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The Effects of Resilience on Student Academic Success in Baccalaureate Nursing

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THE EFFECTS OF RESILIENCE ON STUDENT ACADEMIC
SUCCESS IN BACCALAUREATE NURSING

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ABSTRACT

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The current rise in nursing student attrition has impeded the future supply of registered nurses. With the shortages projected to continue, this growing problem needs to be addressed. Factors influencing nursing student success are diverse and multidimensional. The purpose of this correlational study was to examine the relationship between resilience and student academic success. A descriptive, correlational design was utilized. The study was conducted in a private nursing college with 300 baccalaureate level nursing students. Based on correlational analysis, a weak positive relationship was found between academic success and resilience. Academic success also demonstrated relationships with cumulative grade point average, current nursing course level, employment status, average work hours per week, and race/ethnicity. These findings were consistent with existing literature; however, more research is needed to develop a deeper understanding of the relationship between resilience and academic success in baccalaureate nursing education.

ACKNOWLEDGEMENTS

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CHAPTER I

INTRODUCTION

This non-experimental, descriptive-correlational research study examined the

relationship between resilience and nursing student academic performance. This chapter

includes the background of the study, the conceptual models used for the study, a

statement of the problem, the purpose and professional significance of the study, the

research questions, hypotheses, and definition of terms.

Background

The U.S. Bureau of Labor Statistics (BLS, 2016) predicted a 16% increase in the

nursing labor force was needed over the next five years to care for the growing aging

population   Projections also showed the need for 649,100 replacement nurses in the

workforce by 2024 (BLS, 2015). With this substantial estimated nursing shortage, nurses

need to be adequately and competently prepared for entry into practice. To meet

increasing demands for qualified nurses, nursing programs are expanding student

enrollments. College enrollments in nursing programs nationwide continue to grow;

however, the attrition rate for baccalaureate nursing hovers around 50% (Beauvais,

Steward, DeNisco, & Beauvais, 2014). Because of the high rate of nursing student

attrition, factors influencing academic success, attrition, and retention have become an

area of increasing concern for undergraduate nursing programs worldwide.

Nursing student attrition is a complex phenomenon that is influenced by the

interaction of multiple variables including psychological variables such as motivation and

stress, demographic variables such as age and gender, and poor academic performance (Beauvais et al., 2014; Jeffreys, 2015). Although we cannot eliminate attrition, we can do more to understand it and the variables that influence it. In nursing, about 15%-20% of students drop out during their first and second year of study solely due to low academic performance (Khalaila, 2015). In an effort to decrease nursing student attrition, research regarding the factors influencing academic performance or academic success is warranted.

Factors related to academic success are complicated and multifaceted phenomena that are influenced by the interaction of both cognitive and non-cognitive factors (Jeffreys, 2015). Cognitive factors such as grade point average (GPA) and prerequisite exam scores are recognized variables that have shown significance in the determination of future academic success (Pitt, Powis, Levett-Jones, & Hunter, 2012). Despite vast knowledge of the relationship between cognitive factors such as GPA and academic success, attrition in nursing education remains high. This suggests the need to identify more accurate predictors of academic success. Therefore, research identifying the influence of non-cognitive factors associated with academic success has increased in recent years. Non-cognitive factors such as resilience, emotional intelligence, self-efficacy, and mindfulness have the potential to influence academic underachievement and attrition (Beauvais et al., 2014; Taylor & Reyes, 2012). However, the influence of resilience on academic success has received limited attention and needs further clarification.

Resilience is defined as the ability to adapt to adversity or rebound from adverse situations (Simmons & Yoder, 2013). Resilience enhances coping, adaptive abilities, and

well-being, which leads to cumulative successes (Chow et al., 2018; Rios-Risquez, Garcia-Izquierdo, Sabuco-Tebar, Carrillo-Garcia, & Marcinez-Roche, 2016; Stephens, 2013). The nursing profession has only just begun to recognize the potential contribution and significance of resilience and its application to diverse clinical contexts (Gillespie, Chaboyer, & Wallis, 2007). Research showed resilience could negate the adverse effects of stress and promote adaption to difficulties. Therefore, resilience is an essential element for practicing nurses who work in a chaotic environment (Hodges, Keeley, & Grier, 2005). Resilience has become an essential quality for nurses to be effective in their discipline (Taylor & Reyes, 2012). In an ever-changing work environment, the nurse needs the ability to adapt, acquire new skills, and adjust easily to meet the demands of the profession. Knowledge of and ability to apply resilience could assist the nurse to recover from challenging experiences that occur within the hospital environment. Nurses practicing within the discipline need to apply personal resilience to be prepared to respond to this workplace adversity (Pines et al., 2014). This personal application of resilience allows the nurse to adjust to the pressure and anxiety that occurs within a dynamic and hectic workplace.

Resilience is also an important concept for nursing students. Nursing student resilience is identified as an individualized process of development that occurs through using personal and protective factors to successfully navigate perceived stress and adversities (Stephens, 2013). Nursing students are faced with stressors that could affect their overall success and influence the achievement of their academic goals (Reyes, Andrusyszyn, Iwasia, Forchuk, & Babenko-Mould, 2015b). Nursing students struggle with academic pressure, faculty and student incivility, and stress related to the clinical

setting such as exposure to death and communicable disease (Hodges et al., 2005; Thomas & Revell, 2016). Research showed the perceived stress of nursing school alone has led to increased attrition from nursing programs (Taylor & Reyes, 2012).

The presence of resilience has the potential ability to help ameliorate some of the stress associated with nursing school. Research showed nursing students possessing higher levels of individual resilience had increased well-being and better overall psychological health (Chow et al., 2018; Rios-Risquez et al., 2016). Nursing students with higher individual resilience were more likely to continue their studies and were, therefore, more likely to be retained in the nursing program (Hwang & Shin, 2018). Furthermore, resilience helped nursing students deal with the unique challenges of nursing practice and cope with adversity in their future clinical work (Cleary, Visentin, West, Lopez, & Kornhaber, 2018; Li, Cao, Cao, & Liu, 2015).

Growing evidence shows resilience is not a fixed characteristic but could be developed through targeted interventions (McAllister & McKinnon, 2008). Research indicated resilience training programs are effective ways to increase individual resilience for the practicing nurse (Lee et al., 2015; Magtibay & Chesak, 2017; Mealer et al., 2014). For nursing students, resilience is a process the nursing student builds over time after exposure to the clinical environment (Lopez, Yobas, Chow, & Shorey, 2018). Additionally, resilience training programs could be tailored for the nursing student population.

As nursing programs continue to increase student enrollments to meet the demand for a significant workforce shortage, it is essential to identify factors that have the greatest impact on academic success and student attrition. Considering the high rate of

nursing student attrition and the potential positive impact of resilience on academic

success, more research is needed in this area (Allan, McKenna, & Dominey, 2014; Taylor

& Reyes, 2012; Van Hoek, Protzky, & Franck, 2019).

<div align="center">**Conceptual Framework**</div>

Two conceptual models served as the foundation for this study: the model of

nursing student resilience proposed by Stephens (2013), and the nursing universal

retention and success model (NURS) proposed by Jeffreys (2015). Other models were

considered for this study; however, these models were chosen as they both directly

related to the nursing student population.

Stephens Model of Nursing
Student Resilience

Stephens (2013) proposed a model of nursing student resilience that defined

resilience as "an individualized process of development that occurs through the use of

personal protective factors to successfully navigate perceived stress and adversities" (p.

130). The model was based on an in-depth concept analysis that clarified and enhanced

the practical application of the concept of resilience within the nursing student population

(Stephens, 2013). Since its publication, the model has been used to explore nursing

student resilience in many research studies including quantitative and qualitative

research, integrative reviews, concept analyses, and doctoral dissertations.

The model depicts the concept of resilience, which is influenced by perceived

adversities and the use of individual protective factors to effectively cope or adapt. At

the model's core is an ongoing process of learning to identify, enhance, and develop

protective factors to better manage perceived adversity and stress (see Figure 1). The

result of this process is the accumulation of successes and increased resilience

demonstrated by enhanced coping, adaptive abilities, and well-being (Stephens, 2013).

Stephens's (2013) model hypothesized that as nursing students learn to develop or

enhance their protective factors, they will be better equipped to manage future perceived

adversity and stress.
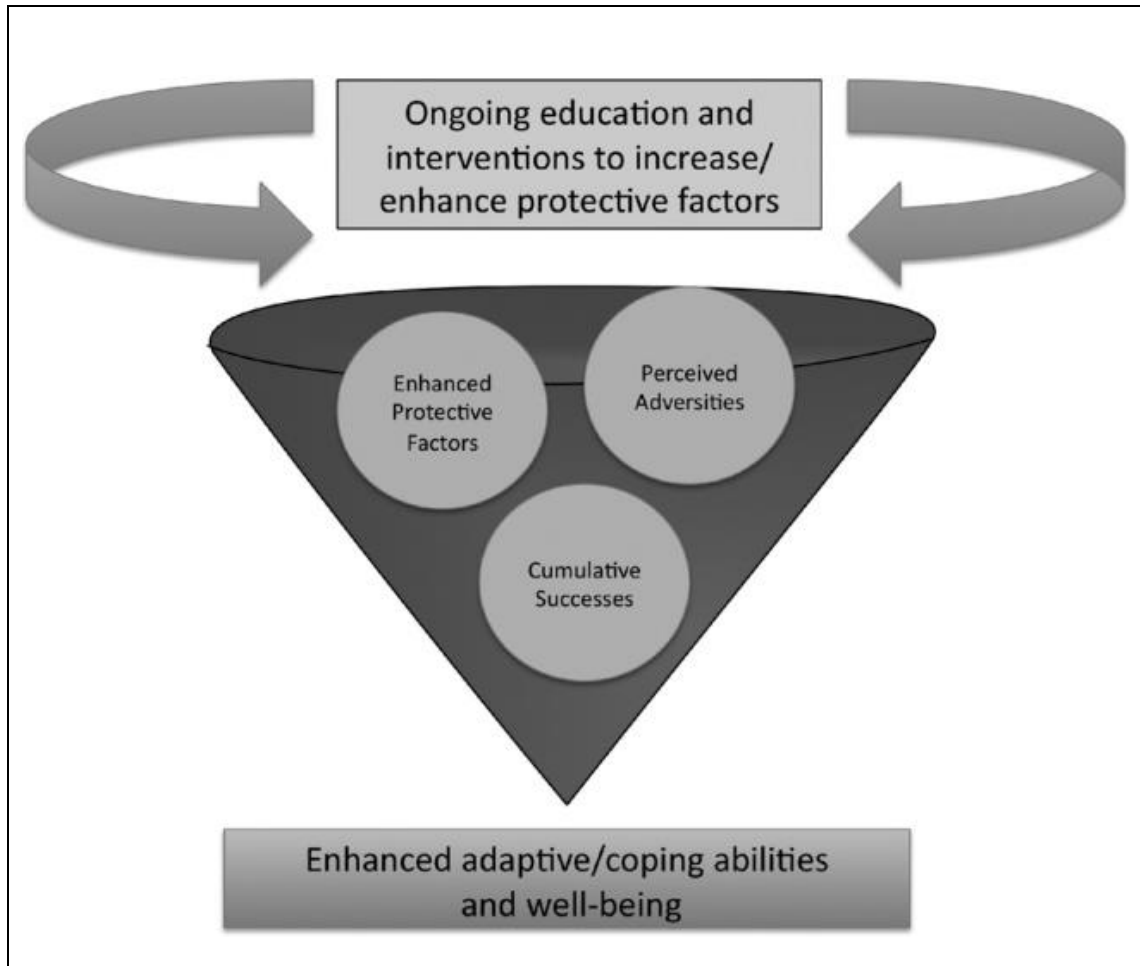
Figure 1. Stephens model of nursing student resilience. Reprinted with permission (see Appendix A) by Stephens (2013).

Perceived adversity. Stephens (2013) stated that adversity and stress are two antecedents necessary for the development of resilience. Perceived adversity is an individualized concept based on experiences and current coping or adaptive abilities. This means students might perceive stressors at varying levels of intensity. Stephens assumed all nursing students are vulnerable to unexpected episodes of perceived adversity and stress.

Individual protective factors. Stephens (2013) described individual protective factors as the attributes necessary for the process of resilience to occur. Common protective factors might include positive emotions, humor, self-efficacy, knowledge of health behaviors and risks, flexibility, competence, strong social support, faith, optimism or hope, connectedness with caring others, effective coping, self-knowledge, and perseverance (Stephens, 2013). While protective factors are individualized to each unique situation, Stephens suggested both personal characteristics, such as self-efficacy and competence, as well as social support were the two categories of attributes necessary for the development of resilience in nursing students.

Cumulative successes. Stephens (2013) described cumulative successes as the major consequence of resilience. This included physical or psychological integration, the development of personal control, psychological adjustment, and personal growth in the wake of disruption. Other consequences due to the development of resilience included effective coping, positive adaption, self-esteem, longevity, career success, confidence, and a sense of well-being (Stephens, 2013).

**Nursing Universal Retention and
Success Model**

Jeffreys's (2015) nursing universal retention and success model (NURS) is an empirically-based and globally applicable organizing framework that examines the many factors affecting undergraduate nursing student retention and success. Its purpose is to identify at-risk students, develop strategies to facilitate success, guide innovations in educational research, and evaluate strategy effectiveness (Jeffreys, 2015). The NURS model (Jeffreys, 2015) is based on the assumption that nursing student retention is a priority concern for nurse educators worldwide and that student retention is a dynamic and multidimensional phenomenon that is influenced by the interaction of multiple variables. Jeffreys's model has been consistently used in research examining the factors associated with nursing student attrition.

The model depicts the interaction of multiple factors that affect attrition, retention, and psychological and academic outcomes of the nursing student population. According to Jeffreys's (2015) model, retention decisions, persistence, and optimal student outcomes are based on the influence of environmental factors, professional integration factors, academic factors, student profile characteristics, student affective factors, and outside surrounding factors (see Figure 2). The model assumes environmental and professional integration factors greatly influence nursing student retention and psychological and academic outcomes interact and influence persistence (Jeffreys, 2015). Jeffreys's model also assumes nursing student retention is best accomplished by focusing on achieving peak performance potential rather than reaching minimal standards for success.
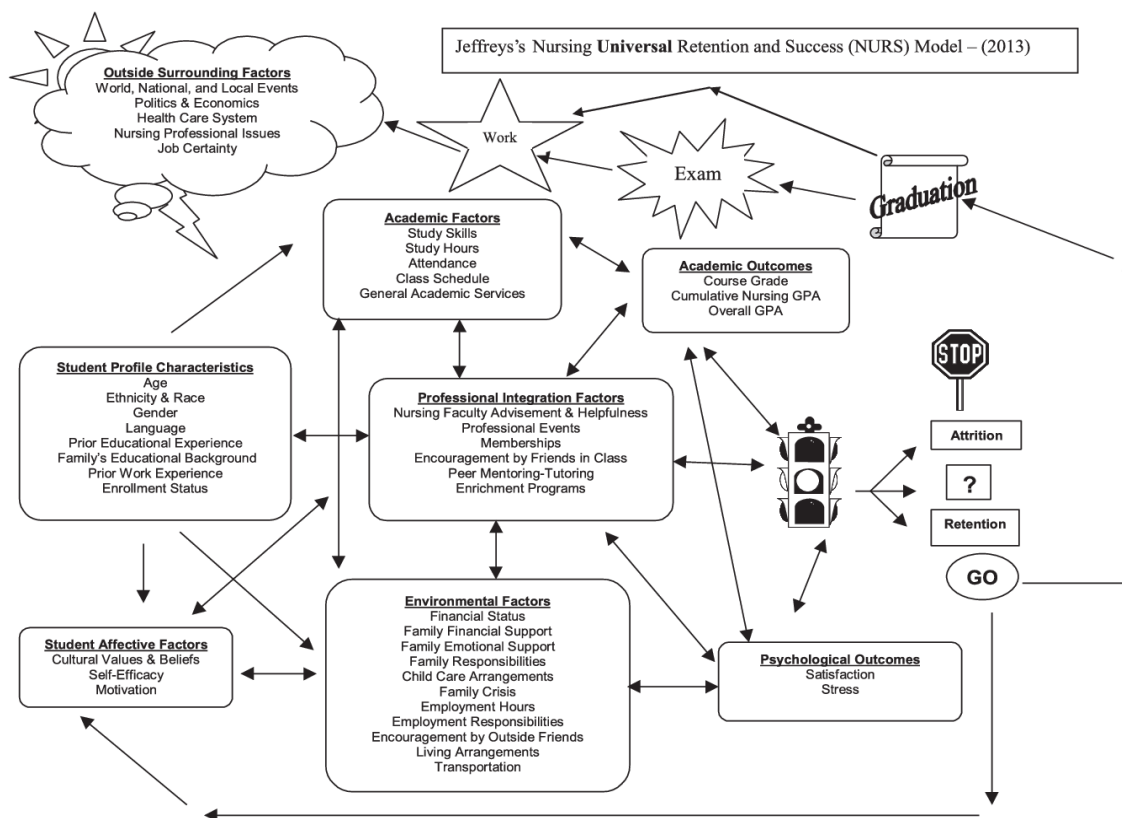
Figure 2. Nursing universal retention and success model. Reprinted with permission (see Appendix B).

Student profile characteristics. Jeffreys (2015) defined student profile characteristics as the innate characteristics one has prior to beginning a nursing program. These characteristics refer to age, ethnicity or race, heritage, gender and sexual identity, first language, prior educational experience, family's educational background, prior work experience, or enrollment status. These characteristics are important as they allow us to categorize or profile students into traditional, under-represented, non-traditional, and/or first-generation college student groups. By routinely appraising student profile characteristics, nurse educators could create a composite of variables that restrict or support retention and success (Jeffreys, 2015).

Student affective factors. Jeffreys (2015) defined student affective factors as individuals' attitudes, values, and beliefs about learning. These factors also included the ability to perform the necessary tasks required for success. They specifically referred to cultural values and beliefs, self-efficacy, and motivation. According to the model, all students have personal values and beliefs that guide thinking, decisions, and actions within the nursing student role. Cultural congruence refers to the degree of fit between the student's personal values and beliefs and that of the nursing profession, academic environment, and nursing education (Jeffreys, 2015). Cultural congruence is important as it positively influences persistence, academic performance, motivation, and retention. Cultural incongruence creates stress and could lead to dissatisfaction, poor academic performance, decreased motivation, and attrition (Jeffreys, 2015). Self-efficacy or confidence influence a student's actions and performance. Highly motivated students view tasks as challenges, prepare diligently, and optimize outcomes whereas unmotivated students view tasks as obstacles, give up easily, and therefore result in poorer academic performance (Jeffreys, 2015).

Academic factors. Jeffreys (2015) described academic factors as personal study skills, study hours, attendance, class schedule, and general academic services. Study skills are defined as the attitudes and responsibilities for study activities, time management and organization, and effort extended with academics (Jeffreys, 2015). A personal study hour is defined as the number of hours allocated exclusively to positive study activities. Attendance refers to being mentally present or absent in the learning environment. Class schedule refers to the various types of course offerings that could

include distance learning, face-to face, hybrid, and clinical based education. All of the above variables influence student retention and success.

      Environmental factors. Jeffreys (2015) described environmental factors as factors external to the academic process that might influence students' academic performance and retention. Environmental factors could include financial status, family financial and emotional support, family responsibilities, childcare arrangements, family crisis, employment hours and responsibilities, encouragement by outside friends, living arrangements, and transportation. Jeffreys specified that these factors are the most influential to academic achievement, persistence, and retention as strong environmental support is believed to compensate for weak academic support.

      Outside surrounding factors. Jeffreys (2015) described outside surrounding factors as factors that exist outside the academic setting that are beyond manipulation and control by either the student or educator. These factors refer to world, national, and local events, politics and economics, the health care system, nursing professional issues, and job certainty. These factors are both predictable and unpredictable and can either positively or negatively influence persistence, retention, and success.

      Professional integration factors. Jeffreys (2015) defined professional integration factors as factors that enhanced students' interaction with the social system of the college and professional environment. These could include nursing faculty advisement and helpfulness, professional events, memberships, professional organizations, encouragement by friends in class, peer mentoring and tutoring, and enrichment programs. Jeffreys argued these factors had the greatest power to optimize

outcomes aimed at reaching one's potential as strong professional integration increased one's professional commitment and persistence behaviors.

Academic and psychological outcomes. Jeffreys (2015) referred to academic and psychological outcomes as two dimensions of outcomes that directly influenced student retention and success. Academic outcomes referred to nursing course grades, cumulative nursing GPA, and overall GPA. Psychological outcomes referred to satisfaction and stress. Jeffreys stated that positive psychological outcomes would include satisfaction and low or manageable stress whereas negative psychological outcomes would include dissatisfaction and high stress. According to Jeffreys, good academic performance resulted in retention only when accompanied by positive psychological outcomes. Therefore, this study examined the potential impact of resilience to student academic success.

These two models provided a desirable framework for this research. The NURS model (Jeffreys, 2015) has been consistently used to define the many potential variables that affect retention and success within the nursing student population. Therefore, it provided context and rationale for all influencing variables that needed to be controlled in the present study. Moreover, it provided rationale for the present research hypothesis. Jeffreys (2015) articulated that positive academic performance resulted in retention only when accompanied by positive psychological outcomes. Research showed resilience increased psychological well-being (Chow et al., 2018). It could, therefore, be hypothesized that individual resilience could strengthen retention and greatly influence nursing student academic outcomes. The NURS model includes student affective factors such as self-efficacy and motivation; however, it disregards resilience. Therefore,

Stephens's (2013) model of nursing student resilience was used to fill this gap. Stephens's model provided a clear conceptual definition for nursing student resilience which could then be used to test the current research hypothesis.

Problem Statement

Attrition is a substantial problem in baccalaureate nursing, especially as students enter upper level nursing coursework. Nursing students who are unsuccessful in their program waste financial and educational resources. Lost potential to the community is also devastating. Student attrition directly diminishes the number of potential graduates serving in the nursing profession. This poses alarming consequences to the already significant existing nursing shortage. These implications alone highlight the necessity to enhance student academic performance and reduce failure rates. However, because academic failure contributes most significantly to nursing student attrition, it is critical to understand and enhance the factors influencing nursing student academic success (Abele, Penprase, & Ternes, 2013).

Nurse educators are responsible for providing experiences that promote academic success and course completion. Given the potential benefit of increasing student academic success and subsequently decreasing attrition rates in baccalaureate nursing, it is imperative that nursing educators better understand the relationship between the factors influencing student academic success. Despite significant research on the cognitive factors influencing student academic success, the problem of attrition remains. Therefore, more research regarding the non-cognitive factors associated with student academic success is needed.

Academic success can be measured in a variety of ways including (a) achieving minimum competency on benchmark exams, (b) course completion, (c) graduation from an accredited nursing program, (d) first time pass rate on the licensing exam, and (e) post-graduation employment. Because academic failure and attrition rates are poorest in the beginning nursing courses, this study examined academic success by measuring benchmark exam scores.

Resilience is one non-cognitive factor that might have the potential to influence persistence and student academic performance. Despite much research on resilience in nursing education, very little has been conducted regarding its relationship to nursing student academic success. Existing evidence regarding resilience and its association with a slightly improved academic performance is weak and sparse (McGowan & Murray, 2016). A review of the literature revealed a small relationship between resilience and academic achievement but further clarification is needed to strengthen this argument (Allan et al., 2014). Additionally, research showed nursing academic performance is most concerning during the first and second year of study and almost no research has been conducted using this population (Khalaila, 2015). Therefore, further research was recommended to more clearly understand the relationship between resilience and its effects on student academic performance.

Purpose of the Study

The purpose of this non-experimental descriptive-correlational study was to determine if a relationship existed between individual resilience and academic success in baccalaureate nursing students.

Research Questions and Hypotheses

The following research question guided this study:

Q1   Is there a relationship between individual resilience and academic success in baccalaureate nursing students?

In addition to the research question were the following hypotheses:

Ho1   There is not a statistically significant relationship between individual resilience and academic success in baccalaureate nursing students.

H1   There is a statistically significant positive relationship between individual resilience and academic success in baccalaureate nursing

Professional Significance of the Study

The potential implications of this study are significant to the nursing profession in several ways. First, this research has the potential to help identify individual resilience as a possible factor that contributes to nursing student academic success. If this relationship is demonstrated, nursing educators could have a better understanding of the impact resilience has on student progression, performance, and program completion. More needs to be done to support student academic success. Knowledge of the impact of resilience could help nursing educators better identify nursing students at risk of poorer academic performance. Findings of this research could help nurse educators understand how building student resilience could counteract the negative effects of perceived stress in nursing school. The findings of this study could also assist nursing educators in supporting student resilience, which in turn could lead to higher student psychological well-being, persistence, and academic success, thus decreasing attrition.

Second, knowledge of the impact of resilience and its relationship to academic success is essential for planning and developing nursing programs that ensure the best outcomes for both the institution and student. Having a better understanding of the

impact of resilience could help nurse educators create curricula, teaching/learning practices, and interventions that promote retention in the nursing program (Taylor & Reyes, 2012). Retention in the nursing program is beneficial to the student, the institution, and the nursing profession.

Last, knowledge of the impact of resilience could be used to support the assumption that resilience benefits nursing students in their academic and professional career. Individual resilience leads to a happier and more positive college experience as well as assists with coping for future difficulties and challenges (Stephens, 2013). Additionally, the development of resilience could assist with individual post-traumatic growth and enhance the ability to cope with clinical stress (Li et al., 2015). The ability to apply individual resilience has the potential to increase both student and faculty satisfaction, increase student retention, and contribute to students' future successes as nursing professionals (Stephens, 2013). The development of resilience is essential to learning about nursing practice (Thomas, Jack, & Jinks, 2012). Consequently, nursing students who are better equipped with resilience are more likely to succeed and become stronger leaders within the nursing profession despite challenges and obstacles they might face (Stephens, 2013; Thomas & Revell, 2016). This research provides nurse educators with knowledge to support student resilience development, thus helping with decreasing student attrition and building success in their future academic and professional careers.

Definition of Terms

The following terms were used throughout the study.

Resilience

Conceptual definition. Resilience is defined as the ability to adapt to adversity or rebound from adverse situations (Simmons & Yoder, 2013). Nursing student resilience is defined as "an individualized process of development that occurs through the use of personal protective factors to successfully navigate perceived stress and adversities" (Stephens, 2013, p.130).

Operational definition. Individual resilience is defined as the ability for adaption, balance, competence, determination, optimism, and acceptance manifested in five underlying characteristics: purpose, perseverance, equanimity, self-reliance, and existential aloneness as measured by the 14-item resilience scale (RS-14; Wagnild & Young, 2016). Possible scores range from 14 to 98 with the higher scores indicating higher resilience. Totaled scores could range from 14-56 (very low), 57-64 (low), 65-73 (on the low end), 74-81 (moderate), 82-90 (moderately high), and 91-98 (high; Wagnild & Young, 2016). For this study, the total resilience score was represented using continuous data.

Academic Success

Conceptual definition. Academic success is conceptually defined in various ways such as achieving minimum competency scores on benchmark exams, course completion, graduation from an accredited nursing program, first time pass rate on the licensing exam, and post-graduation employment (Jeffreys, 2015).

Operational definition. For the purposes of this research, academic success was defined as achieving more than minimum benchmarks on nursing course exams as measured by an average of 75% or greater with the higher percentages indicating higher success. (Jeffreys, 2015).

Summary

Attrition in nursing education remains problematic worldwide. Academic failure contributes most significantly to nursing student attrition; therefore, it is critical to understand the factors influencing nursing student academic success (Abele et al., 2013). Despite much research underscoring the importance of cognitive factors relating to nursing student academic success, attrition rates remain high. Consequently, research regarding the relationship between non-cognitive factors and their association with academic success is warranted. Resilience is one non-cognitive factor that has the potential to impact nursing student academic success but \ has received little research attention. Resilience has the potential to help nursing students mitigate the unique challenges of nursing education. Additionally, knowledge of the significance of the relationship between resilience and nursing student academic success has the potential to help nurse educators better understand the unique causes of attrition plaguing nursing academia today.

CHAPTER II

REVIEW OF THE LITERATURE

Overview

The purpose of this study was to examine the relationship between individual resilience and student academic success in baccalaureate nursing students. A review of the literature was conducted from the disciplines of nursing, psychology, and behavioral and social sciences using the following search terms: predictors of academic success, nursing student success, resilience, success, non-cognitive factors, nursing education, nursing student, nurse, grit, attrition, and resiliency. Terms were entered separately and in combination using Cumulative Index to Nursing and Allied Health, CINAHL, Education Resources Information center, ERIC, and ProQuest databases. An initial search yielded 577 articles. Searches were limited to peer-reviewed, research articles, English language, and articles published within the last 10 years. Publication dates were extended for relevant seminal research, particularly relating to concept analysis. Through this search, a variety of primary sources were obtained. Manual searches of relevant articles' reference lists were also done to identify additional evidence. Specific search criteria and the exclusion of non-relevant articles left 53 primary sources for this literature review.

This literature review attempted to illuminate the definition and concept of resilience, its theoretical properties, its significance in the nursing profession, and its significance in nursing education. Therefore, the literature review is organized into the

following sections: theoretical review of resilience, resilience and the nursing profession, and resilience and the nursing student population. Each section is further divided into subsections of prominent themes that related specifically to resilience in the nursing student population.

<div align="center">**Theoretical Review of Resilience**</div>

Definition of Resilience

Resilience is referred to as a set of traits, an outcome, or a process; therefore, the literature contains a variety of conceptual definitions (Windle, 2011). Resilient (n.d.) is described as springing back, recoiling, returning to the original form after being bent, stretched, or compressed, readily recovering and buoyant (Def. 1). From this definition, the integration of the humanistic components of resilience is evident. This is further articulated in other dictionary definitions. Resilience (n.d.) has also been defined as the ability to recover or adjust easily to misfortune or change (Def. 1). From these dictionary definitions, other definitions have been developed to further describe the qualities and properties of human resilience.

Discipline-specific definitions describe the concept with its most humanistic qualities. Several disciplines have adapted their own unique definition of resilience that could be applied specifically to that field of knowledge. The concept of resilience primarily originated from psychological literature used to describe the psychological and physical aspect of coping (Caldeira & Timmins, 2016). Psychology, social work, and nursing most often define resilience as the ability to adapt to adversity or rebound from adverse situations (Simmons & Yoder, 2013). Medicine defines resilience as the ability to overcome traumatic injuries and the will to live despite life-threatening illness or

injuries (Simmons & Yoder, 2013). Other discipline specific definitions for resilience include (a) the personal quality of a person exposed to high risk factors that often lead to delinquent behavior but they do not do so, (b) the ability of adults who are exposed to a potentially disruptive event to maintain stable and healthy levels of psychological functioning, and (c) a state of recovery or preventative strategy that inhibits the debilitating effects of stress (Garcia-Dia, DiNapoli, Garcia-Ona, Jakubowski, & O'Flaherty, 2013; Reyes et al., 2015b; Windle, 2011). Although these conceptual definitions vary from discipline to discipline, the concept of overcoming adversity has been consistent throughout. For the purposes of this research study, nursing student resilience is defined as an individualized process of development that occurs through using personal and protective factors to successfully navigate perceived stress and adversities (Stephens, 2013).

Defining attributes. In an effort to further define the concept of resilience, an in-depth exploration of the defining attributes was necessary. The defining attributes most closely associated with resilience include a unique set of personal characteristics or personality traits, external resources, and protective factors. To achieve an in-depth analysis of the concept of resilience, all of these critical attributes are explored.

Personal characteristics. Internal factors associated with resilience relate to the personal characteristics or personality traits of the individual. Although this notion has been much debated, the literature contended the attributes of resilience come directly from these personal characteristics, personality traits, or personality factors; therefore, this topic warranted discussion. Personal qualities allow the individual to thrive in the face of adversity or stress (Windle, 2011). As noted from the literature, personality traits

associated with resilience include resourceful adaption, flexibility, positive outlook, inventiveness, hardiness, mutuality, and self-control (Caldeira & Timmins, 2016; Windle, 2011). Other key dispositions include good health, intelligence, easy-going temperament, sociability, confidence, optimism, self-awareness, self-esteem, and an internal locus of control (Atkinson, Martin, & Rankin, 2009; Mohanty, 2016).

Other internal attributes of resilience repeated in the literature included rebounding and determination (Caldeira & Timmins, 2016; Garcia-Dia et al., 2013). Rebounding, or carrying on, depicts the ability of an individual to bounce back after an adverse event (Garcia-Dia et al., 2013). Rather than falter in the face of adversity, these individuals are able to acknowledge the event, grow from it, and return to living life in a sense of new normal (Garcia-Dia et al., 2013). Determination describes the individual's willingness to stick to something or persevere until the desired outcome is achieved (Dyer & McGuinness, 1996; Garcia-Dia et al., 2013). In the face of adversity, the individual expresses conviction and tenacity rather than despair (Dyer & McGuinness, 1996).

External resources. External factors associated with resilience relate to the environmental dynamics or resources on which the individual can rely. These can include social support from friends and family and available community resources (Ahern, 2006; Wagnild & Collins, 2009). Social support that fosters supportive relationships in a time of adversity is the most commonly noted external resource for resilience (Scoloveno, 2016). The combination of both internal and external factors increases the individual's ability to exhibit resilience.

Protective factors. Protective factors were commonly linked to resilience in the literature. Protective factors are also known as personal assets, resources, or strengths (Windle, 2011). These factors have been recognized to play a pivotal role in an individual's capability to resist adversity and also underlie the process of adaption (Windle, 2011). Protective factors are important as they act as a buffering system that minimizes the negative effect of stress (Ahern, 2006).

Protective factors are described at the individual, social, and community level. Individual protective factors include the psychological components of the person. This includes an individual's temperament, aptitude, biology, motivation, and behavior (Windle, 2011). Sense of hope, coping ability, and spiritual connectedness are also associated with individual protective factors (Mohanty, 2016). Social protective factors refer to a strong family connection and parental support (Windle, 2011). This could also relate to the stability or cohesion of the family, the available support and finances, as well as a stable housing environment (Windle, 2011). Community protective factors relate to support systems through social environment and political capital as well as economic factors (Windle, 2011). Examples of this include social networks from work or school, available transport and services, employment status, welfare, housing and education (Windle, 2011). Protective factors have also been linked to the antecedents of resilience.

Antecedents. Antecedents refer to what must occur prior to the manifestation of the concept (Windle, 2011). The antecedents to reliance are numerous. Throughout the literature, the most noted antecedents of resilience included adversity, risk, challenge, conflict, stress, or a traumatic event (Garcia-Dia et al., 2013; Pines et al., 2014; Simmons & Yoder, 2013; Stephens, 2013; Windle, 2011). The antecedent event must have the

potential to result in a negative outcome or place the individual at risk for a compromise in his or her ability to cope (Garcia-Dia et al., 2013). Windle (2011) explained that the context of the adversity could come in a variety of forms including biological, psychological, economic, or social. Examples of adverse or traumatic events in which the individual is able to express resilience might include illness, serious accidents, death of someone close to them, physical or emotional abuse, natural disasters such as hurricanes, and life changes (Simmons & Yoder, 2013; Stephens, 2013; Windle, 2011).

Regardless of the form of adversity or stress, the event must be interpreted as either physically or psychologically traumatic by the individual (Stephens, 2013). The event must pose a significant threat in which individuals under similar circumstances might experience altered coping with the potential of a negative outcome (Windle, 2011). It is also important to understand that the antecedents of resilience are not all equivalent in severity and might range from acute to chronic (Windle, 2011). The context and severity of the antecedent varies from case to case and should be examined respectfully.

In addition to an adverse or traumatic event, protective factors have also been included in the literature as an important antecedent to resilience. Stephens (2013) argued protective factors are necessary for resilience to occur. Protective factors required for resilience include positive emotions, humor, self-efficacy, flexibility, competence, social support, faith, optimism, effective coping, and self-knowledge (Stephens, 2013). Whether a necessary attribute or antecedent of resilience, there was sufficient evidence in the literature to confirm the importance of the presence of protective factors to develop or enhance resilience (Stephens, 2013).

Consequences. The consequences or end-points that occur as a result of the antecedents and attributes of resilience relate to a positive outcome of some kind (Windle, 2011). The most noted consequences of resilience from the literature included effective coping and psychological or physical adjustment (Dyer & McGuinness, 1996; Stephens, 2013). Other consequences of resilience included integration, personal control, personal or professional growth, positive adaption, confidence, and increased self-efficacy (Caldeira & Timmins, 2016; Garcia-Dia et al., 2013; Stephens, 2013; Simmons & Yoder, 2013; Taylor & Reyes, 2012). The common theme among all of the consequences was the maintenance of normal or better functioning despite adversity or stress through effective coping or psychological or physical adjustment.

Effective coping. Effective coping was described throughout the literature as the primary consequence of resilience. Effective coping has been defined as successfully dealing with an adverse event and still enjoying life to the fullest extent (Garcia-Dia et al., 2013). Additionally, effective coping is exhibited by an individual's ability to overcome the stressor time and time again. This post-stress growth allows the individual to re-establish equilibrium after an adverse event (Atkinson et al., 2009).

Psychological or physical adjustment. Psychological or physical adjustment refers to the normal development of functioning of the individuals' mental or physical health (Windle, 2011). In the face of adversity, individuals expressing resilience show an ability to adapt positively or adjust while exhibiting minimal effects of stress (Windle, 2011). The psychological growth that occurs as a result of resilience would also help the individual when future stressors or adversity occur (Atkinson et al., 2009).

A positive consequence or outcome is not always appropriate for the concept of resilience. There are some cases in which a less than desirable outcome is suitable. The nature of an adverse event must be considered to determine the strength and outcome of resilience. For more catastrophic events, a consequence of near or average functioning is sufficient (Windle, 2011). Additionally, when experiencing a severe adversity or illness, simply recovering could be considered adequate resilience (Windle, 2011). These examples detail the range of potential consequences or outcomes that might be exhibited by the individual.

Conversely, the consequences of inadequate resilience should also be considered as they have a large impact on the individual. The consequences of having low resilience might include increased risk for mental illness, anxiety, depression, and burnout (Simmons & Yoder, 2013; Wagnild & Collins, 2009). Furthermore, resilience might weaken when individuals no longer feel capable of meeting challenges (Wagnild & Collins, 2009). In these circumstances the feelings of being overwhelmed and the loss of a reason for life could occur.

Empirical Referents

Measuring resilience is difficult as the concept has not been clearly defined and the attributes and antecedents have been contrasted throughout the literature. Researchers attempted to understand resilience by developing means of measuring it directly and as such, a variety of resilience tools exist. The most noted resilience scales used in nursing include the Wagnild and Young (1993) resilience scale (RS) and the Connor-Davidson resilience scale (CD-RISC; Connor & Davidson, 2003).

Wagnild and Young resilience scale. The RS is a simple scale created in 1993 by Wagnild and Young. This scale uses individual items to measure total resilience. It measures personal competence, social competence, family coherence, social support and personal structure (Garcia-Dia et al., 2013). Scores range from 146 and above, indicating high resilience; 121 to 146, indicating moderate resilience; and below 121, indicating low resilience (Wagnild & Collins, 2009). According to Garcia-Dia et al. (2013), this is the most commonly used scale with consistent reliability and validity. Researchers have used this scale to measure resilience since 1993 with consistently accepted Cronbach's alpha coefficient, therefore it is a noted and trustworthy scale (Garcia-Dia et al., 2013).

Connor-Davidson resilience scale. The CD-RISC (Connor & Davidson, 2003) is another self-rating instrument scale that measures individual resilience. This scale has comparable psychometric ratings to the RS. The CD-RISC is a 25-item scale that measures resilience or the ability to cope in clinical and non-clinical populations (Garcia-Dia et al., 2013). This scale uses Likert questions to measure an individual's level of resilience (Simmons & Yoder, 2013); each is rated on a 5-point scale with higher scores reflecting greater resilience. Validity and reliability coefficients for the scale consistently yielded appropriate psychometric properties. Validity and reliability have been established for multiple populations such as adolescents, students, nurses, and firefighters (Garcia-Dia et al., 2013; Gonzalez, Moore, Newton, & Galli, 2016).

The literature review revealed the concept of resilience is a dynamic and complex phenomenon. Although no singular agreed-upon definition exists, based on the review of literature, it was determined resilience is a trait and a process that allows the individual to successfully function and adapt in the face of adversity (Scoloveno, 2016). Nursing

student resilience is also an individualized process that enables the user to navigate

perceived stress and adversity. This process of adaption is primarily influenced by

personal characteristics, social resources, and protective factors (Caldeira & Timmins,

2016). Resilience is a concept that can be measured. Two reliable scales exist to

measure individual resilience. Having a thorough understanding of the definition of

resilience and its conceptual properties is beneficial in understanding how resilience is

depicted in theory and how it is enacted in the nursing student population.

Theories of Resilience

Despite much research on resilience, the theoretical applications of the concept

remain vague and undefined, particularly in nursing and nursing education. Resilience is

described as a middle range theory; however, there is a lack of agreement regarding the

constructs of the phenomena so theory development remains ambiguous. Because

research remains inconsistent, few theoretical applications have been developed.

Moreover, an overarching theoretical framework or universally accepted theory for

resilience was not found. However, two popular theoretical models relating specifically

to nursing student resilience were identified: Reyes et al.'s (2015a) theory of pushing

through and Stephens's (2013) nursing student resilience model.

Reyes, Andrusyszyn, Iwasia, Forchuk, and Babenko-Mould (2015a) conducted a

constructivist, grounded theory, qualitative study using baccalaureate nursing students.

From the results of this study, the grounded theory of pushing through was proposed.

This theory was the first to address nursing student resilience explicitly. The theory

described pushing through as the ability to withstand challenges and obstacles faced

within the academic environment (Reyes et al., 2015a). The theory of pushing through

included three phases: stepping into, staying the course, and acknowledging. Stepping

into refers to the process of entering adversity or a challenging situation that is a different

or new experience that requires a unique way set or skills to successfully cope (Reyes et

al., 2015a). Staying the course refers to the mindset that continuous or sustained actions

are required for goal achievement. During this phase, students engage in actions or plans

to prevent setbacks in academic goals. Finally, acknowledging refers to the

acknowledgement of self-transformation as a result of experiencing adversity (Reyes et

al., 2015a). The theory underscores nursing students' understanding and enactment of

resilience as a process rather than a trait. The theory could be used to provide nursing

educators with a strength-based perspective in supporting students to adapt to adversity

and meet academic goals (Reyes et al., 2015a). Similar views found in Stephens's (2013)

model of nursing student resilience were used as conceptual models for the present study.

Stephens (2013) model of nursing student resilience depicts the concept of

resilience as a process of combined adversities and protective factors that manifest in

effective coping or adaption. As previously described, this model describes the process

of developing protective factors through education and learning to enhance coping and

adaptive abilities (Stephens, 2013). Stephens's model hypothesizes that as nursing

students learn to identify and enhance their protective factors, they are more likely to

effectively manage perceived adversity, resulting in cumulative success. This model

served as one of the conceptual models for the present study.

Resilience and the Nursing Profession

Resilience in the nursing profession has been extensively researched, particularly

with the practicing clinician in the hospital setting. The majority of literature focused on

the association between resilience and other variables such as burnout and stress experienced by the practicing nurse. Additionally, many studies focused on resiliency training or improving resilience for the nursing professionals. The evidence suggested resilience is an essential element for nurse clinicians. Nurses working within the discipline need to apply personal resilience to respond to workplace adversity (Pines et al., 2014). Knowledge of and ability to apply resilience could assist the nurse in recovering from demanding experiences that occur within the hospital environment. Additionally, resiliency training has demonstrated its effectiveness as a way to decrease work-related stress for the practicing nurse.

Resilience in the Practicing Nurse

According to the research, nurse clinicians are moderately resilient. A study by Koen, Eeden, and Wissing (2011) examined the prevalence of resilience in a group of professional nurses. In this cross-sectional study, surveys were given to a group of nurses practicing in South Africa ($N = 312$). The RS (Wagnild & Young, 2016) was used to measure resilience in this study. The results showed 43% of the participants had high resilience, 47% had moderate resilience, and 10% had low resilience. Nurses practicing in private care facilities had higher resilience levels than nurses practicing in public healthcare settings.

A similar study by Souza Maia, Souza, Assis Correa Soria, and Costa (2017) used a qualitative descriptive method to examine resilience levels of nurses practicing in Brazil. Nurses working on a medical surgical unit were surveyed. The results showed 58% of the participants presented excellent conditions of resilience. An additional study by Dolan, Strodl, and Hamernik (2012) used a grounded theory methodology with

practicing hemodialysis nurses in Australia to better understand resilience in this

population ($N = 16$). Based on thematic analysis, the study results reported the

participants exhibited relatively low levels of burnout and moderately high levels of

resilience. Despite stress in the work environment, participants exhibited self-reliance

and equanimity—two essential components of resilience.

A final study by Garcia-Dia, O'Flaherty, and Arreglado (2018) explored the

relationship among demographic factors, nurses' perception of resilience, and actual

resilience in practicing nurses in the United States. The study used the RS (Wagnild &

Young, 2016) to evaluate resilience with participating nurses ($N = 150$). The results

identified that as the participants' age increased, so did their individual resilience score.

It also showed participants with higher degrees (master's and doctorate) had lower

resiliency scores in comparison to associate and bachelor-prepared nurses. These studies

indicated the majority of nurses who entered the profession had survived despite the

difficulties and stress of practice (Koen et al., 2011). Additionally, these studies

highlighted the significance of resilience in the practice environment and specified where

improvements in individual resilience levels could be made.

In addition to the exploration of resilience levels, several studies examined the

attributes, characteristics, or contributing factors to resilience among practicing nurses.

Attributes of resilience for practicing nurses included positive coping skills, optimism, a

positive attitude, and work-life balance (Cameron & Brownie, 2010; Mealer, Jones, &

Moss, 2012; Tubbert, 2016). This was first demonstrated in a qualitative study by Mealer

et al. (2012). Semi-structured interviews were conducted with intensive care nurses in

effort to identify mechanisms employed by highly resilient nurses ($N = 27$). The CD-

RISC (Connor & Davidson, 2003) was used to measure resilience. The study results indicated highly resilient nurses identified spirituality, a supportive social network, optimism, and having a resilient role model as characteristics used to cope with stress in their work environment. These positive coping skills and psychological characteristics were essential to managing the stressful work environment. Optimism was also found as a key characteristic for resilience in a study by Tubbert (2016). This qualitative study used interviews with a population of emergency room nurses ($N = 16$). Thematic analysis revealed common characteristics of resilience including tenacity, interpersonal connectedness, self-control, and optimism.

A similar study by Cameron and Brownie (2010) explored factors that impacted resilience among practicing registered nurses in Australia. A qualitative phenomenological method was used with the participants ($N = 9$). Based on thematic analysis from semi-structured interviews, the study found clinical expertise, a sense of purpose in a holistic care environment, a positive attitude, and work-life balance were important determinants of resilience among practicing nurses. Additionally, resilience was enhanced when practicing nurses were able to maintain long-term, meaningful relationships with their patients.

Research also suggested good health, energy, hope, and optimism were some important factors that contributed to resilience (Glass, 2009; Zander, Hutton, & King, 2013). Zander et al. (2013) used a qualitative case study to explore the concept of resilience among pediatric oncology nurses ($N = 5$). Thematic analysis from semi-structured interviews revealed nurses perceived good health and energy necessary for resilience. Additionally, Glass (2009) employed a qualitative ethnographic study with a

population of nurses and midwives practicing in Australia ($N = 20$) to investigate the

significance of hope, resilience, and optimism among this population. Based on thematic

analysis from semi-structured interviews, results revealed nurses and midwives identified

resilience as a critical requirement for effective everyday work practice, inner balance,

survival, and sanity. Hope and optimism were two attributes identified as essential to

building and sustaining resilience. These studies indicated positive psychological

attributes such as effective coping strategies, hope optimism, a positive attitude, and

social support were important contributors to resilience.

Resilience and Psychological Effects
in the Practicing Nurse

Working in the healthcare environment has been associated with high levels of

stress (Dehvan, Kamanger, Baiezeedy, Roshani, & Ghanei-Gheshlagh, 2018). It was

hypothesized that resilience negated the negative effects of this stress. Meyer and Shatto

(2018) conducted a pilot study examining resiliency and its relationship to transition to

practice among new nurses ($N = 17$). The RS (Wagnild & Young, 2016) was used to

measure resilience in this group. The study found resilience was important to help negate

the stress of transitioning from student nurse to practicing nurse. This research supported

the assumption that resiliency positively impacted transition to practice for new nurses.

Throughout the literature, many other studies explored the relationship between

resilience and stress-related variables for the practicing nurse. Guo et al. (2017) used a

cross-sectional design to investigate the prevalence and extent of burnout on nurses and

its association with personal resilience. This study used a population of nurses from

China ($N = 1,061$). Through the use of a burnout inventory scale and the CD-RISC

(Connor & Davidson, 2003) measuring resilience, the study found lack of resilience was

a strong predictor of burnout (r = 0.2-0.4, p < .001). Low levels of individual resilience

resulted in higher levels of emotional exhaustion, cynicism, and reduced professional

efficacy. Kutluturkan, Sozeri, Uysal, and Bay (2016) employed a descriptive study with

a population of oncology nurses (N = 140) and also found a negative correlation between

resilience and burnout.

A similar study by Rushton, Batcheller, Schroeder, and Donohue (2015) found a

negative correlation between resilience and emotional exhaustion (r = .13, p < .001).

This cross-sectional study used nurses practicing in high-intensity work environments

such as pediatric, neonatal, oncology, and critical care units (N = 114). Resilience was

measured using the CD-RISC (Connor & Davidson, 2003). The study found greater

individual resilience protected nurses from emotional exhaustion and positively

contributed to personal accomplishment. Higher levels of resilience were associated with

increased hope and reduced stress levels over varying levels of work experience.

Lanz and Bruk-Lee (2017) examined the moderating effects of resilience on

negative job outcomes such as conflict, turnover, burnout, and injuries. The RS (Wagnild

& Young, 2016) was used to measure resilience among a population of nurses working in

various medical units in the United States (N = 97). The results concluded nurses with

lower resilience levels had higher incidences of conflict negative job-related affects.

Nurses with higher levels of resilience experienced less conflict and a greater ability to

bounce back. This study indicated resilience was a valuable trait for nurses to develop to

reduce the negative job outcomes caused by conflict.

A final study by Mroz (2015) explored the relationship between coping strategies

and resilience in practicing nurses. A population of nurses practicing in various

healthcare settings were used for the study ($N = 173$). Survey results indicated negative

correlations between perceived stress and resiliency factors ($r = 0.44, p < .05$). Nurses

exhibiting low levels of perceived stress had higher levels of resilience. Maladaptive

coping strategies such as denial and self-blame contributed to those exhibiting higher

levels of perceived stress. These studies concluded the development of resilience among

nurses was essential for better overall quality of work life. Additionally, these studies

identified resilience as important for nurses working in high-risk and stressful

environments.

In addition to lower levels of burnout and stress, research showed resilience also

had positive mental health effects. Kemper, Mo, and Khayat (2015) used a cross-

sectional survey method to describe the relationship between resilience and mental health

qualities. The participants included a variety of healthcare workers and nurses ($N = 213$).

Resilience was significantly correlated to less stress ($r = -.53, p < .01$), more mindfulness

($r = .5, p < .01$), more self-compassion ($r = .54, p < .01$), and better mental health ($r =$

$.44, p < .01$). A similar study by Dehvan et al. (2018) explored the relationship between

resilience and mental health among psychiatric nurses using a cross-sectional study.

Through the use of the CD-RISC (Connor & Davidson, 2003) and other questionnaires,

the results of the study showed a significant negative correlation among resilience,

anxiety, and insomnia ($r = .036, p < .001$). Higher levels of resilience contributed to

lower levels of anxiety and insomnia. The study's findings concluded resilience had a

significant positive relationship to overall mental health. Both of these studies further

strengthened the argument that resilience is important for positive mental health and the

need for resiliency training in practicing clinicians.

Building Resilience in Nurses

The literature showed resiliency training is effective in increasing individual resilience and decreasing the negative effects of stress in the nursing work environment. Several research studies examined the potential of building resilience through targeted resiliency training intervention. Magtibay and Chesak (2017) conducted a quasi-experimental study to test the efficacy of a training program geared at improving resilience among practicing nurses. The study used a blended learning strategy with stress management and resiliency training. The results of this study showed overall improvements in the building of resilience and mindfulness among the participants ($N =$ 50). The outcomes of the training also showed significant decreases in stress, anxiety, personal burnout, and work-related burnout.

A similar study by Agteren, Iasiello, and Lo (2018) also showed significant improvements in resilience and well-being after targeted psychological training programs. This study implemented a two-day resilience training program with clinical and non-clinical staff working in a public healthcare setting in Australia ($N = 160$). Resilience was measured using the RS (Wagnild & Young, 2016). After the intervention, statistically significant improvements in resilience ($r = 0.15$, $p = .02$) and wellbeing ($d =$ 0.29, $p = .001$) were found. The results of these studies supported the use of resilience training to build resilience for practicing nurses and healthcare professionals.

Pipe et al. (2012) explored the potential of a workplace stress management and resilience-building intervention for nurses and healthcare leaders. A structured educational program designed to teach stress recognition and effective coping skills was given to the participants over two workshop sessions ($N = 44$). The results of the

intervention were positive as personal and organizational stress decreased in all groups over a seven-month time period. Results indicated participants had increased awareness of positive coping strategies and enhanced well-being. This study indicated a workplace intervention was feasible and effective in promoting positive resources for resilience.

McDonald, Jackson, Wilkes, and Vickers (2013) used a collective case study method to employ an educational intervention geared at promoting personal resilience in a population of nurse midwives ($N = 14$). The intervention consisted of six resilience workshops and a mentoring program conducted over a six-month time period. Semi-structured interviews were conducted at three phases throughout the intervention. Thematic analysis revealed strengthened personal and professional resilience among the participants. Participants exhibited enhanced confidence self-awareness, assertiveness, and self-care. This suggested targeted intervention was important for the development and maintenance of personal resilience in the practicing nurse.

A final resilience educational intervention was conducted by Foureur, Besley, Burton, Yu, and Crisp (2013) with a group of nurses and midwives ($N = 40$). The study used a mixed methods design with surveys, pretest and posttest intervention, and interviews. The intervention consisted of a one-day workshop and daily meditation for eight weeks. Several surveys and focus groups were used to analyze the effects of the intervention. Study results showed better overall general health ($r = .011$, $p = .001$), a more positive orientation to life ($r = .009$, $p = .001$), and lower stress levels ($r = .004$, $p = .001$). These results supported the further development of resiliency training programs.

Resiliency training is also effective for nurses practicing in high stress environments such as intensive care, oncology, and operating rooms. Building resilience

in higher stress practice areas greatly assists the nurse to decrease stress and burnout (Lee et al., 2015; Mealer et al., 2014). A study by Mealer et al. (2014) found a positive outcome with resiliency training for nurses working in the intensive care unit ($N = 29$). In a quantitative randomized controlled intervention study, nurses participated in an intensive educational workshop based on mindfulness and stress reduction. Based on the CD-RISC (Connor & Davidson, 2003) and burnout profiles, the study results showed increased resilience scores in the treatment group ($r = .05$, $p = .001$) and significant decreases in posttraumatic stress in both groups ($r = .01$, $p = .001$) post intervention.

In a similar study by Lee et al. (2015), resilience-promoting resources proved beneficial for nurses working in the pediatric intensive care unit. This descriptive study utilized a population of leadership teams from a variety of pediatric intensive care units to create resources geared at promoting workplace resilience. The RS (Wagnild & Young, 1993) was used to measure resilience among the participants ($N = 1,964$). The resources of peer discussions and social interaction with colleagues had the most impact on improving resilience.

Potter et al. (2013) used a qualitative method to pilot a resiliency program for oncology nurses ($N = 13$). The program consisted of a five-week training session on compassion fatigue and resilience. Pretest and posttest questionnaires were administered. Results showed decreased incidence of secondary trauma stress ($r = .044$, $p = .001$). Participants also reported gaining useful strategies for managing stress at work and home.

A final study by Marais, Du Plessis, and Koen (2016) conducted a quasi-experimental study to determine the effectiveness of a sensory stimulation therapy intervention to strengthen the resilience of operating room and intensive care nurses ($N =$

52). A sensory stimulation room was created and conducted with the intervention group. Pretest and posttest survey results showed increased resiliency in the intervention group post-intervention ($p = .00$, $p = .001$). The results of these studies supported the feasibility of resiliency training programs and intervention-based resilience training for nurses practicing in high stress environments.

Based on this review of literature, it was evident that resilience is an important concept for the practicing nurse. Practicing nurses are moderately resilient (Dolan et al., 2012; Koen et al., 2011; Souza Maia et al., 2017). The psychological attributes of effective coping strategies, hope, optimism, a positive attitude, and energy are important to the concept of resilience within the practicing nurse population (Cameron & Brownie, 2010; Glass, 2009; Mealer et al., 2012; Zander et al., 2013). Resilience is essential for effective professional work practice (Glass, 2009). The practicing nurse exhibiting adequate individual resilience leads to lower levels of emotional exhaustion, burnout, cynicism, and perceived stress (Guo et al., 2017; Lanz & Bruk-Lee, 2017; Rushton et al., 2015). Resilience in the practice environment also leads to increased mental health and better coping abilities (Dehvan et al., 2018; Kemper et al., 2015; Mroz, 2015). Additionally, the research showed that implementing a variety of resiliency training programs was a feasible and effective means of increasing individual resilience and decreasing the negative effects of stress for the practicing nurse (Foureur et al., 2013; Lee et al., 2015; Magtibay & Chesak, 2017; McDonald et al., 2013; Mealer et al., 2014; Pipe et al., 2012; Potter et al., 2013). By understanding the significance of resilience in nursing practice, we can begin to understand how this concept might affect the nursing student population as well.

Resilience and the Nursing Student Population

Resilience and its application to the nursing student population has been researched in a variety of areas. The literature review explored nursing students' resilience levels and how they were developed or built. The majority of the research focused on the relationship of resilience to other variables such as well-being and burnout. Finally, few studies explored the relationship between resilience and nursing student academic success.

The literature identified that resilience is an important attribute for nursing students. Nursing students are faced with stress in their academic and personal lives. Additionally, nursing students can suffer from academic pressure, faculty and student incivility, and stress related to the clinical setting such as exposures to death, dying, and communicable disease (Hodges et al., 2005; Thomas & Revell, 2016). Resilience is linked to better overall psychological health, improved happiness and well-being, and decreased burnout (Benada & Chowdhry, 2017; Chow et al., 2018; He, Turnbull, Kirshbaum, Phillips, & Klainin-Yobas, 2018; Rios-Risquez et al., 2016). Resilience in nursing students is built over time and after exposure to the clinical setting (Lopez et al., 2018; Tambag & Can, 2018). Additionally, research showed that targeted training could affect nursing students' ability to build resilience (Skodova & Lajciakova, 2015).

Resilience in Nursing Students

A minimal amount of recent research examined the state of resilience among the nursing student population. Reyes et al. (2015a) conducted a constructivist, grounded theory, qualitative study to explore nursing students' understanding and enactment of resilience. In-depth interviews were conducted with a population of baccalaureate

nursing students from Canada ($N = 38$). Thematic analysis revealed a common process

of 'pushing through' as nursing students' understanding of resilience. Participants

reported using this process to withstand challenges in their personal and academic lives.

  Jackson (2018) explored the process of resilience with graduate level nursing

students ($N = 9$). Thematic analysis from in-depth interviews revealed a common process

of resilience as managing challenges facilitated by passion and support. A similar study

by Wahab, Mordiffi, Ang, and Lopez (2017) examined new graduate nurses'

understanding of resilience. This qualitative study used a population of new graduate

nurses from Singapore ($N = 9$). Thematic analysis from in-depth interviews revealed a

common understanding of resilience as persevering and overcoming obstacles, adapting

to new situations, and taking control of ones learning. The findings of these research

studies were consistent with the definition of nursing student resilience used for the

current study. These research studies also supported the belief that resilience is a process

that could be learned and developed overtime.

  In addition to exploring nursing students' understanding of resilience, little

research has been conducted examining resilience levels in this group. A cross-sectional

study completed by Tambag and Can (2018) evaluated resilience levels of undergraduate

students in the health sciences ($N = 659$). The study also aimed to determine factors that

affected resilience in this population. The study found average resilience levels for this

group were not satisfactory (183.09) considering the highest score for the scale was

250.00. Higher levels of resilience were seen with final year students. The study found

resilience was influenced by sociodemographic features, educational departments,

classes, substance usage, and parental attitudes (Tambag & Can, 2018). The study results

supported the belief that as students moved up throughout education, resilience developed over time.

Building Resilience in Nursing Students

Building resilience in nursing students has been minimally researched. Based on what was available in the literature, it appeared there were ways to influence levels of resilience in the nursing student population. Pines et al. (2014) conducted a quasi-experimental, pretest-posttest study with a group of undergraduate nursing students ($N = 60$). The intervention in this study utilized didactic and simulated training for learning resiliency skills, enhancing perceptions of empowerment, and knowledge of conflict management. The findings of this study showed non-significant changes in empowerment and stress resiliency after training for the students.

A similar study by Skodova and Lajciakova (2015) used a quasi-experimental, pretest-posttest design to examine the effect of psychosocial training on improving coping. Using a population of university students in the health professions ($N = 97$), psychosocial training that focused on improving social interaction and communication was conducted. This study found resiliency training provided a significant decrease in burnout syndrome, an increased sense of coherence, and increased resilience levels. This study suggested targeted training could significantly increase resilience in nursing students.

In addition to training programs, research showed other factors influenced the development of resilience in nursing students. Lopez et al. (2018) conducted a qualitative study examining the impact of clinical placement and its relationship to building resilience. Audio-recorded interviews were conducted using a group of junior

and senior level nursing students from Singapore (*N* = 126). Based on thematic analysis, the study found nursing students felt stressed when first placed in clinical. Most students coped with this challenge by talking with peers. Finally, after accumulating experiences in the clinical setting, students were able to adapt. This study suggested resilience was buildt over time and after experience in the clinical setting.

A study by Sigalit, Sivia, and Michal (2017) explored the association between students' personal and group resilience to their use of social networking platforms. This study used second-year nursing students from Israeli (*N* = 149). Personal resilience was measured using the CD-RISC (Connor & Davidson, 2003). Significant positive correlations were found between social media use and both individual (*r* = .38, *p* < .05) and group resilience (*r* = .11, *p* < .39). This finding suggested social media might encourage social ties, which could enhance the development of resilience in nursing students.

**Effects of Resilience in the Nursing
Student Population**

The bulk of existing research showed resilience has a large impact on psychological development. Resilience was linked to better psychological well-being in multiple studies (Chow et al., 2018; He et al., 2018; Smith & Yang, 2017). In addition, significant relationships between resilience and burnout, mindfulness, happiness, and self-efficacy were identified (Benada & Chowdhry, 2017; Rios-Risquez et al., 2016). Fewer studies explore the effect of resilience to academic success.

Resilience psychological effects. Resilience in the nursing student population is heavily linked to improved psychological well-being. A cross-sectional, descriptive, predictive study by He et al. (2018) examined predictors of psychological well-being

among nursing students in Australia ($N = 538$). Using the CD-RISC (Connor &

Davidson, 2003) to measure resilience, the study found resilience was the strongest

predictor of psychological well-being ($B = 0.44$, $p < .001$). Additionally, students with

higher levels of resilience showed greater overall psychological well-being.

A study by Chow et al. (2018) had similar findings. In this cross-sectional,

descriptive, correlational study, a population of university nursing students ($N = 678$) was

surveyed using the CD-RISC (Connor & Davidson, 2003). This study found a medium

positive correlation between resilience and perceived well-being ($r = .378$, $p = .000$).

Resilience was also a significant predictor of perceived well-being ($B = 0.259$, $p < .001$).

A third study by Smith and Yang (2017) also showed correlations between resilience and

psychological well-being. This study used a cross-sectional design with nursing students

from China ($N = 1,538$). Results from the RS (Wagnild & Young, 1993) scale showed

resilience was positively correlated to overall psychological well-being.

Zhao, Guo, Suhonen, and Leino-Kilpi (2016) also examined the moderating

effects of resilience to subjective well-being. In this cross-sectional study, a population

of nursing students ($n = 426$) and medical students ($n = 336$) from China were used. The

RS (Wagnild & Young, 1993) was used to measure resilience in this study. The study

found lower levels of subjective well-being in first- and second-year nursing and medical

students. This might suggest the process of adaption over time. Study results indicated

resilience was a strong predictor of subjective well-being in all groups.

A study by Rios-Risquez et al. (2016) identified a positive relationship between

resilience and psychological health. This study used a cross-sectional design with

nursing students from Spain ($N = 116$). The CD-RISC (Connor & Davidson, 2003) was

used to measure resilience in this study as well as other measures. The results of this study showed a significant negative relationship between resilience and emotional exhaustion ($r = -0.55$, $p < .01$). Additionally, a significant positive relationship was found between resilience and psychological health. Resilience was associated with lower levels of psychological discomfort and burnout; therefore, higher scores of resilience predicted better perceived psychological health.

A final study by Pines et al. (2014) examined the relationship between stress resiliency and psychological empowerment among nursing students. This correlational study used a population of baccalaureate nursing students and a number of surveys to collect data ($N = 166$). Descriptive and inferential correlational statistics showed a positive correlation between stress resiliency and empowerment. Students with high scores for empowerment also had high scores for stress resiliency. This study furthered the argument that resiliency is important for psychological empowerment and well-being.

In addition to improved psychological well-being, resilience has also been linked to increased happiness, mindfulness, self-efficacy, positive coping mechanisms, and decreased burnout within the nursing student population. A correlational study conducted by Benada and Chowdhry (2017) examined the relationship between resilience and positive psychological outcomes such as happiness and mindfulness. This study used nursing students from India ($N = 70$). The RS (Wagnild & Young, 1993) was used to measure resilience level in this study. Based on the findings, positive relationships among happiness, resilience, and mindfulness were identified.

A similar study by Mathad, Pradhan, and Rajesh (2017) employed a descriptive, correlational study using a population of nursing students from India ($N = 194$). This

study attempted to identify correlates and predictors of resilience among this population.

Results from the CD-RISC (Connor & Davidson, 2003) showed resilience had a

significant positive correlation to mindfulness ($r = .471$, $p < .01$) and empathy ($r = .226$, $p < .01$) in nursing students. Results also showed a significant negative correlation

between resilience and repeated negative thinking ($r = -.203$, $p < .01$). Similar findings

were found in a study by Rees et al. (2016). In this cross-sectional study, a population of

nursing students from Australia and Canada were used. Results from the CD-RISC

showed positive relationships among resilience and mindfulness ($r = .627$, $p < .01$), self-

efficacy ($r = .666$, $p < .01$), and adaptive coping ($r = .131$, $p < .01$). Additionally,

burnout had a significant negative relationship to resilience ($r = -.486$, $p < .01$).

Skodova and Banovcinova (2017) also found a significant negative relationship

between resilience and maladaptive coping strategies. In this correlational study, the

researchers studied a population of baccalaureate nursing students ($N = 150$). Results

from the study showed participants with fewer resources for positive coping strategies

had lower resilience scores. Li et al. (2015) also had similar findings. This cross-

sectional study used a population of nursing students from China ($N = 202$). Survey

results reported that students with moderate resilience levels had greater ability for

posttraumatic growth/coping ability. These studies suggested resilience is important to

mindfulness, self-efficacy, coping, and a reduction of negative thinking in the nursing

student population.

These findings were very similar to that of Chamberlain et al. (2016) who used

third-year nursing students from Australia to examine resilience ($N = 240$). Results from

the CD-RISC (Connor & Davidson, 2003) showed significant negative relationships

between resilience and compassion fatigue ($r = -.4724$, $p < .001$) and resilience and burnout ($r = -.0568$, $p < .001$). This study highlighted the importance of developing resilience for better overall psychological health for the nursing student population.

Resilience and communication. In addition to psychological effects, resilience has been known to influence clinical communication ability. Kong et al. (2016) conducted a cross-sectional study to examine the association between resilience and clinical communication ability among practice nursing students in China ($N = 377$). Results from the CD-RISC (Connor & Davidson, 2003) showed a significant positive relationship between resilience and clinical communication ability ($p < .01$).

Resilience effects on academic success. Nursing students exhibit stress that could affect their overall success and influence the achievement of their academic goals (Reyes et al., 2015b). It was hypothesized that during the transition to higher education, psychological resilience was needed to achieve academic success (Allan et al., 2014). In an effort to impact nursing student attrition, researchers have begun to explore the relationship between resilience and academic success.

Crombie, Brindley, Harris, Marks-Maran, and Thompson (2013) employed an ethnographic case study to explore the factors influencing attrition in nursing students in an associate degree program. This study used two groups of nursing students from England ($N = 200$). Thematic analysis from focus group interviews revealed fostering resilience was found to impact retention in this population. Family and peer support were also identified as important to fostering resilience. This study indicated resilience did play a part in the retention of nursing students.

A study by Hwang and Shin (2018) employed a descriptive, cross-sectional study to determine characteristics of nursing students with high academic resilience. This study used a population of junior and senior level nursing students from South Korea ($N =$ 254). Academic resilience, clinical practice stress, clinical practice satisfaction, and social-affective capability were assessed with a variety of questionnaires. Academic resilience is defined as students' ability to overcome academic pressure or stress (Mwangi, Okatcha, Kinai, & Ireri, 2015). Although it differs slightly from individual resilience, the common theme of "overcoming stress" remained consistent with the definition of individual resilience used in the present study. The results of the study showed students with higher academic resilience were more likely to continue in their studies. Additionally, students with higher resilience had a lower proportion of respondents with a grade point average below 3.0. This study suggested academic resilience was linked to academic achievement.

To date, only four studies have explicitly examined the relationship between resilience and nursing student academic success. A descriptive, correlational study by Beauvais et al. (2014) was conducted to describe the relationship among emotional intelligence, psychological empowerment, resilience, and spiritual well-being to academic success. This study was limited to a population of undergraduate and graduate nursing students from a single private Catholic nursing institution ($N = 124$). This study did not include freshman-level nursing students. The RS (Wagnild & Young, 1993) was used to measure resilience levels in this study. Based on the results, a weak positive correlation was found between resilience and nursing student academic success ($r(121) =$ 0.194, $p = .007$). However, academic success was measured using cumulative GPA,

which might not be indicative of individual course performance. To better understand the influence of resilience on student academic success, the relationship between resilience and nursing course performance needs to be studied further. Additionally, the relationship between these variables needs to be conducted with the freshman nursing student population as this group has the highest rates of attrition. The study's results concluded that resilience might play an important role in persistence through the challenges of nursing education (Beauvais et al., 2014).

A longitudinal descriptive correlational study by Pitt et al. (2012) also showed a weak positive correlation between the personality qualities/traits of resilience and academic performance (range was 0.179 to 0.259). This study was conducted at a single nursing institution in Australia with preregistration nursing students ($N = 138$). Academic performance was also measured using cumulative GPA; however, course aggregate marks were also considered. The tool used to measure personality did not explicitly measure resilience but qualities of emotional stability; therefore, further clarification is needed with resilience specifically. A further limitation of this study was the large attrition rate of the sample. Over 35% of the sample withdrew; therefore, interpretation of the results necessitates caution.

In a study by Taylor and Reyes (2012), a weak positive relationship between nursing student test scores and resilience was identified ($r = 0.59$, $p < .01$). This quasi-experimental, pretest/posttest study sought to explore self-efficacy and resilience among baccalaureate nursing students over one semester of study. The sample included a population of sophomore through senior level nursing students ($N = 136$) from a single institution. The RS (Wagnild & Young, 1993) was used to measure resilience in this

study. The results of the study showed resilience might play a role in persistence through the challenges of nursing study; however, due to a large decrease in the number of participants in the second semester ($n = 6$), analysis and interpretation of the results require caution.

A final study by Van Hoek et al. (2019) was the only research study that found a significant positive correlation between resilience and academic success. This cross-sectional study utilized a population of nursing students ($N = 554$) from six different nursing colleges in Belgium. The VK+ Resilience scale (cited in Van Hoek et al., 2019) was used to measure resilience in this study. This tool is a Dutch resilience scale that has not been tested nor used in the United States. Reliability coefficients for this tool were not provided by the researchers. The findings of this study showed resilience was the only factor that significantly affected academic success. Every time resilience increased by one unit, the success rate increased by 3.5% ($p < .003, p < .05$). However, this study was limited due to the fact that at the time of data collection, a large proportion of nursing students had dropped their current nursing course, indicating this population was not captured. Additionally, a Belgian sample might not represent nursing student groups in the United States.

Based on this review of literature, it was evident that resilience is a substantial attribute for the nursing student population. Evidence suggested nursing student resilience is characterized as a process of pushing through or overcoming that could be learned and developed over time (Jackson, 2018; Reyes et al., 2015b; Tambag & Can, 2018; Wahab et al., 2017). Resiliency training is beneficial in building positive coping mechanisms for the nursing student population (Skodova & Lajciakova, 2015).

Additionally, clinical experience and social networking with peers are known factors that influence resilience among the nursing student population (Lopez et al., 2018; Sigalit et al., 2017). Compelling evidence showed resilience improved overall psychological well-being in the student nurse population (Chow et al., 2018; He et al., 2018; Pines et al., 2014; Rios-Risquez et al., 2016; Zhao et al., 2016). Adequate levels of resilience exhibited in the student nurse increased happiness, mindfulness, self-efficacy, positive coping mechanisms, and decreased burnout (Benada & Chowdhry, 2017; Chamberlain et al., 2016; Li et al., 2015; Mathad et al., 2017; Rees et al., 2016; Rios-Risquez et al., 2016; Skodova & Banovcinova, 2017).

The research indicated resilience might significantly affect nursing students' persistence through their academic program (Hwang & Shin, 2018). Additional research suggested resilience has a positive impact on nursing student academic success. Although prior research demonstrated that resilience might influence nursing students' academic success, conclusive evidence was lacking. The studies differed in age of participants, number of institutions used for sample collection, time within the nursing program and when data were collected, instrumentation, measures of academic success, and geographic location. Any of these factors could contribute to the need for further research. However, the most significant indication for further research was the fact that there was a paucity of research on the relationship of resilience to academic success within the first-year baccalaureate education. This concerning attrition is highest in beginning level nursing courses.

Summary

Within this chapter, literature pertinent to the research of individual resilience was presented and prominent themes for each subsection were identified. Resilience is a complex and multifaceted phenomenon. Resilience has been defined as the ability to adapt to adversity or rebound from adverse situations (Simmons & Yoder, 2013). Nursing student resilience was further defined as "an individualized process of development that occurs through the use of personal protective factors to successfully navigate perceived stress and adversities" (Stephens, 2013, p. 130). Resilience is both a trait and a process that is influenced by personal characteristics, social resources, and protective factors (Caldeira & Timmins, 2016; Scoloveno, 2016).

The literature provided compelling evidence of beneficial psychological consequences of resilience to both the practicing nurse and nursing student populations. In both populations, resilience enhanced overall psychological well-being and decreased stress and burnout (Benada & Chowdhry, 2017; Chow et al., 2018; Dehvan et al., 2018; Guo et al., 2017; He et al., 2018; Rios-Risquez et al., 2016; Rushton et al., 2015). The literature also indicated that building or enhancing resilience was possible. Targeted intervention in resiliency training has proved effective in both the practicing nurse and nursing student populations (Lee et al., 2015; Magtibay & Chesak, 2017; Mealer et al., 2014; Skodova & Lajciakova, 2015).

Although the literature has shown that resilience is a beneficial variable to nursing student academic success, research in the last decade about resilience and the nursing student population in the United States is sparse. The small body of existing literature provided a sparse basis for the understanding of the significance of resilience within the

nursing student population. Therefore, understanding resilience in nursing students is still in its infancy (Jeffreys, 2015; Thomas & Revell, 2016). Despite what is understood about resilience and nursing student academic success, gaps persist in the literature regarding resilience and the population of freshman-level nursing students. Nursing education has not sufficiently investigated the effects of resilience on nursing student academic success. In light of the gaps identified in the literature, more research is needed to clarify and confirm the understanding of the effects of resilience on nursing student academic success.

CHAPTER III

METHODOLOGY

The review of literature revealed a lack of consistent research results related to the effects of resilience on nursing student academic success. In an effort to fill this gap, the primary purpose of this study was to examine the relationship between resilience and academic success in baccalaureate nursing students. Another substantial gap identified in the literature was the lack of research with the freshman nursing student population, when the highest number of students drop out. In an effort to fill this gap, recruitment of the freshman student population was a priority for this study. The literature also revealed research inconsistencies in age of participants, number of institutions used for sample collection, time within the nursing program and when data were collected, instrumentation, measures of academic success, and geographic location. This study attempted to address each of these via consistent methodology. In this chapter, the methodology used to carry out the study is presented. Included are descriptions of the research design, setting, sample, procedures, instruments, data analysis, and ethical considerations.

Research Design

A non-experimental, descriptive-correlational research study approach was used to conduct this investigation. A descriptive-correlational design is appropriate for the purpose of examining the relationship among variables (Grove, Burns, & Gray, 2013).

For this study, the research design of correlation was chosen to answer the following

research question:

> Q1   Is there a relationship between individual resilience (independent variable) and academic success (dependent variable) in baccalaureate nursing students?

The variables included in this study are presented in Figure 3.
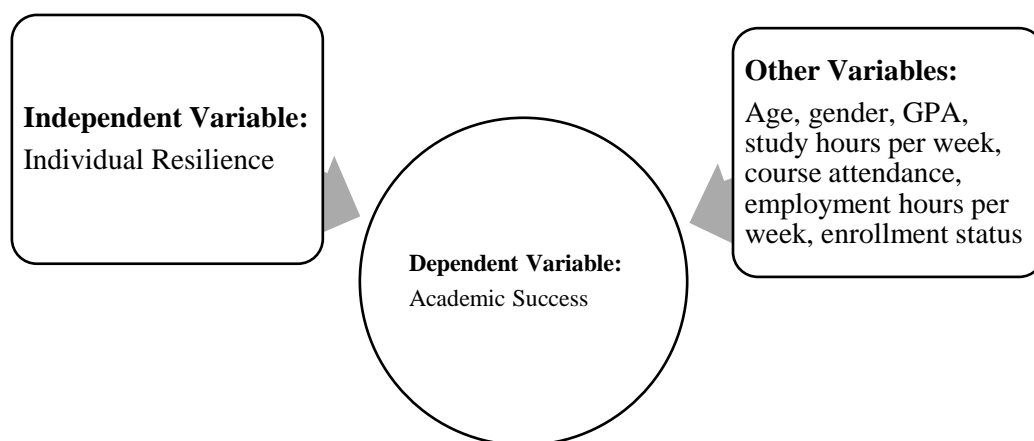
Figure 3. Study variables.

Student academic success was measured by nursing course exam average

represented by percentage. Individual resilience was measured with the Wagnild and

Young (1993) 14-Item Resilience Scale (RS-14; see Appendix C). The other variables

(age, gender, GPA, study hours per week, course attendance, employment hours per

week, and enrollment status) were not manipulated in this study. These other variables

were selected based on evidence from the NURS model (Jeffreys, 2015) that suggested

academic factors, student profile characteristics, professional integration factors, and

environmental factors greatly influenced retention in undergraduate nursing education.

Therefore, the most significant variables from the NURS model were selected to control

in the present study. The demographic variables considered in this study included age, gender, race/ethnicity, marital status, college enrollment status, and current nursing course or level (freshman-senior level).

Setting

The setting for this study involved two nursing institutions in the Midwest region of the United States. Each institution admits an average of 50 to 80 nursing students each year. These institutions were selected to ensure students were representative of the desired sample with varying demographic backgrounds that reflected the nursing student population as a whole. After initial agreement, one institution declined participation due to lack of time for data collection; therefore, all research subjects were from a single institution. The single institution included in the study is a Methodist affiliated nursing and allied health college with approximately 600 baccalaureate nursing students. Data collection for the entire sample took place in a classroom setting following a scheduled didactic period.

Sample

This study used a nonprobability convenience sampling plan to obtain participants. The target population for this research study included nursing students currently enrolled in a baccalaureate nursing program. With the aim of addressing student academic success in baccalaureate nursing students, this group of students readily reflected the desired research population. All students currently enrolled in an accredited baccalaureate nursing program at the two selected nursing institutions in the Midwest region of the Unites States were eligible for the study. Any unwilling student or those who do not completely fill out the survey were excluded. All students within the

baccalaureate nursing program from both nursing institutions were given the opportunity to participate in the study. The final convenience sample included participants from a single private nursing institution. The sample primarily consisted of female nursing students. The students ranged from freshman to senior level and were currently enrolled in a baccalaureate nursing course.

Procedures

All data were collected by the researcher from September to October 2019. This study used a survey method as a data collection technique. Initial paper surveys were distributed to eligible participants directly and in person. Eligible participants were approached in person during their fall 2019 nursing theory (didactic) course. Data collection times were prearranged with the course coordinator of eight different medical-surgical nursing courses from one nursing institution in the Midwest region of the United States. For this study, participants from two of each freshman, sophomore, junior, and senior level nursing courses were included. All individual students present in each course were invited to participate in the study. Each nursing course contained an average of 30 to 80 students, which provided a potential pool of 360 to 960 students from which to sample.

A consent form explaining the purpose, nature and requirements for the study was distributed to all individuals present. This information was verbally reviewed with the individuals. The individuals were also informed that no identifying information would be included on the survey and the risks for participation were minimal; therefore, they were encouraged to respond to the survey as accurately as possible (see Appendix D for study consent and Appendix E for study recruiting script). It was also explained that

completion of the survey represented consent for the study. Individuals were then instructed to complete the survey if they wished to participate in the study. Time was given for individuals to ask questions. Once all questions are answered, surveys were distributed to all present. To avoid coercion, instructions were given by the researcher. After questions were answered, the researcher left the room. Surveys were then distributed and collected by the course nursing instructor and returned to the researcher in a sealed envelope. The survey consisted of a two-sided document. On one side, all demographic variables were included in 11 questions (see Appendix F). The other side contained the Wagnild and Young (1993) RS-14 (see Appendix C.

The surveys were completed via individual self-report. To assure accuracy of the data, individuals could verify current nursing course exam average by reviewing the online ongoing gradebook provided by their current nursing course. No calculation for this was necessary as their exam average was posted for them in the online gradebook. They were also allowed to verify their current GPA by reviewing their online student profile provided by the institution. Those willing to participate returned completed surveys when finished.

Instruments

Two instruments were used in this study. The RS-14 (Wagnild & Young, 1993) was used to measure individual resilience. A demographic data sheet developed by the primary investigator was used to gather demographic and other variable data.

Resilience Scale

Wagnild and Young's (1993) RS-14 was used to measure individual resilience of the study participants. The purpose of this instrument was to measure the degree of individual resilience (Wagnild & Young, 1993). This tool was chosen as it directly measured the variable of interest in this study. The RS-14 is one of the most frequently used scales to measure individual resilience. The RS-14 has been successfully used in several published research studies using nursing and the nursing student population (Beauvais et al., 2014; Benada & Chowdhry, 2017; Smith & Yang, 2017; Taylor & Reyes, 2012). Because of its direct measure of resilience and its ease of use within the nursing student population, it was chosen as a desirable tool for the current study. Permission to use the scale was obtained after a licensure purchase was made from the authors' website (see Appendix G for permission to use the RS-14).

Wagnild and Young's (1993) Resilience Scale was originally developed to identify those who were resilient, had the capacity for resilience, and could also provide empirical support for the relationships between resilience and psychosocial adaption. The initial scale was developed and tested from a qualitative study of 24 women who adapted successfully after a major life event. Five components were identified from the participants' self-reported narratives: equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness (Wagnild & Young, 1993). These components were then analyzed with a review of the existing literature. From there, the authors developed statements that reflected the five components of resilience, which could then be scored on a 7-point Likert scale ranging from *disagree* to *agree*. Possible scores

calculated from this scale ranged from 25 to 175 with higher scores indicating higher resilience (Wagnild & Young, 1993).

Since its development, a few modifications have been made to the RS. According to Wagnild and Young (1993), the original scale used 50 questions taken from verbatim statements from participants in their original 1987 research study. The scale was reduced to only 25 questions, which reflected the five characteristics of resilience, and then presented to the public in 1988 (Wagnild & Young, 1993). The scale was again modified to create a condensed version with only 14 questions. There are currently two authorized versions of the scale: the 25-item Resilience Scale (RS) and the condensed 14-item Resilience Scale (RS-14). The RS-14 was used for this study.

The RS-14 (Wagnild & Young, 1993) uses a questionnaire method to measure the variable of individual resilience. The scale contains 14 seven-point Likert rating scale items ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) consisting of five themes of resilience: self-reliance, meaning, equanimity, perseverance, and existential aloneness (Wagnild & Young, 1993). These themes were representative of the dimensions of the construct of resilience and were not subscales of the survey. The composite score for the independent variable of resilience was created by adding up all the responses to the 14 questions of the RS-14. The sum indicated the total individual resilience score. Possible scores ranged from 14 to 98 with the higher scores indicating higher resilience. Totaled scores could range from 14 to 56 (very low), 57 to 64 (low), 65 to 73 (on the low end), 74 to 81 (moderate), 82 to 90 (moderately high), and 91 to 98 (high; Wagnild, 2016). For this study, the total resilience score was represented using continuous data.

The scores of the instrument were moderately precise. Repeated use of the RS-14 (Wagnild & Young, 1993) in research studies has yielded consistent results and shows high correlations with resilience in a variety of populations. In previous research, quantitative statistical analysis procedures including the t-test, Chi square test, Mann-Whitney test, linear regression model, correlation coefficients, and path coefficient analysis have been completed to analyze data from this instrument.

Psychometric evaluation research was completed using the original and both of the modified instruments. An original pilot study was used to develop and test the psychometric properties of the instrument. Wagnild and Young (1993) performed a pilot study to test for readability, clarity of items, initial reliability, and specificity with 39 undergraduate nursing students. The internal consistency reliability coefficient from this study was .89 (Wagnild & Young, 1993). In addition to this pilot, five other studies were used to test instrument reliability with various populations. Established and valid measures of constructs integral to the theoretical definition of resilience, including self-esteem and perceived stress, were positively and significantly correlated to the RS, which supported construct validity. Correlations from these studies ranged from .67 to .84 (p < .01), which is considered satisfactory (Wagnild & Young, 1993). A measure of adaption outcomes was correlated with the RS, which was similar to other studies and also supported concurrent validity (Wagnild & Young, 1993).

An additional study was also completed by Wagnild and Young (1993) to further explore the psychometric properties using a larger sample. In this study, a random sample of 810 individuals completed the RS in addition to the Live Satisfaction Index, Philadelphia Geriatric Center Morale Scale, Beck Depression Inventory, and physical

health rating on a 5-point scale. The descriptive statistical scores fell within the mid-range for performance for reliability measures and supported internal consistency reliability. Correlational analyses and factor analyses were also conducted to examine the RS. The reliability in this study was high with a coefficient alpha of .91 as well as item-to-total correlations ranging from .37 to .75, all significant at $p < .001$ (Wagnild & Young, 1993). Additionally, initial factor analysis indicated the RS had two major factors named "acceptance of self and life" and "personal competence" (Wagnild & Young, 1993), both of which reflected the theoretical definition of resilience. A correlation between the factor scores and total RS score of .99 at $p < .001$ was identified with the analysis. Concurrent validity was evaluated by correlating the RS with theoretically relevant constructs and all were significant in the expected direction at $p < .001$ (Wagnild & Young, 1993).

Use of this instrument in other research has yielded consistent, reliable alpha coefficients ranging from 0.84 to 0.94 (Wagnild & Young, 1993). Moreover, in several published studies, the Cronbach's alpha coefficient for the RS-14 ranged from 0.85 to 0.94 and the internal consistency rating ranged from 0.91 to 0.94 (Abiola & Udofia, 2011; Wagnild, 2016). Various researchers have indicated the RS had a strong reliability coefficient for the entire scale (Oladipo & Idemudia, 2015). Wagnild and Young (1993) also noted that the empirical range for this instrument has not approached the theoretical range. Additionally, more research regarding the construct validity through discriminant and convergent approaches might be warranted (Wagnild & Young, 1993).

Based on the psychometric analyses completed with this instrument, it was clear the RS did measure what it claimed to measure. Overall, the internal consistency of the

RS was adequately demonstrated in a number of studies with ranges from .76 to .91 and test-retest correlations with ranges from .67 to .84 (p < .01) (Wagnild & Young, 1993). Moreover, the majority of existing research using the instrument stated the tool was easy to use, appropriate for the study population, and successful in identifying resilience. No challenges of using the instrument were identified from previous researchers' perspectives. Based on the above results, it was evident this was an appropriate instrument to measure individual resilience.

Critique of the RS-14 (Wagnild & Young, 1993) indicated many strengths of the instrument including consistent internal reliability and concurrent validity. Positive correlations were noted in a variety of studies that indicated reliable psychometric properties. Additional strengths included the ease of administration, scoring, and data analysis. The instrument was very easy to use and simple to interpret. The instrument was easily completed by the participant and no additional data collectors were needed. Results from the instrument were already in numerical form and were readily transcribed into statistical analysis packages. A final strength was the wide use of the instrument (Windle, Bennett, & Noyes, 2011). According to Windle et al. (2011), the target audience for the instrument was those age 13 and older with an eighth-grade reading level. Therefore, the RS-14 could be used in a variety of populations from adolescent to older adult and was appropriate for a diverse sample population.

There were a few weaknesses of the instrument. The five themes identified by the Windle et al. (2011) including equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness were claimed to have been validated with research literature; however, this was never fully articulated by Windle et al. In some studies, factor analysis

did not yield five themes, which would suggest potential cultural variances in the understanding and perceptions of some items of the scale. Therefore, revalidation needs to be completed if the scale is to be used in a population other than the original setting in which the scale was developed (Oladipo & Idemudia, 2015). Additionally, the scale items were derived from verbatim statements from interviews based on general definitions of resilience; however, no formal definitions of resilience are provided. Therefore, it was unclear how comprehensive the individual items were (Windle et al., 2011).

Overall, the instrument appeared to be well constructed, was easy to score, and simple to interpret. The instrument seemed very appropriate and acceptable to study subjects from a variety of populations and backgrounds. The questionnaire was simple to read and easy to complete. The respondent burden was low as the questionnaire could be completed in 20 minutes or less. The instrument seemed to be very easy to administer, process, and score with minimal effort or time commitment from the researcher. It was easy to administer and interpret for a variety of populations and therefore was deemed a desirable tool for the current study. Because the instrument was piloted with the nursing student population and its favorable critique as stated above, it was a desirable instrument for the current research study.

Demographic Data Sheet

The demographic data sheet was developed by the researcher to address the dependent and control variables of the study. The demographic data survey consisted of 11 questions with variables adapted directly from the NURS (Jeffreys, 2015) model. The survey included both demographic questions and close-ended questions. Demographic

questions included age in years, race/ethnicity, gender, marital status, employment status, enrollment status, and current nursing course level (freshman to senior level). The close-ended questions included current cumulative GPA based on 4.0 scale, current nursing course exam average in percentage, average number of work hours per week, average number of study hours per week, and current nursing course attendance description ("I've attended all class sessions," "I've missed 1-2 class sessions," "I've missed more than 2 class sessions").

Data Analysis

Data Analysis Procedures

The data were analyzed in three stages. The first stage was analysis and computation of the descriptive statistics and the distribution of data for each variable. The second stage of the data analysis was to describe the association of each variable. The third stage of the data analysis was an exploration of the associations among study variables guided by the theoretical frameworks that guided this study. For clarity and as appropriate, each of the major data analysis sections concludes with a summary table. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) computer program (IBM) version 26. A Type I error of 5% was used for all tests of statistical significance.

Completed surveys were reviewed and the total individual resilience score was added for each individual survey by hand. To ensure accuracy of data, each individual score was double checked with a calculator. The data were collected and transcribed into a Microsoft Excel spreadsheet, which was then uploaded into SPSS for analysis.

Data were reviewed and assessed for correct entries, outliers, and missing data. Data for all variables were analyzed and examined using frequency and descriptive statistics to evaluate the frequencies and distributions. The demographic data were examined to provide a thorough description of the sample in order to generalize the findings. Range, mean, median, mode, and standard deviations were assessed for each variable. Internal consistency reliability coefficients for the RS-14 (Wagnild & Young, 1993) were measured with Cronbach's alpha and principle component factor analysis. Finally, a correlational analysis was completed. The primary goals of the analysis were to identify trends and associations among the variables through intra- and inter-subject comparisons; therefore, associations between the variables were completed with correlational analysis.

Data Security

Electronic data were stored on an encrypted flash drive on a password-protected computer to which only the researcher had access. The data were compiled using a secure, password-protected Microsoft-Excel spreadsheet. No identifying information was used in any form of the data; thus, anonymity of the individuals was preserved. The written documents, including the completed surveys, were kept in a locked file cabinet in the researcher's office and destroyed after the research was complete.

Management of Subject Attrition

Subject attrition was not a concern as the survey was administered one time only. Participants were selected and surveyed during a single moment in time; therefore, subject attrition was not possible in this research study.

Missing Data

Surveys with missing data were not used for data analysis. Thirteen surveys were found to have missing data on either the demographic data sheet or the resilience scale and were eliminated and not used for data analysis.

Ethical Considerations

Institutional Review Board approvals were obtained from the University of Northern Colorado, Nebraska Methodist College, and College of Saint Mary's prior to data collection (see Appendices H, I, and J). Additionally, guidelines and ethical principles outlined by the Collaborative Institutional Training Initiative program were followed (see Appendix K for the program completion certificate). No foreseeable risks were associated with this research project; however, when asked to reflect about personal resilience, the participant might have exhibited feelings of uneasiness or anxiety. The subjects had access to mental health services through college campus health if needed following completion of the survey. Completion of the survey constituted as informed consent so no identifiable information was included in the survey. No other identifying information was collected; confidentiality was maintained by numerically coding the completed surveys and destruction of data once the research was completed.

Summary

This quantitative study used a descriptive-correlational design to examine the relationship between individual resilience and academic success in baccalaureate nursing students. A survey method was used for data collection. This study used a nonprobability convenience sampling plan to obtain participants. One nursing institution from the Midwest was used for the sample ($N = 300$). Data analysis techniques included

descriptive statistics of the research sample, internal consistency reliability for the survey tool, and, finally, correlation analysis to answer the research question. This chapter explained the methods used in this quantitative study of resilience and its relationship to academic success amongst baccalaureate nursing students. The next chapter presents the results obtained with these methods.

CHAPTER IV

RESULTS

Overview

In this descriptive-correlational research study, a survey was used to examine the relationship between individual resilience and academic success among baccalaureate nursing students. In addition, relationships between all study variables were also explored. Correlational analysis was used to determine significant relationships among the variables of academic success, resilience, age, gender, race/ethnicity, marital status, current nursing course level, cumulative GPA, average study hours per week, course attendance, employment status, average work hours per week, and enrollment status. This chapter presents the results of those data analyses. First, descriptive statistics for all demographic and variable data are provided. Next, internal consistency reliability coefficients for the RS-14 tool (Wagnild & Young, 1993) are provided with Cronbach's alpha and principle component factor analysis. Finally, the primary research question addressing the association between the independent and dependent variable is presented with correlational analysis. Additionally, correlational analysis between all variables is provided.

Descriptive Statistics

A total of 333 individuals were invited to participate in the study. Of the 333 individuals invited to participate in the study, a total of 313 completed the survey for a survey response rate of 93.9%. Thirteen surveys had missing data on either the

demographic data sheet or resilience scale and were eliminated. After the elimination of surveys with missing data, the final total sample included 300 participants.

The sample included 54 (18%) freshman, 86 (28.7%) sophomore, 88 (29.3%) junior, and 72 (24%) senior level nursing students from seven different nursing courses. From the total sample ($n = 300$), 277 (92.3%) were female, 19 (6.3%) were male, and 4 (1.3%) were neutral for gender. The participants were comprised of 257 (85.7%) Caucasian, 18 (6%) Latino, 12 (4%) African American, 10 (3.3%) Asian/Pacific Islander, and 3 (1%) other for race/ethnicity. Participants were on average 24.39 ($SD = 5.261$) years of age and ranged from 18 to 48 years of age. From the sample ($n = 300$), 254 (84.7%) of the participants were single and 46 (15.3%) were married.

Almost all participants were employed. The majority of the participants worked part-time ($n = 165$, 55%). Fewer of the participants worked full-time ($n = 36$, 12%) and casually ($n = 73$, 24.3%). Very few participants were not employed at all ($n = 26$, 8.7%). Of the participants who worked, the average number of hours worked per week was 16.52 ($SD = 10.062$) and ranged from 4 to 50 hours per week. Frequencies and percentages for participants' demographics are presented in Table 1.

Table 1

Participants' Demographics

Variable	n	%
Gender		
Male	19	6.3
Female	277	92.3
Neutral	4	1.3
Race/Ethnicity		
Caucasian	257	85.7
African American	12	4.0
Asian/Pacific Islander	10	3.3
Latino	18	6.0
Other	3	1.0
Marital Status		
Single	254	84.7
Married	46	15.3
Nursing Course Level		
Freshman	54	18.0
Sophomore	86	26.7
Junior	88	29.3
Senior	72	24.0
Enrollment Status		
Full-time	36	12.0
Part-time	165	55.0
Casual	73	24.3
Not employed	26	8.7
Employment Status		
Full-time	255	85.0
Part-time	45	15.0
Course Attendance		
Attended all class sessions	220	73.3
Missed 1-2 class sessions	77	25.7
Missed > 2 class sessions	3	1.0

$N = 300$

The majority of the participants were enrolled full-time ($n = 255$, 85%) and few

were enrolled part-time ($n = 45$, 15%). Participants' cumulative GPAs ranged from 2.5 to

4.0 based on a 4.0 scale. The average cumulative GPA was 3.367 ($SD = 0.3150$). A

majority of all participants attended all nursing course sessions ($n = 220$, 73.3%). Fewer

participants missed one to two class sessions ($n = 77$, 25.7%), and very few missed more

than two class sessions ($n = 3$, 1%). The average number of study hours per week was

13.56 hours and ranged from 1 to 77 ($SD = 10.583$) hours per week. Descriptive statistics

for continuous variables are presented in Table 2.

Table 2

Descriptive Statistics for Continuing Demographic Variables

Variable	Range	*M (SD)*	Median
Age in years	18-48	24.39 (5.261)	23
GPA	2.5-4.0	3.367 (0.3150)	3.4
Average Study Hours/Week	1-77	13.56 (10.583)	10
Average Work Hours/Week	0-50	16.52 (10.062)	15.5
Nursing Course Exam Average	56-98	81.462 (7.0926)	81.250

Note. M = Mean. *SD* = Standard Deviation. *N* = 300

To answer the research question, the independent variable of total individual

resilience and the dependent variable of academic success were collected. Student

academic success was measured by the nursing course exam average in percentage with

the higher percentage indicating higher academic success. From the sample ($N = 300$),

the mean nursing course exam average was 81.462% and ranged from 56% to 98% ($SD =$

7.0926). The total individual resilience was measured with the RS-14. Possible ranges

for total individual resilience included 14 to 56 (very low), 57 to 64 (low), 65 to 73 (on

the low end), 74 to 81 (moderate), 82 to 90 (moderately high), and 91 to 98 (high;

Wagnild, 2016). From the total sample ($N = 300$), the average total individual resilience

was moderate (78.19) and ranged from very low (38) to high (98; SD = 10.202). When

examining individual nursing course levels (freshman to senior level), the junior level

participants had the highest mean total for individual resilience (78.9, $SD = 9.9$) and the

sophomore level participants had the lowest mean total for individual resilience (77.8, SD

$= 11.67$). Frequencies for participant total individual resilience levels are presented in

Table 3.

Table 3

Participant Total Individual Resilience Levels

	M	Median	Mode	*SD*	Variance	Min	Max
Freshman ($n = 54$)	78.07	79.0	84	9.85	97.05	38	97
Sophomore ($n = 86$)	77.75	79.5	86	11.66	134.77	40	97
Junior ($n = 88$)	78.86	79.0	76	9.94	98.94	49	98
Senior ($n = 72$)	77.97	78.0	79	9.07	82.42	59	97
Total	78.19	79.0	75	10.20	104.08	38	98

Note. SD = Standard Deviation, *M* = Mean. *N* = 300

Reliability Coefficients

To determine reliability of the RS-14 (Wagnild & Young, 1993) for this sample, internal consistency reliability was measured using Cronbach's alpha and principle component factor analysis. Cronbach's alpha was necessary to establish validity and helped to determine whether data results were justifiable with scores that had been aggregated together (Grove et al., 2013). Cronbach's alpha for the 14-item resilience scale for this sample was estimated at .885, indicating 88% of the variability in a composite score, when combining the 14-items in the analysis, was considered a true score variance or internally consistent reliable variance. An acceptable level of reliability was recommended at .70; therefore, a level of .885 was acceptable for this scale (Grove et al., 2013). Cronbach's alpha from this sample was consistent with the original instrument psychometric evaluation, which showed internal consistency reliability coefficient from this study was .89 (Wagnild & Young, 1993).

Because all of the RS-14 (Wagnild & Young, 1993) survey items were scored on a 7-point Likert scale, the individual item standard deviations were all similar and ranged from .94 to 1.317. These values were roughly the same for all 14 scale items. When looking at the inter-item correlations, all items were positively correlated. Inter-item correlations ranged from .171 to 1 with the majority of item correlations between the .3 and .4 range. Inter-item correlations should roughly range from .3 to .5 within the item level, indicating a good scale; therefore, the inter-item correlations for the RS-14 were acceptable for this sample. Item total correlation statistics should ideally range from .2 to .7 (Grove et al., 2013). Item total statistics for the RS-14 with this sample showed an item total correlation from .438 to .661, all of which were in the acceptable range.

Additionally, Cronbach's alpha if deleted for each item was below .883, meaning

deleting any of the items would not increase the total item correlation or total Cronbach's

alpha; thus, all individual items were retained. Reliability statistics for this sample are

found in Table 4.

Table 4

Reliability Statistics and Cronbach's Alpha for Resilience Scale-14

Instrument	Number of Items	*M*	Variance	*SD*	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
RS-14	14	78.57	98.300	9.915	.885	.887

Note. SD = Standard Deviation, M = Mean

The factorability of the 14-items of the RS-14 (Wagnild & Young, 1993) was

estimated using principle component analysis with direct oblimin rotation gathered from

300 participants. The Kaiser-Meyer-Olkin measure of sampling adequacy was measured

at .891 for this sample. A value of .7 or higher was an acceptable value for this test;

therefore, the RS-14 used for this sample was also within acceptable range (Grove et al.,

2013). Additionally, Bartlett's test of sphericity for the RS-14 was statistically

significant at .000, thus increasing confidence for performing the component analysis.

The analysis produced positive correlations between all 14 scale items.

The analysis yielded three factors, explaining 57.60% of the variance for the

entire set of variables. The first factor accounted for 40.749% of the variance. Factor

one was labeled self-belief due to high loadings with the following items: item 11—My

belief in myself gets me through hard times; item 13—My life has meaning; item four—I

am friends with myself; item 14--When I'm in a difficult situation, I can usually find my way out of it; item 10—I can usually find something to laugh about; item two—I feel proud that I have accomplished things in my life*;* and item 12—In an emergency, I'm someone people can generally rely on. The second factor accounted for 8.973% of the variance. Factor two was labeled self-reliability due to high loadings with the following items: item one—I usually manage one way or another, item seven—I can get through difficult times because I've experienced difficulty before, item five—I feel that I can handle many things at a time; and item three—I usually take things in stride. The third factor accounted for 7.883% of the variance. Factor three was labeled willpower due to high loadings with the following items: item eight—I have self-discipline, item nine—I keep interested in things, and item six—I am determined. Factor analysis from this sample varied slightly from the original scale that yielded five factors. This might suggest potential cultural variances in the understanding and perceptions of some items of the scale.

Factor communalities extracted from the three component factor analysis of all 14 scale items were greater than .359 and ranged from .359 to .662, indicating good communality between the factors. When looking at the pattern matrix, all scale items had a score greater than .290 with the exception of five of the scale items, indicating almost all scale items were major contributors to total individual resilience.

Correlation Analysis

Correlational analysis was completed using Pearson, Spearman, and Eta techniques. The primary purpose of this correlational analysis was to identify relationships among academic success and the other measured variables, particularly the

variable of resilience. The primary research question was answered with correlational analysis. Based on the analysis, academic success demonstrated a significant positive relationship with cumulative GPA ($r = .451$, $p = .000$). Academic success also demonstrated a weak positive relationship with resilience ($r = .123$, $p = .033$), current nursing course level ($r = .263$, $p = .000$), race/ethnicity ($r = .171$), and employment status ($r = .219$). Academic success demonstrated a weak negative relationship to average work hours per week ($r = -.187$, $p = .001$).

Several other relationships were identified with correlational analysis. A strong, significant, positive relationship was found between average work hours per week and employment status ($r = .806$). Moderate positive relationships were found between age and marital status ($r = .455$) and age and employment status ($r = .327$). Weak positive relationships were found between resilience and employment status ($r = .175$), age and current nursing course level ($r = .247$, $p = .000$), age and gender ($r = .121$), age and race/ethnicity ($r = .165$), age and course attendance ($r = .161$), gender and average study hours per week ($r = .129$), race/ethnicity and average work hours per week ($r = .144$), cumulative GPA and course attendance ($r = .149$), cumulative GPA and employment status ($r = .109$), average study hours per week and gender ($r = .129$), average study hours per week and course attendance ($r = .137$), and average work hours per week and course attendance ($r = .216$). Weak negative relationships were found with age and cumulative GPA ($r = -.198$, $p = .001$) and average work hours per week and cumulative GPA ($r = -.159$, $p = .006$). No significant relationships were found with enrollment status.

Pearson's Correlation Analysis

Pearson's correlation coefficient allowed for the determination of an association between two interval or ratio variables (Kellar & Kelvin, 2013). Pearson correlation was conducted to examine the relationship among the following variables: academic success, resilience, and cumulative GPA.

Prior to conducting Pearson correlations, the appropriate statistical assumptions were verified and tested through analysis of the variables, distributions, and variabilities. The variables were all interval or ratio levels of measurement. All variables were assessed for normal distribution. When checking for normal distribution, skewness value should be between -1 and 1 and kurtosis value should be between -2 and 2 (Kellar & Kelvin, 2013). This was true for all variables. Histograms appeared to be normally distributed for all variables and normal Q-Q plot points were all on or close to the line for each variable. Few outliers were found with academic success and resilience. When assessing for a linear relationship, scatterplots showed an appropriate curve of points for linearity with all variables. Additionally, scatter plots demonstrated homoscedasticity across all values of the variables.

Pearson is a measure of the strength of association between two variables (Kellar & Kelvin, 2013). When evaluating correlational relationships, it was suggested that correlation coefficients around .1 indicated a weak relationship, around .3 indicated a moderate relationship, and around .5 indicated a significant relationship (Kellar & Kelvin, 2013). Based on the Pearson correlation coefficients, statistical significance was found at the .01 level with academic success and cumulative GPA. A moderate positive strength of association was found with academic success and cumulative GPA ($r = .451$,

p = .000). A positive correlation coefficient (*r*) indicated that as cumulative GPA

increased, academic success increased. Statistical significance at the .05 level was found

with academic success and resilience. A weak positive strength of association was found

with academic success and resilience (*r* = .123, *p* = .033). This positive correlation

coefficient (*r*) indicated that as resilience increased, academic success increased.

Additionally, a weak positive strength of association was found with resilience and

cumulative GPA (*r* = .108, *p* = .061). This positive correlation coefficient (*r*) indicated

that as resilience increased, cumulative GPA increased. Pearson correlation coefficients

are found in Table 5.

Table 5

Pearson Correlation Coefficients for Cumulative Grade Point Average, Academic Success, and Resilience

		Cumulative GPA	Academic Success	Resilience
Cumulative GPA	Pearson Correlation	1.00		
	Sig. (2-tailed)			
Academic success	Pearson Correlation	.451**	1	.
	Sig. (2-tailed)	.000		
Resilience	Pearson Correlation	.108	.123*	1
	Sig. (2-tailed)	.061	.033	

Note ** Correlation is significant at the .01 level, *Correlation is significant at the .05 level. *N* = 300.

For a deeper exploration of the primary research question, a Pearson correlation

was also conducted to examine the relationship between academic success and resilience

for each nursing course level. Based on Pearson correlation coefficients, statistical

significance was found at the .05 level with academic success and resilience for junior

level participants only. A weak positive strength of association was found in this group

(r = .248, p = .020). No statistical significance was demonstrated between academic

success and resilience with freshman, sophomore, and senior level nursing students when

analyzed as individual groups. Pearson correlation coefficients for individual nursing

course groups are found in Table 6.

Table 6

Pearson Correlation Coefficients for Freshman to Senior Levels

		Resilience
Freshman	Pearson Correlation	.081
Academic success	Sig. (2-tailed)	.561
	n	54
Sophomore	Pearson Correlation	.165
Academic success	Sig. (2-tailed)	.129
	n	86
Junior	Pearson Correlation	.248*
Academic success	Sig. (2-tailed)	.020
	n	88
Senior	Pearson Correlation	-.088
Academic success	Sig. (2-tailed)	.461
	n	72

Note **Correlation is significant at the .05 level

Spearman Correlation Analysis

A Spearman's correlation coefficient allows for the determination of an

association between two interval, ratio, or ordinal variables or when variables do not

meet assumptions for Pearson correlation (Kellar & Kelvin, 2013). A Spearman

correlation was conducted to examine the relationship among the following variables:

academic success, resilience, age, average study hours per week, average work hours per

week, and current nursing course level (freshman to senior levels).

Prior to conducting a Spearman correlation, the appropriate statistical assumptions were verified and tested through analysis of the variables, distributions, and variabilities. All variables were at the ordinal level of measurement or higher. Scatter plots demonstrated a monotonic relationship of points for all variables.

Based on the Spearman correlation coefficients, statistical significance was found at the .01 level with academic success and average work hours per week, academic success and current nursing course level, cumulative GPA and age, cumulative GPA and average work hours per week, and age and current nursing course level. A weak positive strength of association was found with academic success and current nursing course level ($r = .263$, $p = .000$). This positive correlation coefficient (r) suggested that as nursing course level increased, academic success increased. Additionally, a weak positive strength of association was found with age and current nursing course level ($r = .247$, $p = .000$).

A weak negative strength of association was found with cumulative GPA and age ($r = -.198$, $p = .001$). A weak negative strength of association was found with academic success and average work hours per week ($r = -.187$, $p = .001$). This negative correlation coefficient (r) suggested that as average work hours per week increased, academic success decreased. Additionally, a weak negative strength of association was found with cumulative GPA and average work hours per week ($r = -.159$, $p = .006$). This negative correlation coefficient (r) suggested that as average work hours per week increased, cumulative GPA decreased. Spearman correlation coefficients are presented in Table 7.

Table 7

Spearman Correlation Coefficients for Academic Success, Resilience, Age, Average Study Hours Per Week, Average Work Hours Per Week, and Current Nursing Course Level

		Cumulative GPA	Academic success	Resilience	Age	Current nursing course level	Average study hours per week	Average work hours per week
Cumulative GPA	Correlation	1.000	.					
	Sig. (2-tailed)							
Academic success	Correlation	.453**	1.000					
	Sig. (2-tailed)	.000						
Resilience	Correlation	.121*	.064	1.000				
	Sig. (2-tailed)	.036	.272					
Age	Correlation	-.198**	.094	.078	1.000			
	Sig. (2-tailed)	.001	.106	.176				
Current nursing course level	Correlation	-.061	.263**	-.025	.247**	1.000		
	Sig. (2-tailed)	.293	.000	.666	.000			
Average study hours per week	Correlation	.014	-.028	.085	.079	.002	1.000	
	Sig. (2-tailed)	.810	.634	.142	.173	.975		
Average work hours per week	Correlation	-.159**	-.187**	-.082	.104	-.007	.086	1.000
	Sig. (2-tailed)	.006	.001	.159	.071	.906	.136	

Note ** Correlation is significant at the 0.01 level, *Correlation is significant at the 0.05 level. *N* = 300

Eta Correlation Analysis

An Eta correlation ratio is used to calculate the strength of association between nominal and ratio or interval variables (Kellar & Kelvin, 2013). An Eta correlation was conducted to examine the relationship among the following variables: academic success, resilience, cumulative GPA, age, gender, race/ethnicity, marital status, course attendance, average work hours per week, average study hours per week, enrollment status, and employment status.

Based on the Eta correlation ratios, statistical significance was found between many variables. A significant positive strength of association was found with work hours per week and employment status ($r = .806$). Age demonstrated a moderate positive strength of association with marital status ($r = .455$) and employment status ($r = .327$). Academic success demonstrated a weak positive strength of association with race/ethnicity ($r = .171$) and employment status ($r = .219$). A weak positive strength of association was found with resilience and employment status ($r = .175$). Age demonstrated a weak positive strength of association with gender ($r = .121$), race/ethnicity ($r = .165$), and course attendance ($r = .161$). Average work hours per week demonstrated a weak positive relationship with race/ethnicity ($r = .144$) and course attendance ($r = .216$). Average study hours per week demonstrated a weak positive relationship with gender ($r = .129$) and course attendance ($r = .137$). Finally, cumulative GPA demonstrated a weak positive relationship with course attendance ($r = .149$) and employment status ($r = .109$). Eta correlations are presented in Table 8.

Table 8

Eta Correlations with Academic Success, Resilience, Cumulative Grade Point Average, Age, Gender, Race/Ethnicity, Marital Status, Course Attendance, Average Work Hours Per Week, Average Study Hours Per Week, Enrollment Status, and Employment Status

Variable	Gender	Race/ethnicity	Marital status	Course attendance	Enrollment status	Employment status
Academic success	.026	.171*	.077	.042	.061	.219*
Resilience	.017	.049	.045	.091	.034	.175*
Age	.121*	.165*	.455*	.161*	.095	.327*
Work hours/week	.045	.144*	.082	.216*	.063	.806*
Study hours/week	.129*	.068	.031	.137*	.047	.095
Cumulative GPA	.091	.177	.007	.149*	.009	.109*

Note *Correlation is significant.

Summary

This descriptive-correlational research study used a survey to examine the relationship between academic success and resilience as well as other variables with a sample of 300 baccalaureate nursing students. The sample was taken from a single nursing institution and consisted primarily of female participants from varying demographic backgrounds. The sample included nursing students from freshman to senior levels. The study variables were measured with a demographic survey and the RS-14 (Wagnild & Young, 1993), which measured total individual resilience. Reliability of the tool with this sample was within acceptable range for Cronbach's alpha. The primary research question was answered using correlational analysis. Based on data analysis, a weak positive relationship between academic success and resilience was identified.

Academic success also demonstrated a relationship with cumulative GPA, employment status, race/ethnicity, average work hours per week, and current nursing course level. This chapter provided a detailed presentation of all results of data analysis. The results presented above clearly indicated relationships among many of the examined variables included in this study. A more detailed summary and a discussion of the findings are presented in the next chapter.

CHAPTER V

DISCUSSION AND CONCLUSIONS

Overview

Attrition in baccalaureate nursing education remains challenging worldwide. Attrition in nursing education is a complex problem that is influenced by the interaction of multiple variables, which needs further clarification. Academic failure is a significant contributor to nursing student attrition. Nursing students are at increased risk of academic failure related to burnout from the challenging demands of academia, increased responsibilities, and pressure from working in the clinical environment (Hodges et al., 2005). The attribute of resilience is one factor that has the potential to impact nursing student attrition. The presence of resilience is known to enhance coping, adaptive abilities, and well-being, all which contribute to cumulative successes (Chow et al., 2018; Rios-Risquez et al., 2016; Stephens, 2013). A review of the literature revealed that personal resilience is influential to both the practicing nurse and the nursing student. Nurses and nursing students with higher levels of individual resilience exhibit better coping skills necessary for the demands of nursing practice (Taylor & Reyes, 2012). Additionally, resilience negates the adverse effects of stress and promotes adaption to difficulties seen in the nursing environment. Resilience could also potentially impact the nursing students' ability to withstand difficulties required from nursing education and, therefore, reduce attrition.

The impact of resilience on nursing student academic success and attrition has been minimally researched. Therefore, the purpose of this non-experimental, descriptive-correlational research study was to determine if a relationship existed between individual resilience and academic success in baccalaureate nursing students. A survey containing a demographic data sheet and the RS-14 (Wagnild & Young, 2016), which measures individual resilience, was completed by 300 freshmen to senior level baccalaureate nursing students from a single nursing institution in the Midwestern region of the United States. Analysis included descriptive statistics of the sample, psychometric properties of the RS-14, and correlational analysis. Psychometric analysis of the RS-14 from this sample found acceptable reliability, as demonstrated by satisfactory ranges of internal consistency estimates from Cronbach's alpha, and acceptable construct validity based on estimates from principle component factor analysis. Analysis of the primary research question was completed by examining the relationship between nursing student academic success and individual resilience with correlational analysis. Following this analysis, all demographic and other study variables were analyzed to determine further existing relationships between the variables. Knowledge from this study provided empirical results for future research regarding resilience and the nursing student population.

This chapter presents a summary of the results, a detailed discussion of the results, and conclusions based on the results of this study. Additionally, this chapter presents study implications, limitations of the study, and recommendations for future research regarding resilience and nursing students.

Summary of Results

In this descriptive-correlational research study, analysis of the primary research question began with the examination of the relationship between nursing student academic success and individual resilience through correlational analysis. Pearson correlations revealed a weak positive relationship between nursing student academic success and individual resilience ($r = .123$, $p = .003$); thus, the null hypotheses for the primary research question were rejected. Following this analysis, correlational analysis between academic success and other demographic variables was conducted and significant relationships were identified. Academic success demonstrated a moderate positive relationship with cumulative GPA ($r = .451$, $p = .000$), and weak positive relationships with current nursing course level ($r = .263$, $p = .000$), race/ethnicity ($r = .171$), and employment status ($r = .219$). Additionally, academic success demonstrated a weak negative relationship with average work hours per week ($r = -.159$, $p = .006$). Correlation did not reflect causation but rather indicated the variables were related in some way. Positive correlation coefficients (r) indicated that as one variable increased, so did the other. Based on the results of this study, it was suggested that as resilience, cumulative GPA, and current nursing course level increased, so did academic success. Negative correlation coefficients (r) indicated that as one variable increased, the other decreased. Thus, the results of this study suggested that as average work hours per week increased, academic success decreased.

Lastly, correlational analysis among all other measured demographic variables was completed and significant relationships were identified. A strong relationship was found between average work hours per week and employment status ($r = .806$).

Moderate positive relationships were found between age and marital status ($r = .455$) and age and employment status ($r = .327$). Weak positive relationships were found between resilience and cumulative GPA ($r = .108$, $p = .061$), resilience and employment status ($r = .175$), age and current nursing course level ($r = .247$, $p = .000$), age and gender ($r = .121$), age and race/ethnicity ($r = .165$), age and course attendance ($r = .161$), gender and average study hours per week ($r = .129$), race/ethnicity and average work hours per week ($r = .144$), cumulative GPA and course attendance ($r = .149$), cumulative GPA and employment status ($r = .109$), average study hours per week and gender ($r = .129$), average study hours per week and course attendance ($r = .137$), and average work hours per week and course attendance ($r = .216$). Weak negative relationships were found with age and cumulative GPA ($r = -.198$, $p = .001$) and average work hours per week and cumulative GPA ($r = -.159$, $p = .006$). No significant relationships were found with the variable of enrollment status.

Correlational analysis among the other measured demographic variables showed many significant relationships; however, only two of these results provided evidence related to the current research topic of resilience. Among these identified relationships, noteworthy results included an approaching significant relationship between resilience and cumulative GPA and a significant relationship between resilience and employment status. Based on positive correlation coefficients (r), results from this study suggest that as resilience increases, so does cumulative GPA. Additionally, these results suggested that employment status might positively affect resilience. Because these results provided evidence concerning resilience, these relationships are included in the discussion. Identified relationships from the other demographic variables were interesting but did not

relate to academic success or resilience; therefore, they were excluded from the discussion.

Discussion of Results

Academic Success

The analysis of potential influences of academic and demographic factors in association with academic success showed several relationships. The current study found academic success had a moderately positive relationship with cumulative GPA. Additionally, results from this study indicated academic success had a weak positive relationship with current nursing course level, average work hours per week, race/ethnicity, and employment status. These results supported theorized relationships identified in the NURS model (Jeffreys, 2015), one of the frameworks used for the study, as well as other existing research studies.

The NURS model (Jeffreys, 2015) suggested nursing student retention is influenced by the interaction of multiple variables including student profile characteristics, student affective factors, academic factors, environmental factors, outside surrounding factors, and professional integration factors.

Student profile characteristics. Student profile characteristics are innate characteristics an individual possesses prior to beginning a nursing program. According to the NURS model (Jeffreys, 2015), the student profile characteristics that have potential to impact nursing student retention and attrition include age, race/ethnicity, gender, first language, prior educational or work experience, family's educational background, or enrollment status. Consistent with the NURS model, the student profile characteristic of race/ethnicity demonstrated a weak positive relationship with academic success in the

present study. This suggested race/ethnicity shared a relationship with academic success

in some way. Previous research also supported the identified relationship between

race/ethnicity and nursing student progress and success (Bulfone et al., 2013; Jeffreys,

2007; Merkley, 2016; Rudel, 2006). Existing evidence suggested success in

baccalaureate nursing was greatest for Caucasian and Asian race/ethnic groups (Jeffreys,

2007). Moreover, evidence suggested attrition in baccalaureate nursing was highest with

African American and Hispanic race/ethnic groups (Jeffreys, 2007; Merkley, 2016).

Based on results from this study, implications of the NURS model, and previous research,

it could be argued that race/ethnicity did have a relationship with nursing student

academic success.

Contrary to the NURS model (Jeffreys, 2015), the student profile characteristics

of age, gender, and enrollment status did not demonstrate a significant relationship to

academic success in this study. However, in addition to evidence from the NURS model,

other existing research supported the relationship between these profile characteristics

and academic success in baccalaureate nursing. Multiple studies found the characteristics

of age (Bulfone et al., 2013; Evans, 2013; Jeffreys, 2007; Mulholland, Anionwu, Atkins,

Tappern, & Franks, 2008; Pryjmachuk, Easton, & Littlewood, 2009; Rudel, 2006) and

gender (Ali & Naylor, 2010; Evans, 2013; McLaughlin, Muldoon, & Moutray, 2010)

influenced nursing student program advancement and academic success. Moreover,

previous research indicated academic success was less likely as age increased (Evans,

2013; Mulholland et al., 2008; Pryjmachuk et al., 2009). Additionally, previous research

specified that male students were less likely to be successful in a baccalaureate nursing

program than female students (Dante, Fabirs, & Palese, 2013; McLaughlin et al., 2010;

Mulholland et al., 2008). Enrollment status was not specified in the existing literature as a variable that impacted baccalaureate nursing student academic success. Furthermore, the student profile characteristics of first language, prior work experience, and family's educational background were not measured in this study. Because results of this study were contrary to the NURS model and other existing research, the impact of additional student profile characteristics and their relationship to nursing student academic success should be considered for future research.

Student affective factors. According to the NURS model (Jeffreys, 2015), student affective factors refer to individuals' attitudes, values, and beliefs about learning, which are necessary for success. Student affective factors include cultural values and beliefs, self-efficacy, and motivation. The NURS model stated personal values and beliefs guide thinking, decisions, and actions toward the nursing student role and, therefore, influence academic outcomes. It could be argued that resilience might pose a similar influence to academic outcomes and could be considered an additional student affective factor, which the NURS model disregarded. Therefore, the variable of resilience was used in place of other student affective factors in the current study. The impact of resilience is discussed below. Cultural values and beliefs, self-efficacy, and motivation were not measured in this study and should be considered for future research.

Academic factors. According to the NURS model (Jeffreys, 2015), academic factors refer to the variables of study skills, study hours, attendance, class schedule, and general academic services, all which are known to influence academic success and retention. Inconsistent with the NURS model, the academic factors of average study hours per week and class attendance did not demonstrate a significant relationship to

academic success in this study. This also conflicted with previous research that suggested study habits significantly impacted performance outcomes in baccalaureate nursing (Patidar, 2019). Class attendance was not specified in the existing literature as a variable that impacted baccalaureate nursing student academic success. Furthermore, the academic factors of study skills, class schedule, and general academic services were not measured in this study. Because the results of this study conflicted with the NURS model and other existing research, the impact of additional academic factors and their relationship to nursing student academic success should be considered for future research.

The academic factors of cumulative GPA and current nursing course level were not specifically described in the NURS model (Jeffreys, 2015); however, both of these variables demonstrated significant relationships with academic success in the present study. According to the NURS model, cumulative GPA is considered an academic outcome rather than an influencer of academic success. Prior research indicated previous academic outcomes, as demonstrated with cumulative GPA, greatly influenced future academic success (Jeffreys, 2007; Kowitlawakul, Brenkus, & Dugan, 2013; Peterson, 2009; Twidell Sanner-Stieher, Allen, Records, & Hsueh, 2019). According to the literature, previous academic performance and past grades significantly predicted future success in baccalaureate nursing (Ali & Naylor, 2010; Dante et al., 2013; Lancia, Petrucci, Giorgi, Dante, & Cifone, 2013; Merkley, 2016; Wharrad, Chapple, & Price, 2003). In this study, cumulative GPA demonstrated a moderate positive relationship with academic success. This suggested that as cumulative GPA increased, academic success also increased. Although this relationship was unspecified in the NURS model, cumulative GPA could be considered a measure of previous coursework. The

relationship demonstrated in this study was consistent with previous research. Based on the results from this study and previous research, it could be argued that cumulative GPA was a moderate influencer of nursing student academic success.

Furthermore, the variable of current nursing course level demonstrated a weak positive relationship with academic success in the current study. Nursing course level was not clearly identified in the literature but could be compared to previous educational work. Previous research indicated upper level coursework grades or previous academic work was suggestive of academic success (Lancia et al., 2013). Therefore, it could be argued the variable of current nursing course level might be considered a lesser influencer of nursing student academic success.

Environmental factors. According to the NURS model (Jeffreys, 2015), environmental factors are factors external to the academic environment that influence academic performance and retention. These factors could include financial status, financial and emotional support, family responsibilities, childcare, family crisis, employment hours, living arrangements, and transportation. Consistent with the NURS model, both employment status and average work hours per week demonstrated a relationship with academic success. Employment status demonstrated a positive relationship with academic success while average work hours per week demonstrated a negative relationship. The negative relationship between average work hours per week and academic success suggested that as employment hours increased, academic success decreased. This finding was consistent with previous research that also suggested employment negatively impacted academic performance and attrition in baccalaureate nursing (Evans, 2013; Rochford, Connolly, & Drennan, 2009; Rouse & Rooda, 2010).

The variable of employment status alone was not specified in the literature, however, based on results from this study and the NURS model, it could be argued that employment status had a relationship with academic success. Moreover, the results from this study, evidence from the NURS model, and existing research supported the claim that average work hours per week negatively impacted academic success in baccalaureate nursing.

The remaining environmental factors were not measured in the present study. The NURS model (Jeffreys, 2015) suggested strong environmental support had the potential to compensate for weak academic support; therefore, further research with other environmental factors should be considered.

Outside surrounding factors. According to the NURS model (Jeffreys, 2015), outside surrounding factors occur external to the academic setting and are beyond manipulation or control by the student or educator. These could include world, national, and local events; politics; economics; changes in the healthcare system; professional nursing issues; and job certainty. Outside surrounding factors were not measured in the present study. It is important to note that at the time of data collection, several outside surrounding factors were present and might have influenced the results of the study. Notable national outside surrounding factors occurring during the fall of 2019 included an intense political climate regarding the building of a border wall, impeachment allegations toward the president, many mass shootings within the United States, and new health concerns regarding vaping deaths. According to the NURS model, these factors could either positively or negatively influence persistence, retention, and success. Impact of such factors would be difficult to quantify and was not measured in the present study;

therefore, interpretation of the results necessitates caution. Future research regarding nursing student academic success and the influence of outside surrounding factors is warranted.

Professional integration factors. According to the NURS model (Jeffreys, 2015), professional integration factors are those that enhance the student's interaction with the social system of the college and professional environment. These include variables such as nursing faculty advisement, professional events and memberships, peer mentoring and tutoring, and enrichment programs. The NURS model argued that these factors had the power to optimize outcomes aimed at persistence and commitment behaviors. Professional integration factors were not measured in the present study. It is important to note that at the time of data collection, many professional integration factors might have influenced the results of the present study. The institution used for data collection utilizes peer mentoring and peer tutoring programs, a student nursing association, as well as faculty advisement programs. The influence of these factors was not measured in the present study; therefore, interpretation of the results necessitates caution. Future research regarding nursing student academic success and the influence of professional integration factors is warranted.

Resilience

In this study, the total sample of nursing students was found to be moderately resilient. This was consistent with previous research that identified average levels of resilience among the undergraduate nursing student population (Tambag & Can, 2018). In the present study, the highest scores of individual resilience were seen with junior level nursing students and the lowest levels were seen with sophomore level nursing

students. Moreover, individual resilience scores were relatively the same from freshman to senior levels. This finding conflicted with previous research that suggested resilience in nursing students is built over time, as students move up through education, and after exposure to the clinical environment (Lopez et al., 2018; Tambag & Can, 2018). Additionally, previous research suggested that as age increased, so did individual resilience (Garcia-Dia et al., 2018). This relationship was not demonstrated in the present study. Because of the conflicting results from this study, more research is needed to increase our understanding of the state of resilience among baccalaureate nursing students. Furthermore, these results indicated the need for more research aimed at understanding nursing students' enactment and building of resilience.

Results from this study identified an approaching positive relationship between resilience and cumulative GPA and a significant positive relationship between resilience and employment status. The positive relationship between resilience and cumulative GPA suggested that as resilience increased, so did cumulative GPA. This finding was consistent with previous research that found nursing students with higher resilience had greater overall academic achievement as indicated with cumulative GPA (Allan et al., 2014; Hwang & Shin, 2018). The positive relationship between resilience and employment status suggested that employment status positively influenced resilience. This finding was also consistent with previous research that found resilience was influenced by sociodemographic factors such as employment (Tambag & Can, 2018). Based on the results of this study and supportive existing evidence, it could be suggested that nursing student resilience had a positive relationship with employment status.

Resilience and Academic Success

In this study, academic success demonstrated a weak positive relationship with resilience for the total sample. Additionally, a weak positive relationship was identified between resilience and academic success with junior level nursing students alone. The positive relationship suggested that as resilience increased, academic success also increased. In previous quantitative studies (Beauvais et al., 2014; Pitt et al., 2012; Taylor & Reyes, 2012), resilience also showed a weak positive relationship with baccalaureate nursing student academic success. Additionally, Van Hoek et al. (2019) identified a significant positive correlation between resilience and academic success. Although the relationship between resilience and academic success identified in this study was weak, these results and results from previous research supported the argument that resilience might be a factor that positively influences nursing student academic success.

Conclusions Based on the Results

Based on the above results, evidence from the NURS model (Jeffreys, 2015), and confirmatory evidence from the literature, it could be concluded that cumulative GPA and nursing student academic success were moderately related variables. Based on the positive demonstrated relationship, it could be suggested that nursing students with a higher cumulative GPA might also demonstrate a greater degree of academic success. Therefore, it could be concluded that previous academic performance was an important indicator of future academic success in baccalaureate nursing education. Findings from this study and previous research also supported the relationship among nursing student academic success and the variables of race/ethnicity, employment status, and average work hours per week. Evidence from the NURS model and previous research indicated

the variables of race/ethnicity, employment status, and average work hours per week were known to impact nursing student academic success in some way. Results from the present study strengthened this argument and confirmed that nursing student academic success was influenced by multiple variables.

In this study, the participants were moderately resilient. Moreover, individual resilience scores were relatively the same from freshman to senior course levels. This contradictory finding validated the need for future research regarding the state of resilience and the nursing student population. The current study found a weak relationship between individual resilience and academic success. Nevertheless, these results and results from previous research supported an established relationship between the two variables. Based on these results, it could be suggested that higher individual resilience might positively impact nursing student academic success. Evidence from this study also indicated that resilience shared a positive relationship with cumulative GPA and employment status. This indication was also confirmed by other research studies (Allan et al., 2014; Hwang & Shin, 2018; Tambag & Can, 2018). Although this gave some suggestions to the relationship of resilience and other variables, the state of knowledge regarding the attribute of resilience among the nursing student population remains unclear.

The current study did not find any significant relationship among academic success and the variables of age, gender, enrollment status, average study hours per week, and class attendance. These results conflicted with evidence from the NURS model (Jeffreys, 2015) and previous research. The contradictory results of this study could have occurred for many reasons. An explanation for the lack of association among academic

success and these variables could be inconsistencies due to the self-report nature of the survey or underdevelopment of the demographic data sheet. Additionally, many of the known influencers of academic success from the NURS model were excluded in the present study. Thus, a lack of control for all known variables that impacted nursing students' academic success could have influenced inconsistencies in the results.

Limitations

This study had limitations regarding the study design and data analysis techniques. First, descriptive correlational study designs predict the relationship among variables and do not allow for causation, limiting the results of the study (Grove et al., 2013). Additionally, many variables known to impact academic success were not included in the present study. These unmeasured variables might have influenced the response of the participants, thus limiting the reliability of the results. This study was conducted over a short period of time and might not have been reflective of changes in resilience over an entire program of nursing study. Only a single measure of resilience was used in the present study. Another limitation of the study design lay with the convenience sampling technique as this could have affected the reliability and generalizability of the study. Participants for this study were gathered from one private nursing institution and a single geographic location; therefore, the sample and setting might not have been representative of all nursing students. Furthermore, data collected for this study were self-reported so the potential for a self-report bias existed. In this study, all variables were collected with self-report. Because of these limitations, generalizability of the findings might warrant caution for the average baccalaureate nursing student. Moreover, at the time of data collection, significant numbers from the

freshman group were not present for data collection. Because attrition is reported highest in this group, significant data regarding those with lower academic success might not have been captured. Even with these limitations, it did not negate the fact that this study provided a contribution to the knowledge of factors that related to resilience and baccalaureate nursing student academic success.

Implications

Research was needed to establish the non-cognitive factors that influenced baccalaureate nursing student academic success (Allan et al., 2014; Taylor & Reyes, 2012; Van Hoek et al., 2019). This exploration and description of the relationship among nursing student academic success and other variables has provided nurse educators more evidence of the most significant influencers of academic success. The relationship among academic success and the variables of cumulative GPA, current nursing course level, employment status, race/ethnicity, and average work hours per week have already been established by the NURS model (Jeffreys, 2015) as known influencers to academic success. These relationships were supported by the results of this research. Additionally, the present study found a weak relationship between resilience and nursing student academic success. A deeper knowledge of the impact of such variables would enhance the nurse educator's ability to identify nursing students at risk of poorer academic performance.

Regarding the variable of resilience alone, clarification of the impact of resilience on academic success was needed (Allan et al., 2014). The results from this study provided more explanation regarding the influence of resilience on nursing student progression, performance, and program completion. Additionally, this research has given

some clarity to the impact of resilience on first- and second-year nursing students—the population where academic performance and attrition is most concerning (Khalaila, 2015). Therefore, this research provided nurse educators with more knowledge to support nursing student resilience development. This study also provided nurse educators with evidence to create curricula, teaching/learning practices, and interventions that promote retention in the nursing program. Moreover, this evidence supported the justification for building individual nursing student resilience, which in turn could lead to higher student psychological well-being, persistence, and academic success, thus decreasing overall attrition.

Recommendations for Future Research

Resilience is an important attribute that contributes to nursing students' cumulative successes (Stephens, 2013). Therefore, further research is needed to continue to add to the existing body of evidence regarding nursing student resilience. The significant relationships identified here and in previous research support future research regarding the clarification of how resilience, along with other significant factors, might impact nursing student academic success. Further research as well as confirmatory and foundational evidence are still needed to justify the relationship between resilience and nursing student academic success. Furthermore, generalizability of the current study results is needed.

Therefore, it is recommended that a similar study with a higher number of participants from various nursing institutions (both public and private) and more geographic locations be completed. Additionally, a longitudinal study of nursing students might be needed to identify changes in resilience over time and how this might

impact academic success through program completion. Because several results of this study conflicted with the NURS model (Jeffreys, 2015), the impact of additional variables from the model and their relationship to nursing student academic success should be considered for future research. In this study, the RS-14 (Wagnild & Young, 1993) demonstrated good psychometric properties and results were comparable to previous research. Therefore, adaption of the instrument would not be necessary and reuse of this tool for future research is recommended. Once more foundational evidence has been established, research with more definitive and predictive analysis techniques such as linear regression should be completed.

Conclusion

It is understood that an increasing nursing shortage is on the horizon. Contributing to this shortage is the alarming rate of attrition from baccalaureate nursing programs nationwide. The rigor of nursing education has contributed to a significant problem in student attrition. Attrition in nursing education is complex and, therefore, factors affecting retention and success need further research. Increasing interest in the impact of non-cognitive factors such as resilience has occurred; however, despite growing interest, there is a lack of literature on the topic. In previous quantitative studies (Beauvais et al., 2014; Pitt et al., 2012; Taylor & Reyes, 2012; Van Hoek et al., 2019), resilience showed a positive relationship with academic success in baccalaureate nursing. However, empirical evidence to support the claim between the relationship was lacking or inconclusive. Although there was an argument that resilience has a positive effect on academic success, the bulk of existing evidence demonstrated only weak statistical significance. Only one existing study identified a strong statistical significance, thus the

need for confirmatory research. Therefore, this study attempted to examine the

relationship between resilience and nursing student academic success and added

information to the current knowledge involving the academic success of baccalaureate

nursing students.

In this study, the participants were moderately resilient, which was consistent

with previously reported resilience scores with this population. In this study, there was a

significant positive correlation between resilience and academic success in baccalaureate

nursing students ($r = .123$, $p = .003$). Although the identified relationship was weak, it

was consistent with findings from previous research (Beauvais et al., 2014; Pitt et al.,

2012; Taylor & Reyes, 2012). In addition, significant relationships among academic

success and the variables of cumulative GPA, current nursing course level, employment

status, average work hours per week, and race/ethnicity were also identified. These

results were also consistent with findings from previous research (Bulfone et al., 2013;

Jeffreys, 2007; Kowitlawakul et al., 2013; Merkley, 2016; Peterson, 2009; Rudel, 2006;

Twidell et al., 2019). Contrary to expected findings for this study, the variables of age,

gender, enrollment status, average study hours per week, and class attendance did not

demonstrate a significant relationship to academic success. These results were

inconsistent with the NURS model (Jeffreys, 2015)—one of the frameworks for the

study.

Without question, previous research indicated resilience is an important attribute

for nurses and nursing students alike. Based on this research, resilience might play an

important role in baccalaureate nursing student academic success. Gaining a better

understanding of the role of resilience on nursing student academic success might be

helpful in developing curricula and teaching/learning practices that promote retention in nursing programs. Additionally, knowledge of the impact of resilience could support the need for resiliency training for the student nurse population. In conclusion, the variables and characteristics that influence the problem of student nurse attrition are complex and multidimensional. Additional research is needed to better understand the impact of such variables so strategies to address the problem can be established and attrition reduced.

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APPENDIX A

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APPENDIX B

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APPENDIX C

14-ITEM RESILIENCE SCALE

14-Item Resilience Scale (RS-14)

Please read each statement and circle the number to the right of each statement that best indicates your feelings about the statement. Respond to all statements.

Circle the number in the appropriate column	Strongly Disagree						Strongly Agree
1. I usually manage one way or another.	1	2	3	4	5	6	7
2. I feel proud that I have accomplished things in my life.	1	2	3	4	5	6	7
3. I usually take things in stride.	1	2	3	4	5	6	7
4. I am friends with myself.	1	2	3	4	5	6	7
5. I feel that I can handle many things at a time.	1	2	3	4	5	6	7
6. I am determined.	1	2	3	4	5	6	7
7. I can get through difficult times because I've experienced difficulty before.	1	2	3	4	5	6	7
8. I have self-discipline.	1	2	3	4	5	6	7
9. I keep interested in things.	1	2	3	4	5	6	7
10. I can usually find something to laugh about.	1	2	3	4	5	6	7
11. My belief in myself gets me through hard times.	1	2	3	4	5	6	7

12. In an emergency, I'm someone people can generally rely on.	1	2	3	4	5	6	7
13. My life has meaning.	1	2	3	4	5	6	7
14. When I'm in a difficult situation, I can usually find my way out of it.	1	2	3	4	5	6	7

APPENDIX D

STUDY CONSENT

UNIVERSITY OF
NORTHERN COLORADO
School of Nursing

Recipient Name
Excellent written and oral communication skills? University of Northern Colorado, PhD Student
e-mail: fros7353@bears.unco.edu

You are being asked to take part in a research study examining the effect of resilience on student academic success in baccalaureate nursing programs. The purpose of this study is to explore the relationship between resilience and academic success in undergraduate, baccalaureate nursing students. Please read this carefully and ask any questions you may have before agreeing to participate in the study.

Procedures: If you agree to participate in this study, you will need to **(1)** respond to the 14 question resilience scale survey which will determine your individual resilience score, and **(2)** complete the demographic data sheet. It is important to answer the survey questions as honestly as possible. Once finished, please place your completed forms in the confidential envelope provided. Participation will take approximately 15 minutes.

Your information will be confidential. You will not provide your name on the survey. The records of this study will be kept private. No individual identifiers will be used in any part of the data therefore your anonymity will be preserved. All study data will be collected by the researcher, stored in a secure place, and not shared with anyone without your permission.

Risks and Benefits: There are no foreseeable risks in participating in this study however you may feel anxious or frustrated when taking the surveys.

Participation is voluntary. You may decide not to participate in this study. If you begin participation, you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Your participation or non-participation will not affect your grades or academic standing within the School of Nursing in any way. Although the study will not benefit you directly, it will provide information that might enable nursing educators to tailor nursing curricula and support services that can impact future nursing students' academic success. There is no compensation for participation in the research study. Please take the time to read and thoroughly review this document and decide whether or not you would like to participate in this research study. If you decide to participate, your completion of the research procedures indicates your consent.

If you have any concerns about your selection or treatment as a research participant, please contact Nicole Morse, Office of Research, Kepner Hall, University of Northern Colorado, Greeley, CO, 80639; 970-351-1910.

APPENDIX E

RECRUITING SCRIPT

I am conducting a research study as part of my doctoral studies at University of Northern Colorado. The purpose of this study is to explore the relationship between resilience and academic success in undergraduate, baccalaureate nursing students. I am requesting that you consider taking part in this study as the results of this study have the potential to impact curricular change and enhance student success for future nursing students. This study will be completed by the end of the semester and you will be able to see the results if you wish. Your participation is simple with a time commitment of 15 minutes or less. If you agree to participate, you will need to respond to the demographic data sheet and complete the resilience scale attached. Once you have finished with the documents, please return them to this confidential envelope that I have provided. Please take some time to read over the consent and ask me any questions that you may have. Thank you for considering participation in this research study.

APPENDIX F

DEMOGRAPHIC DATA SHEET

1.   Please list your age in years. _____

2.   Please circle your identified gender.

        -Male   -Female   -Neutral

3.   Please circle your identified race/ethnicity.

-Caucasian   -African American   -Asian/Pacific Islander -Latino   -Other

4.   Please circle your current marital status.

        -single   -married

5.   Please circle your current nursing course level.

        -freshman   -sophomore   -junior   -senior

6.   What is your current cumulative grade point average based on a 4.0 scale? _____

7.   What is your current nursing course exam average in percentage? _____%

8.   On average, how many hours do you study for your nursing course per week?

_____hours/week.

9.   Circle what best describes your course attendance.

        -I've attended all class sessions.

        -I've missed 1-2 class sessions.

        -I've missed more than 2 class sessions.

10.   Please circle your current employment status? -full-time   -part-time   -casual

        On average, how many hours do you work per week? _____hours/week

11.   Please circle your current enrollment status.

        -full-time   -part-time

APPENDIX G

PERMISSION TO USE RESILIENCE SCALE-14

August 8, 2019

Dear Cassandra,

Thank you for purchasing a licensing agreement to use the RS14 in your graduate research.

The electronic User's Guide is attached and is password protected. Your password is: CFrostRSUG

The print ready RS14 is attached.

The licensing agreement is attached.

Again, thank you and I wish you the very best in your studies.

Best,

Gail

Gail Wagnild, RN, PhD
The Resilience Center
www.resiliencecenter.com
www.resiliencecenter.health

APPENDIX H

INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE: September 10, 2019

TO: Cassandra Frost, MSN, RN
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1475577-1] The Effect of Resilience on Academic Success in Baccalaureate
                    Nursing Students
SUBMISSION TYPE: New Project

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE: September 10, 2019
EXPIRATION DATE: September 10, 2023

Thank you for your submission of New Project materials for this project. The University of Northern
Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB
regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or nicole.morse@unco.edu.
Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of
Northern Colorado (UNCO) IRB's records.

APPENDIX I

**NEBRASKA METHODIST COLLEGE INSTITUTIONAL
REVIEW BOARD APPROVAL LETTER**

NEBRASKA METHODIST COLLEGE
THE JOSIE HARPER CAMPUS

720 North 87th Street | Omaha, NE 68114 | (800) 335-5510 | MethodistCollege.edu

September 11, 2019

Casey Frost, Doctoral Candidate
Katrina Einhellig, PhD, Faculty
University of Northern Colorado

Dear Casey,

This letter is to formally notify you that your research study, *"The Impact of Resilience on Baccalaureate Nursing Student Academic Success"* **IRB # NMC1920_59 EXTERNAL** has been secondarily approved (Primary Approval granted by University of Colorado on September 10, 2019).

You are authorized to begin this study on September 11, 2019. You will need to notify the IRB in writing when the project is completed or discontinued. You can use the University of Northern Colorado's Final Report Form for this purpose. If any unanticipated risks to the participants from Nebraska Methodist College occur, these should be reported to the Nebraska Methodist College IRB. Any changes in protocol will require that you submit a new IRB document.

If you have any questions, please contact Dr. Marla Kniewel, IRB chair at 354-7116, or e-mail at IRB@methodistcollege.edu.

Sincerely,

Marla Kniewel, EdD MSN RN

IRB Chairperson

NMC Institutional Review Board

APPENDIX J

**COLLEGE OF SAINT MARY INSTITUTIONAL
REVIEW BOARD APPROVAL LETTER**

July 29, 2019

Thank you for including CSM in this study. It could be very beneficial for BSN programs and the students enrolled. I have reviewed the documents and the request. I support this research project at CSM assuming all CSM requirements are met per Dr. Linden.

Christi Glesmann, Ed.D, MSN, RN
Program Director, Undergraduate Nursing

CGlesmann@CSM.edu

Thank you for sending your documentation that you've been IRB approved at your institution, and the information from Dr. Glesmann. You have approval from CSM's IRB to access our students for your data.

Vicky Morgan, Ph.D.
Associate Dean Faculty Development
Director, Teaching and Learning Center
College of Saint Mary
7000 Mercy Rd
Omaha, NE 68106

Office phone: (402) 399-2675

APPENDIX K

**COLLABORATIVE INSTITUTIONAL TRAINING
INITIATIVE TRAINING CERTIFICATE**

Completion Date 29-Jul-2019
Expiration Date 28-Jul-2022
Record ID 32241432

This is to certify that:

Cassandra Frost

Has completed the following CITI Program course:

Human Research (Curriculum Group)
Social Behavioral Research Investigators and Key Personnel (Course Learner Group)
2 - Refresher Course (Stage)

Under requirements set by:

Nebraska Methodist Hospital

Collaborative Institutional Training Initiative

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