs 2013-2018. Chi-Square analysis with one degree of freedom and an alpha of .05 has a critical value of 3.84 (Howell, 2014). Results are interpreted in light of this critical Chi-Square value. Interestingly, Chi-Square analysis suggests that there were fewer responding PA nursing programs that maintained an NCLEX-RN® FTPrs \geq 80% for AYs 2013-2018

when requiring a standardized nursing entrance examination than those programs that did not require a standardized entrance examination (28.6% vs. 61.9%), $X^2(1) = 3.74, p < .05$. The resultant Chi-Square value, $X^2(1) = 3.74$, although less than the requisite critical value of $X^2 = 3.84$, is noteworthy that it is significant at the .05 level. It may be that the critical Chi-Square threshold of $X^2 = 3.84$ would have been reached with a larger sample size. Additionally, a higher percent of PA nursing programs admitting students as freshmen maintained an NCLEX-RN[®] FTPRs $\geq 80\%$ for AYs 2013-2018 relative to those programs admitting students later in their academic trajectory (68.8% vs. 31.6%, respectively), $X^2(1) = 4.80, p < .03$.

As noted in Table 4.10, data suggest a significant relationship between admitting students as freshmen and maintaining NCLEX-RN[®] FTPRs $\geq 80\%$ for AYs 2013-2018 ($X^2 = 4.80, df 1, p < .03$). Although the use of a standardized entrance examination did not reach the Chi-Square critical threshold ($X^2 = 3.84$), it was included in the binary logistic model because it demonstrated a p value of .05.

Table 4.11 presents a single predictor binary logistic regression analysis of PA nursing programs maintaining an NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2013-2018 using standardized nursing entrance examination and freshmen admission. Binary logistic regression indicated requiring a standardized nursing entrance examination was no longer significantly related to the NCLEX-RN[®] FTPR ($p = .06$). At the bivariate level, the data indicated that PA nursing programs that admit students as freshmen were almost five times (OR = 4.77; 95% CI = 1.14 - 19.98; $p < .05$) more likely to have maintained an NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2013-2018 than those that admit at other times.

Table 4.10
Chi-Square Analysis of PA Nursing Programs with NCLEX-RN® FTPR \geq 80% for AYs 2013-2018 by Admission Criteria

Admission Criteria	NCLEX-RN® FTPR \geq 80% for AYs 2013-2018				X ² (df)	p
	Yes		No			
	n	%	n	%		
Pre-college Admission Criteria (NA, n = 35, 100.0% responded Yes)						
HS GPA Required					4.80 (1)	.52
Yes	13	52.0	12	48.0		
No	4	40.0	6	60.0		
SAT Required					51.1 (1)	.48
Yes	14	51.9	13	48.1		
No	3	37.5	5	62.5		
Pre-Nursing College Admission Criteria						
College Science Course Required					.27 (1)	.60
Yes	7	43.8	9	56.3		
No	10	52.6	9	47.4		
College Math Courses Required					.33 (1)	.96
Yes	4	36.4	7	63.6		
No	13	54.2	11	45.8		
Pre-Nursing College GPA					.04 (1)	.85
Yes	10	50.0	10	50.0		
No	7	46.7	8	53.3		
Standardized Nursing Entrance Examination						
Standardized Nursing Entrance Required					3.74 (1)	.05
Yes	4	28.6	10	71.4		
No	13	61.9	8	38.1		
ATI® TEAS					2.91 (1)	.09
Yes	3	27.3	8	72.7		
No	14	58.3	10	41.7		
Faculty Generated Examination (NA, n = 0)						
HESI A2 (NA, n = 1)						
Kaplan (NA, n = 1)						
NLN PAX-RN (NA, n = 1)						
Non-Academic Admission Criteria						
Interviews Required (NA, n = 2)						
HAR (NA, n = 7)						
Semester Student Enters Program						
Freshmen					4.80 (1)	.03
Yes	11	68.8	5	31.3		
No	6	31.6	13	68.4		

^aThis statistically significant finding cannot be included in the multivariate model because one of the cells has zero cell

Note. ASN = Associate Degree; BSN = Bachelor's Degree; MSNE = Master's Degree Entry; HBCU = Historical Black Colleges and Universities; ACEN = Accreditation Commission for Education in Nursing; CNEA = Commission for Nursing Education Accreditation; CCNE = Commission on Collegiate Nursing Education

Table 4.11

Single Predictor Binary Logistic Regression Analysis of Responding PA Nursing Programs with an NCLEX-RN® FTPR \geq 80% for AYs 2013-2018 by Admission Criteria

Admission Criteria	NCLEX-RN® FTPR \geq 80%				OR (95% CI)	<i>p</i>
	AYs 2013-2018					
	Yes		No			
	n	%	n	%		
Semester Student Enters Program:						
Freshmen					4.77 (1.14 - 19.98)	.05
Yes	7	43.8	9	56.3		
No	10	52.6	9	47.4		
Standardized Nursing Entrance Examination Required					.25 (.06-1.06)	.06
Yes	4	28.6	10	71.4		
No	13	61.9	8	38.1		

The standardized nursing entrance examination was not statistically significant at the $p = .05$ level; it approached statistical significance ($p = .06$) and was included in the multivariate model. This is a reasonable consideration given the low number responding to positive use of a standardized entrance examination. Table 4.12 presents a multivariate binary logistic regression analysis of responding PA nursing programs maintaining an NCLEX-RN® FTPR \geq 80% for AYs 2013-2018 by admission criteria, standardized nursing entrance examination and freshman admission. Data indicated that at the multivariate level, neither requiring a standardized nursing entrance examination ($p = .32$) nor the year of admission ($p = .15$) retained a significant association with NCLEX-RN® FTPR \geq 80% for AYs 2013-2018. Therefore, Hypothesis 2, there is a relationship between admission criteria and NCLEX-RN® FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have consistently met the 80% NCLEX-RN® FTPRs mandated by the PA SBON, was not supported.

Table 4.12

Multivariate Binary Logistic Regression Analysis Examining Responding PA Nursing Programs with NCLEX-RN® FTPR \geq 80% for AYs 2013-2018 by Admission Criteria

Admission Criteria	B (SE)	Wald Chi	OR (95% CI)	<i>p</i>
Semester Students Enter Program: Freshmen	1.18 (.82)	2.05	3.24 (.65-16.19)	.15
Standardized Nursing Entrance Examination Required Standardized Entrance Examination Req	-.83 (.85)	.99	.43 (.08-2.26)	.32

Research Question 3. What is the relationship between admission criteria and NCLEX-RN® FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have changed their admission criteria since the 2013-2014 academic year?

Question 3 was included in this research to gather data regarding changes in admission criteria and the influence that change may have had on a nursing program's NCLEX-RN® FTPR. When respondents addressed the research question regarding admission criteria change, the specific year of the change was not noted. Data obtained from responding PA nursing programs' written comments (n = 23) regarding changes to admission criteria were categorized and analyzed using Pearson's Chi-Square test for categorical variables allowing the investigator to address research questions 3. An increase in the minimum SAT score (n = 6; 17.1%) was the pre-college admission criteria that most respondents changed. Five (14%) nursing programs indicated the pre-nursing GPA had been increased. An increase in acceptable score was the most frequent statement related to the standardized nursing entrance examination (n = 5; 14.3%). Regarding non-academic admission criteria, one program indicated their intent to discontinue interviews (n = 1; 2.9%) and another planned to change group interviews to

individual interviews ($n = 1$; 2.9%). Limiting the number of pre-requisite courses students could repeat was also noted as an admission criterion change three (8.6%) PA nursing programs were instituting.

Table 4.13 presents a Chi-Square analysis of the PA nursing programs maintaining an NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2013-2018 by changes in admission criteria. Analysis indicates that no specific change in admission criteria was associated with NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2013-2018.

Table 4.13
Chi-Square Analysis of PA Nursing Programs with Changed Admission Criteria Since AY 2013

Admission Criteria	PA Nursing Programs with Changed Admission Criteria Since AY 2013				X ² (df)	p
	Yes		No			
	n	%	n	%		
Pre-college Admission Criteria						
HS GPA Increased					.00 (1)	.97
Yes	1	50.0	1	50.0		
No	16	48.5	17	51.1		
SAT Minimum Score Increased					.44 (1)	.51
Yes	3	50.0	3	50.0		
No	14	48.3	15	51.7		
SAT Minimum Score Decreased					1.09 (1)	.30
Yes	1	100.0	0	0.0		
No	16	47.1	18	52.9		
Accepting Students without SAT Scores					1.09 (1)	.30
Yes	1	100.0	0	100.0		
No	16	47.1	18	52.9		
Pre-Nursing College Admission Requirements						
College Math Courses (NA)						
Encourage to take HS AP Science Courses					1.09 (1)	.30
Yes	1	100.0	0	0.0		
No	16	47.1	18	52.9		
Establish a Minimum Grade for A&P					.97 (1)	.30
Yes	0	100.0	1	100.0		
No	17	50.0	17	50.0		
Pre-nursing GPA Increased					.31 (1)	.58
Yes	3	60.0	2	40.0		
No	14	46.7	16	53.3		
Pre-nursing GPA – No Rounding					1.09 (1)	.30
Yes	1	100.0	0	100.0		
No	16	47.1	18	52.9		

Table 4.13 (continued)

Chi-Square Analysis of PA Nursing Programs with Changed Admission Criteria Since AYs 2013

Admission Criteria	PA Nursing Programs with Changed Admission Criteria Since AYs 2013-2018				X ² (df)	p
	Yes		No			
	n	%	n	%		
Standard Nursing Entrance Examination						
Increased Minimum Score on Entrance Examination					1.91 (1)	.17
Yes	1	20.0	4	80.0		
No	16	53.3	14	46.7		
Decreased Minimum Score on Entrance Examination					1.09 (1)	.30
Yes	1	100.0	0	0.0		
No	16	47.1	18	52.9		
Changed Nursing Entrance Examination					.97 (1)	.32
Yes	0	0.0	1	100.0		
No	17	50.0	17	50.0		
Add a Nursing Entrance Examination					.97 (1)	.32
Yes	1	100.0	0	0.0		
No	17	50.0	17	5.0		
Non-Academic Admission Criteria						
Discontinued Interviews					.97 (1)	.32
Yes	0	0.0	1	100.0		
No	17	50.0	17	50.0		
Change Interviews from Group to Individual					.97 (1)	.32
Yes	0	0.0	1	100.0		
No	17	50.0	17	50.0		
Other Admission Criteria Changes						
Give Extra Points for HS Advanced Placement Math and Science					1.09 (1)	.30
Yes	1	100.0	0	0.0		
No	16	47.1	18	52.9		
Limit the # of pre-requisites courses that can be repeated					.97 (1)	.32
Yes	0	0.0	3	100.0		
No	17	53.1	15	46.9		
Discontinue the letter of reference					.97 (1)	.32
Yes	0	0.0	1	100.0		
No	17	50.0	17	50.0		

Respondents Additional Comments

Several respondents added comments in an open text box. The responses expanded on their answers but did not add any new or additional data. The topics of the comments also included information not pertinent to this research but may provide other ideas for future research regarding progression and exit criteria.

Summary and Conclusion

This research focused on admission criteria used as screening or gatekeeping processes for entry into PA nursing programs. A web-based survey was sent via email to 69 PA nursing program directors. The RR was 50.7% (n = 35). It was noted that the number of approved, PA nursing programs (PA SBON, 2018a, 2019a) and the number of PA nursing programs with an NCLEX-RN® FTPRs \geq or equal to 80% has increased between AY 2013 and AY 2018 (PA SBON, 2018a, 2019b). The survey was arranged using page and question skip logic to guide the respondents to each question based on their previous response (Appendix C). Responding PA nursing programs completed the survey in three to thirteen minutes, with a mean of 7.27 minutes.

Descriptive and inferential data analysis provided evidence to support Hypothesis 1. Multivariate analysis using the admission criteria, requiring a standardized nursing entrance examination (p = .32) and the year of admission (p = .15), indicated that neither criteria retained a significant association with NCLEX-RN® FTPRs \geq 80% for AYs 2013-2018; therefore, Hypothesis 2 was not supported. Hypothesis 3 focused on changes to admission criteria by pre-licensure, collegiate nursing programs. When responding PA nursing programs answered this question, the year the admission criteria were changed was omitted. Insufficient data relating to the year of admission criteria change prohibited analysis of any change in NCLEX-RN® FTPRs as it related to specific years. The data obtained from respondent's written comments regarding changes made to admission criteria (n = 23) were categorized. Those admission categories were analyzed using Pearson's Chi-Square test for categorical variables. This analysis did not find any

significant statistical relationship between changes in admission criteria and NCLEX-RN® FTPRs. Therefore, Hypothesis 3 was not supported

The similarity of the demographic data and NCLEX-RN® FTPRs between the PA nursing programs and responding PA nursing programs was noted. The use of pre-college admission criteria, pre-nursing college admission criteria, the use of standardized entrance examinations, and non-academic criteria were also noted across all responding PA nursing programs. These similarities will be discussed further in the following chapter.

Chapter 5 Conclusion and Discussion

Overview

The purpose of this study was to examine the relationship between admission criteria and NCLEX-RN® FTPRs in pre-licensure, collegiate nursing programs in Pennsylvania. A web-based, self-report survey developed by the researcher was used to collect admission criteria data from pre-licensure, collegiate nursing programs. Results of the use of admission criteria by Pennsylvania pre-licensure, collegiate nursing programs as a gatekeeping tool to screen applicants, the limitations of the study, and recommendations for further research are discussed in this chapter.

Summary of the Study

This study examined the relationship between admission criteria used by pre-licensure, collegiate nursing programs in Pennsylvania and their NCLEX-RN® FTPRs. Lewin's Gatekeeping Theory was used to guide the study. This study examined how admission criteria were used as a screening mechanism to identify potential applicants who would be suitable for the profession and successfully pass the NCLEX-RN® on the first attempt.

The respondents (n = 35) received an email with a link to a web-based survey with multiple-choice questions about program demographic, pre-college admission criteria, pre-nursing admission criteria, and standardized entrance examinations. Several questions allowed space for additional comments. The demographic data indicated that the respondents were primarily traditional BSN programs at a faith-based institution with CCNE accreditation.

The study focused on answering the following three research questions:

1. What admission criteria are:
 - a. currently used by pre-licensure, collegiate nursing programs in Pennsylvania?
 - b. currently used by pre-licensure, collegiate nursing programs in Pennsylvania that have maintained an 80% NCLEX-RN[®] FTPR for AYs 2016-2018 as reported by the PA SBON?
2. What is the relationship between admission criteria and NCLEX-RN[®] FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have consistently met the 80% NCLEX-RN[®] FTPR mandated by the PA SBON??
3. What is the relationship between admission criterion and NCLEX-RN[®] FTPR in pre-licensure, collegiate nursing programs in Pennsylvania that have changed their admission criteria since the 2013-2014 academic year?

The hypotheses developed from the review of literature were:

- H₁** Pennsylvania pre-licensure, collegiate nursing programs that have consistently met or exceeded the mandatory 80% or higher NCLEX-RN[®] FTPR use admission criteria in the screening of applicants.
- H₂** There is a relationship between admission criteria and NCLEX-RN[®] FTPRs of pre-licensure, collegiate nursing programs in Pennsylvania.

- H₃** Pennsylvania pre-licensure, collegiate nursing programs that have not met the mandatory 80% NCLEX-RN[®] FTPRs have revised their admission criteria.

Theoretical Framework

Lewin's Gatekeeping Theory identified channels that allow movement or change to occur between groups (Deluliis, 2015; Erzikove, 2018; Lewin, 1947). The gatekeepers monitor the flow into and through the channels, thereby allowing access between groups (Deluliis, 2015; Lewin 1947). Gatekeeping or assessing the applicant's suitability for entrée into professional education has been used by many disciplines (Brear et al., 2008; Cole & Lewis, 1993; Sowbel, 2012). These disciplines include dental hygiene (Rudy et al., 2017); dentistry (Allareddy et al., 2012; Carol & Schuster, 2015); psychology (Bodner, 2012), social work (Brear et al., 2008; Elpers & FitzGerald, 2013; Moore et al., 1998; Moore & Urwin, 1991; Sowbel, 2012), and medicine (Bills et al., 2016; Valachovic, 2012). Screening may include identifying those applicants that have the academic ability to complete the program of study (Elpers & FitzGerald, 2013; Moore et al., 1998; Moore & Urwin, 1991) and those who will maintain the ethical standards of the profession (Miller & Koerin, 2001). Gatekeeping and monitoring of professional suitability begins with admission screening and continues throughout the student's educational preparation (Elpers & FitzGerald, 2013; Moore et al., 1998; Moore & Urwin, 1991).

Lewin's Gatekeeping Theory was used as an overarching guide for this study (1947). Gatekeeping using admission criteria to screen applicants for suitability for a pre-licensure, collegiate, professional nursing educational program was studied. The

NCLEX-RN[®] FTPR was identified as the successful outcome of the screening or gatekeeping. The next section discusses the results of the possible influence of the gatekeeping using admission criteria by pre-licensure, collegiate nursing programs.

Summary of Results

The overall population of Pennsylvania pre-licensure collegiate nursing programs, nursing programs with an NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2016-2018 and AYs 2013-2018, have similar demographic characteristics. The majority of the overall population of nursing programs in Pennsylvania and the respondent sample are traditional BSN programs, in a faith-based college or university, and use screening criteria for admission to their program.

This research used a self-report survey and respondents were self-selected. Self-selection may contribute to a study with a non-representative sample (Polit & Beck, 2018). The study sample was representative of the overall population of all PA nursing programs, all PA nursing programs NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2013 - 2018, and all PA nursing programs maintaining NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2016-2018.

Descriptive statistical analysis of the survey data identified the frequency and the distribution of admission criteria currently used by responding pre-licensure, collegiate nursing programs in Pennsylvania. All respondents (n = 35) used admission criteria to screen applicants for entry into their nursing programs. The admission criteria used were SAT scores (n = 27), pre-nursing GPA (n = 20), college science courses (n = 16), and a standardized nursing entrance examination (n = 14). Each pre-licensure, collegiate nursing program identified the admission criteria that was used at their program for the screening of applicants. Various combinations of admission criteria were used by the

nursing programs in the screening process. The results of the frequency and distribution answer the research question focusing on the admission criteria currently used by PA nursing programs (n = 11).

The subsequent research questions focused on the admission criteria used by PA nursing programs maintaining an NCLEX-RN® FTPR $\geq 80\%$ for AYs 2016-2018.

Descriptive statistics indicated the frequency and distribution of the admission criteria used. The admission criteria used by nursing programs that maintained an NCLEX-RN® FTPR $\geq 80\%$ for AYs 2016-2018 included HS GPA (n = 20), SAT (n = 22), required college sciences (n = 14), pre-nursing college GPA (n = 17), and standardized nursing entrance examinations in support of H₁.

Results identified admission criteria used by nursing programs that had maintained an NCLEX-RN® FTPR $\geq 80\%$ for AYs 2013-2018. The analysis indicated that nursing programs with an NCLEX-RN® FTPR $\geq 80\%$ for AYs 2013-2018 used SAT scores (n=14), HS GPA (n = 13), college sciences (n = 7), pre-nursing GPA (n = 10), and standardized nursing entrance examination (n = 4). These results provided information to inform the screening of applicants and support for applicant selection to nursing programs. Thus, the admission criteria acted as a gatekeeping mechanism for faculty and admission committees to gauge the appropriateness of applicants' entrée into the nursing profession.

Initially, analysis of the data for Research Question 2, indicated responding PA nursing programs admitting students as freshmen and standardized nursing entrance examination influenced maintaining an NCLEX-RN® FTPR $\geq 80\%$ for AYs 2013-2018. Further analysis at the multivariate level suggests that neither requiring a standardized

nursing entrance examination ($p = .32$) nor the year of admission ($p = .15$) retained a significant association with NCLEX-RN[®] FTPR $\geq 80\%$ for AYs 2013-2018.

Research Question 2 examined the presence of a relationship between admission criteria and NCLEX-RN[®] FTPRs $\geq 80\%$ for AYs 2013-2018. The results indicated that a relationship does not exist. Therefore, Research Questions 2 was answered. Hypothesis 2 posits a relationship exists between admission criteria and NCLEX-RN[®] FTPRs $\geq 80\%$ for AYs 2013-2018. The results suggest a relationship does not exist; therefore, Hypothesis 2 is not supported.

Lastly, changes in admission criteria were examined. Responding PA nursing programs did not provide the year that changes to admission criteria occurred; however, the free-text comments were collated using the same admission criteria categories developed from the review of literature. The admission criteria categories included were pre-college admission criteria, pre-nursing college admission criteria, standardized nursing entrance examinations, and non-academic admission criteria. Descriptive statistics were used to obtain the frequency of the various changes made to the admission criteria. A Chi-Square test was used to examine the admission criteria changes for statistical significance. The results did not indicate any significance to the changes to the admission criteria relative to NCLEX-RN[®] FTPR. Therefore, though Research Question 3 was answered, Hypothesis 3 was not supported.

Limitations

Though the RR1 and RR2 of 50.7% provided an adequate sample size ($n=35$), which met the power threshold as calculated by *G*Power* ($n = 32$) (Faul et al., 2007), the individual admission criteria variables were difficult to analyze given the small numbers

of responses for each admission criteria. A larger sample, including a larger proportion of Pennsylvania nursing programs, may have allowed for analysis using each of the admission criteria individually rather than as one combined variable. A replication of this study, including additional states or regions, may provide for a larger sample. A larger sample would also allow for a more in-depth investigation into the relationship between admission criteria and NCLEX-RN® FTPR.

Admission criteria were examined across pre-licensure, collegiate nursing programs. Therefore, ASN, BSN, accelerated BSN, second degree, and MSNE programs were combined and reported in aggregate due to the PA SBON's reporting structure for the NCLEX-RN® FTPRs. Research focused on admission criteria and NCLEX-RN® FTPRs by program type requires obtaining additional information directly from nursing programs. The examination of admission criteria and NCLEX-RN® FTPRs by program type would allow for further statistical comparison between and among program types. Further differentiation and statistical analysis of admission criteria, as it relates specifically to nursing program type, would provide more detailed information for the screening of applicants at all levels of nursing programs.

Relationship to the Research

The literature review revealed that most researchers used individual nursing programs to study admission criteria (Bennett et al., 2016; Cunningham et al., 2014; Elkins, 2015; Hinderer et al., 2014; McGhee et al., 2010; Newton et al., 2007; Romeo, 2013; Yoho et al., 2007). Further, the review of the literature did not identify any studies that examined admission criteria without concurrently considering progression criteria, exit criteria, faculty factors, student characteristics, and program issues. The literature

review identified one regional and two national studies. This current study examined admission criteria and NCLEX-RN® FTPRs at multiple nursing programs in Pennsylvania and thus addressed the limitations of prior studies.

Wiggins (2012) examined admission, progression, and exit criteria in a regional study conducted in the southern United States. The investigator used telephone interviews with nursing program administrators (n = 30) attending a regional conference. Wiggins (2012) was unable to identify admission criteria used in a consistent pattern by the participants. In contrast, the current study results indicated the responding programs and the responding programs maintaining an NCLEX-RN® FTPR ≥ 80 used the same admission criteria. This study similar to Wiggins, found that less than one-half of respondents used nursing entrance examinations (n = 11).

Crow et al. (2004) and Odom-Maryon et al. (2018) used multiple variables of admission, progression, and exit criteria in their national studies. Crow et al. (2004) (n = 160) recruited nationally for respondents for a study focused on admission and progression criteria supporting success in the NCLEX-RN®. Crow et al. (2004) results indicated that programs using standardized entrance examinations had a higher NCLEX-RN® FTPR. The results of Odom-Maryon et al. (2018), a more recent national study (n = 832), focusing on program characteristics and NCLEX-RN® success were contradictory. The current study found a relationship between a standardized entrance examination and NCLEX-RN® FTPRs. However, analysis using Chi-Square tests and multivariate logistical regression, the results were not statistically significant and therefore, indicate an association among the variables did not exist in the responding programs.

Odom-Maryon et al. (2018) indicated nursing programs not requiring a standardized nursing examination had higher NCLEX-RN® FTPRs, whereas, Crow et al. (2004) found the opposite results. The lack of multisite research focusing solely on admission criteria and lack of consistent results were identified as the gaps in the literature. The current research used multiple sites in Pennsylvania to address one aspect of the gap in prior research, but the small sample size limited analysis.

Recommendations for Further Research

Admission criteria were posited as a gatekeeping mechanism in this study to identify pre-licensure, collegiate nursing programs that produced graduates who would be successful on the NCLEX-RN® on the first attempt. Future research may use Lewin's Gatekeeping Theory (1947) and admission criteria to identify applicants who would be successful on the NCLEX-RN® on the first attempt.

Additionally, replication of this study, including regional or national pre-licensure, collegiate nursing programs as the population would provide for a larger sample. The resulting larger number of participating programs would enable a more in-depth analysis of individual and combinations of admission criteria. Larger numbers of participating programs may also provide sufficient data to analyze the relationship between admission criteria and NCLEX-RN® FTPR by program type. Also, examining admission criteria for transfer students and the relationship to NCLEX-RN® FTPR is another area for future research. Research focused on the relationship of HAR to NCLEX-RN® FTPR may be of interest to the nursing community. Since HAR incorporates non-academic criteria, identification of other characteristics of an applicant may provide valuable information for student success.

Changes to admission criteria and the resulting impact on NCLEX-RN® FTPRs were an area that this study attempted to analyze. Future research may consider a longitudinal study to examine the impact of the admission criteria change over time. Admission criteria are one aspect of the gatekeeping activities in professional programs. Progression criteria and exit criteria used by nursing programs are areas that should be investigated. Additionally, replication of this study after initiation of the next generation (NGN) NCLEX-RN® would provide for comparison between the test versions. Replication of this study after the start of the NGN NCLEX-RN® may provide nursing programs with data for evaluation and revision of their admission criteria.

Recommendations for Practice

There currently is and will continue to be an increased need for highly educated nurses due to changes in healthcare and the aging of the population. Historically, the demand for nurses has increased, especially in times of crises, whether caused by political strife, war, or disease. The current pandemic caused by the COVID 19 virus and its possible chronic disease sequelae (CDC, 2020; Wang et al., 2020; Wilcox & Herridge, 2010) impacting the population worldwide will only increase the need for highly educated nurses. Additionally, financial difficulties due to economic issues may encourage displaced workers to consider nursing as a potential stable career choice. Admission criteria is one aspect of the educational infrastructure of nursing that can be examined. Ongoing research using Lewin's Gatekeeping Theory (1947) as a guide to further study who enters the nursing profession may have a far-reaching impact on the future of the nursing profession

Conclusion

Admission criteria are the gatekeeping mechanism for entry into a professional nursing program. Monitoring applicants to identify those who will be successful is important but may eliminate candidates who do not have impressive academic portfolios. Each nursing program identifies those applicants who may succeed in their program based on admission criteria. It may be valuable to include non-academic criteria when deciding to allow an applicant through and enter the nursing program.

The idea for this research came from the investigator's experience working with students. There were students with high GPA and SAT scores who were unable to succeed in a nursing program. Some students struggled in every class but excelled in clinical experiences. This research came from the desire to facilitate fostering student success in the NCLEX-RN® on their first attempt. In conclusion, the information derived from this study may facilitate an understanding of some gatekeeping practices used by nursing programs.

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Appendix A

Pilot Survey

Nursing Program Admission Criteria



COLLEGE OF GRADUATE STUDIES

Loyola 130 | 1145 King Road | Immaculata, PA 19345

Recruitment Email and Survey

Date:

Title of Project: **Dissertation Pilot Survey –
Nursing Program Admission Criteria**

Dear Dr.

My name is Julia Anne Walsh and I am a doctoral candidate in Higher Education at Immaculata University and am asking for your participation in this important short Pilot Survey investigating admission criteria used by nursing programs.

Your input and comments are vital and will inform the final survey instrument to be used to examine the possible relationship between admission criteria and NCLEX-RN FTPR across the state of Pennsylvania. The final survey instrument will be approved by the Research Ethics Review Board at Immaculata University.

I am hopeful you will decide to participate in this pilot survey. I hope that by providing you with a link to the pilot survey website, it will be easy for you to respond. To complete the survey, simply click on this link:

(Weblink)

This pilot survey will ask general demographic questions and the admission criteria used for applicants to your pre-licensure, collegiate nursing program. The pilot survey also asks for your comments regarding the content and process of the survey. Should this web-based survey pose a problem, please contact me, and I will make arrangements to provide you another method of participation.

Your participation in the pilot study should take no longer than thirty minutes. Participation in this pilot study is voluntary. You may decline to answer any questions you do not wish to answer, and you can withdraw your participation at any time by not submitting your response. There are minimal risks from participating in this study, which may include fatigue from answering the questions. You can stop, rest, and restart the on-line survey. Research examining the relationship between admissions criteria and NCLEX-RN FTPRs may provide valuable information for nursing programs

It is important for you to know that any information that you provide will be confidential. All the data will be summarized and used to inform the final survey instrument.

The data collected from this pilot survey will be accessed only by the researcher and the dissertation supervisor. All will be maintained on a password-protected computer database. As well, the data will be electronically archived after completion of the study and maintained for 5 years.

Should you have any questions about the study, please contact Julia Anne Walsh (doctoral candidate) JWalsh2@mail.immaculata.edu or Mary Powell, Ph. D., (dissertation supervisor) at mpowell3@mail.immaculata.edu.

Please complete the pilot survey by **August 9th, 2019**. I am so grateful for your time and efforts to help inform this important work.

Sincerely,

Pilot Survey

Nursing Program Admissions Criteria and NCLEX-RN First Time Pass Rates

This **Pilot Survey** is being conducted by Julia Anne Walsh as part of my dissertation research in the Higher Education, Nursing Education Concentration at Immaculata University, under the supervision of Mary Powell, Ph.D. I am conducting a **Pilot Survey** to collect data focusing on admission criteria used by nursing programs.

As a pre-licensure, collegiate nursing program director or chairperson, I am asking for your feedback about this new **Pilot Survey** about admission criteria used by your nursing program. Results from this **Pilot Survey** will be used to inform and refine final instrument development examining admission criteria to collegiate pre-licensure nursing programs. The final instrument will be used in my dissertation research to examine a possible relationship between pre-licensure, collegiate nursing program admission criteria, and first-time pass rates on the National Council Licensure Exam for Registered Nurses (NCLEX- RN FTPRs) in the State of Pennsylvania. The final instrument will be approved by the Immaculata University Research Ethics Review Board before data collection in nursing programs in Pennsylvania.

It is important for you to know that any information that you provide will be confidential. All data will be summarized.

The data collected from this **Pilot Survey** will be accessed only by the researcher and the dissertation supervisor. All data will be maintained in a password-protected computer database. As well, the data will be electronically archived after completion of the study and maintained for 5 years after the research has been completed.

Should you have any questions about the **Pilot Survey**, please contact Julia Anne Walsh, at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., at MPowell3@mail.immaculata.edu.

Thank you for considering participating in this **Pilot Survey**.

Consent

1. To participate in this survey, the respondent must be 18 years of age or older.*
- You are 18 years of age or older. By completing this on-line survey, you have voluntarily agreed to participate in this pilot study.
(continue to question #2)
- You are less than 18 years old. You are not eligible to participate in this survey. Thank you for your time.

Demographic Information

2. Please describe your nursing program.
- Associate Degree Pre-licensure Nursing Program
(continue to question #4)
- Bachelor's Degree Pre-licensure Nursing Program
(continue to question #3)
- Masters Level Entry Program
(continue to question #4)
- Other, please describe _____
(continue to question #4)
3. Please describe your bachelor's degree pre-licensure nursing program.
- Traditional undergraduate pre-licensure nursing
- Second-degree pre-licensure nursing program
- Other, please describe your bachelor's degree pre-licensure nursing program
(continue to question #4)
4. Please describe your college or university by choosing **all that apply** to your institution.
- A county institution
- A state institution
- A private institution
- A public institution
- A faith-based institution
- A Historically Black College or University (HBCU)
- Other, please describe your institution _____
(continue to question #5)

5. Please describe the location of your college or university?

- Rural
- Suburban
- Urban

(continue to question #6)

6. Please indicate a nursing accrediting agency that your program uses.

- Accreditation Commission for Education in Nursing (ACEN)
- Commission for Nursing Education Accreditation (CNEA)
- Commission on Collegiate Nursing Education (CCNE)
- We do not use a nursing accrediting agency
- Other, please indicate the nursing accrediting agency that your program uses

(continue to question #7)

7. Please describe when your students enter your nursing program.

- First semester
- Second semester
- Third semester
- Freshman year
- Sophomore year
- Junior year
- Second degree
- Other, please describe _____

(continue to question #9)

Pre-requisites

The following questions will focus on the criteria used for admission to your pre-licensure nursing program. Please answer the questions based on the criteria for admission used during the **2017-2018 academic year**. The final questions will provide you with an area for additional comments about the criteria you use for admission to your program and any additional comments about this pilot survey.

8. During the **2017-2018 Academic Year**, were applicants required to meet **criteria** for admission to your nursing program?

Yes, we required applicants to meet criteria for admission to our nursing program.
(continue to question #9)

No, we did not require applicants to meet criteria for admission to our nursing program.
(continue to question #23)

Pre-College Admission Criteria

9. During the **2017-2018 Academic Year**, was the applicant's **High School GPA** used as a criterion for admission to your nursing program?

No, we did not use the applicant's High School GPA as a criterion for admission to our nursing program.
(continue to question #10)

Yes, we required the applicant to have a **minimum High School GPA** of _____
(continue to question #10)

SAT

10. During the **2017-2018 Academic Year**, was the applicant's **SAT cumulative** score used as a criterion for admission to your nursing program?

No, we did not require the applicant's cumulative SAT score as a criterion for admission to our nursing program.
(continue to question #11)

Yes, for admission to our nursing program the applicant was required to have a **minimum cumulative SAT score** of _____
(continue to question #12)

ACT

11. During the **2017-2018 Academic Year**, was the applicant's **ACT cumulative score** used as a criterion for admission to your nursing program?

No, we did not require the applicant's ACT cumulative score as a criterion for admission to our nursing program.
(continue to question #12)

Yes, for admission to our nursing program the applicant was required to have a **minimum ACT cumulative score** of _____
(continue to question #12)

Pre-Nursing College Criteria**Science Courses**

12. During the **2017-2018 Academic Year**, did you require applicants to take **College Science Courses** as admission criteria to your nursing program?

Yes, we required applicants to take **College Science Courses** for admission to our nursing program

(continue to question #13)

No, we did not require applicants to take college science courses for admission to our nursing program

(continue to question #14)

13. You indicated that applicants during the **2017-2018 Academic Year** were required to take **College Science Courses** as a criterion for admission to your nursing program. Please indicate the college science course required for admission to your nursing program by choosing all that apply.

Anatomy and Physiology

Biology

Chemistry

Microbiology

Other, please describe _____

(continue to question #14)

Math Courses

14. During the **2017-2018 Academic Year**, did you require applicants to take **College Math Courses** as an admission criterion to your nursing program?

Yes, we did require the applicant to take college math courses for admission to our nursing program.

(continue to question #15)

No, we did not require the applicant to take college math courses for admission to our nursing program.

(continue to question #16)

15. You indicated that applicants during the **2017-2018 Academic Year** were required to take College Math Courses for admission to your nursing program. Please indicate the **College Math Courses** required as an admission criterion to your program by choosing all that apply.

Algebra

Statistics

Other, please describe _____

(Continue to question #16)

GPA

16. During the **2017-2018 Academic Year**, did you use a **Cumulative Pre-Nursing College GPA** as a criterion for admission to your nursing program?

No, we did not use the Cumulative Pre-Nursing College GPA as a criterion for admission to our nursing program.

(continue to question #17)

Yes, for admission to our nursing program, applicants were required to have **minimum Cumulative Pre-Nursing College GPA** of _____

(continue question #17)

Entrance Exams

17. During the **2017-2018 Academic Year**, which of the following **Nursing Entrance Exams** were used as a criterion for admission to your nursing program?

Assessment Technologies Institute Test of Essential Academic Skills (**ATI TEAS**)

(continue to question #18)

Faculty Generated Admission Exam

(continue to question #19)

Health Education Systems, Inc., Admission Assessment Exam (**HESI A2**)

(continue to question #20)

Kaplan Nurse Entrance Test (**Kaplan NET**)

(continue to question #21)

National League for Nursing Pre-Admission Test (**NLN PAX-RN**)

(continue to question #22)

We did not use an admission exam as a criterion for admission to our nursing program.

(continue to question #23)

Other Nursing Program Admission Exam. Please describe what exam was used and the minimum score(s) required.

(continue to question # 23)

ATI TEAS

18. You indicated that applicants during the 2017-2018 Academic Year were required to take the ATI TEAS entrance exam. Please indicate the minimum score(s) required for the **ATI TEAS entrance exam**.

- Composite or Cut Score _____
- Reading _____
- Math _____
- Science _____
- English and Language _____

(continue to question #23)

Faculty Generated Entrance Exam

19. You indicated that applicants during the **2017-2018 Academic Year** were required to take a **Faculty Generated Entrance Exam** as a criterion for admission to your nursing program. Please indicate the minimum score(s) required on the **Faculty Generated Entrance Exam**.

(continue to question #23)

HESI A2

20. You indicated that applicants during the **2017-2018 Academic Year** were required to take the HESI A2 Entrance Exam as a criterion for admission to your nursing program. Please indicate the minimum score(s) required on the **HESI A2 Entrance Exam**.

- Cumulative Score _____
- Reading Comprehension _____
- Math _____
- Science _____
- Vocabulary and General Knowledge _____
- Grammar _____

(Continue to question #23)

Kaplan NET

21. You indicated that applicants during the **2017-2018 Academic Year** were required to take the Kaplan Nurse Entrance Test (Kaplan NET) as a criterion for admission to your nursing program. Please indicate the minimum score(s) required on the **Kaplan NET**.

- Cumulative Score _____
- Reading _____
- Math _____
- Science _____
- Writing _____
- Critical Thinking _____

(continue to question #23)

22. You indicated that applicants during the **2017-2018 Academic Year** were required to take the National League for Nursing Pre-Admission Test (NLN PAX-RN) as a criterion for admission to your nursing program. Please indicate the minimum score(s) required on the **NLN PAX-RN**.

- Composite Score _____
- Composite % Rank _____
- Math _____
- Science _____
- Verbal Ability _____
- Grammar _____

(continue to question #23)

Non-academic Criteria

23. During the **2017-2018 Academic Year**, were **Interviews** used as an admission criterion to your nursing program?

- Yes, during the 2017-2018 Academic Year, Interviews were required as a criterion for admission to our nursing program.

(continue to question #24)

- No, during the 2017-2018 Academic Year, Interviews were not required as a criterion for admission to our nursing program.

(continue to question #25)

24. You indicated that applicants during the **2017-2018 Academic Year** were required to participate in an Interview as a criterion for admission to your nursing program. Please describe how you approached the **Interview process** by selection from the options below.

Individual

Group

Face to Face

Teleconference

Videoconference

(continue to question #25)

Holistic Admission Review

25. During the 2017-2018 Academic Year, was a Holistic Admission Review used in the admission process to your nursing program?

No, a Holistic Admission Review was not used in our nursing program admission process.

(continue to question #26)

Yes, a Holistic Admission Review was used in our nursing program admission process. Please describe your approach to the Holistic Admission Review process.

(continue to question #26)

26. During the **2017-2018 Academic Year**, what other data were used as admission criteria to your nursing program?

We did not use any other data as admission criteria to our nursing program.

(Continue to question #27)

Other data were used as admission criteria to our nursing program. Please describe the other data that you used as admission criteria to your nursing program.

(Continue to question #27)

27. Have you changed the criteria that are required for admission to your nursing program since the **2013-2014 Academic Year**?

No, we have not changed our admission criteria since the 2013-2014 Academic Year

(continue to question #28)

Yes, we have changed our admission criteria since the 2013-2014 Academic Year. Please describe the change(s) and in which academic year(s) this occurred.

(continue to question #28)

Additional Comments

28. Do you have any additional comments regarding your admission criteria?

(continue to question #29)

Pilot Survey Instrument

29. Regarding the data collection instrument- Please indicate any other recommendations for changes to process and/or content in this pilot survey focusing on admission criteria in pre-licensure, collegiate nursing programs.

Thank you for your time and participation in this survey!

End of Survey

Appendix B

Pilot Survey Reminder Emails



COLLEGE OF GRADUATE STUDIES

Loyola 130 | 1145 King Road | Immaculata, PA 19345

Reminder Email 1

Title of Project: Dissertation **Pilot Survey** –
Nursing Program Admissions Criteria

Dear Dr.

My name is Julia Anne Walsh and I am a doctoral candidate in Higher Education at Immaculata University and last week, I sent you an email asking for your participation in an important short Pilot Survey investigating admissions criteria used by nursing programs.

Your participation in the pilot survey should take no longer than thirty minutes. Participation in this pilot survey is voluntary. You may decline to answer any questions you do not wish to answer, and you can withdraw your participation at any time by not submitting your response. There are minimal risks from participating in this study, which may include fatigue from answering the questions. You can stop, rest, and restart the on-line survey.

I hope that providing you a link to the pilot survey website makes it easy for you to respond. To complete the survey, simply click on this link:

(Weblink)

This pilot survey will ask general demographic questions and the admissions criteria used for applicants to your pre-licensure, collegiate nursing program. **The pilot survey also asks for your comments regarding the content and process of the survey.**

Your input and comments are vital and will inform the final survey instrument to be used to examine the possible relationship between admission criteria and NCLEX-RN FTPR across the state of Pennsylvania. The final survey instrument will be approved by the Research Ethics Review Board at Immaculata University.

Please complete the pilot survey by **August 9th, 2019**. I am so grateful for your time and efforts to help inform this important work.

Should you have any questions about the pilot survey, please contact Julia Anne Walsh (doctoral candidate) at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., (dissertation supervisor) at mpowell3@mail.immaculata.edu.

Thank you once again for completing this important pilot survey.

Sincerely,

Pilot Survey Reminder Email 2

Date:

Title of Project: **Dissertation Pilot Survey –
Nursing Program Admission Criteria**

Dear Dr. :

My name is Julia Anne Walsh and I am a doctoral candidate in Higher Education at Immaculata University. Last week I sent you an email asking for your participation in an important short Pilot Survey investigating admission criteria used by nursing programs.

If you have already completed this survey, I would like to thank you very much. I truly appreciate your help.

If you have not completed the pilot survey, I would like to urge you to do so. **The pilot survey should take no longer than thirty minutes.** Simply click on the link below to begin answering the questions.

(Weblink)

Your input and comments are vital and will inform the final survey instrument to be used to examine the possible relationship between admission criteria and NCLEX-RN FTPR across the state of Pennsylvania. The final survey instrument will be approved by the Research Ethics Review Board at Immaculata University.

Please complete the pilot survey by **August 9th, 2019**. I am so grateful for your time and efforts to help inform this important work.

Should you have any questions about the pilot survey, please contact Julia Anne Walsh (doctoral candidate) at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., (dissertation supervisor) at mpowell3@mail.immaculata.edu.

Thank you once again for completing this important pilot survey.
Sincerely,

Pilot Survey Reminder Email 3

Date:
Topic: Dissertation Pilot Survey –
Nursing Program Admission Criteria

Dear Dr. :

I am writing to follow up on the message I sent last week asking you to participate in a short **Pilot Survey investigating admission criteria used by nursing programs**. The pilot survey is part of my **Dissertation Research, which will** examine the possible relationship between admission criteria and NCLEX-RN FTPR across the state of Pennsylvania. Your input and comments about the **Pilot Survey** are vital and will use to revise the final survey instrument, which will be approved by the Research Ethics Review Board at Immaculata University.

If you have already completed this survey, I would like to thank you very much. I truly appreciate your help.

If you have not completed the pilot survey, I would like to urge you to do so. **The pilot survey should take no longer than thirty minutes**. Simply click on the link below to begin answering the questions.

(Weblink)

Please complete the pilot survey by **August 9th, 2019**. I am so grateful for your time and efforts to help inform this important work.

Should you have any questions about the pilot survey, please contact Julia Anne Walsh (doctoral candidate) at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., (dissertation supervisor) at mpowell3@mail.immaculata.edu.

Thank you once again for completing this important pilot survey.

Sincerely,

Appendix C

Admission Criteria Survey



COLLEGE OF GRADUATE STUDIES

Loyola 130 | 1145 King Road | Immaculata, PA 19345

Recruitment Email and Survey

Date:

Title of Project: **Dissertation Study** – Nursing Program Admission Criteria and NCLEX-RN First Time Pass Rates

Dear (*insert name*),

My name is Julia Anne Walsh and I am a doctoral candidate in Higher Education at Immaculata University and am asking for your participation in this important study investigating the possible relationship between admission criteria used by pre-licensure nursing programs and NCLEX-RN first time pass rates.

This electronic survey will ask general demographic questions and questions about the admission criteria used for applicants to your pre-licensure, collegiate, nursing program.

Your participation in this study should take no longer than 15 to 30 minutes. Participation is voluntary. You may decline to answer any questions you do not wish to answer, and you can withdraw your participation at any time by not submitting your response. Should this electronic survey pose a problem, please contact me, and arrangements will be made to provide you another method of participation. Please complete this survey by (*insert date*).

I am hopeful you will decide to participate in this survey. To complete the survey, simply click on this link below:

(*Insert weblink*)

This study was approved by the Research Ethics Review Board at Immaculata University. It is important for you to know that any information that you provide will be confidential. All the data will be summarized. Data collected from this survey will be accessed only by the researcher and the dissertation supervisor. All data and materials will be maintained on a password-protected computer database. As well, the data will be electronically archived after completion of the study and maintained for 5 years. There are minimal risks from participating in this study, which may include fatigue from answering the questions. You can stop, rest, and restart the electronic survey.

Should you have any questions about the study, please contact Julia Anne Walsh (doctoral candidate) at JWalsh2@mail.immaculata.edu or Mary Powell, Ph. D., (dissertation supervisor) at mpowell3@mail.immaculata.edu.

Your input and comments are vital. Research examining the relationship between admissions criteria and NCLEX-RN FTPRs may provide valuable information for nursing programs.

I am so grateful for your time and efforts to help inform this important work.

Sincerely,

Nursing Program Admission Criteria and NCLEX-RN First Time Pass Rates

This study is being conducted by Julia Anne Walsh as part of the requirements for a doctorate in Higher Education, Nursing Education Concentration at Immaculata University, under the supervision of Mary Powell, Ph.D. My study examines the relationship between pre-licensure, collegiate nursing program admission criteria and first-time pass rates on the National Council Licensure Exam for Registered Nurses (NCLEX- RN FTPRs) in the State of Pennsylvania. This study was approved by the Immaculata University Research Ethics Review Board before data collection in nursing programs in Pennsylvania.

It is important for you to know that any information that you provide will be confidential. All data will be summarized. The data collected from this survey will be accessed only by the researcher and the dissertation committee. All data will be maintained in a password-protected computer database. As well, the data will be electronically archived after completion of the study and maintained for 5 years after the research has been completed.

Should you have any questions about the survey, please contact Julia Anne Walsh, at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., at MPowell3@mail.immaculata.edu.

Thank you for considering participating in this survey.

Consent

1. To participate in this survey, the respondent must be 18 years of age or older.*
- You are 18 years of age or older. By completing this on-line survey, you have voluntarily agreed to participate in this pilot study.
(continue to question #2)
- You are less than 18 years old. You are not eligible to participate in this survey.
Thank you for your time. *(survey completed)*

Demographic Information

2. Please describe your **Pre-Licensure Nursing Program(s)**. Choose **all that apply** to your nursing program(s).
- Associate Degree Pre-licensure Nursing Program *(continue to question #4)*
- Bachelor's Degree Pre-licensure Nursing Program *(continue to question #3)*
- Masters Level Entry Program *(continue to question #4)*
- Other, please describe _____ *(continue to question #4)*
3. Please describe your **Bachelor's Degree Pre-licensure Nursing Program**. Choose **all that apply** to your nursing program(s)
- Traditional undergraduate pre-licensure nursing
- Second-degree pre-licensure nursing program
- Other, please describe your bachelor's degree pre-licensure nursing program *(continue to question #5)*
4. Please describe your college or university by choosing **all that apply** to your institution.
- A county institution
- A state institution
- A private institution
- A public institution
- A faith-based institution
- A Historically Black College or University (HBCU)
- Other, please describe your institution _____

(continue to question #5)

5. Please describe the location of your college or university?

- Rural
 Suburban
 Urban

(continue to question #6)

6. Please indicate a nursing accrediting agency that your program uses.

- Accreditation Commission for Education in Nursing (ACEN)
 Commission for Nursing Education Accreditation (CNEA)
 Commission on Collegiate Nursing Education (CCNE)
 We do not use a nursing accrediting agency
 Other, please indicate the nursing accrediting agency that your program uses

(continue to question #7)

7. Please describe when your students enter your **Pre-Licensure Nursing Program(s)**.
 Choose **all that apply** to your nursing program(s).

- | | | |
|---|---|--|
| <input type="checkbox"/> First semester | <input type="checkbox"/> Freshman year | <input type="checkbox"/> Second degree |
| <input type="checkbox"/> Second semester | <input type="checkbox"/> Sophomore year | <input type="checkbox"/> Masters Level |
| <input type="checkbox"/> Third semester | <input type="checkbox"/> Junior year | Entry |
| <input type="checkbox"/> Other, please describe _____ | | |

(continue to question #8)

Pre-requisites

The following questions will focus on the criteria used for admission to your pre-licensure nursing program. Please answer the questions based on the criteria for admission used during the **2017-2018 academic year**. The final questions will provide you with an area for additional comments about the criteria you use for admission to your program and any additional comments about this pilot survey.

8. During the **2017-2018 Academic Year**, were applicants required to meet **criteria** for admission to your nursing program?

- Yes, we required applicants to meet criteria for admission to our nursing program.

(continue to question #10)

- No, we did not require applicants to meet criteria for admission to our nursing program.

(continue to question #23)

Pre-College Admission Criteria

9. During the **2017-2018 Academic Year**, was the applicant's **High School GPA** used as a criterion for admission to your Pre-licensure nursing program(s)?

No, we did not use the applicant's High School GPA as a criterion for admission to our nursing program.

(continue to question #10)

Yes, we required the applicant to have a **minimum High School GPA** of

Less than 2.0 on a 4.0 scale

2.0 to 2.49 on a 4.0 scale

2.5 to 2.99 on a 4.0 scale

3.0 to 3.49 on a 4.0 scale

3.5 to 3.99 on a 4.0 scale

4.0 on a 4.0 scale

Other _____

(continue to question #10)

SAT

10. During the **2017-2018 Academic Year**, was the applicant's **SAT cumulative** score used as a criterion for admission to your nursing program?

No, we did not require the applicant's cumulative SAT score as a criterion for admission to our nursing program.

(continue to question #11)

Yes, for admission to our nursing program the applicant was required to have a **minimum cumulative SAT score** of

400-499 900-999 1400-1499

500-599 1000-1099 1500-1599

600-699 1100-1199 1600

700-799 1200-1299 Other _____

800-899 1300-1399

(continue to question #12)

ACT

11. During the **2017-2018 Academic Year**, was the applicant's **ACT cumulative score** used as a criterion for admission to your nursing program?

No, we did not require the applicant's ACT cumulative score as a criterion for admission to our nursing program.

(continue to question #12)

Yes, for admission to our nursing program the applicant was required to have a **minimum ACT cumulative score** of

1 – 4 22 28 34

5 - 9 23 29 35

10 – 14 24 30 36

15 -19 25 31 Other _____

20 26 32

21 27 33

(continue to question #12)

Pre-Nursing College Criteria**Science Courses**

12. During the **2017-2018 Academic Year**, did you require applicants to take **College Science Courses** as admission criteria to your nursing program?

Yes, we required applicants to take **College Science Courses** for admission to our nursing program

(continue to question #13)

No, we did not require applicants to take college science courses for admission to our nursing program

(continue to question #14)

13. You indicated that applicants during the **2017-2018 Academic Year** were required to take **College Science Courses** as a criterion for admission to your nursing program.

Please indicate the college science course required for admission to your nursing program by choosing all options that apply to your program.

Anatomy and Physiology

Biology

Chemistry

Microbiology

Other, please describe _____

(continue to question #14)

Math Courses

14. During the **2017-2018 Academic Year**, did you require applicants to take **College Math Courses** as an admission criterion to your nursing program?

Yes, we did require the applicant to take college math courses for admission to our nursing program.

(continue to question #15)

No, we did not require the applicant to take college math courses for admission to our nursing program.

(continue to question #16)

15. You indicated that applicants during the **2017-2018 Academic Year** were required to take College Math Courses for admission to your nursing program. Please indicate the **College Math Courses** required as an admission criterion to your program by choosing all that apply.

Algebra

Statistics

Other, please describe _____

(Continue to question #16)

GPA

16. During the **2017-2018 Academic Year**, did you use a **Cumulative Pre-Nursing College GPA** as a criterion for admission to your nursing program?

No, we did not use the Cumulative Pre-Nursing College GPA as a criterion for admission to our nursing program.

(continue to question #17)

Yes, for admission to our nursing program, applicants were required to have **minimum Cumulative Pre-Nursing College GPA** of _____

(continue question #17)

Entrance Exams

17. During the **2017-2018 Academic Year**, which of the following **Nursing Entrance Exams** were used as a criterion for admission to your nursing program?

- Assessment Technologies Institute Test of Essential Academic Skills (**ATI TEAS**)
(continue to question #18)
- Faculty Generated Admission Exam**
(continue to question #19)
- Health Education Systems, Inc., Admission Assessment Exam (**HESI A2**)
(continue to question #20)
- Kaplan Nurse Entrance Test (**Kaplan NET**)
(continue to question #21)
- National League for Nursing Pre-Admission Test (**NLN PAX-RN**)
(continue to question #22)
- We did not use an admission exam as a criterion for admission to our nursing program.
(continue to question #23)
- Other Nursing Program Admission Exam.** Please describe what exam was used and the minimum score(s) required.

(continue to question # 23)

ATI TEAS

18. You indicated that applicants during the 2017-2018 Academic Year were required to take the ATI TEAS entrance exam. Please indicate the **minimum composite score** required for the **ATI TEAS entrance exam**.

- Developmental (0.0-40.7%)
- Basic (41.3-58.0%)
- Proficient (58.7-77.3%)
- Advanced (78.0-90.09%)
- Exemplary (90.7-100.0%)
- No minimum
- Other _____

(continue to question #23)

Faculty Generated Entrance Exam

19. You indicated that applicants during the **2017-2018 Academic Year** were required to take a **Faculty Generated Entrance Exam** as a criterion for admission to your nursing program. Please indicate the minimum score(s) required on the **Faculty Generated Entrance Exam**.

(continue to question #23)

HESI A2

20. You indicated that applicants during the **2017-2018 Academic Year** were required to take the HESI A2 Entrance Exam as a criterion for admission to your nursing program. Please indicate the **minimum composite score** required on the **HESI A2 Entrance Exam**.

- | | |
|--------------------------------------|-------------------------------------|
| <input type="checkbox"/> Below 749 | <input type="checkbox"/> 850-899 |
| <input type="checkbox"/> 750- 799 | <input type="checkbox"/> 900 |
| <input type="checkbox"/> 800-849 | <input type="checkbox"/> No minimum |
| <input type="checkbox"/> Other _____ | |

(Continue to question #23)

Kaplan NET

21. You indicated that applicants during the **2017-2018 Academic Year** were required to take the Kaplan Nurse Entrance Test (Kaplan NET) as a criterion for admission to your nursing program. Please indicate the **minimum composite score** required on the **Kaplan NET**.

- | | |
|--------------------------------------|-------------------------------------|
| <input type="checkbox"/> Below 70 | <input type="checkbox"/> 90-99 |
| <input type="checkbox"/> 70-79 | <input type="checkbox"/> 100 |
| <input type="checkbox"/> 80-89 | <input type="checkbox"/> No minimum |
| <input type="checkbox"/> Other _____ | |

(continue to question #23)

22. You indicated that applicants during the **2017-2018 Academic Year** were required to take the National League for Nursing Pre-Admission Test (NLN PAX-RN) as a criterion for admission to your nursing program. Please indicate the **minimum composite score** required on the **NLN PAX-RN**.

- | | |
|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> Below 50 | <input type="checkbox"/> 150-199 |
| <input type="checkbox"/> 50-99 | <input type="checkbox"/> No minimum |
| <input type="checkbox"/> 100-149 | <input type="checkbox"/> Other _____ |

(continue to question #23)

Non-academic Criteria

23. During the **2017-2018 Academic Year**, were **Interviews** used as an admission criterion to your nursing program?

Yes, during the 2017-2018 Academic Year, Interviews were required as a criterion for admission to our nursing program.

(continue to question #24)

No, during the 2017-2018 Academic Year, Interviews were not required as a criterion for admission to our nursing program.

(continue to question #25)

24. You indicated that applicants during the **2017-2018 Academic Year** were required to participate in an Interview as a criterion for admission to your nursing program. Please describe how you approached the **Interview process** by selection from the options below.

Individual Face to Face Videoconference

Group Teleconference

(continue to question #25)

Holistic Admission Review

25. During the 2017-2018 Academic Year, was a Holistic Admission Review used in the admission process to your nursing program?

No, a Holistic Admission Review was not used in our nursing program admission process.

(continue to question #26)

Yes, a Holistic Admission Review was used in our nursing program admission process. Please describe your approach to the Holistic Admission Review process.

(continue to question #26)

26. During the **2017-2018 Academic Year**, what other data were used as admission criteria to your nursing program?

We did not use any other data as admission criteria to our nursing program.

(Continue to question #27)

Other data were used as admission criteria to our nursing program. Please describe the other data that you used as admission criteria to your nursing program.

(Continue to question #27)

27. Have you changed the criteria that are required for admission to your nursing program since the **2013-2014 Academic Year**?

No, we have not changed our admission criteria since the 2013-2014 Academic Year

(continue to question #28)

Yes, we have changed our admission criteria since the 2013-2014 Academic Year. Please describe the change(s) and in which academic year(s) this occurred.

(continue to question #28)

Additional Comments

28. Do you have any additional comments regarding your admission criteria?

Thank you for your time and participation in this survey!

End of Survey

Appendix D



Admission Criteria and NCLEX-RN FTPR Reminder Emails

COLLEGE OF GRADUATE STUDIES

Loyola 130 | 1145 King Road | Immaculata, PA 19345

Weekly Reminder Emails**Reminder 1 Email**Date: *(insert date)*Title of Project: Dissertation Study- Nursing Program Admissions Criteria and
NCLEX-RN First Time Pass RatesDear *(insert name)*,

My name is Julia Anne Walsh and I am a doctoral candidate in Higher Education at Immaculata University and last week, I sent you an email asking for your participation in an important short survey investigating the possible relationship between admission criteria used by pre-licensure nursing programs and NCLEX-RN first time pass rates.

Your participation in this survey should take no longer than 15-30 minutes.

This survey will ask general demographic questions and questions about the admissions criteria used for applicants to your pre-licensure nursing program. Participation is voluntary. You may decline to answer any questions you do not wish to answer, and you can withdraw your participation at any time. To complete the survey, simply click on this link:

(insert weblink)

Please complete the survey by *(insert date)*. **Your input and comments are vital.** This survey instrument was approved by the Research Ethics Review Board at Immaculata University. There are minimal risks from participating in this study.

I am so grateful for your time and efforts to help inform this important work.

Should you have any questions about the survey, please contact Julia Anne Walsh (doctoral candidate) at 978.590.9037 or JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., (dissertation supervisor) at 484.574.9746 or mpowell3@mail.immaculata.edu.

Thank you once again for completing this important survey.

Sincerely,

Reminder 2 Email

Date: *(insert date)*

Title of Project: **Dissertation Survey** – Nursing Program Admission and NCLEX-RN First Time Pass Rates

Dear *(insert name)*,

My name is Julia Anne Walsh and I am a doctoral candidate in Higher Education at Immaculata University. Recently I sent you an email asking for your participation in an important short survey investigating the possible relationship between admission criteria used by pre-licensure nursing programs and NCLEX-RN first time pass rates.

If you have already completed this survey, I would like to thank you very much. I truly appreciate your help.

If you have not completed the survey, I would like to urge you to do so. This survey should take no longer than 15-30 minutes. Simply click on the link below to begin answering the questions.

(inset weblink)

Please complete the survey by *(insert date)*. **Your input and comments are vital.** The survey instrument was approved by the Research Ethics Review Board at Immaculata University. I am so grateful for your time and efforts to help inform this important work.

Should you have any questions about the survey, please contact Julia Anne Walsh (doctoral candidate) at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., (dissertation supervisor) mpowell3@mail.immaculata.edu.

Thank you once again for completing this important survey.

Sincerely,

Reminder Email 3

Date: *(insert date)*
Title of Project: **Dissertation Survey** – Nursing Program Admission and
NCLEX-RN First Time Pass Rates

Dear *(insert name)*,

I am writing to follow up on an email I recently sent asking for your participation in an important short survey investigating the possible relationship between admission criteria used by pre-licensure nursing programs and NCLEX-RN first time pass rates.

If you have already completed this survey, I would like to thank you very much. I truly appreciate your help.

If you have not completed the survey, I would like to urge you to do so. This survey should take no longer than 15-30 minutes. Simply click on the link below to begin answering the questions.

(inset weblink)

Please complete the survey by *(insert date)*. **Your input and comments are vital.** The survey instrument was approved by the Research Ethics Review Board at Immaculata University. I am so grateful for your time and efforts to help inform this important work.

Should you have any questions about the survey, please contact Julia Anne Walsh (doctoral candidate) at JWalsh2@mail.immaculata.edu or Mary Powell, Ph.D., (dissertation supervisor) at mpowell3@mail.immaculata.edu.

Thank you once again for completing this important survey.

Sincerely,

Appendix E

**IMMACULATA UNIVERSITY RESEARCH ETHICS REVIEW
BOARD REQUEST FOR PROTOCOL REVIEW--REVIEWER'S
COMMENTS FORM (R1297)**

Name of Researcher: Julia Walsh

Project Title: Nursing Program Admissions Criteria and NCLEX-RN® First Time Pass Rates

Reviewer's Comments:

Your proposal is **Approved**. You may begin your research or collect your data.

PLEASE NOTE THAT THIS APPROVAL IS VALID FOR ONE YEAR (365 days) FROM DATE OF SIGNING.

Reviewer's Recommendations:

_____ Exempt

 X **Approve**

_____ Expedited

_____ Conditionally Approved

_____ Full Review

_____ Do Not Approve

Marcia Parris

September 19, 2019

Marcia Parris, Ed.D.,

Date

Chair, Research Ethics Review Board