EXPLORING THE CONNECTION BETWEEN STUDENT SELF-EFFICACY AND STUDENT SUCCESS IN A PRELICENSURE NURSING PROGRAM: A PREDICTIVE CORRELATIONAL STUDY

by

Leanne Moreira

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

The purpose of this quantitative, nonexperimental, correlational study was to determine if a passing score on the standardized Health Education Systems Incorporated (HESI) exit examination for prelicensure nursing students can be predicted from the number of working hours and self-efficacy scores for those same students. This study is important because of high attrition and low retention rates among prelicensure nursing students, preventing more nurses from providing care to society at a time when the demand for nurses is high. The study included 79 prelicensure nursing students in rural Maine and Ohio. Two measurement instruments were included in this study: the general self-efficacy tool and the HESI exit exam. To collect data, Microsoft Forms and the Evolve.Elsevier HESI exit exam technologies were utilized. A logistic regression analysis evaluated the results. The results show no statistical significance or predictive relationship between the HESI exit exam, the number of hours prelicensure nursing students work, and self-efficacy, $\chi^2(6) = 7.952$, $p = .242$. Even though this study's data did not result in statistical significance or predictive correlation, there is evidence to support how assessing student success through standardized testing could result in different data results compared to previous research. Recommendations for future research include increasing the number of participants to include more diversity, conducting qualitative research to gain a deeper understanding of what other barriers prelicensure nursing students endure outside of coursework, replicating this study with other variables found from previous research, and using an alternative self-efficacy tool specifically created for nursing students.

Keywords: HESI exit exam, GSE tool, prelicensure nursing students, self-efficacy

Dedication

I dedicate this dissertation to my husband, Martin Moreira; my mom, Dawn Lounsbury; and my sister, Stacy Sikes. I could not have accomplished any of my life goals without their love and support. I also want to thank God for giving me the strength and perseverance to never give up on my dreams and to help me obtain my goals.

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List of Abbreviations

Accreditation Commission for Education in Nursing (ACEN)

Assessment Technologies Institute (ATI)

Associates Degree in Nursing (ADN)

Bachelor of Science in Nursing (BSN)

Certified Nurse's Assistant (CNA)

Evolve.Elsevier (EE)

General Self-Efficacy Scale (GSE)

Grade Point Average (GPA)

Health Education Systems Incorporated (HESI)

Institutional Review Board (IRB)

Licensed Practical Nurse (LPN)

Maine State Board of Nursing (MSBON)

National Council Licensure Examination (NCLEX)

Ohio State Board of Nursing (OSBON)

Registered Nurse (RN)

Variation Inflation Factor (VIF)

CHAPTER 1: INTRODUCTION

Overview

This quantitative, nonexperimental, correlational study aimed to determine if a passing score on the standardized Health Education Systems Incorporated (HESI) exit examination for prelicensure nursing students can be predicted from the number of working hours and self-efficacy scores for those same students. Chapter 1 will explore the background of the nursing profession and how it relates to the need to examine self-efficacy, the barriers to completing a prelicensure nursing program, and nursing student success. Below is the problem statement and how other studies recommend further research on the dissertation topic. The dissertation also includes a discussion of the purpose of this study and the significance of this study. Finally, there is also an introduction to the research questions and pertinent definitions of this study.

Background

Nursing education is essential to produce qualified nurses to care for patients. Nursing education also has attrition rates as high as 50% in prelicensure nursing programs and retention rates ranging between 50% and 80% (American Association of Colleges of Nursing, Nursing shortage, 2020; Eudy & Brooks, 2022; Robert, 2020). There is a call for more research to find a direct correlation between student success and self-efficacy (Bulfone et al., 2021a, 2022b). Other research studies examined many variables associated with the attrition rates and retention rates of nursing students, including whether students worked in nursing schools, burnout, grade point average (GPA), language barriers, gender, etc.; however, there was no direct correlation identified in these studies to determine the cause of the attrition and retention rates in prelicensure nursing program (Bulfone et al., 2021a, 2022b; Chang & Gau, 2021). Identifying the root cause for high attrition and low retention rate in nursing education is important, as

prelicensure nursing education programs are high stakes for students, society needs more nurses to care for the growing population, and high attrition and low retention rates are costly for higher education institutions (American Association of Colleges of Nursing, 2020; Chang & Gau, 2021). Prior research studies are calling for more research to discover direct reasons for high attrition and low retention rates in nursing programs (Bulfone et al., 2021a, 2022b; Chang & Gau, 2021; Pride et al., 2020).

Historical Overview

Florence Nightingale, the founder of the nursing profession, created the first school of nursing in 1860 (Karimi & Alavi, 2015). During Nightingale's time, nurses had a limited scope of practice to provide basic care for patients, the basic care primarily done by certified nurse assistants today. In Nightingale's time, nurses learned through clinical experience without formal education and without a licensing board to prove proficiency (Karimi & Alavi, 2015). Since the start of the nursing profession in 1860, the growth of the nursing profession now includes a formal education process of didactic and clinical experience, and nurses may earn degrees ranging from diploma to doctoral-level education (Karimi & Alavi, 2015).

Today, the nursing profession has many different branches to care for patients, including registered nurses (RN), licensed practical nurses (LPN), and certified nurse assistants (CNAs) (Maine State Board of Nursing, 2022). However, the scope of practice for each branch of nursing differs, with the registered nurse having the most extensive scope of practice of the three branches listed (Billings & Halstead, 2023; Potter et al., 2021). Registered nursing students may enter the profession with a diploma, associate, or bachelor's degree; however, practical nurses earn a certificate, not a degree (Maine State Board of Nursing, 2022). The nursing profession also considers prelicensure nursing students as those seeking degrees or certificates to become

registered nurses or licensed practical nurses. With the nursing profession's scope of practice and duties increasing significantly throughout history, the standards for producing qualified nurses also increased to protect the public's safety (Potter et al., 2021).

Society at Large

The American Association of Colleges of Nursing (2020) predicts a nursing shortage of more than 200,000 nurses annually until 2031. The potential effect of the nursing shortage on society is an insufficient number of nurses to care for a growing population and a decline in the quality of care in the health care field (American Association of Colleges of Nursing, 2020; Chang & Gau, 2021). There is a strong demand for more nurses in prelicensure nursing programs to care for the growing population. Nurses from the baby boomer generation are retiring. They will need care for themselves from healthcare professionals, resulting in insufficient healthcare professionals to care for the general or baby boomer generation (American Association of Colleges of Nursing, Nursing shortage, 2020). With other professions, if there is a need to create more personnel in a particular workforce discipline, a higher education institution would start a program or increase enrollment to graduate more qualified individuals to work in that discipline (Schrum, 2020). However, nursing programs have strict standards from state regulators and accrediting bodies (ACEN, 2023; Eudy & Brooks, 2022).

The Accrediting Commission for Education in Nursing (ACEN) requires nursing programs to maintain an expected achievement completion rate of prelicensure nursing programs (ACEN, 2023). The Maine State Board of Nursing (MSBON) and Ohio State Board of Nursing (OSBON) do not have completion rate standards that nursing programs must adhere to but defer to the completion rate standards of the accrediting bodies to regulate this standard (Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). Nursing programs calculate

completion rates using retention and attrition rates of students during 100% of the time of the program (ACEN, 2023). Also, nursing programs must maintain a 70% or higher licensure pass rate to maintain accreditation status (ACEN, 2023; Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). Suppose nursing programs do not meet these standards. In that case, the program will have to complete additional reporting to the state board and accrediting body, face possible disciplinary actions, and have a chance to be closed (ACEN, 2023; Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). Maintaining these high standards in nursing education is problematic while increasing the enrollment of qualified nursing students to care for the population.

Since the start of the nursing profession, research has shown an evolution of nursing student needs and responsibilities (Bulfone et al., 2021a, 2022b). The evolving needs of nursing students today also contribute to high attrition and low retention rates in nursing programs. Factors such as student burnout, lack of resources, low self-efficacy scores, and language barriers contribute to high attrition and low retention rates in nursing programs (Bulfone et al., 2021a, 2022b; Chang & Gau, 2021; Lazic et al., 2021; Pride et al., 2020). Students face difficulties balancing their personal life responsibilities and maintaining academic success. Nursing programs operate within a complex societal context, where they encounter significant barriers in simultaneously addressing the needs of their students, the wider population, state regulatory agencies, and accrediting organizations. These multifaceted challenges are substantial and play a critical role in exacerbating the nursing shortage, as well as contributing to high attrition and low retention rates among nursing students (Schrum, 2020).

Theoretical Background

The theoretical framework for this study is the self-efficacy theory (Bandura, 1977). This study examines the connection between the self-efficacy score from the general self-efficacy scale (GSE), and the GSE is based on Bandura's (1977) self-efficacy theory and the four principles of the self-efficacy theory. The self-efficacy theory aims to investigate human decisions and how the outcomes relate to those decisions (Maddux & Stanley, 1986). Additionally, the self-efficacy theory explores how individuals' beliefs can or cannot resolve or complete a goal and how those beliefs affect the individual's ability to reach their goals (Bandura, 1977). The self-efficacy theory is prominent in research and is the framework for many studies related to nursing students (Bulfone et al., 2021a; Chami-Malaeb, 2022; Chang & Gau, 2021; Eudy & Brooks, 2022).

The purpose of the study is to determine if the prelicensure student believes they have the ability or cannot complete the prelicensure nursing program, which is the reason for choosing the self-efficacy theory as the theoretical framework for this dissertation. Similar studies incorporated the self-efficacy theory as their theoretical framework to study prelicensure nursing students. Bulfone et al. (2021a) found a link between students' self-efficacy, burnout, and GPA scores with prelicensure nursing students in Italy. Chang and Gau (2021) also found that nursing students' self-efficacy relates to academic achievement with technology in the classroom.

Prelicensure education programs aim to create nursing students who can pass the licensure examination and care for the population. Not only do students have high stakes with completing the nursing program, but the nursing program also has high stakes, as the demands to produce more nurses and maintain the high standards of the accrediting body and state regulators require a balancing act (ACEN, 2023; Maine State Board of Nursing, 2022). Nursing programs'

attrition and retention rates are of concern, and a gap in the research is evident. This gap in the literature requires investigation and study to improve the outcomes of students and nursing program success to meet the needs of all stakeholders involved. Using the theoretical self-efficacy framework for this dissertation could help fill this gap by examining the existence of a solution to the problem.

Problem Statement

Existing research has established a connection between self-efficacy and the success of prelicensure nursing students. However, this body of work has yet to fully explore the relationship between self-efficacy, student success, and crucial factors like attrition or retention rates (Bulfone et al., 2021a, 2022b). Studies have identified various factors contributing to low self-efficacy scores, including student burnout, gender differences, employment, family responsibilities, socioeconomics, and cultural influences (Bulfone et al., 2021a, 2022b; Chang & Gau, 2021; Lazic et al., 2021; Pride et al., 2020). Furthermore, a positive correlation has been observed between higher self-efficacy scores and higher grade point averages (GPA). However, the link between GPA and overall student success remains limited, as GPA standards vary across nursing programs and do not consistently predict licensure pass rates (Bulfone et al., 2021a; Fuglsang et al., 2021). A notable correlation exists between the Health Education Systems Incorporated (HESI) exam scores and the success of prelicensure nursing students in licensing examinations (Riley et al., 2023; Shah et al., 2022). Specifically, students scoring 850 or above on the HESI exam have a 95% probability of passing their licensing exams (Shah et al., 2022).

The literature indicates a need for more in-depth research on how self-efficacy impacts the success of prelicensure nursing students (Bulfone et al., 2022b). For instance, student burnout, which is linked to high attrition and low retention rates, correlates with self-efficacy

scores and GPA. However, the multitude of variables associated with burnout (such as work, family responsibilities, and gender) complicates the direct relationship between student success and self-efficacy scores. Addressing the high attrition and low retention rates in nursing programs is complex due to the numerous factors influencing student success, burnout, and self-efficacy. Understanding the root causes of high attrition and low retention rates in relation to student success and self-efficacy could offer valuable insights for stakeholders to improve the graduation rates of nursing students. Previous research on nursing student burnout predominantly focused on prelicensure bachelor's degree students in Italy (Bulfone et al., 2022b). While a positive linear correlation has been found between self-efficacy and on-time program completion, this relationship is primarily observed in bachelor's degree nursing students (Bulfone et al., 2021a, 2022b; Chang & Gau, 2021). Presently, there is no clear, direct correlation established between prelicensure nursing student success and standardized HESI exam scores, hours worked by students, and their self-efficacy scores. The problem is that the existing literature lacks a comprehensive exploration of the direct correlations between prelicensure nursing student success, attrition and retention rates, and self-efficacy (Bulfone et al., 2021a, 2022b). This gap hinders the development of effective strategies to enhance the success rates of nursing students, particularly in addressing the elements that influence attrition and retention.

Purpose Statement

The overall purpose of this quantitative, predictive correlational study was to determine if a passing score on the standardized HESI exam can be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students. A necessary secondary purpose, then, will be to assess the statistical significance between each individual

predictor variable (self-efficacy scores and the number of working hours) and the dichotomous outcome variable of passing the HESI exam with scores of 850 points or higher. The HESI exam is a standardized examination that determines the preparedness of a nursing student to pass the licensing exam, also known as the National Council Licensure Examination (NCLEX) (Shah et al., 2022). There is a 95% probability of students passing the nursing licensure examination if the student obtains an 850 or higher on the HESI exam; therefore, the criterion variable is dichotomous: A score of 850 points or higher is passing, and a score of 849 points or fewer is failing (Flowers et al., 2022; Riley et al., 2023; Shah et al., 2022).

The predictor variables are *the number of working hours* and *self-efficacy scores.* The number of working hours is defined as the average number of hours individuals work per week at a place of employment where an individual is compensated for their services (Collewet, 2017). Self-efficacy is "the strength of an individual's belief in his or her ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks" (Schwarzer & Hallum, 2008, p. 2). The population of the study will include prelicensure nursing students from the practical nurse (PN) and associate degree nurse (ADN) programs in the New England and Ohio area who use the HESI exam in the last semester of their nursing program to measure the student's preparedness to pass the NCLEX.

Significance of the Study

The significance of this study is to add to the body of knowledge of self-efficacy, standardized testing, and students with other responsibilities outside of college courses to show further how the relationship between these variables affects nursing student progression in nursing school. Evidence highlights that students with low self-efficacy scores and lower GPAs are likelier than their counterparts to fail or withdraw from the prelicensure nursing program due

to burnout from having multiple responsibilities outside the student's college course responsibilities (Bulfone et al., 2022b). Similarly, BSN students in Italy with higher GPAs are linked to having higher self-efficacy scores and completing their nursing program (Bulfone et al., 2022b). This study will contribute to the wealth of knowledge with prelicensure students from other degree disciplines and include students from different areas of the globe. This study will examine students in the United States, specifically New England and Midwest locations, and will contain a population from multiple degree branches of the prelicensure student discipline.

This study is also significant to stakeholders who use and rely on standardized testing, specifically the HESI exam. Multiple studies show a positive correlation between student success in obtaining 850 points on the HESI and a 95% probability of passing the NCLEX (Riley et al., 2023; Shah et al., 2022). Nevertheless, providing more insight into the connection of the 850-point benchmark with possible high self-efficacy scores will highlight the importance of standardized testing to evaluate student success. Investigating whether obstacles hinder students from reaching the 850-point benchmark will enrich the knowledge about the HESI exam.

This study is also significant to the theoretical self-efficacy framework as there are studies not only connecting nursing students with poor self-efficacy scores to poor attrition and retention rates but also to licensed nursing professionals to increase job turnover (Chami-Malaeb, 2022; Hwang & Kim, 2022). Licensed nursing professionals with lower self-efficacy scores become burned out from the job faster than those with higher self-efficacy scores and are more likely to quit their job (Chami-Malaeb, 2022; Hwang & Kim, 2022). This study can add to the body of knowledge that uses the self-efficacy theoretical framework to show how low self-efficacy scores may create poor outcomes for stakeholders.

Research Question

RQ1: How accurately can a passing score on the HESI exam be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students?

Definitions

1. *Attrition rates*—the calculated number of nursing students who drop out of a program when an enrolled nursing student is in the nursing program. To calculate this number, divide the total number of nursing students by the total number of nursing students who drop out of the program before the completion of the program (Lewis et al., 2022).
2. *Expected level of achievement (ELA)*—"A measurable index identified by the faculty that reflects a desired outcome. An ELA should be high enough as to be genuine and encourage continuous improvement, but not so high as to be idealistic and, thus, unachievable" (ACEN, 2023, p. 7). The Maine and Ohio Colleges ELA is set for 70% (L. Gotjen, personal communication, May 23, 2023; T. Ludwig, personal communication, May 23, 2023).
3. *General self-efficacy scale (GSE)*—this Likert scale is a validated and reliable tool with 10 questions with four numerical responses for individuals to respond. The GSE assesses the individual's perceived self-efficacy and predicts how the individual will cope with experiences and life events (Schwarzer & Renner, 2000).
4. *Health Education Systems Incorporated (HESI) exam*—the standardized HESI examination is a tool for prelicensure nursing programs to determine the likelihood a nursing student will pass the licensure examination (Shah et al., 2022).

5. *Number of working hours*—the number of hours an individual works for an employer and receives financial compensation for their services (Collewet, Working hours and productivity, 2017).
6. *Prelicensure nursing students*—students who enter into a practical nurse (PN), associate's degree nursing (ADN), or bachelor's degree nursing (BSN) program to earn the qualifications needed to take the licensing boards or NCLEX. ADN and BSN nursing students are qualified to take the registered nursing NCLEX, and PN nursing students are qualified to take the licensed practical nurse (LPN) NCLEX (Maine State Board of Nursing, 2022).
7. *Self-efficacy score*—a score from the GSE. The higher the score, the higher the probability the individual has a high sense of self-efficacy. The lower the score, the less likely the individual has a sense of self-efficacy (Schwarzer & Renner, 2000).
8. *Retention rates*—the calculated number of nursing students who fail out of the nursing program before the completion of the nursing program. To calculate this number, divide the total number of nursing students by the total number of nursing students who fail out of the program before the completion of the program (Lewis et al., 2022).

CHAPTER 2: LITERATURE REVIEW

Overview

A systematic review of the literature was conducted to explore the correlation between self-efficacy scores, the number of hours students work, and student success in the prelicensure nursing program of a private, not-for-profit college in Maine and a community college in Ohio. This chapter offers a review of the research on this topic. The self-efficacy theory by Albert Bandura (1977) is discussed in the first section, followed by a review of recent literature on high attrition rates in nursing programs and how other disciplines have retention and attrition issues linked to low efficacy scores. In addition, the literature indicates the multiple barriers preventing individuals from reaching their goals and self-efficacy relate to the probability of student success in their education courses. The literature also states the various tools used to measure student success; the tool selected for this dissertation is the best tool available to measure student success. Finally, a gap in the literature is identified as the need for more studies on the relationship between self-efficacy, the number of hours worked, and student success in prelicensure nursing programs.

Theoretical Framework

The self-efficacy theory describes why people choose a path and expect an outcome based on their previous experiences in similar situations (Bandura, 1977). As the demand for more nurses increases, a desire to identify the root problem for high attrition and low retention rates in prelicensure nursing education programs persists. After discovering the root problem(s) for high attrition and low retention rates, higher education institutions and stakeholders can allocate resources and create solutions to decrease or eliminate the problem(s) associated with the prevention of nursing student success (Robert, 2020; Schrum, 2020). The self-efficacy theory

is the theoretical framework for this study because the student's belief in completing a prelicensure nursing program can influence prelicensure nursing students' self-efficacy. This section of the literature review will explore the historical context, principles of the self-efficacy theory, the evolution of the self-efficacy theory over time, and the reasons for using self-efficacy as the theoretical framework for this research study.

Historical Context

Albert Bandura (1977) is the theorist responsible for developing the social learning theory. Bandura (1977) created the social learning theory in the 1960s (transitioned to the social cognitive theory in the 1980s) to understand the complexities of human behavior. To further explore human decisions and the outcomes associated with those decisions, Bandura (1977) created the self-efficacy theory. The historical purpose of the self-efficacy theory was to explain and predict psychological changes in individuals who experience different treatment modes. Cognitive processing and motivation are the two main factors that affect an individual's achievement and retention of new behaviors (Maddux & Stanley, 1986).

The two main response-outcome expectancies of behavior are efficacy expectations and outcomes expectations. Individuals weigh, integrate, and process their concerns from information to determine their capability, which regulates their behavioral choices and efforts (Bandura, 1977). The self-efficacy theory states that an individual has a pathway of response-outcome expectancies. Outcome expectancy is an individual's belief that a behavior will or will not resolve in a particular outcome, and self-efficacy expectancy is an individual's belief they are incapable of completing the behavior(s) (Bandura, 1977). Self-efficacy expectancy influences the start of individual behaviors and how the individual persists with frustrations or possible failure (Bandura, 1977). Self-efficacy expectancies are the best predictors of individual behaviors and

the persistence of the individual (Maddux & Stanley, 1986). Many peer-reviewed publications support the self-efficacy theory's findings in higher education, recruitment, mental health illness treatment, leadership, counseling, etc., but specifically for this dissertation, further research needs to be examined with prelicensure nursing students (Bulfone et al., 2021a; Chang & Gau, 2021; Jin & An, 2023). The self-efficacy theoretical framework includes four principles based on the historical context and the two response-outcome expectancies. Other researchers, however, added to the original self-efficacy theory, including more principles, three primary outcomes, and factors of time influence and individual's self-efficacy (e.g., Figure 1**)** (Latham & Seijts, 1999; Maddux, 2013; Narsimulu, 2016; D. A. Williams, 2015).

Self-Efficacy Principles, Dimensions, Influences, and Primary Outcomes

Bandura's (1977) original self-efficacy theory comprises four principles: performance accomplishment, vicarious experience, verbal persuasion, and emotional and physiological states. Performance accomplishment is the most influential principle in self-efficacy, as this principle is the individual's mastery of experience or previous performance. With individuals who have successful experiences, their mastery expectations increase, and with individuals who have multiple repeated failures, their mastery expectations decrease (Kachaturoff et al., 2020). The following principle, vicarious experience, is viewing others achieving outcomes without consequences or adverse effects and attempting to achieve the same or similar outcomes from the same or similar experiences. Vicarious experience is modeling; watching others perform a task successfully increases behavioral improvements among viewers (Kachaturoff et al., 2020).

The third principle of Bandura's self-efficacy theory is verbal persuasion, which attempts to change human behavior using verbal influence (Bandura, 1977). Verbal persuasion has limitations; using this principle alone to influence people shows little to no changes in human

behavior. However, socially persuaded people can meet an outcome and provide tools to achieve the outcome, increasing their motivation to meet goals. The final principle is emotional and physiological, which states that emotional and psychological beliefs can affect an individual's well-being and can alter their views to attempt and reach a goal (George et al., 2020). The intensity of the emotional and physiological reactions is not the concern but instead how the individual perceives and interprets the situation. Decreasing emotional and physiological arousal can decrease avoidance behavior. Based on the four principles of self-efficacy theory, the historical context, and response-outcome expectancies, the theoretical framework relates to nursing students (Bandura, 1977).

Since 1977, Bandura's self-efficacy theory has evolved and now includes a fifth principle. Maddux (2013) found a fifth principle of the self-efficacy theory: imaginal experiences. People have the ability to imagine various situations or events by visualizing outcomes (positive or negative) based on their behaviors and emotional reactions. Individuals can create personal efficacy or inefficacy beliefs by imagining the outcomes if they or other individuals act effectively or ineffectively in future events. These imaginal experiences are based on vicarious or actual occurrences with situations that are similar to the events occurring. Imaginal experiences, on their own, do not strongly influence an individual's self-efficacy as an indicator of success or failure (Maddux, 2013).

The original self-efficacy theory included three dimensions of self-efficacy: magnitude, strength, and generality (Bandura, 1977; Maddux, 2013). Current literature from Maddux (2013) shares the three dimensions included in the original self-efficacy theory still apply to each individual's self-efficacy, as these dimensions shape how a person will react to situations and events. The dimension magnitude of self-efficacy refers to how many complex or threatening

"steps" individuals can complete or perform. An individual may believe one is compatible with completing a goal until a certain point of a challenge, similar to a smoker trying to quit until they become stressed and break their smoking abstinence (Maddux, 2013). The strength dimension is the belief that the individual has enough resilience to perform the tasks in question. A group of nursing students may believe they can complete the nursing program, but a few students may have more resilience or strength to complete the program than others. Finally, generality is the last dimension of the self-efficacy theory (Maddux, 2013). Generality is how the success or failure of an experience influences other self-efficacy experiences. A nursing student who becomes sober after illicit drug abuse (high-risk situation) may extend one's feelings of self-efficacy to complete the nursing program (Maddux, 2013). These three dimensions, combined with the four principles, are critical components of the self-efficacy theoretical framework.

Additionally, with researchers using the self-efficacy theory as a theoretical framework, there is also literature to support proximal and distal influences that affect an individual's self-efficacy (Latham & Seijts, 1999; Maddux, 2013). Self-efficacy beliefs are either beliefs from distal (past) or proximal (current or immediate) experiences. "[S]elf-efficacy for a specific performance in a specific situation measured at a specific time will be the result of the confluence of distal and proximal information from all [five principles]" (Maddux, 2013, p. 41). Maddux (2013) and Latham and Seijts (1999) agree that distal information about self-efficacy is less powerful than proximal information, as consequences occurring presently (proximal) will have more of an impact than consequences that occur in the future (distal).

Bandura (1997) published three primary outcomes or consequences influenced by each individual's self-efficacy beliefs: approach versus avoidance, quality of performance, and persistence (Narsimulu, 2016; D. A Williams, 2015). The primary outcomes are on the

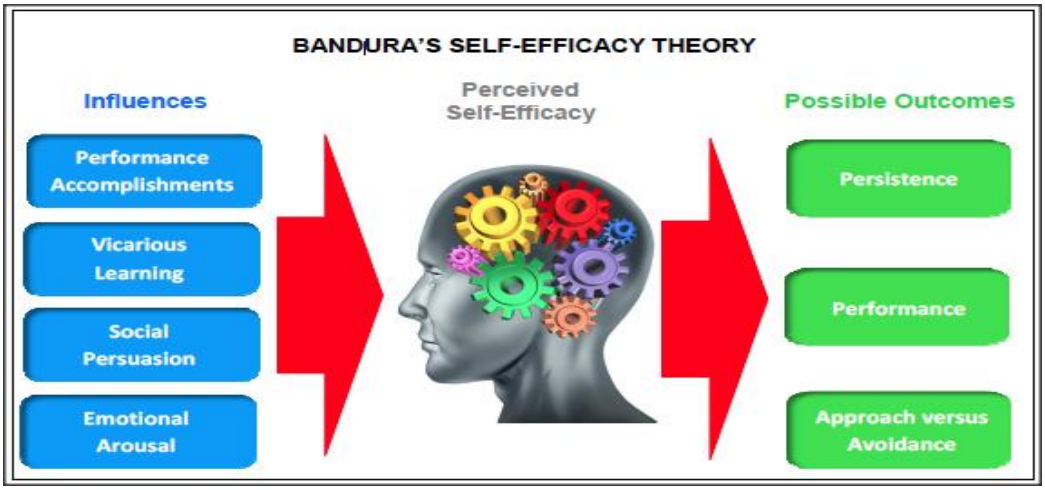
individual's self-efficacy beliefs and their decisions on overcoming a situation or obstacle. The outcome approach versus avoidance describes whether an individual will try or will not try to complete a task or obstacle. The quality of performance is how the individual performs and applies effort to tasks and opportunities (D. A. Williams, 2015). The last primary outcome is persistence; the description of persistence is how much longevity one has to complete tasks or goals (D. A Williams, 2015). An individual with high self-efficacy behaviors has a higher probability of approaching, performing well, and being persistent in a situation (Narsimulu, 2016). Individuals who have low self-efficacy beliefs are more likely to avoid tasks and conflicts, do not perform well or apply much effort, and give up quickly on duties and disputes (Narsimulu, 2016; Scharzer, 2014). Bandura (1977) created the self-efficacy theory, which initially included four principles, dimensions, influences, and primary outcomes. Some studies, however, conflict with Bandura's original self-efficacy theory (Margolis & McCabe, 2006; Scharzer, 2014).

Further review of the literature on self-efficacy and the principle of self-efficacy indicates there are peer-reviewed articles that evolved the self-efficacy theory or emphasized certain principles over others. The original self-efficacy theory from Bandura (1977) expressed four principles of self-efficacy with emotional and psychological principles together; however, other researchers separated the principles and added the imaginal experiences principle to the self-efficacy theory (Latham & Seijts, 1999; Maddux, 2013; Scharzer, 2014). Margolis and McCabe (2006) report that the three major principles of the self-efficacy theory are enactive master, vicarious experiences, and verbal persuasion. The emotional and physiological states do not influence an individual's self-efficacy or performance; and by providing a supportive atmosphere by celebrating victories, modeling hard work and motivation, and giving positive

encouragement, students can improve their self-efficacy (Margolis & McCabe, 2006). However, other authors disagree and share that emotional and physiological states significantly impact student self-efficacy, especially in populations without support and resources (Kaufmann et al., 2022). Students with mental illnesses like anxiety and depression are more likely to fail their courses. Students with high anxiety and depression have reduced motivation and decreased learning engagement, resulting in high attrition, low retention, and low-performance levels (Kaufmann et al., 2022). The above literature review of the self-efficacy theory further indicates how self-efficacy theory is the best choice as the theoretical framework for this dissertation. To improve the outcomes of prelicensure nursing students' success in nursing programs, additional research could find the underlying cause for high attrition and low retention rates in prelicensure nursing programs. Other disciplines and other studies in prelicensure nursing programs found correlations with students having low self-efficacy correlating to low student success; the self-efficacy theory will add to the current body of literature to determine if there is a link between self-efficacy and prelicensure nursing students (Bulfone et al., 2022b; Chang & Gau, 2021).

Figure 1

Bandura's Self-Efficacy Theory



Note. By A. Bodipo-Membra, 2018, image, located online, LinkedIn.

Self-Efficacy and Nursing Students

Self-efficacy is an ever-growing researched theory and the theoretical framework for research in many other disciplines. As stated previously, the self-efficacy theory was founded by Bandura (1977), and other disciplines, like nursing education, utilize the theory's application to other situations and have validated tools to prove if self-efficacy is a measurable theory (Lazic et al., 2021). The self-efficacy theory emphasizes how an individual's behaviors and thoughts influence performance (Bandura, 1977). As the demand for nursing students to pass and graduate increases, there is a need to determine what the student's barriers are to completing their courses successfully (Schrum, 2020). Therefore, there is a need to utilize the self-efficacy theoretical framework to determine if there is a relationship between prelicensure nursing students' success in the nursing program and their self-efficacy scores.

Nursing students have various experiences throughout their lives, which may influence their beliefs if they can complete a nursing program successfully. Other professions and disciplines found there is a relationship between self-efficacy and the ability to complete tasks or

achieve goals (Bulfone et al., 2022b; Chang & Gau, 2021). Additionally, if students have other responsibilities outside of their college experience (such as the number of hours students work), there is additional pressure to complete the nursing program successfully (Bulfone et al., 2022b; Chang & Gau, 2021). With the increased pressure from society to push more nursing students through prelicensure nursing programs, more evidence is needed to determine the barriers for students and provide assistance to eliminate the barriers. The literature will show links between nursing students, self-efficacy, and the various variables influencing an individual's self-efficacy beliefs.

Related Literature

The purpose of this section in the literature review is to synthesize the current information on the main topic of this study. Due to increased demands for nurses to enter the workforce, there is significant pressure for nursing programs to increase enrollments and graduate more qualified nurses. More research is needed to identify the barriers to high attrition rates and graduate more qualified prelicensure nursing students (ACEN, 2023; Maine State Board of Nursing, 2022). Some potential barriers to preventing nursing students from completing a nursing program are the number of hours the student works and their self-efficacy beliefs. The following related literature will synthesize information about self-efficacy, nursing student barriers to completing nursing programs, the general self-efficacy scale used to measure students' self-efficacy, and the use of the health education system (HESI) to determine student success in a nursing program.

Attrition and Retention Rates in Nursing Education

With the demand for more nurses, there is a push for nursing programs to increase enrollment of prelicensure nursing students to decrease the nursing shortage gap (Schrum, 2020).

Nursing education attrition rates are high, and retention rates are low among prelicensure nursing programs (Schrum, 2020). Conflicting data, however, exists with differing data relating to prelicensure nursing programs' attrition and retention rates (American Association of Colleges of Nursing, Nursing shortage, 2020; Eudy & Brooks, 2022; Robert, 2020). The American Association of Colleges of Nursing (AACN) (2020) reports attrition of prelicensure nursing students as high as 50% and a retention rate ranging from 50%–80% in prelicensure nursing programs. Eudy and Brooks (2022) agree with the AACN report attrition rates of 50% but also report the average retention rate of 18% among the United States and international nursing education programs. Even with conflicting data on attrition and retention rates, the data supports a need to improve prelicensure nursing student attrition and retention rates. Maintaining low attrition and high retention rates amongst prelicensure nursing students is a requirement by regulatory accreditation bodies that require nursing programs to evaluate their processes.

Maine and Ohio State Board of Nursing and Accreditation Completion Rate Requirements

Nursing education has state and accreditation requirements to follow, and each state's requirements differ for nursing programs and nursing students (ACEN, 2023). The Maine State Board of Nursing (MSBON) and the Ohio State Board of Nursing (OSBON) have similar requirements for prelicensure nursing programs (Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). Both states require nursing programs to seek approval from the state board of nursing before enrolling prelicensure nursing students. Additionally, the MSBON (2022) and the OSBON (2022) require prelicensure nursing programs within the state of residence to obtain nationally recognized nursing accreditation, like the Accreditation Commission for Education in Nursing (ACEN). The only nursing accrediting body to accredit practical nurse and associate degree nursing programs is the ACEN (ACEN, 2023).

The MSBON (2022), OSBON (2022), and ACEN (2023) require prelicensure nursing students to complete a licensure examination to practice called the National Council Licensure Examination (NCLEX), specific to the discipline the graduate will enter (the NCLEX-PN for practical nursing graduates or the NCLEX-RN for registered nursing graduates). However, the MSBON (2022), OSBON (2022), and ACEN (2023) have different requirements for the NCLEX pass rates. The MSBON (2022) requires a 3-year aggregate of 70% or higher for first-time graduates, and the OSBON (2022) requires 95% or higher of the national average for first-time candidates within a 6-month time period. The ACEN (2023) requires nursing programs to have a first-time NCLEX pass rate higher than 80% or higher than 80% for first-time test-takers and repeat testers. Regarding completion rates, both the MSBON and OSBON follow the standards of the ACEN to have an expected level of achievement (ELA) that genuinely reflects an expected outcome of completion rates. With nursing attrition rates as high as 50% and retention rates ranging from 50%–80%, obtaining an annual completion rate that meets the program's ELA is difficult (Eudy & Brooks, 2022; Shah et al., 2022).

Each state and the ACEN (2023) give autonomy to prelicensure nursing programs to create admissions criteria, curriculum, and standards to prove a reasonable ELA of completion rates and student success for passing the NCLEX (Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). This autonomy allows programs to improve and change the program if students are not meeting the completion benchmarks and licensure pass rates, as the programs may face severe consequences for not meeting state and accreditation standards. Nursing programs who do not meet completion or licensure pass rates must create action plans for the state board of nursing. In addition, nursing programs may be placed on probation with the potential of the program losing accreditation and the program could eventually close if the

program's licensure pass rates and completion rates do not improve (ACEN, 2023; Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). Therefore, identifying the potential barriers preventing students from completing the prelicensure program successfully is essential.

Reasons for High Attrition and Low Retention Rates

According to the research, several reasons for high attrition and low retention rates in prelicensure nursing programs are prevalent. Bullying, diversity, student burnout, and resilience are the main contributors to high attrition and low retention rates. This section of the dissertation study will begin with an in-depth review of bullying in nursing programs and the complexities of faculty-to-student and student-to-student bullying. It will also address diversity as another common theme discovered in the review of the literature and how diversity links to attrition and retention rates. A review of student burnout and its influence on prelicensure nursing students dropping out and failing nursing programs without significant resources will follow. The literature review will conclude with student resilience, a theme that increases student likelihood of completing prelicensure nursing programs. Each section of this part of the literature review will show how each theme relates to the hypothesis and why these themes are included in the literature review.

Bullying

Globally, bullying is a significant problem amongst the entire population and is not singled out in one profession or one group of people; the nursing profession and nursing education also have a bullying problem (American Nurses Association, n.d., p. 5; Haliza et al., 2023). Historically, nursing education and the nursing profession are known for bullying and "eating their young," and this remains a problem (Haliza et al., 2023). The general definition for bullying is an individual or group of people causing repeated and unwanted physical, emotional,

or psychological harm to a person or group of people directly or indirectly (American Nurses Association, n.d.; Ibrahim et al., 2020; Shute et al., 2022). With the nursing shortage increasing the need for nurses, a need exists to examine the type of bullying in nursing education, how bullying affects nursing education, and the links of bullying to self-efficacy. A review of the literature shows significant data on how bullying increases attrition and decreases retention rates and links to individual self-efficacy beliefs.

With the increase in research to identify barriers preventing more nurses, more investigation is discovering a variety of bullying in the nursing profession streaming from nursing education (American Nurses Association, n.d.; Ibrahim et al., 2020; Shute et al., 2022). According to the American Nurses Association (n.d.), the two main types of bullying in nursing education are vertical and horizontal (lateral) violence. The research for both vertical and horizontal violence states that these types of bullying cause students to drop out or fail nursing programs, but conflicting evidence exists on how interventions and early reporting can improve student outcomes in nursing education (Biheler, 2021; Dos Santos, 2022; Haliza et al., 2023). Vertical violence is people of different levels of a hierarchy system (e.g., boss-to-employee or instructor-to-student). Horizontal violence is when peers on the same level cause aggression toward one another (e.g., senior nursing student-to-senior nursing student) (Sukut & Ayhan, 2022). With both types of bullying, individuals who are victims of bullying may undergo situations of physical (e.g., pushing, hitting, punching); verbal (e.g., insults, teasing, intimidation, discrimination remarks); social (e.g., defamation of character, hostile facial gestures, exclusion); and cyber violence due to technology (e.g., hurtful text messages or emails, social media posts of gossip, intimidation of others online, exclusion) (American Nurses Association, n.d.; Ibrahim et al., 2020; Shute et al., 2022). These various types and subtypes of bullying cause attrition and

retention rate problems in nursing education and the nursing profession. Still, literature is discovering ways to improve the bullying problem and encouraging leaders in higher education to intervene to prevent the further nursing shortage.

As stated previously, the nursing profession is primarily White females; however, accrediting agencies like ACEN are pushing for more diversity in nursing education programs to maintain programmatic accreditation (ACEN, 2023; Dos Santos, 2022). The literature indicates that individuals who are minorities in the nursing profession are predominately bullied by means of vertical and horizontal bullying (Abdelaziz & Abu-Snieneh, 2021; Miskimon et al., 2023; Xu et al., 2022). English language learners (ELL) and racial minorities are the populations who present significant bullying in nursing educational programs. According to the research, considerable bullying by peers and faculty was toward students of diverse backgrounds, cultures, and genders (Abdelaziz & Abu-Snieneh, 2021; Chachula et al., 2022; Xu et al., 2022). Research shows that students with student-to-student bullying are more likely to speak up and seek help from faculty or administrators; however, when there is faculty-to-student bullying, students report feeling more isolated and hopeless, increasing their desire to withdraw or fail the nursing program (Abdelaziz & Abu-Snieneh, 2021; Sukut & Ayhan, 2022; Xu et al., 2022). Conflicting evidence shares how significant bullying is by peers. Still, other reports share that bullying by faculty is less likely today compared to student-to-student bullying but remains more devastating to students due to the lack of support and feelings of isolation (Abdelaziz & Abu-Snieneh, 2021; Xu et al., 2022). Furthermore, new evidence is exploring more bullying effects and identifying direct and indirect bullying (Shute et al., 2022).

Research identifies direct bullying as a behavior that harms, hurts, or humiliates an individual and is apparent and evident to others who are witnessing the harm (e.g., hitting,

kicking, punching, name-calling) (Miskimon et al., 2023; Shute et al., 2022). In comparison, indirect bullying is a behavior that is difficult to detect. Indirect bullying is often discreet and anonymous; the victim may not be aware until after the bullying occurs (e.g., damage to a person's social reputation, jokes shared with a group of people, sharing unflattering images through text messaging) (Miskimon et al., 2023; Shute et al., 2022). Multiple studies agree that faculty in nursing programs may not intervene with indirect bullying, as indirect bullying is difficult to detect (Miskimon et al., 2023; Shute et al., 2022). Even in nursing, managers are less likely to intervene with nursing staff experiencing indirect bullying (Dos Santos, 2022). One study shares that the lack of intervention from faculty is due to the lack of emotional intelligence, as faculty do not see a need to intervene with indirect bullying (Shute et al., 2022). The lack of intervention from leadership in the nursing profession and faculty causes mental health problems and increases the likelihood of students withdrawing or failing the nursing program (Miskimon et al., 2023; Shute et al., 2022).

Bullying remains a global issue and continues to occur in the nursing profession and nursing education. Bullying contributes to an individual's self-efficacy beliefs (Haliza et al., 2023; Oducado et al., 2022). Multiple studies show a connection between low self-efficacy scores and bullying, as students become isolated and withdrawn (Haliza et al., 2023; Oducado et al., 2022). Students feel they cannot meet their goals due to the bullying and give up on their pursuit of becoming a nurse. However, students with sufficient support and intervention (counseling, academic advisors, and student advocates) are more likely to overcome the barriers of bullying and meet their goals (Ibrahim et al., 2020). Even though there is a direct correlation between self-efficacy and bullying, this dissertation did not include bullying as one of the variables, as students who complete each level of the nursing program have significant resilience

to overcome barriers that prevent them from completing the nursing program (Haliza et al., 2023; Oducado et al., 2022; Xu et al., 2022). Due to the connection between bullying and self-efficacy, this variable was necessary to explore in this literature review but is not included as a variable in this dissertation.

Diversity

Students of different races, cultures, sexuality, and gender and nontraditional learners are less likely to complete the prelicensure nursing program successfully (Adedokun et al., 2022; Charania & Patel, 2022; Gajewski, 2022; W. Williams & Dahan, 2022). Traditionally, nurses and nursing students were Caucasian, Christian women and would have a limited scope of practice (Billings & Halstead, 2023). However, nursing programs seek to increase diversity in nursing students and the nursing profession (Mei et al., 2022; Twidwell et al., 2022). Due to the push to increase diversity in nursing programs, there is a need to increase or improve existing plans to help diverse students succeed in nursing school (Mei et al., 2022; Twidwell et al., 2022). The barriers to helping diverse students to succeed in prelicensure nursing programs are socioeconomic, language, lack of preparedness from a faculty perspective, education of faculty to reach the diverse population of students, balance between personal life and college life, and learning techniques (Adedokun et al., 2022; Charania & Patel, 2022; Gajewski, 2022; W. Williams & Dahan, 2022).

Today, the average age of students entering prelicensure nursing programs is between 26 and 40 years old, and they are classified as nontraditional students (Adedokun et al., 2022; Avery-Desmarais et al., 2021; Pride et al., 2020). These nontraditional nursing students have many responsibilities outside of their nursing program and must work to support their lifestyles and families and pay for higher education costs (Pride et al., 2020). Additionally, students who

have many outside responsibilities (caring for family, attending social activities, working at a place of employment) have limited ability to meet with faculty for extra help, participate in socialization activities with peers, have limited time to study, and some miss classes due to time limitations (Adedokun et al., 2022; Avery-Desmarais et al., 2021; Pride et al., 2020). A research study states that utilizing technology to record lectures would eliminate potential barriers for students who miss class and allow them to view lecture materials repeatedly to reinforce content (Avery-Desmarais et al., 2021). However, another research study states that for prelicensure nursing students, technology should be limited, and student learning is best in a face-to-face format, especially for nontraditional learners (Pride et al., 2020; W. Williams & Dahan, 2022).

Conflicting literature states nontraditional students are more likely to succeed in nursing programs due to time management skills and due to their life experience, but other research states nontraditional students struggle due to the lack of technology use and too many personal barriers (Adedokun et al., 2022; Avery-Desmarais et al., 2021; Charania & Patel, 2022; Gajewski, 2022; Matthews et al., 2022; W. Williams & Dahan, 2022). Nontraditional students are at a higher risk of dropping or failing out of nursing programs due to their limited ability to attend classes and to seek help, as well as experiencing isolation from their peers and faculty. The above problems are not isolated to nontraditional learners but include other diverse populations like English language learners.

An increase in diversity among nursing programs also includes more students who immigrated from foreign countries as well as English language learners (Adedokun et al., 2022; Gajewski, 2022). ELL students are immigrants from foreign countries or domestic students where English is not their primary language of communication (Gajewski, 2022). Some ELL students have a basic understanding of the English language, whereas others are more advanced

in their English knowledge (Gajewski, 2022). ELL students who enter prelicensure nursing programs will likely drop out or fail for various reasons. Learning the English language is a challenge, but ELL students must also learn medical terminology in healthcare and how nurses communicate with one another (Adedokun et al., 2022). Another barrier is that nursing faculty are unprepared to teach ELL students and struggle to meet their learning needs (Charania & Patel, 2022). Isolation is another barrier for ELL students, as a non-willingness to ask for help from the faculty or to study with peers (Adedokun et al., 2022; Charania & Patel, 2022; Gajewski, 2022). These barriers add to the growing deficit in the nursing profession to care for the increasing population. More research is needed to explore how resources can aid students of diverse cultures to become nurses, which is why this research study is needed.

Diversity is a variable widely explored in research and is connected to self-efficacy and student success. Students of different genders, cultures, sexuality, and race and nontraditional learners in other disciplines have lower self-efficacy scores. They cannot meet their projected outcomes, contributing to poor attrition and retention rates (Chang & Gau, 2021). Providing students with the proper tools to succeed in nursing would increase diversity, decrease attrition, and increase the retention of nursing students (Pride et al., 2020; Twidwell et al., 2022). Even though nursing programs seek to improve the enrollment of diverse students, many factors contribute to higher attrition and lower retention rates. This dissertation will include elements of diversity in the data collection and results, as the literature shows diversity can influence the results of self-efficacy and student success; however, diversity is not the central theme of this dissertation study.

Burnout

Nursing student burnout is becoming a trend for high attrition and low retention rates worldwide (Hwang & Kim, 2022). Prelicensure nursing students are required to complete their nursing program with two main components: didactic and clinical experiences (Ghods et al., 2022; Ma et al., 2022). To achieve success in the didactic and clinical components of the nursing program, research shows many themes that affect the chances of student burnout in nursing programs (Chami-Malaeb, 2022; Chang & Gau, 2021; Hwang & Kim, 2022; H. Kim & Lee, 2022; Ma et al., 2022). This section of the dissertation will show the connection between nursing student self-efficacy and how burnout correlates to various components: grit and mental health illness. This section will also explore why these components are essential to prelicensure nursing students, why self-efficacy remains a variable in this study, and why grit and mental health illnesses are factors researched in this dissertation.

Grit. Nursing student grit is the ability to persevere through all adversities and challenges to meet a long-term goal (Terry & Peck, 2020b). Nursing programs have great rigor to meet state and accreditation requirements. To complete their prelicensure program, students must complete many assignments, clinical hours, simulation, laboratory skills, and other requirements (Maine State Board of Nursing, 2022). The entire nursing program requires students to complete a program ranging from 1 to 2 years and is a challenging long-term goal (Burke et al., 2022; H. Kim & Lee, 2022; Terry & Peck, 2020b). Prelicensure nursing students need to have grit to complete the nursing program due to the time commitments, challenges, and meeting long-term goals.

The research shows nursing students struggle to meet their long-term goals due to various factors relating to low or lack of grit, but students with high grit levels were more likely to

succeed in nursing school (Burke et al., 2022; H. Kim & Lee, 2022; Terry & Peck, 2020b). Students from a higher socioeconomic status, higher age, and whose motivation to enter a nursing school was unrelated to television had higher grit levels (Terry & Peck, 2020b). Students of higher age and socioeconomic status had more support systems and experience to handle the pressures of nursing school (Burke et al., 2022; H. Kim & Lee, 2022; Terry & Peck, 2020b). Nursing students in graduate programs also have higher grit levels to complete the program than undergraduate nursing students (Burke et al., 2022). Graduate nursing students have firsthand experience with nursing school's pressures and difficulties, have support systems to prevent burnout, and understand how to meet their long-term goals (Burke et al., 2022; H. Kim & Lee, 2022; Terry & Peck, 2020b). Social support is associated with the level of grit a nursing student has to complete the prelicensure nursing program (H. Kim & Lee, 2022). Nursing students who had support during their time in the prelicensure nursing program were less likely to burn out and fail or drop out of the program (H. Kim & Lee, 2022).

The student's level of grit is associated with burnout, as students who become burned out from a prelicensure nursing program have a high incidence of dropping out or failing their nursing courses (Burke et al., 2022; H. Kim & Lee, 2022; Terry & Peck, 2020b). The student's level of grit is also related to self-efficacy, as the student's past experiences and outcomes are more likely to predict the student's response to highly intense situations and the amount of grit a nursing student has to complete the program (Jin & An, 2023). The higher the nursing student's self-efficacy and grit levels, the more likely the student will pass and complete the nursing program and pass the licensure examination (Jin & An, 2023; H. Kim & Lee, 2022; Terry & Peck, 2020b). Even though a significant relationship between self-efficacy and grit exists, this research study aims to view nursing students in a 16-week course and not throughout their

nursing program. By the time the nursing student arrives at the final 16-week course in their nursing program, the student would prove to have the grit needed to complete the program and is not the focus of this study.

***Mental Health Illness and the COVID-19 Pandemic*.** Students who suffer from mental illnesses and enter into a prelicensure nursing program are more likely to experience burnout (Hwang & Kim, 2022). After COVID-19, mental health illnesses surged among students in higher education institutions, and students did not have significant resources to improve their conditions (Jardon & Choi, 2022). The primary mental health illness issues viewed in nursing education are depression, anxiety, low self-esteem, and stress, and these mental illnesses increase the likelihood of academic burnout (Hwang & Kim, 2022). Since the COVID-19 pandemic, mental health illnesses have been on the rise among nursing students, as there have been many changes to teaching, learning, and limited support services for nursing students (Jardon & Choi, 2022; S. C. Kim et al., 2021; Sveinsdottir et al., 2021).

During the COVID-19 pandemic, there was a mandate from the United States government to lock down campuses, and many colleges chose to teach courses online (Jardon & Choi, 2022). Since nursing programs have a didactic and clinical component, teaching online was a shift from traditional practices (Jardon & Choi, 2022; S. C. Kim et al., 2021; Sveinsdottir et al., 2021). Since coursework transitioned to an online format, students needed to obtain technology and learn how to learn online. Some colleges did not have sufficient resources to assist students with learning in an online format, which added to students' mental health illness stresses (Jardon & Choi, 2022; S. C. Kim et al., 2021; Sveinsdottir et al., 2021). Students could progress in the online courses, but their mental health illness issues increased due to the increased stress and isolation students underwent during the COVID-19 lockdown. Additionally,

some college campuses provided online support services for students, but the resources students had access to were not readily available compared to pre-COVID-19, and students did not learn to develop coping mechanisms for high-stress situations (Sveinsdottir et al., 2021). Students also could not access emotional support from family and friends due to the COVID-19 lockdown (Jardon & Choi, 2022; S. C. Kim et al., 2021; Sveinsdottir et al., 2021).

As a result of the isolation, increase in mental illnesses, and lack of emotional support, there was an increase in student burnout in nursing programs. Nursing students with emotional burnout dropped out or failed the nursing program (Jardon & Choi, 2022). However, the students who completed their nursing program struggled with the intense pressures of working in healthcare facilities since nursing students during the lockdown were not exposed to caring for patients in healthcare facilities and only learned to care for patients in an online simulated environment (S. C. Kim et al., 2021; Sveinsdottir et al., 2021). Students were also unprepared to work as nurses by communicating and caring for patients in high-pressure situations, increasing turnover in healthcare facilities and decreasing nursing job satisfaction (Jardon & Choi, 2022). The COVID-19 lockdown increased attrition and decreased retention rates, as students had limited access to student resources and were unprepared to cope with the stresses associated with nursing education and the nursing profession (Ma et al., 2022). Mental illness remains a problem as individuals entering nursing programs still have coping issues associated with the COVID-19 lockdown (Ma et al., 2022).

Due to the COVID-19 pandemic, mental health illnesses are surging amongst prelicensure nursing students. Mental health illnesses were included in this literature review, as the literature shows how mental health illnesses are a contributing variable to the lack of student success in nursing programs and how students who struggle with mental health illnesses are less

likely to overcome obstacles if the individual has low self-efficacy beliefs. Even though mental health illnesses due to COVID-19 are a significant problem, there is an overwhelming amount of research to show the connections between nursing student success, COVID-19, and mental health illnesses, and another study would continue to prove what other scholars found. Therefore, this dissertation will not use mental health illnesses and COVID-19 as variables in this study.

Resilience

Resilience is another theme tied to self-efficacy among various disciplines, including prelicensure nursing students (Georges et al., 2021; Siddique et al., 2023; Sujiarto et al., 2022). As stated, self-efficacy is an individual's belief in their ability to perform a specific task or achieve a particular goal (Bandura, 1997). Resilience is an individual's ability to overcome problems and adversity (Shaabna & Sarhan, 2022; Siddique et al., 2023). Besides self-efficacy, resilience holds significant ties to individual success depending on the circumstances each faced in their life (Georges et al., 2021). Resilience connects to overcoming problems and adversity in multiple fields, from students with liberal arts and science degrees to nursing education and employment (Georges et al., 2021; Siddique et al., 2023; Yildiz & Kilek, 2022). Conflicting research on contributing factors of resilience, how resilience affects individuals exists, and how specific services can improve resilience amongst individuals; however, the research shows self-efficacy and resilience are connected through positive linear correlations (Cennet & Dilek, 2022; Siddique et al., 2023; Warshawski, 2022).

Resilience is the ability of an individual to bounce back and overcome challenges (Siddique et al., 2023). In higher education programs with high intensity, such as students who must complete licensure examinations following all higher education requirements, students must show high resilience to complete the program and pass the licensing exam; however, some

obstacles affect student resilience (Pillay et al., 2022; Shaabna & Sarhan, 2022; Warshawski, 2022). Emotions and coping mechanisms play a role in individual resilience; students who do not learn how to control their emotions or learn coping mechanisms at a young age cannot adapt those skills when entering higher education when obstacles are in their path (Merino-Godoy et al., 2022; Supervia et al., 2022). Students who do not learn to control their emotions and cope with difficult situations have lower self-efficacy beliefs and struggle in higher education (Merino-Godoy et al., 2022; Supervia et al., 2022). Additionally, individuals who historically had socioeconomic difficulties, a lack of social support, and a history of giving up from obstacles have a higher probability of lower resilience; however, there is conflicting evidence with some of these factors based on interventions to support resilience (Cennet & Dilek, 2022; Georges et al., 2021; Siddique et al., 2023).

Social support, academic support, and supportive family and friends increase the resilience of students in college and employment settings as the support provides a way for individuals to cope with overcoming problems and difficulties (Siddique et al., 2023; Sujiarto et al., 2022; Warshawski, 2022). The support from other individuals allowed students to decrease their stresses, increase their study time, and allow for a student to vent their frustrations (Warshawski, 2022). Academic support from faculty also increases resilience, giving students the confidence and self-efficacy to overcome obstacles and meet their goals (Siddique et al., 2023). Additionally, in other avenues like the nursing practice, new nurses with senior nursing staff providing support and teamwork increased new nurse resilience and decreased burnout, increasing employment longevity (Georges et al., 2021). Other research shows that students with a physical outlet like regular exercise, however, will increase student and individual resilience to overcome problems and achieve goals (Chen et al., 2022). Regular exercise decreases hormones

that increase feelings of stress, improve mood and motivation, and increase endorphins to allow individuals to cope with stress and overcome obstacles to achieve their goals (Chen et al., 2022).

Resilience is a contributing factor to student success. Still, self-efficacy is more significant to this study as each student shows resilience by passing several courses and exams before arriving at the final class and the final HESI exam. In prelicensure nursing programs, students must have the resilience to continue through the program to graduate, as there are many difficulties and barriers to "weed out" students who do not have the resilience and abilities to become a nurse (Georges et al., 2021; Siddique et al., 2023; Sujiarto et al., 2022). Their past performance dictates how they will study, approach each question, and manage their time when determining how many hours to work and how to complete the HESI exam. Prelicensure nursing students who are less likely to pass the final HESI exam failed out of the program prior to this last course. Even though resilience and self-efficacy are linked, in this case, self-efficacy is the better theory needed in this dissertation, as students already have enough resilience to complete the program based on the prior obstacles they faced before the final nursing course.

Tools to Measure Academic Student Success

The ultimate prelicensure student success in a nursing program is passing the National Council Licensure Examination (NCLEX) (Maine State Board of Nursing, 2022). The NCLEX is the gatekeeper examination to allow nursing students to become licensed and practice nursing. ACEN (2023) requires nursing programs to have assignments and mechanisms to assess and evaluate if nursing students meet program and student learning outcomes. These assessments measure student success in various ways through simulation and examinations. Nursing programs are moving to include up to 50% simulation in nursing programs and standardized testing to measure student success in prelicensure nursing programs (Maine State Board of

Nursing, 2022; Sanderson et al., 2022; Shah et al., 2022). Other mechanisms to assess student success are beginning to surface in nursing programs, as there is a need to graduate more nurses. This literature review section will share the diverse tools used to assess student success: the general self-efficacy scale, simulation, the HESI exam, and the assessment technologies institute (ATI). This section will include using some tools and not others, as the tools relate to the dissertation. At the conclusion of this section, an overview will be included of why the GSE and HESI tools are the best fit for this dissertation.

General Self-Efficacy Scale

The self-efficacy theory is the theoretical framework of this research, and the general self-efficacy scale (GSE) tool is one of the validated tools included to assess if prelicensure nursing students have high or low self-efficacy. The GSE is a 10-question Likert scale of 1 to 4 to measure how students perceive their ability to meet their desired outcomes (Lazic et al., 2021; Prifti, 2022). The GSE Cronbach's alpha's reliability is between 0.76 to 0.90, proving the tool is reliable and valid through predictive and criterion-related validity in multiple studies (Luszczynska et al., 2005; Schwarzer & Hallum, 2008). Research studies used the GSE to connect self-efficacy to feelings of optimism, work satisfaction, depression, stress, burnout, anxiety, health concerns, and emotion (Lazic et al., 2021; Prifti, 2022). Many disciplines in higher education and the workforce utilize the GSE tool to measure individuals' self-efficacy and determine the likelihood that individuals will meet their goals. This validated and reliable tool will show how prelicensure nursing students feel about their ability to complete the nursing program.

As indicated previously, using the GSE tool is in multiple disciplines to assess the individual's self-efficacy. A link between self-efficacy and individual success exists because

evidence shows that higher self-efficacy students are more likely to complete a task or goal. Students in higher education science programs with low self-efficacy scores on the GSE tool were more likely to drop out or fail their college courses than students with higher GSE scores (Ommering et al., 2021). Furthermore, students who have mental health illnesses (anxiety, feelings of isolation, and difficulties focusing) were more likely to have a lower GSE score and were not able to reach their coursework and grade scores (Bouih et al., 2021; Green, 2022). Students with an outlet for their anxiety or who had high resilience consistently had higher GSE scores and were more likely to meet their goals compared to those with lower GSE scores (Hayat et al., 2021; Ren et al., 2021).

Due to the popularity of the self-efficacy theory, there are multiple tools in the literature to assess individual self-efficacy scores. In the literature review, many tools are available for use. However, they are specific to certain fields, do not encompass all the questions needed to assess, or are too complicated for the population. Based on the nature of this dissertation, the GSE tool is the best fit for this dissertation. The GSE tool allows for an analysis of nursing students' self-efficacy beliefs and, as indicated by previous studies, provides a quantitative view to determine if the student has high or low self-efficacy beliefs. This tool is also linked to student success, as students who had higher self-efficacy scores from the GSE were more likely to meet their goals by passing their courses compared to the students with lower self-efficacy scores on the GSE scale (Hayat et al., 2021; Ren et al., 2021). However, this tool alone is not enough to demonstrate support for student success in the prelicensure nursing program because no link currently exists to the GSE tool and the pass rates of the licensure examination (NCLEX). Using the GSE scale with the HESI tool is imperative to indicate student success and if the number of hours worked during the final course in the prelicensure program affects the student's outcome.

Simulation

Simulation is a growing tool in nursing education and the nursing profession (Koukourikos et al., 2021). Research supports that simulation improves student understanding of clinical judgment, confidence, and self-efficacy (Fuglsang et al., 2021; Hwang & Kim, 2022; Terry & Peck, 2020a). In the states of Maine and Ohio, the state board of nursing granted permission to nursing programs to utilize up to 50% of high-fidelity simulation in replacement of clinical due to the limitations of clinical, and students are still able to reach academic success (Maine State Board of Nursing, 2022; Ohio State Board of Nursing, 2022). Simulation has three levels: low, mid, and high fidelity (Billings & Halstead, 2023). Current literature focuses on high-fidelity simulation, as state regulating bodies support the use of high-fidelity simulation (Fuglsang et al., 2021; Hwang & Kim, 2022; Terry & Peck, 2020a).

High-fidelity simulation is the most realistic simulation; lifelike mannequins possess the functions of humans (e.g., heartbeat, pulse, breathing, and seizure activity). Nursing programs also create an environment similar to a healthcare setting to make the simulation as lifelike as possible. High-fidelity simulation allows students to use the highest levels of Bloom's taxonomy to utilize clinical judgment practices, analyze patient conditions, and create solutions for problems (Koukourikos et al., 2021; Salameh et al., 2021). The benefits of high-fidelity simulation are that faculty can control the learning environment and alter patient outcomes based on how the student cares for the patient (Koukourikos et al., 2021; Salameh et al., 2021; Thomas & Barker, 2022). In the healthcare setting, faculty have little control over patient outcomes and cannot guarantee students will care for patients whose illnesses are similar to what students are learning in didactic (Koukourikos et al., 2021; Salameh et al., 2021; Thomas & Barker, 2022).

During simulation, faculty can see students perform all tasks, competencies, and clinical judgment skills to correct problems in a safe environment without risk to patient safety (Sharoff, 2022). The ELL students can have more time to hone their skills in a low-risk environment and obtain one-on-one attention in the simulation environment. The outcomes indicate ELL students felt better about their skills and had more self-confidence to care for patients in clinical (Sharoff, 2022).

Even with increased student learning, however, no connection between simulation, student success, attrition, and retention rates exists in the literature. Research shows a slight increase in grades within the didactic classes, but the increase in grades was not statistically significant to increase student success (Fuglsang et al., 2021). Additionally, NCLEX pass rates were not statistically significant one way or the other with the use of simulation in nursing programs, but the ATI predictor scores increased (Thomas & Barker, 2022). Student self-confidence is essential to student success, but the evidence to prove a strong relationship between student success and simulation is limited to nonexistent. Based on the literature review information, simulation is not included as a variable in this dissertation, as there is no strong connection between student success and simulation. The reason for including simulation in this literature review is to show how simulation does have anecdotal assistance to improve student outcomes with some increase in test scores, and one study did prove increased success with ATI. Still, there is not enough research to warrant simulation as a student success tool.

Health Education System Examination

There is substantial evidence to prove the relationship between student success and the HESI standardized examination for prelicensure nursing students. The HESI exam is a standardized and valid tool to measure several aspects of nursing knowledge to determine

student success (Shah et al., 2022). Prelicensure registered nurse (RN) and practical nursing (PN) programs utilize the HESI standardized exam (Riley et al., 2023; Shah et al., 2022). The research supports the utilization of the RN and PN HESI exit examinations to determine student success in passing the NCLEX, as students who obtain an 850 score have a 94%–96% probability of passing the NCLEX the first time. Students who earn a 900 score on the HESI exit examination have a probability of 96%–98% of passing the NCLEX the first time.

Additionally, the evidence also states that HESI does not predict failures of the NCLEX, only student success in passing the NCLEX. There is a direct link between students who obtain an 850 score or higher on the HESI exit exam to student success in the nursing program and passing the NCLEX licensure exam (Riley et al., 2023; Shah et al., 2022). Multiple studies are showing the validity and reliability of the HESI exit exam, whose authors are not affiliated with the creators of the HESI exit exam (Flowers et al., 2022; Riley et al., 2023; Shah et al., 2022). Therefore, researching if students' self-efficacy scores, hours worked, and HESI exit exams have a connection could identify if this link could improve attrition and retention rates amongst nursing students. The Ohio and Maine nursing programs utilize the HESI exit exam in their last course of the prelicensure nursing programs, which will satisfy the use of the tool with this population. Based on the above information, the HESI exit exam is the best tool to measure student success in this dissertation.

Assessment Technologies Institute

Another standardized examination system to assess student success with passing the NCLEX system is the ATI (2020). The ATI is similar to HESI, as both exams have a comprehensive predictor assessment matrix to predict the likelihood of PN and ADN students passing the NCLEX examination (Assessment Technologies Institute, 2020). The ATI exam

follows a percentage rather than a point system like the HESI exam. With the comprehensive ATI exam, students complete 180 questions with 30 questions that are not graded to assess for validity on future comprehensive predictor exams. Like the HESI exam, the ATI exam does not predict student failures of the NCLEX exam. The benchmark recommendation for nursing programs is to set a 70% passing score, as this score provides students with a 90% probability of passing the NCLEX (Assessment Technologies Institute, 2020).

The Assessment Technologies Institute reports that the ATI Comprehensive Standardized Exam is valid and reliable, with a *p*-value ranging from .7 to .96, and is validated through predictive validity (Assessment Technologies Institute, 2020). However, the reliability data is from the ATI report. There were not as many peer-reviewed articles published by reputable publishers to validate the use of ATI testing for prelicensure student success compared to the HESI exam. Of the limited journal articles found, there are reports of student success with the use of ATI testing linking to simulation and male nursing students in prelicensure nursing programs (Kellett et al., 2023; Thomas & Barker, 2022). The journal articles published about ATI were primarily about the entrance exams, not the prelicensure comprehensive exams. Even with the limited research articles published, the comprehensive ATI exam has validity and reliability.

Although evidence supports the validity and reliability of the comprehensive ATI exam, this dissertation will use the HESI exit exam. The HESI exit exam and predictive validity are validated through many studies (Flowers et al., 2022; Riley et al., 2023; Shah et al., 2022). Additionally, the Ohio and Maine prelicensure nursing programs utilize the HESI exit exam in the final course before graduation; therefore, changing to the ATI exam would not serve this study's current population of students. The scoring system is similar with equal student success,

but there is limited research to confirm if ATI is a better tool than the HESI exam. Each comprehensive exam utilizes Bloom's taxonomy and the NCLEX blueprint (the content students are assessed on when completing the licensure exam) to assess student readiness to pass the NCLEX (Assessment Technologies Institute, 2020; (Evolve.Elsevier, 2022). Based on the above variables and the data viewed in the literature, this dissertation will use the HESI exit exam as one of the tools in this study.

Summary

Attrition and retention rates in nursing education are problematic and remain concerning. Nursing faculty and administrators seek to decrease attrition and increase retention rates to graduate more qualified nursing students who can work in the field and reduce the nursing shortage (Billings & Halstead, 2023). Using the self-efficacy theory will provide guidance and understanding of this topic. This review of literature on nursing student attrition and retention, self-efficacy, and prelicensure nursing student success has a distinct gap. This gap exists between prelicensure nursing student success, the number of hours students work during their program, and the students' self-efficacy scores. Support in other disciplines and contexts that self-efficacy is a factor in individual success is present. Still, there is little research to identify a connection between prelicensure nursing students' self-efficacy, the number of hours students work, and the successful completion of a nursing program. Abundant literature is available to support the use of the HESI exit exam to show student success in nursing programs (Riley et al., 2023). One can better understand how these outcomes affect attrition rates by researching the effects of student self-efficacy and HESI exit exam scores that prove successful completion of the prelicensure nursing program.

CHAPTER 3: METHODS

Overview

The purpose of this quantitative, nonexperimental, correlational study is to determine if a passing score on the standardized Health Education Systems Incorporated (HESI) exit examination for prelicensure nursing students can be predicted from the number of working hours and self-efficacy scores for those same students. This section of the dissertation begins with an introduction to the study's design and includes complete definitions of the variables. Additionally, the research question and null hypothesis will follow. Finally, at the end of this chapter, there is a description of the participants, setting, instrument, procedures, and data analysis plans.

Design

The research design selected for this study was a predictive correlation. The use of correlational designs in research has two purposes: "(1) to explore causal relationships between variables and (2) to predict scores on one variable from research participants' scores on other variables" (Gall et al., 2007, p. 337). Gall et al. (2007) underscore that correlation designs allow researchers to synthesize multiple variables and determine whether a relationship exists. No manipulation of variables occurred in this study, and no experimental design was employed; consequently, the variables are termed predictor or criterion. In this research, a predictive correlation design was employed, as outlined by Gall et al. (2007). This method was chosen for its effectiveness in forecasting the behavior pattern of a specific criterion. Consequently, employing a predictive correlation design is particularly suited to the objectives of this dissertation. This study aims to ascertain whether there is a predictive relationship between the number of hours prelicensure nursing students work, their self-efficacy scores, and their

likelihood of achieving a passing score (850 or higher) on the HESI exam (Gall et al., 2007). In other research, prelicensure nursing students who work while attending classes is one of many variables in the study or called for in future recommendations (Chami-Malaeb, 2022; Chang & Gau, 2021; Eudy & Brooks, 2022). However, sufficient research has not utilized a validated tool to assess nursing student success (Bulfone et al., 2021a; Fuglsang et al., 2021). A predictive correlational design showed if the two predictive variables in this study have statistically and practically significant direct correlations to the criterion variable. The predictive variable—the number of hours worked—does not require a validated or reliable instrument, defined by how many hours a student works each week during their last semester of nursing school (Bulfone et al., 2022b). The other predictive variable, self-efficacy, "is the strength of an individual's belief in his or her ability to respond to novel or difficult situations and deal with any associated obstacles or setbacks" (Schwarzer & Hallum, 2008, p. 2). The criterion variable—prelicensure nursing students passing the HESI exam with an 850 or higher—is defined by Shah et al. (2022). There is a 95% probability of students passing the nursing licensure examination if the student obtains an 850 or higher on the HESI exam; therefore, the criterion variable is dichotomous: A score of 850 points or higher is passing, and a score of 849 points or less is failing (Flowers et al., 2022; Riley et al., 2023; Shah et al., 2022).

Research Question

RQ1: How accurately can a passing score on the HESI exam be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students?

Hypothesis

$H_0$1: There is no significant predictive relationship between the criterion variable (earning a passing HESI exam score or higher) and the linear combination of predictor variables (number of working hours and self-efficacy scores for prelicensure nursing students).

Participants and Setting

Prelicensure nursing programs aim to educate students to pass the licensure examination and enter the workforce to care for the population in various clinical specialties. These programs are in hospital-based institutions, community colleges, and university systems (ACEN, 2023). This part of the study describes the population, participants, sampling strategy, and sample size and concludes with the setting description.

Population

The population and setting for this dissertation are prelicensure nursing students (undergraduate programs) located in a rural area of New England (Maine) and Midwestern (Ohio) United States. The Maine location has prelicensure nursing programs and is at a private, not-for-profit hospital-based college in central Maine. Maine is more than 35,000 square miles and has a population of fewer than 1.4 million people, primarily White (94.2%) with low economic standing (11.5% people in poverty) (United States Census, 2022). The Maine college is only commuter students, and the mean age of students is 30 (L. Gotjen, personal communication, May 23, 2023). The New England Commission of Higher Education (NECHE) accredits the college, and the Accreditation Commission for Education in Nursing (ACEN) accredits the prelicensure nursing programs. The nursing program has the Maine State Board of Nursing (MSBON) approval to run a prelicensure ADN and PN program (Maine College of Health Professions, 2023). Permission was granted from the dean of nursing to use the

prelicensure nursing students in this dissertation.

The Ohio location has prelicensure nursing programs and is a community college in the northwest area of rural Ohio. Ohio has more than 11.78 million people, and 80% of the population is White, with the next highest race population of 12% Black individuals, and has a socioeconomic standing of 13.4% of people who reside at the poverty line (United States Census, 2022). The Ohio community college is a commuter and residential college with traditional and nontraditional students (T. Ludwig, personal communication, May 23, 2023). The community college is accredited through the North Central Association of Colleges and Schools Commission Institutions of Higher Education, and ACEN accredits the prelicensure nursing programs. The Ohio State Board of Nursing (OSBON) approves the ADN and PN programs to educate students (Northwest State Community College, 2022). Permission was granted from the dean of nursing to use the prelicensure nursing students in this dissertation.

Participants

The selection of participants in this dissertation was a convenience sample of adult (18 years and older) prelicensure nursing students from the states of Maine and Ohio during the 2023–2024 academic year. The sampling procedure for this dissertation was collecting data from a population with a high attrition rate and low retention rate (Pride et al., 2020; Schrum, 2020). Prelicensure nursing students have some of the highest attrition rates and lowest retention rates across the country; ease of accessibility was one of the reasons for selecting the population in Maine and Ohio. Additionally, these were the only colleges with ADN and PN nursing students who agreed to participate in the study. These are also the only colleges utilizing the HESI exit exam in Maine and Ohio to measure student success in the prelicensure nursing program. Other colleges across the country use the HESI examination similar to the New England and the

Midwest college; however, maintaining student confidentiality and procedures for collecting data was a concern. Therefore, a college in the states of Maine and Ohio with PN and ADN students was the population from which a selection would be made for this study.

For this study, the total number of sampled participants was 79, which is the required minimum when assuming a medium effect size. According to Gall et al. (2007), 66 participants is the minimum requirement for a logistic regression analysis when assuming a medium effect size and statistical power of .7 and a .05 alpha level. The sample was from two colleges within two different prelicensure nursing programs (ADN and PN) in Maine and Ohio. In the nursing program, students in their last nursing class before graduation were selected. The demographic information includes gender, ethnicity, age range, and English as a second language students: 10 male; 69 female; 71 Caucasian; 3 Black; 5 other; 5 multi-language learners; 74 primary English language; 20 ages 18–25; 26 ages 26–33; 19 ages 34–41; 9 ages 42–49; 4 ages 50–58; and 1 over 59. A total of 79 students participated in the study, 73 from the ADN program and 6 from the PN program.

Setting

The setting of the study was in central Maine and northwest Ohio, with undergraduate prelicensure nursing students in an ADN and PN program. The students in these areas of the United States were selected for various reasons; this study focused on examining both PN and ADN nursing students and nursing programs that utilize the HESI exam in the same format. The nursing programs from the community college in Ohio and the private, not-for-profit college in Maine utilize the exit HESI exam similarly, decreasing limitations. Both colleges have PN and ADN programs at the same institution and have similar populations of low socioeconomic students living in rural areas. Finally, Ohio and Maine colleges were the only colleges that

agreed to allow their students to participate in this study. Data were collected in the final course of the ADN and PN prelicensure programs and the course where the students complete the exit HESI exam to measure their probability of passing the licensure exam. The course delivery is in a face-to-face, in-person format during a 16-week semester.

Instrumentation

In this study, two instruments were used to answer one question. The general self-efficacy scale (GSE) was used to measure the predictor variable: prelicensure student self-efficacy. The HESI was used to measure the criterion variable: the HESI exam passing score of 850 points or higher and failing score of 849 points or lower.

General Self-Efficacy Scale

The purpose of the GSE tool was to assess the individual's perception of self-efficacy in individuals 12 years of age and older and to predict if the individual will cope with their experiences and life events (see Appendix B for the GSE) (Schwarzer, 1992). Matthias Jerusalem and Ralf Schwarzer developed the tool in Germany in 1981 to evaluate broad personality disposition (Juarez & Contreras, 2008). Schwarzer and Jerusalem (1995) originally had 20 questions to evaluate individuals on the survey and was only on the adult population. Over time, the tool reduced the number of questions to 10 and moved away from only adult use to include adolescents as young as 12. The GSE was translated into 33 languages in more than 10 countries (Schwarzer & Jerusalem, 1995). Today, the tool evaluates an individual's perceived self-efficacy and ability to cope with their life experiences at a 12-year-old reading level (Juarez & Contreras, 2008). The GSE tool was an appropriate tool for this study's population; the GSE tool was used in several studies to evaluate self-efficacy scores of prelicensure nursing students and are the target population of this tool (Luszczynska et al., 2005; Schwarzer & Hallum, 2008;

Schwarzer & Renner, 2000).

The tool was validated with criterion-related validity in multiple correlation studies (Luszczynska et al., 2005; Schwarzer & Hallum, 2008; Schwarzer & Renner, 2000). The GSE was validated with concurrent validity and predictive validity. To establish concurrent validity, the GSE was measured with other validated tests to assess for correlations with the variables and the criterion and to verify the same results (Schwarzer, 2012). To establish predictive validity, the GSE assessed German women during 1-year intervals (over 2 years) to determine self-esteem and optimism, and self-efficacy was positively correlated (Schwarzer, 2012). The GSE is also reliable, with Cronbach's alphas ranging from .76 to .90 (Luszczynska et al., 2005; Schwarzer & Hallum, 2008; Schwarzer & Renner, 2000). The GSE tool is on the Freie Universität Berlin website and includes multiple resources on the use of the tool (Schwarzer & Jerusalem, 1995). The current tool has 10 questions and is a 4-point Likert scale that ranges from "not at all true" to "exactly true." The range of the rating system is as follows as exactly written on the GSE tool: Not at All True: 1; Barely True: 2; Moderately True: 3; and Exactly True: 4 (Schwarzer & Jerusalem, 1995, p. 2). After the participants complete the survey, each category's scores are added together to provide a total score of a maximum score of 40 points and a minimum of 10 points. A score of 40 points is the highest score possible, meaning the individual has high self-efficacy; however, a score of 10 points is the lowest score possible, meaning the individual has low self-efficacy. The tool takes fewer than 5 minutes to complete (Schwarzer & Jerusalem, 1995). Students completed the GSE tool online, and the data automatically populated a score into Microsoft Office Forms located in the researcher's cloud, which is double password protected. Permission to use this instrument was sent to Dr. Ralf Schwartzer from Freie Universität Berlin from the psychology department, and permission was granted before data collection occurred

(see Appendix A for permission to use the GSE).

Health Education Systems Incorporated Exit Exam

The purpose of the HESI tool was to measure nursing student success of prelicensure nursing students (Evolve.Elsevier, 2022). The inception of the HESI in the early 1990s was to assist nursing programs by assessing student readiness for NCLEX success (Morrison et al., 2004). The original HESI exit exam had 150 questions to evaluate student success with various questions based on Bloom's taxonomy, National League of Nursing (NLN) standards, and the NCLEX blueprint (Shah et al., 2022). Due to the changes with the NCLEX exam, the HESI exit exam was changed to 110 questions, but the exam still utilizes Bloom's taxonomy, NLN standards, and follows the NCLEX blueprint (Evolve.Elsevier, 2022; Morrison et al., 2004; Shah et al., 2022). In December 1999, the HESI exit exam was comprised of 85 nursing programs utilizing the exam; however, the use of the HESI exit exam increased to over 565 nursing programs (Morrison et al., 2004). HESI launched only one exam during the 1990s, which evaluated only RN students' knowledge. However, now, HESI has admission entrance exams, and specialty testing (maternity, pediatrics, mental health, medical-surgical, community health, leadership, fundamentals, and health assessment) for Advance Practice Registered Nurses (APRN), RN, and PN students (Evolve.Elsevier, 2022; Morrison et al., 2004; Shah et al., 2022). The prelicensure HESI exit exam is only for RN or LPN nursing adult students and students with a minimum of a 10^{th}-grade reading level (Evolve.Elsevier, 2022; Morrison et al., 2004; Shah et al., 2022). The tool was used in multiple studies to measure and evaluate prelicensure (ADN and PN nursing students) nursing students' probability of passing the licensing examination (Morrison et al., 2004; Riley et al., 2023; Shah et al., 2022).

The HESI exit exam tool was validated through criterion-related validity in multiple research studies. The HESI exit exam was validated through predictive validity. According to Evolve.Elsevier (2022), 13 studies over the last 20 years utilizing more than 20,000 prelicensure nursing students have established the HESI exam as a valid tool. The HESI exit exam also has a Cronbach's alpha ranging from .75 to .85, meaning the HESI exam is reliable (Morrison et al., 2004; Riley et al., 2023; Shah et al., 2022). The exam comprised 110 questions; 10 of the questions are not graded, 25% are in the next-generation NCLEX (NGN) format, and the remaining 75% are in the traditional NCLEX format. Students had 200 minutes to complete the exam.

The points on the HESI exam typically range from 300 to 1500 points (Shah et al., 2022). A score of 849 points or less on the HESI grading system means the student does not have sufficient knowledge to pass the NCLEX, and a score of 850 points score or higher means the student has sufficient knowledge to pass the NCLEX. The HESI score is generated through an automatic grading system utilizing its proprietary algorithm to assess student success. The HESI data was collected by the lead faculty member of the course and sent to the researcher to view if a student earned 850 points or higher, or 850 points or lower. With HESI, students complete various questions based on Bloom's taxonomy scale of difficulty (Evolve.Elsevier, 2022). An example of the grading system is two students taking the same exam with the same number of correct questions, but one student had a higher score than the other. The score difference is due to the difficulty level of the questions based on Bloom's taxonomy. The student who answers more questions correctly at the knowledge and comprehension level but fewer questions correctly on the application and analysis level of Bloom's taxonomy will have a lower HESI score compared to a student who had more questions correct on the application and analysis level

and fewer questions correct with the knowledge and comprehension level (Evolve.Elsevier, 2022). HESI is scored automatically, with students having 200 minutes to complete it.

The HESI exam was populated from a secure and password-protected online server through EE. After the student completed the exam, their score was automatically populated to show the student's results in a points and percentage scoring system. Christine Gouveia, Vice President of Applied Learning Sciences from Evolve, granted permission to use this tool EE, and permission was granted before data collection (see Appendix C for the permission).

Procedures

Before any data collection, IRB approval was obtained from Liberty University's IRB committee (see Appendix G for IRB approval). The colleges granted permission for the study by the dean of the nursing programs (see Appendix D and E for the deans' permissions). During the first two weeks of the semester, an online live recorded information session was held for students to listen to the purpose, procedures, risks, benefits, and any other pertinent information of the study (see Appendix I for information session script). Students who wanted to participate in the study were provided a consent form through Microsoft Forms (students were emailed the consent form via college email) and gave or declined consent (see Appendix H for the consent form). Information collection for the study was collected in two different ways. Select faculty/instructors who work at the college were informed through one meeting with a step-by-step handout (see Appendix F for the faculty/instructor directions). Faculty only emailed participating students with a link from Microsoft Forms to complete the GSE tool questions, answer the demographic questions, and indicate how many hours per week the student works. Microsoft Forms is double password protected, and students could only access the Microsoft Forms link through their college email (issued by the college). Students completed the survey

within the first two weeks of the semester. With predictor variables, the scores were vastly different. On the number of hours worked, this variable was coded as 1, 2, 3, or 4; does not work = 1; works less than 20 hours per week = 2; works 20–40 hours per week = 3; and works more than 40 hours per week = 4. The last predictor is the self-efficacy score; this variable was coded with the actual self-efficacy scores.

At the end of the final course (the last in the prelicensure nursing student program), the students completed the standardized exit HESI examination. The exit HESI data was generated through Evolve.Elsevier password-protected online website. The exit HESI exam was a cumulative exam covering topic areas listed on the NCLEX blueprint. All data was secured in a two-password-protected cloud file that only the researcher could access. All data that could identify student information who participated in the study was protected. A dichotomous variable can only have one of two values, typically 0 or 1 (Gall et al., 2007). The dichotomous criterion variable in this dissertation was the exit HESI exam, and the predictor variables were the number of hours worked and the self-efficacy scores. The HESI exam, as the dichotomous criterion variable, was coded on a 0 or 1 scale. Students who reached 850 points or above earned a 1, and students who scored less than 850 points earned a 0 on the scale. The data will be secured for 5 years after the research's completion and then destroyed.

Data Analysis

Logistic regression was the statistical tool utilized in this research study. According to Gall et al. (2007), Field (2018), and Warner (2013), a logistic regression analysis is used to determine the correlation between a dichotomous criterion variable and predictor variables that can be either continuous or dichotomous. Despite modeling binary outcomes, logistic regression is a part of the general linear regression model (GLM) because the log odds of the outcome

linearly relate to the predictors. “Essentially, while the outcome itself is nonlinear, the relationship between the predictors and the logarithm of the odds ratio is linear, making it a special case within the GLM framework” (Field, 2018, p. 72). This study assessed if the predictor variables (number of hours worked and self-efficacy scores) influenced the criterion variable (HESI exam). According to Gall et al. (2007), logistic regression is the most appropriate analysis because the criterion variable is dichotomous or categorical.

Data screening for the logistic regression analysis in the present study included visual screening for missing and inaccurate entries along with tests for significant outliers, high leverage points, or highly influential points that comprise assumption test number seven in the following assumptions test information. This type of analysis has seven total assumptions (Barthlow et al., n.d.; Field, 2018). Four are methodological assumptions stated previously: binary criterion variable, two-predictor variables on a continuous (or categorical) level, independence of observations, and appropriate sample size. The other three are diagnostic statistical assumptions (Barthlow et al., n.d.; Field, 2018). The first assumption was a linear relationship between the continuous independent variable and the logit transformation of the dependent variable. The logit transformation of the dependent variable was a natural log of the dependent variable (the HESI exam with a passing score of 850) to predict whether the event will or will not occur (Gall et al., 2007). A Box-Tidwell approach was used to test for the linearity through SPSS. The second assumption was that there should not be multicollinearity. Tolerance and variance inflation factor (VIF) values were used to test this assumption. The final assumption was no significant outliers, influential high points, or high leverage points. To test this assumption, the CaseWise Diagnostics test was used. To report the effect size, the Nagelkerke R^2 was used. The alpha level (α) level identified for the statistical analysis technique

is α =.05. The statistical result for this study included model coefficients, model, and classification table.

CHAPTER 4: FINDINGS

Overview

The purpose of this quantitative, predictive correlational study was to determine if a passing score on the standardized HESI exam can be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students. The predictor variables were the number of working hours and self-efficacy scores. The criterion variable was dichotomous: whether prelicensure nursing students passed the HESI exam with an 850 or higher. A binary logistic regression was used to test the null hypothesis. The Findings section includes the research question, null hypothesis, data screening, descriptive statistics, assumption testing, and results.

Research Question

RQ: How accurately can a passing score on the HESI exam be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students?

Null Hypothesis

H_0: There is no significant predictive relationship between the criterion variable (earning a passing HESI exam score or higher) and the linear combination of predictor variables (number of working hours and self-efficacy scores for prelicensure nursing students).

Data Screening

The researcher sorted the data and scanned for inconsistencies in each variable. No data errors or inconsistencies were identified. Extreme outliers are points that do not fit the regression model well. CaseWise Diagnostics were used to examine for extreme outliers, which are cases with standardized residuals greater than 2.5. One outlier was identified, as indicated in Table 1,

so all data were retained. Since there were 79 participants the required number of participants in a logistic regression was 66, and one outlier was less than the 5% allowed in a logistics regression, the outlier was kept in the study (Field, 2018). More specifically, 5% of the distribution's variables are allowed to lie outside +/- 1.96, and approximately 1% can fall outside +/- 2.58. This study's outlier met these conditions; consequently, it was retained (Field, 2018).

Table 1

CaseWise Diagnostics

CaseWise List[b]

		Observed		Predicted	Temporary Variable		
Case	Selected Status[a]	HESI Score	Predicted	Group	Resid	ZResid	SResid
74	S	8**	.257	L	.743	1.702	2.506

a. S = Selected, U = Unselected cases, and ** = Misclassified cases.

b. Cases with studentized residuals greater than 2.000 are listed.

Descriptive Statistics

Descriptive statistics were obtained on each of the continuous independent variables. The sample consisted of 79 participants. Self-efficacy was measured by the general self-efficacy scale (GSE) with possible scores on the questionnaire ranging from 10 to 40 points (Schwarzer, 1992). A score of 40 points means the student has high self-efficacy to obtain the passing HESI score, whereas a low score of 10 means the student has low self-efficacy and does not believe they can obtain a passing score on the HESI. The number of hours worked was obtained through a categorical survey. On the number of hours worked, this variable was coded as 1, 2, 3, or 4; does not work = 1; works less than 20 hours per week = 2; works 20–40 hours per week = 3; and works more than 40 hours per week = 4. Descriptive statistics are found in Table 2.

Table 2

Descriptive Statistics

	N	*Min*	*Max*	*M*	*SD*
GSE Score	79	21.0	40.0	32.4	4.1
# of Hours Worked	79	1.0	6.0	2.4	.96
Valid *N* (listwise)	79				

Assumption Testing

Assumption of Linearity

Binary logistic regression requires a linear relationship between the continuous independent variables and the logit transformation of the dependent variable. The Box-Tidwell approach was used to test this. The predictive variables, the number of working hours, and the self-efficacy scores were all found to be linearly related with $p > .05$ for all. Based on this assessment, the continuous independent variable was found to be linearly related to the logit of the dependent variables. The assumption of linearity was tenable.

Assumption of the Absence of Multicollinearity

A variance inflation factor (VIF) test was conducted to ensure the absence of multicollinearity. This test was run because if an independent variable (x) is highly correlated with another independent variable (x), it essentially provides the same information about the dependent variable. If the VIF is too high (greater than 10), then multicollinearity is present. Acceptable values are between 1 and 5. The absence of multicollinearity was met between the variables in this study. See Table 3 for collinearity statistics.

Table 3

Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	VIF
1	GSE Score	.999	1.001
	# of Hours Worked	.999	1.001

a. Dependent Variable: Graduation Status

Results

As written previously, the null hypothesis of this dissertation is there is no significant predictive relationship between the criterion variable (earning a passing HESI exam score or higher) and the linear combination of predictor variables (number of working hours and self-efficacy scores for prelicensure nursing students). A binary logistic regression was conducted to determine if a passing score on the standardized HESI exam can be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students. The logistic regression model was not statistically significant, $\chi^2(6) = 7.952$, $p = .242$ as seen in Table 4, and the results failed to reject the null hypothesis at the 95% confidence level.

Table 4

Omnibus Tests of Model Coefficients

		Chi-square	*df*	Sig.
Step 1	Step	7.952	6	.242
	Block	7.952	6	.242
	Model	7.952	6	.242

The model explained 13% (Nagelkerke R^2) of the variance in HESI scores as shown in Table 5.

Table 5

Model Summary

Step	-2 log likelihood	Cox & Snell R^2	Nagelkerke R^2
1	90.667	.096	.134

Moreover, as shown in the classification table (Table 6), the logistic regression model correctly classified 70% of cases overall with a sensitivity of 94.4% and a specificity of 16.0%. The positive predictive value was 57.1%, and the negative predictive value was 70.8%.

Table 6

Classification Table[a]

			Predicted		
			Graduation		
	Observed		Less than 850 points	850 points or greater	Percentage Correct
Step 1	HESI Score	Less than 850 points	4	21	16.0
		850 points or greater	3	51	94.4
	Overall Percentage				69.6

a. The cut value is .500

None of the independent variables were statistically significant as shown in Table 6.

Table 7

Logistic Regression Predicting HESI Success

Variables in the Equation

		B	*S.E.*	Wald	*df*	*p*	Odds Ratio	95% C.I. for EXP(B)	
								Lower	Upper
Step 1[a]	GSE Score	1.795	3.531	.258	1	.611	6.019	.006	6092.622
	# of Hours Worked			3.555	4	.470			
	# of Hours Worked (1)	1.016	.710	2.048	1	.152	2.762	.687	11.102
	# of Hours Worked (2)	1.102	.725	2.306	1	.129	3.009	.726	12.470
	# of Hours Worked (3)	1.923	1.237	2.416	1	.120	6.842	.605	77.330
	# of Hours Worked (4)	20.959	40, 92.969	.000	1	1.000	1,266,097,846.469	.000	.
	GSE Score by IN_GSE	-.378	.790	.229	1	.632	.685	.146	3.226
	Constant	-15.603	25.144	.385	1	.535	.000		

a. Variable(s) entered on step 1: GSE Score, # of Hours Worked, GSE Score * IN_GSE.

CHAPTER 5: CONCLUSIONS

Overview

In this chapter is a discussion related to whether the results contradict or support the body of research and literature of student self-efficacy, success, and the number of hours students work. In addition, this chapter includes the theoretical, practical findings, implications, and limitations of this study. The conclusion of Chapter 5 provides recommendations for future research.

Discussion

The purpose of this quantitative, predictive correlational study was to determine if a passing score on the standardized Health Education Systems Incorporated (HESI) exam can be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students. The predictor variables were the number of working hours and self-efficacy scores. The criterion variable was dichotomous: whether prelicensure nursing students passed the HESI exam with an 850 or higher. The sample size comprised 79 prelicensure nursing students from rural Maine and Ohio. Students completed the GSE and other demographic data online, and the deans sent the HESI scores to the researcher via email. The data was analyzed using the IBM SPSS Version 29 for Windows. To answer the research question, a logistic regression statistical tool was used.

RQ: How accurately can a passing score on the HESI exam be predicted from a linear combination of the number of working hours and self-efficacy scores for prelicensure nursing students?

H_0: There is no significant predictive relationship between the criterion variable (earning a passing HESI exam score or higher) and the linear combination of predictor variables (number

of working hours and self-efficacy scores for prelicensure nursing students).

Based on the data in Chapter 4, the results failed to reject the null hypothesis at the 95% confidence level $\chi^2(6) = 7.952$, $p = .242$. The results of this study indicate that self-efficacy ($p = .611$), the number of hours worked ($p = .470$), more specifically to the number of hours worked breakdown, did not have a predictive relationship between students passing or failing the HESI exam: does not work ($p = .152$); works less than 20 hours per week ($p = .129$); works 20–40 hours per week ($p = .120$); and works more than 40 hours per week ($p = 1.00$). The model indicated a medium effect size (Gall et al., 2007), where the Nagelkerke R^2 of 13% indicates a weak relationship between the predictors and variables, meaning the self-efficacy and the number of hours work do not predict the outcome of a prelicensure nursing student passing or failing the HESI. Additionally, the Nagelkerke R^2 of 13% indicates the variability in student success (pass or fail of the HESI exam) can be explained by the number of hours prelicensure nursing students work and self-efficacy.

This study's findings are not consistent with previous research that found that self-efficacy is a significant predictor of student success (Bulfone et al., 2022b; Chang & Gau, 2021). These studies suggest a significant statistical effect of self-efficacy influencing nursing student success; however, these studies measure prelicensure student success differently, use dissimilar data analyses, and use alternative tools to measure self-efficacy compared to this study (Bulfone et al., 2022b; Chang & Gau, 2021). In this study, the measurement of student success was defined as a student obtaining an 850 or greater on the standardized HESI examination. Bulfone et al. (2022b) measured student success as not failing or dropping out of the nursing program and the use of measuring self-efficacy with the Academic Nurse Self-Efficacy scale (ANSEs). Chang and Gau (2021) used the 5-point Likert scale named the self-efficacy questionnaire and measured

student success through a student's view of if they had a better understanding of the learning materials. Both of these studies also used different data analyses to measure the effects of self-efficacy on student success; Bulfone et al. (2022b) used a counterfactual mediation analysis, and Chang and Gau (2021) used an analysis of covariance (ANCOVA). Both of the studies found a significant relationship between self-efficacy and student success, the use of different tools, data analyses, and definitions of student success indicate how this study's result does not show a statistically significant relationship between student success and self-efficacy.

Other research adds burnout and grit relating to nursing student success and self-efficacy. The burnout and grit variables in other research incorporate nursing students who work in addition to completing their coursework in higher education, along with age, socioeconomic status, support systems, and mental illness (anxiety and depression) (Burke et al., 2022; Chami-Malaeb, 2022; Chang & Gau, 2021; Jin & An, 2023; Hwang & Kim, 2022; Kim & Lee, 2022; Ma et al., 2022; Terry & Peck, 2020b). This study only utilized the variable of the number of hours prelicensure nursing students work with self-efficacy and student success while the students completed their coursework in higher education and categorized the number of hours worked. The other studies did not categorize the number of hours prelicensure nursing students worked, which could also account for the lack of statistical significance and a low Nagelkerke R^2 as the n = 79 prelicensure nursing students, but breaking the n down even more into number of hours worked categories would decrease the predictability outcome (Burke et al., 2022; H. Kim & Lee, 2022; Terry & Peck, 2020b). Not all the studies used prelicensure nursing students as their population; some of the studies assessed graduate nursing students and students undergoing significant stressors and mental health problems resulting from the COVID-19 pandemic (Burke et al., 2022; H. Kim & Lee, 2022; Jardon & Choi, 2022; S.C. Kim et al., 2021). These other

studies did not utilize logistics regression to determine a predictive relationship between variables, as this study (Burke et al., 2022; Chami-Malaeb, 2022; Chang & Gau, 2021; Hwang & Kim, 2022; Kim & Lee, 2022; Ma et al., 2022; Terry & Peck, 2020b).

While there is a plethora of prior research surrounding the influences of self-efficacy and the HESI tool used for student success, there is no research investigating these two variables simultaneously. As previously stated, prelicensure nursing student success is measured in a variety of ways through simulation, standardized tests (assessment technology institute and HESI), and student surveys (Bulfone et al., 2022b & Chang & Gau, 2021; Koukourikos et al., 2021; Riley et al., 2023; Salameh et al., 2021; Shah et al., 2022). Self-efficacy is another variable measured through many surveys: the general self-efficacy (GSE) scale, Academic Nurse Self-Efficacy scale (ANSEs), and self-efficacy questionnaire (Bulfone et al., 2022b & Chang & Gau, 2021; Lazic et al., 2021; Prifti, 2022). Even though there is research finding statistical significance in student success and self-efficacy, these findings are reliant on surveys where social perception can sway student answers and not give a true assessment of student success and self-efficacy.

This study's findings did not support the self-efficacy theory used in the theoretical framework. The self-efficacy theory is an individual's belief that they can complete a task (Bandura, 1997). There are four major principles of the self-efficacy theory: performance accomplishment, vicarious experience, verbal persuasion, and emotional and physiological states (Bandura, 1977). In this study, students answered a series of questions from the GSE to evaluate their capability to complete a task. According to the data, the student's perception of their self-efficacy had no predictive correlation or statistical significance to the students passing or failing the HESI exam. Therefore, the empirical data of this study contradicts other research on how the

self-efficacy theory is a predictor of prelicensure nursing student success and provides statistical significance (Bulfone et al., 2022b; Chang & Gau, 2021).

While prior research in other disciplines and students with majors other than nursing shows statistical significance using the GSE scale, this study did not find any statistical significance or predictive correlation. After reviewing other self-efficacy tools, the GSE scale may not be the most appropriate scale to use with nursing students, as many other factors contribute to nursing student success by increasing the body of knowledge. However, the HESI exam is a proven, valid, and reliable tool specifically created to assess prelicensure nursing student knowledge and is a statistically significant ($p < .001$) indicator of student success (Riley et al., 202; Shah et al., 2022). With a limited amount of research using HESI as a predictor of student success with self-efficacy, but other research finding statistical significance with other tools providing student success and self-efficacy, this study shows how using a standardized exam to measure students' knowledge rather than the students' perception of increased knowledge can alter researched data.

Implications

Researchers studied each variable in this study: self-efficacy (Bandura, 1977; Chang & Gau, 2021; George et al., 2020; Kaufmann et al., 2022; Latham & Seijts, 1999; Maddux & Stanley, 1986; Maddux, 2013; Margolis & McCabe, 2006; Narsimulu, 2016; D. A. Williams, 2015; Scharzer, 2014); working outside of nursing school (Adedokun et al., 2022; Avery-Desmarais et al., 2021; Charania & Patel, 2022; Gajewski, 2022; Matthews et al., 2022; Pride et al., 2020; W. Williams & Dahan, 2022); and the HESI exam (Flowers et al., 2022; Riley et al., 2023; Shah et al., 2022). Only one recent study explored the relationship between student success, self-efficacy, and burnout (students working as part of the burnout variables) for

prelicensure nursing students (Bulfone et al., 2022b). After examining current research, no other studies investigated a predictive relationship between the criterion variable (earning a passing HESI exam score or higher) and linear combination predictor variables (number of working hours and self-efficacy scores for prelicensure nursing students).

Given the dearth of research surrounding self-efficacy and prelicensure nursing student success in higher education, this study contradicts the significant relationship between self-efficacy and prelicensure nursing student success as evidenced by other research (Bulfone et al., 2022b; Chang & Gau, 2021; Chami-Malaeb, 2022; Hwang & Kim, 2022; H. Kim & Lee, 2022; Ma et al., 2022). Even though there is no statistical significance to the findings of this study, the evidence does provide empirical data and makes a significant contribution by showing how a valid and reliable tool is significant to research to measure student success. This study also adds to the theoretical literature on the self-efficacy theory to further indicate self-efficacy is not the only factor associated with prelicensure nursing student success. Other studies show a significant relationship between self-efficacy and resilience or self-efficacy and grit; as this study does not show statistical significance with the criterion variable and predictive variables, researchers could include resilience or grit with self-efficacy to identify if these additional variables would provide implications to future research program (Burke et al., 2022; Chami-Malaeb, 2022; Chang & Gau, 2021; Haliza et al., 2023; Jin & An, 2023; Oducado et al., 2022; Xu et al., 2022).

A major practical implication of this study is self-efficacy and the number of hours students work do not solely affect attrition and retention in prelicensure nursing programs. As stated previously, research shows many factors influencing prelicensure nursing students' success in nursing programs, burnout, resilience, grit, mental illness, number of hours worked, bullying, and resources available (Bulfone et al., 2022b; Cennet & Dilek, 2022; Chami-Malaeb,

2022; Chang & Gau, 2021; Jin & An, 2023; Hwang & Kim, 2022; Kim & Lee, 2022; Ma et al., 2022; Siddique et al., 2023; Terry & Peck, 2020b; Warshawski, 2022). Therefore, prelicensure nursing programs must not only evaluate nursing students on how many hours they are working and the student's perception of their self-efficacy. Given the lack of statistical significance and the lack of predictability of the variables in this study, nursing programs must assess more than a couple of variables to determine if a nursing student will succeed in a prelicensure nursing program.

Limitations

This research study consists of several limitations that could impact external and internal validity. The study did meet the minimum sample size requirement; however, having participants only from one college in Maine and Ohio does not represent the entire prelicensure nursing student body of the United States. Other studies include participants from multiple locations within the United States and globally (Bulfone et al., 2022b; Chang & Gau, 2021). The second limitation was using self-reporting instruments. According to Gall et al. (2007), using self-reporting instruments can result in social desirability bias or responding to the questionnaire in a favorable light instead of answering the questions based on the participant's true beliefs and feelings. The prelicensure nursing students participating in the study could have reported their self-efficacy beliefs in a more socially favorable manner rather than responding to their true feelings, resulting in inaccurate data.

The third limitation is the scope of diversity in the study. This study consisted of 79 participants. As reported previously, the study participants involved 10 male; 69 female; 71 Caucasian; 3 Black; 5 other; 5 multi-language learners; 74 primary English language; 20 ages 18–25; 26 ages 26–33; 19 ages 34–41; 9 ages 42–49; 4 ages 50–58, and 1 over 59. A total of 79

students participated in the study, 73 from the ADN program and 6 from the PN program. Even though gender, ethnicity, age, and types of prelicensure programs were not variables of interest in the study, a more balanced distribution of participants may contribute to different data results. Even though diversity is lacking in this study, the gender, age, and primary English language results are consistent with prelicensure nursing programs across the United States (American Association of Colleges of Nursing, 2020). The final limitation of this study is the use of a logistics regression. The logistic regression design is used to determine the strength and direction between variables and does not explain the cause and effect relationship between variables (Gall et al., 2007). The use of other research designs could identify the actual cause and effect between this study's variables.

Recommendations for Future Research

As a result of this study's limitations and findings, the following are recommendations for future research to further advance the body of knowledge on student success, self-efficacy, and the number of hours students work.

1. Repeat the study with a larger sample size to increase the participant diversity (students of different race, socioeconomic status, gender, age, and support status in their personal life) of findings with the prelicensure nursing population.
2. Perform a qualitative study among nursing students to discover if there are other themes, and explore the depth and complexity surrounding student success other than the number of hours worked.
3. Due to the potential limitation of social desirability with the study's instrument, include more of an equal distribution of prelicensure nursing students to compare data findings.

4. Replicate this study with prelicensure bachelor nursing students to increase the generalizability of the data findings.
5. Include other prelicensure nursing programs in the rural New England and Maine areas, as these programs are subject to the same accrediting and regulatory bodies.
6. Replicate this study using a dichotomous approach to the number of hours worked and include other variables that may affect a prelicensure nursing student from becoming successful (socioeconomic, family, mental illness).
7. Repeat this study to have equal or close to equal prelicensure nursing students from both the LPN and ADN tracks.
8. Replicate this study with the use of a different valid and reliable self-efficacy tool specifically created for nursing students like the ANSEs.

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APPENDICES

Appendix A

Permission for the GSE

Everything you wanted to know about the
General Self-Efficacy Scale
but were afraid to ask
by Ralf Schwarzer, May 30, 2014

There is no other manual of the GSE. This is the only documentation. Don't send eMails asking for more!

There are currently scale versions adapted to 33 languages. See:
http://userpage.fu-berlin.de/~health/selfscal.htm

The purpose of this FAQ is to assist the users of the scales published at the author's web pages http://www.ralfschwarzer.de/ Here you find lots of other resources.

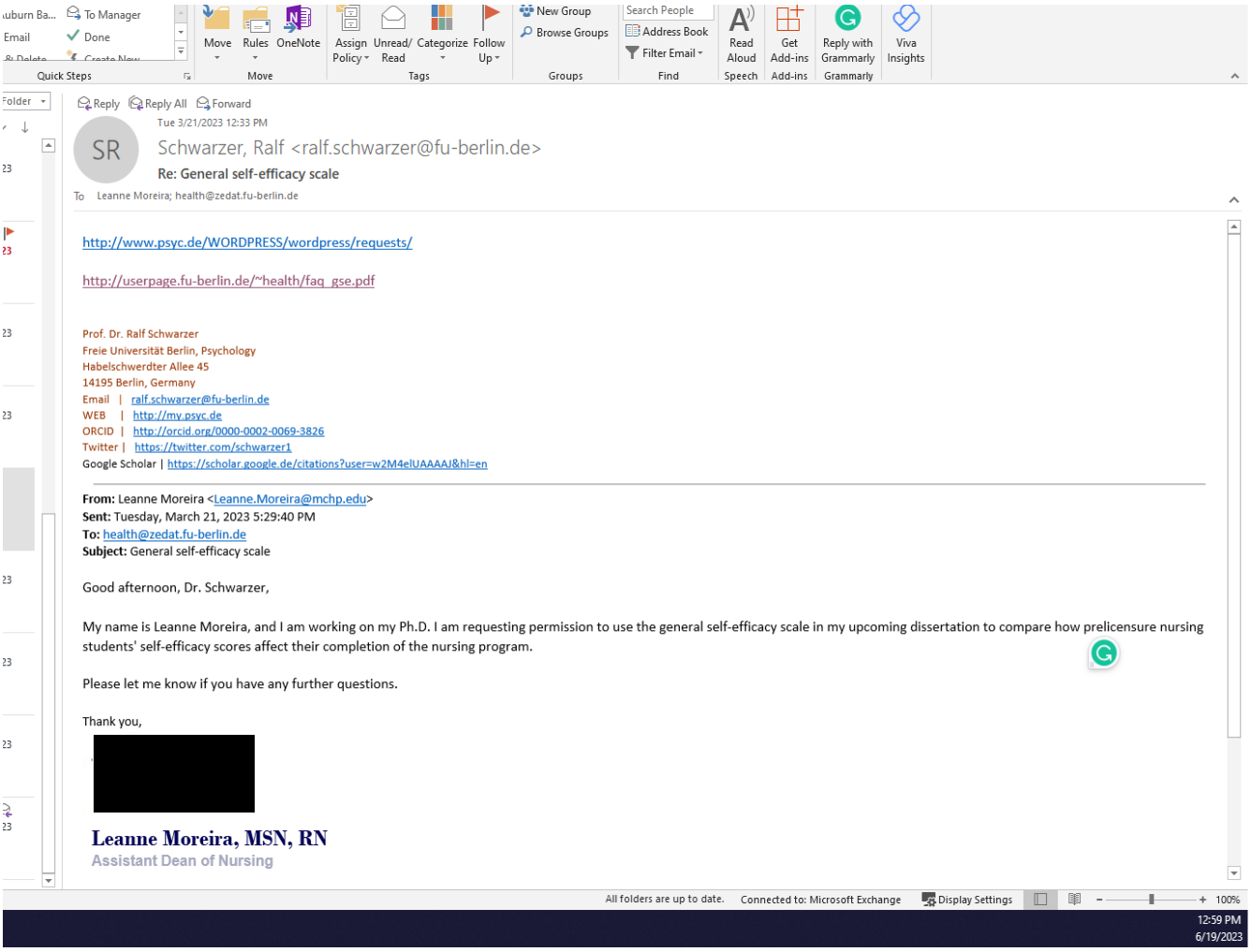
Before attending to the questions below you might want to study our web pages. You might not have any questions after reading the web pages.

Do I need permission to use the general perceived self-efficacy (GSE) scale?

For a permission letter, see page 9.You do not need our explicit permission to utilize the scale in your research studies. We hereby grant you permission to use and reproduce the General Self-Efficacy Scale for your study, given that appropriate recognition of the source of the scale is made in the write-up of your study.

The main source is attached to this FAQ:
Schwarzer, R., & Jerusalem, M. **(1995)**. Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, England: NFER-NELSON.

An additional source for the German version is:
Schwarzer, R., & Jerusalem, M. (Eds.). (1999). *Skalen zur Erfassung von Lehrer- und Schülermerkmalen: Dokumentation der psychometrischen Verfahren im Rahmen der Wissenschaftlichen Begleitung des Modellversuchs Selbstwirksame Schulen*. Berlin: Freie Universität Berlin.



Reply Reply All Forward

Tue 3/21/2023 12:33 PM

SR

Schwarzer, Ralf <ralf.schwarzer@fu-berlin.de>

Re: General self-efficacy scale

To Leanne Moreira; health@zedat.fu-berlin.de

http://www.psyc.de/WORDPRESS/wordpress/requests/

http://userpage.fu-berlin.de/~health/faq_gse.pdf

Prof. Dr. Ralf Schwarzer
Freie Universität Berlin, Psychology
Habelschwerdter Allee 45
14195 Berlin, Germany
Email | ralf.schwarzer@fu-berlin.de
WEB | http://my.psyc.de
ORCID | http://orcid.org/0000-0002-0069-3826
Twitter | https://twitter.com/schwarzer1
Google Scholar | https://scholar.google.de/citations?user=w2M4elUAAAAJ&hl=en

From: Leanne Moreira <Leanne.Moreira@mchp.edu>
Sent: Tuesday, March 21, 2023 5:29:40 PM
To: health@zedat.fu-berlin.de
Subject: General self-efficacy scale

Good afternoon, Dr. Schwarzer,

My name is Leanne Moreira, and I am working on my Ph.D. I am requesting permission to use the general self-efficacy scale in my upcoming dissertation to compare how prelicensure nursing students' self-efficacy scores affect their completion of the nursing program.

Please let me know if you have any further questions.

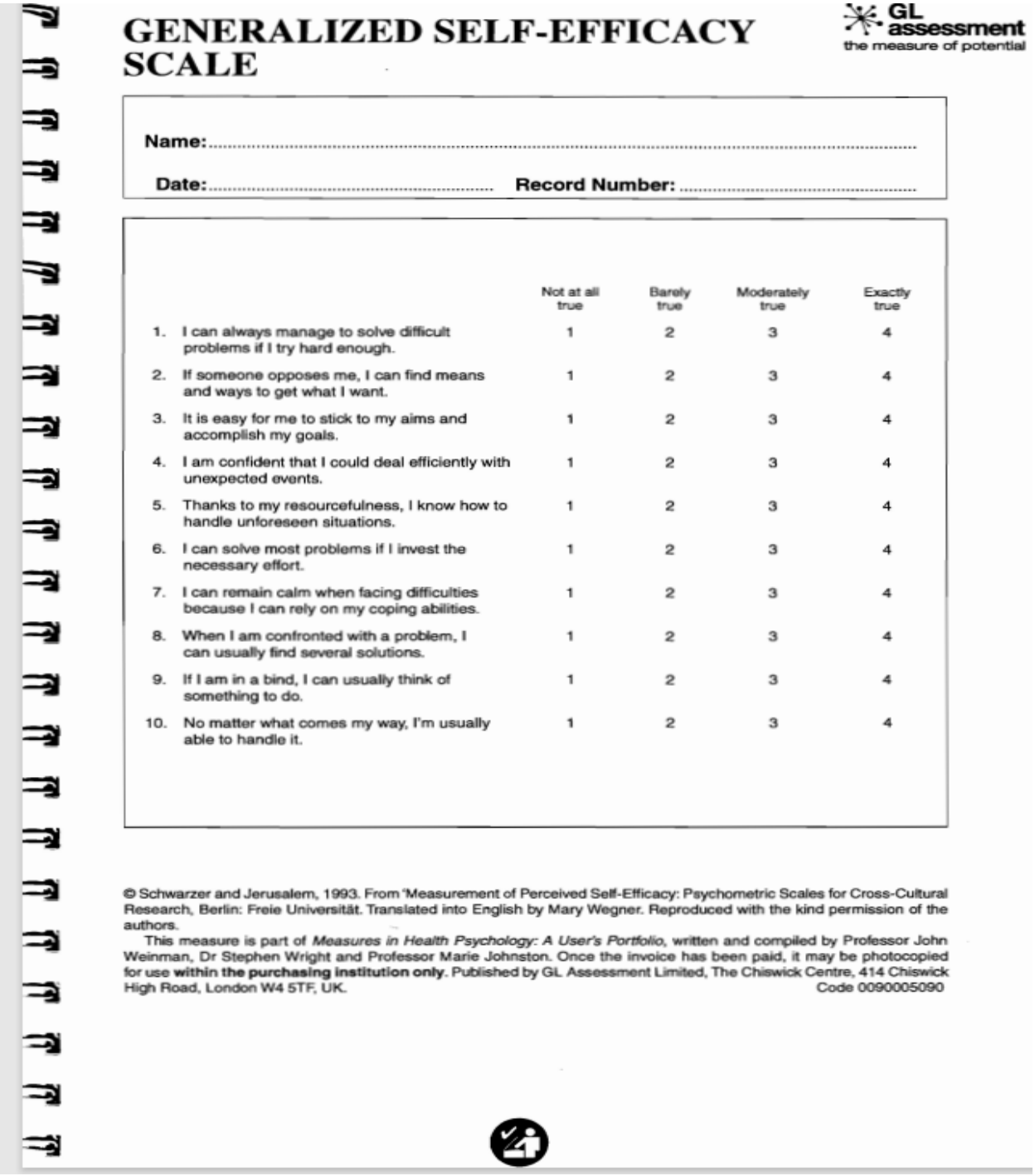
Thank you,

[redacted]

Leanne Moreira, MSN, RN
Assistant Dean of Nursing

Appendix B

General Self-Efficacy Scale



GENERALIZED SELF-EFFICACY SCALE

GL assessment
the measure of potential

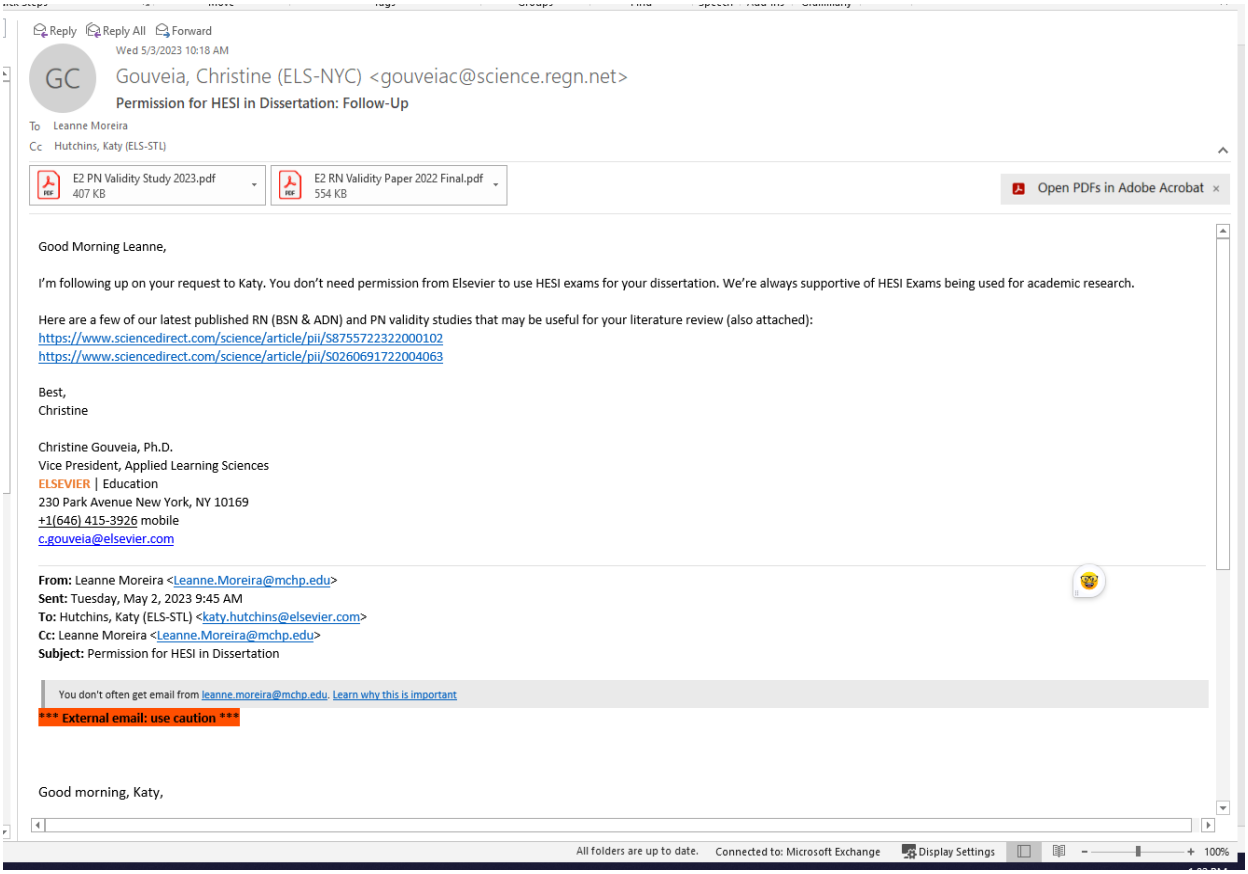
Name:.....

Date:..... Record Number: .....

		Not at all true	Barely true	Moderately true	Exactly true
1.	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
2.	If someone opposes me, I can find means and ways to get what I want.	1	2	3	4
3.	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
4.	I am confident that I could deal efficiently with unexpected events.	1	2	3	4
5.	Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
6.	I can solve most problems if I invest the necessary effort.	1	2	3	4
7.	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
8.	When I am confronted with a problem, I can usually find several solutions.	1	2	3	4
9.	If I am in a bind, I can usually think of something to do.	1	2	3	4
10.	No matter what comes my way, I'm usually able to handle it.	1	2	3	4

Appendix C

Permission for HESI



Reply Reply All Forward

Wed 5/3/2023 10:18 AM

GC Gouveia, Christine (ELS-NYC) <gouveiac@science.regn.net>

Permission for HESI in Dissertation: Follow-Up

To Leanne Moreira

Cc Hutchins, Katy (ELS-STL)

E2 PN Validity Study 2023.pdf 407 KB

E2 RN Validity Paper 2022 Final.pdf 554 KB

Open PDFs in Adobe Acrobat

Good Morning Leanne,

I'm following up on your request to Katy. You don't need permission from Elsevier to use HESI exams for your dissertation. We're always supportive of HESI Exams being used for academic research.

Here are a few of our latest published RN (BSN & ADN) and PN validity studies that may be useful for your literature review (also attached):
https://www.sciencedirect.com/science/article/pii/S8755722322000102
https://www.sciencedirect.com/science/article/pii/S0260691722004063

Best,
Christine

Christine Gouveia, Ph.D.
Vice President, Applied Learning Sciences
ELSEVIER | Education
230 Park Avenue New York, NY 10169
+1(646) 415-3926 mobile
c.gouveia@elsevier.com

From: Leanne Moreira <Leanne.Moreira@mchp.edu>
Sent: Tuesday, May 2, 2023 9:45 AM
To: Hutchins, Katy (ELS-STL) <katy.hutchins@elsevier.com>
Cc: Leanne Moreira <Leanne.Moreira@mchp.edu>
Subject: Permission for HESI in Dissertation

You don't often get email from leanne.moreira@mchp.edu. Learn why this is important

***** External email: use caution *****

Good morning, Katy,

All folders are up to date. Connected to: Microsoft Exchange Display Settings 100%

Appendix D

Dean Permission: Maine Nursing Program

June 28th, 2023

To Whom it May Concern:

RE: Request to use nursing students in research for completion of doctoral dissertation at Liberty University.

Leanne Moreira is granted permission to include students enrolled in the nursing program at Maine College of Health Professions in research conducted in completion of her doctoral dissertation.

The reasons for granting permission to include nursing students in this research are as follows: a) Biomedical interventions are not part of this research, b) a psychometric survey and retrospective analysis of the results of standardized examinations are used to measure the research constructs, and c) the research methodology is structured in a way that does not interfere with the students' decision to participation in the study.

Sincerely,

[redacted]

Lynne Gotjen, PhD, MSN, RN
Maine College of Health Professions
Dean of Nursing
lynne.gotjen@mchp.edu

Appendix E

Dean Permission: Ohio Nursing Program

Northwest State Community College

5/22/2023

To Whom it May Concern:

I, Tiffany Ludwig, give Leanne Moreira permission to use students/student demographics at Northwest State Community College for her dissertation.

If you have any further questions, please contact me at tludwig@northweststate.edu

Sincerely,

[redacted]

Tiffany Ludwig, DNP, RN, CNE

Dean of Nursing & Allied Health

419-267-1266

Northwest State Community College

Appendix F

Training for Implementation of the General Self-Efficacy Tool and the HESI Exit Exam

Students who wish to participate will sign the consent form with the following link; the dean will send the following link and QR codes to the students wishing to participate through their school email and the General Self-Efficacy Tool (GSE) link and QR code will also be included in that email with the informed consent.

- GSE link https://forms.office.com/r/hmc6sqkYcF
  - 
- Consent Form link https://forms.office.com/r/CQ7NsUe0C7
  - 

To implement the HESI exit exam students will have 200 minutes to complete the HESI exit exam. Students should not share answers, work independently in a quite room. The researcher will email the dean with the individuals who agreed to participate in the study, so the HESI exit exam results can be emailed to the researcher. Once students complete the HESI exit exam, the dean will email the researcher at lmoreira@liberty.edu with the names and scores of the students who agreed to participate in the study. The dean may use the Evolve.Elsevier link to obtain live training or review a recorded webinar on how to administer the HESI exit exam.

- HESI exit exam live training https://evolve.elsevier.com/education/training/hesi-exam-testing/

- HESI exit exam recorded webinar https://evolve.elsevier.com/education/training/hesi-exam-testing/hesi-next-generation-hesi-ng-training-recorded-webinar-basic-functionality/

Appendix G

IRB Approval

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

January 11, 2024

Leanne Moreira
Jeffrey Savage

Re: IRB Approval - IRB-FY23-24-1012 EXPLORING THE CONNECTION BETWEEN STUDENT SELF-EFFICACY AND STUDENT SUCCESS IN A PRELICENSURE NURSING PROGRAM: A PREDICTIVE CORRELATIONAL STUDY

Dear Leanne Moreira, Jeffrey Savage,

We are pleased to inform you that your study has been approved by the Liberty University Institutional Review Board (IRB). This approval is extended to you for one year from the following date: January 11, 2024. If you need to make changes to the methodology as it pertains to human subjects, you must submit a modification to the IRB. Modifications can be completed through your Cayuse IRB account.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

5. Research involving materials (data, documents, records, or specimens) that have been collected, or will be collected solely for nonresearch purposes (such as medical treatment or diagnosis). (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(4). This listing refers only to research that is not exempt.)

For a PDF of your approval letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study Details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your stamped consent form(s) and final versions of your study documents can be found on the same page under the Attachments tab. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,

G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

Appendix H

Consent

Provide your study title, **ensuring that it matches the title you listed on your IRB application**. Regarding co-investigators, list any individuals who will be assisting you with your research. If you are a student, do not list your faculty sponsor as a co-investigator. Only list a faculty member if they will serve as part of a study team.

Title of the Project: Exploring the Connection between Student Self-Efficacy and Student Success in a Prelicensure Nursing Program: A Predictive Correlational Study

Principal Investigator: Leanne Moreira, Doctoral Candidate, School of Education, Liberty University

Invitation to be Part of a Research Study

The next section should include your participant criteria. Make sure that all participant eligibility requirements are listed and that **they match what is on your IRB application and recruitment document(s)**. An example is provided.

You are invited to participate in a research study. To participate, you must be at least 18 years old, a prelicensure nursing student (LPN or RN nursing student) in the last semester of their nursing program
Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

In one to two sentences and in plain language, please list the purpose of your study. Do not include details about your procedures as they will be discussed below.

The purpose of the study is to determine if there is a direct correlation between prelicensure nursing students with the number of working hours, self-efficacy scores, and student success with the standardized HESI exam. Also to identify if student self-efficacy beliefs and the number of hours they work are preventing them from graduating, increasing attrition and decreasing retention rates in prelicensure nursing education.

What will happen if you take part in this study?

* Next, you will need to list your study procedures **in order** and **include expected time estimates for each**. You may provide an overall time estimate for total participation at the end of

your procedures list if your study involves multiple procedures that will take place **during a single visit** (e.g., Exercise Science projects).
* If you plan to implement an intervention and will be using a control and experimental group(s), you must notify your participants of how groups will be assigned (randomly or otherwise) and that participants may or may not receive the intervention as part of their participation. If control group participants will have the opportunity to receive the intervention after the study has concluded, provide related information.
* If you choose to withhold information about study groups and group assignments, your study will involve deception, and you will need to note this on the Consent page of your IRB application and potentially create and submit a debriefing statement for IRB review.
* For qualitative studies, if participants will be asked to review their interview transcripts, the developed themes, etc. to check for accuracy or confirm agreement (i.e., member checking), please list this as a procedure and include a time estimate. If you use the term *member checking*, be sure to include a description to allow for participant understanding.
* Screening is not considered a study procedure, so **it should not** be listed in the below paragraph.
* Please **do not list reading/signing the consent form as a procedure**.
* If your study will involve the collection of photographs/video/artifacts (pictures, drawings, etc.) of or from participants, and you plan to include the photographs/video/artifacts or images of the artifacts in your paper/thesis/dissertation/publication or as part of a future presentation(s), your participants will need to sign a release form allowing you to do so.

If you agree to be in this study, I will ask you to do the following:

1. During the first two weeks of the semester, an online live recorded information session will be held for students to listen to the purpose, procedures, risks, benefits, and any other pertinent information of the study. The information session presentation is 10 minutes long.
2. Students are provided a consent form through Microsoft Forms (students will be emailed the consent form via their college email by a designated faculty or the Dean of the program) and they will have the opportunity to give or decline consent.
3. Only the dean will email participating students with a link from Microsoft Forms to complete the GSE tool questions, answer the demographic questions, and provide the number of hours the student works per week. Students will complete the survey within the first two weeks of the semester. The time requirement to complete the survey is 3 minutes.
4. At the end of the final course (the last in the prelicensure nursing student program), the students will complete the standardized exit HESI examination.
5. Once the scores are generated from the HESI exam, the faculty or Dean of the nursing program will email the HESI scores of the participants to the researcher.

How could you or others benefit from this study?

* Select the appropriate option below. Participants should not expect to receive a direct benefit simply from taking a survey or participating in an interview; however, they may receive a direct benefit if the study procedures involve a teaching or therapy intervention, the opportunity to obtain training they would not receive if they did not participate, etc.

* You will also need to provide information about the expected benefits to society/your discipline/the literature.

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include increasing the body of knowledge pertaining to barriers preventing prelicensure nursing students from graduating. Also, to gain knowledge if students are working and their self-efficacy beliefs are preventing more prelicensure nursing students from graduating nursing school. Therefore, increasing the nursing shortage and preventing quality healthcare for society.

What risks might you experience from being in this study?

* Select the appropriate option below, keeping in mind that risk can be psychological, physical, legal, social, and economic.
* No study is without risk, but studies involving the collection of data through surveys or interviews are generally considered minimal risk, so option 1 should be retained.
* Individuals participating in studies involving physical activity may risk injury, but if the participants will be healthy, fit individuals, such risks are still considered minimal. For this scenario, option 2 should be retained and completed.
* For guidance regarding procedures that may involve greater than minimal risk (Option 3), please contact the IRB.

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

Please read the below definitions before completing this section:
***Anonymous** means **you, the researcher, will not be able** to link your data (e.g., survey responses, grades, etc.) to the specific participants who provided or are associated with the data.
***Confidential** means **you will be able** to link individual participants to the information they provide or are associated with, but you will not disclose participant identities or how named or identifiable individuals responded.

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Data will be stored on a double password-protected online cloud. After five years, all electronic data will be deleted.
- Students names will be coded and the coded information will be kept in a separate double-password-protected online cloud. Once all information is coded, students names will be deleted.

Is study participation voluntary?

The voluntary-participation wording **is required** for all research. Please review the options in red and select the appropriate options based on your study design.

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University, Maine College of Health Professions, or Northwest State Community College. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

The how-to-withdraw section **is required** for all research. Please review the below options and select the appropriate option based on your study design.

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

If the researcher is a faculty member, the sponsor's name and email information may be removed. Otherwise, **it is required**.

The researcher conducting this study is Leanne Moreira. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted]. You may also contact the researcher's faculty sponsor, Jeffrey Savage at [redacted].

Whom do you contact if you have questions about your rights as a research participant?

Do not remove or alter the IRB's contact information or the disclaimer.

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

If option 1 applies, remove the remaining contents of this document.

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

_____

Printed Subject Name

_____

Signature & Date

Legally Authorized Representative Permission

Delete this section if it is not applicable to your study. A legally authorized representative (LAR) is a family member or other individual who has the legal authority to make decisions on the part of an adult who is not capable of doing so because of a physical condition or cognitive disability.

By signing this document, you are agreeing to the person named below participating in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I agree for the person named below to take part in this study.

_____

Printed Subject Name

_____

Printed LAR Name and Relationship to Subject

_____

LAR Signature Date

Appendix I

Information Session Script

Hello Prelicensure Nursing Student,

As a graduate student in the School of Education at Liberty University, I am conducting research to better understand why prelicensure nursing students fail or withdraw before completing their program. The purpose of my research is to determine if there is a correlation between your HESI exams, self-efficacy scores, and the number of hours you work, if you meet the participant criteria and are interested, I would like to invite you to join my study.

Participants must be 18 years and older and in the last semester of their prelicensure nursing program. Participants, if willing, will be asked to consent to the study via an emailed link, and complete an online survey using a Microsoft Forms link that will be emailed to you via your school email. Once you complete the survey, you will click submit and you will be done with your portion of the study. The survey you complete should take less than 5 minutes to complete. At the end of the semester and after you complete your HESI exam, the Dean will email me your HESI results to determine if your survey results affected your HESI score. Names and other identifying information will be requested as part of this study, but the information will remain confidential.

A consent document is provided as via an online link to your school email one week after the information session recording is sent. The consent document contains additional information about my research. After you have read the consent form, please type your name to in the allotted section. Doing so will indicate that you have read the consent information and would like to take part in the study.

Thank you for your time. Do you have any questions?