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Impact of Mentoring on First Year Nursing Student Anxiety

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

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Heather Ann Geiger Clesi

MSN, Sacred Heart University, 2013

BS, Texas Woman's University, 2003

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

First-year nursing students (FYNS) experience anxiety that can decrease academic achievement and result in attrition from the nursing program (NP). Research has not evaluated the impact of faculty mentoring (FM) offered by the NP on FYNS anxiety level and academic achievement in didactic courses. This study, guided by Neuman's system model, used a descriptive cross-sectional design. An online survey link was distributed to FYNS in a southwestern state via NP directors and social media. FYNS were asked if their NP offered FM and were sorted into groups based on their response. Responses were received from 321 participants with 75 meeting all inclusion criteria: FM offered (N = 37) and no FM offered (N = 38). State anxiety was measured using the State Trait Anxiety Index, and academic achievement using self-reported didactic course letter grade. An independent t test showed no statistically significant difference in state anxiety level between groups, M = .602, 95% CI [-4.51, 5.78], $t(73)$ = .231, p = .818. A chi-square analysis showed no statistically significant association between didactic course grade and whether or not FM was offered, $\chi^2(1)$ = 1.706, V = .151, p = .426. Survey participation was limited by university closures caused by the COVID-19 pandemic; small sample size therefore limits study generalizations. Results indicate that FM by NPs did not significantly impact anxiety level or academic achievement of FYNS. Future research should include strategies to improve sample size and to further study the impact of FM on FYNS anxiety and academic achievement. Understanding the prevalence, benefit and types of FM may lead nursing program administrators to improve and test FM strategies.

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Dedication

I would like to dedicate my dissertation firstly to my family. During my PhD journey, we have been through a hurricane, a pandemic, and battled (and defeated!) childhood cancer. Throughout these times, you have shown unwavering love and support in my meeting this life goal. James, I am beyond blessed that we chose each other to take these trips around the sun together. This degree is as much yours as it is mine because, as with everything else, it has taken both of us to make it work. Zoee and Wyatt, I hope you will someday realize what an important step this is and that you can find inspiration to attain any goal you set for yourselves in life. You both, by far, exceed anything else I will ever do in this life. Thank you for your unending patience while "mommy does homework".

To my "Dr. chat" buddies, Dr. Angela Vitale and Dr. Samantha Abate: There will never be words adequate enough to express my appreciation for the support you have both given me. I can honestly say that I would not have completed this degree without you both. Hopefully we will find ways to continue our tradition of chicken and eggplant dinners with dessert in spinning restaurants.

To my work families, friends, and the PhDs and DNPs who have been an inspiration to me: Thank you for your unwavering support as I have gone through this PhD journey. I am truly blessed to have you all in my life!

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I would like to thank my dissertation chair, Dr. Long, and committee member, Dr. Valdez, for their guidance and support through the dissertation process. I hope to someday use the examples you have provided as role models to guide students I will have in the future.

I would also like to thank the members of the IRB and nursing program directors who aided in my survey distribution as well as anyone who shared my survey link, participated or considered participating in my survey.

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Chapter 1: Introduction to the Study

Nearly a quarter of undergraduate college students report that anxiety has resulted in a decrease in academic performance (American College Health Association, 2015). Anxiety is particularly prevalent in first-year nursing students who report levels of anxiety beyond those experienced by nonnursing as well as more senior nursing peers (Smith-Wacholz et al., 2019; Turner & McCarthy, 2017; Wedgeworth, 2016). The anxiety experienced by first-year nursing students has an impact on nursing students themselves as well as society at large. Anxiety experienced by nursing students can manifest itself in poor academic performance, diminished mental and physical health, and attrition from the nursing program (Brady et al., 2019; Gurková & Zeleníková, 2018; Tantillo et al., 2017; Walker & Verklan, 2016; Yüksel & Bahadır-Yılmaz, 2019). Society as a whole is impacted because these negative effects decrease the number of competent nurses graduating, who are needed to fill a shortage in the nursing workforce (see American Association of Colleges of Nursing, 2019). Investigating an intervention that impacts first-year nursing student anxiety and academic achievement can result in positive social change by increasing the number of competent nurses graduating from nursing school available to care for people in the society.

The following chapter provides information about a descriptive cross-sectional study in which I investigated the impact of mentoring on the level of anxiety and academic achievement of first-year nursing students. Information provided includes further background into the issue of first-year nursing student anxiety, the impact of anxiety, the problem statement and purpose of the study, the research questions and

hypotheses that were explored, the theoretical framework used in investigating these research questions, the nature of the study, the variables used in the study, the assumptions, scope, limitations, and delimitations of the study, as well as the significance of the study.

Background of the Study

Research has shown that first-year nursing students experience a higher level of anxiety than nonnursing students and more senior nursing students (Smith-Wacholz et al., 2019; Turner & McCarthy, 2017; Wedgeworth, 2016). Elevated levels of anxiety for first-year nursing students have been attributed to "feelings of uncertainty," "struggle with expectations," "immersion" into the culture of nursing, and "emotional and ethical experiences" and result in a decrease in the students' academic achievement (McDonald et al., 2018, p. 85). Nursing students must maintain a level of academic achievement to remain in the nursing program; thus, a decreased level of academic achievement can result in dismissal from the nursing program (Steinmayr et al., 2017; Tinto, 1993). A review of the literature revealed a variety of interventions, including various forms of mentoring, aimed at decreasing anxiety and improving academic achievement (DeWitty et al., 2016; Donnell et al., 2018; Lemay et al., 2019; Pegram & Fordham-Clarke, 2015; Ratanasiripong et al., 2015; Sweeney, 2018; Tantillo et al., 2017; Wiguna et al., 2018; Yüksel & Bahadır-Yılmaz, 2019).

Despite an abundance of research, a consensus has not been reached on the most effective intervention to improve anxiety and academic achievement. Further, the primary setting where this research was conducted is the clinical setting. Nursing

students are concurrently enrolled in didactic, skills lab, and clinical courses (Turner & McCarthy, 2017). There is a gap in the literature regarding interventions to impact anxiety and academic achievement related to the first-year nursing student in the didactic course. The aim of this research study was to aid in closing this gap in the literature by studying the impact of mentoring on anxiety and academic achievement in the first-year nursing student in the didactic course.

Problem Statement

As stated previously, anxiety experienced by first-year nursing students can decrease students' ability to critically think and learn, which in turn causes decreased academic achievement and resultant failure and attrition from the nursing program (Brady et al., 2019; McDonald et al., 2018; Steinmayr et al., 2017; Tantillo et al., 2017; Tinto, 1993; Yüksel & Bahadır-Yılmaz, 2019). In Chapter 2, I present a thorough review of literature, including studies researching the impact of interventions -- and different forms of mentoring -- aimed at decreasing anxiety and the resulting effects experienced by nursing students (see DeWitty et al., 2016; Donnell et al., 2018; Lemay et al., 2019; Lombardo, Wong, Sanzone, Filion, & Tsimicalis, 2017; Pegram & Fordham-Clarke, 2015; Ratanasiripong et al., 2015; Rohatinsky, Harding, & Carriere, 2017; Smith-Wacholz et al., 2019; Sweeney, 2018; Tantillo et al., 2017; Turner & McCarthy, 2017; Wiguna et al., 2018; Yüksel & Bahadır-Yılmaz, 2019). While these interventions have shown varying levels of success in decreasing the impact of anxiety experienced by nursing students, anxiety and resultant decrease in academic achievement remain a problem (Smith-Wacholz et al., 2019; Turner & McCarthy, 2017).

While mentoring has been explored as an intervention to decrease anxiety, the existing research has addressed the impact of mentoring on specific populations, such as minority students in the nursing program and general students in lab and clinical courses (Brady et al., 2019; Ford, 2015; Gurková & Zeleníková, 2018; Murray, 2015; Pegram & Fordham-Clarke, 2015; Powers et al., 2018; Rohatinsky et al., 2017; Skela-Savič & Kiger, 2015; Sweeney, 2018; Tabi, 2016; Walker & Verklan, 2016; Williams et al., 2018). There is a gap in the literature studying the impact of mentoring on first-year nursing student anxiety and academic achievement in the didactic course.

Purpose of the Study

The purpose of this study was to evaluate the impact of mentoring on the levels of anxiety and academic achievement in the didactic course of first-year prelicensure nursing students. The approach to this research was a quantitative, descriptive cross-sectional research design using anonymized online surveys to first-year nursing students in prelicensure nursing programs in a large southwestern state. The study was performed by comparing results of students who report their nursing programs offering mentoring and those who report their nursing programs do not offer mentoring. The independent variable was mentoring; the dependent variables were anxiety and academic achievement in the first-year nursing program didactic course.

Research Question and Hypotheses

Research Question 1 (RQ1): What are the differences in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course?

$H_0$1: There will be no difference in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course.

H_a1: There will be a decrease in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course.

RQ2: What are the differences in academic achievement for mentored students compared to those without mentoring during the first-year didactic course?

$H_0$2: There will be no difference in academic achievement for mentored students compared to those without mentoring during the first-year didactic course.

H_a2: There will be an increase in academic achievement for mentored students compared to those without mentoring during the first-year didactic course.

Theoretical Foundation

The theoretical framework used for this study was Neuman's systems model (NSM). NSM focuses on a client – in the case of this study, a student – and the need to maintain stability in order to maintain wellness (Neuman & Fawcett, 2011). According to this theory, stability can be impacted by intrapersonal, interpersonal, and extrapersonal stressors (Neuman & Fawcett, 2011). Clients can decrease and prevent the impact of stressors by increasing the strength of normal and flexible lines of defense (Neuman & Fawcett, 2011). A more detailed explanation of this model is provided in Chapter 2.

This theory relates to the study approach because, in order to attain academic achievement, students must be able to persevere despite experienced stressors (see

Delaney et al., 2016). The impact of mentoring on students' flexible lines of defense and subsequent impact on anxiety and academic achievement were evaluated in this study. Thus, NSM supported the research questions of whether mentoring impacts the level of student level of anxiety as well as the level of academic achievement.

Nature of the Study

In this study, I used a descriptive cross-sectional quantitative approach to evaluate the impact of mentoring on anxiety and academic achievement in first-year nursing students in the didactic course. A convenience sample of students enrolled in associate degree (ADN) and baccalaureate (BSN) prelicensure nursing programs located in a large southwestern state were surveyed via an anonymized online survey tool to ascertain whether participants were enrolled in a program that offered mentoring and, if so, whether participants used mentoring. As I describe in further detail in Chapter 3, the proposed plan for the research included distributing surveys to students in a specific metropolitan area via the directors of participating nursing programs, but this did not yield enough responses, and the survey was later distributed via social media. These questions naturally assigned students to two groups: one in which students were offered mentoring and one in which students did not have access to mentoring. Survey results were analyzed using Statistical Package for the Social Sciences (SPSS)® software, the results of which are included in Chapter 4. The independent variable was mentoring; the dependent variables were anxiety and academic achievement in the first-year nursing program didactic course.

Definitions

Defined below are terms used throughout this study:

Academic achievement: Outcomes indicating the accomplishment of specific educational goals that can determine whether a student is able to continue in the chosen program (Steinmayr et al., 2017). The level of academic performance necessary to progress in the nursing program is determined by individual nursing programs (Programs of Study and Approval, 2013). Academic achievement was measured by asking students to self-report the passing letter grade for the program attended and what letter grade was obtained in the didactic course.

Anxiety: An emotion characterized by feelings of tension that can be accompanied by physical symptoms such as numbness, heart palpitations, trembling hands, and feelings of fear (American Psychological Association, 2019; McDonald et al., 2018). Level of anxiety was measured using the scores from the state portion of the State-Trait Anxiety Inventory, which is further discussed in Chapter 3 (see Spielberger, Gorsuch, Luschene, Vagg, & Jacobs, 1983). *State* refers to temporary feelings that change based on environment or circumstance, whereas *trait* refers to a more stable level of emotions that are more related to the person's personality (Spielberger et al., 1983).

Didactic course: The instructive course in the nursing program where learning takes place via lectures and textbooks. This is in contrast to clinical and lab courses where learning takes place via hands-on patient care and simulated exercises (*Didactic*, 2012).

Faculty mentoring: Faculty members serving as mentors or role models to students in the nursing program (Murray et al., 2016).

First-year nursing student: Undergraduate students enrolled in the first-year of nursing-specific courses in a program of study that, when successfully completed, allows the student to take the National Council Licensure Examination-Registered Nurse (NCLEX-RN) and be licensed as a registered nurse (Programs of Study and Approval, 2013). This definition includes students in both associate degree and baccalaureate degree levels of study and is differentiated from first-year college students working on prerequisite general education courses for the nursing program.

Mentoring: Support, guidance, and counseling provided by a more experienced person to a less experienced person (Wilson et al., 2010). While there are multiple forms of mentoring – including peer to peer, professional nurse, and faculty mentoring – that are discussed in Chapter 2, in this study, I evaluate the impact of faculty mentoring specifically.

Stressors: The sources of anxiety that can result from intrapersonal, interpersonal, or extrapersonal events and interactions (Neuman & Fawcett, 2011).

Assumptions

The assumptions guiding this study involved participant honesty. In order to obtain accurate data, students must be honest in answering survey questions. Therefore, it was assumed that

1. Students answered survey questions regarding availability of and participation in mentoring honestly.

2. Students answered survey questions regarding academic grades honestly.
3. Students answered survey questions regarding anxiety honestly.

One final assumption guiding this study, not involving honesty, was that

4. The sample of students participating in the study was representative of nursing students as a whole.

Scope and Delimitations

The decision to include students enrolled in programs that do offer mentoring as well as those that do not offer mentoring enhanced internal validity by providing an opportunity to compare the results of students attending programs that offer mentoring – whether they choose to attend or not – against students attending programs where mentoring is not offered. This enhanced the measurement of statistical significance by indicating whether the differences in the students' academic achievement was truly due to mentoring, or whether simply attending a program where mentoring is offered acted as a confounding variable.

The populations included in this study included students enrolled in the first year of nursing courses in prelicensure undergraduate nursing programs located in a large southwestern state. While many college students experience anxiety, nursing students were chosen for this study as research has shown an increased level of anxiety experienced by nursing students as well as an impact to society due to decreased academic achievement and attrition of nursing students (American Association of Colleges of Nursing, 2019; American College Health Association, 2015; Smith-Wacholz et al., 2019; Turner & McCarthy, 2017; Wedgeworth, 2016). First-year nursing students

specifically were chosen for this study as students in the first year of the nursing program report levels of anxiety beyond the levels of anxiety experienced by more senior nursing peers (Smith-Wacholz, Wetmore, Conway, & McCarley, 2019b; Turner & McCarthy, 2017; Wedgeworth, 2016).

By including students from multiple undergraduate nursing programs of both associate and baccalaureate level in a large southwestern state, a population of diverse nursing students was sampled. This enhanced the ability to generalize study results to other first-year nursing students.

Limitations

The use of a descriptive cross-sectional design may result in a threat to validity if the study sample is not representative of the proposed population (Aggarwal & Ranganathan, 2019). The demographics of nursing student participants will be compared to those of nursing students in the selected geographical area in Chapter 4. Collecting data from multiple undergraduate nursing programs across a large geographical area should increase the representativeness of the participants as well as decrease the impact of covariances.

Potential bias was decreased by the exclusion of students being instructed by me and anonymization of students participating in the study. The nursing program where I am employed was not included in survey distribution to prevent the potential of coercion and undue influence. When the survey was distributed on social media, the survey link was not sent to students instructed by me. Further, the survey was sent via an online tool that anonymized participants. Survey questions did not request information risking

identification of the student or the program the student attended. With the survey instructions, students were provided information about the research project, assurance that their participation was voluntary, that they would in no way be coerced to participate, and that their answers would remain anonymized and confidential.

Significance of the Study

The objective of this study was to assess the impact of an intervention that may be helpful in decreasing the level of anxiety experienced by first-year nursing students as well as potentially increasing student academic achievement as a result of decreased anxiety. Finding interventions that decrease anxiety and increase academic achievement results in benefits to students, colleges, and society. Nursing students experiencing anxiety are more likely to suffer from poor academic performance, diminished mental and physical health, and increased rates of attrition from the nursing program (Brady et al., 2019; Gurková & Zeleníková, 2018; Tantillo et al., 2017; Walker & Verklan, 2016; Yüksel & Bahadır-Yılmaz, 2019). These effects can further negatively impact the student's desire to continue in the nursing program or college in general and may result in a financial impact as the student may have to pay to repeat courses or repay student grants and loans (Kubec, 2017). Due to the structure and sequence of nursing courses it is not possible to fill seats vacated by nursing students who are unable to advance in the nursing program, which results in decreased revenue to the college as well as diminished numbers of students completing the nursing program (Kubec, 2017). Diminished numbers of students completing the nursing program contributes to the existing nursing

shortage, resulting in diminished capacity to provide care to members of society (see American Association of Colleges of Nursing, 2019).

Significance to Theory and Social Change

This study fills a gap in the knowledge regarding the impact of mentoring on first-year nursing student anxiety and academic achievement. The findings of this study contribute to helping colleges select interventions to implement that can impact first-year nursing student anxiety and diminished academic achievement. Finding interventions that are successful in improving nursing student anxiety and academic achievement increase the number of competent nursing students graduating and filling the shortage of the nursing workforce (see American Association of Colleges of Nursing, 2019; Turner & McCarthy, 2017). Increasing the number of competent nursing students graduating and joining the nursing workforce can result in positive social change.

Summary

First-year nursing students experience an increased level of anxiety compared to more senior nursing students and students in other disciplines. This level of anxiety results in decreased academic achievement and possible attrition from the nursing program. Decreased academic achievement and attrition result in financial and psychological impacts on the student, financial impacts on the nursing program, and decreases in the number of future nurses to care for a society that is already experiencing a shortage of nurses in the workforce.

Research has been performed studying the impact of mentoring on anxiety levels in minority student populations in nursing programs as well as in the clinical and lab

setting. However, there is a gap in the literature regarding the impact of mentoring on first-year nursing student anxiety and academic achievement specific to the didactic course, which I aimed to fill. In Chapter 2, I provide an in-depth literature review discussing anxiety, academic achievement, interventions found in the literature aimed at improving anxiety and academic achievement, as well as previous research using mentoring as an intervention.

Chapter 2: Literature Review

Despite an abundance of research into the causes of and interventions to alleviate anxiety in undergraduate nursing students, undergraduate nursing students continue to report anxiety levels beyond the levels experienced by nonnursing undergraduate students (Turner & McCarthy, 2017; Wedgeworth, 2016). The impact of this anxiety manifests itself in poor academic performance, diminished mental and physical health, and attrition (Delaney et al., 2016). Available research currently focuses on the anxiety experienced by undergraduate nursing students related to clinical experiences; however, anxiety experienced by students related to didactic courses has not been addressed. There is a need for research into interventions to decrease anxiety related to the didactic course. Previous studies have identified mentoring as an intervention that has been shown to decrease anxiety in the undergraduate nursing student in the clinical setting, but research is needed to assess the impact of mentoring on student anxiety in the didactic course. The purpose of this study was to determine how mentoring impacts anxiety and academic achievement, which can be impacted by anxiety levels, in the didactic course of first-year undergraduate nursing students.

The following chapter details the literature search strategy, theoretical foundation, literature review related to key variables and concepts, and conclusions of an exhaustive review of existing literature. In the literature search strategy section, I detail search terms, libraries, and search engines utilized as well as years included in the search parameters. The theoretical foundation section provides an explanation of NSM, how it was used to guide this research project, and previous nursing education studies that used

NSM as a theoretical foundation. Finally, I present ways undergraduate nursing student anxiety has been examined in the past as well as the impact of interventions implemented to help undergraduate nursing students manage anxiety.

Literature Search Strategy

In order to broadly assess the key variables included in the study, a search was performed using Google Scholar, National League for Nursing, American Association of Colleges of Nursing, and National Student Nurses' Association as well as Walden University library databases including Thoreau, CINAHL, MEDLINE, and EBSCOHost using key search terms and phrases including *nursing student and stress, nursing student and academic stressors, nursing student anxiety, undergraduate nursing student and stress, nursing student stress attrition, nursing student anxiety mentoring, undergraduate nursing mentoring, undergraduate mentoring, academic course, academic stressors, didactic course, lecture course,* and *academic mentoring*.

A comprehensive review of previous literature investigating the selected variables was then performed using search terms *anxiety AND mentoring or mentorship or mentor or mentor program or mentoring program AND nursing students or student nurses or undergraduate student nurses*, a*cademic achievement or academic success or grades AND mentoring or mentorship or mentor or mentor program or mentoring program AND nursing students or student nurses or undergraduate student nurses*, and *anxiety AND* a*cademic achievement or academic success or grades AND mentoring or mentorship or mentor or mentor program or mentoring program AND nursing students or student nurses or undergraduate student nurses.*

Databases included in EbscoHost (including CINAHL, Education Source, ERIC, MEDLINE, PsycInfo, SocINDEX) as well as ProQuest were included. Further literature was then obtained by using the citations found in the results from this search. Search parameters in the databases were limited to peer evaluated sources in the past 5 years. No results were yielded when *anxiety* and *academic achievement* and *nursing students* were used within the same search; thus, the two terms were searched separately in all databases. Including *academic course or lecture course or didactic course* in the search terms also yielded no results from the databases. Resulted literature was evaluated and excluded from inclusion in the literature review if it referred to nursing students who were not prelicensure, mentoring from clinical staff, the experience of mentors, or was not available in English.

Theoretical Foundation

NSM was selected as the theoretical framework for this study. NSM is a conceptual model based on systems theory that focuses on the client's response to actual or possible stressors in the environment and incorporates the overall goal of maintaining system stability and facilitating optimal wellness in relation to experienced stressors (Neuman & Fawcett, 2011, p. 3). The model's creator, Neuman, was a nurse, instructor, and psychological counselor who set out to create a teaching tool that provided structure and integrated student learning in a wholistic manner (Neuman & Fawcett, 2011). Initially termed Neuman model theory when it was created in 1970, it was later renamed NSM when it was noted that the client at the core of the model could be viewed as a living, open, complex system (Neuman & Fawcett, 2011).

As depicted in Figure 1, the client in the model can represent an individual, family, group, community, or social issue (Neuman & Fawcett, 2011). The client's wellness and stability can be impacted by stressors which are loosely defined as intra-, inter- and extra- personal environmental (Neuman & Fawcett, 2011). Over time, the client has developed a normal line of defense – which is the natural ability to withstand stressors – to protect wellness from being impacted by stressors. This normal line of defense can be strengthened/weakened over time by developing coping mechanisms as well as the severity and length of stressors encountered (Neuman & Fawcett, 2011).

The client also has a flexible line of defense created by the five interacting variables -- physiological, psychological, sociocultural, developmental, and spiritual – that create an accordion-like defense against stressors that expands and contracts depending on how harmoniously the variables are interacting (Neuman & Fawcett, 2011, p. 14). If a stressor makes it through the flexible line of defense, it impacts the client. The level of impact of the stressor on the client is determined by the relationship between the five variables mentioned in the flexible line of defense. If a stressor breaches the lines of defense, the client has lines of resistance within them that function to return the client to a normal state of stabilization (Neuman & Fawcett, 2011).

To prevent the client from encountering stress and aiding the client after experiencing stress, the client has three levels of prevention: primary, secondary, and tertiary. In primary prevention, knowledge is used to identify and assess a potential stressor and then to reduce or prevent reaction from the stressor. In secondary prevention, symptoms caused by the stressor are assessed, prioritized, and treated. In

tertiary prevention, the client system makes adjustment to return to primary prevention. (Neuman & Fawcett, 2011).

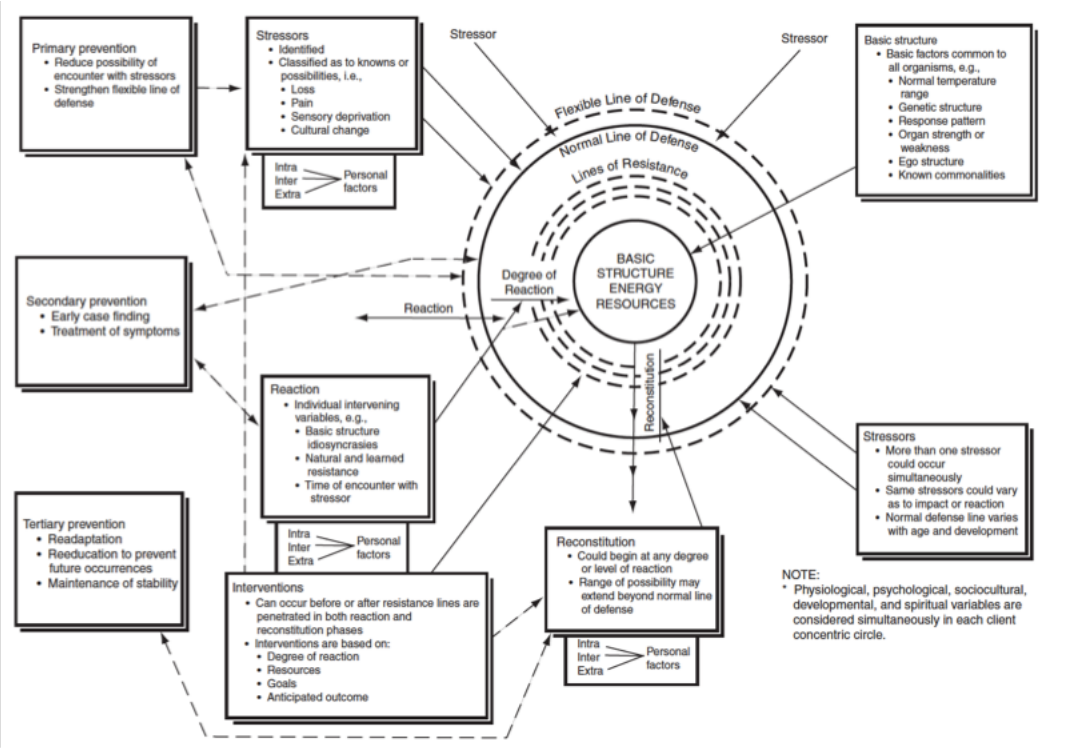

Figure 1. Neuman systems model. From *The Neuman Systems Model* (5th edition, p. 13), by B. Neuman, and J. Fawcett, 2011, Upper Saddle River, NJ: Pearson. Copyright [2011] by Pearson. Reprinted with permission (see Appendix A).

Previous Use of Neuman Systems Model

To find similar literature that used NSM, a search was performed via the Thoreau search engine using the terms *Neuman, anxiety or stress*, and *student or undergraduate student or college student*. Results were then limited to literature specifically researching nursing student stress and anxiety, which yielded four works.

Moscaritolo (2009) identified stressors including "the first clinical experience, fear of making mistakes, performing clinical skills, faculty evaluation, lack of support by nursing personnel, and theory gap," which is the gap between what is learned in the

classroom versus what is practiced in the clinical setting (p. 17). Moscaritolo used NSM as a conceptual framework in a literature review discussing the use of humor, peer instructors and mentors, and mindfulness training in decreasing undergraduate nursing student anxiety in the clinical setting. Moscaritolo exemplified the framework provided by NSM stating that "[t]he clinical stress students experience invades the normal line of defense, and when students cannot manage stress, the normal line of defense is broken and anxiety results" (p. 19). Moscaritolo further noted that the use of interventional strategies increased the students' resistance to stress and strengthened the flexible line of defense, which then decreased the amount of anxiety experienced by the student (p. 19).

In addition, Speck (1990) used NSM as a theoretical framework in a quasi-experimental study to examine the impact of guided imagery on anxiety experienced by baccalaureate nursing students learning to perform injections. Speck noted that nursing students are "exposed to a barrage of stressors" that can disturb equilibrium and, like Moscaritolo (2009), noted that students would have a "greater capacity to protect their normal line of defense" if the anxiety level is decreased (p. 346). Speck also cited Neuman's primary prevention, noting that assisting students to identify anxiety-producing situations could "prevent or allay some of the possible factors associated with stressors" (p. 346).

Graham et al. (2016) also used NSM as a theoretical framework in a cross-sectional study to determine the level and perceived contributing factors of stress experienced by first-year undergraduate nursing students in the clinical learning environment in Jamaica. Stressors identified by Graham et al. included "financial

burden, poor interpersonal relationships with clinical staff and preceptors, high academic demands, and lack of free time to socialize or sleep" (p. 383). As with the previous studies referenced above, Graham et al. focused on using primary prevention to decrease the incidence of stress and strengthening the normal line of defense. Graham et al. defined stressors in the clinical learning environment as financial concerns (extrapersonal), thoughts and feelings (intrapersonal), and negative interactions with staff and patients (interpersonal).

Furthermore, Bauer (2014) used NSM as the theoretical framework in a quasi-experimental design to evaluate whether guided imagery decreased perceived stress in undergraduate nursing students. Stressors identified by Bauer included "clinical experiences, academic load, and personal stressors" (p. 1386). Bauer noted that students attempt to "maintain a sense of balance and homeostasis within the learning environment" and that students who are more knowledgeable about stress modifying techniques have stronger lines of defense (p. 18). As with the previous studies referenced, Bauer focused on primary prevention (in this case, knowledge about stressors and the use of guided imagery) to strengthen the normal line of defense, which ultimately makes the student more resistant to stressors.

Rationale and Relationship of Theory to Study

In this study, I used NSM to evaluate the impact of an intervention (mentoring) on the stability (level of anxiety) and wellness (academic achievement) of the client (undergraduate nursing student). As noted in NSM, students are subjected to a myriad of stressors both at home and school. Responses to stressors depend upon students' existing

lines of defense. Students with weaker lines of defense are more likely to experience disequilibrium (identified in this study as anxiety) and a loss of stability and wellness (identified in this study as decreased academic achievement). Identifying interventions (such as mentoring) that can possibly increase the students' level of primary prevention can strengthen the students' normal line of defense and ultimately aid them in maintaining equilibrium (decreased levels of anxiety) and wellness (academic achievement). Figure 2 illustrates an adapted graphical representation of NSM as used in this study.

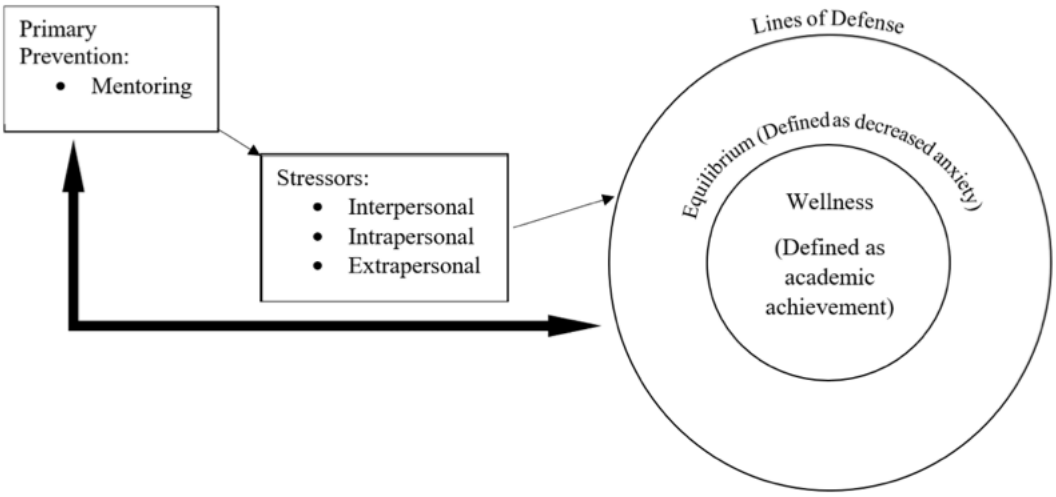

Figure 2. Adapted Neuman systems model.

Literature Review

Key variables and concepts involved in this study included first-year undergraduate nursing students, didactic course, anxiety, academic achievement, and mentoring. First-year undergraduate nursing students enrolled in a didactic course were the focus of the study, anxiety and academic achievement were the dependent variables,

and mentoring was the independent variable. In the following section I will better define the aforementioned variables and concepts as well as provide a pertinent review of the literature.

First-Year Undergraduate Nursing Students

There are multiple educational paths to becoming a registered nurse: diploma, associates, bachelors, and accelerated bachelors. While curriculum and student classification may differ, nursing programs are all tasked with preparing graduating nursing students for the same version of the NCLEX-RN (Programs of Study and Approval, 2013). The population utilized for this study included prelicensure nursing students who have completed preprofessional general education courses and are currently enrolled in the first year of nursing specific-nursing in associate or baccalaureate programs.

The population of nursing students chosen for this study have higher rates of anxiety than more senior nursing students (see Smith-Wacholz et al., 2019). This elevated level of anxiety has been attributed to the demands of feelings of uncertainty, struggle with expectations. immersion into the culture of nursing, and emotional and ethical experiences that result in feelings of stress, depression, and anxiety that ultimately impact the students' ability to learn and diminishes academic achievement (McDonald et al., 2018, p. 85).

Didactic Course

Nursing programs include classroom courses, hands-on skill courses, as well as courses where they practice what they are learning on actual or simulated patients in the

clinical setting. Nursing programs are unique from other health care profession programs in that nursing students are enrolled in the didactic, skills, and clinical courses concurrently (Turner & McCarthy, 2017). This challenging course load along with rigorous examinations and the drive for a competitive grade point average result in stress for nursing students at all levels (Turner & McCarthy, 2017).

There is a plethora of literature published in the past 5 years researching interventions, including mentoring, to improve anxiety and academic success in the simulated and actual clinical settings (Brady et al., 2019; Gurková & Zeleníková, 2018; Pegram & Fordham-Clarke, 2015; Sweeney, 2018; Thomson et al., 2017; Walker & Verklan, 2016). Research has also been performed seeking interventions to improve retention of minority and underrepresented students in the nursing program as a whole in the past 5 years (Bond et al., 2015; Cowan et al., 2015; DeWitty et al., 2016; Donnell et al., 2018; Escallier & Fullerton, 2009; Murray et al., 2016; Powers et al., 2018; Tabi, 2016; Williams et al., 2018). There is a gap in the literature, however, in researching interventions to decrease the anxiety and increase the academic achievement of nursing students in the didactic course of the nursing program.

Anxiety

As defined by the American Psychological Association (2019)**,** anxiety is "an emotion characterized by feelings of tension, worried thoughts and physical changes" (para 1). Physical changes can include symptoms such as numbness, heart palpitations, trembling hands, and feelings of fear. As noted previously, nursing students have been

noted to exhibit elevated levels of anxiety compared to both undergraduate peers as well as peers in other healthcare disciplines (McDonald et al., 2018).

Reflecting on NSM, stressors – the sources of anxiety – for nursing students previously identified in the literature can be categorized as intrapersonal, interpersonal, and extrapersonal (see Neuman & Fawcett, 2011). Intrapersonal stressors include fear of failure, fear of making mistakes in the clinical setting, test anxiety, inability to handle the course load, fear of unfamiliar situations, lack of study skills, and the inability to translate classroom material to clinical practice (see Brady et al., 2019; Lombardo et al., 2017; Rohatinsky et al., 2017; Tantillo et al., 2017; Walker & Verklan, 2016; Yüksel & Bahadır-Yılmaz, 2019). Interpersonal stressors include interacting with patients for the first time, evaluation and critiques from instructors, relationships with instructors, providing care to dying patients, handling unfamiliar equipment, encountering bullying and discrimination, and interactions with staff members and an unfamiliar unit culture in the clinical setting (see Gurková & Zeleníková, 2018; Lombardo et al., 2017; Rohatinsky et al., 2017; Tantillo et al., 2017; Yüksel & Bahadır-Yılmaz, 2019). Extrapersonal stressors include students lacking the ability to manage their personal lives, newly experienced distance from family and other sources of emotional and financial support, being unfamiliar with the area where they live and go to school, difficulties with transportation, and difficulty finding child care (see Tantillo et al., 2017).

Elevated levels of anxiety may lead to poor student outcomes. Nursing students experiencing anxiety have quantitatively been documented as having impaired cognitive abilities including a decreased ability to think critically and learn (Walker & Verklan,

2016; Yüksel & Bahadır-Yılmaz, 2019). Elevated levels of anxiety have also been quantitatively shown to result in diminished physical and mental health resulting in symptoms such as depression, burnout, and panic symptoms (Gurková & Zeleníková, 2018; Yüksel & Bahadır-Yılmaz, 2019). Elevated levels of anxiety and accompanying symptoms have been noted to cause a decrease in time spent studying, decrease in grade point average and overall academic achievement, an avoidance of academic activities, an increase in absenteeism, and attrition from the nursing program (Brady et al., 2019; Gurková & Zeleníková, 2018; Tantillo et al., 2017; Yüksel & Bahadır-Yılmaz, 2019). As noted previously, most of the research investigating anxiety has been focused on skills lab and clinical settings.

Previously researched interventions to prevent and decrease nursing student anxiety can be categorized as primary, secondary, or tertiary prevention against diminished wellness, academic failure, and program attrition (Delaney et al., 2016; Neuman & Fawcett, 2011). Interventions such as peer mentoring, peer learning, role models, faculty advising, clinical coaching, wellness courses, and financial counseling aid the student in increasing their flexible line of defense and decreases the deleterious effects anxiety (DeWitty et al., 2016; Pegram & Fordham-Clarke, 2015; Sweeney, 2018; Tantillo et al., 2017; Yüksel & Bahadır-Yılmaz, 2019). Quantitative research performed using interventions such as meditation, biofeedback-assisted relaxation, guided imagery, mindfulness therapy, yoga, art therapy, and pet-assisted therapy have been found to aid nursing students in decreasing and managing the effects of anxiety (Donnell et al., 2018; Lemay et al., 2019; Ratanasiripong et al., 2015; Wiguna et al., 2018). Qualitative

research has shown a decrease in anxiety through stress management courses, support groups, workshops for test anxiety, financial support, counseling, and participation in remediation programs that can also assist students who have suffered from the effects of anxiety and prevent recurrences of negative effects from the anxiety (Lombardo et al., 2017; Tantillo et al., 2017).

Academic Achievement

Academic achievement indicates the extent that students fulfill educational goals. Tools to measure academic achievement include course grades, standardized tests, and grade point average (GPA). Students' eligibility to continue on an educational path can be impacted by their academic achievement (Steinmayr et al., 2017). In order to remain in and successfully complete a nursing program, students must maintain a level of academic performance determined by the program attended (Accreditation Commission for Education in Nursing, 2019; Southern Association of Colleges and Schools Commission on Colleges, 2017). The state Board of Nursing in the area where participants were recruited allows individual nursing programs to determine the satisfactory level of academic performance that must be met for the student to continue in the program and graduate (Professional Nursing Education Programs of Study, 2018).

Identified causes of diminished academic achievement in nursing students reflected in the literature can also be divided into intrapersonal, interpersonal, and extrapersonal. Intrapersonal causes of diminished academic achievement include stress, anxiety, feelings of isolation and alienation, difficulty transitioning to the social and academic changes in college, diminished self-concept, and a decreased opinion of nursing

after beginning the nursing program (see Ford, 2015; Lombardo et al., 2017; Murray et al., 2016; Smith-Wacholz et al., 2019; Tabloski, 2016). Interpersonal causes of diminished academic achievement include a lack of academic support in the nursing program, a lack of available role models or mentors, lack of peer support, and discrimination and microaggressions (see Cowan et al., 2015; Murray et al., 2016; Smith-Wacholz et al., 2019; Williams et al., 2018). Extrapersonal causes of diminished academic achievement include financial barriers and lack of finances as well as decreased academic achievement in high school (see Murray et al., 2016; Smith-Wacholz et al., 2019).

Interventions to improve academic achievement include academic support, personal support, and financial support. Interventions using academic support such as academic support programs, academic tutoring, innovative teaching strategies incorporating technology, and access to a retention specialist were shown to improve nursing student academic achievement (Cowan et al., 2015; Havrilla et al., 2018; Murray et al., 2016; Sweeney, 2018). Interventions using personal support include mentorship programs with professional nurses, faculty, and peers, social activities and interactions, and role modeling (Cowan et al., 2015; Ford, 2015; Lombardo et al., 2017; Murray et al., 2016; Williams et al., 2018). Interventions using financial support include financial assistance, financial workshops, and scholarships (Cowan et al., 2015). Quantitative research using academic support, financial support, and mentoring were shown to improve academic achievement (Cowan et al., 2015; Ford, 2015; Havrilla et al., 2018; Williams et al., 2018). Qualitative research showed an increase in academic achievement

for students who had access to technological support, academic support, as well as mentoring (Brady et al., 2019; Lombardo et al., 2017; Tantillo et al., 2017).

Mentoring

Mentoring involves an older or more experienced person providing support, guidance, and counseling to a younger or less experienced person (Wilson et al., 2010). Three types of mentors utilized in nursing programs have been identified in the previous literature: professional nurse mentors, peer mentors, and faculty mentors.

Professional nurse mentors are nurses working in the clinical setting who serve as mentors to nursing students or graduating nurses. The role of professional nurse mentors is to incorporate nursing knowledge and skills, develop professionalism and ethics, and socialize the student into the role of the nurse (Skela-Savič & Kiger, 2015). The majority of literature discussing professional nurse mentors involved supporting nursing students in the clinical setting (Brady et al., 2019; Gurková & Zeleníková, 2018; Skela-Savič & Kiger, 2015).

Peer mentors are nursing students in their final year of the nursing program who work with less experienced nursing students in an academic and social capacity (Walker & Verklan, 2016). Qualitative research has shown peer mentoring to be effective in increasing retention of minority students in laboratory and clinical settings as well as the nursing program overall (Lombardo et al., 2017; Murray et al., 2016; Powers et al., 2018). Quantitative research has shown peer mentoring decreases anxiety and increases self-concept in the clinical and laboratory settings as well as increases retention of minority students in the program overall (Ford, 2015; Pegram & Fordham-Clarke, 2015;

Tabi, 2016; Walker & Verklan, 2016; Williams et al., 2018). Student success and retention were found to be positively impacted by peer mentoring in situations where it has been used as a success strategy (Jacobs et al., 2015).

Faculty mentors are nursing faculty members acting in a mentor or role model capacity to students in the nursing program. Faculty mentoring has been found to motivate students, foster independent practice and critical thinking, and has been found to increase retention of minority students (Murray et al., 2016). Faculty mentoring has also been found to increase NCLEX-RN pass rates (Havrilla et al., 2018; Tabi, 2016).

Summary and Conclusions

The impacts of anxiety, academic achievement, and mentoring have each been studied in the nursing student population. Increasing levels of anxiety have been shown to have a negative impact on academic achievement. Mentoring has been shown to decrease anxiety, but research on how mentoring impacts anxiety has primarily occurred in the clinical setting. Mentoring has also been shown to impact NCLEX-RN pass rates as well as performance in the laboratory and clinical settings.

There was a gap in the literature indicating how mentoring impacts anxiety related to the didactic setting as well as how this impact on anxiety affects nursing student academic achievement. There was also a gap in the literature indicating the type of mentoring that has the greatest impact on nursing student anxiety and academic achievement. In the next chapter methods used in this study to research these gaps are discussed.

Chapter 3: Research Method

The purpose of this descriptive cross-sectional design study was to evaluate the impact of mentoring on the levels of anxiety and academic achievement in the didactic course of first-year prelicensure nursing students. Investigating the impact of mentoring may provide information that could potentially decrease the anxiety level and increase the academic achievement of first-year nursing students. In the following chapter, I introduce the research design and rationale, methodology, and threats to validity for the study. The methodology section includes information about the population studied, procedures for recruitment and data collection, information about instrumentation and operationalization of constructs of the instrumentation used, operationalization of the included variables, and the data analysis plan.

Research Design and Rationale

A quantitative research design was chosen for this study. Quantitative research uses statistical procedures to examine the relationship between defined variables (Keenan, 2018). The relationship between these variables can then be used to predict outcomes for a broader population. This is in contrast to qualitative research, which evaluates observed data for patterns (Keenan, 2018). These patterns can then be used to gain a deeper understanding of a phenomenon. For this study, I examined the relationship between mentoring and anxiety and academic achievement; a quantitative design was most appropriate to compare these variables. The research questions for this study were as follows:

RQ1: What are the differences in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course?

RQ2: What are the differences in academic achievement for mentored students compared to those without mentoring during the first-year didactic course?

Study Variables

A single anonymized online survey was used to collect data on the selected variables. The independent variable in this study was faculty mentoring, which was measured as a dichotomous variable (offered or not offered). Students were asked to identify whether the nursing program attended offered mentoring and, if so, what type of mentoring was offered and whether the mentoring was used. The dependent variables were anxiety and academic achievement. Anxiety is defined as an emotion characterized by feelings of tension that can be accompanied by physical symptoms such as numbness, heart palpitations, trembling hands, and feelings of fear and was measured as a continuous variable using the state portion of the State Trait Anxiety Inventory for Adults (STAI), which provides a score based on the participants' responses (American Psychological Association, 2019; Spielberger et al., 1983). The permissions for the STAI from Mindgarden do not permit the publishing of the scoring tool within this project (Appendix B). Academic achievement was defined as outcomes indicating the accomplishment of specific educational goals that can determine whether a student is able to continue in the chosen program and was measured as an ordinal variable (A, B, C, D, or F) via the student self-reporting the didactic course average earned as a letter grade (see Steinmayr et al., 2017).

Study Design

A descriptive cross-sectional design was used for this research study. As described in Chapter 1, this research design allowed me to measure anxiety levels and academic achievement of first-year nursing students across a large geographical area at a fixed point in time (Lavrakas, 2013). Further, it allowed for comparison of two nonrandomized groups of participants: one that was offered mentoring and one that did not. The survey link was first distributed via email to students in nursing programs allowing permission, and later distributed via social media that invited all students meeting inclusion criteria to participate. Thus, students were not randomized into groups but assigned to groups based on whether the programs attended did or did not offer mentoring.

There were no true resource restraints with this design choice. The chosen participant group was students in the first year of the nursing program, and participants were first recruited through participating nursing program director, then by a recruitment flyer shared on social media. A time constraint was contacting the directors – and the directors contacting the students -- during a time emails were being checked (e.g., during the academic semester as opposed to during holidays or breaks). As discussed in the Limitations section of Chapter 5, the quarantine caused by COVID-19 resulted in programs taking extended spring breaks and dramatically changing the format of courses a few weeks after data collection began, which created unanticipated restraints.

A descriptive cross-sectional design choice is consistent with research designs needed to advance knowledge in the health and social sciences discipline. As the name

implies, a descriptive study design is used to describe characteristics of the population being studied (Shields & Rangarajan, 2013). A cross-sectional form of descriptive study is appropriate for this study as it is used to collect data on multiple variables and evaluate whether they exist in the chosen population at a specific time (Aggarwal & Ranganathan, 2019). By evaluating for a relationship between these variables, the intervention can either be expanded, discontinued, or further research can be performed (Burkholder et al., 2016).

Methodology

In the following section, I detail information regarding the participants included in the study, including the targeted population, sampling and sampling procedures, and procedures for recruitment of participants. Information regarding data collection is also detailed, including procedures for data collection, instrumentation and operationalization of constructs, and data analysis plan.

Population

The target population for this study was undergraduate, prelicensure nursing students enrolled in their first year of nursing specific courses. The originally proposed plan included recruiting participants from nursing programs in a large metropolitan area in a southwestern state where there are 31 nursing programs recognized by the state Board of Nursing: 19 are associate degree programs and 12 are bachelor degree programs (Texas Board of Nursing, 2019). Admission requirements of those programs are determined by the individual nursing programs, with some programs admitting only one time per year and others admitting student cohorts in the fall, spring, and summer

semesters (Accreditation Commission for Education in Nursing, 2019; Southern Association of Colleges and Schools Commission on Colleges, 2017). Cohort sizes ranged from a minimum of 40 to a maximum of 100 students (Texas Board of Nursing, 2019). Data collection occurred in the spring semester of 2020.

Sampling and Sampling Procedures

Participants in this study were comprised of a convenience sample of undergraduate prelicensure nursing students enrolled in their first year of nursing courses. The state Board of Nursing publicly publishes the names and locations of all nursing programs in the state as well as the names and email addresses of directors of these programs. At the end of the Fall semester of 2019, the directors of 30 nursing programs were contacted, and permission was requested for enrolled students to participate in the study (the nursing program where I am employed was excluded to prevent undue bias). By mid-January 2020, only seven programs had responded and agreed to allow students to participate. Institutional review board (IRB) approval was received from Walden University as well as six of the aforementioned programs. After IRB approval was obtained, the nursing program directors were asked to forward an email to enrolled students explaining the purpose of the research study, assurances that information obtained would be used for research purposes only and would remain anonymous, assurances that participation was voluntary and that participants could withdraw from the research at any time, and a link to the anonymous survey. Due to poor response rate from this data collection method, Walden IRB approval was received to distribute the survey link on a social media page where it was shared on multiple nursing-

related pages. I do not have any current or former students as friends on the social media page where the survey link was shared, thus preventing undue bias to current students in the program where I teach.

One of the questions on the survey asked the student if the program attended offers mentoring. The students were sorted into the mentored or nonmentored group based on the answer to this question. Participant inclusion criteria included prelicensure associate degree and bachelor's degree students enrolled in the first year of nursing program courses. For the purposes of this study, this included students beginning the nursing program in the Spring or Fall of 2019, and inclusion criteria was expanded to include students beginning the nursing program in Spring 2020 as data collection extended into the end of the Spring 2020 semester. Exclusion criteria included students who chose not to participate, students who started the nursing program before 2019, and students taking anxiolytics or antidepressants prior to starting the nursing program. At the end of data collection responses were received from 321 students, with 75 meeting inclusion criteria as well as responding to all required variables.

Online power analysis tool G*Power 3.1 was used to obtain the sample size needed for statistical analysis (see Faul, Erdfelder, Buchner, & Lang, 2009). Anxiety levels between the two groups (the mentored group and the nonmentored group) were evaluated using a two-tailed *t* test using an a-priori alpha of .05, power of 0.8, and an effect size of 0.5 as parameters based on standards used in previous social research studies (see Faul et al., 2009). Student grades were collected as a letter grade and thus were treated as an ordinal scale, and a chi-square for association was used to compare

grades between the two groups using an a-priori alpha of .05, power of 0.8, and 6 degrees of freedom (see Faul et al., 2009). The power analysis tool calculated a sample size of 67 for each group – a total of 134 students (see Faul et al., 2009). Thus, the goal to recruit was 67 participants for each group.

Procedures for Recruitment, Participation, and Data Collection

As stated previously, 30 directors of undergraduate prelicensure nursing programs were contacted via email, and permission was requested for students enrolled in the first year of nursing courses in these programs to participate in this study (Appendix B). Once IRB approval was obtained from consenting programs as well as Walden University, an email was sent to the program directors, which included an online survey link and information about the study (Appendix C). The program directors were asked to forward this email to first-year students to recruit the students to participate. The email included means of contacting me, information about what I was researching, assurances that participation was voluntary and that there was no penalty from myself or the nursing program for lack of participation, and information about benefits students would receive from participation (learning more about the process of research and the impact of mentoring). The information in the email further assured the students that no negative consequences were anticipated as a result of participation in the study and that students would not be receiving any compensation for participation.

As indicated in Appendix D, demographic information requested in the survey included participant age, gender, whether completion of the nursing program will result in the student's first college degree, history of academic failure, and type of nursing

program the student is attending (associate degree or baccalaureate degree). The survey also asked type of mentoring offered by the nursing program (faculty, peer-to-peer, clinical preceptor, or none), whether the student has utilized offered mentoring, and the student's current letter grade average in the didactic course, (Appendices E & F). Student consent and desire to participate in the study was obtained by the student clicking on the survey link within the email they received and then verified by via the first item asking the student to indicate or decline consent and agreement to participate in the study. After Walden IRB approved participant recruitment via social media a flyer (Appendices H and I) was shared on my social media page. Consent was obtained via the first survey item asking the student to indicate or decline consent and agreement to participate in the study.

At the close of the survey there was message thanking participants for participating. As this was a one-time survey there was no need for students to follow up or contact me further. Once the data analysis was completed and conclusions were drawn, an email illustrating the findings of the research was sent to the participating program directors with a request to forward this information to students that potentially made up the pool of participants. A link to the published document was shared on my social media site to share with participants who may have been recruited from that route.

Data was collected via an online survey program that stores participants' responses anonymously. The data was then downloaded into a spreadsheet and placed in SPSS® version 26.0 for analysis.

Instrumentation and Operationalization of Constructs

The STAI is a 40-item survey used to measure state anxiety (anxiety related to a specific situation) as well as trait anxiety (trait referring to a general personality trait) that was first developed in 1970 by Spielberger and then published with Gorsuch, Lushene, Vagg, & Jacobs (Spielberger et al., 1983). The current version of the survey (Form Y) is divided into the STAI-S that includes 20 items measuring how the respondent feels "at this moment" to measure state anxiety and the STAI-T that includes 20 items measuring how the respondent "generally feels' to measure trait anxiety (Spielberger et al., 1983). Examples of survey items (shared with permission from Mindgarden as displayed in Appendix I), include "I feel at ease," "I feel upset," "I lack self-confidence," and "I am a steady person". Responses to these items are a four option rating scale ranging from "not at all" to "very much so" (Spielberger et al., 1983). The scores associated with these responses are combined to achieve a total score where a higher total equates to a higher level of stress (Spielberger et al., 1983). Scores of 39-40 on the state portion of the scale have been associated with clinically significant symptoms of anxiety (Julian, 2011).

The STAI manual is copyrighted by Consulting Psychologists Press and the tool is distributed through Mindgarden.com (Spielberger et al., 1983). Permission to utilize the STAI as part of an online survey has been obtained from Mindgarden as shown in Appendices J and K. The STAI Adult version is intended for populations over 16 years of age with at least a 6th grade reading level, and has been revised to include a children's version, a short version (that includes six to ten questions), and versions for use in over 30 different languages (Spielberger et al., 1983).

The STAI is an appropriate tool for use in this study as it has been extensively used in researching anxiety levels of college students including nursing students (see Allen, 2018; Beischel, 2013; Dearmon et al., 2013; Farra & Smith, 2019; Holland, Gosselin, & Mulcahy, 2017; Hollenbach, 2016; Kameg, Szpak, Cline, & Mcdermott, 2014; Prato & Yucha, 2013; Rossler, 2019). Previous testing of the STAI in college students has resulted in normative means for females (state anxiety: $M = 38.76$, $SD = 11.95$, $p = .93$; trait anxiety: $M = 40.40$; $SD = 10.15$; $p = .91$) and males (state anxiety: $M = 36.47$; $SD = 10.02$, $p = .91$; trait anxiety; ($M = 38.30$; $SD = 9.18$; $p = 0.90$) (Spielberger et al., 1983).

Reliability and internal consistency of the STAI has been established using a 20-day test-retest interval of college students that resulted in $p = .92$ and $r = .34$ (females)/ $r = .62$ (males) on the STAI-S and an $p = .90$ and $r = .75$ (females)/$r = .71$ (males) on the STAI-T (Spielberger et al., 1983). The STAI has been found to be valid and correlated moderately to the Taylor Manifest Anxiety Scale (0.73) and the Cattell and Scheier's Anxiety Scale Questionnaire (0.85) (Julian, 2011).

Operationalization of Variables

Academic achievement. Academic achievement was defined as the outcomes indicating the accomplishment of specific educational goals. These educational goals can determine whether a student is able to continue in the chosen program (Steinmayr et al., 2017). The level of academic performance necessary to progress in the nursing program is determined by individual nursing programs (Programs of Study and Approval, 2013). Academic achievement was measured by asking students to self-report the passing letter

grade for the program attended and what letter grade was obtained by the student in the didactic course. The letter grade was treated as a 5-item Likert scale (A, B, C, D, F) and the impact of mentoring was evaluated using a chi-square test of association.

Anxiety. Anxiety was defined as an emotion characterized by feelings of tension that can be accompanied by physical symptoms such as numbness, heart palpitations, trembling hands, and feelings of fear (American Psychological Association, 2019; McDonald et al., 2018). Student level of anxiety was measured using the state score of the STAI. Impact of mentoring on levels of anxiety were evaluated using a two-tailed independent *t* test comparing the STAI state score against whether or not the student received mentoring.

Mentoring. Mentoring was defined as faculty members serving as mentors or role models to students in the nursing program (Murray et al., 2016). While this was the intervention and independent variable, the variable was not manipulated. As part of the survey participants were asked whether the nursing program attended offered mentoring. The answer to this question placed the participant in either the mentored or nonmentored group.

Data Analysis Plan

Collected data were downloaded from the online survey tool and placed into a spreadsheet where it was manually screened and cleaned by evaluating for missing data and eliminating submissions that were missing responses to the key variables. Data were then loaded into SPSS® version 26.0 for analysis (see IBM Corp., 2019).

RQ1: What are the differences in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course?

$H_0$1: There will be no difference in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course, $\mu 1 = \mu 2$.

H_a1: There will be a decrease in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course, $\mu 1 \neq \mu 2$.

Analysis. An independent two-tailed *t* test was utilized to determine if there was a statistically significant difference in the levels of the dependent variable of anxiety compared to the independent variable of mentoring.

Interpretation of results. Significance of results was based upon an a-priori alpha of .05, power of 0.8, and an effect size of 0.5 as parameters based on standards used in previous social research studies (see Faul et al., 2009).

RQ2: What are the differences in academic achievement for mentored students compared to those without mentoring during the first-year didactic course?

$H_0$2: There will be no difference in academic achievement for mentored students compared to those without mentoring during the first-year didactic course, $\mu 1 = \mu 2$.

H_a2: There will be an increase in academic achievement for mentored students compared to those without mentoring during the first-year didactic course, $\mu 1 \neq \mu 2$.

Analysis. A Chi-square test of analysis was used to determine if there was a relationship between the dependent variable of academic achievement and the independent variable of mentoring.

Interpretation of results. Significance of results were based upon an a-priori alpha of .05, power of 0.8, and 6 degrees of freedom (see Faul et al., 2009).

Threats to Validity

Threats to validity can affect the ability to conclude that the findings of research were actually due to the identified intervention, as opposed to a covariant factor (Creswell, 2014). Thus, threats to validity from external and internal factors must be identified and the research must be designed in a way to avoid these threats. In the following section I discuss threats to the validity as well as ethical procedures of this study.

External Validity

External threats to validity occur when the researcher incorrectly attributes inferences from the data to people, settings, or past/future situations or when the testing itself interferes with the participants' behavior (Creswell, 2014; Warner, 2013). Thus, generalizing of results must be performed cautiously as the sample group may not be representative of all people – in this case, nursing students – in all settings – nursing programs – at all times. While focusing on a specific geographic area to recruit participants may pose a threat to generalizability, the selected geographic area has a diverse population and the inclusion of students from both associate and bachelor programs served to increase the generalizability of results. Testing reactivity did not alter

the results of this study as the design utilized a single survey asking the participant to reflect on experiences and did not present the opportunity for the student to change behaviors at the time of testing.

Internal Validity

Internal threats to validity result from procedures, treatments, or experiences of the research and can affect the researcher's ability to establish the cause and effect relationship of the variables being studied (Creswell, 2014). Using a validated instrument, such as the State-Trait Anxiety Inventory, helps to decrease bias from the survey tool (see Creswell, 2014). The students were not randomized into groups and provided interventions, but were stratified based on whether mentoring was available in the nursing programs attended. This prevented demoralization by participants who may have felt a benefit was not being provided as a part of the study as well as prevented any compensatory rivalry between the groups (see Creswell, 2014). Providing the survey to all students enrolled in the first year of the nursing programs decreased biases that could be created by extensive exclusion criteria, but there remained a threat that students who were more motivated to respond to a survey may have shared similar characteristics and students who were not motivated to respond may not have been well represented (see Creswell, 2014). Threats such as selection-maturation and experiment mortality were not a concern in this study as it involved a one-time single survey design.

Construct Validity

Threats to statistical conclusion validity occur when there is inadequate statistical power or a violation of statistical assumptions and may result in inaccurate interpretation

of results. These threats were addressed through the construct of the research that have been outlined in Chapters 1, 2, and 3. Using variables that have been extensively defined and using a measurement tool (the STAI) that has been shown to be valid and reliable prevented inaccurate data collection (see Creswell, 2014). Using power analysis to select an appropriate sample size and applying parameters to identify statistical analysis that have been extensively utilized and shown to be valid in past social research increased the accuracy of data collected, though it is notable that the sample size was unable to be achieved (see Creswell, 2014).

Ethical Procedures

Throughout this research project every attempt was made to respect the ethical principles of respect for persons including the respect for autonomy, beneficence, and justice for participants (see Burkholder et al., 2016). Permission was obtained from the directors of participating nursing programs as well as from the IRB of each program's governing school as well as Walden University's IRB (#02-13-20-0668624). Student contact was sent through the program directors (Appendix B), and then via social media where I could not determine the identity of those accessing the survey. Participation was completely voluntary, and this was detailed in the email to students, the social media flyer, as well as in the survey instructions. The first item in the survey was the opportunity to record consent to participate. Students choosing not to participate were able to close the survey without any information being saved. Student participation was completely anonymous as the online survey tool did not use any participant identifiers. As the survey was anonymous, there was no way to inform the nursing program directors

of what students' answers were or names of students who did or did not choose to participate.

The online survey tool and data collected were only accessible to myself, and I will not share the username or password. After data was downloaded the information was deleted from the survey tool where it was overwritten and destroyed completely within 90 days (see SurveyMonkey, 2019). Downloaded data will be maintained for a period of 5 years in a password protected file saved on a secure personal cloud drive that was password protected where only I have access. Students of the school where I was employed were exempted from recruitment to avoid conflict of interest or power differentials. There were no incentives offered for participation.

Summary

A quantitative, descriptive cross-sectional design was utilized for this research study that examined the impact of mentoring on anxiety and academic achievement of first-year prelicensure nursing students. Participants were recruited from nursing programs in a southwestern region of the United States by first obtaining permission from nursing program directors as well as IRB approval from the individual schools and Walden University, and then by obtaining Walden University IRB to publish a recruitment flyer and survey link on a social media site. Power analysis identified that a minimum of 134 participants were needed to obtain statistical significance, though only 75 complete submissions were received. The state portion of the State-Trait Anxiety Inventory was utilized to measure student anxiety, and an independent two-tailed T-test was utilized to evaluate the relationship of anxiety and mentoring. Academic

achievement was measured using student self-reporting of didactic grades, and a chi-square test of association was utilized to evaluate the relationship of academic achievement and mentoring. Threats to validity were evaluated and controlled as possible. An anonymous online survey tool was utilized to confirm participant consent as well as obtain survey data. This data was then downloaded, screened and cleaned, and loaded into SPSS® for analysis. Data was deleted from the online survey tool after data collection was complete and will be maintained in a secure file for 5 years after study completion. In Chapter 4, I provide information about the actual data collection process as well as the results of data collected.

Chapter 4: Results

The purpose of this study was to evaluate the impact of mentoring on the levels of anxiety and academic achievement in the didactic course of first-year prelicensure nursing students. The research questions and hypotheses were as follows

RQ1: What are the differences in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course?

$H_0$1: There will be no difference in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course.

H_a1: There will be a decrease in nursing student anxiety levels for mentored students compared to those without mentoring during the first-year didactic course.

RQ2: What are the differences in academic achievement for mentored students compared to those without mentoring during the first-year didactic course?

$H_0$2: There will be no difference in academic achievement for mentored students compared to those without mentoring during the first-year didactic course.

H_a2: There will be an increase in academic achievement for mentored students compared to those without mentoring during the first-year didactic course.

The following chapter includes information about the data collection process, the report and analyses of the data, the study results, and the answers to the research questions.

Data Collection

As stated in Chapter 3, directors from 30 prelicensure nursing programs were contacted, and permission was requested for enrolled students to participate in the study. Seven program directors responded providing permission. IRB approval was received from five of these programs as well as from Walden University. Data collection began as described in Chapter 3 (recruitment email forwarded by program directors to students) on February 14, 2020. A sixth program granted IRB permission and was included in recruitment and data collection on May 6, 2020. Recruitment emails were sent to each participating program's director a total of three times spaced 2 weeks apart.

By March 23, 2020, 159 survey responses had been collected, but 131 of these were not included in data analysis as only 28 met inclusion criteria listed in Chapter 3 (prelicensure associate degree and bachelor's degree students enrolled in the first year of nursing program courses who were not taking anxiolytics or antidepressants prior to beginning the nursing program) and included responses to all questions pertaining to key variables (state anxiety portion of the STAI, whether the nursing program offered mentoring and [if so] what type, and the letter grade earned in the didactic course). Walden IRB approval was received on April 6, 2020 to distribute a survey flyer on social media sites (Appendix G). By April 20, 2020, an additional 62 survey responses had been collected, but 44 of these were not included in data analysis as only 18 met inclusion criteria and included responses to all key variables. Walden IRB approval was received on May 5, 2020 to broaden the geographic area included for recruitment to include the whole state (updated flyer in Appendix H). As the survey remained open

through most of the Spring 2020 semester, on May 5, 2020, the inclusion criteria were widened to include students who began the nursing program in Spring 2020 as those students had attended long enough to generate a significant average for the semester. By June 3, 2020, an additional 100 survey responses had been collected, but 71 of these were not included in data analysis as only 29 met inclusion criteria and included responses to all key variables.

An online power analysis tool calculated the need for a sample size of 134 participants (67 from a group who reported mentoring was available, 67 from a group who reported mentoring was not available). After 15 weeks of data collection in the various forms detailed above, a total of 321 survey responses were received, 75 of which met inclusion criteria and included responses to all key variables. On June 3, 2020, permission was received from my dissertation committee to close the survey. Due to the anonymity of the survey, it is not possible to distinguish the recruitment method that resulted in the recruitment of specific numbers of participants. In Chapter 5, I further discuss limitations, including the international pandemic that first impacted the southwestern United States in March 2020.

Baseline Descriptive and Demographic Characteristics

The majority of the participants were in the 25 to 34-year-old age range (29%) and female (69%). Eighty-five percent were enrolled in associate degree nursing programs, with the majority of respondents reportedly beginning the program in the Fall of 2019 (48%), roughly half were working toward their first college degree (51%), and

half reported who no previous college courses were failed (50%). Table 1 displays the demographic characteristics of this study's participants.

Table 1

Participant Demographic Characteristics (*N* = 75)

Characteristic	*n*	%
Current age		
18-20	3	4
21-25	23	30.7
26-30	16	21.3
31-40	22	29.3
41-50	4	5.3
50+	3	4
n/a	4	5.3
Gender		
Female	69	92
Male	6	8
Program type		
Associate Degree	64	85.3
Bachelor's Degree	11	14.7
Semester started in nursing program		
Spring 2019	21	28
Fall 2019	48	64
Spring 2020	6	8
Previous college degree		
Yes	37	49.3
No	38	50.7
Number of previously failed college courses		
None	50	66.7
1-2	19	25.3
3-4	4	5.3
5+	2	2.7
Faculty mentoring available		
Yes	37	49.3
No	38	50.7

In order to assess external validity, the sample demographics were compared to a 2019 survey of prelicensure nursing students in the state where data collection took place (Texas Center for Nursing Workforce Studies, 2020a, 2020b). In both samples, the majority of participants were 21 to 40 years of age, with approximately 1/3 of participants in the 21 to 25 age range. There were, however, considerably fewer participants in the 18 to 20-year-old age range participating in this research (4%)

compared to the state survey (16.2%). Males represented a smaller percentage of participants in this research (8%) compared to the state survey (16.4%). Program types were disproportionally represented as 85.3% of participants in this research attended ADN programs, whereas only 40.1% of participants in the state survey attended ADN programs. Table 2 displays the demographic characteristics of the state's study participants.

Table 2

Nursing Student Demographics of the Selected State (N = 17,091)

Characteristic	%
Current age	
Under 21	16.2
21-25	38.2
26-30	18.2
31-40	18.8
41-50	7.1
50+	1.5
Gender	
Female	83.5
Male	16.4
Did not answer	0.1
Program type	
ADN	40.1
BSN	51.5
Other	8.4

Note. Data obtained from Texas Center for Nursing Workforce Studies (2020a; 2020b)

Study Results

At the time the survey closed, there were 321 total participants. After data were screened and cleaned as outlined in Chapter 3, the final sample used for data analysis consisted of 75 participants from prelicensure nursing programs in a large southwestern state. The survey responses from these 75 participants were loaded into SPSS® for analysis.

Anxiety Level

The impact of mentoring on state levels of anxiety was analyzed using an independent sample *t* test to determine if there was a statistically significant difference in the state anxiety level of students whose programs did offer mentoring ($N = 37$) versus those whose programs did not offer mentoring ($N = 38$). Data were evaluated to ensure that the six assumptions of independent sample *t* tests were met prior to running the analysis. The first three assumptions make up the basic assumptions and are related to the study design (Lund Research, 2018b). Assumption 1, that the dependent variable is measured at the continuous level, was met by the dependent variable (anxiety) being measured using the state portion of the STAI, which provides scores ranging from 20 to 80 (see Lund Research, 2018b). Assumption 2, that the independent variable consists of two categorical, independent groups, was met by the independent variable (mentoring) being a dichotomous variable with responses of yes or no (see Lund Research, 2018b). Assumption 3, that there is independence of observations, was met by the groups being independent of each other – programs either offer mentoring or not. Therefore, if participants answered the survey question honestly and only took the survey once, there was not an opportunity for any participant to belong to more than one group (see Lund Research, 2018b).

The last three assumptions are related to the nature of the data collected (Lund Research, 2018b). Assumption 4, that there are no significant outliers in the scores of the dependent variable, was assessed by inspection of a boxplot that showed no outliers in the data for anxiety (see Lund Research, 2018b). Assumption 5, that the dependent

variable should be normally distributed, was assessed using the Shapiro-Wilk test for normality that showed that the anxiety scores for each of the groups were normally distributed as $p > .05$ (see Lund Research, 2018b). Assumption 6, that there is a homogeneity of variances, was assessed using the Levene's Test for Equality of Variances, which showed that there was indeed homogeneity of variances for anxiety scores for each of the groups as $p > .05$ ($p = .641$; see Lund Research, 2018b).

As the assumptions of the independent *t* test were met, the results were analyzed. Students who were offered mentoring had marginally higher anxiety scores ($M = 48.74$, $SD = 1.753$) than students who were not offered mentoring ($M = 48.14$, $SD = 1.924$). The mean anxiety score was $M = .602$, (95% CI [-4.51 to 5.78]) higher in students who did were not offered mentoring compared to those who were offered mentoring. There was not a statistically significant difference in the anxiety score between students who were not offered mentoring and those who were, $t(73) = .231$, $p = .818$, $d = .053$. The results of the independent *t* test are illustrated in Figure 3. As the independent *t* test did not yield a statistically significant difference between the two groups, the null hypothesis cannot be rejected.

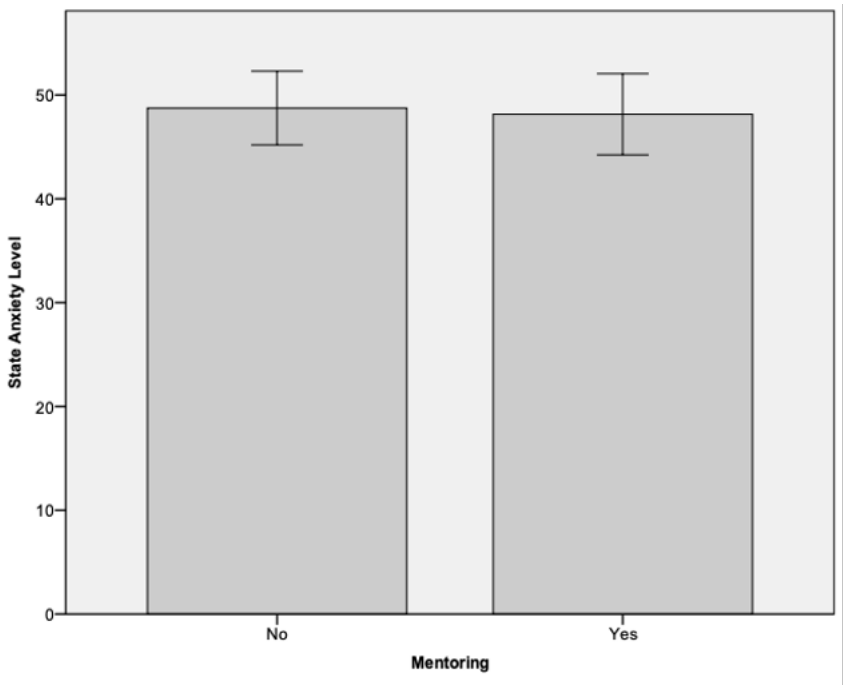

Figure 3. Illustration of *t*-test results for anxiety by mentoring offered.

Academic Achievement

The impact of mentoring on academic achievement was analyzed using chi-square test for association to determine if there is an association between the letter grade average in the didactic course and whether or not the student's program offered mentoring. Data was evaluated to ensure that the three assumptions of chi-square test for association were met prior to running the analysis. Assumption 1, that the two variables being compared were measured at the categorical level, was met because both variables (mentoring and letter grade) had limited response options, and were therefore treated as categorical variables (see Lund Research, 2018a). Assumption 2, that there is independence of observations, was met by the groups being independent of each other – programs either offer mentoring or not (see Lund Research, 2018a). Assumption 3, that the data fits the

model to be tested was evaluated using a crosstabulation which noted that expected cell frequencies were greater than five in all cells.

As the assumptions of the chi-square for association were met, the results were analyzed. There was no statistically significant association between letter grade and whether or not students were offered mentoring, $\chi^2(1) = 1.706$, $p = .426$. There was a low association between the letter grade average in the didactic course and whether or not the student's program offered mentoring, $V = .151$, $p = .426$. Results of the chi-square analysis are illustrated in Table 3 and Figure 4. As the chi-square for association did not yield a statistically significant difference between the two groups, the null hypothesis cannot be rejected.

Table 3

Crosstabulations and Chi-Square Results for Grade by Mentoring Offered

Mentoring	Letter grade					χ^2	*df*	*p*
	A	B	C	D	F			
Not offered	15	18	5	0	0	1.706	2	0.426
Offered	20	19	8	0	0			
Total	25	37	13	0	0			

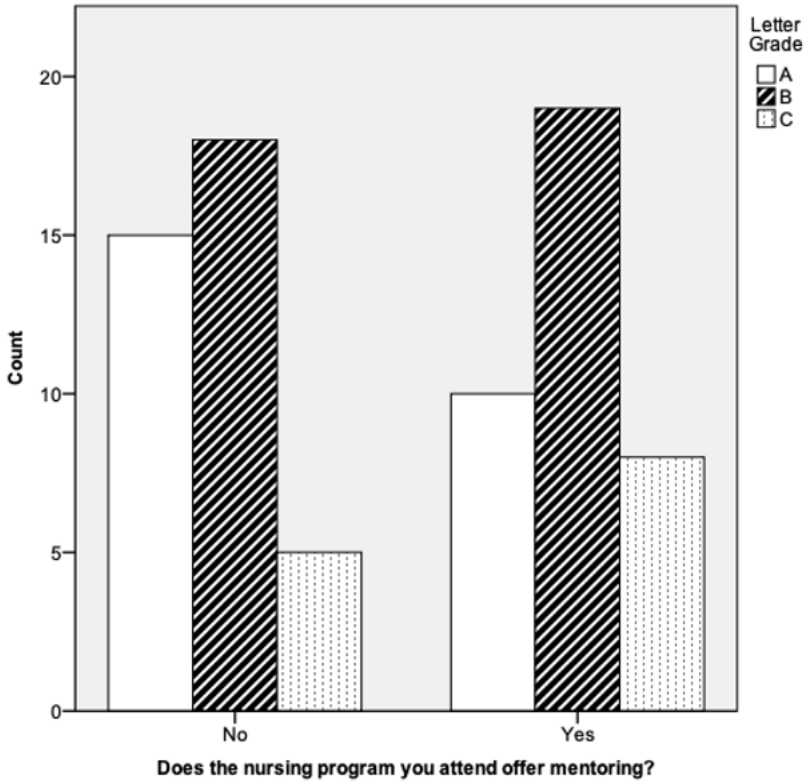

Figure 4. Illustration of chi-square results for grade by mentoring offered.

Additional Statistical Tests

Analysis was repeated using only the cohort reporting that mentoring was offered to assess whether having mentored offered versus using mentoring was statistically significant.

Anxiety level. An independent-samples *t* test was performed to determine if there was a difference in the state level of anxiety between students who did not utilize offered mentoring ($N = 13$) versus those who did ($N = 24$). Assumptions for independent *t* tests, mentioned previously, where all met and there were no outliers in the data as assessed by inspection of a boxplot. Anxiety scores for each of these groups were normally distributed as assessed by Shapiro-Wilk's test ($p > .05$), and there was homogeneity of

variances as assessed by Levene's test for equality of variances (p = .613). Anxiety levels were higher in students who did not utilize offered mentoring (M = 50.23, SD = 3.254) versus those who did (M = 47.0, SD = 2.405), though there was not a statistically significant difference, M = 3.231, 95% CI [-4.994, 11.456], t(35) = .797, p = .431, d = .023 (Figure 5).

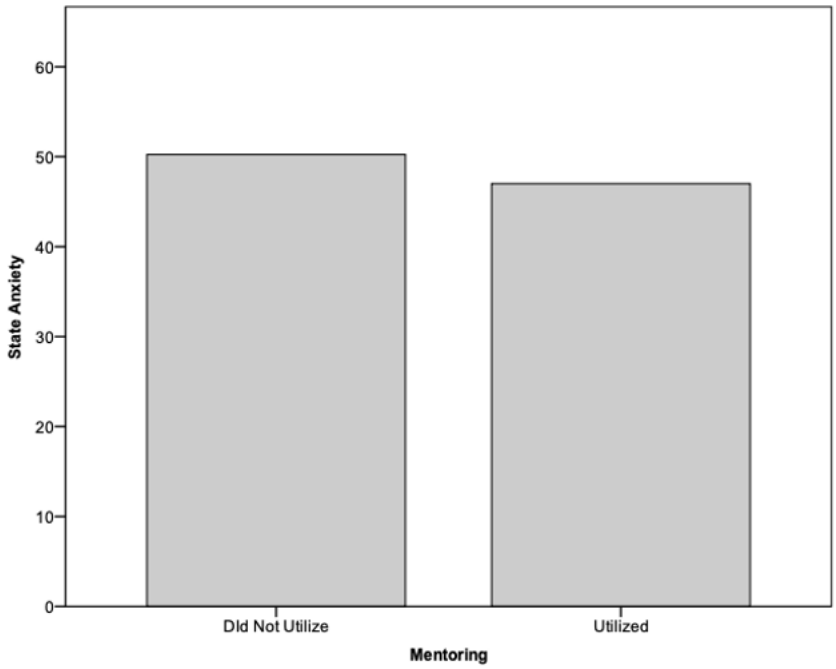

Figure 5. Illustration of *t*-test results for anxiety by mentoring utilized.

Academic achievement. A chi-square test for association was conducted between students who did not utilize offered mentoring versus those who did and academic achievement. While this data did not meet the assumption that all expected cell frequencies were greater than five in all cells, data analysis was continued as it was met in 5 out of 6 instances.

There was not a statistically significant association between whether or not the student utilized offered mentoring and academic achievement, $\chi^2(1) = 3.162$, $p = .206$. There was a moderate association between the letter grade average in the didactic course and whether or not the student utilized offered mentoring, $V = .292$, $p = .206$ (Table 4 and Figure 6).

Table 4

Crosstabulations and Chi-Square Results for Grade by Mentoring Used

Mentoring	Letter grade					χ^2	*df*	*p*
	A	B	C	D	F			
Not utilized	3	9	1	0	0	3.162	2	0.206
Utilized	7	10	7	0	0			
Total	10	29	8	0	0			

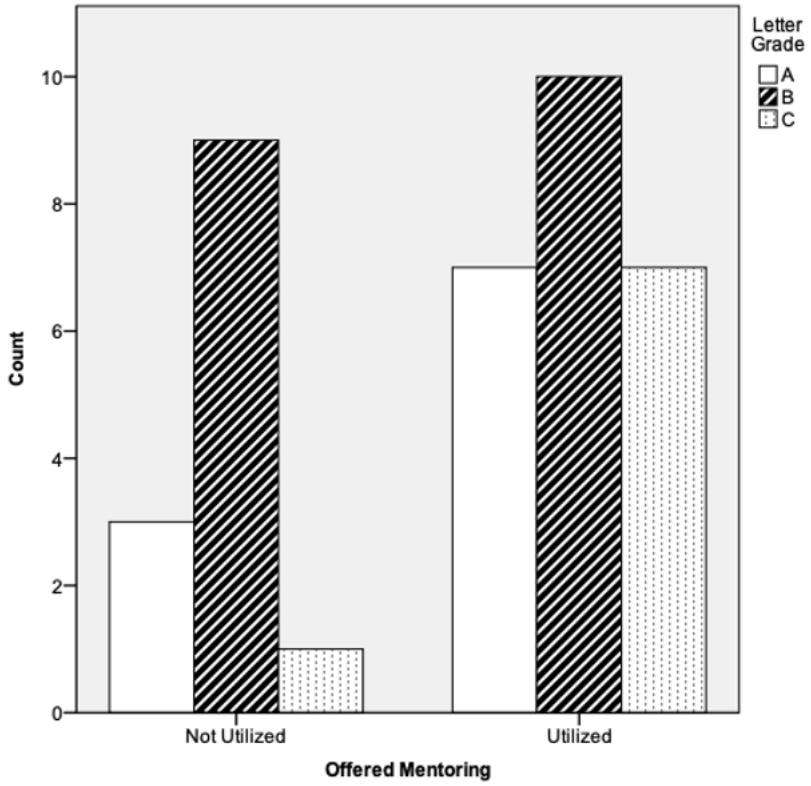

Figure 6. Illustration of chi-square results for grade by mentoring offered.

Summary

While the survey sample was relatively small, the demographics of survey participants were similar to the broader demographics of nursing students in the large southwestern state where the research took place. Statistical differences in the comparisons of both level of anxiety and academic achievement to whether or not the student's program offered mentoring was negligible, and neither was statistically significant. Further, comparisons of both level of anxiety and academic achievement to whether or not the student utilized mentoring where it was offered were greater, though not statistically significant. Given the lack of statistical significance, the null hypothesis could not be rejected to either research question. In Chapter 5, I provide interpretation of

the findings, discuss limitations of the study, and provide recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

The following chapter includes an interpretation of findings, limitations of the research study, recommendations for future research, implications of the findings, and a conclusion. The purpose of the study was to investigate the impact of mentoring on the level of anxiety and academic achievement in the didactic course of first-year nursing students. These variables were studied using a quantitative, descriptive cross-sectional research design wherein an anonymous survey was sent to first-year nursing students via their nursing program directors as well as through social media.

As noted in Chapter 4, an independent *t* test showed that anxiety levels were marginally higher in students whose programs did not offer mentoring ($M = .602$), though this finding was not statistically significant ($p = .818$). Another independent *t* test showed that anxiety levels were slightly higher in students who did not use mentoring in programs where it was offered ($M = 3.321$), though this finding was not statistically significant ($p = .431$).

A chi-square test for association showed that there was a weak association between the letter grade average in the didactic course and whether or not the student's program offered mentoring, though the finding was not statistically significant ($\chi^2(1) = 1.706$, $V = .151$, $p = .426$). Another chi-square for association showed that there was a moderate association between the letter grade average in the didactic course and whether or not the student used the offered mentoring, though the finding was not statistically significant ($\chi^2(1) = 3.162$, $V = .292$, $p = .206$).

While these findings were not statistically significant and the null hypotheses could not be rejected, it may be worth investigating these variables again as limitations outside of my control may have impacted study participation and results.

Interpretation of Findings

Previous research has shown that first-year nursing students experience an increased level of anxiety compared to more senior nursing students and students in other discipline programs (Smith-Wacholz et al., 2019; Turner & McCarthy, 2017; Wedgeworth, 2016). Increased level of anxiety of these students can result in diminished ability to critically think and learn, which can result in decreased academic achievement (Brady et al., 2019; McDonald et al., 2018; Steinmayr et al., 2017; Tantillo et al., 2017; Tinto, 1993; Yüksel & Bahadır-Yılmaz, 2019). Decreased academic achievement results in financial impacts on both the student and the nursing program, psychological impacts on the student, and ultimately results in a decrease number of nurses entering the workforce at a time when there is already a shortage of nurses in the workforce (American Association of Colleges of Nursing, 2019; Kubec, 2017). While previous research has been performed studying the impact of mentoring on levels of anxiety and/or academic achievement in specific demographic groups overall as well as in students in the clinical course (discussed in Chapter 2), there was a gap in the literature regarding the impact of mentoring on the level of anxiety and academic achievement of first-year nursing students in the didactic course.

Anxiety

The first research question addressed the impact of mentoring on the level of anxiety of first-year nursing students in the didactic course. As discussed in Chapter 4, the level of anxiety was marginally higher in students who did not attend programs where mentoring was offered as well as in students who did not use mentoring in programs where it was offered, though these differences were not statistically significant. Walker and Verklan's (2016) research was the most similar to this study in terms of design wherein they researched the impact of peer mentoring on the level of anxiety of nursing students in their first clinical experience. They found a significant decrease in the level of anxiety of students who received mentoring compared to those who did not (Walker & Verklan, 2016). In a literature review DeWitty et al. (2016) noted that mentors were most frequently faculty and that the support of faculty was the greatest facilitator in student completion of the nursing program (p. 54).

As stated previously, there is no research available that directly compared the impact of mentoring, faculty of otherwise, on the level of anxiety of first-year nursing students in the didactic course. Previous research has indicated a decrease in student anxiety in other aspects of the nursing program. Further research with a larger participant pool is needed to validate the findings of this study researching the impact of mentoring on the level of first-year nursing student anxiety.

Academic Achievement

The second research question addressed the impact of mentoring on the level of academic achievement of first-year nursing students in the didactic course. As discussed

in Chapter 4, the association of mentoring and academic achievement was low to moderate, but not statistically significant. Havrilla et al. (2018) studied the implementation of faculty mentoring on NCLEX pass rates and found a significant increase in student grade point average and NCLEX pass rate over a 3-year period, but there was no other research available that directly compared the impact of mentoring, faculty or otherwise, on the academic achievement of first-year nursing students in the didactic course. Previous researchers found that mentoring was included in interventions that increased student GPA and overall program retention. Further research with a larger participant pool is needed to validate the findings of this study researching the impact of mentoring on the level of first-year nursing student academic achievement.

Theoretical Framework

NSM was used as the theoretical foundation for this study. NSM focuses on the client's response to actual or possible stressors in the environment and incorporates the overall goal of maintaining system stability and facilitating optimal wellness in relation to experienced stressors (Neuman & Fawcett, 2011, p. 3). Over time, the client's stability can be impacted by intra-, inter-, and extra-personal stressors, and the client develops both a natural (built over time) and a flexible (changes based on physiological, psychological, sociocultural, developmental, and spiritual variables) line of defense to withstand these stressors (Neuman & Fawcett, 2011). The client has three levels of prevention to prevent encountering stressors and aid in recovering from stressors: primary (used to identify/assess and reduce/prevent reaction from the stressor), secondary (where symptoms from the stressor are assessed, prioritized, and treated), and tertiary

(where the client makes adjustments to return to a primary prevention state; Neuman & Fawcett, 2011).

In this study, I used the NSM framework to evaluate whether mentoring (a source of primary prevention) impacted the level of anxiety (stability) in the first-year nursing students' (client) with the ultimate goal of achieving academic achievement (wellness). The results of this study were inconclusive whether mentoring impacted the level of anxiety in first-year nursing students' or if their academic achievement was impacted by implementing this source of primary prevention as it was not possible to reject the null hypothesis to either research question and there were significant limitations.

Limitations of the Study

The greatest limitations to the validity and reliability were the limited level of participation by nursing programs as well as participants, the impact of the COVID-19 pandemic, the limitation of grades reported by participants, and possible bias caused by students in my program unintendedly participating in the study. As noted in Chapter 3, G*Power analysis indicated that 67 participants were needed in each research group to perform adequate statistical analysis. While there was a total of 321 participants, 162 did not meet inclusion criteria, and 84 left pertinent sections of the survey blank, resulting in 75 total participants, 56% of what was needed to achieve adequate statistical analysis. It is unclear what caused the lack of participants, but the lack of participating nursing programs and COVID-19 pandemic may have been major contributors.

The first COVID-19 case was diagnosed in the state where this research project took place on March 4, 2020 (Department of Health and Human Services, 2020). All

schools (including colleges) were ordered to be closed on March 19, 2020 and were subsequently ordered to keep all school buildings closed through the end of the 2020-2021 school year, resulting in a sudden and significant change in instruction delivery (Exec. Order No. GA-08, 2020; Exec. Order No. GA-14, 2020). This may have caused a limitation in access to participants via their nursing directors (the original research design plan) as well as potentially altering the state anxiety level unrelated to anticipated nursing program stressors. These factors may result in limitations to validity of results due to a small number of participants and limitations to reliability as the pandemic may have altered anxiety levels.

Another limitation was that respondents reported grades of A, B, or C only, and that no participant reported grades of D or F. This may be a limitation due to requesting student grades from a previous semester. Participants were asked to identify what the minimum passing grade was in their nursing program, and every participant answered C or greater. Thus, students receiving D or F may not have been represented in the survey participants as they had already been removed from the program. It is also possible that students with lower grades were not as motivated to participate in a voluntary research study as their higher scoring peers. This limitation of reported grades may have presented a limitation in analysis of association of mentoring to academic achievement. Future research studies should consider these limitations when planning and implementing similar research.

Lastly, it is not possible to rule out the limitation of potential bias caused by the students in my program unintendedly participating in the study. While every effort was

made to prevent sharing of the survey link with students in the program where I am employed, it is possible that the anonymous link may have been sent to a student in my program by another student or by locating a shared social media page containing the link. Future research studies should consider this limitation when planning and implementing similar research.

Recommendations

This research was limited by the small sample size, which may have been impacted by the COVID-19 virus and subsequent changes in program delivery. While a change in recruitment method was attempted to overcome this challenge, it did not significantly increase participation. Future research of this topic should include a recruitment method capable of fostering greater participation from nursing programs as well as nursing student participants. Further, the timing of survey distribution and questions directed at obtaining grades should be addressed in such a way that students who are no longer in the program due to attrition are compelled to answer. Lastly, the survey questions should be worded in a way that allows the survey to remain open for more than a semester while recruiting incoming first-year nursing student participants.

Implications

Social Change

Improving nursing student anxiety and academic achievement can result in an increase of competent nursing students who are needed to fill the expanding shortage of the nursing workforce (see American Association of Colleges of Nursing, 2019; Turner & McCarthy, 2017). While the results of this study were not statistically significant, this

study contributes to the body of knowledge by researching interventions to improve nursing student perseverance as well as by providing recommendations for carrying out future research of the selected variables in the nursing student population. Positive social change is impacted at the personal, educational, and societal level by furthering research of ways to help nursing students persevere in the nursing program. Students who persevere through the nursing program do not have the financial impact of a semester of school that must be repeated, nursing programs do not suffer the loss of a nursing seat that cannot be refilled, and society does not lose out on the graduating nurse at the end of the completed program (see Kubec, 2017).

Recommendations for Practice

While faculty mentoring was not found to have a statistically significant impact on the levels of first-year nursing student anxiety and academic achievement in this study, in the literature review in Chapter 2 I highlighted the importance of faculty support for student success (Havrilla et al., 2018; Murray et al., 2016; Tabi, 2016). A recommendation for practice would be for nursing instructors to be a role model to their students and support them in their academic endeavors.

Conclusions

First-year nursing students can be hindered by elevated levels of anxiety and diminished levels of academic achievement. In this study I attempted to identify an intervention, faculty mentoring, by evaluating its impact on levels of anxiety and academic achievement through an anonymized online survey to students in a large southwestern state. While the results of this study were not statistically significant,

further research of these variables is suggested as the study may have been hampered by the effects of the COVID-19 pandemic. Finding interventions to improve levels of anxiety and academic achievement of the first-year nursing student imparts positive social change by increasing the number of competent graduating nurses joining the workforce to ease the ongoing nursing shortage.

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Appendix A: Permission to Reproduce Neuman's Systems Model Figure

*Permission is **not** needed to use the Neuman Systems Model for any purpose.*

For educational purposes (student papers, theses, dissertations; teaching and curriculum):

Permission is hereby granted for reproduction of any **figures** in Neuman, B., & Fawcett, J. (Eds.) (2011). *The Neuman systems model* (5th ed.). Upper Saddle River, NJ: Pearson.

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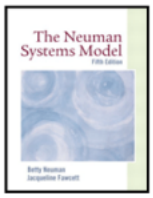

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Appendix B: Email to Nursing Program Directors

From: **Heather Clesi**
Subject: Assistance With PhD Dissertation Project

Good evening -

I completing the proposal phase of my dissertation project through Walden University where I am working toward my PhD in Nursing Education. I am researching the impact of mentoring on anxiety levels and levels of academic achievement in the didactic course of first-year nursing students. To have enough participants to achieve sufficient statistical power, I will need to survey students from both schools that offer mentoring as well as those that do not. I should be completing IRB through Walden by the end of the year, and anticipate sending surveys (by asking you to please distribute a link to the students in your program) in January 2020. My questions today are:

1) Would you be willing to open your program's students to participation in this study?
2) If you would be willing, to whom would I need to speak regarding the IRB process at your institution?
3) Does your campus's nursing program have a mentoring program in place for your students?
4) If your program *does* have mentoring, who serves as the mentors (faculty or students)?

Thank you so much for your assistance, it is greatly appreciated!

Heather Clesi, MSN, RNC-OB, CNE, Doctoral Student
PhD Nursing Education Student
Walden University

Appendix C: Email to Participants

From: Heather Clesi
Subject: Your Participation in a Research Project Would Be Appreciated!

Dear Nursing Program Director:

Thank you very much for your agreement to allow your students to participate in my dissertation research project. Would you please be so kind as to forward the information (including the link) below to your nursing students? Specifically, I am looking to survey students who began the nursing program in Spring 2019 or Fall 2019.

Dear Nursing Student:

I am a PhD student working toward my PhD in Nursing Education through Walden University. As part of the fulfillment of my degree, I am required to perform a research project and write a dissertation paper about the research process and findings. Specifically, I am researching the impact of mentoring on the level of anxiety and academic achievement of first-year nursing students in their didactic (i.e. lecture or theory) course(s).

Would you please spare 10-15 minutes of your time to fill out the survey (via the link below) to help me complete this research?

Should you consent to participate, please know that your participation is completely anonymous and entirely optional/voluntary. Neither your faculty, program director, nor I will be able to identify whether you participated or what your responses were. There are no anticipated risks to you as a participant. While you will not receive any direct benefits or compensation for your participation, please know that your responses will contribute to research that can be used to inform nursing programs on the usefulness of mentoring as a tool for student success.

Thank you for your time!

Heather Clesi, MSN, RNC-OB, CNE, Doctoral Student
PhD Nursing Education Student
Walden University

Appendix D: Student Demographic Information

When was your first semester in this nursing program (in other words – in what semester was your first nursing program course? Do not include your prerequisites.)	Prior to Spring 2019 Spring 2019 Fall 2019 Spring 2020
Were you prescribed anxiolytics or antidepressants prior to beginning the nursing program?	Yes No
Age	_____ years
Gender	Male Female Choose not to answer
Do you have a previous college degree?	Yes No
Have you previously failed any college courses?	No previous courses failed 1-2 previous courses failed 3-4 previous courses failed 5+ previous courses failed
What type of nursing program are you enrolled in?	Associate Degree Bachelor's Degree Other
If you replied "other" to the previous question, what type of nursing program are you enrolled in?	_____

Appendix E: Mentoring Survey Items

Does the nursing program you attend offer mentoring? (If "no" please skip forward to the next survey page)	Yes No
If your nursing program does offer mentoring, who acts as the mentor?	Other students Faculty Nurses at the clinical site Someone else
If you answered "someone else" in the previous question, please describe this person's role in your college:	_____
If your nursing program does offer mentoring, how often do you utilize mentoring? (Please select the option that closest describes how often)	Never Once a semester Once a month Once a week More than once a week

Appendix F: Academic Achievement Survey Items

What letter grade is required to successfully complete didactic (lecture) nursing courses in your nursing program?	A B C D F
What number grade is associated with this letter grade? (e.g. 74.5-79.5)	_____
What letter grade did you earn in your Fall 2019 nursing didactic (lecture) course?	A B C D F
If you have more than one nursing lecture course, what letter grade did you earn in your second Fall 2019 didactic (lecture course)?	A B C D F n/a – I only had 1 nursing lecture course in Fall 2019
If you have more than two nursing lecture courses, what letter grade did you earn in your third Fall 2019 didactic (lecture) course?	A B C D F n/a – I only had 2 nursing lecture courses in Fall 2019
If your first semester was Spring 2020, what letter grade did you earn in your Spring 2020 didactic (lecture) course? [Note: this question was added when students who started the program in Spring 2020 were added to the inclusion criteria]	A B C D F

Appendix G: Social Media Survey Flyer

- If you are, or know someone who is, an ADN or BSN nursing student in SE Texas who began their nursing classes in Spring 2019, Fall 2019, or Spring 2020 please consider taking part in or passing along the enclosed research study. I am a doctoral student studying the impact of mentoring on the levels of anxiety and academic achievement of first-year nursing students in their didactic (lecture) courses. Please click the survey link below for more details.

- Thank you for your help and consideration

Appendix H: Updated Social Media Survey Flyer

- If you are, or know someone who is, an ADN or BSN nursing student in Texas who began their nursing classes in Spring 2019, Fall 2019, or Spring 2020 please consider taking part in or passing along the enclosed research study. I am a doctoral student studying the impact of mentoring on the levels of anxiety and academic achievement of first-year nursing students in their didactic (lecture) courses. Please click the survey link below for more details.
- Thank you for your help and consideration

Appendix I: STAI Permission

www.mindgarden.com

To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

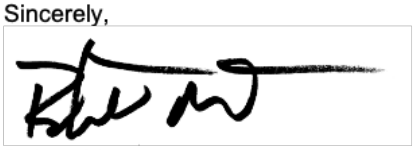
State-Trait Anxiety Inventory for Adults

The four sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

I feel at ease
I feel upset
I lack self-confidence
I am a steady person

Sincerely,



Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix J: Approval for Remote Online Use of STAI

Approval for Remote Online Use of a Mind Garden Instrument

Effective date is December 8, 2019 for:

Heather Clesi

You submitted your Application for Remote Online Use at 5:56 pm EST on December 06, 2019.

mind garden [v2]