7-2024

Reducing stress and improving mindfulness practices among mental health professionals through guided meditation.

Liara G. Patton
University of Louisville, liaraisnogle@gmail.com

Reducing Stress and Improving Mindfulness Practices Among Mental Health Professionals Through Guided Meditation

by

Liara Gelene Patton

Paper submitted in partial fulfillment of the
requirements for the degree of

Doctor of Nursing Practice

School of Nursing, University of Louisville

July 8, 2024

Dr. Katherine Adelstein	July 8th, 2024
DNP Project Chair	Date
Dr. Kennetha Williams	July 8th, 2024
DNP Project Committee Member	Date
Associate Dean DNP and APRN Programs	Date

Table of Contents

Abstract

Background: Chronic exposure to psychological stress places mental health providers in a vulnerable position when coping skills are not learned or available. Mental health providers are at risk for both mental and physical illness due to the empathetic demands of their client's stressors. The deficit in adequate coping skills can cause provider-client relationships to suffer and create an undesirable work environment.

Setting: This project took place in Somerset, KY, at a mental health company called A New Beginnings Achievement Center (ANBAC). Twenty-six employees work at ANBAC, all of whom are involved in providing mental health services to developmentally delayed community members.

Purpose: The purpose of this quality improvement project is to reduce stress levels and increase mindfulness of ANBAC staff using guided meditation.

Procedures: Four guided meditation sessions entailing a 15-minute guided meditation recording were conducted on-site at ANBAC. One session took place each week for four weeks. All ANBAC employees were invited to participate. ANBAC staff were encouraged to use the 15-minute guided meditation link provided at home outside of the four scheduled sessions.

Measures: Outcomes were measured in this project before the first session and after the fourth session are stress and mindfulness, measured by the Perceived Stress Scale (PSS-14) (Cohen et al., 1983) and the Mindful Attention and Awareness Scale (MAAS) (Brown & Ryan, 2003). Heart Rate Variability (HRV) and blood pressure were measured before and after all four sessions.

Reducing Stress and Improving Mindfulness Practices Among Mental Health Professionals Through Guided Meditation

In recent years, the American culture has placed a large emphasis on the negative health effects of psychological stress, while at the same time, encouraging education about mindfulness practices to reduce stress and improve mental health. However, many people struggle to incorporate stress reduction practices into their daily lives. The employees at A New Beginnings Achievement Center (ANBAC) have expressed increased levels of stress related to their busy work environment and limited coping skills. Collectively, the mental health of employees at ANBAC is not good due, in part, to poor coping skills. ANBAC employees need to improve their coping skills in order to live healthier, happier lives and to provide the best care for their clients.

Background

Psychological stress is a common phenomenon for providers in healthcare, particularly in the field of mental health. Stress can get out of hand when it is constant, reoccurring, and involves one's own personal life and work life. Barton (2020) states that chronic psychological stress is a frequently occurring health risk globally. Long term, chronic elevated psychological stress can be underestimated in its detrimental effects on the body. At the physiological level, exposure to a psychologically stressful situation will provoke the autonomic nervous system to activate and trigger a sympathetic response, commonly called a "fight or flight" response. To trigger that response, cortisol, a natural steroid, is released. Chronic exposure to cortisol related to psychological stress can wreak havoc on multiple body systems. The cardiovascular system suffers from chronically high cortisol levels resulting in high blood pressure and elevated heart rate that places the heart under stress of its own. Additionally, chronic cortisol exposure can

weaken the immune system leading to increased risk of autoimmune conditions and infectious diseases (Jarvelin-Pasanen et al., 2018). Some researchers have studied Heart Rate Variability (HRV) which is a term used to refer to the rate change that occurs with an individual's heart rate when one is exposed to a stressful event or a calming intervention. An increased HRV is a positive outcome after a calming intervention, meaning that the time between beats is increased, indicating a lower, usually healthier heart rate. For example, if one's heart is beating at a rate of 150 compared to 75, there is less HRV, or less time between beats (Amutio et al., 2015). Additionally, Bartlet et al. (2019) found that the ability to process information, pay attention and cope with emotions is negatively affected by long-term stress. When these physical and psychological effects of stress begin to overwhelm an individual's ability to cope, there is increased risk for depression, substance abuse, and other maladaptive coping mechanisms (Bartlett et al., 2019).

External Evidence

Empathy is a valued trait in healthcare workers. The term empathy is defined as the ability to understand and share feelings of another. However, it is a trait that can also place healthcare workers in a vulnerable position to experience the same psychological stresses that are experienced by those with whom they empathize (Barton, 2020). Healthcare workers in the field of mental health may be at a higher risk for occupational psychological stress because of the high levels of empathy they often exhibit for patients and clients in very difficult situations. Psychological occupational stress in the field of mental health has been described as "exhausting, demanding, and draining" due to the nature of the work (Rokach & Boulazreg, 2022). Rokach & Boulazreg (2022) found that due to the nature of their work, mental health professionals were more likely to experience negative feelings towards co-workers as they associated work stress

with those they worked beside. Mental health organizations can be greatly impacted when their employees are experiencing high levels of chronic stress. Staff experiencing high levels of occupational stress are at risk for disinterest in work projects, often miss multiple days of work, and are sometimes less engaged overall in their work (Bartlett et al., 2019). Additionally, Rokach & Boulazreg (2022) found that when mental health workers were dealing with their own stress, the therapeutic relationship with their clients suffers. A study by Acker (2012) found that 56% of the mental health professionals in their study reported "moderate to high range for emotional exhaustion, 73% scored in the moderate to high range for role stress, and 50 % of those surveyed reported desire to leave their place of employment." Stressful work environments and employees with limited coping skills can lead to financial loss as mentally exhausted employees are more likely to have an increased number of absent days (Jarvelin-Pasanen et al., 2018). The World Health Organization (2022) estimated that the effects of mental exhaustion in the workforce have led to a $1 trillion dollar profit deficit due to nearly 12 billion working days lost.

Without any emphasis on self-care, mental health providers cannot serve those who need their specialized services (Ko & Lee, 2021). Rokach & Boulazreg (2022) completed a survey in 2017 that showed that providers "overextend themselves at work" in the mental health setting. Crowley and Gottlieb (2012) conducted a study that found therapy provided by those who practice self-care was more effective than those who did not practice self-care. A common form of self-care that is proven to be beneficial in lowering psychological stress is guided meditation. Guided meditation improves stress levels through mindfulness. Mindfulness can be described as a consciousness that is present when one is aware of and paying attention to any combination of their touch, taste, smell, sight, or thoughts at any given moment (Brown & Ryan, 2003). Another source defines mindfulness as intentionally paying attention "on purpose, in the present moment,

and non-judgmentally to the moment by moment unfolding of experience" (Luangapichart et al., 2022, p. 2). Frequent practice of meditation can help practitioners reap the benefits of mindfulness (Bailey et al., 2018).

Guided meditation is a helpful way for beginning practitioners to practice mindfulness. Through verbal cues, guided meditation prompts those practicing to focus on specific body parts and breathing patterns. Advancements in technology have made recordings of guided meditations easily accessible from almost any platform. A meta-analysis of 39 studies found evidence supporting mindfulness meditation as an instrument to enhance cognitive functioning (Eberth & Sedlmeier, 2012). A controlled-longitudinal study observed that mindfulness meditation over an 8-week period increased the concentration of gray matter in 16 different individuals' brains. Gray matter is known to be associated with emotional regulation, thought processing, problem solving and perspective—all of which are vulnerable to the effects of psychological stress (Holzel et al., 2011). Patients and clients can be highly sensitive to their providers' stressors placing the therapeutic relationship at risk (Rokach & Boulazreg, 2022). Many mental health providers are guilty of one-way care that naturally neglects the needs of oneself despite the training one might have where compassion and understanding could be offered on an intrapersonal level (Barton, 2020). Guided meditation offered in the workplace may help mental health professionals provide the highest level of care to their patients while avoiding the unhealthy consequences of occupational stress (Ko & Lee, 2021).

Internal Evidence

Established June 18th, 2018, in Somerset, Kentucky, A New Beginnings Achievement Center (ANBAC) is a mental health company in Kentucky that offers mental health services to those with cognitive disabilities. ANBAC's mission is to serve the intellectually and

developmentally disabled individuals of Pulaski County. Through one-on-one interaction, ANBAC's staff individualize care for young and older adults to become independent members of the community. Students/clients at ANBAC are taught how to navigate adulthood while maintaining jobs and homes for themselves. Students' ages range from 16 to 30 years old. Approximately 20 or more students are enrolled in ANBAC's services annually, with many returning year after year depending on individual needs, age, and resources. The staff at ANBAC is made up of 26 employees. These employees are the executive director, behavioral analysts, registered behavior technicians, case managers, administrative coordinators, and vocational skills director. Students come to ANBAC up to five days a week for instruction depending on individualized needs. In addition to group and one-on-one life skills instruction, staff may also be responsible for transporting students to a job or medical appointments or other outside activities.

During a needs assessment of ANBAC, the CEO of the company expressed that many of the staff are experiencing stressors in their personal lives while already enduring a stressful work environment in mental health. Stress management and coping skills were brought up by others when exploring what contributions a doctoral project could offer their company. The environment at ANBAC was described as "creatively chaotic" but effective in their treatment of clients. However, there weren't any formal offerings for stress management for staff members. One individual explained, "I love working here and I love what I do, but sometimes it feels like I can't catch a break. Every student has their individual needs, and it is mentally taxing to come to work every day and give them the attention and patience they deserve. I feel like I have an empty tank" (Anonymous ANBAC Employee, personal communication, October 12th, 2022). Those who were interviewed at ANBAC expressed great passion and interest in a doctoral project that

could offer stress management to employees and benefit them both at work and in their personal lives.

Target Population

The target population for this quality improvement project are employees at ANBAC. Mental health providers are vulnerable to stress due to the nature of their work. Many of those whom ANBAC staff care for are experiencing high stress situations that are often expected to be solved by the staff member through guidance and counseling. A willingness to help others is a trait that most providers carry, and the good intentions of helping as many people as possible or always going the extra mile for someone can become taxing and stressful. Loyalty to a company and one's clients can also place stress on an individual when trying to also meet the demands of life outside of work as well (Rokach & Boulazreg, 2022).

Literature Review

The literature review produced up-to-date research and comprehensive reviews on the benefits of mindfulness among various high-stress occupations with many focusing on those providing mental health services. While completing the literature review, themes were noted among the different studies and the intervention chosen along with the instruments used for measurable outcomes, and the designated outcomes themselves. It must be noted that interventions varied in their implementation methods and time frames across studies in order to fit the population studied. Additionally, certain instruments utilized were shortened to meet the specific objective of a study.

Interventions Reviewed

Mindfulness interventions take many forms with the focus of being present in the moment. The literature review produced multiple forms of mindfulness that utilize guided meditation

sessions as their main intervention or as a major component of the study. Mindfulness-based stress reduction (MBSR) and Mindfulness-based cognitive therapy (MBCT) are two terms that fall under the umbrella of mindfulness interventions. Both MBSR and MBCT are referenced in this integrative review as terms encompassing interventions that are solely guided meditation or utilize guided meditation as a component of the intervention. A common form of MBSR is conducted through eight weeks of 2.5 hours of meditation, with one weekend day designated for 6 hours of silence. Three of the randomized control trials in the review took this approach to MBSR in their study (Crowder & Sears, 2017; Hill et al., 2017; Verweij et al., 2018). Jimenez-Gomez et al. (2022) did not specify the time of MBSR interventions used but did record 26 people in the intervention group who received MBSR treatment. Six of the systematic reviews contained MBSR as an intervention studied. Bartlett et al. (2019) noted 13 of the 25 RCTs used in their systematic review contained MBSR with guided meditation interventions. Hoge et al. (2021) had 47 of 72 MBSR interventions, while Janssen et al. (2018) reviewed 23 studies with MBSR as the only intervention. Wong et al. (2018) reviewed 25 of their 36 RCTs with MBSR. Lomas et al. (2019) included 21 of 41 articles with MBSR, and Hoffman et al. (2010) reviewed 25 of 39 articles with MBSR. One RCT took an approach using eight weeks of guided meditation once a week on every Thursday but did not specify the length of each Thursday session (Yang et al., 2018).

MBCT was the second most common intervention observed in this integrative review. Only one RCT reviewed included MBCT and consisted of two weeks with 2.5-hour sessions weekly with one six-hour silent day along with daily homework between sessions (Schanche et al., 2020). The rest of the MBCT interventions are seen in four more systematic reviews, some of which were previously listed with MBSR interventions as well. Hoge et al, (2021) reviewed 21 of 72 articles

with MBCT interventions while Wong et al. (2018) reviewed 11 of 36, Lomas et al. (2019) 3 of 41, and Hoffman et al. (2010) 13 of 39.

Other interventions that are not labeled as MBSR and MBCT include mindfulness breathing exercises (Howarth et al., 2019), mindful-self compassion (MSC) (Jimenez-Gomez et al., 2022), mindfulness meditation programs (Mohammed et al., 2018), and stress management sessions (Wade et al, 2021). Mohammed et al. (2018) described the mindfulness meditation program as four weeks of 60-to-90-minute formal instruction with 20 to 30 minutes of on-your-own meditation using a CD recording. Stress management sessions were described as four sessions covering stress-coping techniques along with drop-in staff support groups (Wade et al., 2021). Timeframes and detailed descriptions of the other interventions were not provided, likely due to their involvement in systematic reviews with diverse interventions.

Measured Outcomes, Findings & Instruments

Numerous outcomes were measured among the 15 articles in this integrative review. Depending upon the population, measures were chosen to reflect how mindfulness practices could impact each measure individually. The most common measures between the articles included mindfulness, stress, depression, anxiety, self-compassion, and burnout. Instruments specific to the measure were also included and the most prevalent are discussed below with the appropriate measure. Additional measures worth noting that were studied in three of the articles include biophysical measurements such as heart rate and blood pressure.

Mindfulness. Mindfulness proved to be the most common outcome studied among the reviewed articles. Seven articles utilized the Five Facet Mindfulness Questionnaire (FFMQ) to find significance in the relationship between mindfulness and mindfulness interventions. Significant results with a p-value <0.001 were reported for Bartlett et al. (2019), Lomas et al.

(2019), and Schanche et al. (2020). Significant results with a p-value <0.05 were reported for Jimenez-Gomez et al. (2022) and Verweij et al. (2018). One study using the FFMQ did not produce significant results (Mohammed et al., 2018). Amutio et al., (2015) utilized the FFMQ scale and discovered a significant relationship between mindfulness and meditation also ($p<0.05$). The second most common instrument used in this review is the Mindful Attention and Awareness Scale (MAAS). Four articles used the MAAS, and two articles were described as having significant results in increasing mindfulness with a p-value <0.001 (Hill et al., 2017; Lomas et al., 2019). No value was provided, but significance was reported for Janssen et al. (2018) and Howarth et al. (2019). Bartlett et al. (2019) did not report a significant relationship between mindfulness and mindfulness interventions.

Stress. The Perceived Stress Scale (PSS) was listed as the most used scale among the fifteen articles. A significant relationship (p-value <0.001) between stress reduction and mindfulness interventions was found for Hill et al. (2017) and Lomas et al. (2019). Significance with a p-value <0.05 was found in three other studies using the PSS (Bartlett et al., 2019; Crowder & Sears, 2017; Mohammed et al., 2018). A significant relationship without a statistical value was recorded for Hoge et al. (2021). The Nursing Stress Scale was used in one article and produced significant results in reducing stress after MBIs (p-value <0.05) (Yang et al., 2018). Howarth et al. (2019) did not report a stress instrument or a statistical value but did report that a significant reduction in stress was experienced by participants after mindfulness interventions.

Cardiovascular Measures. As previously mentioned, an elevated heart rate is a common side effect when stress triggers the autonomic system to release cortisol. Three of the reviewed studies measured pre and post intervention heart rates of their participants. Amutio et al. (2015) measured HRV at both six months and twelve months and found a significant relationship between

increased HRV and mindfulness practices that included guided meditation. In fact, the strength of the positive relationship between mindfulness interventions and HRV was stronger at month twelve than it was at month six (Amutio et al., 2015). Another study conducted by Wolever et al. (2015) found significance while referencing a p-value of <0.05 between meditation and increased HRV. One study did not observe any statistical significance between HRV and mindfulness interventions (Roeser et al., 2013).

Blood pressure is the second cardiovascular measure noted in these studies when assessing its relationship with mindfulness interventions. Researchers focused on both the systolic and diastolic measurements of each participant's blood pressure. Like heart rate results, Roeser et al., (2013) did not find a significant relationship between mindfulness interventions and blood pressure. However, both Wolever et al., (2015) and Amutio et al. (2015) did observe a statistically significant relationship ($p<0.05$).

Cultivating a culture of controlled psychological stress has proven to be possible through mindfulness interventions such as the ones discussed in this review. Daunting and extensive methods for mindfulness implementation should not scare organizational leaders away, as many manageable interventions have been described above. Increased mindfulness, stress reduction, heart rate variability, and decreased blood pressure must be valued in the workplace. Those working in mental health experience an environment that affects their own mental health, and it is highly appropriate to place emphasis on mindfulness interventions in the work setting for these individuals.

Purpose and Specific Aims

The purpose of this quality improvement project was to reduce stress levels and increase mindfulness of ANBAC staff using guided meditation. The first aim of this project was to

implement a 15-minute guided meditation session once a week for four weeks. The second aim was to measure stress and mindfulness before the first session and after the fourth session. The third aim is was measure each participant's heart rate and blood pressure before and after each session.

Quality Improvement Model

The Plan-Do-Study-Act (PDSA) cycle is a well-known model that is often used in quality improvement projects such as this one. Shewart and Deming (1986) constructed this model when addressing manufacturing processes in the 1980s. The PDSA cycle helps users identify a plan for a needed change, enact that plan, study and evaluate the results the plan produced, and then act upon the results by either discarding the implemented change, adopting it, or repeating the cycle over as many times necessary. One may note that the PDSA cycle is similar to the scientific method with its construction of a hypothesis that is then tested, evaluated and interpreted to form a conclusion that provides further insight towards the purpose of the study (Taylor et al., 2014). The PDSA cycle is used in this quality improvement project to steer the implementation of guided meditation at ANBAC. Planning is a large part and considerably the most important part of this project. The plan for this intervention had been an ongoing process for over a year where research of guided meditation, mindfulness, and stress reduction was extensive. The “Do” component of the PDSA cycle will took place in February of 2023 when ANBAC employees began practicing guided meditation. Results of pre and post surveys were reviewed and studied regarding the meditation sessions. Lastly, the “Act” component lied in the hands of the staff at ANBAC where their company decided to continue the guided meditation sessions for their staff or discontinue the intervention after the project was completed. A visual representation of the PDSA cycle can be found under *Figure 1*.

Methods

ANBAC was chosen as the project site during an exploratory meeting with the CEO. During this meeting, the CEO explained that her staff are in dire need of stress reduction strategies due to the stress that naturally occurs in the realm of providing mental health services. Permission was obtained for this project by the CEO of ANBAC during a meeting discussing quality improvement projects to address employee stress. Additional proof of permission for this project is included in the appendices as a copy of an email from ANBAC's CEO, see Appendix A.

Design. This study's design entails quantitative data collected through pre- and post-test surveys along with measures of heart rate and blood pressure before and after guided meditation. Data samples from ANBAC employees were collected via convenience sampling. Inclusion criteria include being a current ANBAC staff member.

Sample. Participants recruited for this project include all ANBAC employees. ANBAC staffed 26 employees at the time of this project. Genders include both male and female. The ages of staff members ranged from 20- to 53 years old. All project interventions took place on-site at ANBAC for the convenience of participants. A vast majority of the literature on mindfulness interventions studied populations involved in health care. Articles in the integrative review did include mental health providers as a population of study. The staff at ANBAC work heavily in mental health and suffer from similar psychological stress to the populations described in the literature. A 50% participation rate was the goal for the implementation of the intervention. Every ANBAC employee was notified of the guided meditation sessions through handouts, work email, and a work texting application. The emails and handouts contained information stating all four dates that the sessions occurred and the timeframe of each session, see Appendix H.

Context. The root causes of the stress experienced by those working at ANBAC include aspects of life outside of work and the natural stress that occurs with being a mental health professional. Unfortunately, ANBAC employees have expressed a deficit in their coping mechanisms for psychological stress. As a company, ANBAC seeks to better the lives of their clients and employees through this project. A key stakeholder influential to this intervention's success is the behavioral analyst appointed by the CEO as the contact person for this project. Additional stakeholders include the rest of the staff at ANBAC who participated in the guided meditation sessions.

Facilitation of this project was dependent upon the relationship constructed between the project leader and the staff at ANBAC. Early and consistent presence of the project leader at ANBAC to meet and converse with ANBAC employees helped establish rapport and potentially supported participation from staff. Barriers to this project's success included the participants' personal time and schedules. ANBAC employees are busy, and the goal of this project was to reduce stress, not increase stress. The meditation sessions took place immediately after work hours starting at 3:00pm when it was most convenient for ANBAC staff. This project was not required of ANBAC staff, and there was no monetary compensation for participation.

Intervention Implementation. The intervention implemented in this quality improvement project was guided meditation. The implementation period for this project was from February 6th, 2024 to February 27th, 2024. Each session took place every Tuesday from 3:00pm to 4:00pm during the month of February for a total of four sessions. An introduction of the project leader and a brief description of the project initiated the first session of the intervention. Participants were asked to set aside any prior negative experiences or feelings they may have had towards guided meditation. The participants were then given a survey on

mindfulness and stress to complete. Once a week, for a total of four weeks, their heart rate and blood pressure were measured by the project leader. ANBAC staff were encouraged to wear comfortable clothes, take their shoes off, and with the lights turned off, find a spot on the floor with a yoga mat to lay on. The guided meditation was a fifteen-minute recording called "15 Minute Guided Breathing Meditation for Relaxation and Inner Stillness" that was played from YouTube and found at https://www.youtube.com/watch?v=4Undv6MmQeE (McCready, 2019).

After the recording finished, ANBAC staff were asked to continue lying still while the project leader immediately recorded each individual's heart rate and blood pressure before sitting or standing up. The same guided meditation recording was used during all four sessions. This course of events starting and ending with measurement of heart rate and blood pressure was repeated at all four sessions. In the fourth and final session, a post-survey measuring mindfulness and stress was administered to all participants after their heart rate and blood pressure were recorded.

Procedures. The introduction of the project took roughly 2 minutes with an allotted time of 3 minutes to answer any questions about the intervention. Ten minutes was utilized for participants to answer all questions from the surveys. Another 10 minutes were used to measure the blood pressure and heart rate of each participant. Next, 2 minutes allowed for participants to take their shoes off and find a spot to get comfortable on the floor. After the group settled-in to their spots, a 15-minute recording initiated the guided meditation. Once the guided meditation was completed, another 10 minutes were used to collect the blood pressure and heart rate of each participant for a second time. During the fourth and final session, 10 more minutes were required to complete the post surveys.

Copies of the surveys used to collect data on both mindfulness and stress can be found in Appendix B-F along with corresponding copies of permission to use. Each participant was assigned a number for data referencing. The heart rate and blood pressure of each participant was recorded on a spreadsheet listing the participant's assigned number next to the corresponding columns for their heart rate and blood pressure. A finger-tip heart rate monitor was used to measure heart rate, and an automatic blood pressure cuff was used to measure blood pressure. The upper right arm was used to record blood pressure if there were no contraindications to do so.

To promote health and safety for participants, the project leader screened for hypertension while collecting blood pressure measurements coinciding with the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Bood Pressure's Eighth Edition (JNC-8). Participants who screened positive for Stage 1 Hypertension (BP 140 to 159/90 to 99) or Stage 2 Hypertension (BP >160/ 100) were to be given a slip of paper recommending he or she see a primary care provider for further evaluation. Participants who screened positive for a hypertensive crisis (BP >180/110) were to be given a slip of paper recommending he or she visit the nearest emergency room for further evaluation. The paper given to participants included JNC-8 guidelines for Stage 1, Stage 2, and hypertensive crisis. The date of the blood pressure reading along with the participant's blood pressure was also written on the sheet. A copy of the paper slip can be found in Appendix I.

Financial resources for this project were provided by the project leader. Minimal financial expenses were expected due to the location, timing, materials and human resources required for implementation. Resources that contributed to the budget include paper and ink for handouts, project leader's time, purchase of a finger-tip heart rate monitor, and purchase of an

automatic blood pressure cuff. The cost of time spent meeting with ANBAC staff is also included in the budget to acknowledge the valuable company time these individuals volunteered for my project. The potential revenue retained after stress reduction occurred post-guided meditation implementation is included in the budget *below* as well.

DNP Project Budget	
ACTIVITY & TOOLS	**EXPENSE**
Meeting for approval with CEO (1.5hr)	$150 : ($100/hr)
Meeting with behavioral analyst (Chairman of project)	$50 : ($50/hr, met for 1hr)
Meeting with course educator for (30min)	$15 : ($30/hr)
Online meditation recording	free
Printed handouts for pre & post survey	$5.60 : ($0.10/copy for 56 copies)
Employee Attendance after work hours	$0.00
Equate 4000 Series Upper Arm Blood Pressure Monitor	$30.28
CONTEC CMS50NA Pulse Oximeter	$13.99
Time taken by APRN to research, plan, and implement	$1,900
TOTAL	**$2,164.87**
Potential Revenue Retained Post Implementation	
Employee Title	**Cost of Onboarding staff to fill role after burnout**
Retention of behavioral analyst (1)	$2000 : ($50/hr for 8hr/day for one week)
retention of educational staff (3)	$3600 : ($30/hr for 8hr/day for one week)
Retention of office staff (7)	$5040: ($18/hr for 8hr/day for one week)
Retention of individualized Instructors (18)	$15840 : ($22/hr for 8hr day for one week)
TOTAL	**$26,480**

The training of the project leader for this intervention includes 3 years of Doctorate Nursing Practice (DNP) education. Consultation over the quality improvement interventions of guided meditation has been discussed with both a DNP prepared chairperson and DNP prepared committee member who specialize as Mental Health Nurse Practitioners.

Ethical Considerations

Submission for review of this quality improvement project was received by the University of Louisville Institutional Review Board and approved in January 2024. Approval was also received by the CEO of ANBAC by both verbal and written permission, see Appendix A. Protection and deidentification of data was practiced by recording only the assigned number of each individual and their heart rate and blood pressure. Information from the cardiovascular

measures and surveys was not shared with anyone and were disposed of properly when the information was no longer needed.

Measures

Stress. The Perceived Stress Scale (PSS-14) was used to measure stress among participants in the form of a Likert scale. The PSS was created in 1983 to assess situations that individuals deem stressful. The instrument is a five-point scale that consists of 14 items ranging from 0 (never) to 4 (very often) (Cohen et al., 1983). Reliability of the PSS is demonstrated with a Cronbach alpha of .78 (Baik et al., 2019). Validity of the PSS was assessed by Baik et al. (2019) with significant statistics during their assessment of anxiety (p=.001), depression (p =.001), and emotional exhaustion (p=.001). Reverse scoring is used for the four items that are positive (4, 5, 7, 8), and the remaining items are scored according to the original scale. Scores ranging 0 to 13 correlates with low stress, 14 to 36 correlates with moderate stress, 27 to 40 correlates with high stress (Baik et al., 2019). Pre-intervention scores for this project were calculated and averaged and compared with the average post intervention scores to determine effectiveness of this project's intervention on the measurable outcome of stress.

Mindfulness. The Mindfulness Attention Awareness Scale (MAAS) was created by Brown and Ryan (2003) to measure mindfulness of dental and nursing students included in their study. The scale consists of 15 items that are answered using a 6-point Likert scale from 1 (almost always) to 6 (almost never). The score is computed by adding the number chosen from each of the 15 items. Interpretation of a high score reflects high levels of mindfulness and low scores reflect low levels of mindfulness (Brown & Ryan, 2003). The MAAS covers multiple categories including emotional intelligence, cognitive processing, interpersonal thoughts, and other generalizable components. The reliability of this instrument is expressed by a Cronbach

alpha of .81. The reliability of this instrument was further demonstrated by a test-retest on a group of 60 psychology students that ultimately found an interclass correlation of .81 ($p<.001$). Two test groups were also compared in this analysis and the difference between scores was not found to be statistically significant after readministering the MAAS (Brown & Ryan, 2003). A study by Black et al. (2012) supports the validity and reliability of the MAAS with a Cronbach's $\alpha = .89–.93$ and test–retest $r = .35–.52$. Scores obtained from the MAAS pretest were averaged and compared to the MAAS posttest scores.

Blood Pressure. Blood pressure was measured in the upper right arm of each participant if not contraindicated using the Equate 4000 Series Upper Arm Blood Pressure Monitor (Bentonville, AK). Both the systolic blood pressure (SBP) and diastolic blood pressure (DBP) were recorded. Recordings from each session were compared.

Heart Rate. Heart rate was measured on the fingertip using CONTEC CMS50NA Pulse Oximeter Fingertip Blood Oxygen Saturation Monitor (Qinhuangdao, Hebei Province, China). Results were recorded as beats per minute (bpm). Pre-post intervention recordings from the sessions were evaluated for significance.

Data Analysis

Jamovi Version 2.3 was used to analyze collected data. Descriptive statistics were implemented to assess for means and frequencies in the data collected from pre-post surveys along with heart rate and blood pressure measurement recordings. A nonparametric Wilcoxon Signed Rank test was used to evaluate possible differences or similarities between pre- and post-test scores from the MAAS and PSS-14 surveys. A paired-sample t-test was used to evaluate possible differences or similarities between mean pre- and post-meditation heart rates and mean pre- and post-intervention blood pressures. Further evaluation of the relationship between the

first meditation session pre- and post- intervention heart rate, SBP, and DBP was compared to the fourth session pre- and post-intervention heart rate, SBP, and DBP using descriptive statistics.

Results

Survey Scores

The nonparametric Wilcoxon Signed Rank test was used to evaluate the pre- and post-intervention survey scores of both the PSS-14 and MAAS. The relationship between the pre-intervention PSS-14 score and the post-intervention PSS-14 score did not prove to be statistically significant (p=0.844). Similarly, the MAAS pre- and post-intervention scores were not statistically significant either with a p-value of 0.123.

Table 1

PSS-14 & MAAS Pre-Post Intervention

Wilcoxon Signed Rank Test				
			Statistic	p
Pre MAAS	Post MAAS	Wilcoxon W	16.0	0.844
Pre PSS-14	Post PSS-14	Wilcoxon W	29.5	0.123

Vital Signs

A paired sample t-test was used to assess the significance of the relationship between the first session pre- and post-intervention HR, SBP and DBP and the fourth session pre- and post-intervention HR, SBP, and DBP (Table 2). No significant relationship was found for any of the paired t-tests among HR, SBP or DBP ($p < 0.05$) when comparing only pre-intervention measures to pre-intervention measures and vice versa for post-intervention measures. The lowest p-value was found between session one's post-intervention SBP and session four's post-intervention SBP (p=0.095). It is important to note that when the very first readings for HR,

SBP, and DBP recorded during session one pre-intervention are compared to the very last reading of the project during session four post-intervention there is a significant relationship (Table 3). Session one pre-intervention SBP and session four post-intervention SBP have a p-value of p=0.04. Session one pre-intervention DBP and session four post-intervention DBP have a p-value of p=0.024. There was no significant relationship between session one pre-intervention HR and session four post-intervention HR (p=0.44).

Table 2

Session 1 & Session 4 Vital Signs

Paired Samples T-test							
			statistic	df	p	Mean diff	SE diff
S1 Pre SBP	S4 Pre SBP	Student's t	1.4961	7.00	0.178	9.500	6.35
S1 Pre DBP	S4 Pre DBP	Student's t	1.5645	7.00	0.162	6.375	4.07
S1 Pre HR	S4 Pre HR	Student's t	-0.0686	7.00	0.947	-0.375	5.46
S1 Post SBP	S4 Post SBP	Student's t	1.9307	7.00	0.095	15.625	8.09
S1 Post DBP	S4 Post DBP	Student's t	1.6550	7.00	0.142	8.250	4.98
S1 Post HR	S4 Post HR	Student's t	0.6339	7.00	0.546	2.250	3.55

Table 3

Session 1 Pre-intervention Vital Signs & Session 4 Post-Intervention Vital Signs

Paired Samples T-Test					
			statistic	df	p
S1 Pre SBP	S4 Post SBP	Student's t	2.516	7.00	0.040
S1 Pre DBP	S4 Post DBP	Student's t	2.862	7.00	0.024
S1 Pre HR	S4 Post HR	Student's t	0.814	7.00	0.443

Descriptive statistics were used to further evaluate the HR, SBP, and DBP from pre- and post-intervention sessions one and four. The sample size was 13 people for the first and third session and 9 people for the second and fourth session. As seen *below* in Table 4, each measurement's average labeled post-intervention decreased from the first session to the fourth session. Additionally, the only measurement in the entire descriptives chart from the fourth session that has an average higher than the first is the HR for the fourth pre-intervention session.

Table 4

Session 1 & Session 2 Vital Signs

Descriptives					
	N	Mean	Median	SD	SE
S1 Pre SBP	13	137.5	132.0	18.29	6.47
S4 Pre SBP	13	128.0	128.0	9.34	3.30
S1 Pre DBP	13	93.1	91.0	13.15	4.65
S4 Pre DBP	13	86.8	87.0	9.48	3.35
S1 Pre HR	13	79.9	80.0	8.06	2.85
S4 Pre HR	13	80.3	82.5	12.34	4.36
S1 Post SBP	13	137.5	129.0	23.80	8.41
S4 Post SBP	13	121.9	125.0	11.12	3.93
S1 Post DBP	13	92.6	84.5	19.04	6.73
S4 Post DBP	13	84.4	81.0	6.61	2.34
S1 Post HR	13	78.9	82.0	16.41	5.80
S4 Post HR	13	76.6	73.5	11.34	4.01

Caffeine & Nicotine Use

Sixty-two percent of participants in session one used nicotine 30 minutes prior to meditating and 69% of participants consumed caffeine. Of the nine participants in session two, 66% used nicotine products 30 minutes prior to meditating, and 66% of participants consumed caffeine. Session three had 23% of participants who used nicotine 30 minutes prior to meditating, and 46% of participants consumed caffeine. Session four had 55% of participants who used nicotine 30 minutes prior to meditating, while 22% of participants consumed caffeine.

Discussion

No statistically significant relationship was found between pre-MASS and PSS-14 scores when compared to post- MASS and PSS-14 scores (Table 1). Analysis of HR, SBP and DBP did not produce statistically significant results ($p<0.05$) when comparing pre-intervention measurements of session one to session four and post-intervention measurements of session one to session four (Table 2). A statistically significant relationship was found in SBP and DBP when comparing these measurements from the first recording of the project to the final recording (Table 3). This measurement is the truest form of pre-intervention and post-intervention comparison as it is representative of the BP immediately before the intervention was implemented and immediately after it was completed. The average measurements of HR, SBP, and DBP decreased from pre-intervention to post-intervention, though not of significance, it demonstrates that there was a positive effect of the meditation on these physiological measurements.

There were some confounding factors in the implementation of this intervention. At each session, participants were screened for caffeine and/or nicotine use in the 30 minutes prior to collection of his or her BP and HR. Caffeine and nicotine use may have contributed to statistically insignificant results. Both caffeine and nicotine can elevate heart rate and blood pressure. Heart

rate and BP measurements affected by nicotine and caffeine use may have skewed data during analysis. It is important to consider the consumption of nicotine and caffeine when evaluating measurements such as BP and heart rate.

Of the 26 employees staffed at ANBAC during this implementation phase, 50% were able to participate in two of the four sessions, while 35% of staff were able to participate in the other two sessions. The main stakeholder, the behavioral analyst, attended all four sessions. The presence of the behavioral analyst was key in the participation adherence and compliance of other members due the analyst's rapport with her coworkers. The first sessions consisted of twelve women and one man. The second session was made up of 8 women and one man. The third and fourth sessions consisted of only women. ANBAC staffs two men out of the 26 employees. One of the men was unable to attend sessions due to his own illness and the other man's mother was severely ill in intensive care. Contributing factors to lower participation percentages included sick participants, sick family members, and employee's children's extracurricular activities that occurred during meditation session hours.

Limitations

A major limitation this quality improvement project encountered was attendance. Meditation sessions were not mandatory; therefore, individuals did not have work-related incentives to attend every session. Additionally, illnesses and other personal commitments did not always allow for every participant to attend. The lack of consistent attendance may have skewed data as the same individual's vital signs were not compared at each session. The surveys also posed this problem. Not all the individuals who took the pre survey were in attendance to take the post survey.

Another limitation involved the location of the meditation sessions. The first session took place in a basement classroom provided by the behavioral analyst. The room was crowded for the attendance of 13 adults. The following week, the analyst decided it was best to have the following sessions in the cafeteria for spacing purposes. The distance between participants improved, however the electrical appliances, such as the refrigerator, made sounds that often distracted or startled participants during meditation. The startling and distraction of the participants may have altered their BP and HR readings by triggering the sympathetic nervous system—acutely raising their HR and BP.

Frequency can also be viewed as a limitation as well. Due to the time constraints of the ANBAC employees and the project leader, it was only feasible for one session a week over a four-week period. Reasearch conducted for this project included mindfulness interventions lasting as long at eight weeks with one session a week for 2.5 hours (Crowder & Sears, 2017; Hill et al., 2017; Verweij et al., 2018). Additionally, most of the articles reviewed also had sample sizes of 40 or more. The small sample size in this project limits the validity and reliability of the data produced.

Implications for Nursing Practice

Blood pressure and heart rate measurements took place at the start and end of each session with secondary prevention in mind. If a participant's blood pressure reached a certain level, he or she received a slip (Appendix I) with recommendations on how to seek medical attention. During the entire project, two slips were handed out during the pre-intervention screening of session one. After session one, one of these individuals sought out her primary care provider who then increased her BP medicine due to elevated readings. The other individual chose not to seek medical attention despite recommendations from the project leader. However, this participant's first blood pressure

measurement recorded was 177/119 and the final blood pressure recorded for this participant was 129/94 in the fourth session. It is worth noting for future projects, that caffeine and nicotine use should be taken into consideration when evaluating heart rate and blood pressure. A control group would have been beneficial in determining how much of an impact nicotine and caffeine had on HR and BP measurements in this project.

Elevated BP is treated daily in health care. This project demonstrates that encouraging patients to use guided meditation as a nonpharmacological intervention to manage stressors in life might be beneficial to their health. Not every cause of elevated blood pressure can be managed by meditation, however, it is cost-effective and an easily accessible intervention for those with major stressors. Providers should explore all realistic avenues within their patient's means when evaluating mental health and treating elevated blood pressures.

Future adherence to guided meditation at ANBAC seemed hopeful. Informal discussions with participants after each session resulted in positive feedback. Participants made statements like, “Can we do this every day?” and “I’m not ready to get up [from the yoga mat].” After the fourth and final session, the group asked one of its members to continue leading meditation sessions for the group in the future. The ANBAC employee who was asked by the group to lead future meditation sessions agreed. This individual had practiced meditation outside of this project and valued the benefits of meditation enough to offer leading future sessions for her coworkers. Though minimal statistical significance was found, implementation of this project produced clinically significant feedback from participants who benefited from guided meditation.

Conclusion

This QI project’s findings implicate no statistically significant relationship between stress and mindfulness after guided meditation is completed once a week for four weeks. However, a

statistically significant relationship was found between pre-intervention BP during session one and post-intervention blood pressure during session four. Mental health professionals will remain at risk for their own mental illness due to the nature of their profession (Rokach & Boulazreg, 2022). Acknowledging this risk and practicing interventions such as meditation can help these providers minimize the detrimental effects that long-term stress has on the body (Jarvelin-Pasanen et al., 2018).

References

Acker, G. M. (2012). Burnout among mental health care providers. *Journal of Social Work, 12*(5), 475–490. https://doi-org.echo.louisville.edu/10.1177/1468017310392418

Amutio, A., Martínez-Taboada, C., Hermosilla, D., & Delgado, L. C. (2015). Enhancing relaxation states and positive emotions in physicians through a mindfulness training program: A one-year study. *Psychology, Health & Medicine, 20*(6), 720–731. https://doi-org.echo.louisville.edu/10.1080/13548506.2014.986143

Bailey, N. W., Nguyen, J., Bialylew, E., Corin, S. E., Gilbertson, T., Chambers, R., & Fitzgerald, P. B. (2018). Effect on well-being from an online mindfulness intervention: "Mindful in May." *Mindfulness*, *9*(5), 1637–1647. https://doi-org.echo.louisville.edu/10.1007/s12671-018-0910-7

Bartlett, L., Martin, A., Neil, A. L., Memish, K., Otahal, P., Kilpatrick, M., & Sanderson, K. (2019). A systematic review and meta-analysis of workplace mindfulness training randomized controlled trials. *Journal of Occupational Health Psychology*, *24*(1), 108–126. https://doi-org.echo.louisville.edu/10.1037/ocp0000146

Barton, H. (2020). An exploration of the experiences that counsellors have of taking care of their own mental, emotional and spiritual well-being. *Counselling & Psychotherapy Research, 20*(3), 516–524. https://doi-org.echo.louisville.edu/10.1002/capr.12280

Black, D. S., Sussman, S., Johnson, C. A., & Milam, J. (2012). Psychometric assessment of the Mindful Attention Awareness Scale (MAAS) among Chinese adolescents. *Assessment, 19*(1), 42–52. https://doi.org/10.1177/1073191111415365

Brown, K.W. & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(1), 822-848.

Carlson, L.E. & Brown, K.W. (2005). Validation of the Mindful Attention Awareness Scale in a cancer population. *Journal of Psychosomatic Research, 58,* 29-33.

Crowder, R., & Sears, A. (2017). Building resilience in social workers: An exploratory study on the impacts of a mindfulness-based intervention. *Australian Social Work, 70*(1), 17–29. https://doi-org.echo.lou

Crowley, J. D., & Gottlieb, M. C. (2012). Objects in the mirror are closer than they appear: A primary prevention model for ethical decision making. *Professional Psychology: Research and Practice, 43*(1), 65–72. https://doi.org/10.1037/a0026212

Deming, W.E. (1986). *Out of the crisis.* MIT Press.

Hill, R. J., McKernan, L. C., Wang, L., & Coronado, R. A. (2017). Changes in psychosocial well-being after mindfulness-based stress reduction: A prospective cohort study. *Journal of Manual & Manipulative Therapy (Taylor & Francis Ltd), 25*(3), 128–136. https://doi-org.echo.louisville.edu/10.1080/10669817.2017.1323608

Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 78*(2), 169–183. https://doi.org/10.1037/a0018555

Hoge, E. A., Acabchuk, R. L., Kimmel, H., Moitra, E., Britton, W. B., Dumais, T., Ferrer, R. A., Lazar, S. W., Vago, D., Lipsky, J., Schuman-Olivier, Z., Cheaito, A., Sager, L., Peters, S., Rahrig, H., Acero, P., Scharf, J., Loucks, E. B., & Fulwiler, C. (2021). Emotion-related constructs engaged by mindfulness-based interventions: A systematic review and meta-analysis. *Mindfulness, 12*(5), 1041–1062. https://doi-org.echo.louisville.edu/10.1007/s12671-020-01561-w

Holzel, B.K., Carmody, J., Vangel, M., Congleton, C., Yerramsetti, S. M., Gard, T., Lazar, S. W. (2011). Mindfulness practice leads to increases in regional brain gray matter density, *Psychiatry Research: Neuroimaging, 19*1(1), https://doi.org/10.1016/j.pscychresns.2010.08.006.

Howarth, A., Smith, J. G., Perkins-Porras, L., & Ussher, M. (2019). Effects of brief mindfulness-based interventions on health-related outcomes: A systematic review. *Mindfulness, 10*(10), 1957–1968. https://doi-org.echo.louisville.edu/10.1007/s12671-019-01163-1

Janssen, M., Heerkens, Y., Kuijer, W., van der Heijden, B., & Engels, J. (2018). Effects of mindfulness-based stress reduction on employees' mental health: A systematic review. *PloS One, 13*(1), 1-37. https://doiorg.echo.louisville.edu/10.1371/journal.pone.0191332

Jarvelin-Pasanen, S., Sinikallio, S., & Tarvainen, M. P. (2018). Heart rate variability and occupational stress-systematic review. *Industrial health, 56*(6), 500–511. https://doi-org.echo.louisville.edu/10.2486/indhealth.2017-0190

Jergensen, K. (2018). Practice what you preach: An exploration of DBT therapists personal skill utilization in burnout prevention. *Clinical Social Work Journal, 46*(3), 187–199. https://doi-org.echo.louisville.edu/10.1007/s10615-017-0633-6

Jiménez-Gómez, L., Yela, J. R., Crego, A., Melero-Ventola, A. R., & Gómez-Martínez, M. Á. (2022). Effectiveness of the mindfulness-based stress reduction (MBSR) vs the mindful self-compassion (MSC) programs in clinical and health psychologist trainees. *Mindfulness, 13*(3), 584–599. https://doi-org.echo.louisville.edu/10.1007/s12671-021-01814-2

Ko, H., & Lee, S. M. (2021). Effects of imbalance of self- and other care on counselors' burnout. *Journal of Counseling & Development, 99*(3), 252–262. https://doi-org.echo.louisville.edu/10.1002/jcad.12372

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2019). A systematic review and meta-analysis of the impact of mindfulness-based interventions on the well-being of healthcare professionals. *Mindfulness, 10*(7), 1193–1216. https://doi-org.echo.louisville.edu/10.1007/s12671-018-1062-5

Luangapichart, P., Saisavoey, N., & Viravan, N. (2022). Efficacy and feasibility of the minimal therapist-guided four-week online audio-based mindfulness program 'Mindful Senses' for Burnout and Stress Reduction in Medical Personnel: A randomized controlled trial. *Healthcare, 10*(12), 25-32. https://doiorg.echo.louisville.edu/10.3390/healthcare10122532

McCready, C. (2019, November 25). *15 minute guided breathing meditation for relaxation and inner stillness* [Video]. YouTube. https://www.youtube.com/watch?v=4Undv6MmQeE

Mohammed, W. A., Pappous, A. (Sakis), Muthumayandi, K., & Sharma, D. (2018). The effect of mindfulness meditation on therapists' body-awareness and burnout in different forms of practice. *European Journal of Physiotherapy, 20*(4), 213–224. https://doi-org.echo.louisville.edu/10.1080/21679169.2018.1452980

Pritchard, E. K., & Burns, C. (2020). Shifting from stress to S.A.N.I.T.Y. in your leadership. *New Zealand Journal of Occupational Therapy, 67*(1), 21–23.

Rokach, A., & Boulazreg, S. (2022). The COVID-19 era: How therapists can diminish burnout symptoms through self-care. *Current Psychology: A Journal for Diverse Perspectives on*

Diverse Psychological Issues, 41(8), 5660–5677. https://doi-org.echo.louisville.edu/10.1007/s12144-020-01149-6

Schanche, E., Vollestad, J., Binder, P. E., Osnes, B., Visted, E., Svendsen, J. L., & Sorensen, L. (2020). Can clinical psychology students benefit from brief and intensive mindfulness training? *Counselling & Psychotherapy Research, 20*(2), 311–324. https://doi-org.echo.louisville.edu/10.1002/capr.12273

Taylor, M. J., McNicholas, C., Nicolay, C., Darzi, A., Bell, D., & Reed, J. E. (2014). Systematic review of the application of the plan-do-study-act method to improve quality in healthcare. BMJ quality & safety, 23(4), 290–298. https://doi.org/10.1136/bmjqs-2013-001862

University of Kentucky. (2021, September 27). *Even with Kentucky's anxiety and depression rates dropping since January, the state still ranks ninth for this measure in the U.S.* Kentucky Health News. https://ci.uky.edu/kentuckyhealthnews/2021/09/27/even-with-kentuckys-anxiety-and-depression-rates-dropping-since-january-the-state-still-ranks-ninth-for-this-measure-in-the-u-s/#:~:text=In%20Kentucky%2030%25%20of%20people,drop%20of%2022%25%20since%20January

Verweij, H., van Ravesteijn, H., van Hooff, M., Lagro-Janssen, A., & Speckens, A. (2018). Mindfulness-based stress reduction for residents: A randomized controlled trial. *Journal of General Internal Medicine, 33*(4), 429–436. https://doi-org.echo.louisville.edu/10.1007/s11606-017-4249-x

Wade, D., Georgieva, M., Gunnewicht, H., Finnigan, J., & MacCallum, N. (2021). Delivery of a psychological intervention to assess and reduce workplace stress among intensive care

staff. *Journal of the Intensive Care Society*, *22*(1), 52–59. https://doi-org.echo.louisville.edu/10.1177/1751143719884855

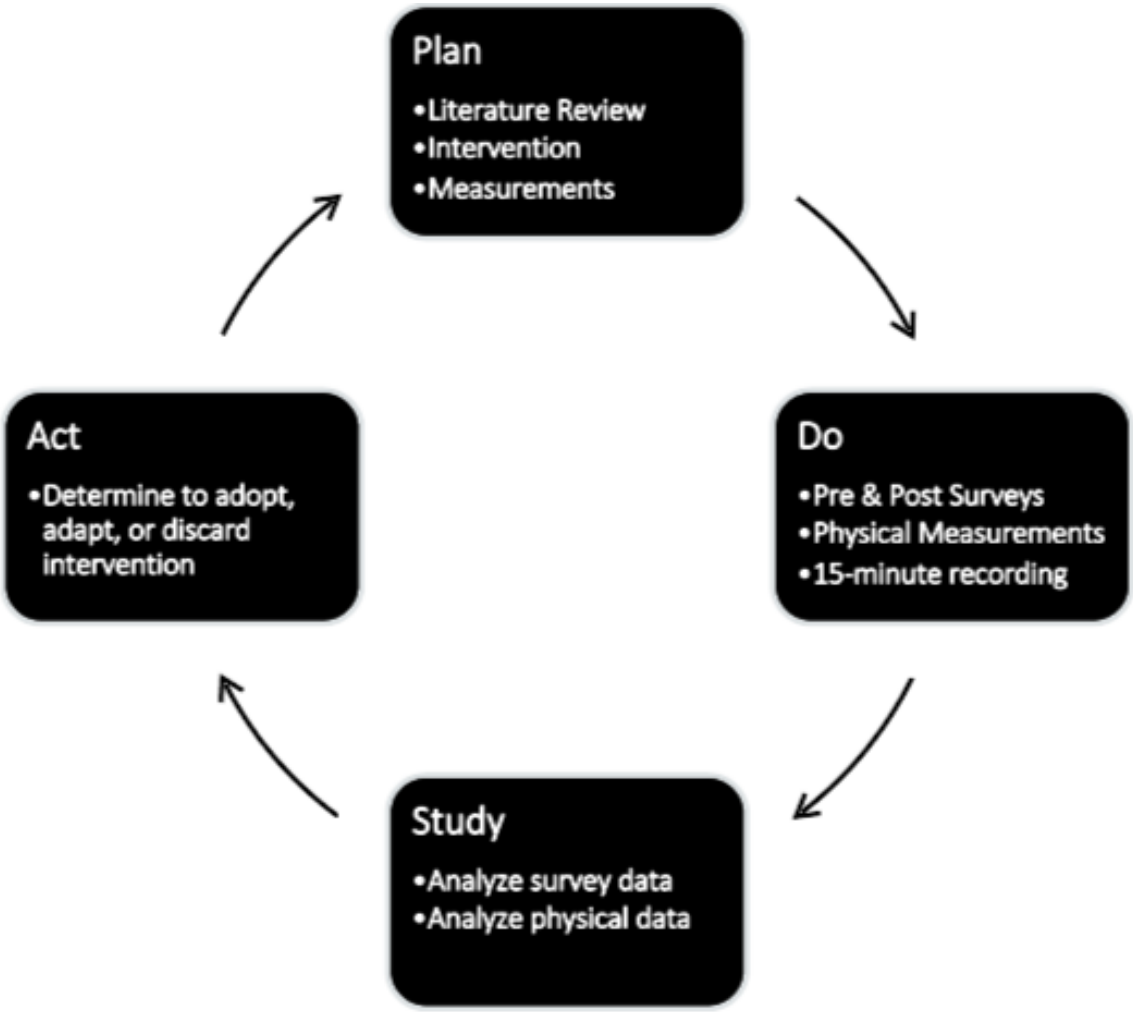
Wong, S. Y. S., Chan, J. Y. C., Zhang, D., Lee, E. K. P., & Tsoi, K. K. F. (2018). The safety of mindfulness-based interventions: A systematic review of randomized controlled trials. *Mindfulness*, *9*(5), 1344–1357. https://doi-org.echo.louisville.edu/10.1007/s12671-018-0897-0

World Health Organization. (2022, September 28). *Mental health at work.* World Health Organization. https://www.who.int/news-room/fact-sheets/detail/mental-health-at-work

Yang, J., Tang, S., & Zhou, W. (2018). Effect of mindfulness-based stress reduction therapy on work stress and mental health of psychiatric nurses. *Psychiatria Danubina*, *30*(2), 189–196. https://doi-org.echo.louisville.edu/10.24869/psyd.2018.189

Figure 1

PDSA Cycle



Appendix A

Letter of Support

Rachael Jenkins <anewbeginningachievement@gmail.com>

To: Patton,Liara

Cc: Beth Kozak <BethKozak@outlook.com>

Wed 10/4/2023 5:03 PM

CAUTION: This email originated from outside of our organization. Do not click links, open attachments, or respond unless you recognize the sender's email address and know the contents are safe.

To Whom It May Concern;
As Executive Director of A New Beginning Achievement Center, Liara Patton has my permission to implement a DNP project at ANBAC. Please feel free to contact me with any question or concerns. Thank you.

Have a great day!

Rachael Jenkins-Wyatt
Executive Director
A New Beginning Achievement Center, LLC
Phone: (606) 254-0495
Fax: (606) 254-0498
anewbeginningachievement@gmail.com

Life is short, Break the rules, Forgive quickly, Love truly, Laugh uncontrollably, and never regret anything that made you smile!

By God's grace, I am what I am…
- 1 Corinthians 15:10

Appendix B
Permission for PSS-14 Use

Patton,Liara
To:
scohen@cmu.edu

Thu 10/5/2023 5:38 PM

Dr. Cohen,

I am emailing you in regard to the PSS-14 and permission of its application in my Doctorate of Nursing Practice project. With your permission I wish to use the PSS-14 to evaluate psychological stress both before and after guided meditation is implemented at a mental health company in my community. If permission is granted, please notify me of any copyright forms or other information I may need for appropriate usage. I would be grateful to utilize the PSS-14 in this project!

Thank you,

Liara Patton RN, BSN
University of Louisville
Student
Doctorate of Nursing Practice Program
Phone: (260)446-4305

SC

Sheldon Cohen <scohen@andrew.cmu.edu>
To:
Patton,Liara <liara.patton@louisville.edu>

Fri 10/6/2023 6:31 AM

PSS Permissions 2023.pdf

You don't often get email from scohen@andrew.cmu.edu. Learn why this is important

Dear Liara Patton,

Thank you for your interest in the PSS-14 - Perceived Stress Scale - 14 items.

As a not-funded academic user, you will not be charged for the use of this questionnaire (https://eprovide.mapi-trust.org/instruments/perceived-stress-scale-14-items#need_this_questionnaire).

You can use Online Distribution to download any available translations of the questionnaire from ePROVIDE. Please refer to the Instructions to download a questionnaire for assistance with this process.

We ask that you please kindly select the specific language you are looking for (for example English for US, Spanish for US, etc.).

For electronic version:

We only distribute the translation in paper version, not e-version. If you want to use this electronically, you will need to build this by your own means. Screenshots of your proposed format will need to be submitted for MRT review before it goes live. This will be free of charge as a non-funded academic. Please submit a new request (and reference this request number 2316266) once the screens are available.

1. Title and instructions matches file provided in full.

2. The Owner's copyright notice should be inserted on the bottom of each screen, on which the questionnaire will be presented.

3. The number or questions, order displayed and all text for the questionnaire provided matches without missing/modification elements. The contents should be as close as possible to the original pen & paper version

The following information: "For any information on the use of the PSS-14, please contact Mapi Research Trust, Lyon, France. Internet: https://eprovide.mapi-trust.org" and any credit should be inserted on the last screen on which the questionnaire will be presented.

Let me know if you have any trouble by replying directly here. If, after a successful download, you could message me I will close this ePROVIDE request complete.

Best Regards,

Diamond

Request Summary

- **Type of request**: Questionnaire Distribution
- **Status**: Pending Client
- **Subject**: Perceived Stress Scale (PSS)
- **Description**: I am requesting permission to use the PSS for its application in my Doctorate of Nursing Practice project. With your permission I wish to use the PSS to evaluate psychological stress both before and after guided meditation is implemented at a mental health company in my community. If permission is granted, please notify me of any copyright forms or other information I may need for appropriate usage. I would be grateful to utilize the PSS in this quality improvement project.
- **Instruments**:
- PSS-14 - Perceived Stress Scale - 14 items

- **Modules**: PSS-14
- **Other Instrument**: *Not specified*
- **Languages**:
- English for the United States
- **Mode of administration**: Paper administration
- **Study financing**: Not funded

Requester

- **User name**: Liara Patton (liara.patton@louisville.edu)
- **Organization**: University of Louisville
- **Other recipients (CC)**: *Not specified*

Request Information

- **Study/Protocol number**: *Not specified*
- **PO Number**: *Not specified*

Best regards,

ePROVIDE™
By Mapi Research Trust

Appendix C

PSS-14 Scale

Perceived Stress Scale - 14 items (PSS-14)©

INSTRUCTIONS:

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

	Never	Almost Never	Sometimes	Fairly Often	Very Often
	0	1	2	3	4
1. In the last month, how often have you been upset because of something that happened unexpectedly?	○	○	○	○	○
2. In the last month, how often have you felt that you were unable to control the important things in your life?	○	○	○	○	○
3. In the last month, how often have you felt nervous and "stressed"?	○	○	○	○	○
4. In the last month, how often have you dealt successfully with day to day problems and annoyances?	○	○	○	○	○
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	○	○	○	○	○
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	○	○	○	○	○
7. In the last month, how often have you felt that things were going your way?	○	○	○	○	○
8. In the last month, how often have you found that you could not cope with all the things that you had to do?	○	○	○	○	○
9. In the last month, how often have you been able to control irritations in your life?	○	○	○	○	○
10. In the last month, how often have you felt that you were on top of things?	○	○	○	○	○

	Never	Almost Never	Sometimes	Fairly Often	Very Often
	0	1	2	3	4
11. In the last month, how often have you been angered because of things that happened that were outside of your control?	○	○	○	○	○
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?	○	○	○	○	○
13. In the last month, how often have you been able to control the way you spend your time?	○	○	○	○	○
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	○	○	○	○	○

Appendix D

PSS-14 Instructions & Scoring

PSS-14

Perceived Stress Scale - 14 items
Version 1.0

Scaling and Scoring
Version 2.0: March 2023

Mapi Research Trust

Written by:
Mapi Research Trust
27 rue de la Villette
69003 Lyon
France

Mapi Research Trust

Perceived Stress Scale - 14 items Version 1.0 (PSS - 14)
Scaling and Scoring Version 2.0: March 2023

I. Scaling

The PSS - 14 is composed of 14 items investigating the same domain.

Domains	Number of Items	Item reversion*	Direction of Domains
Unidimensional	14	4, 5, 6, 7, 9, 10 and 13	Higher score = Higher perceived stress

*item reversion: item follows the opposite direction of the domains

II. Scoring of Domains

		Sources:
Item scaling	5-point Likert-type Scale ranging 0: "Never" to 4: "Very often"	**Cohen et al., 1998**
Weighting of items	No	**Cohen et al., 1998**
Range of scores	Total score range: 0-56	**Cohen et al., 1998**
Scoring Procedure	Scores are obtained by reversing responses (e.g., 0=4, 1=3, 2=2) to the 7 positively stated items (items 4, 5, 6, 7, 9, 10, and 13) and then summing across all scale items.	**Cohen et al., 1998**
Interpretation and Analysis of missing data	Acceptable if no more than 2 missing items. When items are missing, the score is calculated by determining the average score of the completed items (total score/number of completed items) and multiplying that average by 14.	**From the author**
Interpretation of multiple answers for one item	Consider items with multiple answers as missing.	**From the author**
Interpretation of scores	There are no breakdowns that apply across outcomes. For example, a specific range of scores might mean one thing for predicting depression (e.g., indicate high stress) and another for heart disease (e.g., indicate low stress).	**From the author**

Appendix E

MAAS Permission

VCU
Monroe Campus
Virginia Commonwealth University
Department of Psychology
White House
806 West Franklin Street
P.O. Box 842018
Richmond, Virginia 23284-2018

804 828-6754
Fax: 804 828-2237
TDD: 1-800-828-1120

Dear Colleague,

The trait Mindful Attention Awareness Scale (MAAS) is in the public domain and special permission is not required to use it for research or clinical purposes. The trait MAAS has been validated for use with college student and community adults (Brown & Ryan, 2003), and for individuals with cancer (Carlson & Brown, 2005). A detailed description of the trait MAAS, along with normative score information, is found below, as is the scale and its scoring. A validated state version of the MAAS is also available in Brown and Ryan (2003) or upon request.

Feel free to e-mail me with any questions about the use or interpretation of the MAAS. I would appreciate hearing about any clinical or research results you obtain using the scale.

Yours,

Kirk Warren Brown, PhD
Department of Psychology
Virginia Commonwealth University
806 West Franklin St.
Richmond, VA 23284-2018
e-mail kwbrown@vcu.edu

Appendix F

MAAS Scale & Scoring

Day-to-Day Experiences

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what *really reflects* your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1	2	3	4	5	6
Almost Always	Very Frequently	Somewhat Frequently	Somewhat Infrequently	Very Infrequently	Almost Never

I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
It seems I am "running on automatic," without much awareness of what I'm doing.	1	2	3	4	5	6
I rush through activities without being really attentive to them.	1	2	3	4	5	6
I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6

1 Almost Always	2 Very Frequently	3 Somewhat Frequently	4 Somewhat Infrequently	5 Very Infrequently	6 Almost Never

I drive places on 'automatic pilot' and then wonder why I went there.	1	2	3	4	5	6
I find myself preoccupied with the future or the past.	1	2	3	4	5	6
I find myself doing things without paying attention.	1	2	3	4	5	6
I snack without being aware that I'm eating.	1	2	3	4	5	6

MAAS Scoring

To score the scale, simply compute a mean (average) of the 15 items. Higher scores reflect higher levels of dispositional mindfulness.

Appendix G

YouTube Video Permission

On 20 Oct 2023, at 17:11, Patton, Liara <liara.patton@louisville.edu> wrote:

Caroline,

I am a Doctor of Nursing Practice (DNP) student at the University of Louisville, KY, USA. To graduate, I am required to complete a DNP project. My project is over stress reduction and mindfulness. I plan to use guided meditation as my intervention in this project. To do so, I would be grateful for your permission to use your video recording on YouTube (https://www.youtube.com/watch?v=4Undv6MmQeE). I would use this video in four separate sessions. The video would be accessed via YouTube and a copy of the link referencing you as the author would be included in my paper for this project. There will not be any monetary profit or incentive collected from this project.

If permission is granted, please let me know of any copyright regulations I need to follow!

Thank you,

Liara Patton, BSN, RN
University of Louisville
Doctor of Nursing Practice

Caroline McCready <caroline.mccready@live.co.uk>

To:
Patton, Liara

Sat 10/21/2023 5:17 AM

Hi Liara,

Thanks for getting in touch. You're very welcome to use the video for your DNP project! The way you've described using it doesn't affect or breech copyright in any way and I'm very happy for you to use it.

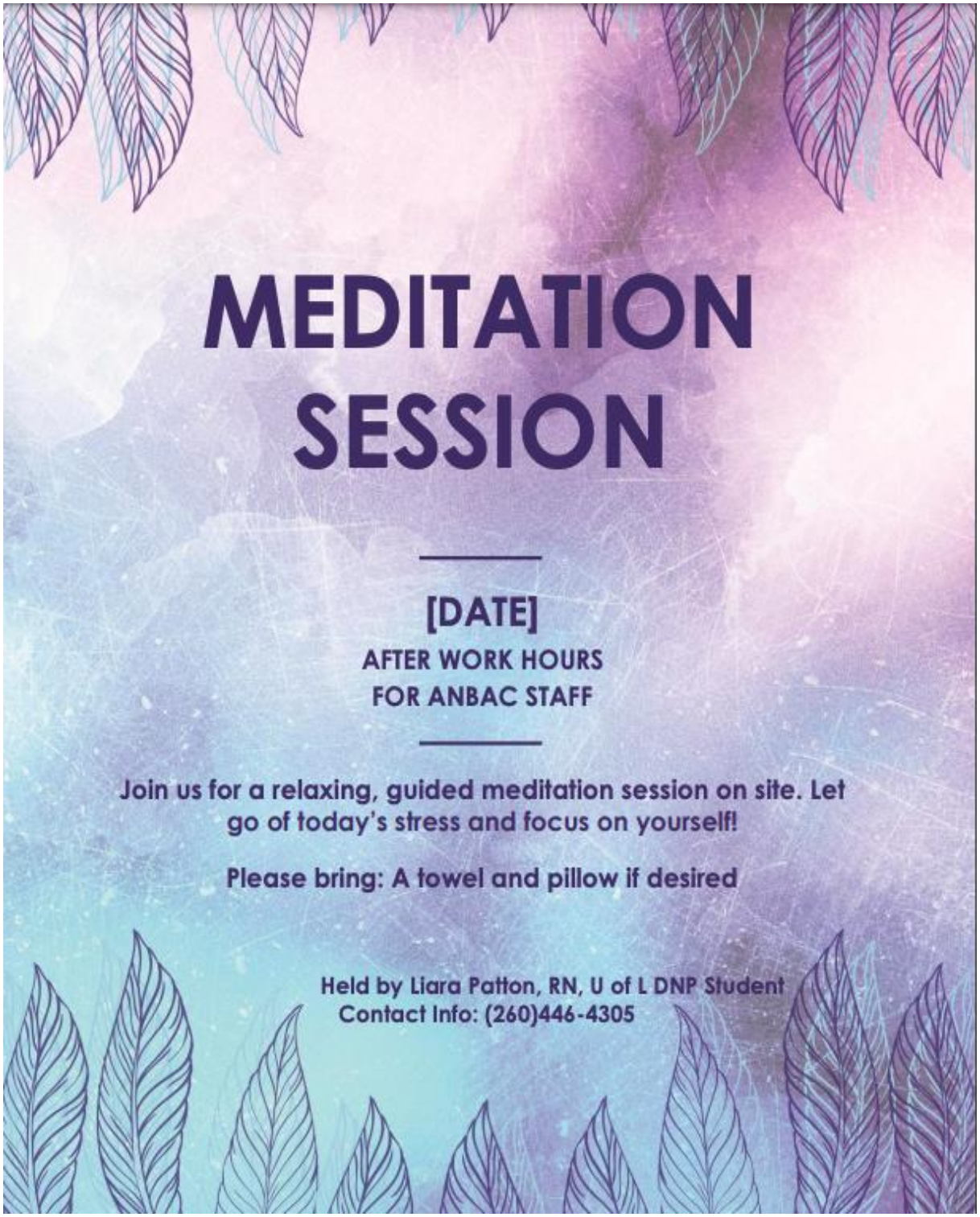
I'd be so curious to know what your results are, if you'd be happy to share your findings please feel free to email me!

Wishing you the best of luck with your research and with the project.

Warm wishes,
Caroline

Appendix H

Meditation Flyer



Appendix I

JNC-8 Slip

You are receiving this slip of paper due to your elevated blood pressure (written below) according to the JNC-8 Hypertension Guidelines. It is recommended that you visit your primary care doctor soon for further evaluation or seek emergent care at the nearest ER if advised.

JNC-8 Blood Pressure Stages:

Stage 1 Hypertension: 140 to 159/90 to 99

Stage 2 Hypertension: >160/ 100

Hypertensive Emergency: >180/110

Your BP: _____

Today's Date: _____

Recommendation: _____

Iqbal, A. M., & Jamal, S. F. (2023). Essential Hypertension. In *StatPearls*. StatPearls Publishing.