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Lowering Perceived Stress Levels in Undergraduate Nursing Students

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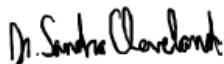
Doctor of Nursing Practice



Dr. Joey Cope, Dean of the College
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Date: 10 / 20 / 2020

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School of Nursing

Lowering Perceived Stress Levels in
Undergraduate Nursing Students

A doctoral project submitted in partial satisfaction
of the requirements for the degree of
Doctor of Nursing Practice

By

Caitlin K. Dodd

November 2020

Dedication

I dedicate this project to my family and to all of the students who participated and breathed together each Tuesday and Thursday.

Acknowledgments

I want to express my thanks to those who helped throughout this project and who, without their help, I would not have made it here. Thank you to Dr. Sandra Cleveland for always reminding me to take a deep breath and to take each step one piece at a time. Thank you to Drs. Theresa Naldoza and Tonja Hartjes for serving on my committee and providing thoughts and concerns. Thank you to everyone who was always willing to talk me through this or that step of work, whether it was when I barged into your office or recently via text. Last but not least, thank you to my family. Without your support and encouragement, I would not have made it through this project or doctorate program.

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Abstract

This project analyzed the effects of guided meditations and a stress management class on undergraduate, prelicensure nursing students' perceived stress levels. College students and professional nurses are both susceptible to having high stress levels. Mindfulness activities have been shown to lower stress levels. Undergraduate, prelicensure nursing students participated in this project determining the effects of guided meditations and a stress management class on perceived stress levels in a quantitative, pre- and postinterventional study. Participants in the project completed a stress management class and 18 guided meditation sessions in an undergraduate classroom setting. The researcher used the Perceived Stress Scale-10 (PSS-10) to measure the effects of the intervention. Results showed a statistically insignificant difference between pre- and postintervention PSS-10 mean scores. Participants' free responses were positive, and they found the interventions beneficial. Half of the participants had the same or a lower PSS-10 score following the intervention. The COVID-19 pandemic emerged during the intervention period for this project, possibly changing the effectiveness of the intervention. Despite the statistically insignificant results, participants expressed benefits from the guided meditations, and these could be incorporated into the classroom setting. The school of nursing, where the study took place, can analyze other areas where meditations could be added for possible stress relief.

Keyword: stress, meditation, nursing student, undergraduate, perceived stress level, mindfulness

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Chapter 1: Introduction

The general U.S. population experiences high stress levels, with U.S. healthcare workers being no exception. In 2015, some 75% of the U.S. population reported experiencing a symptom of stress within the previous month (American Psychological Association [APA], 2015). U.S. healthcare workers and nursing staff are particularly susceptible to high levels of stress, with 82% of practicing nurses reporting workplace stress (American Nurses Association [ANA], 2017). Work stress in nursing is particularly concerning since it can be detrimental to not only the individual's health but the patients or populations receiving care.

As with the general U.S. population, nursing students also experience stressful situations. Nursing students have stressors ranging from trying to be admitted to the program to having to maintain required grade point averages to continue (Turner & McCarthy, 2017). Nursing student stress levels are high and could potentially increase as they remain in the program of study and into their future careers as nurses. Implementing guided meditations into the classroom setting across a baccalaureate nursing program is a long-term goal of this project. A short-term goal includes determining if brief guided meditation sessions at the beginning of class time with undergraduate, prelicensure nursing students lowered perceived stress levels.

Statement of the Problem

High stress levels and limited coping skills are concerns for college students. Some 32% of college students reported that stress negatively affects them academically (American College Health Association, 2018). Nursing students have additional stressors within their program of study. Nursing students learn in a curriculum based not only in the classroom but in the clinical setting at the undergraduate level, which contributes an additional stressor (Turner & McCarthy, 2017). Nursing students need to be taught coping skills to improve their stress levels leading to

success academically and being able to provide safe, quality patient care. Without training to manage stress and anxiety, nursing students are more likely to become overwhelmed, be unsuccessful in nursing school, and could potentially cause patient harm.

Background

Stress could negatively impact the health of nursing students. Prolonged stress can lead to heart disease, weight gain, headaches, depression, and anxiety (McEwen & Sapolsky, 2006). Each of these complications from stress could have long-lasting consequences. Some individuals working as nurses are at an increased risk for stress and poor health because of high stress levels (Park & Kim, 2013). Learning coping mechanisms and stress management techniques before entering the nursing profession could help students prevent adverse health outcomes.

Self-care and stress management are highlighted as national issues. Healthy People 2020 has the following topic: Health-Related Quality of Life and Well-Being. This topic includes improving not only the physical well-being of Americans, but the mental well-being (Office of Disease Prevention and Health Promotion, 2016). Improving an individual's stress level, could help improve their overall mental and physical well-being. The ANA has launched the Healthy Nurse, Health Nation (HNHN) Grand Challenge. The main health focus of HNHN Grand Challenge is quality of life, which includes lowering nurses' stress levels (ANA, 2017). The *Essentials for Baccalaureate Education for Professional Nurses* is the basis of accreditation for baccalaureate nursing programs (American Association of Colleges of Nursing [AACN], 2008). Essential VIII is Professionalism and Professional Values, which includes recognizing the importance of personal health and the effect it can have on providing quality care (AACN, 2008). One way to help value and show the importance of personal health would be to

incorporate self-care techniques into the nursing program through the use of stress management skills.

Nurse Stress and Patient Outcomes

High nursing stress levels have a detrimental effect on patients who are receiving care and could decrease the quality of care patients receive, leading to adverse events and medical errors (Pich, 2018). A decrease in the quality of care patients are receiving could lead to any number of unknown medical errors or poor outcomes for the patients. When nurses with less than optimal health are compared to those with better health, medical errors may occur 26% to 71% more often (Melnyk et al., 2018). In a study by Melnyk et al. (2018), participants completed the Perceived Stress Scale-4 (PSS-4) to determine stress levels; those participants with higher perceived stress scores were at increased risk of medical errors. This study concluded that addressing stress is essential because it can lead to costly medical mistakes impacting patient health. Medical errors are costly for healthcare organizations. In the U.S., it is estimated that medical errors cost \$17.1 billion every year (Van Den Bos et al., 2011). Healthcare organizations spend significant amounts on medical errors. Thus, it is vital that nurses learn self-care coping mechanisms early or before their career begins to prevent these issues.

Undergraduate Nursing Student Stress Levels

College students are very prone to high stress levels. In 2018, some 86% of undergraduate college students reported feeling overwhelmed, and 62% reported overwhelming anxiety (American College Health Association, 2018). College students reported stress levels that are higher than the general U.S. population (APA, 2015). The high stress levels in college students could lead to negative health outcomes.

Nursing students are a class of students who have stressors similar to their other college peers. They also have additional stressors that general college students do not because their academic learning consists of clinical rotations where they provide care to patients (McCarthy et al., 2018). Nursing students begin to care for patients at the undergraduate level and this interaction, along with the drive to do well academically, adds to the increased risk for high stress levels.

This project will impact the nursing students participating by potentially lowering their stress levels. Lower stress levels should help with student retention and success in the nursing program.

Purpose of the Project

The purpose of this project was to determine if nursing students who completed training for stress management and practiced guided meditations during class time reported lower levels of perceived stress than before participating in the intervention.

Significance

Nurses often report high levels of stress leading to nurses leaving the profession of nursing entirely or leaving the current place of employment, creating an increase in the nursing shortage (Lo et al., 2018). According to the Bureau of Labor Statistics (2015), the unmet need for registered nurses will grow to 439,300 by 2024. Having coping skills to manage high stress levels before starting their professional career could lead to higher rates of nurse retention.

Nurses leaving their current role as a registered nurse and training new nursing staff for those roles is costly for healthcare organizations. A survey of 130 healthcare facilities determined that bedside nurse turnover costs an average of \$52,100 leading to a cost for healthcare facilities of \$4.4 million to \$6.9 million per year (NSI Nursing Solutions Inc., 2019).

A nursing staff able to manage their stress level could lead to an increase in nurse retention rates and to cost savings for the organization.

Stress management training will benefit schools of nursing by improving attrition in the program and individuals' academic performance. Bamber and Kraenzle Schneider (2016) suggested that a reduction in stress and anxiety through guided meditation can lead to an increase in student success, higher attrition rates, and improved academic achievement. Nursing programs are evaluated on student attrition rates and NCLEX® pass rates. Learning and implementing stress management and coping techniques early will not only benefit the nursing student, but could also help to improve the nursing program by improving retention through academic success. The participants in this project may benefit by learning stress management strategies, practicing guided meditation, and decreasing perceived stress levels. I designed this project to have an impact on healthcare organizations by teaching future nurses coping strategies to reduce nurses' stress levels leading to higher retention rates. The project could also benefit schools of nursing by improving attrition and academic success. It could enhance the lives of the nursing students who participated by decreasing their personal perceived stress levels.

Nature of the Project

I designed the project to lower stress levels in undergraduate, prelicensure nursing students. Participants in the project participated in a class about stress management and practiced guided meditation at the start of each class period using pre- and postintervention surveys to determine if there was a change in perceived stress levels.

Methodology

I used a quantitative pre- and postinterventional design to allow for a comparison of perceived stress levels before and after the intervention. I analyzed the data to determine if there

was a statistically significant difference in PSS scores before and after the intervention.

Statistically significant results would potentially provide the justification needed to accomplish the goal of placing stress management training in the classroom and completing guided meditation during class time.

Question Guiding the Inquiry

A properly developed research question helps a researcher to design and implement a research project.

Q1. Do undergraduate prelicensure nursing students (population), who participate in training for coping skills and stress management with a guided meditation during class time (intervention) report lower perceived stress levels (dependent variable/outcome) than before training (comparison) during a semester of the undergraduate nursing program (time)?

The population used for this project was prelicensure nursing students at a private urban university in the Southern United States. The nursing students were enrolled in a five-semester BSN program. The intervention took place during the first semester that the participants were enrolled in nursing course work.

The intervention included a stress management program provided by the university's wellness center. The guided meditations were commercially prepared and accessed via different apps. I evaluated the perceived stress levels of participants using Cohen's Perceived Stress Scale (PSS). I completed a comparison of the nursing students' PSS scores following the intervention to determine if there was a decrease in perceived stress levels. The intervention took place during the 15-week semester.

Hypothesis

A hypothesis helps to give a proposed explanation of what occurred following the given intervention.

H1: Undergraduate, prelicensure nursing students will report decreased perceived stress levels following completion of a class in stress management and guided meditations.

H0 Null: Undergraduate, prelicensure nursing students will have no change in perceived stress levels following completion of a class in stress management and practice with a guided meditations.

Theoretical Framework

The description of stress varies greatly; one definition commonly used comes from Richard Lazarus. Frydenberg (2014) explains that Lazarus began to research coping and stress in the 1960s and Lazarus's initial definition of stress was "a mismatch between the perceived demands of a situation and the individual's assessment of his or her resources to deal with these demands" (p. 83). Lazarus's initial definition of stress and a coping response eventually led to the creation of the transactional model of stress and coping.

Richard Lazarus and Susan Folkman developed the transactional model of stress and coping (Figure 1). The model describes how individuals react to events from the environment (Folkman & Lazarus, 1988; Kivak, 2019). In this model, a person's interaction with the environment drives his or her emotional response. Folkman and Lazarus (1988) believed that once an individual interacts with the environment, they appraise the interaction as harmful, beneficial, threatening, or challenging. The assessment of the circumstances is what leads to the emotional response and not the interaction itself (Folkman & Lazarus, 1988). If the demands of the environmental interaction overwhelm the resources available or are seen as threatening, then

the event becomes a stressor (Kivak, 2019). The interaction with the environment itself is not a stressor. Instead, the evaluation of the event and the available resources leads to the emotional response of stress (Folkman & Lazarus, 1988).

Figure 1

Transactional Model of Stress and Coping



Note. Reprinted from “Wikimedia Commons,” by Philipp Guttman, 2016,

(https://commons.wikimedia.org/wiki/File:Transactional_Model_of_Stress_and_Coping_-_Richard_Lazarus.svg).

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The emotional response generated at that point needs to be addressed by the individual. The individual applies coping mechanisms to change the person–environment relationship to address the emotional response (Folkman & Lazarus, 1988; Kivak, 2019). The coping mechanisms are what can be altered or changed for individuals. Folkman and Lazarus (1988) identified coping mechanisms as either emotion-focused or problem-focused. Problem-focused

coping mechanisms vary the person–environment relationship, while emotion-focused coping mechanisms alter the perception or meaning of the relationship (Folkman & Lazarus, 1988). Problem-focused coping mechanisms would mean changing the interaction with the environment in some way, perhaps by avoiding the situation in the future. Emotion-focused coping mechanisms would be changing the way the individual looks at a stressful event, maybe through practicing mindfulness before entering into the environment. The individual will reappraise the situation after applying the coping mechanisms and start the process over again (Folkman & Lazarus, 1988). The transactional model of stress and coping offers an outline for how individuals will react emotionally to different environmental interactions and how coping mechanisms affect the emotional response.

Definitions

The terms stress and perceived stress level, as defined, are used throughout the study. I examined and used key terms to provide an exhaustive literature review and to provide clarity and comprehension of this evidence-based project. The key terms defined below established the foundation for the study of the phenomenon of the stress of undergraduate, prelicensure nursing students.

Perceived stress level. I used the PSS to measure perceived stress levels in participants. Cohen created the PSS, and the scale measures the amount of stress perceived by individuals in different life situations over the past month (Cohen, 1994). The PSS is an interval scale measured from 0-4, with 0 as *never*, 2 as *sometimes*, and 4 as *very often*.

Prelicensure. Prelicensure is defined as occurring before the issue of a nursing license.

Stress. Stress is defined as the adverse mental and physical reactions occurring when the

pieces of a task or situation exceed the individual's capabilities or resources, and their needs are not met (National Institute for Occupational Safety and Health, 2008).

Undergraduate. A college or university student who does not have a bachelor's degree.

Scope and Limitations

This study utilized undergraduate, prelicensure nursing students from a private, urban university in the Southern United States. According to the *2015 Fact Book* provided by the university the participants attended, the nursing department population was homogeneous and had an average age of 20.4 years, was 93% female, and 72.1% White. The nursing department mirrors the university as a whole in demographic characteristics, except for gender. The population used was a majority of first-degree students. The sample was nonrandomized, and I selected students taking a professional nursing course in the first semester of a nursing program. I invited all students enrolled in the class to participate in the study. I excluded students from participation if they were under 18 years of age.

I completed the study during 10 weeks of a traditional 15-week semester. The intervention took place during scheduled class time and used equipment already in place in the classroom. The classroom had movable tables and chairs and computer technology in place. Students typically sat in teams of five or six people.

Limitations of this study included the similar nature of the population, small sample size, and short duration. The sample was nonrandomized, based on enrollment in a course, and not based on student interest in the concept, which could have changed the effect of the intervention. The limitations related to a homogeneous sample cannot be changed for this study.

Delimitations included education for students related to beneficial effects of the guided meditation and to help nursing students to value the time. I used an assistant to introduce the

study to students and complete the informed consent process to lessen the bias or perceived coercion of the course instructor completing this information. I assumed that students would benefit personally from participation in the study by having lower stress levels.

Summary

Elevated stress levels and a lack of coping skills are a problem with undergraduate nursing students. High stress levels could lead to poor health outcomes and a decrease in academic success. I designed this project to improve nursing students' perceived stress levels by practicing guided meditation and completing a class in stress management. Nursing students learning the new coping skills to manage high stress levels will help them not only in their academic careers but when they enter into the nursing profession.

Chapter 2: Literature Review

This chapter discusses the literature I reviewed to evaluate the effects of stress management techniques on undergraduate, prelicensure nursing students. I completed a literature search using the PubMed database and PubMed clinical queries. The keywords used in the search included the terms *mindfulness training*, *nurse*, *nurse stress*, *nursing students*, *education*, and *nursing student stress*. I added these additional variables to the search terms: *nurse errors* and *patient safety*. The inclusion criteria used were English language, human studies, and articles published from 2009–2019. Additional filters searched for meta-analysis reviews and clinical trials. I completed a manual search of references in relevant to identify any other sources using the inclusion criteria for evaluation.

I selected and reviewed 53 studies for relevance and selected 25 as relevant for discussion for the literature review. The studies included randomized control trials, quasi-experimental pretest/posttest designs, a time series, systematic reviews, and qualitative studies. The initial review identified two main variables as outcome measures: stress level and mindfulness-awareness. Additional variables were anxiety levels, power levels, quality of life, burnout, and judgment.

Stress: General Background

Stress in the general U.S. population and specifically in healthcare workers and college students have been studied over time. The American Psychological Association (APA) stated that in the last month of 2015, 75% of Americans had experienced an indication of stress (APA, 2015). Individuals can use different coping strategies for dealing with stress; however, one in five Americans reports not attempting to use any strategies to decrease their stress levels (APA, 2015). A lack of identifiable coping skills is a concerning finding considering the majority of

Americans report high-stress levels. Guided meditation and mindfulness are healthy measures that can be taken to relieve stress (Kang et al., 2009).

Within the U.S. population, healthcare workers report having high stress levels. Some 69% of U.S. healthcare workers reported that they felt stressed at their current job (Sullivan, 2014). Healthcare personnel indicate that stressors come from organizational factors, workload issues, the need to hide emotions, and mismatches between skills, demands, and support (Pich, 2018). These identified stressors lead to high levels of stress for U.S. healthcare workers.

While some stress can be beneficial as a form of motivation, high stress levels can have a detrimental result on a nursing student's academic success and well-being (Bamber & Kraenzle Schneider, 2016). The harmful effects of stress could lead to nursing students not completing the nursing program or ending up with health conditions, which would affect attrition rates and could lead to long-term poor health. An overview of the literature demonstrates the need to address high stress levels with positive coping mechanisms.

Current Research

The studies used for this review provided an understanding of what the current state of research is related to this project. I review the population, intervention, and below.

Population

The population of interest consisted of undergraduate nursing students. Most undergraduate students experience stressful situations in connection with social situations, adapting to a new environment, and various challenging experiences (Bamber & Kraenzle Schneider, 2016). Nursing students experience all of the above stressful encounters of undergraduate students but have additional expectations added as nursing students. Nursing students experience stress from meeting professional standards while still in school, fear of

failure, providing care in the clinical setting, and competing for high grades (Frogeli et al., 2016). Undergraduate nursing students experience various stressful events throughout their education.

Interventions and Outcomes

Researchers utilized many different methods to achieve the outcomes of lower stress levels, increased mindfulness, and decreased medical errors.

Meditation. Researchers have used meditation as all or part of several studies I reviewed (Burger & Lockhart, 2017; Chang et al., 2016; Gockel et al., 2013; Hartel et al., 2017; Kang et al., 2009; Ratanasiripong et al., 2015; Schwind et al., 2017). Some of the interventions took place in the classroom setting, while others were outside classes or during personal time.

Several researchers incorporated meditation into the classroom. Schwind et al. (2017) completed an interprofessional, qualitative study with students in nursing, child and youth care, and early childhood. The students participated in a short instructor-led meditation at the start and finish of each class period. Fifty-two students participated in the study; however, only 13 attended the poststudy focus groups. All students enrolled in the courses took part in the meditations, regardless of involvement in the research study. The overall response from the focus groups was that meditations decreased stress and anxiety related to school and life events. Participants in the study reported that the meditations at the beginning of class helped them focus and remain grounded (Schwind et al., 2017).

A mixed methods study completed by Gockel et al. (2013) had a similar approach in which graduate social work students completed 10 minutes of meditative or mindfulness time at the beginning of each class period, followed by 5 minutes of discussion. Different mindfulness and meditation strategies were used throughout the 28 sessions completed. A student's *t* test was conducted using the Freiberg Mindfulness Inventory that showed a significant difference ($t =$

2.16, $p = .034$) between the experimental group and control group (Gockel et al., 2013). Study participants ranked the helpfulness of the mindfulness activities and identified that mindfulness nurtured self-care and helped in managing anxiety. Many participants reported still practicing mindfulness three months later (Gockel et al., 2013).

Hartel et al. (2017) completed a case study where students enrolled in a library science class completed a three-minute commercially prepared meditation at the beginning of each class period. Written responses from students related to the use of guided meditations in the classroom; the responses were overwhelmingly positive, and several referred to the benefits of increased concentration and decreased stress (Hartel et al., 2017). Each of these researchers had a slightly different approach to incorporating meditation into the classroom, but each was able to include the practice successfully.

Other researchers had participants complete meditations outside of scheduled class time. Participants in Burger and Lockhart's (2017) random control trial completed 10 minutes of meditation daily at home for 4 weeks to evaluate the effects on stress, mindfulness, and attention. There were 52 prelicensure nursing students, with 28 assigned to the experimental group and 24 assigned to the control group. The participants were provided instructions and prerecorded guided meditations for use. Participants completed the Attention Network Test (ANT), PSS-10, and the Five-Facet Mindfulness questionnaire (FFMQ). A MANCOVA was completed on the PSS-10 and FFMQ scores showing statistically significant differences between the experimental and control groups ($F[2,47] = 7.16, p = .002$). Executive attention was shown to increase from the ANT scores (Burger & Lockhart, 2017).

Ratanasiripong et al. (2015) conducted a pre- and postintervention randomized control study. They used three groups in the study: a biofeedback group, a mindful meditation group,

and a control group. Researchers asked participants in the mindful meditation group to meditate three times a day for 4 weeks after completing training on how to meditate. They analyzed the effects of the intervention using the PSS-10 and State-Trait Anxiety Inventory. A repeated measure ANOVA was completed to compare the scores from the three groups. The PSS-10 scores for the mindful meditation group identified a statistically significant decrease in perceived stress ($F[1,28] = 13.76, p = .001$). The State-Trait Anxiety scale was also had statistically significant results from preintervention to postintervention in the mindful meditation group ($F[1, 28] = 14.36, p = .001$) (Ratanasiripong et al., 2015).

In Kang et al.'s (2009) nonequivalent, pre- and postintervention study, students completed a class in coping and stress followed by meditation and movement classes for 1 to 2 hours per session for 8 weeks. Forty-one nursing students were in the control group, and 21 were in the experimental group. The researchers measured the effects of the interventions using the Psychosocial Wellbeing Index, the State-Trait Anxiety Inventory, and the Beck Depression Inventory. An ANOVA test had statistically significant results related to participants in the experimental groups stress and anxiety levels ($F = 6.145, p = .013$). There was no significant difference in depression scores between the experimental and control groups (Kang et al., 2009). The meditations completed outside of class time varied in the different studies reviewed.

Mindfulness Programs. Researchers have used various other programs of mindfulness, coping, or resilience training as interventions. Training programs have varied in length and type of program; however, most included some kind of mindfulness component (Calisi, 2017; Chesak et al., 2015; Daigle et al., 2018; Frogeli et al., 2016; M. Kim et al., 2015; S. Kim et al., 2018; S. Kim et al., 2016; Plummer et al., 2018; Sanko et al., 2016; Song & Lindquist, 2015). Researchers created some of these programs, while others used evidence-based programs.

Studies by Daigle et al. (2018) and Song and Lindquist (2015) used the Mindfulness-Based Stress Reduction (MBSR) program, which is an adaptive coping-based program. The MBSR program is an evidenced-based program lasting 8–10 weeks with varying lengths of session times and outside practice time (Song & Lindquist, 2015). Song and Lindquist (2015) used the Depression, Anxiety, and Stress Scale-21 to measure the effects of MBSR training. They found a significant decrease in stress determined using ANOVA testing ($F = 15.31, df = 1, p = .001$) and anxiety ($F = 5.61, df = 1, p = .023$; Song & Lindquist, 2015). However, Daigle et al. (2018) measured MBSR group symptoms of distress using the Tension-Anxiety Subscales of the Profile of Mood States Scale with a significant to moderate reduction on the Profile of Mood States Scale determined using ANOVA testing ($F(1,67) = 5.669, p = .020$).

A reduction in the number of medical errors was a different outcome measured in the Daigle et al. (2018) study. Participants noted a self-reported decrease in medical errors using the Nursing Errors Rating scale tool. Thirty-seven percent of the nurses who reported errors on the pretest scale reported fewer errors in the three months following the MBSR training (Daigle et al., 2018). A reduction in nursing errors should lead to improved patient care.

In the pilot project completed by van der Riet et al. (2015), 14 nursing students completed a seven-week program with a one-hour session each week that included didactic learning and practice time based on MBSR components. Ten of the nursing students completed a focus group to share their ideas on the project. Researchers identified the overall themes as *attending to self*, *attending to others*, and *attending to the program*, and that the *attending to self* theme related to self-care and stress management (van der Riet et al., 2015).

Sanko et al. (2016) completed a time series, two-group interventional design study that used the learning management system (LMS) to deliver mindfulness training to students

participating in the research study, as well as live facilitated sessions. The researchers used the Freiberg Mindfulness Inventory to determine if there was an increase in mindfulness. While results showed a rise, it was not statistically significant ($p = .281$). They did not utilize any measurement tool for stress levels, but participants self-reported lower stress levels following the intervention (Sanko et al., 2016). Student responses to the addition of meditation activities were positive and related to lower stress levels.

While the majority of studies reviewed reported a decrease in stress levels with training, not all did. Plummer et al. (2018) created a mindfulness-based curriculum that was uploaded into modules for the students to access in the LMS. A randomized control trial with 94 participants, 58 control, and 36 interventional groups was completed. The researchers measured the effects of the intervention using PSS with a $p = .148$ at 20 weeks following the intervention and $p = .103$ at 32 weeks, which was not statistically significant. While Plummer et al.'s (2018) participants did not have lowered stress levels, the program where the intervention took place was an accelerated master's program, and the participants could have been overwhelmed to the point that the intervention did not affect stress levels.

Frogeli et al. (2016) used acceptance and commitment training, where individuals learn to decrease avoidance of stressful events, in their randomized control pilot study with 113 nursing students. They measured the effects of the intervention using the Mindful Attention Awareness Scale (MAAS), PSS-14, and Burnout Subscale. Burnout or a state of complete mental, physical, or emotional exhaustion can come from prolonged stress, either in the workplace or academic setting. Mindfulness training can lower stress levels, which can help to reduce burnout. Frogeli et al. (2016) reported a statistically significant decrease in stress and burnout in the experimental group (Cohen's $d = 1.12$ and 0.82 , respectively). The experimental group also had an increase in

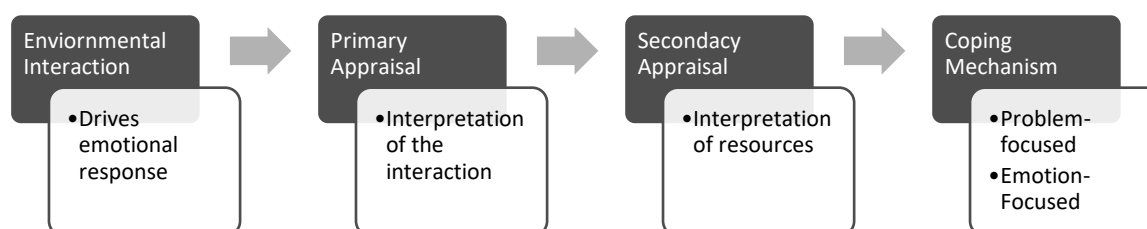
mindfulness-awareness at the three months follow-up using the MAAS ($p = .045$; Frogeli et al., 2016).

Theoretical Framework

This project used the transactional stress and coping model as a guide for altering the perceived stress levels and improving academic success in undergraduate prelicensure nursing students (Figure 2). Nursing students interact with many different environmental stimuli that lead to the emotional response of stress. The interaction with the environment is what leads to the reaction of stress (Folkman & Lazarus, 1988). A problem-focused coping response is when an individual changes the person–environment relationship, which can work in some stressful situations but is not realistic for most students' stressful encounters (Folkman & Lazarus, 1988). An upcoming exam might be a stressful encounter for a nursing student. The exam has to be taken to be successful in school, illustrating a situation where the environment causing the stress cannot be changed.

Figure 2

Flowchart of Stress and Coping



Students should know how to improve their emotion-focused responses to stress. An emotion-focused response is when the attention or meaning of the reaction is changed; that was the focus of this project (Folkman & Lazarus, 1988). With training on stress and coping management techniques and dedicated practice in medication, students were able to change their

emotional responses to stressful situations. This project helped students to develop an emotion-focused coping mechanism to deal with stressful situations when the environment cannot be changed.

Summary

The literature reviewed provided many summaries of results related to decreased levels of stress and interventions in mindfulness or meditation. All but one of the studies reviewed identified a positive correlation between training and perceived stress levels. While not all of the findings were significant, each would support the use of mindfulness training or meditation for improving stress levels.

A limitation noted in the majority of the research studies reviewed were small sample sizes. Every study examined had fewer than 100 participants except one, and most had fewer than 50. A small sample size decreases the power of the research study and limits the generalizability to other groups. Sanko et al. (2016) reported the smallest number of participants at 27, while Hartel et al. (2017) reported the highest amount at 200. Research completed by Chesak et al. (2015), Frogeli et al. (2016), M. Kim et al. (2015), Plummer et al. (2018), Sanko et al. (2016), and van der Riet et al. (2015) all identified participant dropout as a limitation. Having participants either not complete the whole training process or fail to complete the follow-up surveys can affect the results. Even though the sample sizes were small, and participants did not complete the entire study, the results showed a reduction in stress levels and an increase in awareness.

A short study length was identified as a gap in the studies reviewed. Most of the studies only completed a pretest and an immediate posttest following completion of the training. There

was a minimal follow-up on the long-term effects of the training or if the initial positive results continued after the training period.

The majority of the studies I reviewed were randomized controlled trials lending to the quality of the evidence found. According to AACN's evidence-leveling system, all studies earned a level B or C (Armola et al., 2009). While all of the researchers identified limitations and areas of future research, each study on its own had a high level of evidence.

Barriers to implementation were similar to what researchers faced in the reviewed literature. The ability to have participants commit to the whole training process and complete follow-up surveys was the same for this project. This study had a small sample size as well. Helping future participants see the relevance of the training and how it could benefit not only in their current life situation but in their future employment could have helped to retain participants and increased the sample size.

A review of the literature revealed that meditation or mindfulness training had a positive effect on the participants. Participants who completed training had lower perceived stress levels. Decreased perceived stress levels can lead to less burnout in academia or the workplace and lead to overall improved health. Despite limitations in sample size, the review of literature supports implementation of meditation and other stress management training. For the purpose of this project, the review of literature confirmed that using stress management training for undergraduate nursing students could lead to reduced stress levels.

Chapter 3: Methodology

I completed a quantitative pre- and postintervention study using undergraduate, prelicensure nursing students. The participants were nursing students enrolled in a beginning level professional nursing course and asked to be in the research study that took place during class time. The intervention included a class offered by the university's wellness center on stress management, followed by biweekly practice of guided meditations at the beginning of class. All students enrolled in the course, regardless of enrollment in the study, could have participated in the intervention. I obtained approval to conduct the study from the study site's institutional review board (IRB) with an additional IRB Authorization Agreement (IAA) completed with Abilene Christian University (ACU).

Study Design

The study was a quantitative nonrandomized comparison using a pre- and postintervention design investigating the effects of a stress management class and guided meditation on undergraduate, prelicensure nursing students' perceived stress levels. I completed the pre- and postintervention study design to determine whether the interventions lowered the perceived stress levels of participants.

Measurement Tool

The Perceived Stress Scale (PSS) is a widely used and studied tool measuring individuals' feelings and beliefs over the previous month. Sheldon Cohen created the tool. It is used to determine how overloaded, unpredictable, and uncontrollable individuals find their current life situation (Cohen, 1994). The questions are general and can be completed in five to ten minutes by anyone who has completed a junior high education (Cohen, 1994; Cohen &

Williamson, 1988). Permission for me to use the tool was not required for academic research (Appendix A).

The survey was created initially with 14 questions, but has been modified to 10 items and is now the recommended tool for use (Cohen & Williamson, 1988; Denovan et al., 2019). I used the PSS-10 (Appendix B) for measuring perceived stress levels in undergraduate nursing students. I chose it because of the short length of time needed for completion.

The PSS-10 collects answers using an interval scale from 0 to 4. A 0 represents *never* with a 4 representing *fairly often*. Numbers 1 to 3 change from *almost never*, *sometimes*, and *fairly often*, respectively (Cohen, 1994). Individuals completing the scale are asked to choose the corresponding number for how frequently they have felt a particular way related to different life events in the past month (Cohen, 1994; Cohen et al., 1983; Denovan et al., 2019). The life events are worded for people who have completed junior high or higher education with questions that are general and not specific to any one situation (Cohen et al., 1983). The easy-to-read questions and general nature ensures that the PSS-10 can be used in many different circumstances or with diverse populations.

The PSS-10 contains questions related to coping ability and stressful situations. Questions 4, 5, 7, and 8 are positively worded questions about an individuals' coping ability (Cohen, 1994; Denovan et al., 2019). The remaining items are related to stressful events. The survey tool is scored by totaling the numbered responses for the stressful questions and adding the total of the positively worded questions after reverse coding the answers; $0 = 4$ or $4 = 0$ (Cohen et al., 1983). The total of the scale gives the individuals' total perceived stress score, the maximum score is 40, and the minimum score is 0. Cohen and Williamson (1988) determined the average PSS-10 score for 18–29-year-olds to be 14.2; however, Denovan et al.'s (2019)

evaluation of the PSS-10 in university students found the average PSS-10 score to be 19.79 for the same age group. The PSS-10 score of undergraduate students from the same age range has the potential of being higher, as seen in the comparison for scores from Cohen and Williamson (1988) and Denovan et al. (2019).

The PSS-10 has significant internal validity and reliability. The PSS-10 has an alpha coefficient of 0.78 (Cohen & Williamson, 1988). More recently, Denovan et al.'s (2019) study of the use of the PSS-10 in university students determined the alpha coefficient to be 0.86. A high Cronbach's alpha indicates a high reliability of questions on a tool from one individual's uses to the next (Plichta & Kelvin, 2013). I chose the PSS-10 for this study due to the broad questions asked, ease of use, and high reliability.

Data Collection, Analysis, Management Plan, and Methodology

I recruited nursing students to the study via an email sent out by an assistant or proxy (Appendix C). The proxy was an employee of the university and helped me complete the informed consent process, introduction, and pre- and postintervention surveys. The proxy completed these processes during scheduled working hours with the permission of their direct supervisor. The proxy had no direct supervision over the students. All students enrolled in the professional role course received the email regarding participation one week before completing the informed consent process and were told that partaking in the research was voluntary and that I would not know whether or not they were participating. The proxy told students that participation in the study would not affect their grade in the course. I did not receive results of the study until the nursing instructors submitted and finalized all grades for the course.

A proxy came to the class to share study information and collect the students' informed consent and preintervention survey if they had volunteered to participate. The preintervention

survey included a demographic survey and the PSS-10. The demographic survey and PSS-10 was a three-page packet of papers stapled together for the students to complete. I did not use any PSS-10 surveys that participants did not fully complete. I gave all students enrolled in the course the option to complete the informed consent and the preintervention survey in the classroom; if they chose not to participate, they were asked to remain in their seats until the proxy collected the informed consents and preintervention surveys. I did this so that no one in the room knew who did or did not participate. The proxy reminded students that participation in the study was voluntary and asked them to remain in their seats until everyone had completed the paperwork to help maintain the confidentiality of those participating. Participants created a unique identifier using the numeric form of the month and day of their birth; an example would be July 25 coded as 0725, and the first two letters of their permanent address street name.

After the completion of the informed consent process, students participated in a course from the university's wellness program related to stress management techniques. All students enrolled in the course had the option to participate in the stress management class and meditations, regardless of participation in the study. The university's stress management class focused on defining stress, practiced stress reduction techniques, and explained a new way to look at stressful events in their lives (Appendix D). The stress management class took place during a scheduled class day. Nursing students participated in a guided meditation at the beginning of each class period for 10 weeks, starting at 1 to 2 minutes and increasing in time each week until reaching 10 minutes. Two weeks after the completion of the 10 weeks of guided meditation, students completed the postintervention survey. The proxy provided the postintervention survey to the study participants. The postintervention survey included questions about students' perceived benefits of guided meditation during class time, the use of meditation

outside of class time, the number of times they participated in the intervention, and a free answer space related to benefits of the study interventions (Appendix E). The postintervention survey included the questions listed above and the PSS-10 scale as a stapled three-page packet. The code created—the month and day of their birthday as numbers and the first two letters of the street name at their permanent address—was at the top of the postintervention survey with a reminder of the code components. If the participant did not fully complete the PSS-10 survey, I did not use the results for the study. Students were asked to remain in their seats while they completed the postintervention survey to prevent others from knowing who was participating and who was not. The surveys were kept separate in a locked file cabinet. The proxy matched the pre- and postintervention surveys by hand using the unique code the participants created. I did not match or view the survey results until the completion of the semester, and instructors finalized the participants' grades for their first semester nursing course.

Demographic Data

I collected demographic data following the informed consent process with the preintervention survey. The demographic portion identified the participants' gender and their age range. It included self-identification of ethnicity with the following choices: American Indian/Alaska Native, Asian, Black/African American, Hawaiian/Other Pacific Islander, Hispanic/Latino, Multi-Ethnic, Non-Resident Alien, Unknown Ethnicity, White. Students in the nursing program are designated by their entry status: traditional student or transfer student, which participants indicated on the survey. The students also indicated if they were first- or second-degree students. Marital or partner status was collected using single/divorced/widowed or married/partner. Participants answered whether or not they had children at home, and if they worked full-time, part-time, or were full-time students.

The survey also collected basic information about experiences with meditation and stress techniques. The survey asked a “Yes” or “No” in regards to previous meditation experiences. Participants answered whether they believed their current stress level to be no stress, below-average stress, average stress, above-average stress, or overwhelming stress. There was an open-ended question where participants could list any current stress management techniques they were using (Appendix F).

Guided Meditation Sessions

I used commercially prepared guided meditations from the Headspace and the Insight timer apps (Appendix G). The sessions started at 1 to 2 minutes in length and increased by 1 to 2 minutes each week until 10 minutes of meditation was achieved. The 10-minute sessions continued until the end of the 10 weeks. All students enrolled in the course could have participated in the meditation sessions regardless of participation in the study. Students who were not participating in the study and who did not want to meditate could have listened to headphones or studied at their seats.

Data Analysis

Participants completed the preintervention surveys via paper and pencil. Responses were anonymous, and the proxy matched pre- and postintervention surveys using the code created by the participants. The data were demographic information and the PSS-10 scores. I used the PSS-10 to determine if the intervention lowered participants’ stress levels. If participants did not complete the PSS-10 scale entirely, I did not include their survey results. If demographic data were incomplete, but the participant completed the PSS-10 survey, I counted the results. If participants did not indicate the number of sessions attended or did not participate in the stress management class, I did not include the results.

I analyzed demographic data via descriptive statistics. Additionally, I used three variables from the demographic data—marital status, children, and work status—to determine if there was a difference in perceived stress scores. I used chi-square analyses to determine this difference.

I transferred data from the PSS-10 surveys to Excel for analysis in SPSS. A paired sample t test was used on the pre- and postintervention PSS-10 scores. I used the paired sample t test because normality assumptions were met. I analyzed the data using a histogram and a Kolmogorov-Smirnov (K-S) test to determine that a normal distribution occurred and to identify any outliers. A G*Power analysis for a matched-pair test is 34 participants at 80% power. A goal sample size for this project was 37 participants. The typical class size was 40 students.

I have kept all research data in a password-secured electronic source and will destroy it after three-years or per the standards of the IRB department providing approval to conduct the project. I secured all paper responses in a locked filing cabinet and will destroy them at the same time. Data collected during this project have been stored in a secure ACU-owned hard drive. Data have been stored in a folder under the ACU faculty chair member's name and owned by ACU in case access is needed at a future date. This drive was provided by ACU's online graduate school for doctoral student research data and supported by the ACU's IT department for security purposes. All data obtained during implementation will be maintained on a password-protected computer, and only I will have password access. Data will be kept for at least 3 years according to federal regulations for protecting and maintaining data of human research participants, which requires that raw data to be stored for 3 years. After completion of data collection, I completed a data collection inactivation form to alert the IRB office of study completion.

Feasibility

This study was highly feasible as resources were already in place. The cost was minimal and related mainly to copying fees, which I assumed. I purchased an inexpensive Bluetooth speaker to ensure that guided meditations were loud enough to hear throughout the classroom. I obtained permission and support from the Director of Nursing Research and Nursing Scholarship, where I am employed (Appendix H). I asked students enrolled in the introductory nursing course to participate in the study. The study took place during scheduled class time and did not use any additional resources for the nursing students.

I had the use of SPSS software through employment with the university where I conducted the project. SPSS software was available for use by all facility employees for research purposes without any additional costs. I used the time spent on the project for the completion of my DNP degree. I received or provided no financial compensation to complete this project.

IRB Approval

The project received IRB approval at my place of employment (Appendix I) with an IAA agreement with ACU (Appendix J). The nursing students voluntarily took part in the study and completed the informed consent process for participation. A proxy completed the study's introduction to prevent any perceived coercion and ensure the anonymity of the participants. The participants created a four-number, two-letter code when completing the initial survey and used the same code again when completing the final survey. The code was the month and date of their birthday in number form and the first two letters of their permanent address street name. Whether or not a student participated in the study was confidential. All students could have participated in the stress management class and guided meditations regardless of the involvement in the research. I had no access to the survey results until after grades were turned in for the semester.

Participants in the study could contact me via email to view their pre-/postsurvey results at the start of the following semester. The proxy and I collected all data anonymously and it remained confidential. No one gathered any information that pertained to identifying participants. I addressed any additional ethical issues found during the IRB process or in the review before initiating the study.

Practice Setting and Target Population

The practice setting was a private, urban university in the Southern United States where I am employed. I received permission to complete the study from the Director of Nursing Research and Scholarship and obtained IRB approval. The nursing program was a five-semester, baccalaureate program that prepares graduates to sit for a licensure exam leading to becoming a registered nurse.

The target population was undergraduate, prelicensure nursing students enrolled in the sophomore II cohort and were beginning the nursing program. According to data provided by the university the participants' attended, the student population was majority female and White. The nursing student group was a combination of traditional students who started at the university as freshmen and students transferring to the university for the nursing program. The sophomore II cohort of students had approximately 80 students divided into two groups of about 40 each. I asked all students enrolled in the course to participate regardless of background or gender. Exclusion criteria were if the student was under 18 years of age, not attending the stress management class, and participating less than 15 times in these classes.

Risks and Benefits

A potential risk was that participants might have felt emotionally sensitive to addressing the stress they had while participating in the project. Thus, the consent form noted that they

could withdraw at any time, and also provided participants with information about the university's counseling center and services. The nursing students who participated should have benefited by having lower perceived stress levels following the interventions. Their participation was voluntary and could have been withdrawn at any time if the student was uncomfortable with the intervention. Participation in the study did not affect the students' grades in the course.

An additional potential risk was students knowing who and who was not participating in the study. To help prevent this risk, when completing the informed consent and pre- and postintervention surveys, the proxy asked all students to remain seated while they were completing the forms and surveys. The possibility of risks is always present, and I took steps to limit those risks.

Timeline

The proposal defense date for this project was July 2019, with IRB approval completed in October 2019. I completed the IAA with ACU in November 2019, and the informed consent process and preintervention survey in January 2020. The intervention followed from January to April 2020 with the postintervention survey conducted in April of 2020. I completed the data analysis in May 2020. Following the completion of data analysis, I completed work on the remainder of the project requirements. Possible abstract submissions will take place in the fall of 2020. See Appendix K for the timeline of the project.

Summary

I completed a quantitative pre- and postintervention study measuring the perceived stress levels of undergraduate, prelicensure nursing students. I measured the nursing students' perceived stress levels using Cohen's PSS-10 before the intervention and at two weeks after the completion of the intervention. The intervention included a stress management class and

increasing amounts of guided meditation during class time. I collected and analyzed the data for a change in the perceived stress levels.

Chapter 4: Findings

This chapter discusses the results of the study. The chapter includes a discussion on the interpretation and inferences of the findings. All students on the roster for the course utilized for the study were emailed an invitation to participate 1 week before completing the informed consent process. A proxy then attended the start of class to complete the informed consent process and collect the preintervention surveys. Following the informed consent process, all students enrolled in the class completed the stress management course and guided meditations at the start of class. Participants completed the postintervention survey two weeks after completing the last interventional meditation.

Purpose of the Project

The purpose of the project was to determine if students who completed a stress management class and guided meditations reported lower perceived stress levels following the intervention.

Data Collection

I completed data collection before and 2 weeks after the intervention. A proxy collected the preintervention survey data with paper and pencil in the classroom. A total of 41 students consented to participate in the project. Of the 41 preintervention surveys completed, one had an incomplete anonymous code and was removed from the results. Participants completed a second consent for the change in data collection and interventional delivery methods. Postintervention data collection was completed online with Qualtrics. Students received an email asking them to complete the survey via the anonymous link provided. A total of 23 participants completed the postintervention survey. Of the postsurvey results, two did not have the anonymous codes completed fully, three codes did not have matching presurvey data, and two did not have a

completed second consent form. The original exclusion criteria included students who attended less than 15 sessions, which I changed to 13 for the final survey, and an incomplete PSS-10 scale. Two surveys had either an incomplete PSS-10 scale or indicated that the participant had attended less than 13 sessions. After removing postintervention surveys due to missing or incomplete information, I included a total of 14 postintervention surveys for data analysis. The final total number of participants in the study was 14, with an attrition rate of 34%.

Statistical Analysis

I uploaded all data into Excel spreadsheets, where I completed statistical analyses using SPSS version 26 software. I summarized categorical data using descriptive statistics, and calculated mean and standard deviations with data from the PSS-10 surveys.

Demographic Data

I collected demographic data during the pre- and postintervention surveys. The target population for the project was undergraduate, prelicensure nursing students at a private Southern U.S. university. I invited a total of 43 students to participate in the research project. Of the 14 participants, all were female, first-degree students between 18–25 years of age who entered the nursing program through the traditional route. One participant identified as both Hispanic and White with overall results as 14% Hispanic/Latino and 92% White. No participants reported living with a partner, and one had children at home. Of the participants, 29% reported that they worked part-time, and none reported working full-time. In regards to previous meditation experience, 50% of the participants marked they have had past experiences. See Table 1 for demographic data frequencies.

Table 1*Demographic Frequencies*

Characteristic	<i>f</i>	Total
Female	100%	14
18-25 years old	100%	14
Race		
Hispanic	14%	2
White	92%	13
Work Status		
Full-Time	0%	0
Part-Time	29%	4
Full-Time Student	71%	10
Experience with Meditation		
Yes	50%	7
No	50%	7

The preintervention survey asked participants to identify current stress relief activities they utilized. Three participants did not provide any stress relief behaviors, while others identified multiple techniques used. While seven participants indicated previous experience with meditation, only four reported using meditation/prayer/focused breathing as a stress relief activity. Other everyday stress relief activities included exercise, talking with others, and watching TV. See Table 2 for self-identified stress relief activities.

Table 2*Current Stress Relief Activities*

Free response stress relief activities	Participants reported
Exercise	5
Talking	4
Meditation/prayer/focused breathing	4
TV	3
Self-care	2
Yoga	2
Sleep	2
Music	2
Alcohol use	1
Eat well	1

Chi-Square Test

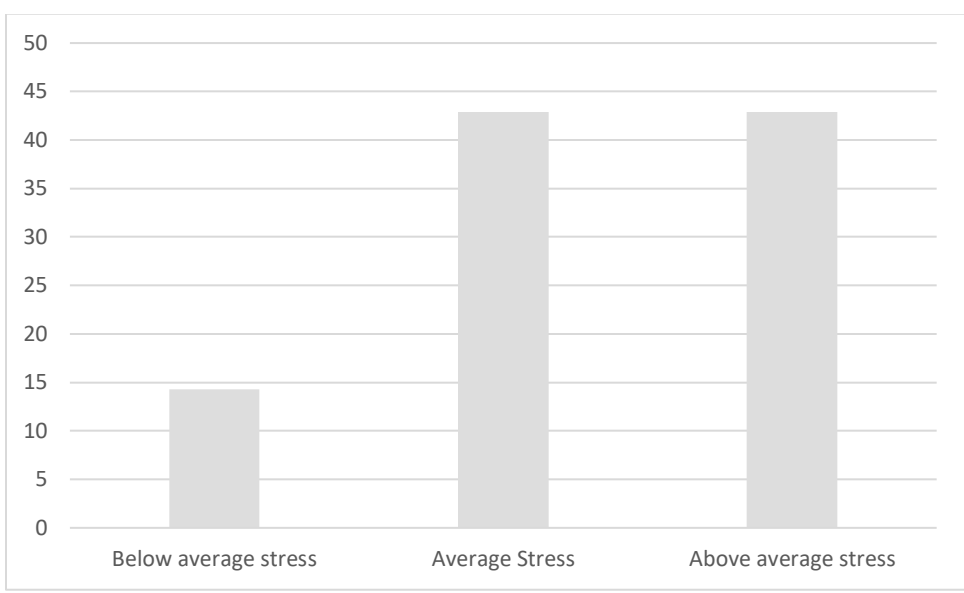
The original proposal was to complete a chi-square comparison for demographic data related to marital status, children at home, and work status. None of the participants reported living with a partner, and only one reported having children at home. Four participants stated that they worked part-time; due to the low number, I did not conduct this statistical test.

Student Self-Rated Stress Levels

The pre- and postintervention surveys asked participants to self-identify and report their stress levels. On the presurvey, 14 % of students identified as having below-average stress, 43% identified average stress, and 43% identified above-average stress levels. See Figure 3 for presurvey stress levels.

Figure 3

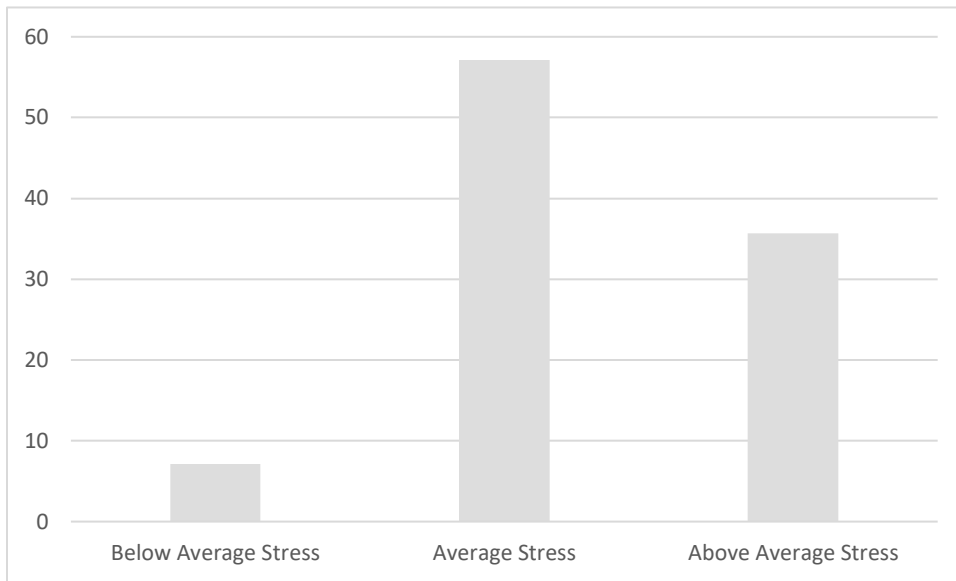
Preintervention Survey Self-Reported Stress Levels



On the postintervention survey, the majority of participants, 57%, indicated that they had an average stress level. Seven percent of participants stated a below-average stress level, and 35% noted an above-average stress level. See Figure 4 for postintervention survey frequency levels.

Figure 4

Postintervention Survey Self-Reported Stress Levels



Paired-Samples *t* Test

I analyzed the data, and it met all assumptions to complete a paired-samples *t* test.

Kolmogorov-Smirnov (K-S) test results indicated that the pre- and postsurvey results followed a normal distribution, $D(14) = .138, p = .200$ and $D(14) = .195, p = .156$. The pre- and postsurvey had no outliers. See Table 3 for K-S results.

Table 3*One-Sample Kolmogorov-Smirnov Test*

Parameter		Pre-	Post-
<i>N</i>		14	14
Normal Parameters ^{a,b}	<i>M</i>	17.0714	18.6429
	<i>SD</i>	5.96740	4.61781
Most Extreme Differences	Absolute	.138	.195
	Positive	.096	.123
	Negative	-.138	-.195
Test Statistic		.138	.195
Asymp. Sig. (2-tailed)		.200 ^{c,d}	.156 ^c

Note. a. Test distribution is normal; b. Calculated from data; c. Lillfors significance correction; d.

This is a lower bound of the true significance.

I conducted a paired-samples *t* test to compare PSS-10 scale mean scores from preintervention and the PSS-10 mean scores two weeks after the intervention. There was not a statistically significant difference in the scores for the preintervention survey ($M = 17.07$, $SD = 5.97$) and postintervention survey ($M = 18.64$, $SD = 4.62$); $t(13) = -0.8$, $p = 0.438$). See Table 4 for means and standard deviation.

Table 4*Means and Standard Deviations for PSS-10 Scores*

Logistic parameter		<i>M</i>	<i>N</i>	<i>SD</i>	<i>SEM</i>
Pair 1	Presurvey totals	17.0714	14	5.96740	1.59486
	Postsurvey totals	18.6429	14	4.61781	1.23416

These results suggest that the intervention of meditations and a stress management class did not affect students' perceived stress scores. See Table 5 for paired-samples *t*-test results.

Table 5*Paired-Sample t-Test Results*

Pair		<i>M</i>	<i>SD</i>	<i>SEM</i>	95% <i>CI</i> of the Difference		<i>t</i>	<i>df</i>	Sig. (2-tailed)
					Lower	Upper			
1	Presurvey totals	-	7.34548	1.96316	-	2.66972	-.800	13	.438
	Postsurvey totals	1.57143			5.81258				

Question Guiding the Inquiry

Q1. Do undergraduate prelicensure nursing students (population), who participate in training for coping skills and stress management with a guided meditation during class time (intervention) report lower perceived stress levels (dependent variable/outcome) than before training (comparison) during a semester of the undergraduate nursing program (time)?

H1: Undergraduate, prelicensure nursing students will report decreased perceived stress levels following completion of a class in stress management and guided meditations.

H0 Null: Undergraduate, prelicensure nursing students will have no change in perceived stress levels following completion of a class in stress management and practice with guided meditations.

The mean score of the PSS-10 scale increased during the project, leading to an insignificant finding for the paired-samples *t* test. From these results, the hypothesis (H1) for this project needs to be rejected. Six participants had lower PSS-10 scores following the intervention, and two had no change in scores. The qualitative feedback from students was positive regarding the use of meditations during class time. While the statistical analysis did not support the presented hypothesis, the overall student perception was positive for the intervention activity.

Reliability, Validity, Strengths, and Weaknesses

The PSS-10 scale was the appropriate measurement tool for this study. The participants were able to complete the scale without issue, and it has a Cronbach's alpha of 0.86 when used with university students (Denovan et al., 2019). The self-rating of believed stress scores was appropriate because each participant identified what they thought to be the level for themselves at that time. While the students had a free-response question asking how they liked the intervention, there was no free-response questions related specifically to whether they felt the intervention changed their stress level or helped them manage their stress. A change in the data collection method would be to have a free-response section for the individual's thoughts on the intervention related to managing their stress.

The COVID-19 crisis compromised the validity of the study. Participants were not only adjusting to a change in teaching methodology during the interventional period, but they were living through a global pandemic. There was no way to plan for this threat to the validity of the study.

Strengths

I evaluated the strengths of this project regarding its methods and effectiveness. This project was set up to be completed during scheduled class time, meaning students did not have to remember to complete the meditations or find a set time. Students provided positive feedback on the university's stress management course. This course was already put together and offered for free by the university, and it emphasized the importance of utilizing stress management techniques. The use of commercially prepared meditations gives the ability for anyone to add meditations into a class period since there was no training required for the instructor. Strengths from this project can lead to the ability to replicate it in other courses or settings.

Weaknesses

As predicted, not all students were interested in participating in the guided meditations. The intervention occurred at the start of class and everyone was in the room regardless of participation in the study, leading to the classroom space being noisy at times.

The university where the study occurred transitioned mid-semester to online learning. This transition affected the delivery of the interventions, consent for the project, and final data collection. It is unknown the impact these events had on the overall project and may have led to a change in the results, the effect of the intervention, and the amount of participation.

The participants lacked diversity in race, age, and gender, limiting the ability to apply the intervention in different settings. There was a significant decrease in participation from the preintervention period to the completion of the postintervention survey. The delivery of the postintervention survey online instead of in-person may have altered the response rate.

Limitations

Limitations of this study were the attrition rate and effects from the COVID-19 pandemic. The study had an attrition rate of 34%, with a loss of 27 participants. The participants had to complete a secondary consent for the change in meditation delivery and online data collection. Both the secondary consent and postintervention survey lost participant numbers. For future data collection, the same method of collection should be used for the pre- and postsurveys in an attempt to gain similar numbers. As stated above, the participant group lacked diversity in all measured factors and was small at only 14 participants.

The global COVID pandemic led to unanticipated limitations to this study. This study had to shift from in-person to virtual delivery partway through, which may have changed the results of the findings. There was no way to anticipate or prepare for the abrupt transition to

online learning during this study. An additional limitation is the unknown effect of the COVID-19 pandemic on participants' stress levels in relationship to this study. While results were not statistically significant, the intervention could still have had a positive effect on their stress levels in regards to what was occurring.

Discussion of Methodology Changes

Due to the COVID-19 pandemic, the delivery method and final data collection method for this study changed. The following paragraphs describe the study process following the completion of the initial informed consent process. Students began the meditation intervention during the next class period after completing the informed consent process with the university stress management class being completed the following week. Students completed 11 in-person meditation sessions twice a week over a five-and-a-half-week period along with the university stress management class before spring break for the university. After the first five-and-a-half weeks of the study, the university extended spring break for a week and transitioned to online course work for the remainder of the semester due to the global COVID-19 pandemic.

I obtained an IRB amendment to the study (Appendix L), decreasing the number of weeks over which the research would take place, session delivery methods, and the method of collection for postintervention survey data. The number of weeks for the intervention was changed from 10 to 9 weeks. Students who wished to continue their participation in the study completed a second informed consent acknowledging the decreased number of sessions, a change to online delivery, and final data collection via Qualtrics. They completed the second consent via an anonymous link through Qualtrics. After acknowledging their consent, I asked students to provide the code used on the preintervention survey to identify which preintervention surveys to continue to use for data analysis. If the student did not consent to remain in the study,

I did not ask them to provide their preintervention survey code and they were taken to a screen thanking them for completion of the consent. The code was anonymous and not linked to the student's name. I did not access secondary consents for the study until grades for the course had been posted.

The meditation sessions changed from being completed in-person in the classroom to being completed virtually through a live Zoom class time. The final total number of meditation sessions conducted for the intervention was 18, with 11 in-person and seven online. The postintervention survey data was collected via an anonymous Qualtrics link (Appendix M). Students received an email with the link for the postintervention survey, where they provided their unique code, completed questions, and the PSS-10 scale. I did not access data until instructors posted final grades for the semester.

Interpretation of Findings

The overall mean perceived stress score for the participants increased from the preintervention to the postintervention survey leading to insignificant paired-sample *t*-test results. During project implementation, a global health pandemic occurred. The Kaiser Family Foundation reported in April 2020 that 45% of US adults felt their mental health had been affected by worry and stress over the COVID-19 pandemic (Panchal et al., 2020). Participants would have been affected by fear and anxiety over the virus.

Students had to shift from in-person face-to-face learning to online distance learning in a short period with little to no preparation. With the shift in course delivery, many students lost their support network from peers leading to additional challenges. Active Minds (2020) surveyed college students in April 2020 and found that one in five felt COVID-19 had worsened their

mental health, with stress and anxiety being the most affected. It is highly probable that the COVID-19 health pandemic affected the insignificant results of this project.

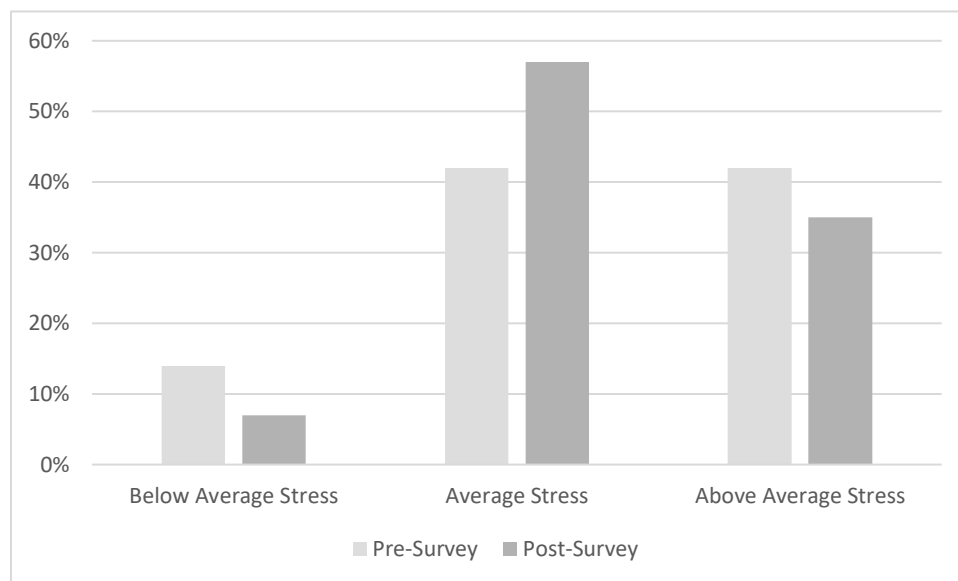
Student Self-Reported Stress Levels

As part of the pre- and postintervention surveys, students identified their stress levels. The number of students reporting an above-average stress level decreased from the pre- to postintervention. On both surveys, the majority of participants identified as having average stress levels. While the PSS-10 scale means increased during the project, the students' self-reported levels did not change. The goal of the project was to lower stress scores, but the end outcome was no change in their self-identified stress levels.

When comparing the self-reported stress levels pre- and postintervention, 7% indicated a below-average stress level postintervention compared to 14% preintervention. Forty-two percent of participants had average stress at the start, but 57% reported average stress following the project. The above-average stress identification changed from 42% presurvey to 35% postsurvey. See Figure 5 for a comparison of self-reported stress levels. Stress levels remaining the same despite a global pandemic could indicate that the intervention was successful.

Figure 5

Comparison of Pre- and Postintervention Self-Reported Stress Levels



Student Free Responses From Postsurvey

As part of the postintervention survey, participants had an open-ended question for their thoughts on how well the meditation sessions worked in the classroom. Thirteen of the 14 participants in the study provided free responses to the question. The majority of students found the intervention beneficial to them. Students commented that they liked having a moment to step back from everything and focus on themselves. One student wrote, “I really liked the technique used in class because it allowed me to just forget about everything going on with school and just focus on myself for just a moment.” Several students commented on the length of the sessions by the end and felt that about five minutes was the best amount of time. One comment was, “I really enjoyed meditating in class, and I thought it very beneficial. I do have to say that as the meditations got longer, it was harder to focus for the full time and sometimes made me more tired. Overall, I loved it; I think you should continue to do it, and I think that around five minutes is perfect.” Students also stated the university stress management class they completed was

helpful. Two students specifically said doing the sessions before the exams helped them to focus and concentrate.

There were some comments about the noise level in the room and how it was hard to concentrate. One student stated, “It was hard to focus on meditation when there was noise from other students moving around.” While most students sat quietly during the sessions, there was noise from papers or movement in their seats. Only one student responded that the sessions did not help them relax. Overall, the students found the addition of the meditation sessions to the classroom to be beneficial.

Participants identified their use of meditation practices outside of the classroom on the postintervention survey. Fifty percent of the participants stated that they completed no meditation sessions outside of class time, while 21% indicated they practiced meditation 1 to 2 times a month. Twenty-nine percent of participants stated that they meditated outside of class time once a week. The preintervention survey did not ask the frequency of meditation used for stress relief, but at that time, only 29% indicated it was a technique used. The use of meditation as a stress relief technique for some participants may have increased over the study period.

Inferences About Findings

The rise in mean PSS-10 score from the pre- and postintervention surveys would imply that the intervention was unsuccessful, but when taking into account the underlying stressful issues, the intervention should not be removed. The student feedback from the study was positive, and there was minimal change in the self-reported stress levels. So, while the data did not support the use of the intervention for lowering stress levels, the participants still found it beneficial. A recommendation from this study would be to continue using a brief meditation at the start of a class period.

The intervention could have helped maintain or, for some, lower stress levels despite the ongoing COVID-19 crisis. Six participants had a decrease in their scores, and two participants' scores did not change. The average decrease was by 4 points. On the self-reported stress level question, more participants identified as having an average stress level on the postsurvey than the presurvey. While the paired sample *t* test did not reveal significant results, most of the participants stayed at the same stress level or in some cases decreased their stress level, indicating that possibly the intervention had a beneficial effect.

A small sample size may have significantly influenced the overall results of the study. The two participants who had the lowest stress levels on the presurvey, PSS-10 scores of less than 10, had the most significant increases in their PSS-10 scores by 15 points or more on the postsurvey. If these two participants are removed from the sample, the new presurvey mean is 18.75 and postsurvey mean 17.83. The small sample size may have made the effect of the significant increases for these two participants more apparent than if the sample size had been larger.

The total number of participants in this study decreased significantly from beginning to end, having an unknown effect on the results. The attrition rate and overall impact on the final results may have been from the change in the delivery method. The initial pretest was collected via paper/pencil in the classroom during regularly scheduled class time, while the postsurvey results were collected electronically. A change in the collection method could have had an impact on the number of final participants.

Conclusion

I conducted this project in an attempt to lower perceived stress levels in undergraduate, prelicensure nursing students through meditation and a class on stress management. Participants

completed the preintervention survey and the consent process in-person with paper and pencil. The participants completed 18 guided meditation sessions, in-person or online, a stress management class, and completed the postintervention survey two weeks after the last meditation session. Following the intervention, there was a final total of 14 participants in this study. For data analysis, a paired-sample t test found an insignificant difference between pre- and postintervention PSS-10 scale results. Data analysis revealed that the mean total of the pre- and postintervention surveys increased following the intervention. The COVID-19 health crisis began during this study leading to an unknown effect on the reliability or validity of this study and creating a limitation. Data analysis also showed that the participants were homogenous in nature, and the sample size was small. The results indicated that the hypothesis should be rejected.

While the paired-samples t test had insignificant results, student feedback regarding the intervention was still positive. The participants' free responses were positive in regard to the use of meditations at the start of class. The mean PSS-10 score for the group increased. However, there were several participants whose scores decreased or stayed the same, possibly showing a positive effect from the intervention. Most participants continued to identify as having an average stress level despite changes in course delivery and the emerging pandemic. The additional stress from COVID-19 may have affected the overall results of this study.

Chapter 5: Discussion of Findings

In this chapter, I discuss the implications for leaders, a relationship to the DNP Essentials, and recommendations for research and practice. I created this project to determine if undergraduate, prelicensure nursing students would have lower perceived stress levels following a stress management class and meditations during class time. The students completed pre- and postintervention surveys to help me analyze the effects.

Implications and Analysis for Leaders

Outcomes from this project indicated that undergraduate, prelicensure nursing students found meditation at the start of class and a course on stress management helpful for their well-being. While the statistical analysis did not show statistically significant results for lowering perceived stress levels, the student feedback was positive, and self-reported stress levels did not change for most participants. Stress levels and mental health concerns have been on the rise in college students and healthcare workers since the start of the COVID-19 crisis (Active Minds, 2020; Spoorthy et al., 2020). Educational and nursing leaders will need to continue to seek out ways and solutions to help decrease the stress load for these individuals. The addition of brief, commercially prepared meditations could help to alleviate stress in these areas.

Participants in the study commented on the benefits of the stress management class. Organizational leaders could look into providing education or training on the importance of managing stress levels and different stress management techniques. Leaders could look to outside companies to offer training or have people trained within the organization to facilitate courses for others.

Leaders should consider creating a quiet place for meditation or stress relief activities to occur. More than one participant noted the noise level in the room. Bemker and Ralyea (2018)

recommended that health care organizations create a quiet space for workers free from stress and a place for relaxation. This project echoes the need for a quiet area for people to relax and spend time in meditation. Even though the statistical results of this project were not significant, nursing and educational leaders should consider adding meditations into a workday, training on stress management, and building a quiet space to complete these activities.

Findings and a Relationship to DNP Essentials

The literature review for this project revealed the benefits of including mindfulness or meditative activities to reduce stress. While the results of this project were statistically insignificant in relation to lowering perceived stress scores, the participants' free responses highlighted the personal perceived benefits of the intervention. Participants' PSS-10 scores increased overall, but their self-reported stress levels did not increase throughout the project despite the COVID-19 crisis. Six participants had lower PSS-10 scores, and two had no change in their scores. The Essentials of Doctoral Education for Advanced Nursing Practice will be discussed below to help guide the implications of this project for nursing practice.

Essential 1: Scientific Underpinnings for Practice. The literature review completed for this project revealed many research projects have evaluated and analyzed ways to reduce stress levels in students and nurses. There had not yet been a study conducted where quantitative data relating to stress levels for classroom time meditation in nursing students at the time I wrote the literature review. The intended outcome of this project was to lower perceived stress scores for the participants; however, due to circumstances uncontrollable outside stressors, I did not reach this outcome through quantitative data analysis. I have completed all steps I used to create and conduct the study and these steps could be replicated.

Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking. The need to practice self-care and prevent compassion fatigue or burnout in health care workers has become well known in our society. Researchers have shown an increased risk of errors for nurses who have higher stress levels (Melnik et al., 2018). This project attempted to use an evidence-based intervention to help lower the stress levels of future nurses and possibly build a lifelong skill. This project was cost-effective due to the use of commercially prepared free apps and could be utilized by someone else in any setting.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice. For this project, I noted the problem of high stress levels in nursing students and reviewed the published literature for evidence-based solutions. I designed the project based on the findings from the literature, recognizing that there was not a study in place yet that used quantitative methods to evaluate stress levels following meditations in the classroom for nursing students. I completed statistical analyses on the data collected from this project, and I assessed the outcomes of the intervention.

Essentials IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care. For this project, technology was evaluated and utilized in several ways. The apps used for the meditations in the classroom were considered by price, availability of meditations, and the options to choose different lengths. I selected the two apps because they were free for download and had a variety of time ranges and meditation options for use. The shift to virtual learning midway through the intervention for this study meant that technology was used more than previously planned. The university where the study took place used Zoom to complete synchronous online teaching sessions; the meditations were started on a phone and played via Zoom for the students. Qualtrics, Excel, and SPSS were

used for data collection and analysis. The technology used throughout this project enhanced the intervention and analysis of the results.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health. In this project, I evaluated the stress levels of undergraduate students and nurses. High stress levels are typical in both of these populations, and the project evaluated the effect of meditations at lowering stress levels in future nurses. Guided meditations and stress decreasing techniques could be used as health promotional items for other populations.

Essential VIII: Advanced Nursing Practice. In this project I designed, implemented, and evaluated the effects of guided meditations and a stress management class on perceived stress levels highlighting the ideals within Essential VIII. While the results were not statistically significant from this project, an analysis of the current conditions in the United States shows that this may have affected the outcomes. For this project I utilized DNP Essentials I, II, III, IV, VII, and VIII.

Recommendations

Despite statistically insignificant results, there are parts of this project that should be incorporated into classroom learning. A short meditation before exams could be used in any classroom. One participant stated, "I liked when we did them on test days where they were test-related. I feel like it helped me to calm down before a test." Adding in a short commercially prepared meditation before exams would be something that could be done with minimal planning.

The university where the study took place should continue to have a scheduled day dedicated to the stress management course. One participant stated, "I liked the guest speaker showing us different techniques to manage stress." Even though the students in the class would

not be participating in a research study, they could still benefit from the course on different stress management techniques.

A third recommendation would be to add a short three- to five-minute meditation to each class period. Three to five minutes appeared to be enough time for students to focus on the meditation while the room remained quiet.

In this study there was an attrition rate of 34% with a loss of 27 participants to follow up. While some loss of participants is expected, this was a significant amount. During the course of the study the data collection method changed due to the COVID-19 health crisis. A change in the data collection method and need for a secondary consent may have affected the attrition rate. For future research studies, the same data collection method should be used throughout.

Recommendations for Future Research

There are many different ways that the intervention could be modified and researched for the effects on stress or mindfulness levels. While the current results would support a short meditation in the classroom, a future research study could look at the impact of a set timed meditation used for ten weeks. For the current study, I invited all students in the course to participate, and the intervention took place during scheduled class time. Future research could invite the whole class to join, but have the meditations scheduled for another time, such as right before or after class, so only those interested would participate, possibly decreasing the noise level.

With the overall changes occurring in higher education currently, future research could also look at ways to build a meditation module into an LMS system. Participants could then access the module when it worked best in their schedule. Several participants felt it benefited

them to complete the meditations before testing; a study could look at the effect of having meditation as the first question on an electronic testing platform.

An additional place to measure the effects of meditation on undergraduate nursing students would be in the laboratory or a clinical or simulation setting. Using guided meditations could affect stress levels in these settings or performance on a specific skill measure. Future studies could analyze the effects of meditation on participants from diverse backgrounds related to their experiences in a nursing program. There are many ways and areas where the effects of guided meditations on undergraduate nursing students could be measured .

Summary

While this project did not have statistically significant results, there are still components of it that leaders can use in the classroom or health care setting. Leaders should look to provide a time and place for students or health care staff to practice meditation, as well as consider providing training on stress management and the effects of stress. This project can be related back to DNP Essentials I and III due to the scientific nature of the project. DNP Essentials II, IV, VII, and VIII can also be related to this project. Recommendations from this project are to add a short meditation to each class period, continue the stress management class provided by the university, and have a short meditation before exams. Future research could measure the effects of meditation on stress levels for students who express interest in learning, creating a module for use in a LMS, or using meditation before a lab or simulation. There is no limit to where or how guided meditations could be added to the healthcare or higher education setting.

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Appendix B: PSS-10 Scale

Unique code (4 number & 2 letter combination): _____

Please complete all ten questions

PSS

INSTRUCTIONS:

The questions in this scale ask you about your feelings and thoughts during **THE LAST MONTH**. In each case, please indicate your response by placing an "X" over the circle representing **HOW OFTEN** you felt or thought a certain way.

	Never 0	Almost Never 1	Sometimes 2	Fairly Often 3	Very Often 4
1. In the last month, how often have you been upset because of something that happened unexpectedly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. In the last month, how often have you felt nervous and "stressed"?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. In the last month, how often have you felt that things were going your way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. In the last month, how often have you been able to control irritations in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. In the last month, how often have you felt that you were on top of things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. In the last month, how often have you been angered because of things that were outside your control?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Perceived Stress Scale. Reprinted from Dr. Cohen's Scales, by Stephen Cohen, February 19, 2015 retrieved from <http://www.psy.cmu.edu/~scohen/>.

version: 07/29/2019
PSS 1 of 1

Appendix C: Introduction Email

Dear Prospective Participant,

My name is Caitlin K. Dodd and I am a doctoral of nursing practice student at Abilene Christian University and an Assistant Professor of Professional Practice at XXXXXX.

I am conducting a research study on lowering perceived stress levels in nursing students. Participation will take approximately three and a half hours over ten weeks. Participation is completely voluntary and data will be collected anonymously and stored in a locked file cabinet.

If you are interested informed consent for the project will be completed on January 28 during your Professional Role I course. All interventions for this project and surveys will be completed during the Professional Role I course. Participation in this study will in no way affect your course grade.

Potential risks for the study may be becoming more aware of your personal stress level or students being aware of whether or not you are participating in the study. No compensation is being offered for this study.

If you have any questions, please do not hesitate to contact me at xxxxxx@xxxxxxxxxxx.

Thank you for your time.

**Caitlin K. Dodd, DNP-S, MSN, RN, CNE
Doctor of Nursing Practice Student
Abilene Christian University
School of Nursing**

**Assistant Professor of Professional
Practice
XXXXXXXXXX
XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXX**

Appendix D: Outline of Stress Management Class

Got Stress? Learn How to De-Stress Like a Pro

Got Stress? Of course—who doesn't! In this interactive presentation, students are taught how to change their view of Stress: instead of debilitate, Stress can enhance their academic and personal lives. In addition, the group learns and practices stress-resiliency skills.

Learning Outcomes:

- Students will identify multiple sources of Stress and how these forms of Stress present themselves mentally and physically.
- Students will equip themselves to reframe the Stress presented in their life and understand steps towards developing a “growth” mindset
- Students will practice multiple relaxation techniques promoting improved coping skills and lowering perceived Stress.

How does this relate to student success?

XXX, Stress is the #1 impediment to academic performance according to the National College Health Assessment. High stress levels can have an extremely detrimental effect on our mind with reduced memory, impaired decision making, lowered comprehension, and reduced ability to focus. As we learn to manage the various stressors of college, this will not only improve an individual's quality of life: it will improve performance in all aspects of their lives including academically, employability, and relationships.

Appendix E: Postintervention Survey

Code is your month and birthday as numbers (July 25=0725) and the first two letters of your permanent address street name (Blossom=BL) Code=0725BL

Unique code (4 number & 2 letter combination): _____

How many in class sessions did you participate in? Please circle your response below.

All	Most (15-19)	Some to no session (14 or less)
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I completed meditation outside of class time. Please circle your response below.

Daily	3-4 times a week	Once a week	1-2 times a month	Never
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Please indicate below what you believe your current stress level to be. Please circle your response below.

No stress	Below average stress	Average stress	Above average stress	Overwhelming stress
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Please use the space below to provide your thoughts related to the stress management techniques used:

Appendix F: Demographic Survey

Please create a unique code. The code should be your month and birthday as numbers (July 25=0725) and the first two letters of your permanent address street name (Blossom=BL) Code= 0725BL

Unique code (4 number & 2 letter combination): _____

Gender: Please circle your response below.

Male

Female

Please circle your age range below.

18-25

26-36

37-46

46-55

56 or older

Ethnicity: Please circle your response below.

American Indian/Alaska Native

Asian

Black/African American

Hawaiian/Other Pacific Islander

Hispanic/Latino

Multi-Ethnic

White

Unknown Ethnicity

Student entry status: Please circle your response below.

Traditional student

Transfer student

Degree Status: Please circle your response below.

First Degree

Second Degree

Unique code (4 number & 2 letter combination): _____

Marital/partner Status: Please circle your response below.

Single/divorced/widowed

Married/partner

Children at home: Please circle your response below.

Yes

No

Employment Status: Please circle your response below.

Full-time

Part-time work

Full-time student/ no work

Previous experience with meditation: Please circle your response below.

Yes

No

Please indicate below what you believe your current stress level to be. Please circle your response below.

No stress

Below average
stress

Average stress

Above average
stress

Overwhelming
stress

Please use space below to list any stress management techniques currently in use:

Appendix G: App Descriptions

Headspace App

The headspace app is a free app available for download on Google play or the Apple app store.

The free portion of the app will be used for this project. The calm guided meditations will be used with an increasing time frame each week.

Insight Timer App

The insight timer app is a free app available for download on Google play and the Apple app store. The free portion of the app will be used for this project. A guided meditation related to exam preparation will be used before exams.

Appendix H: Support Letter

April 1, 2019

Tonya Sawyer-McGee
Program Director, Doctor of Nursing Practice
Abilene Christian University
1600 Campus Court
Abilene, TX 79699

Dear Dr. Sawyer-McGee,

Please be advised that [REDACTED] will be happy to support Abilene Christian University DNP student Caitlin Dodd in her scholarly project efforts to meet the requirements for her Doctor of Nursing Practice degree. Caitlin will keep me informed of her needs and progress towards successful completion of the project. [REDACTED] is happy to support her efforts.

Respectfully submitted,

Kathy A. Baker

Appendix I: IRB Approval Letter

DATE: 1-October-2019

TO: Caitlin Dodd

FROM: [REDACTED] Institutional Review Board

RE: Approval of Protocol Number 1920-19

Dear Caitlin:

In accordance with applicable federal law governing the use of human subjects in research, the [REDACTED] Institutional Review Board ("IRB") has reviewed and approved your proposed project entitled "Lowering Perceived Stress Levels in Undergraduate Nursing Students". Your study is considered minimal risk and was reviewed through the expedited process, category 7. Please know that the IRB has not evaluated your project for scientific merit, except to weigh the risk to the human participants and the risk/benefit ratio (i.e. do benefits outweigh risk). This approval does not replace any other approvals that may be required.

Your IRB approval is effective on October 1, 2019. Continuing review is not required; however, an annual progress report is. This report must be submitted to the IRB before each anniversary of your approval date every year until this study is closed.

The approved consent is attached to this letter. Only this version of the consent form may be used in recruiting research participants.

Remember that you are responsible for ensuring that your study is conducted in an ethical manner and in accordance with applicable law and [REDACTED] policies and procedures. You must submit required reports, as well as any proposed modifications to the IRB for review. No changes to your protocol may be implemented without prior IRB approval. Also, you are required to promptly report unanticipated problems and adverse events.

Your study may be selected for a Post-Approval Monitoring ("PAM"). You will be notified if your study has been chosen for a PAM. A PAM investigator may request to observe your data collection procedures, including the consent process. Once your research is complete and no identifiable data remains, please use a [Project Closure and Final Report](#) form to close this study. All active projects are subject to PAM.

Please contact Research Compliance at [REDACTED], if you need any additional information.

Sincerely,

[REDACTED] Institutional Review Board

Appendix J: Authorization Agreement

Version Date: 03/31/2011

Sample text for an Institution with a Federawide Assurance (FWA) to rely on the IRB/IEC of another institution (institutions may use this sample as a guide to develop their own agreement).

Institutional Review Board (IRB) Authorization Agreement

Name of Institution or Organization Providing IRB Review (Institution/Organization A):
[REDACTED]

IRB Registration #: 00002653 Federalwide Assurance (FWA) #, if any: 00022286

Name of Institution Relying on the Designated IRB (Institution B):

Abilene Christian University

FWA #: 00025095

The Officials signing below agree that Abilene Christian University may rely on the designated IRB for review and continuing oversight of its human subjects research described below: (check one)

This agreement applies to all human subjects research covered by Institution B's FWA.

This agreement is limited to the following specific protocol(s):

Name of Research Project: Lowering Perceived Stress Levels in Undergraduate Nursing Students

Name of Principal Investigator: Caitlin K. Dodd

Sponsor or Funding Agency: N/A Award Number, if any: N/A

Other (describe): _____

The review performed by the designated IRB will meet the human subject protection requirements of Institution B's OHRP-approved FWA. The IRB at Institution/Organization A will follow written procedures for reporting its findings and actions to appropriate officials at Institution B. Relevant minutes of IRB meetings will be made available to Institution B upon request. Institution B remains responsible for ensuring compliance with the IRB's determinations and with the Terms of its OHRP-approved FWA. This document must be kept on file by both parties and provided to OHRP upon request.

Signature of Signatory Official (Institution/Organization A):

[Signature] Date: 12-12-19

Print Full Name: [REDACTED] Institutional Title: Associate Provost of Research

NOTE: The IRB of Institution A may need to be designated on the OHRP-approved FWA for Institution B.

Signature of Signatory Official (Institution B):

[Signature] Date: Nov 11, 2019

Print Full Name: Susan Lewis Institutional Title: Vice Provost

Appendix K: Project Timeline and Tasks

January	Recruit participants, pre intervention survey
January-April	Interventional Period, post intervention survey
May-August	Evaluation of Survey results
August-December	Identify possible conferences for presentations and journal options for publication
	Create presentation and work on paper for publication
	Submit abstract for presentation or publication

Task	October	January	February	March	April	May-July	August-November
IRB approval							
Recruit participants, informed consent, and pre intervention survey							
Stress Management Class							
Meditation Intervention							
Post intervention survey							
Evaluation of survey results							
Complete final chapters							
Identify possible presentation or publication options							
Submit abstracts							

Appendix L: IRB Amendment

DATE: 19-March-2020

TO: Caitlin Dodd [REDACTED]

FROM: TCU Institutional Review Board

RE: Approval of Amendment to Protocol 1920-19-AM1

Dear Caitlin [REDACTED]

In accordance with applicable federal law governing the use of human subjects in research, the [REDACTED] Institutional Review Board has reviewed and approved your proposed amendment to the project entitled "Lowering Perceived Stress Levels in Undergraduate Nursing Students". Your study continues to be considered minimal risk and was reviewed through the expedited process, category 7.

Remember that you are responsible for ensuring that your study is conducted in an ethical manner and in accordance with applicable law and TCU policies and procedures. Approval of this amendment does not change due dates for Annual Check-in/Continuing Review Reports, if any. Also, please remember that you are required to promptly report unanticipated problems and adverse events.

Please contact Research Compliance at [REDACTED], if you need any additional information.

Sincerely,

[REDACTED] Institutional Review Board

Appendix M: Postintervention Survey Qualtrics

Post-Survey Lowering Perceived Stress Levels in Undergraduate Nursing Students

**Q1 Code is your month and birthday as numbers (July 25=0725) and the first two letters of your permanent address street name (Blossom=BL) Code= 0725BL
Please type your unique code below**

Q2 How many in class session did you participate in? Please circle (choose) your response below.

- All (1)
- Most (13-17) (2)
- Some to no sessions (12 or less) (3)

Q3 I completed meditation outside of class time. Please circle (choose) your response below.

- Daily (1)
- 3-4 times a week (2)
- Once a week (3)
- 1-2 times a month (4)
- Never (5)

Q4 Please indicate below what you believe your current stress level to be. Please circle (choose) your response below.

- No stress (1)
- Below average stress (2)
- Average stress (3)
- Above average stress (4)
- Overwhelming stress (5)

Q5 Please use the space below to provide your thoughts related to the stress management techniques used:

Q6 Please answer all ten questions below.

	Never (1)	Almost Never (2)	Sometimes (3)	Fairly Often (4)	Very Often (5)
1. In the last month, how often have you been upset because of something that happened unexpectedly? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. In the last month, how often have you felt that you were unable to control the important things in your life? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. In the last month, how often have you felt nervous and "stressed"? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. In the last month, how often have you felt confident about your ability to handle your personal problems? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. In the last month, how often have you felt that things were going your way? (7)

6. In the last month, how often have you found that you could not cope with all the things that you had to do? (8)

7. In the last month, how often have you been able to control irritations in your life? (9)

8. In the last month, how often have you felt that you were on top of things? (10)

9. In the last month, how often have you been angered because of things that were outside your control? (11)

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? (12)

