

IMPROVING STRESS MANAGEMENT OF THE NURSING STAFF IN A POST-
ANESTHESIA CARE UNIT

by

Jessica Selvaggio

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Tracey Robertson Bell, DNP, NNP-BC 07/22/2019

Signature Faculty Coordinator

Date

Signature Program Director

Date

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Dedication

This project was planned, implemented, and evaluated in dedication to all of the nurses that I have worked with, worked for, precepted, learned with, and learned from throughout my career. From my nursing peers, managers, preceptors, teachers, leaders, classmates, and faculty, thank you for constantly reminding me what nursing is truly about. Thank you for the encouragement, guidance, feedback, support and for the role you played in making me the nurse practitioner that I am today. It has been an honor being your student, co-worker, employee, and friend.

Abstract

Healthcare workers, especially nurses, experience high levels of stress every day due to the high demands of their jobs. Persistently high levels of stress can negatively impact an individual's physical, mental, and psychological well-being while also effecting their job satisfaction and work performance. These conditions can eventually lead to high employee turnover and poor patient outcomes. Educating nurses about the importance of developing healthy stress management skills can help to prevent the development of negative coping habits, improve overall well-being, and improve patient care. Stress management interventions were implemented in the high stress environment of a post-anesthesia care unit. The nursing staff was familiarized with mindfulness-based practices. A stress management education session was presented at their staff meeting. The staff received weekly emails containing stress reduction strategies and they were encouraged to practice these strategies daily. Nurses were also challenged to perform a 1-minute daily meditation prior to beginning each shift. The interventions were evaluated using a pre and post-implementation survey containing items from the Perceived Stress Scale and the Mindful Attention Awareness Scale. Demonstrated by data comparison, the perceived level of stress within the unit was reduced after the implementation period and the states of mindfulness, attention, and awareness were increased among the nurses. The effectiveness, feasibility, and low budget of this project made it easily replicable throughout other departments and institutions.

Key words: Stress; Stress management; Stress reduction; Inpatient nursing; Burnout; Mindfulness-based cognitive therapy;

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Chapter One: Overview of the Problem of Interest

Workplace stress is a common occurrence in healthcare environments and institutions (Duarte & Pinto-Gouveia, 2016). Due to the high demands and responsibilities of healthcare workers, stress is most prevalent among nursing personnel who interact with patients directly and lack time to commit to their own self-care (Gauthier, Meyer, Grefe, & Gold, 2015). Persistently high stress levels can adversely impact an individual's work performance and health (Duarte & Pinto-Gouveia, 2016).

Employees who experience constant stress at work are more likely to develop negative coping mechanisms such as alcohol or substance misuse, unhealthy eating habits, poor peer relationships, or other maladaptive behaviors (Duarte & Pinto-Gouveia, 2016). Stress that is ineffectively managed also leads to personal and professional burnout, poor mental and physical health, increased employee absences, and high employee turnover (Duarte & Pinto-Gouveia, 2016). Nurses who experience burnout caused by stress are more likely to have lapses in judgement, make medication errors, miss opportunities for clinical intervention, and may not pay attention to emerging safety threats (Lyndon, 2016; Grensman et al., 2018). Therefore, improving stress management among nurses individually will decrease the overall stress levels of the unit, improve unit productivity, and improve the quality of care provided to patients (Horner, Piercy, Eure, & Woodard, 2014).

The practice of mindfulness has become a common and effective stress management strategy that involves purposefully paying attention to the present in a nonjudgmental and nonreactive manner (Horner et al., 2014). Mindfulness-based cognitive therapy (MBCT) integrates mindfulness practices along with other common stress reduction techniques such as meditation and yoga (Grensman et al., 2018). Collectively, MBCT involves emptying the mind,

becoming more aware of the present moment, and acknowledging the thoughts that contribute to stress (Grensman et al., 2018).

Background Information

Critical care units of hospitals, such as the post-anesthesia care unit (PACU), rely heavily on the knowledge, skills, and time management abilities of its nursing staff to maintain patient safety and meet department demands (Vahedian-Azimi et al., 2017). Common sources of stress for critical care nurses include (1) being unable to effectively comfort or help patients despite treatments, (2) caring for high acuity patients requiring time-consuming interventions, (3) providing life-sustaining measures, (4) dealing with difficult patients and their families, and (5) acting as the middle-man in communication among care providers, the patient, and the patient's family (Vahedian-Azimi et al., 2017). Complications and other unexpected events are common in these units and require immediate nursing interventions which contributes additional stress to daily routines (Sotanzadeh, Degett, & Gogenur, 2017). Because of the demands that nurses working in a critical care department encounter daily, critical care nursing is considered one of the most stressful careers (Vahedian-Azimi et al., 2017).

Many care providers deal with stress daily, but most are able to adequately manage it. However, a large majority of care providers, especially nurses, turn to maladaptive coping mechanisms (McConachie, Mckenzie, Morris, & Walley, 2014). A common effect of maladaptive coping to stress is becoming easily irritated, frustrated, or agitated when situations are challenging (Grensman et al., 2018). Maladaptive coping can negatively impact patient care and overall unit productivity. Therefore, effectively managing stress levels could improve stress coping abilities, decrease the likelihood of outbursts due to frustration, prevent negative coping habits, improve overall well-being, and improve patient care (Grensman et al., 2018).

Significance of Clinical Problem

Healthcare personnel unable to adequately manage their stress environment are more likely to experience burnout. Although there is no concrete definition of *burnout*, it is characterized as emotional and physical exhaustion related to workplace stress (Grensman et al., 2018). Burnout affects emotional well-being, cognitive function, sleep, and indirectly impact a person's physical health (Grensman et al., 2018). Individuals working in stressful environments are more likely to use maladaptive coping strategies i.e., substance misuse and poor diet choices to cope with job demands. Additionally, stress affects immune system function and is linked to chronic diseases such as cardio-vascular disease and diabetes (McConachie et al., 2014). In extreme cases, individuals who suffer from burnout seek treatment in primary care settings, occupational medicine, or psychiatry (Grensman et al., 2018).

Stress and burnout impact departments or entire institutions. When employees are not operating at their fullest potential, productivity is decreased and co-worker satisfaction suffers (Grensman et al., 2018). Stress management interventions in the workplace may (1) improve the physical and the psychological effects of stress, (2) enhance workplace performance, and (3) reduce employee dissatisfaction (Steinberg, Klatt, & Duchemin, 2017).

Nurses dissatisfied with their role and who felt burnout were less likely to report to work as scheduled (Grensman et al., 2018). Working with a shortage of staff increases the workload for the rest of the department which creates additional stress. Added workload puts care providers at higher risk for burnout related exhaustion (Steinberg et al., 2017). Nurses with burnout are likely to provide patient care with impaired memory, a lack of vigilance, decreased cognitive function, or a lack of attention to detail because they are less engaged in their role and perceive the patient as an object (Lyndon, 2016). These nurses place the patients they are caring

for at increased risk for experiencing adverse events and decreased satisfaction with the care that they received (Lyndon, 2016; Grensman et al., 2018).

The Triple Aim and the Theory of Stress and Coping

Decreasing the patient's perception of the care they receive and putting their safety at risk goes against the goals set by the Triple Aim (Lyndon, 2016). The Triple Aim focuses on (1) improving the patient's experience of obtaining care, (2) reducing costs healthcare costs and (3) improving the overall health of a population (Bodenheimer & Sinsky, 2014). Improving the stress management abilities of care providers has a positive impact on the ways that they cope with periods of high stress. Adequately managing stress makes care providers less likely to make mistakes or have errors in judgement and also improves the patient's care experience (Lyndon, 2016). Lazarus and Folkmans' Theory of Stress and Coping is based on the connections between stress, an individual, their environment, and how an individual interprets the stimuli within their environment (Kristofferzon, Engstrom, & Nilsson, 2018; Biggs, Brough, & Drummond, 2017). Along with the Triple Aim, it was the theoretical framework used to guide the implementation of mindfulness-based cognitive therapy and stress management techniques in the post-anesthesia care department.

Question Guiding Inquiry (PICO)

Does implementing stress management techniques, such as MBCT, reduce the negative perceptions of stress and increase the mindfulness of the nurses working in a PACU?

Population. The population for this intervention included nurses working in an inpatient Post-Anesthesia Care Unit at a tertiary care, not-for-profit 439-bed hospital located in a southeastern state.

Intervention. The concepts of MBCT were introduced to the nursing staff of the PACU through an educational presentation given at a staff meeting. Various mindfulness and stress management interventions were introduced for an 8-week period following the educational presentation. Nurses were encouraged to perform a one-minute guided mindfulness meditation prior to beginning every shift. Emails containing mindfulness education and stress management strategies were sent to the entire nursing staffing. Nurses were advised to practice the mindfulness and stress management techniques contained in the emails as their daily routines allow. In addition, a quiet corner of the unit was made available for any coworker to utilize throughout the day for relaxation and to practice these techniques.

Comparison. Prior to the project implementation, there were not stress reduction interventions in place.

Outcome. The goal of MBCT implementation was to reduce the stress of the nurses in the PACU by improving their stress management abilities. The outcome was quantified using the Perceived Stress Scale (PSS) and the Mindful Attention Awareness Scale (MAAS). The PSS is an instrument used to measure how an individual perceives the stress of their daily lives (Cohen, 1994). The MAAS quantifies an individual's tendency to be mindful, attentive, or aware of a given situation or experience (Brown & Ryan, 2003).

Summary

Nurses who experience high levels of stress daily are more likely to develop substance abuse, depression, anxiety, and decreased job satisfaction. Burnout and exhaustion result when healthcare workers are unable to adequately manage high stress levels. By providing stress reduction interventions in the PACU, nursing staff will be better prepared to handle stressful

situations. As the problem and need for intervention was addressed, further exploration of potential stress reduction interventions was researched through a literature review.

Chapter Two: Review of the Literature

After recognizing the need for stress management intervention among nurses in an inpatient PACU setting, a literature review was conducted to explore effective methods of reducing stress in nursing departments. A better understanding of the negative effects of persistent stress and how that stress can impact the productivity of a work environment was achieved. Effective interventions used to manage or reduce stress in the workplace were reviewed. More specifically, articles reporting the process of implementing stress reduction interventions for nurses in the healthcare setting were evaluated.

Methodology

Sampling strategies. A literature search using the PubMed and EbscoHost databases was completed. Articles published within the last five years that named humans as the main subjects of focus were included in the literature review. Searches were done using various combinations of the key phrases stress management, stress reduction, inpatient nursing, nursing, mindfulness, mindfulness-based cognitive therapy (MBCT), and mindfulness-based stress reduction (MBSR). An initial search was performed using the terms “stress reduction” and “nursing” which yielded 174 articles. When “mindfulness” was added to this search, 21 articles remained. After excluding articles not relating to nurses who performed patient care, 8 articles were kept for further evaluation.

Of these initial 8 articles, MBCT and the MBSR model were both common and effective stress reduction interventions discussed. A search using “Mindfulness-based cognitive therapy” yielded 285 articles which decreased to 20 articles after the term “nursing” was added. However, only 1 article from this search was kept for review after excluding articles not relating to MBCT implementation in nurses. A search using “mindfulness-based stress reduction” and “nurses”

yielded 13 articles and 3 articles pertained to mindfulness interventions performed in a nursing staff.

Evaluation criteria. To be specific to the project population, articles were selected if nurses were the principle subjects of study. Articles that focused on interventions exclusively for patients or students were only used for discussion on the negative effects of stress but were otherwise excluded from review. Additionally, articles discussing interventions other than stress management were excluded. For a more detailed report regarding reviewed articles used for this project, please see Literature Review Matrix in Appendix A.

Literature Review Findings

Stress related to Inpatient and Critical Care Nursing. Critical care nurses are expected to be highly educated, highly-skilled, and adept time managers (Vahedian-Azimi et al., 2017). Complications and other unexpected events are more likely to occur in these units because of the high-acuity levels of the patients (Sotanzadeh et al., 2017). Due to the high demands nurses face in critical care and inpatient departments, there is a positive relationship between hospital nursing and negative habits such as fast-food eating, physical inactivity, increased alcohol consumption, and non-prescription opioid usage (Vahedian-Azimi et al., 2017).

Burnout. Burnout is best characterized by the emotional and physical exhaustion that is usually directly related to the stress encountered in the work place (Grensman et al., 2018). Because of the high levels of stress that healthcare personnel experience daily, nurses are at increased risk for developing burnout (Bodenheimer & Sinsky, 2014). The main areas affected by burnout are the emotional well-being, cognitive function, and sleep. Burnout also indirectly affects an individual's physical well-being (Grensman et al., 2018).

Stress-induced burnout occurs in about 40% of nurses at some point in their career (Duarte & Pinto-Gouveia, 2016). Nurses experiencing burnout are less engaged in their peer and patient interactions. They are also more likely to perform their job with impaired memory, a lack of vigilance, decreased cognitive function, or a lack of attention to detail. This puts nurses with burnout at increased risk for creating errors which greatly impacts patient care and can negatively affect patient outcomes (Lyndon, 2016).

A cross-sectional survey was performed using various groups of nurses working in high-intensity settings (Rushton, Batcheller, Schroeder, & Donohue, 2015). The results of the survey demonstrated a strong correlation between stress and burnout experienced in the nurses working in these areas. It also supported the implementation and development of strategies to reduce nurses' vulnerability to exhaustion and stress (Rushton et al., 2015).

Negative effects of stress. Experiencing high levels of stress constantly can lead to the forming of mal-adaptive coping strategies (McConachie et al., 2014). Nurses who are not able to appropriately manage the high levels of stress that they experience regularly are more likely to develop other negative coping strategies that can lead to substance abuse, depression, anxiety, decreased job satisfaction, and negative peer and patient interactions. These nurses are more likely to permanently leave nursing practice (Rushton et al., 2015).

Stress has also been linked to impact the physical health of anyone who is unable to adequately manage it. Persistent and unmanaged stress can have negative effects on the body's immune system, cause high blood pressure, and lead to psychological distress. It has also been associated with chronic diseases such as cancer, diabetes, and cardiovascular disease (McConachie et al., 2014; Steinberg et al., 2017). Additionally, there is evidence to support that

high levels of persistent stress are linked to migraine headaches, obesity, unhealthy cholesterol levels, backache, and muscle tension (Khoury, Sharma, Rush, & Fournier, 2015).

Stress also affects cognitive functions like attention and memory. Lapses in attention or altered memory puts nurses at increased risk for creating medication administration errors or being unable to recognize life-threatening conditions in a timely manner. These negative outcomes related to stress put patients at risk for adverse events or unfavorable outcomes (Botha, Gwin, & Purpora, 2015).

Stress management techniques. Yoga and mindfulness-based cognitive therapy (MBCT) are efficient stress reduction and management techniques that demonstrate positive effects on health-related quality of life (Grensman et al., 2018). Yoga practices include gentle body movements, breathing exercises, and meditation that can be practiced by anyone despite their physical condition. Yoga aims to increase awareness of bodily sensations and emotions (Grensman et al., 2018). When used together, yoga and MBCT are beneficial interventions to improve mental health, benefit job performance, and promote stress reduction (McConachie et al., 2014).

Stress reduction programs implemented in the workplace reduce illness and positively impact the psychological and physical symptoms of stress in the employees who participate (Steinberg et al., 2016). Promotion of staff emotional well-being through educational programs or mindfulness-based instruction has been found to be an effective way of encouraging development of coping skills among a department's staff. These interventions also foster the ability of the nursing staff to adapt to stressful situations (Vahedian-Azimi et al., 2017).

Mindfulness-based Cognitive Therapy (MBCT). MBCT interventions are categorized based on the strategy that they are based (Khoury, Lecomte, Gaudiano, & Paquin, 2013). One

popular and efficient mindfulness strategy is based on meditation techniques that aim to regulate emotions and reduce mal-adaptive emotional responses. Another mindfulness strategy focuses on becoming aware of one's sensations, thoughts, acceptance, reactivity to situations, and prior judgements (Khoury, et al., 2013). In addition to relaxation training, MBCT practices guide compassion and empathy development. Individuals who practice MBCT are less likely to suffer from burnout and are more likely to learn new information, develop new perspectives, and become better care providers (Ponte & Koppel, 2015).

To obtain the most benefits from MBCT, individuals should routinely practice mindfulness techniques for at least 30 minutes daily (Steinberg et al., 2017). Because a care provider's schedule is sporadic and unpredictable, this type of intervention is not feasible in a fast-paced nursing department. Adaptations to MBCT recommendations have been made to make practicing these techniques more suitable for a healthcare worker throughout their day (Steinberg et al., 2017).

Mindfulness-based Stress Reduction Model. The Mindfulness-based Stress Reduction (MBSR) model is an effective training module developed by University of Massachusetts professor Jon Kabat-Zinn (Khoury et al., 2015). The purpose of the MBSR model is to teach healthy individuals how to observe stressful situations in a neutral and accepting manner through mindfulness practices, meditation, self-awareness, and yoga. The standard MBSR 8-week curriculum includes weekly 2-hour group sessions with an additional 6-hour group retreat (Khoury et al., 2015).

In a randomized controlled study, the MBSR model was implemented in a high-stress surgical intensive care unit (Steinberg et al., 2017). Interventions for the study included the encouragement of performing simple yoga stretches, listening to relaxation music, and attending

weekly group sessions with a mindfulness instructor. Maintaining appropriate staff coverage during the weekly group session created an additional challenge for the unit (Steinberg et al., 2017). To guarantee full participation in group sessions, coverage had to be provided by other departments or by the management team which was not always available. Despite this setback, the study demonstrated that MBSR interventions can improve a nurse's ability to recognize their own emotional response to daily stress (Steinberg et al., 2017).

A similar quasi-experimental pilot study was conducted on an intermediate-intensity medical-surgical nursing unit for 10 weeks (Horner et al., 2014). The intervention in this study also included an altered version of the MBSR model. Mindfulness classes were held once a week during both day and night shift hours for 30 minutes to avoid disruptions in patient care. The classes focused on developing awareness of one's thoughts and emotions, along with tips on improving patient interactions by being fully present in the moment (Horner et al., 2014). Because nurses' work schedules are variable and patient care is unpredictable, full attendance in weekly classes was impossible. To compensate for missed classes, weekly emails were sent, and visual reminders were placed around the unit to review material covered in that week's class (Horner et al., 2014). According to the mindfulness attention awareness scale (MAAS), the intervention group of this study demonstrated increased levels of mindfulness after completing the training while the control group's scores remained the same (Horner et al., 2014).

In a controlled cohort study, the traditional MBSR model was altered to make the interventions more feasible for the nurses of a pediatric intensive care unit (Gauthier et al., 2015). Instead of weekly group sessions, the nurses were encouraged to practice one 5-minute daily mindfulness guided meditation session before starting every shift. The guided meditation sessions were performed individually and were made convenient for the nurse to complete before

starting daily tasks (Gauthier et al., 2015). The evaluation of the study included the use of the MAAS which demonstrated an overall improved awareness of negative emotions and reduced stress among the nurses in the unit (Gauthier et al., 2015).

Perceived Stress Scale and the Mindful Attention Awareness Scale. A correlational cross-sectional study was conducted to investigate the relationship between mindfulness and perceived stress among Brazilian health care professionals (Atanes et al., 2015). The Perceived Stress Scale (PSS) and the Mindful Attention Awareness Scale (MAAS) were used to measure self-reported mindfulness and the perception of a stressful situation (Atanes et al., 2015).

According to the results of the PSS and MAAS, nurses demonstrated low levels of mindfulness and higher levels of perceived stress. The study concluded that health care professionals who were able to be mindful in certain situations were typically less stressed (Atanes et al., 2015).

The PSS (see Appendix B) is a self-report 10-item instrument used to measure how individuals perceive situations in their daily lives that cause stress (Cohen, Karmarck, & Mermelstein, 1983). The PSS has been demonstrated to have reliable findings in clinical settings and has become an increasingly popular method of measuring perceived stress. It relates the severity of the perceived stress to the person's ability to cope with it (Taylor, 2015). The PSS is used in studies to measure the impact that an intervention has on the ways that a sample perceives daily stressors or stressful situations (Taylor, 2015).

The MAAS (see Appendix C) is a 15-item instrument that evaluates mindfulness (Atanes et al., 2015). It measures an individual's tendency to be mindful, attentive, or aware of a given situation. It is a reliable method to measure the effectiveness of mindfulness-based interventions because the MAAS was developed to be used by individuals without experience with mindfulness practices (Brown & Ryan, 2003).

Limitations of Literature Review Process

Although many of the articles suggested that mindfulness-based cognitive therapy could reduce stress levels of healthcare workers, there were few studies reporting that it was accomplished. Information about actual implementation of MBCT in a fast-paced healthcare department was limited. When implementation was addressed, it suggested requiring staff to participate in multiple hour long mandatory and routine mindfulness therapy sessions scheduled once per week during the middle of the day. This type of intervention is unfeasible due to the time constraints, schedule inconsistencies, and job requirements of the nursing population of focus for the purpose of this project.

Discussion

Conclusion of findings. Work-related stress is a common occurrence among nurses and healthcare personnel (Gauthier et al., 2016). If it is not managed properly, persistent stress can lead to negative outcomes such as substance abuse, depression, anxiety, decreased job satisfaction, and poor physical health (Rushton et al., 2015). Due to the accessibility, feasibility, and the capability of targeting multiple people at one time, MBCT is a popular and effective stress management strategy when considering interventions to be implemented in the workplace (Botha et al., 2015). MBCT also serves as a foundation to guide the development of compassion and empathy which can improve patient interactions and satisfaction (Ponte & Koppel, 2015).

Advantages and disadvantages of findings. One advantage of this literature search was the number of articles associated with the impact and potential benefits of mindfulness-based interventions that were published within the last 5 years. Articles consistently mentioned relevant information regarding the negative impact of stress on healthcare workers' mental and physical

health. Multiple research studies discussed the effectiveness and feasibility of implementing of an altered version of the traditional MBSR model in nursing departments.

A disadvantage of this literature search was that numerous articles focused on mindfulness among nursing students or patient populations instead of among nurses working in patient care areas. Although implementing mindfulness to lower nursing students' stress levels is similar to the purpose of lowering nurses' stress levels, there is a difference between being a student and being a practicing nurse. There was also insufficient information about implementing mindfulness techniques in an inpatient PACU.

Utilization of findings in practice. Stress reduction techniques in the form of mindfulness-based cognitive therapy was implemented in the PACU using an altered version of the traditional MBSR model. The PACU nurses were educated regarding the mindfulness implementation with an initial educational presentation and through weekly emails. Each nurse was encouraged to perform a 1-minute mindfulness guided meditation before starting each shift. The PACU nursing staff completed the PSS and MAAS at the beginning and end of the stress management project implementation. The pre- and post-implementation results were compared and the differences demonstrated that the PACU nurses' overall mindfulness increased and their stress perception reduced after incorporating mindfulness practices and stress reduction techniques into their daily work routines.

Summary

Although there was insufficient information detailing how to begin MBCT in a PACU nursing department, there was enough evidence to support stress management interventions for the nursing staff. Implementing an altered version of MBSR model in a high-stress nursing department may decrease the negative impacts of stress and improve stress management among

the nursing staff. By improving the ability of nurses to manage the stress that they encounter daily, nurses will be more likely to engage in positive peer and patient relationships, have increased work satisfaction, and develop a positive outlook on their daily stress.

Chapter Three: Theory and Concept Model for Evidence-based Practice

Lazarus and Folkman's Theory of Stress and Coping discusses the relationship between stress and adequate coping strategies. The concepts of this theory will be used to guide the implementation of stress reduction interventions in the PACU setting. The process of translating the supportive evidence for stress management into better practice was directed by the Stetler model of evidence-based practice. The concepts introduced by both the theoretical framework and the evidence-based practice model will be incorporated into improving stress management of nurses by implementing mindfulness interventions within the department.

Concept Analysis

Several related concepts in this discussion are Mindfulness, Mindfulness-based cognitive therapy (MBCT), and Mindfulness-based Stress Reduction (MBSR). Mindfulness is the self-regulating act of paying attention on purpose and being aware of the present moment in a non-judgmental manner (Atanes et al., 2015). MBCT includes practices and techniques that foster an individual's ability to be aware of their own sensations, thoughts, and perspectives (Grensman et al., 2018). The MBSR model is an established mindfulness training curriculum that uses MBCT, meditation, and gentle yoga to teach participants how to observe situations in an accepting and nonreactive way (Khoury et al., 2015). The traditional MBSR curriculum includes weekly 2-hour group sessions and a 6-hour group retreat facilitated by a certified mindfulness instructor (Khoury et al., 2015).

Stress is the phenomena that occurs when a person encounters a stimulus that they consider to be threatening, challenging, or harmful (Biggs et al., 2017). Stress is experienced when an individual's emotional response to a stimulus exceeds their capacity of coping (Biggs et al., 2017). The concept of Coping is defined as the process in which an individual uses their own

cognitive and behavioral skills to manage situations that they consider stressful (Kristofferzon et al., 2018).

Theoretical Framework

Lazarus and Folkman's Stress and Coping Theory. According to Lazarus and Folkman's stress and coping theory, individuals are constantly assessing the stimuli that they encounter within their environments (Biggs et al., 2017). As the individual internally judges the stimulus, an emotional response to the stimulus occurs. The emotional response that occurs is dependent on how the individual perceives that specific stimulus (Biggs et al., 2017).

Coping with stress relies on a person's cognitive and behavioral abilities to manage perceived stressful situations (Kristofferzon et al., 2018). Lazarus and Folkman's Stress and Coping Theory categorizes coping as emotion-focused coping and problem-focused coping. Emotion-focused coping refers to the process of attempting to regulate the emotions that a stressful situation causes (Kristofferzon et al., 2018). Examples of emotion-focused coping mechanisms would include meditation, relaxation techniques, or mentally avoiding a stressful situation purposefully. Problem-focused coping interventions are techniques used when a person feels that they can manage a situation. In problem-focused coping, a person seeks out information to solve or alter a stressful situation in order to feel more in control of it (Kristofferzon et al., 2018).

Application to practice change. By implementing a version of the MBSR model in the PACU, the nurses learned stress management strategies to improve their abilities to cope with stress they encounter daily. Guided by Lazarus and Folkman's Stress and Coping Theory, techniques incorporated in their work routines allowed the nursing staff to improve both their emotion-focused and problem-focused coping mechanisms. Mindfulness-based coping strategies

helped the nurses regulate negative emotions associated with stressful situations. After practicing the coping strategies for a period of time, the nurses will also be able to more effectively alter the situations in which they find to be the most stressful.

EBP Change Theory

Stetler Model for Evidence-based Practice. The Stetler Model is a conceptual model used to guide implementation of evidence-based practice interventions into clinical settings (Melnyk, 2017). The model was originally derived from a research model. It promotes research utilization findings into safe, effective, and sustainable nursing practice. According to the model, the steps of preparation, validation, comparative evaluation and decision-making, translation and application, and evaluation take place to assess and translate research findings into action (Melnyk, 2017).

The preparation step of the Stetler Model involves identifying the problem then reviewing literature for pertinent evidence (Melnyk, 2017). After preparation, validation occurs which involves critical appraisal of the evidence. Comparative evaluation and decision-making are the steps of the model where decisions are made based on the validated evidence (Melnyk, 2017). Once decisions are made, a practice change is made in the translation and application step. Finally, the outcome of the practice change is evaluated in the final phase of the Stetler Model.

Application to practice change. Following the Stetler Model, the first step of implementing stress reduction interventions in the PACU was recognizing that high levels of stress existed among the unit nurses. Once stress was identified as a problem, literature was reviewed for evidence for improved stress management and potential stress reduction interventions. Various stress reduction techniques and practices were compared and analyzed.

Articles were critically appraised. Validated evidence supported that MBCT is the most effective and feasible stress management intervention for nurses in healthcare settings (Botha et al., 2015).

As the Stetler Model indicates in the decision-making phase, the MBSR model was determined to be a feasible and beneficial intervention for the PACU. Based on the implementation details of MBSR in other high-stress nursing departments, a plan was detailed for applying an altered version of the model for the PACU. The plan for the practice change was communicated to the nursing staff. Following the application of the practice change, the impact of the intervention would be evaluated using the Perceived Stress Scale and the Mindful Attention Awareness Scale.

Summary

The process of appraising research and translating it into practice was guided by the Stetler model steps for evidence-based practice. The need to begin stress reduction interventions for nurses in the PACU was guided by the concepts discussed in Lazarus and Folkman's Theory of Stress and Coping. Together, the theoretical framework and the evidence-based practice model guided the planning and implementation process of MBCT in the PACU.

Chapter Four: Pre-implementation Planning

Before a quality improvement project could be implemented, a series of steps needed to be taken in order to ensure its success. After a problem was established and the desire to make a change was communicated, approvals had to be granted by the institution's administration before moving forward with the planning process. An initial proposal was developed and submitted to the leadership team of the unit and submitted to the faculty lead.

Project Purpose

The purpose of this quality improvement project was to improve the stress management abilities of the nurses working in the PACU. The nurses were encouraged to incorporate mindfulness-based practices and stress management strategies into their daily routines for 8 weeks. By implementing an altered version of the MBSR model in the PACU, the nurses were given the opportunity to practice MBCT and decide which techniques were most effective for them and their practice. The end goal of this project was that the nurses would continue to practice stress reduction techniques even after the project officially ended.

Project Management

Organizational readiness for change. The nursing manager of the PACU discussed initial concerns about the severity of stress that the PACU nurses encounter daily. After conducting a literature review, it was concluded that high stress levels are common among nursing personnel. High stress has the potential to negatively impact nurses both physically and mentally leading to burnout, increased employee turnover, and patient care mistakes (Grensman et al., 2018; Steinberg et al., 2017).

To further explore the department's readiness for change, interviews and discussions were held with the nursing staff and leaders of the unit. These conversations were taken into

consideration when developing a plan of action and selecting appropriate interventions. The leadership team played a role in structuring the plan to make it the most feasible for the unit. Most of the nurses acknowledged that high stress was a problem within the department and several nurses recognized their own negative reactions to stress. After also voicing their desire for improved coping strategies within the unit, a final project plan was developed, and an official proposal was submitted for institutional approval.

Inter-professional collaboration. The Nurse Practitioner (NP) student, also the project leader, developed professional relationships with the PACU nursing managers, the institution's Director of Nursing Practice, and the nurses employed within the units. The nurse managers of the PACUs played important roles as the contacts within their units. All planned interventions were discussed with the managers and the leadership team. A nurse representative was selected from each of the PACUs to oversee the interventions when the project leader could not be present. The institution's Director of Nursing Practice, also the project clinical site chairperson, served as a liaison with the hospital administration. The Director of Nursing Practice collaborated with the project leader in order to gain appropriate approval for project implementation.

The project leader partnered with the nurse managers of the PACUs and the Director of Nursing Practice to develop a feasible action plan in order to improve the stress management among the nurses. The project leader reviewed literature and evidence that was relevant to stress management interventions among healthcare personnel. After critically appraising evidence-based practices, an implementation plan was developed in order to facilitate the best possible outcomes for the nurses of the PACUs.

Risk management assessment. The recommended stress management interventions required less than minimal risk to the participants and a Strength, Weakness, Opportunities, and Threats (SWOT) analysis was completed. One of the major threats of this quality improvement project was asking the nurses to change their daily habits and routines. However, one of the major opportunities was the heavy involvement and support of the PACU nurse leadership team in the implementation of the interventions. With the department's leadership team's support and encouragement, the project was more likely to be executed as recommended which made the threats to the project's success even more insignificant.

A strength of the PACU was the amount of teamwork among nurses that takes place within the department. The nurses work in close proximity to one another, use each other as resources, and rely on each other in order to maintain patient safety. The teamwork of the unit acted as an opportunity to hold each other accountable in performing mindfulness practices when situations become challenging. Because the PACU nurses work so closely together, they were likely able to recognize signs that demonstrate one of their peers is becoming overwhelmed. In these situations, a nurse could offer to step in so that the overwhelmed nurse can step away from their patient care obligation until their focus is regained.

Another potential strength in the implementation of this project was the "staggered schedule" used in this unit. To accommodate the daily unpredictable surgical schedule, 1-2 nurses begin their shift every hour until the unit is fully staffed. This aspect makes the recommended 1-minute meditation more feasible because not every nurse will need to perform the meditation at the same time.

This "staggered schedule" could also be a potential weakness of the project because there was not a single designated time for this daily meditation to take place that was convenient for

everyone. Another weakness identified included the fast pace of the unit leading to the nurses simply not having the time to take for meditation or to read their weekly emails. Additionally, the lack of motivation or desire to participate in an optional self-care activity could be considered as a threat to the project which could impede its overall effectiveness.

Organizational approval process. The nurse manager of the PACU discussed concerns regarding the high stress levels experienced by the nursing staff. A meeting was arranged with the Chief Nursing Officer and the Director of Nursing Practice. The need for intervention within the PACU was discussed and a plan for implementation was introduced. A formal proposal was developed and approved by the Director of Nursing Practice. The Chief Nurse Officer granted approval for the proposed plan to be implemented in both PACUs within the institution (See Appendix D).

Information technology. Email was used to communicate with project team members, the PACU leadership team, and the nurse participants. Email was also used to send the weekly mindfulness material and practice points. A survey development application was used as the tool to create the pre-implementation and post-implementation surveys used for data collection. The data collected from the survey tool was transmitted to an Excel spreadsheet in order to organize, analyze, and evaluate the data. A slide presentation was used for the initial mindfulness educational session during the PACU's staff meeting.

The nurses were coached to perform a 1-minute mindfulness guided meditation before starting every shift. The participants had the option of downloading a free mindfulness application to their own personal smartphone or device. They received a list of recommended and commonly used applications. These applications, along with a daily meditation book, supplied the participants with guided meditations and offered additional mindfulness practices.

Cost Analysis of Materials Needed for Project

The costs for this project (see Appendix E) were minimal. Materials for each unit's daily meditation intervention were provided. These materials included 1-minute timers, reusable headphones, stress balls, and a daily meditation book.

Institutional Review Board Approval

The data collection forms and educational tools that were developed for the implementation of this project were submitted for faculty review. An official letter of support from the institution was also submitted. This letter (see Appendix D) acknowledged permission that only East Carolina University's Institutional Review Board would be required for approval in order to conduct this quality improvement project at the institution.

The Quality Improvement/Program Evaluation Self-Certification Tool (See Appendix J) was completed. It was then submitted to East Carolina University College of Nursing faculty for review. After submitting this tool, this project was classified as not research and further IRB approval was not required.

Plan for Project Evaluation

Demographics. The project sample was comprised of registered nurses working at the institution in either of the two surgical PACUs. The age of each nurse is reported in a table demonstrated by the number of nurses who fit within each given age range. The other demographic collected was the number of years of practicing as a registered nurse. This demographic is reported in a table demonstrating how many nurses have worked within each range of years. Both demographics were collected in the pre-implementation survey.

Outcome measurement. The two main goals of this project were a decreased perception of stress and an increased state and disposition of mindfulness for the nurses working in the

PACU. The perception of stress was measured using the Perceived Stress Scale. The state and disposition of mindfulness was measured using the Mindful Attention Awareness Scale. If both outcomes are met, then the implemented interventions would be considered successful in improving the stress management strategies of the nurses working in the PACU.

Perceived Stress Scale. The Perceived Stress Scale (PSS) is a 10-item survey tool used to measure the perception of stress. It is used to appraise the degree in which individuals consider situations in their life to be stressful (Cohen et al., 1983). It also includes questions pertaining to the current levels of stress experienced. The respondents are asked how often they felt or experienced certain emotions or thoughts during the last month (Cohen et al., 1983). Permission to use the PSS can be viewed in Appendix G.

Data analysis. Each response of the PSS is given a numeric value and the values are then summed. The higher the value demonstrates a higher level of perceived stress (Cohen et al., 1983). For the purpose of this project, the sums of the pre-implementation and post-implementation surveys were averaged. The averages were compared and the difference demonstrated either an increased or decreased level of perceived stress.

Mindful Attention Awareness Scale. The Mindful Attention Awareness Scale (MAAS) is a 15-item survey that lists every-day experiences (Brown & Ryan, 2003). Respondents are directed to answer each item based on how often they have each experience. Answers reflect the respondent's actual experience instead of what they think their experience should be (Brown & Ryan, 2003). Permission to use the MAAS can be viewed in appendix H.

Data analysis. To score the MAAS scale, each response is given a numeric value and an average is taken of the 15 items. The higher the score, the higher the level of dispositional mindfulness and awareness (Brown & Ryan, 2003). To evaluate the data collected using the

MAAS, the mean of the averages for the unit was analyzed. The mean of the averages of the pre-implementation survey was compared with the mean of the averages collected in the post-implementation survey. The difference between the two means would demonstrate any increase or decrease in the mindful disposition of the PACU staff collectively.

Data management. The data was collected using an anonymous survey (see Appendix I for both pre and post implementation surveys). Both surveys were emailed to the PACU nursing staff through a gatekeeper using the department's email list currently on file. The data was transferred from the survey development application to an Excel spreadsheet for scoring, analysis, and evaluation. After fulfilling the purposes for this project, the excel spreadsheet was deleted and the results were removed from the survey database.

Summary

The pre-implementation planning phase of this project involved acknowledging that the high-stress environment of the PACU setting was a problem among the nursing staff. The idea of implementing a quality improvement project to improve the stress management of the nurses was proposed and approved by the institution. This pre-implementation planning phase ended with receiving official approval to conduct from East Carolina University's Institutional Review Board. A date was set to begin the quality improvement project implementation by sending the pre-implementation stress management survey out to the nursing staff of the PACUs.

Chapter Five: Implementation Process

Using an altered version of the Mindfulness-based stress reduction model, the PACU nurses participated in stress management interventions for an 8-week period. Following a mindfulness education presentation, the nurses were advised to perform a one-minute daily mindful meditation before beginning work. The nurses also received weekly emails containing mindfulness practices, strategies, and tips to be incorporated into their daily routines. Pre-implementation and post-implementation data were collected using electronic surveys with items from the Perceived Stress Scale by Dr. Sheldon Cohen and the Mindful Attention Awareness Scale by Dr. Kirk Brown.

Setting

The settings for this quality improvement project were the two main surgical post-anesthesia care units (PACU) of a tertiary care hospital located in an urban metropolitan area. Both units serve as the areas for anesthesia recovery for a variety of post-operative surgical patients including both adult and pediatric populations. The two departments share similar job requirements, demands, and patient safety goals. Each PACU nurse is trained to work effectively in both departments and can float to the other unit if ever necessary. Due to the patient volume and fast patient turnover, these PACUs tend to be fast-paced working environments.

Participants

The participants of this quality improvement project were the nurses of the two surgical PACU's of a 439-patient bed hospital. These critical care nurses must receive additional certification in advanced cardiovascular life support and pediatric advanced life support due to the high acuity, variety, and nature of the patient populations. All participants were registered

nurses in the state of North Carolina with varying experience levels, career backgrounds, and ages.

Recruitment

The participants were informed that this project would be taking place within their units by their management team. It was communicated to the nurses that participation in this project was voluntary and there would be no punishment for not participating. The project was advertised as a unit-wide quality improvement initiative and participation was encouraged but not mandatory.

Implementation Process

Pre-Implementation Survey. A survey was created using an online survey development application. This survey served as a baseline data collection tool and used to compare pre and post implementation data. The surveys included the Perceived Stress Scale and the Mindful Attention Awareness Scale. The survey also included 2 demographic questions related to the ages of the participants and the number of years working as a registered nurse. The nurses were informed that the data and their responses to the survey would remain anonymous.

The pre-implementation survey was distributed to the PACU nursing staff by the unit manager through their established email accounts. The nurses were notified of the dates in which the survey would begin and end. In addition, the nurses were also notified that a stress management quality improvement project would be taking place within their department and that participation was optional.

The survey remained open for 4 weeks prior to the 8-week implementation period. After the closing of the survey, the data collected was transferred from the survey application to an

Excel spreadsheet. The data was evaluated using the PSS and MAAS recommended scoring techniques. The data was used as a baseline compared with post-implementation data.

Mindfulness Education Presentation. An educational presentation was created using PowerPoint based upon the reviewed evidence. This information was presented to the nursing staff during their quarterly staff meeting one week after the completion of the pre-implementation survey. The presentation also contained details and instruction for the various mindfulness interventions that would be implemented in the PACUs for the next 8 weeks.

Weekly Mindfulness Emails. One week following the mindfulness education presentation, the staff received weekly emails to their work accounts containing mindfulness practice tips and a weekly challenge. The emails were sent to the nursing staff every Monday for an 8-week period from the project leader. The information contained in these emails included examples of mindfulness techniques and stress management strategies. The nursing staff was coached to incorporate the strategies and techniques listed in these emails into their daily lives and routines.

Daily Mindful Meditation. The nurse participants were coached to perform daily mindful meditation for one minute prior to beginning their shift. Meditation would take place on units in designated areas. Nurses were advised to download mindfulness meditation applications onto their personal smartphone device. Mindfulness meditation books and headphones were made available to each unit.

Post-Implementation Survey. The post-implementation survey was created using the same survey development application and survey questions as the pre-implementation survey. The only difference between the two surveys was that the demographic questions were omitted

in the post-implementation version. This survey was distributed and evaluated in the same way as the pre-implementation survey.

Summary

The process of planning this quality improvement project began with recognizing the importance of improving stress management among PACU nurses. Through discussion and collaboration with the PACU nurses and the managers of the units, the need for intervention within the department was determined. Appropriate approvals were granted for the implementation of stress management interventions. Mindfulness education, meditation, and mindfulness practices were performed for an 8-week period. Although the implementation period ended, the goal of this project would be for the PACU nurses to continue practicing mindfulness-based cognitive therapy and stress management strategies throughout their daily lives.

Chapter Six: Evaluation of the Practice Change Initiative

The implementation of this quality improvement project included several interventions related to stress management. The interventions included a mindfulness education presentation, performing a brief daily meditation, and receiving weekly emails containing various stress management strategies. The nurses were encouraged to participate and incorporate these interventions into their daily routines. To evaluate the effectiveness of this project, a pre and post-implementation survey was used.

Participant Demographics

At the time of implementation, there were 67 total employed nurses between the two PACUs. All nurse participants held a valid registered nursing license for the state of North Carolina. More specific demographic data was collected in the pre-implementation survey. The demographic data collected included age and years of nursing experience of the 36 participants who completed the pre-implementation survey. This data can be viewed below in tables 1 and 2.

Table 1

Ages of Nurse Participants

Age	20-29	30-39	40-49	50-49	60+
# of Nurses	14	8	5	5	4

Table 2

Years of Nursing Experience of Participants

# of years	0-5	5-10	10-15	15-20	20+
# of Nurses	13	9	3	1	10

Intended Outcomes

The intended outcomes of this quality improvement project were to decrease the perception of stress among the nurses in the PACU and to increase their state and disposition of mindfulness while at work. The perception of stress outcome was measured using the Perceived Stress Scale (PSS) and the pre and post-implementation data was compared. The Mindful Attention Awareness Scale (MAAS) was used to measure and compare the nurses' overall state and disposition of mindfulness before and after the implementation.

The main goal of this quality improvement project was to improve the stress management abilities of the PACU nursing staff by implementing mindfulness-based cognitive therapy and stress reduction interventions. By teaching the PACU nurses various stress management strategies and encouraging them to incorporate those strategies into their daily routines, the nurses would develop stress management skills that they could utilize even after the official quality improvement project ended. If the nurses were able to develop their own stress management habits, then they would be more likely to better manage the stressful situations that they encounter daily.

Findings

Out of the 67 PACU nurses who were employed at the time of the project's implementation, 36 completed the pre-implementation survey and 30 completed the post-implementation survey. The number of nurses who completed both surveys was not tracked. Additionally, it was not tracked if the same 30 nurses who completed the post-implementation survey were the same 36 nurses who completed the pre-implementation survey.

According to the recorded quarterly staff meeting minutes, 48 nurses attended the stress management education presentation. It was impossible to track and record the exact number of

nurses who read the mindfulness practice tips and stress management strategies sent to their work email accounts. Because this project was advertised as voluntary, optional, and confidential, participation in the daily meditation and mindfulness practice was not logged or recorded.

The data collected by the PSS contained in both surveys was evaluated by giving a numeric value to each response. For the purposes of this project, the responses were added individually and then the average score of all collected surveys was recorded. As recommended by Dr. Sheldon Cohen (1983), the level of perceived stress can be determined by the sum of the recorded responses with a high sum indicating a higher level of perceived stress. After comparing the final averages from both the pre and post-implementation surveys, it was concluded that the level of perceived stress throughout the PACU had decreased following the project implementation (see below in Table 3).

The data collected using the MAAS in both surveys was evaluated similarly to the PSS. Each response was given a designated numeric value. The average of all responses is considered to be the respondent's final score. Higher respondent scores were indicative of higher levels of dispositional mindfulness and awareness (Brown & Ryan, 2003). After comparing the final averages from both the pre and post-implementation surveys, it could be concluded that the overall disposition of mindfulness and awareness of the PACU nurses had increased after the project implementation (see Table 3).

Table 3

Pre and Post-Implementation Survey Data

	PSS	MAAS
Pre-Implementation	30.69	3.70

Post- Implementation	29.06	4.45
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Summary

After the designated 8-week implementation period of the various stress management interventions in the PACU, the nurses completed a post-implementation survey that was compared with data from the pre-implementation survey. Based on the survey results, it was concluded that the implementation of the various interventions was overall effective in improving the stress management abilities of the nurses in the PACU. As a group, their perceived stress levels were reduced, and their mindfulness disposition was increased.

Chapter Seven: Implications for Nursing Practice

Doctoral degrees in advanced practice nursing can be categorized as either research-focused or practice-focused. Research-focused programs concentrate on science, statistics, and research methodology. Practice-focused programs are centered more around applying research and evidence-based practices to improve clinical practice and patient outcomes (AACN, 2006). A Doctor of Nursing Practice (DNP) program is a practice-focused curriculum that prepares its doctoral graduates to develop advanced competencies to improve nursing practice, strengthen healthcare delivery, and develop enhanced leadership skills (AACN, 2006).

Practice Implications

Both research-focused and practice-focused doctoral programs prepare advanced practice nurses to perform at the top of their profession. However, they both have different goals, competencies, and degree requirements (AACN, 2006). The *Essentials of Doctoral Education for Advanced Nursing Practice* is a document prepared by the American Association of Colleges of Nursing (AACN, 2006) to help guide consistency between the two types of doctoral degrees. The document contains the 8 DNP Essentials, or practice implications, that discuss the essential competencies and content that each DNP graduate must complete.

Essential I: Scientific underpinnings for practice. DNP graduates can translate scientific knowledge into effective treatment plans or interventions that will benefit patients. Competency in this Essential requires the ability to develop and evaluate new practices based on science and science-based theories (AACN, 2006). The quality improvement project was implemented in the PACU after reviewing scientific research and evidence that supported the need and potential benefit of intervention.

Reviewed research claimed that nurses and healthcare personnel are at increased risk of developing negative coping habits related to the persistent levels of stress that they encounter on a daily basis. Experiencing constant stress places nurses at increased risk for developing burnout, poor mental and physical health, and decreased job satisfaction (Duarte & Pinto-Gouveia, 2016). It was concluded that promoting the development of positive coping mechanisms through a department-wide stress reduction program could ultimately decrease the overall stress levels of the unit (Steinberg et al., 2016). By fostering the nursing staff's ability to adapt to stressful situations positively, they would be less likely to experience the negative outcomes of stress (Duarte & Pinto-Gouveia, 2016).

Essential II: Organization and systems leadership for quality improvement and systems thinking. Implementing quality improvement and sustaining changes are two aspects of innovation that DNP graduates should be proficient. DNP graduates must have a working knowledge of organizational policies, financial structures, and practice management (AACN, 2006). The understanding of these factors and how they can impact the effectiveness of an intervention is necessary to successfully implement and sustain change.

To facilitate an effective quality improvement project, the DNP student leading this project assessed the department's readiness for change, time and space availability, and the desire for intervention. After interviews were conducted within the unit and a project proposal was submitted, the DNP student was able to conclude that the proposed interventions could be supported as a project. The DNP student played an important role in facilitating communication among the department's leadership team and within the institution, which positively impacted the project's implementation, effectiveness, and sustainability.

Because the main purpose of this project focused on teaching the nurses how to implement stress management strategies into their daily life, ensuring sustainability played a major role in this project's success. The supplies utilized for this project did not require a large budget and there were not financial constraints for its implementation. In order to ensure that the nurses could continue performing the interventions even after the project officially ended, the recommended interventions needed to be simple, inexpensive, and not require a large amount of time. For this reason, the meditation and stress management supplies were given to the units as a donation with the instruction and encouragement to continue using them.

Effective communication among the unit's leadership teams and with the site chairperson acted as a contributor to the project's success. The DNP student communicated with the members of the leadership teams at least once per week and checked in with the nurses of the units periodically throughout the 8-weeks. The site chairperson was given updates via email and in-person meetings on the project's status, timeline, and dissemination plan. Additionally, the site chairperson offered dissemination opportunities and coached the DNP student on how to present the project to potential shareholders.

Essential III: Clinical scholarship and analytical methods for EBP. Performing a thorough literature review is an important aspect of applying clinical scholarship to implement the best evidence for practice. A DNP graduate can apply the relevant findings from a literature review to plan, design, and implement a quality improvement project. Interventions taken from research can be adapted to promote efficient, effective, and safe practice for the population of focus (AACN, 2006).

Evidence-based practices were considered when reviewing several stress management projects and research studies implemented in health care settings. Additionally, only studies

conducted in inpatient settings were reviewed because inpatient nurses were the primary population of focus for this project. The findings and methodologies from these studies were considered to develop the most appropriate stress management interventions for the nurses in the PACU. The interventions used in previous studies were altered and adapted per institution specifics in order to be utilized by the PACU nurses with the best possible outcomes.

Through the literature review, it was concluded that nurses experience high levels of stress on a daily basis (McConachie et al., 2014). Nurses who are not able to manage the high levels of stress are more likely to develop negative coping strategies that can lead to substance abuse, depression, anxiety, decreased job satisfaction, and negative peer and patient interactions (Rushton et al., 2015). It has also been associated with chronic diseases such as cancer, diabetes, and cardiovascular disease (McConachie et al., 2014; Steinberg et al., 2017). Additionally, stress can also cause a decreased attention span or an altered memory. These negative effects of stress places nurses at increased risk for creating patient care mistakes (Botha et al., 2015).

Essential IV: Information systems/technology and patient care technology for the improvement and transformation of healthcare. The DNP graduate can apply information systems and technology to assess the efficacy of patient care, develop tools to improve patient outcomes, and monitor population trends. The DNP curriculum prepares its graduates to design, use, and evaluate patient care technology to promote safe and effective care to their patients. Additionally, DNP graduates should have the knowledge and skills to apply the appropriate technologies to their practice (AACN, 2006).

For this quality improvement project, automated email was utilized to ensure that the nursing staff received their stress management education emails at the same time every week. A list of free mindfulness applications was given to the nurses to be downloaded onto their own

personal smartphone if they desired. This list of applications was developed based upon the opinions and recommendations of several popular and well-known mindfulness authors and instructors. It was suggested that these applications be used to help guide their mindfulness practice and daily meditations.

Essential V: Healthcare policy for advocacy in healthcare. Policy influences the delivery and regulation of health care. DNP graduates are expected to assume the leadership capabilities to communicate the needs of health care professionals and the general population to the policy makers. Graduates should also play a role in policy committees, legislation, and governmental boards to evaluate current policies in place and advocate for new or innovated policies to improve the health outcomes of the population (AACN, 2006).

Although this project did not change any healthcare policies or legislation, its purpose was to promote and advocate for the self-care of healthcare workers. Healthcare workers, especially nurses, often lack the time to commit to their own self-care due to the high demands and responsibilities of caring for other people (Gauthier et al., 2015). The interventions of this project were designed with the purpose of encouraging nurses to set aside time each day to meditate, deep breathe, perform mindfulness practices, and take care of their own well-being.

Evidence suggests that nurses experiencing high levels of stress at work are more likely to make medication errors, lack timely decision-making skills, and be less responsive to emergency situations (Botha et al., 2015). Using this evidence, along with data supporting the effectiveness of stress management projects on healthcare workers, policy could be implemented within the institution or at the state or federal level that promotes required stress management training for all healthcare employees. By decreasing stress levels of healthcare employees, safe patient care is promoted and errors made during patient care can be minimized.

Essential VI: Interprofessional collaboration for improving patient and population health outcomes. A DNP graduate can effectively lead interprofessional teams to enhance team functioning and maintain safe, efficient, and timely patient-centered care (AANC, 2006). DNP programs prepare graduates to facilitate the collaboration among professionals and communicate constructively as a team leader. The effective leadership capabilities of the DNP graduate are essential in order to maximize and utilize each discipline's skills and knowledge to the fullest potential (AACN, 2006).

Interprofessional collaboration was incorporated into the planning and implementation of this project. The DNP student acted as the project leader by initiating and facilitating communication among various professionals throughout the duration of the project. Communication with the nursing managers occurred by email and face-to-face meetings. The DNP student was present in the units weekly to check in on the project's progress and listen to the nurse's concerns, suggestions, and experiences.

In addition to facilitating communication, the DNP student led the project implementation by using the project team member's strengths to benefit the project's outcome. The Director of Practice, also the project's site chairperson, played an important role in obtaining the appropriate approvals within the institution. Guided by the DNP student's leadership, the nursing managers along with several PACU staff nurses played the role of improving the project's design to better fit the specific needs of the PACU.

The purpose and interventions of this project were disseminated by the DNP student to the facility Research and Innovation Council and during the institution's system-wide strategic planning meeting on *Integrated Well-Being among Co-Workers*. Members in attendance of this meeting included hospital administrators, executive board members, pastoral care directors,

medical doctors, nurses, and clinical managers. By sharing the initiatives of this project with members from various disciplines, the interventions could then be adapted to fit the needs of other departments to be implemented for a variety of populations.

There are multiple ways in which other disciplines could be incorporated into this project's interventions in the future. In the next phase of this project's implementation, members of pastoral care could offer optional mindfulness meditation sessions to be performed on the nursing units at various times throughout the day. Mindfulness and stress management educational classes could be added to this institution's continuing education curriculum to be taught by certified mindfulness instructors or the hospital educators and open to all hospital employees to attend.

Essential VII: Clinical prevention and population health for improving the nation's health. The DNP curriculum includes a heavy focus on health promotion, risk reduction, and illness prevention of the population. Population health concerns can be addressed by synthesizing concepts related to cultural diversity and population disparities to develop care models, improve health access, and address the gaps that occur within the health system (AACN, 2006). DNP graduates demonstrate knowledge regarding the control of infectious disease, disaster preparedness, and evidence-based prevention interventions to promote the best quality outcomes for their populations of focus (AACN, 2006).

After analyzing the health concerns of the nursing population, it was determined that stress and the negative effects of stress are prevalent among healthcare personnel (Duarte & Pinto-Gouveia, 2016). Encouraging nurses to perform stress reduction techniques while at work could guide the improvement of their stress management capabilities (Horner et al., 2014).

Nurses who manage stress adequately are less likely to adopt negative coping habits and more likely to develop better mental and physical health (McConachie et al., 2014).

Being unable to manage stress appropriately puts nurses at increased risk of developing personal and professional burnout, decreased job satisfaction, and mental and physical exhaustion (Duarte & Pinto-Gouveia, 2016). Nurses caring for patients under these conditions are more likely to have poor attention spans, make medication errors, miss opportunities for clinical intervention, and have delayed reactions to emerging safety threats (Lyndon, 2016; Grensman et al., 2018). Therefore, improving the stress management abilities of nurses can improve the overall quality of care provided to patients (Horner et al., 2014).

Essential VIII: Advanced nursing practice. A large part of the DNP curriculum prepares its graduates to perform their role with advanced levels of clinical judgment and assessment skills that are appropriate to their designated area of expertise (AACN, 2006). DNP graduates are educated to sustain therapeutic relationships with patients and other professionals to optimize health outcomes while also guiding and mentoring other nurses to perform at the best of their ability (AACN, 2006). Using knowledge of advanced practice nursing, a DNP graduate can translate evidence-based practice interventions in order to benefit the population that they are serving.

Although the interventions implemented for this project were designed for PACU nurses, it is possible for stress management interventions to be implemented in any setting and for any population. As a DNP graduate, one can apply the findings of this project and alter the project blueprint so that it can effectively be executed in a different setting. Even though the interventions may not follow the same design, the general concept of this project could benefit a variety of populations.

The interventions of this project will be included in a system-wide “wellbeing toolkit” that will act as a resource to be utilized by every department within the hospital system. The toolkit resource will be used to promote co-worker well-being by using innovative ways to prevent burnout and improve the work-life of healthcare workers employed by the institution. The PACU stress management project impacted only a very small sample of an otherwise larger population of nurses who experience burnout and persistent stress daily. However, the “wellbeing toolkit” initiative will make it possible for variations of this stress management project to be replicated throughout nursing departments in hospitals all over North Carolina.

Summary

The DNP Essentials were developed to provide consistency among advanced nursing doctoral programs. These 8 Essentials, or implications to practice, guided the competencies that each graduate of a DNP program would be able to exhibit. These implications and competencies were utilized and demonstrated throughout the planning, implementing, and evaluation of this quality improvement project.

Chapter Eight: Final Conclusions

A series of stress management interventions were implemented within a nursing department for an 8-week period. During that time, the nurses were encouraged to perform various stress reduction techniques. They were also asked to explore their own perceptions of stress and how they react to it. After evaluating the project's outcomes and objectives, several conclusions could be made on the project's significance, strengths, limitations, and benefits. There were also recommendations that could be made for future projects and for other populations.

Significance of Findings

The concrete data that was collected during this project suggested that the implementation of the stress management interventions reduced the stress levels of the nurses working in the PACU. However, there was other significance in the findings of this project that could not be collected through data analysis. Introducing this small population of nurses to the concepts of stress management allowed them to evaluate their own reactions and perceptions to stress. Upon being encouraged to explore and practice stress management techniques, the nurses could conclude on their own which technique worked out best for their personal needs.

Project Strength and Limitations

Several strengths and limitations were encountered throughout this project's implementation. Due to the nature and purpose of the project, participation was made voluntary, optional, and confidential. This limited the methods used to record and track which nurses participated, when, frequency, and the extent to which they performed the recommended interventions. Since this information was not tracked, the exact findings of this project could only be based off the survey results and voluntary self-reporting.

Another limitation included the lack of overall desire for the nurses to participate in an optional project. Although the benefits of the project were communicated to the nurses, there was not any way to force them to perform the recommended interventions. Participation could only be encouraged.

The actual participation in completing the surveys was also a limitation. It was unknown whether the same 30 nurses who completed the post-implementation survey were among the same 36 nurses who completed the pre-survey. Individual results could have also been identified anonymously to analyze data collected from specific nurses. These individualized results could have been further broken down to make comparisons based on the collected demographic data.

Although confidentiality was considered a limitation in the methods of data collection, it could also be considered a strength. The nurses were not forced to record or track every time that they performed an intervention so the interventions might have been performed frequently and informally. They were encouraged to practice mindfulness techniques and stress management strategies at their own discretion. This concept allowed them to explore their own personal reactions to stress and the best ways to manage those reactions.

The greatest strengths of this project were its low cost and the minimal amount of supplies it required. This aspect contributed greatly in the initial planning phase while obtaining approvals to implement within the units. It also makes the project very easy to replicate in other departments.

Project Benefits

One of the greatest benefits to implementing this project was the opportunity to introduce the concept of stress management and self-care to a vulnerable population who encounters high levels of stress daily. The job demands of healthcare often leave nurses unable to commit time to

taking care of themselves. This project granted nurses the opportunity to practice self-care and offered suggestions on how they can incorporate stress reduction techniques into their work routines. Because of the project's positive impact, the PACU leadership teams committed to continue encouraging the nurses to perform daily meditation and any other stress management techniques throughout the day.

Another benefit encountered while implementing this project was experiencing the increased support of coworker wellbeing within the institution. After concluding that this project was effective and feasible, plans were made to replicate its interventions in other departments and at other hospitals. The implementation of this project brought further attention to the concept of stress management and its importance among healthcare employees.

Recommendations for Practice

The interventions used in this project focus on encouraging self-care and stress reduction. Although the interventions for this project were implemented specifically for PACU nurses, any population can easily perform them. Stress is a concept that is found in any environment and can have negative effects on anyone unable to manage it. It is important to discuss stress reduction practices and strategies with any patient population as a nurse practitioner and care provider.

There are several plans for the continuation of this stress management project. The project's purpose and interventions were presented at strategic planning meeting on *Integrated Well-Being among Co-workers*. As discussed during this meeting, the interventions used for this project will be included in a "well-being toolkit" that will act as a centralized resource used for sharing best practices of promoting coworker well-being across an entire hospital system. This toolkit initiative is focused on actively finding innovative ways to prevent coworker burnout and improve work-life for the thousands of healthcare employees. When this toolkit initiative is

implemented, adaptations of this stress management project will be able to be replicated throughout departments in hospitals all over North Carolina.

Final Summary

Throughout the whole process of planning, implementing, and evaluating this stress management quality improvement project, a new understanding of evidence-based change was developed. With the guidance of the Stetler Model for Change and the theoretical framework of Lazarus and Folkman's Stress and Coping Theory, this project was introduced to a population and was concluded to be effective. Although high levels of stress in healthcare will always be a problem, this project had a positive impact on a nursing department and increased awareness of the benefits of improving stress management within a healthcare institution.

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Appendix A

Literature Review Matrix

Article	Level of Evidence	Data/Evidence Findings	Conclusion	Use of Evidence in EBP Project Plan
Atanes, A., Andreoni, S., Hirayama, M., ... & Demarzo, M. (2015). Mindfulness, perceived stress, and subjective well-being: A correlational study in primary care health professionals. <i>BMC complementary alternative medicine</i> , 15 (303). Doi: 10.1186/s12906-015-08230	Level VI	The study demonstrated that nurses typically have high levels of perceived stress and lower levels of mindfulness.	Health care professionals (including family physicians, registered nurses, nursing assistants, and community health workers) report high levels of stress and burnout related to job strain.	The PSS and the MAAS can be used together to compare the relationship between perceived stress and mindfulness of a sample.
Bodenheimer, T. & Sinsky, C. (2014). From triple to quadruple aim: Care of the patient requires care of the provider. <i>Annals of family medicine</i> , 12(6), 573-576. Doi: 10.1370/afm.1713	Level VII		By introducing the additional goal of improving the work-life experience of care providers to the already existing goals of the Triple Aim, the “Quadruple Aim” was developed	Concentrating only on the goals set by the Triple Aim, caused a lack of attention paid to health care providers themselves.
Botha E, Gwin T, & Purpora C. (2015). The effectiveness of mindfulness-based programs in reducing stress experienced by nurses in adult hospital settings: A systematic review of	Level II	43% of nurses who reported burnout also indicated their intent to leave their present institution. An increase of one patient per nurse’s assignment	Mindfulness-based cognitive therapy has been shown with moderate evidence to demonstrate improvement in depression	When considering possible interventions in the workplace, stress management techniques become a popular choice due to its accessibility, feasibility, and the capability of targeting multiple people at a time. Mindfulness-based interventions

quantitative evidence protocol. <i>Database of systematic reviews and implementation reports</i> , 13 (10), 21-9. doi: 10.11124/jbisrir-2015-2380		increased the prevalence of burnout by 23%		can enhance a nurse's capacity to focus and concentrate by increasing present moment awareness
Duarte, J. & Pinto-Gouveia, J. (2016). Effectiveness of a mindfulness-based intervention on oncology nurses' burnout and compassion fatigue symptoms: A non-randomized study. <i>International journal of nursing students</i> , 64, 98-107. Doi: 10.1016/j.ijnurstu.2016.10.002	Level III	Mindfulness-based interventions may be effective in reducing oncology nurses' psychological symptoms and improve their overall well-being	Mindfulness could be effective in reducing stress but controlled studies done with healthcare professionals, especially nurses are limited.	Burnout is highly prevalent in nurses and can be as high as 40%. Mindfulness practice helps cultivate healthier and adaptive ways of responding to stress, rather than habitual and often maladaptive reactions.
Gauthier, T., Meyer, R., Grefe, D., & Gold, J. (2015). An on-the-job mindfulness-based intervention for pediatric ICU nurses: A pilot. <i>Journal of pediatric nursing</i> , 30 (2), 402-409. Doi: 10.1016/j.pedn.2014.10.005	Level IV	Effective in improving stress reduction and increasing self-awareness of negative emotions. Used Mindfulness Awareness Scale to measure outcomes.	Intensive care units are high-intensity settings. The traditional MBSR model of 2.5-hour weekly sessions is not feasible for nurse department settings when nurses are population of focus.	Traditional MBSR model altered to implement 5-minute guided mindfulness meditation before every shift.
Grensman, A., Acharya, B., Wandell, P., Nilsson, G., Falkenberg, T., Sundin, O., & Werner, S. (2018).	Level II	Definition of burnout and what it could cost for a	Treatment of burnout with yoga, cognitive behavioral therapy, or mindfulness behavior therapy had equal	Mindfulness behavioral-cognitive therapy can be utilized as treatment or prevention of burnout. Main areas affected by

Effectiveness of traditional yoga, mindfulness-based cognitive therapy, and cognitive behavioral therapy on health-related quality of life: A randomized controlled trial on patients on sick leave because of burnout. <i>BMC complementary and alternative medicine</i> , 18 (1). doi: 10.1186/s1290601821419		company; treatments used for burnout	effects on health-related quality of life and the main areas affected in burnout. This indicates that all methods can be used as effective treatment and prevention of burnout, and to improve health-related quality of life.	burnout – emotional well-being, cognitive function, sleep, and indirectly – physical well-being.
Horner, J., Piercy, B., Eure, L., & Woodard, E. (2014). A pilot study to evaluate mindfulness as a strategy to improve inpatient nurse and patient experiences. <i>Applied nursing research</i> , 27 (3), 198-201. Doi: 10.1016/j.apnr.2014.01.003	Level III	Results of this pilot study support the potential effectiveness of mindfulness training to reduce levels of stress in nursing staff.	In order to fully understand the exact impact of mindfulness on patient interactions and nursing stress levels, the sample size should have been larger and the intervention should have been longer.	MAAS demonstrated increase in mindfulness of intervention group that participated altered MBSR training which consisted of 10 weeks of 30 minute classes focusing on mindfulness techniques. Material was reviewed in email form and through visual reminders posted throughout the unit.
Khoury, B., Lecomte, T., Gaudiano, B., & Paquin, K. (2013). Mindfulness interventions for psychosis: a meta-analysis. <i>Schizophrenia research</i> , 150 (1), 176-84. Doi:10.1016/j.schres.2013.07.055	Level I	There are various categories of mindfulness interventions based on the strategy that they utilize	Mindfulness interventions are efficient in the management of psychosis and schizophrenia.	Meditation is a popular and efficient mindfulness intervention, it helps users regulate emotions and reduce mal-adaptive emotional responses. Mindfulness-based stress reduction model is an 8 week mindfulness training model proved effective in increasing self-awareness,

				decreasing prior judgements to situations, and improving stress reduction strategies.
Khoury, B., Sharma, M., Rush, S., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. <i>Journal of psychosomatic research</i> , 78 (6), 519-528. Doi: 10.1016/j.jpsychores.2015.03.009	Level I	The purpose of the MBSR model is to teach healthy individuals how to observe stressful situations in a neutral and accepting manner.	MBSR is moderately effective in reducing stress, depression, anxiety, and distress in healthy individuals	The Mindfulness-based Stress Reduction (MBSR) model uses mindfulness practices, meditation, self-awareness, and yoga. The standard MBSR 8-week curriculum includes weekly 2-hour group sessions with an additional 6-hour group retreat.
Kristofferzon, M., Engstrom, M., & Nilsson, A. (2018). Coping mediates the relationship sense of coherence and mental quality of life in patients with chronic illness: A cross-sectional study. <i>Quality of life research</i> , 27 (7), 1855-1863. Doi: 10.1007/s11136-018-1845-0	Level II	Coping with stress uses both cognitive and behavioral efforts of the individual	Coping strategies that are considered the most effective by the individual are the most important in managing stress	Emotion-focused coping is used when persons try to regulate emotions the situation causes (relaxation, meditation, or avoiding information) and is used when a person needs to avoid or escape from a situation. Problem-focused coping refers to strategies a person uses to solve or alter the stressful situation or themselves (planning what to do or seeking information). These strategies are used when they feel they have the ability to manage the situation
Lyndon, A. (2016). Perspectives on safety: Burnout among health professionals and its effect	Level VII	Providers that suffer from burnout lack engagement and see patients as objects	Link is unknown whether units with higher prevalence of burnout encounter more patient mortality or if units	Burnout caused by stress can impact patient care and puts nurses at risk for creating errors

on patient safety. <i>Patient safety network: Agency for healthcare research and quality</i> , retrieved from https://psnet.ahrq.gov/perspectives/perspective/190/burnout-among-health-professionals-and-its-effect-on-patient-safety		which jeopardizes patient safety	with higher patient mortality have higher prevalence of provider burnout	Triple Aim – improving patient experience of care, improving the health of the population, and reducing the per-capita costs – are more likely to be achieved when the care providers are satisfied and not burnt out.
McConachie DA, McKenzie K, Morris PG, Walley RM. Acceptance and mindfulness-based stress management for support staff caring for individuals with intellectual disabilities. <i>Res Dev Disabil.</i> 2014 Jun;35(6):1216-27. doi: 10.1016/j.ridd.2014.03.005	Level II	Working in stressful environments can lead to mal-adaptive coping strategies	Stress management techniques like mindfulness demonstrated improvement in reducing stress	Stress can affect the immune system function and is also linked to chronic diseases such as cancer, diabetes, and cardiovascular disease
Melnyk, B. (2017). Models to guide the implementation and sustainability of evidence-based practice: A call to action for further use and research. <i>Worldviews on evidence-based nursing</i> , 14 (4). Doi: 10.1111/wvn.12246	Level I		The Stetler model was originally derived from a research model and promotes the utilization of research findings into safe, effective, and sustainable nursing practice.	The Stetler Model is a conceptual model used to guide implementation of evidence-based practice interventions into the clinical setting.
Ponte, P. & Koppel, P. (2015). Cultivating mindfulness to enhance nursing practice. <i>American</i>	Level III	Mindfulness-based practices have been growing in popularity as	More research is needed to determine the optimal practices and the quantity and quality of practice required to	Mindfulness can help reduce psychological stress and burnout among nurses and other health care practitioners. Helpful

journal of nursing, 115 (6), 48-55. Doi: 10.1097/01.NAJ.0000466321.46439.17		complementary treatments for many health conditions.	create changes in nurse stress responses and overall well-being	practices include meditation, mindful breathing and visualization, walking, yoga, and tai chi
Rushton, C., Batcheller, J., Schroeder, K., & Donohue, P. (2015). Burnout and resilience among nurses practicing in high-intensity settings. <i>American journal of critical care, 24</i> (5), 412-420. Doi: 10.4037/ajcc2015291	Level II	High stress of nursing can lead to substance abuse, depression, decreased job satisfaction, disengagement and reduced loyalty to institution	These nurses are more likely to leave nursing practice altogether due to the high demands of their role	Burnout rates for nurses are significantly higher for nurses working in a hospital setting opposed to other nursing environments; with critical care nursing being at the highest risk for burnout.
Steinberg, B., Klatt, M., & Duchemin, A. (2017). Feasibility of a mindfulness-based intervention for surgical intensive care unit personnel. <i>American journal of critical care, 26</i> (1), 10-18. Doi: 10.4037/ajcc2017444	Level II	Associations have been found between workplace stressors and poor physical and mental health of nurses	Higher stress environments correlate with poorer performance. Burnout has been associated with below satisfactory patient care practices.	Workplace programs that address coping with stress have been shown to reduce illness and favorably affect psychological and physical symptoms of stress, such as high blood pressure, and can improve performance and decrease employee turnover.
Taylor, J. (2015). Psychometric analysis of the ten-item perceived stress scale. <i>Psychological assessment, 27</i> (1), 90-101. doi:10.1037/a0038100	Level I	PSS is considered reliable instrument used in sample of postpartum patients using antidepressant	PSS is popular instrument tool used to measure perceived stress	The perceived stress scale has been demonstrated to be a reliable measurement tool to demonstrate the impact of an intervention on the perception of stress.
Trybou, J., Germonpre, S., Janssens, H., Casini, A., Braeckman, L., De Bacquer, D., & Clays, E.	Level IV	An employee functions at their highest potential when there is a	The demand-control-support model states the demands of an individual's job and the control that the individual has	By being able to manage the daily stress of a work environment, employees will be more likely to achieve the

(2014). Job-related stress and sickness absence among Belgian nurses: A prospective study. <i>Journal of nursing scholarship</i> , 46 (4), 292-301.		balance between their job's demand and the control that they have over it.	over their role can impact their well-being and co-worker satisfaction	desired balance between the demands of their job and their control over their assigned tasks
Vahedian-Azimi, A., Hajiesmaeili, M., ... Miller, A. (2017). Effects of stress on critical care nurses: A national cross-sectional study. <i>Journal of intensive care medicine</i> , doi: 10.1177/0885066617696853	Level II	Those experiencing burnout have drained their physical and emotional resources in attempting to cope with the stressors present in the work environment.	Efforts to decrease workplace stress of ICU nurses by focusing on facilitating peer collaboration, improving resource availability, and staffing ratios are likely to show the greatest impact on stress levels.	Burnout is the inability to cope with stressors over an extended period of time where the body's defense system is depleted leading to exhaustion. Burnout is positively associated with higher fast-food consumption, infrequent exercise, higher alcohol consumption, and more frequent painkiller use.

Appendix B

Perceived Stress Scale

PERCEIVED STRESS SCALE

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 by circling *how often* you felt or thought a certain way.

Name _____ Date _____

Age _____ Gender (*Circle*): **M F** Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- | | | | | | |
|--|---|---|---|---|---|
| 1. In the last month, how often have you been upset because of something that happened unexpectedly? | 0 | 1 | 2 | 3 | 4 |
| 2. In the last month, how often have you felt that you were unable to control the important things in your life? | 0 | 1 | 2 | 3 | 4 |
| 3. In the last month, how often have you felt nervous and "stressed"? | 0 | 1 | 2 | 3 | 4 |
| 4. In the last month, how often have you felt confident about your ability to handle your personal problems? | 0 | 1 | 2 | 3 | 4 |
| 5. In the last month, how often have you felt that things were going your way? | 0 | 1 | 2 | 3 | 4 |
| 6. In the last month, how often have you found that you could not cope with all the things that you had to do? | 0 | 1 | 2 | 3 | 4 |
| 7. In the last month, how often have you been able to control irritations in your life? | 0 | 1 | 2 | 3 | 4 |
| 8. In the last month, how often have you felt that you were on top of things? | 0 | 1 | 2 | 3 | 4 |
| 9. In the last month, how often have you been angered because of things that were outside of your control? | 0 | 1 | 2 | 3 | 4 |
| 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? | 0 | 1 | 2 | 3 | 4 |

Appendix C

Mindful Attention Awareness Scale

	1 Almost Always	2 Very Frequently	3 Somewhat Frequently	4 Somewhat Infrequently	5 Very Infrequently	6 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

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 of the 15 items. Higher scores reflect higher levels of dispositional mindfulness.

Appendix D

Letter of Organizational Support



September 28, 2018

Jessica Selvaggio, BSN, RN
East Carolina University

Dear Ms. Selvaggio:

Congratulations on making progress towards the Doctorate of Nursing Practice at East Carolina University.

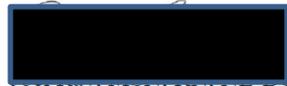
On behalf of Patient Care Services at [REDACTED] I am providing you with permission to conduct a quality improvement project for Post-Anesthesia Care that aims to improve stress management of the nursing staff through a mindfulness education activity.

I understand the objective of the study is:
Implement stress management techniques, such as MBCT, to reduce the negative perceptions of stress and increase the mindfulness of the nurses working in a PACU.

I understand the quality improvement project will include the following:
(a) Measure before and after variables using Perceived Stress Scale and Mindfulness Attention Awareness Scale in PACU RN staff.
(b) Provide education to the PACU RN staff.
(c) Report your findings to the PACU Leadership team.

Please continue to work closely with Dr. Julia Aucoin for the details of project execution. Should you require any further information, please do not hesitate to contact me. You may use the ECU IRB only and are not required to submit to UNC IRB. Upon completion of the study, I will enjoy reading the project report.

Sincerely,



Vice President Patient Care Services and Chief Nursing Officer

chosen for excellence

Appendix E

Cost Analysis

<i>Item</i>	<i>Cost per Item</i>	<i>Number of Items</i>	<i>Total Cost</i>
Box used for meditation items	\$4	2	\$8
Daily Mindfulness book placed in Meditation box and in staff break room	\$5	4	\$20
1-minute timer	\$0.25	4	\$1
Stress ball	\$0.25	4	\$1
Headphones	\$6	2	\$12
TOTAL			\$42

Appendix F

Pre-Implementation Demographic Survey Questions



How old are you?

- 20-29
- 30-39
- 40-49
- 50-59
- 60+

How long have you been a practicing Registered Nurse?

- 0-5 years
- 5-10 years
- 10-15 years
- 15-20 years
- 20+ years



Appendix G

Permission to use the Perceived Stress Scale

For reprints, please contact:

Sheldon Cohen, Ph.D.

Department of Psychology
C
4
I



[Psychology Department Faculty Page](#)

Note that many articles, chapters, and scales are available online in the "Vita" section of this website.

Permissions

Permission for use of scales is not necessary when use is for academic research or educational purposes.

If you need written permission, please write the letter with a line for a signature, along with a self-addressed envelope.

Appendix H

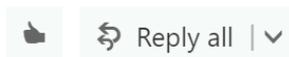
Permission to use the Mindful Attention Awareness Scale



Kirk Warren Brown [REDACTED]

Yesterday, 10:07 AM

Selvaggio, Jessica Louise ↕



Yes you are welcome to use the MAAS for your study. You can find the scale, along with background normative and other information, on the 'Lab > Tools for Researchers' page of my Lab website, the link for which is below. The 'Publications' page has papers related to the validation of the MAAS. See especially Brown and Ryan (2003).

All the best with your research,

Kirk

Kirk Warren Brown PhD
Associate Professor • Social Psychology and Health Psychology
Director • COBE Contemplative Science and Education Core
Department of Psychology • Virginia Commonwealth University

[REDACTED]

Senior Editor, [Oxford Handbook of Hypo-egoic Phenomena \(2016\)](#). Oxford U Press.
Senior Editor, [Handbook of Mindfulness \(2015\)](#). Guilford Press.
Academic Editor, PLOS ONE

Appendix I

Pre-Implementation and Post-Implementation Qualtrics Survey



In the last month, How often have you...

been upset because of something that happened unexpectedly?

In the last month, How often have you...

felt that you were unable to control the important things in your life?

In the last month, How often have you...

felt nervous or "stressed"?

- Never
- Almost Never
- Sometimes
- Fairly Often
- Very Often

In the last month, How often have you...

felt confident about your ability to handle your personal problems?

In the last month, How often have you...

felt that things were going your way?

In the last month, How often have you...

found that you could not cope with all the things that you had to do?

In the last month, How often have you...

been able to control irritations in your life?

In the last month, How often have you...

felt that you were on top of things?

In the last month, How often have you...

been angered because of things that were outside your control?

In the last month, How often have you...

felt difficulties were piling up so high that you could not overcome them?

Appendix J

IRB Evaluation Self-Certification Tool

Quality Improvement/Program Evaluation Self-Certification Tool

Purpose:

Projects that do not meet the federal definition of human research pursuant to 45 CFR 46 do not require IRB review. This tool was developed to assist in the determination of when a project falls outside of the IRB's purview.

Instructions:

Please complete the requested project information, as this document may be used for documentation that IRB review is not required. Select the appropriate answers to each question in the order they appear below. Additional questions may appear based on your answers. If you do not receive a STOP HERE message, the form may be printed as certification that the project is "not research", and does not require IRB review. The IRB will not review your responses as part of the self-certification process.

Name of Project Leader:

Project Title:

Brief description of Project/Goals:

The purpose of this project is to improve the stress management abilities of the nurses working in a post-anesthesia care unit (PACU). Stress reduction techniques in the form of mindfulness-based cognitive therapy (MBCT) will be implemented in the PACU. MBCT utilizes the concepts of mindfulness, relaxation, and self-awareness to regulate emotions and reduce negative emotional responses to stress. The PACU nurses will be educated regarding implementation with an initial educational presentation during a quarterly staff meeting. Weekly emails will be sent that will include mindfulness focus points and practices. The nurses will also be encouraged to perform a 1-minute mindfulness guided meditation before every shift for an 8-week period. The pre- and post-implementation results will be compared using the Perceived Stress Scale and the Mindful Attention Awareness Scale. The nurses will complete these evaluation tools prior to attending the educational presentation and after participating in the mindfulness implementation. The goal of the project is to demonstrate that the PACU nurses' overall mindfulness is increased and their stress perception is reduced after incorporating MBCT into their daily work routines.

Will the project involve testing an experimental drug, device (including medical software or assays), or biologic?

Yes

No

Has the project received funding (e.g. federal, industry) to be conducted as a human subject research study?

Yes

No

Is this a multi-site project (e.g. there is a coordinating or lead center, more than one site participating, and/or a study-wide protocol)?

Yes

No

Is this a systematic investigation designed with the intent to contribute to generalizable knowledge (e.g. testing a hypothesis; randomization of subjects; comparison of case vs. control; observational research; comparative effectiveness research; or comparable criteria in alternative research paradigms)?

Yes

No

Will the results of the project be published, presented or disseminated outside of the institution or program conducting it?

Yes

No

Would the project occur regardless of whether individuals conducting it may benefit professionally from it?

Yes

No

Does the project involve "no more than minimal risk" procedures (meaning the probability and magnitude of harm or discomfort anticipated are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests)?

Yes

No

Is the project intended to improve or evaluate the practice or process within a particular institution or a specific program, and falls under well-accepted care practices/guidelines?

Yes

No

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project. 10/12/2018
