Boise State University
ScholarWorks

Doctor of Nursing Practice Projects | School of Nursing

Spring 2022

Mindfulness-Based Stress Reduction to Decrease Burnout in Emergency Nurses: A Quality Improvement Project at an Academic Medical Center

Desireé M. McCue
Boise State University

It indeed took both resilience or grit and the support of my faculty, colleagues, and family to complete this work. I want to thank my husband Terry and daughter Shaylee for their love, encouragement, and support. I also want to express my sincere gratitude to Dr. Teresa Serratt for her guidance and wisdom when I most needed it. Finally, I dedicate this to all the nurses who give of themselves to improve the lives of others.

Mindfulness-Based Stress Reduction to Decrease Burnout in Emergency Nurses: A Quality Improvement Project at an Academic Medical Center

A Scholarly Project Presented to the Faculty of the School of Nursing

Boise State University

In partial fulfillment of the requirements

for the degree of Doctor of Nursing Practice

By

Desireé M McCue

Committee Chair (Faculty Mentor): Teresa Serratt, Ph.D. R.N.

Committee Member (Second Reader): Deena Rauch, D.N.P., R.N., NEA-BC, CENP, EBP (CH), FACHE

Abstract

Nursing burnout, categorized by increased emotional exhaustion (EE), depersonalization (DE), or decreased personal achievement (PA), is rising in the United States. Emergency Department (ED) nurses at an academic medical center in the western United States experience burnout related to workplace violence and trauma exposure exacerbated by a global pandemic. Burnout can lead to adverse health impacts for nurses, increased institutional costs, and adverse patient outcomes.

Improving mindfulness or awareness of the present can reduce burnout in ED nurses. A mindfulness pilot project was conducted with staff nurses (n=20) and nurse leaders (n=4) in the ED. Participants attended Mindfulness-Based Stress Reduction (MBSR) classes for eight weeks and practiced mindfulness outside of class. The impact of MBSR was measured before and after the pilot using the Five-Facet Mindfulness Questionnaire Short Form and Maslach Burnout Inventory for Medical Personnel. Overall, ED staff nurses experienced an 11% improvement in mindfulness, a 1% decrease in EE, a 6% decrease in DE, and a 10% increase in PA. ED nurse leaders experienced a 7% improvement in mindfulness, 14% reduction in EE, 36% decrease in DE, and 4% improvement in PA.

This pilot project suggests that MBSR is an effective way to increase mindfulness and reduce burnout. Engagement with MBSR classes and participation in mindfulness activities outside of class improved mindfulness and reduced burnout among participants. Due to the promising outcome, this work is recommended to be repeated in the ED setting and expanded to other high-stress environments.

Keywords: burnout, emergency department nurses, pandemic, workplace violence, mindfulness, MBSR, stress reduction

Table of Contents

Problem Description 6
History of Local Problem 8
Significance of the Local Problem 9
Available Knowledge 10
Literature Review 11
Synthesis of Evidence 11
Rationale 12
Theoretical Model 13
Project Framework 14
Specific Aims 15
Context 15
Local Care Environment 16
Relevant Elements of Project Setting 17
Convergence with Organizational Values and Needs Assessment 18
Evaluating Readiness for Change 20
Strengths and Weaknesses 20
Interventions 21
Logic Model Narrative 22
Correlation of Intervention with Theoretical Model Elements and Phases 24
Timeline 25
Measures 25
Analysis 27
Ethical Considerations 27
Conflicts of Interest 28
Biases and Threats to Quality 28
IRB Application 29
Budget 29
Expense Report 30
Expenses in Year Two and Three of the Project 30
Operating Income 31

Results 31
Project Steps, Process Measures and Outcomes 31
Contextual Elements Impact on Interventions and Outcomes 33
Unintended Consequences 36
Missing Data 37
Actual Project Revenues and Expenses 37
Summary 38
Interpretation 38
Associations between Interventions and Outcomes 40
Comparison of Results with Previous Findings 41
Impact of Project on People and Systems 42
Differences in Observed versus Expected Outcomes 43
Costs and Strategic Tradeoffs 44
Policy Implications 46
Limitations 46
Conclusions 46
Usefulness of the Work 47
Sustainability 47
Potential for Spread 48
Next Steps and Dissemination 49
References 51
Appendix A 64
Appendix B 105
Appendix C 106
Appendix D 107
Appendix E 112
Appendix F 115
Appendix G 121
Appendix H 128
Appendix I 130
Appendix J 131
Appendix K 132
Appendix L 134

Appendix M 135
Appendix N 138
Appendix O 141
Appendix P 144
Appendix Q 145
Appendix R 146
Appendix S 147
Appendix T 148
Appendix U 149
Appendix V 150
Appendix W 151
Appendix X 152

Decreasing Burnout in Emergency Nurses

As nursing professionals' demands increase, there is evidence that nearly 70% experience burnout (Masterson, 2017). Burnout in caregivers is characterized by emotional exhaustion (EE), depersonalization (DE), and decreased personal accomplishment (PA) resulting from prolonged occupational stress (Maslach, 1982). The result of burnout is emotional detachment leading to adverse health impacts, turnover, and decreased productivity that contribute to adverse patient outcomes (Drybre et al., 2017; Maslach, 1982). Emergency nurses are more likely to experience burnout than their inpatient peers (Hooper et al., 2010; Schooley et al., 2016). Interventions to reduce burnout in Emergency Department (ED) nurses are needed to maintain a healthy workforce and provide consistent quality patient care.

Problem Description

Problem Background

An average of 25% of ED nurses experience burnout through an accumulation of stress (Adriaenssens, De Gucht, & Maes, 2012). Although these tensions may be personal, the emergency environment provides a unique set of occupational stressors contributing to nursing burnout. ED personnel are regularly exposed to workplace violence, patient overcrowding, and traumatic events (Adriaenssens, De Gucht, & Maes, 2015; Virkstis, Herleth, & Langr, 2018). Over time these stressors lead to burnout.

One significant factor contributing to burnout among nurses is exposure to violence (Virkstis, Herleth, & Langr, 2018). Healthcare violence in the United States (US) is increasing, with nurses experiencing violence exposure three times more than all other occupations (Dressner & Kissinger, 2018). A study of 106 US hospitals established that nurses suffered injuries resulting from visitor-perpetrated violence at a rate of 40%. In contrast, other healthcare

workers were injured just over 30% of the time (Groenewold et al., 2018). ED nurses in particular experience more physical and verbal aggression than nurses in medical-surgical settings (Adriaenssens et al., 2012; Estryn-Behar et al., 2008).

Exposure to severe injury or death in patients is also a contributor to psychological stress and burnout. Nurses in the ED are exposed regularly to patient death, traumatic injury, severe illness, and suicide (Adriaenssens, De Gucht, & Maes, 2012). Lack of time for recovery, hectic work situations, ineffective coping, lack of social support, and lack of supervisor advocacy can aggravate the impacts of stressful events (Adriaenssens et al., 2012; Masterson, 2017; Virkstis, Herleth, & Langr, 2018)

The health impacts of burnout are significant. An appraisal of available evidence conducted by Adriaenssens, De Gucht, & Maes (2012) found that nearly 9% of ED nurses exposed to traumatic events at work experience Post Traumatic Stress Disorder (PTSD) symptoms, and nearly a third of exposed nurses have psychological distress. Exposed nurses may also have suppressed immune function related to the traumatic event's impact (Gates et al., 2011). These health impacts could increase absenteeism and shorten the nurses' careers or life-expectancy (Sallon et al., 2017).

In addition to health complaints, burnout impacts job-related performance. Nurses may have an increased desire to leave their job due to stress and burnout (Estryn-Behar et al., 2008; Laeeque et al., 2018). Furthermore, ED nurses describe reduced productivity and an inability to deliver effective care after traumatic events (Wolf et al., 2014). In a US survey, 37% of respondents reported decreased empathy for patients and families, reduced productivity, low concentration, difficulty regulating emotions, and decreased focus at work due to psychological trauma (Gates et al., 2011). Each of these conditions could negatively impact patient care. The

impacts on the quality of care and wellbeing of these healthcare professionals could profoundly alter the care environment's safety culture.

Local Problem

Registered Nurses (RNs) in the EDs at an academic medical center in the western United States experience burnout, job dissatisfaction, and intent to leave Emergency Medicine related to direct and vicarious trauma associated with violence, traumatic patient events, and overcrowding, exacerbated by the COVID-19 pandemic. Nurses experiencing psychological effects of these workplace stressors may struggle to provide quality, safe, care despite a desire to work at the top of their abilities, impacting patient satisfaction and outcomes.

History of Local Problem

This hospital's efforts to quell the most frequent cause of workplace stress and burnout resulted from staff members reporting patient or visitor violence exposure in 2015. As a nursing leader in this ED, the Doctor of Nursing Practice (DNP) student lead the department in actions to improve safety. Over 100 interventions occurred over the following five years to quell violence in the workplace. Violence prevention education, care model changes, physical environment modifications, and increased security presence improved the perception of safety among staff members, and decreased nurse injury frequency and severity. However, reports of violence in the ED continued to increase. Factors presenting in patients or family members such as drugs, alcohol, mental illness, histories of violence, anxiety, and lack of control can make the environment unpredictable and lead to acts of violence (Vrablik, 2019; Wolf, Delao, & Perhats, 2014). The inability to completely eliminate violence impacted the experience of stress and burnout in ED RNs.

Nurses were also frequently exposed to patients experiencing traumatic injuries, devastating illnesses, and suicide attempts in the ED. Interventions to reduce the impact of psychological stress following traumatic patient events were employed at this hospital. Following a reported traumatic event, managers followed-up with employees to assess resource requirements. Employees also participated in Critical Incident Stress Debriefing through centralized hospital resources. These sessions allowed members of the care team to debrief the incident with the aid of a facilitator. Additionally, peer supporters were available to talk individually with team members within 48 hours of an event. Other wellness programs offered through the hospital included paid counseling sessions and a counseling smartphone application allowing staff members to text with a mental health professional. The hospital also provided Schwartz Rounds to review complex interdisciplinary cases. Despite these resources, psychological stress and burnout were highly prevalent in the ED as evidenced by data from exit interviews and workplace safety survey results.

Significance of the Local Problem

The effects of burnout related to workplace violence, exposure to vicarious patient trauma, and the COVID-19 pandemic continued to impact hospital operations. ED turnover increased from eight to twenty-four percent over the two and a half years prior to project implementation. Exit interviews revealed that nurses were choosing to leave the department, and often the specialty of Emergency Medicine, due to psychological distress.

The organization was also impacted directly by the disengagement of ED RNs as a result of burnout. Engagement can be described as a positive feeling related to work including investment and dedication to the organization (Hetzel-Riggin, et al., 2020). As a Magnet hospital, nurse engagement and satisfaction are imperative. Magnet hospitals pride themselves in

attracting nurses to the positive culture created at the organization. A hospital without nurse engagement may quickly become a less desirable place to work. To have a site validation visit to renew Magnet status the organization must perform better than the mean in three of four nursing engagement categories (Graystone, 2018). At the time of this intervention the Emergency Departments at this hospital scored below the mean regarding engagement, threatening Magnet recertification.

Available Knowledge

To holistically address the impact of burnout related to workplace stress, consideration must be taken of the ability of the nurse to cope after a traumatic event. In her Nurse as a Wounded-Healer Model, Marie Conti-O'Hare (2004) emphasizes the need for effective coping following a traumatic event. When a nurse recognizes the psychological pain experienced and acknowledges it, they can heal and remain a capable provider. A nurse who is unable to identify trauma and how it impacts them are unable to fully recover. Eventually, their unresolved wounds lead them to ineffective coping mechanisms impacting their health as well as the care environment (Christie & Jones, 2014; Conti-O'Hare, 2004).

To evaluate available evidence guiding interventions aimed at reducing burnout in ED RNs by helping them acknowledge and cope with trauma, a literature search was conducted. The searchable question was framed in the format of PICO (population, intervention, comparator, and intervention). The PICO format (P =first responders or nurses or social services workers; I = resilience interventions; C= not applicable; O = reduce the negative impacts of witnessing or experiencing workplace violence, trauma or burnout was used to develop the question, "In first responders, nurses, or social service workers exposed to trauma what interventions reduce burnout?"

Literature Review

The databases CINAHL, Psych Info, JSTOR, ProQuest, and Cochrane library were searched using the following keywords: first responder(s), social service(s), nurse(s), resilience training, improved coping, reduced workplace stress, reduced burnout, not students. Studies in English written over the last ten years (2010 to present) with a focus on adult subjects in careers with high occupational stress were included for review. Studies containing pharmacologic or paraprofessional interventions such as psychotherapy were excluded. Studies were also excluded if they lacked a treatment, didn't include interventions, had small samples (less than thirty participants), focused on military personnel or students. The titles and abstracts from twenty-four articles were returned and reviewed, with a total of nine relevant to the identified problem. The search revealed evidence highly favoring Mindfulness-Based Stress Reduction (MBSR).

Synthesis of Evidence

The articles resulting from the literature searches were appraised using John's Hopkins Evidence-Based Practice Appraisal Tools (Dang & Dearholt, 2018). The quality of the literature is categorized A through C, with C being the most inferior quality. The literature search yielded four articles of Level I evidence, average quality of B (Arnetz et al., 2013; Chitra & Karunanidhi, 2018; Luken & Sammons, 2016; Wei, Ji, Li, & Zhang, 2017). Four additional articles were Level II evidence, average quality of B (Au et al, 2018; Ghawadra et al., 2019; Pérez-Fuentes et al., 2020; Sallon et al., 2017). One remaining article identified in the search was Level III evidence, quality C (Lamothe et al., 2016).

The resulting evidence found Mindfulness Based-Stress Reduction or similar variations of mindfulness training reduced burnout related workplace stress in occupations with high trauma exposure (Ghawadra et al., 2019; Lamothe et al., 2016; Luken & Sammons, 2016; Pérez-

Fuentes et al., 2020; Sallon et al., 2017). A related program using guided imagery improved psychological and physical responses to stress after ten ninety-minute sessions (Arnetz et al., 2013).

Mindfulness-Based Stress Reduction is a class that teaches participants to focus on the present moment. The class combines techniques such as yoga, meditation, and observing emotions without judgement. Participants can apply this technique to various situations to improve their well-being, perception of pain, coping, as well as reduce stress and burnout (Kabat-Zinn, 1982; Ludwig & Kabat-Zinn, 2008). The traditional MBSR class consists of eight weekly two and a half hour classes and one seven-and-a-half-hour seminar. The recommended homework is 45 to 60 minutes of daily meditation practice during the eight-week intervention period (University of Massachusetts Memorial Medical Center, 2020).

Traditional MBSR was used in the studies by Ghawadra et al., (2019), Luken and Sammons (2016), and Perez-Fuentes and colleagues (2020). Although MBSR is costly, a conservative estimate of twenty nurses participating in the intervention at an average of 50 dollars per hour cost the institution $27,000 in education time, it was supported by the Chief Nursing Executive. The impact of MBSR with 20 participants would be 16.5% of the total ED staff nurses (125). Given the evidence demonstrated in the literature, this pilot intervention focused on MBSR for staff nurses and nurse leaders, teaching them to cope with and process workplace stress in a different light. See Appendix A: Literature Summary Table.

Rationale

Creating structure and processes at the commencement of the project helps to create a framework to organize knowledge, influence outcomes, and communicate clearly with stakeholders. The Logic Model framework adapted from the WK Kellogg Foundation (2004)

provides clear outcomes, resources and processes. Combining the Logic Model with Resilience Theory, derived from social work (Van Breda, 2018) completes a framework upon which to build interventions and create a culture in which ED RNs may learn new coping skills to increase their resilience after experiencing unavoidable workplace stressors.

Theoretical Model

The theoretical framework used to guide development of this project is Resilience Theory. The underlying assumptions and fundamental concepts of this theory are that more resilient people can better recover after an adverse event. They may achieve positive outcomes despite adversity (Van Breda, 2018). One of the core principles is that adversity and positivity are learnable. People learn to adapt to stress and have subsequent stress responses that are more effective (Southwick et al., 2014). Learning to adapt can decrease burnout (Wei et al., 2017).

Although the precise definition can be debated, resilience is the ability to thrive despite vulnerability and adversity (Mastren & Monn, 2015; Southwick et al., 2014; Van Breda, 2018). Vulnerability and adversity can lead to unwanted outcomes, however, not all individuals who face the same adversity are negatively impacted in the long term. In fact, there are some who are even more high functioning after an untoward experience. This phenomenon can be called hardiness or resilience (Van Breda, 2018).

According to Van Breda (2018), there are three major components that make up resilience. First there is the experience of adversity. Adversity may be chronic or acute in nature. Chronic adversity may extend for entire lifetime such as poverty (Van Breda, 2018) or many traumatic events experienced and witnessed in the ED over the course of a nursing career. Acute adversity is usually of limited duration, such as an accident (Van Breda, 2018), or a single episode of violence in the ED. Next is the mediating impact of adversity, which may come

naturally or as a part of a learned behavior (Mastren & Monn, 2015). Mediation of adversity is a combination of learned skills, innate abilities, and the application of both (Mastren, 2020).

Finally, the outcome or level of resilience is obtained. The ability to achieve hardiness, grit, or resilience likely exists on a spectrum (Van Breda, 2018). At times depending on the circumstances a person may cope better than other times (Mastren & Monn, 2015). This favors having more than one option to mediate coping that an individual can pick or choose from depending on what works for them. Although a complete model could not be found to represent Resilience Theory, you can find a pictoral representation of this theory in Appendix B.

Resilience theory aligns well with the project's overarching goal of reducing burnout in ED nurses because the literature shows that nurses exposed to workplace stressors who are hardy or resilient, have fewer negative impacts from the event (Adriaenssens, De Gucht, & Maes, 2015; Park, 2017). Improving resilience in ED RNs may decrease burnout and improve the ability to cope with traumatic events in the future, preventing future burnout. MBSR offers a variety of techniques to reframe events and process adversity.

Project Framework

The role of the Logic Model in project development is to plan for project success. Although most models for project development address keys for success, such as stakeholders, required resources, outcomes, and objectives (Moran, Burson, & Conrad, 2017), the Logic Model builds upon intended outcomes. By shifting the focus to outcomes, and not focusing solely on inputs and interventions, the Logic Model defines success. This can help participants and planners gain clarity about the project focus and allows project managers to speak to stakeholders in a way that can garner support (Zaccagnini & White, 2017). When stakeholders

understand the outcomes and have an agreed upon point of success, they may be more likely to sponsor the resources and focus needed to implement and sustain the project plan.

Specific Aims

The aim of this project was to train staff nurses in MBSR to increase their awareness and connection to the present moment. This mindful awareness and ability to observe rather than react to emotions impacted burnout by decreasing emotional exhaustion and depersonalization and providing tools to process workplace stressors. A secondary aim of this project was to improve coping and resilience in nurse leaders to decrease their experience with burnout.

Context

The organization at the focus of this project was an academic medical center in the western United States, serving as a non-profit public health care corporation. The business was an academic research center, teaching institution, hospital, and source for regional specialty care. Interventions aimed at reducing burnout occurred in the Adult, Observation, and Pediatric Emergency Departments of the hospital. A successful pilot in these areas of high trauma exposure could lead to replication within other departments and settings.

Population

The population at the focus of this intervention were the RNs working within Emergency Services, approximately 125 people. RNs practicing at this organization shared a professional community, however, they were also influenced by the city's culture and the microcultures of their neighborhoods. The broader regional influences required exploration to understand the macrosystems of the nurse's community and the health implications that impact them (Tannenbaum, 2018). The beliefs nurses bring with them from their respective cultures and

experiences may influence both the way they naturally cope with stressful events, as well as their willingness to engage in an intervention aimed at increasing mindfulness through meditation.

Although no data specific to the health of nurses in the metropolitan area or the organization existed as the time of this project, a national study by the American Nurses Association (2017) illustrated nursing's struggle with workplace stress. Nurses may also engage in unhealthy coping mechanisms. An estimated 6% of nurses engaged in alcohol or drug use that interfered with professional performance, and another 15% overindulged in alcohol (NSCBN, 2011). Further, nurses suffered twice the rate of depression as the mainstream population (Lampert, 2016; Ferguson, 2016). Workplace stress, depression, and poor coping add to the problem of burnout in ED RNs experiencing workplace trauma.

Local Care Environment

The hospital at the heart of this intervention is a 562-bed inpatient facility with a 90% occupancy rate. The mission statement was to deliver excellence in healthcare to those in the community. This includes emphasizing the creation and implementation of new knowledge and evidence-based practices into patient care. All direct care staff in the ED were classified employees and performed their jobs under union contracts negotiated between the bargaining unit and the employer. This means that all interventions performed in this environment were subject to contractual rules. While this can provide clear structures under which to resolve potential conflicts, it could also have limited the available activities. For instance, clear rules guide how a nurse is paid for their educational time.

As a public institution funding for operations including patient care were made up by a combination of federal and state-funded medical compensation programs such as Medicaid and Medicare combined with private medical insurance. As a non-profit institution the organization

forgave medical debt through charity care and wrote off bad debt unpaid by patients. For the ED approximately $214,830 in bad debt and $421,611 in charity care was written off monthly. The institution also participated in Value Based Care initiatives which reimbursed the organization for certain health outcomes (LaPointe, 2016). Insecurities in the economy, policy changes to funding structures or loss of the Affordable Care Act could have significantly impacted the future of the organization and its ability to not only provide patient care but fund performance improvement efforts such as this scholarly project.

Relevant Elements of Project Setting

The Adult ED was a 41-bed department consisting of 34 acute care rooms, four trauma bays, and three psychiatric holding areas. There were also five rooms in the triage area to perform the functions of triage and rapid medical evaluation for lower acuity patients. The Pediatric Emergency Department had 10 treatment beds and an additional triage space. The average daily census for the combined units was around 130 patients per day, with 47,857 visits in 2019. The ED's Observation Units held 16 patients at a time requiring additional care, but not meeting inpatient criteria.

The primary function of the Emergency Departments within the hospital was to provide life-sustaining treatments to patients until they could obtain definitive care. The EDs are the entry point for the Trauma Center and offered surgical intervention, stabilization, and therapies for patients sustaining life-threatening injuries. The ED also offered emergency care of patients with heart attack and stroke. Care of populations with chronic illness and life-threatening injury contributed to the stress experienced by healthcare personnel. Nurses caring for these diverse populations had negligible downtime before responding to the next unstable patient. This

increased the nurse's physical and mental stress, making it more difficult for them to process the trauma they experience (Vrablik, 2019).

The Emergency Department was also the entry point for patients who could not otherwise be seen in traditional primary care settings. This may be because they lacked insurance, could not keep scheduled appointments, or had behaviors excluding them from outpatient medical practices. The Emergency Medical Treatment and Labor Act (EMTALA) ensured that all patients presenting to the ED received a Medical Screening Exam and stabilizing care (Centers for Medicare and Medicaid Services, 2012). As such, patients with behavioral issues, or violent tendencies excluded from care elsewhere required treatment in the ED. These patients were seen and treated according to EMTALA regardless of their ability to pay.

Patients and families in the ED may also experience anxiety regarding the uncertainty of their situation. Some patients come to the ED intoxicated or during a mental health crisis. Long wait times and ED overcrowding increase the stress on both patients and healthcare professionals, a phenomenon exacerbated by the COVID-19 pandemic (Adriaenssens, De Gucht, & Maes, 2012; Wolf, Delao, & Perhats, 2014). In addition, COVID-19 increased the uncertainty of the ED. Nurses were wearing and changing personal protective equipment more often than ever before. The pandemic added additional psychological burden to nurses. These factors made the environment unpredictable, stressful, and more prone to patient or visitor perpetrated violence (Estryn-Behar, et al., 2008; Wolf, Delao, & Perhats, 2014).

Convergence with Organizational Values and Needs Assessment

The organization recognized the need to improve burnout as a result of workplace stressors in the ED. The nursing leadership team included the ED Manager, the Adult ED Assistant Nurse Manager, the Pediatric ED Assistant Nurse Manager, the Specialty Practice

Leader (educator), the Associate Chief Nurse for Critical Care and Emergency Services, and the Chief Nursing Executive. These leaders committed their support to the project and saw the value of teaching nurses MBSR to prevent workplace stress and burnout. Additionally, the hospital Board of Directors and President declared that workplace engagement and provider wellness was a goal for the strategic plan by 2025. As such, the MBSR intervention was supported by Human Resources as a part of employee wellness work.

Turnover increased prior to the intervention, in part, because of the psychological and physical impacts of burnout at this medical center. The cost of nursing turnover varies from 0.31 to 1.3 of a nurse's salary (Halter, et al., 2017). Using the most conservative cost estimate of 0.31 times a nurses annual salary to calculate the cost of turnover, and the mean state nursing wage of $88,770 (US Bureau of Labor Statistics, 2018), the cost per nurse of turnover is $27,518. Considering a 24% turnover rate, the cost to the organization for ED nursing turnover related to the impacts of burnout was just over one million dollars per year ($1,056,691).

As many as 8.5% of ED nurses exposed to workplace trauma experience PTSD symptoms and nearly a third have psychological distress (Adriaenssens, De Gucht, & Maes, 2012). Nurses who experience the most severe mental health impacts of depression or PTSD because of workplace stress may experience lost work of 0.8 days per month or be less productive at work (Davidson, Stein, Shalev, & Yehuda, 2004). Lost workdays incur additional costs for the organization (Roelen, et al., 2018) as well as increased stress on the nurses who must cover the absences of their colleagues (Mbombi et al., 2018). This can potentially worsen the problem of burnout.

Evaluating Readiness for Change

Nurses expressed a desire to have better resources to aid in coping with workplace stress. They also expressed frustration with the time it takes to engage with existing resources. For instance, the Critical Incident Stress Debriefing (CISD) program existed for any patient related trauma but could take 24-72 hours to engage with impacted employees. Further, research shows that CISD is neutral in its effectiveness at best, and in some cases harmful (Bhui et al., 2012; Wessely et al., 2008). A hospital-wide peer support program was started in 2016 and was poorly utilized. This was partly due to ED nurses not recognizing nurses in other departments as peers, lack of a timely response, and possibly, the stigma of reaching out for help. For these reasons, the MBSR intervention was focused on individuals developing multiple coping techniques and presence skills rather than relying solely on hospital resources external to the department.

Strengths and Weaknesses

The strengths of implementing this intervention at this academic medical center included resource availability. There were adequate software and technology support structures to implement a pilot project within the institution and to expand the project to other departments if successful. The institution also had survey and assessment tools to evaluate successful implementation of performance improvement projects. Other resources such as paper, classroom space, web communications platforms existed and were readily available should they be needed for the project.

Potential detractors from this project were the nurses' willingness to participate in a mindfulness class. Those who are in most need of help may be less likely to engage in an intervention. Another potential obstacle to this project's success was that it was unknown what, if any, coping and resilience activities the nurses were engaged before the intervention. The most

significant threat to the success of the project was the hospital's financial climate. Discretionary spending was proceeding cautiously and federal aid to the hospital during the pandemic was uncertain. Although patient volumes continued to rise, there were few opportunities to recover money lost during the pandemic. Additionally, health care rules regarding social distancing and procedural testing limited the hospital's ability to operate at its pre-existing capacity.

Memorandum of Understanding

A Memorandum of Understanding (Appendix C) was signed with the sponsoring organization on February 2, 2021, to outline the scope of work, outcomes, and duration of the educational intervention.

Interventions

Following the framework of MBSR creator Dr. Kabat-Zinn (1982), educational sessions included mindfulness exercises such as abdominal breathing, mentally scanning the body (body scan), and sitting meditation. Participants were also introduced to mindful movement such as yoga and intentional awareness while walking or eating. These techniques helped to shift mindset to the present and diminish negative thinking patterns that undermine resilience, reducing burnout in ED nurses. The sessions were taught by an MBSR certified teacher of 25-years following the Principles and Standards of Practice for MBSR (University of Massachusetts Memorial Medical Center, 2020).

The classes consisted of a real-time virtual meeting delivered via a web-meeting platform over an eight-week period. MBSR classes for nurse leader participants took place weekly on consecutive Wednesday evenings for two- and one-half hours. Staff nurse participants attended class on consecutive Tuesday mornings for two hours. During class,

participants were asked to share in groups. They were taught to be curious about thoughts and feelings, identify when they felt stuck, and incorporate mindfulness at work and home.

Homework sessions of 30-45 minutes per day were encouraged but not required. Recorded guided meditation activities were provided and averaged 60 minutes in length, although some recordings were as short as 15 minutes. Work outside of class also included practicing mindfulness techniques and recognizing negative, positive, or stressful encounters and how they impacted the body. These homework assignments were further debriefed in the group setting. The full day seminar presented in some MBSR course classes was omitted in this pilot project intervention due to scheduling difficulty and the added organizational cost.

Cultural integration was important in the planning process for intervention sustainability. Tools and resources were planned to reinforce mindfulness techniques, such a providing yoga mats and quiet space for staff nurses practice mindfulness during their workday. Additionally, leaders planned to incorporate mindfulness moments as a part of staff meetings, and educational events to facilitate mindfulness as a part of the unit culture.

Logic Model Narrative

The Kellogg (WK Kellogg Foundation, 2004) Logic Model was used as a framework to guide outcomes and interventions (Appendix D). The first set of short-term outcomes focused on training attendance and pre-assessment to determine the current state regarding burnout and mindfulness. The final set of outcomes pertained to the results of the intervention including assessing for an increase in mindfulness and a decrease in burnout. Resources accounted for in the Logic Model included human resources (labor), supplies and equipment, information technology, and space.

There were six short-term, five intermediate-term, and two long-term outcomes of this scholarly project:

Outcome	Timeline	Outcome
Outcome 1	Short-term	12% of nurses (n=15) from the ED attended at least six of the eight MBSR sessions by July 31, 2021.
Outcome 2	Short-term	80% of Emergency nursing leaders attended six out of eight MBSR training classes by July 31, 2021.
Outcome 3	Short-term	75% of nurses who attended training between April and July of 2021, would recommend the course to a colleague.
Outcome 4	Short-term	60% of MBSR class participants filled out both the Pre-assessment and post assessment by July 31, 2021.
Outcome 5	Short-term	During the intervention period 60% of MBSR participants engaged in at least one mindfulness activity principle three times a week by July 31, 2021. There was a 40% increase in overall mindfulness between April 2021 and July 2021 as measured by the Five Facet Mindfulness Questionnaire short form (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).
Outcome 6	Short-term	There was a 50% improvement in at least two categories of burnout as measured by the Maslach Burnout Inventory-Health and Human Services for Medical Professionals (emotional exhaustion, depersonalization, or personal accomplishment) among staff nurses who attended at least six of the MBSR sessions between April and August 2021.
Outcome 7	Intermediate term	A second cohort of 15% of nurses (n= 20) were trained in MBSR attending at least six of the eight sessions by December 2021. A second cohort of nurse leaders (n= 10) were trained in MBSR attending at least 75% of sessions by December 2021 to other areas in the organization.
Outcome 8	Intermediate term	New nurses entering the ED were enrolled in MBSR training as a part of their Transition to Practice Program on a quarterly basis beginning in June 2022
Outcome 9	Intermediate term	75% of staff nurses report regularly using mindfulness techniques in June of 2022.
Outcome 10	Intermediate term	70% of nurses in the ED reported an intent to remain in their position for the next three or more years on the employee engagement survey in 2023.
Outcome 11	Intermediate term	Nursing engagement scores increased by 20% in the 2023 Press Ganey Employee Engagement survey and decreased burnout components on the workplace safety survey.
Outcome 12	Long-term	MBSR training was available to all nurses upon hire to the ED. The department maintains a training rate of 75% or more

		of staff members and was able to show favorable metrics for sustainability
Outcome 13	Long-term	ED Nurses experienced less burnout, turnover and intent to leave related to direct or vicarious workplace trauma measured by intent to leave and turnover rates.

Intermediate and long-term outcomes were measured outside the timeframe of this scholarly project.

Correlation of Intervention with Theoretical Model Elements and Phases

Staff nurses and nurse leaders in the ED were exposed regularly to adversity. It was impossible to eliminate the exposure to illness, injury, and violence in the work environment. According to Resilience Theory, these exposures could lead to poor coping and ultimately burnout among nurses working in this environment (Van Breda, 2018). Teaching MBSR to nurses exposed to adversity formed a mediating pathway to process events leading to improved coping and hardiness needed to mediate burnout from future stressors (Mastren & Monn, 2015). Users could develop coping skills such as mindfulness and the ability to reframe stressful events, through engagement with MBSR. These skills are shown to decrease burnout (Ghawadra, et al, 2019; Harker et al, 2015; Kabat-Zinn, 1982; Luken & Sammons, 2016; Martin-Asuero & Gloria, 2010; Nowrouzi, et al., 2015; Pérez-Fuentes, Juardo, Rubio, Sanchez, & Linares, 2020). This ability to reframe events without suppressing thoughts was also shown to be preventative in decreasing the development of burnout resulting from exposure to secondary trauma (Harker, et al, 2015). Mediating the adversity in the work environment that leads to burnout by implementation of MBSR leads to what resilience theory refers to as thriving among participants (Mastren & Monn, 2015; Van Breda, 2018).

Timeline

The planned timeline for this project helped to guide the major phases and activities executed throughout the implementation period (Appendix E). By January 2021, outcomes were finalized as well as measurement tools, and budgetary implications. A Memorandum of Understanding with the sponsoring organization was completed in early February 2021 (Appendix C). The DNP scholarly project's pre-and post-assessment survey materials were created and finalized by March 19, 2021. These assessments can be found in Appendices L through O. On April 2, 2021, calls for registration in the MBSR class began for both staff nurse and nurse leader participants. Leadership participants committed to the program by April 5, 2021, and staff nurse participants by April 18th. The educational intervention started in the first part of May and the results were measured by August 31, 2021.

Measures

The outcomes measured in the educational intervention included evaluation of the intervention as well as attendance and participation by nurse participants. Additionally, pre- and pot-intervention measurement of burnout and mindfulness were performed. Pilot success was defined as an observed decrease in burnout and increased mindfulness in participants attending more than 75% of the MBSR classes.

Burnout was measured using the MBI-HHS (MP), The Cronbach's alpha of this survey ranges 0.76- 0.90 (Statistics Solutions, 2021). The survey included 22 statements and users rated themselves on the frequency of burnout symptoms experienced from 1 (never) to 7 (everyday). Higher levels of burnout are indicated by increased emotional exhaustion and depersonalization, and decreased personal accomplishment (Mind Garden Inc., 2019). The aim of using the Burnout Inventory was to examine changes in burnout among nurses following the educational

intervention. Permission to use this scale was obtained from the authors (Appendix J). A redacted form of the survey is included in Appendix N in accordance with author copyright.

The second component of the assessment was the Five-Facet Mindfulness Questionnaire short form (FFMQ-sf). The FFMQ-sf is a 15-item survey derived from the 39 question FFMQ. It has similar validity (Cronbach's Alpha 0.80- 0.85) to the 39-question survey but reduces the cognitive load and burden on participants (Baer, et al., 2008; Baer, Carmody, & Hunsinger, 2012; Gu, et al., 2016). The FFMQ-sf measured the mindfulness components of observing, describing, awareness, non-judging and non-reactivity of inner thoughts or experience (Bauer, et al, 2006). Users were asked to rate 15 mindfulness statements from 1 (never or rarely true) to 5 (very often or always true). The goal of measuring mindfulness was to assess whether the intervention of MBSR increases mindfulness for participants. The FFMQ-sf is available for use with proper credit to authors (Appendix M).

Finally, following the educational intervention, participants were asked to evaluate their satisfaction with the program including content, length of time spent, platform, and trainer performance. Participants were also be asked to disclose which mindfulness techniques they practiced and with what frequency, and how often they engaged in homework activities. The goal was to discern which, if any mindfulness techniques were most used by participants to reinforce these principles outside of the instructional setting. Details of the post-assessment can be found in Appendix O.

Analysis

Analysis of results included graphical representation of frequency of mindfulness techniques used as well as comparison of pre- and post-assessment results for FFMQ-sf and MBI-HHS (MP). Percentages of improvement in mindfulness and burnout were calculated for

MBSR participants. The percentages of improvement were compared for alignment with previously published literature. In addition, nominal counts of participant attendance for each session were compared against target counts, to ascertain the percentage of participation in the educational offering.

Ethical Considerations

Evaluating ethical considerations is necessary for any intervention in which humans are participants. Care must be taken to ensure that only necessary data is collected, that the standards set forth by the Institutional Review Board and hospital policy are followed implicitly. No personally identifying information was collected during the project. In addition, access to raw data was limited to the DNP student and faculty mentor. Individual data was submitted via RedCaps survey platform with a unique login created by and only know to the participant. Nurse participants in the intervention were recruited as volunteers and were made aware that they could discontinue participation at any time during the educational intervention.

Some researchers have posed that by educating on the possible consequences including the physical and psychological sequelae of trauma exposure, one may be increasing the impact of the trauma of participants through the power of suggestion (Wessely, et al., 2008). While this is a possibility, it is disputed by others (Southwick et al., 2014). Referrals were made by the MBSR trainer for any concerning retraumatization to participants witnessed or disclosed during educational sessions. The DNP student did not have access to information concerning individual referrals for counseling or other psychological resources. Data collected during this intervention was erased upon conclusion of the scholarly project analysis.

Conflicts of Interest

A potential conflict of interest in this intervention was that the DNP student was also the Director of Emergency Services at the project site. This position could have impacted outcomes or participation due to real or perceived authority. Participants were informed during the enrollment process that their involvement was optional, and that participation would not impact their position at the institution. All the results were kept anonymous and entered in a database for the DNP student to analyze. The DNP student did not make judgments or assumptions about the individuals reporting results. The DNP student was not present at offered staff nurse MBSR sessions and any personal information shared during sessions was not shared with the DNP student outside of pre-post assessments.

Biases and Threats to Quality

All humans carry with them the potential for bias based on their experiences and beliefs. Bias could also occur due to phenomenon such as the Hawthorne Effect, whereby the participants behave in a certain way because they know they are being watched. The awareness of a desired result or watched behavior may affect results when participants believe they should behave in a certain way (Dang & Dearholt, 2018). Results of the study were not reported to staff involved until the end of the project analysis to avoid the team trying to perform in a certain way to achieve an expected result.

Threats to quality also included having limited participation. If participants had chosen not to complete the sessions or engage in homework the intervention it would have been difficult to measure the true impact of the intervention. Additionally, if participants declined to fill out pre- and post-assessments, there may not have been enough data to evaluate the outcomes of the project. A similar threat would have occurred if participants left questions on the pre-assessment

or post-assessment incomplete. Incomplete data impacts the ability to analyze the results of the interventions.

IRB Application

The Institutional Review Board (IRB) application and request for determination was submitted to the sponsoring facility for consideration on March 4, 2021. The results of this submission determined this educational intervention did not quality qualify as research. The letter of determination was submitted to Boise State University.

Budget

This intervention's financial value was a return on investment in the form of decreased turnover, absenteeism, workers compensation claims due to emotional duress, and increased presenteeism. The expenses and revenue directly related to the project are captured within the scholarly project financial reports (Capella & Nakfoor, 2018). The purpose of capturing the project's economic impact was to manage stakeholder and DNP student resources appropriately and inform others wishing to replicate the project in the context of their organization. It also allowed the DNP student to assume skills critically needed in the workplace, such as economic efficiency (Brosnan & Swint, 2017). The DNP student accounted for reported items using the ingredients approach (Brosnan & Swint, 2017). Items within each significant category of the monetary transaction were listed and valued based on current prices at the time of evaluation. All financial planning documentation used the US dollar as currency.

Expense Report

The scholarly project expense report, located in Appendix G, lists the planned scholarly project expenses between May 1, 2021, and August 31, 2021. The primary categories of expenses were personnel (labor), materials and supplies, space, equipment, information

technology (IT), and marketing. Human resources are often the most expensive cost in an organization (Penner & Spencer, 2018). As such, labor is the most-costly expense in this scholarly project, with just over $25,000 in planned labor costs associated with the MSBR classroom time for the trainer, and participants.

Materials and supplies were projected to cost $400. This category included items to facilitate mindfulness as a part of the work culture and include yoga mats and handouts. Space for training and implementation was estimated at $2,400. Equipment was chiefly a computer and was estimated at nearly $300. Finally, IT costs totaled $2,300, primarily for software licenses and data storage. The overall costs of the pilot project period were estimated at $30,417.32.

Expenses in Year Two and Three of the Project

The projected costs to continue the intervention over the first three years are outlined in Appendix H and total just over $164,000. The annualized costs of year one of the project is just over $85,000. Costs to continue the program beyond the pilot intervention include labor expenses to educate 40 additional nurses in the first year. In year two, costs decrease slightly to a little over $56,000 as 60 additional nurses and five nurse leaders will be educated. In year three, training costs significantly decrease to approximately $23,000 as most existing employees will be trained. Educational interventions in year three will be targeted toward new employees. Estimates of the costs for new employee training assumed a future turnover rate of 8%.

Although some items are expected to be preserved over three years, the costs of years two and three are impacted by increased nursing salaries, cost of materials, and rentals of classroom space. Annual contractual pay increases for staff nurses and a possible increase for nurse leaders were accounted for in years two and three. Materials and supply price increases of 1.9% were also included in analysis of project sustainability and were estimated using the Consumer Price

Index (US Bureau of Labor Statistics, 2020). Space costs increased after the first year due to the possibility of offering classes in person when modified operational restrictions due to the pandemic are lifted.

Operating Income

This DNP project did not generate a direct income for the facility. There are two primary sources of revenue for this project. The first revenue source was in-kind donations of time from the DNP student as the project manager. The second was donations of materials, space, labor expenses, software, survey permissions, trainer time and equipment from the organization where the project took place. The resulting operating income was zero dollars as the expenses described in the project expense report equals the revenues provided through DNP student and corporate donations (Appendix I).

Results

This scholarly project identified six short-term outcomes (Appendix K) following attendance in an eight-week MBSR class led by an experienced trainer and practicing mindfulness outside of class. As the ED RN participants gained mindful awareness and observed rather than reacted to emotions, the intervention decreased depersonalization, emotional exhaustion, and ultimately burnout.

Project Steps, Process Measures, and Outcomes

Following approval from the DNP student's Executive Committee, MBSR classes began in May 2021. Attendance was measured at each class for both staff nurses and nurse leaders. Attendance targets (Outcomes 1 and 2) were partially met. A total of nine out of 17 staff nurse participants attended at least six of the eight MBSR sessions (7% of total staff). At least 50% of the classes were attended by 13 total staff nurse participants (10% of total staff). This was short

of the goal of 12% of staff nurses attending 75% of classes. The attendance target for nurse leaders was to have 80% attend six of eight MBSR sessions. Actual attendance measured 60%. Overall attendance is found in Appendix Q.

Satisfaction with the MBSR classes offered over eight weeks, was a desired outcome of the intervention to understand the perceived quality and favorability of MBSR classes for participants. Participants who felt the quality of class quality was poor would be less likely to learn from the class and may not gain as much benefit (Eom, Ashill, & Wen, 2006). Following completion of the class participants were asked to rate their experience with the class (Appendix O). The goal was that 75% of intervention participants would recommend the class to a colleague (Outcome 3). This outcome was met with 90% of participants attending at least one session recommending the MSBR class to a colleague. Nine participants, or 45%, were very likely or highly like to recommend the class to a colleague.

All participants were asked to complete the pre-assessment survey (Appendices L, M, and N) before the start of their first MBSR class and the post-assessment survey following the eight class (Appendices M, N, and O). Outcome 4, having 60% of the participants in the MBSR class completing both the pre- and post-assessment surveys, was fully met by June 24, 2021. Of participants attending at least one MBSR class, 100% filled out both the pre- and post-assessment surveys.

Homework including practicing mindfulness outside of class was a key fundamental of the program in helping master mindfulness techniques and recognizing negative, positive, or stressful encounters and how they impacted the body. Following the completion of MBSR training, participants rated their participation in mindfulness outside of class (Appendix O). Outcome 5 targeted two goals of mindfulness, practicing mindfulness outside of class and having

an improved mindfulness score using the FFMQ-sf, this outcome was partially met. Of those attending at least six of eight MBSR classes, 92% practiced mindfulness outside of class at least three times a week which was more than the target of 60% engagement outside of class. Participants also completed the FFMQ-sf to measure their overall increase in mindfulness (Appendix M). Out of all participants attending at least one MBSR class there was a 9% increase in mindfulness. This fell short of the targeted 40% increase in mindfulness (Appendix S).

Finally, for Outcome 6 participants rated their burnout in three aspects of burnout: emotional exhaustion, depersonalization, or personal accomplishment as measured by the MBI-HHS (MP) (Appendix N). Outcome 6 was not met. Among staff nurses who attended at least six of the MBSR sessions, there was a 1% average decrease in emotional exhaustion, a 6% decrease in depersonalization, and a 10% increase in personal accomplishment. In nurse leaders attending at least 6 of 8 classes there was a 36% decrease in Depersonalization, 14% decrease in Emotional Exhaustion and 4% increase in personal achievement. Although these were improvements in all three aspects of burnout measured by the MBI-HHS (MP), it was significantly less than the target of 50% improvement in at least two categories of burnout targeted by Outcome 6 (Appendix S). A summary of all outcomes and measurements can be found in Appendix K.

Contextual Elements and Impacts on Interventions and Outcomes

Pandemic related Elements

This scholarly project occurred during the late spring and early summer of 2021, 13 months after the first case of a coronavirus pandemic. The pandemic added additional stressors on ED nurses during the time of the intervention. These stressors included wearing extra personal protective equipment as a defense against viral illness spread during the pandemic and modifying all in-person classes to a virtual setting. ED volumes also began to rise (from 133

patients per day in 2019 to 182 patients per day) and cared for patients with higher acuity during the intervention period. Increased patient volumes coupled with the virus furthered the strain on nurses working in the ED and decreased the number of MBSR participants. This could have impacted also impacted the overall mindfulness and burnout results of MBSR participants.

The MBSR classes for both the nurse leader and staff nurse participants were delivered via a virtual meeting platform due to the hospital's pandemic-related protocols. Changes in class context and the virtual format could have affected participant cohesion and engagement. It also allowed some participants to attend without a camera, possibly not engaging in the MSBR classes the same way they would in person. Lack of engagement or interaction could have impacted the level of benefit obtained from the intervention.

Planned sustainability efforts were also unable to be completed due to the pandemic. All indoor meeting spaces were re-appropriated to accommodate physical distancing requirements during meal and rest breaks. Infection preventionists added additional cleaning and monitoring guidelines for shared equipment such as yoga mats, blankets, or other props to facilitate mindfulness at work. Additionally, staff meetings and other venues where mindfulness might be introduced into the ED culture were cancelled due to extreme staffing challenges and patient acuity. Mindfulness practice may have been adopted more fully if these adjunct sustainability plans could have occurred during the intervention timeframe.

In addition to the constraints within the work environment, grade school classes in the area were delivered virtually, requiring parents to be available to assist children with learning assignments and classroom attendance. Additionally, daycares in the area were either closed or offered limited hours. These circumstances led to unexpected nursing absences from work. The number of nurses calling out ill required their colleagues to pick up overtime in a more stressful

environment to maintain operations. The three staff nurses who expressed interest but did not commit to the program cited shift schedule difficulty, childcare, or other personal stressors. Out of 23 total staff nurses expressing interest in the MBSR intervention, 20 committed to attend the first class.

Other Contextual Elements

The DNP scholarly project was planned for June and July of 2021. However, due to trainer availability, classes for the nurse leaders began in early April and for the staff nurses in late April. In addition, the MBSR trainer could only accommodate one cohort of ED participants rather than two cohorts. This led to modifications in timing and delivery. MBSR classroom time for nurse leaders, initially intended as a group of peers, was altered to include community members. Nurse leader participants commented that they were uncomfortable engaging with people they did not know well and did not share as much about their successes or struggles during the class due to discomfort. This may have minimized the impact of the MBSR intervention for the nurse leader participants.

Initial enrollment efforts for staff nurse participants showed limited responsiveness. Due to the poor response and short timeline, recruitment was broadened to include emergency observation nurses. These nurses care for ED patients awaiting a diagnostic determination or requiring admission but not meeting inpatient criteria. The observation nurses' proximity to the unit, duties, and common patient population made them a good fit for the ED staff nurse participant cohort.

Overall attendance rates in MBSR classes were 78% for observation nurses, 70% for nurse leaders, 62% for adult ED nurses, and 58% for pediatric ED nurses (Appendix Q). Three nurses failed to participate in any classes and did not provide a rationale for non-attendance. Of

the remaining 17 participants, eight did not attend the targeted 75% of classes. Staff nurses mentioned difficulty with the 08:00 a.m. start time after working a night or evening shift. Some of these participants were scheduled to work during class time and could not trade their shifts to facilitate class attendance. Others cited the need to work on the unit due to unexpected vacancies, although there was no apparent association between unit 'ill calls" and MBSR attendance (Appendix R). Nurse leaders missed classes due to their need to fill in staffing gaps created by sick calls or high acuity patient needs in the department. Others missed classes due to difficulty in leaving work in time for the evening class. Social commitments were also cited as a source of missed classes, impacting overall nurse leader attendance and engagement.

Unintended Consequences

For the most part, classroom attendance and practice of mindfulness outside of class led to increases in mindfulness and decreases in burnout scores. However, two participants with 75% MSBR attendance practicing more than 15 minutes of mindfulness outside of class had no increase in mindfulness. This is likely as they already practiced mindfulness before the MBSR intervention and had moderately high mindfulness scores on their pre-assessments. Both participants, however, had positive changes in burnout scores after attending MBSR classes.

Two other participants attending at least 75% of the MBSR classes did not experience any positive impacts following participation in the intervention. One participant had high levels of depersonalization and emotional exhaustion before the MBSR class and had no changes in these two areas post-intervention. This could indicate a high level of burnout. Another nurse had moderately high scores in all areas of the MBI-HHS (MP) before the intervention. Despite attending classes, this nurse showed a significant increase in depersonalization of patients and emotional exhaustion post-intervention. Although it is uncertain the cause of this lack of

improvement, it was a finding that cannot be overlooked. Neither of these participants practiced mindfulness homework regularly outside of class.

The number of night-shift participants initially enrolled in the intervention numbered six out of 20. However, only two night-shift staff nurses attended at least 75% of the MBSR classes, and no evening shift participants attended the class. The timing of the class in the early morning was one factor in the limited representation of these shifts. Significant staffing challenges on nights and other outside commitments also led to this pilot favoring more day shift staff than those on night or evening shifts. Future interventions should explore the best time for night shift participants or offer more flexible options for class participation. Particularly as night shift nurses experience more stressors related to violence as cited in the literature (Estryn-Behar, et al., 2008).

Missing Data

One person who did not attend any classes completed both the pre- and post-assessment surveys. The survey results of this individual were removed from the data set before analysis. Other than this example, no data anomalies were noted. Additionally, there were no assessment fields left incomplete by participants. All participants attending at least one class filled out both the pre- and post-survey materials. This maximized the ability to analyze the outcomes of the intervention.

Actual Project Revenues and Expenses

The initial MBSR project proposal estimated a total budget of $30,417.32, excluding DNP student time, for the pilot period. Actual expenses were $22,567.99, $7,909.33 less than budgeted. This reduction resulted from decreased labor costs associated with participation and decreased space costs due to virtual class instruction. In addition, information technology costs

were less than budgeted as a learning management system was not used to facilitate enrollment and communication with participants. Materials costs were also saved due to the inability to implement mindfulness spaces and props in the workplace. A revised Statement of Operations can be found in Appendix P.

Summary

Increased stressors in the ED environment such as workplace violence, patient trauma, physiologic demands, and a global pandemic can result in stress and burnout in ED nurses (Adriaenssens, De Gucht, & Maes, 2015; Copeland & Henry, 2018; Mastren, 2020). Burnout has consequences such as suboptimal patient care and increased organizational cost (Ghawadra, et al., 2019; Luken & Sammons, 2016; Wolf, Delao, & Perhats, 2014). Engaging in mindfulness reduces stress and increases the ability of participants to cope and foster resilience, decreasing burnout (Ghawadra et al., 2019; Lamothe et al., 2016; Luken & Sammons, 2016; Pérez-Fuentes et al., 2020). This pilot project at an academic medical center in the western United States sought to decrease burnout in ED nurses by increasing mindfulness.

Staff nurse and nurse leader participants were invited to MBSR classes to improve nursing burnout in the ED. Of the initial 24 total participants, 12 attended the target of 75% (six out of eight) of the MBSR classes. These 12 participants had an increase in mindfulness as measured by the FFMQ-sf (Appendix M). Participants attending at least 75% of the classes also improved all three categories of burnout: emotional exhaustion, depersonalization, and personal accomplishment (Appendix S).

Interpretation

Participants in MBSR classes were asked to practice their skills outside of class to solidify learning. Outside of class, 92% of participants practiced mindfulness, and most

participants practiced mindfulness at least three times a week during the intervention. Of those attending less than six of the eight MBSR classes (<75% attendance), mindfulness was practiced at least three times a week 75% of the time. The most frequently practiced mindfulness techniques measured by self-report were mindful breathing (six times per week), curiosity (three times per week), and body scan (two and a half times per week). Appendix U summarizes the types of mindfulness techniques and their average frequency.

Positive results seemed to relate to engagement in the intervention. Both attending MBSR classes and practicing mindfulness outside of class were associated with better outcomes among participants. Mindfulness using the FFMQ-sf increased by 11% in participants attending at least 75% of classes regardless of time spent practicing outside of class. Those who practiced mindfulness at least three times a week and attended 75% of classes experienced a 13% increase in mindfulness. There was a 21% increase in mindfulness in participants, with 75% of classroom participation practicing mindfulness for an average of 10-15 minutes per week (Appendix X).

Overall, those engaging in at least 75% of sessions of MBSR also had an improvement in aspects of burnout, including emotional exhaustion, depersonalization, and personal accomplishment. Participants had better outcomes if they both attended MBSR classes and practiced mindfulness outside of class. Participants both attending 75% of the MBSR classes and participating in an average of 10-15 minutes of mindfulness outside of class had a 10% reduction in emotional exhaustion and a 21% improvement in depersonalization. Participants with 75% MSBR attendance practicing more than 15-minutes of mindfulness outside of class had a 37% improvement in depersonalization after attending MSBR classes (See Appendix W).

As mentioned previously, two individuals did not experience improvement in burnout, one of which had a worsening of burnout indicators. When omitting the individual with

increased MBI-HHS scores or taking the median scores, there is a more significant improvement in the overall results of the intervention. After omitting this individual's scores from the data, staff nurses attending at least 75% of the MBSR classes had a 6% improvement in emotional exhaustion and an 18% improvement in depersonalization. This information is summarized in Appendix T.

Associations between Interventions and Outcomes

Participant attendance was increased by interventions aimed at appealing to nurses in different ways. In addition, the inclusion of observation RNs improved the total attendance in MBSR classes. Increased class attendance of at least 75% was associated with an improvement in mindfulness and burnout. However, overall attendance in the intervention was short of projected goals, mostly related to increased personal and professional stressors, class timing, and the need to prioritize patient care activities during a pandemic.

Those who could not attend the target number of MBSR classes still rated their project satisfaction highly but cited class timing and length as barriers to continued participation. The class length was two hours for staff nurses and two and a half hours for nurse leaders. A slight majority of participants (57%) felt that the class length was just right. However, the remaining participants found the class too long and wished there were options to attend shorter classes. Many of the participants who felt the class was too long attended less than 75% of classes. In addition, some participants felt the length of the guided practice meditations for home (30 minutes to one hour) were a barrier in completing homework and practicing meditation outside of class.

Nurse leaders were less likely than staff nurses to recommend the class to peers. Narrative comments related that the class was less satisfying with strangers, and the participants

felt less comfortable disclosing their feelings and experiences. In addition, they felt competing priorities between the operational needs of the department and attending class. Most stated they felt the class was too long after an entire workday. However, as a group, nurse leaders with 75% attendance had an average of 36% improvement in depersonalization and 14% improvement in emotional exhaustion after attending the MBSR class. Improvement in all three areas of burnout occurred in nurse leader participants regardless of the number of classes attended (Appendix V).

Satisfaction among all class participants was high, with 92% stating they would recommend the class to a colleague. Of the staff nurse participants, most said that talking about shared experiences in class helped reinforce principles and made the class more beneficial. Only two found it harder to share being in a cohort with their peers. Comments included in the post-assessment showed that regardless of overall burnout scores or improvement of mindfulness, most participants felt that the class decreased their perceived stress and contributed to their overall wellbeing.

Comparison of Results with Previous Findings

The literature affirms that MBSR both increases mindfulness and decreases occupational stress and burnout (Brady et al., 2011; Cohen-Katz, et al., 2005; Ghawadra et al., 2019; Lamothe et al., 2016; Luken & Sammons, 2016; Martin-Asuero & Gloria, 2010; Sallon et al., 2017; Sarazine, et al., 2021). Although many of these studies worked with healthcare professionals or nurses, there were no studies of ED nurses as a cohort such as was employed in this scholarly project. Despite the lack of study specifically targeting this group, ED staff nurse and nurse leader participants attending MBSR classes increased mindfulness and decreased burnout.

The literature varied in the amount of improvement in burnout scores after MBSR or a similar mindfulness program, and many saw statistically significant improvements in emotional

exhaustion and depersonalization. The improvement in emotional exhaustion was most prominent in reviewed studiFor instancde although overall mindfulness es with score improvements between 20-30% in some groups while others saw minor improvements in burnout scores but themes of decreased stress (Brady et al., 2011; Cohen-Katz, et al., 2005; Luken & Sammons, 2016; Sarazine, et al., 2021). The percentage of improvement in staff nurse burnout in this pilot project was much more modest than the literature, with a 1% emotional exhaustion and 6% depersonalization improvement in those attending 75% of classes (Appendix S). Nurse leaders had the most significant improvement in burnout scores with a 14% decrease in emotional exhaustion and a 36% decrease in depersonalization in those attending 75% of classes. It is possible that contextual elements of this project influenced these results. Simiarly to the literature, despite percentages of measured change in burnout, most participants related comments about decreased stress following attendance in MBSR classes showing that participants obtained benefit from the intervention.

The MBSR systematic reviews by Ghawadra and colleagues (2019) and Luken and Salmons (2016) revealed that most studies with nursing participants had small sample sizes. The samples ranged between 10 and 94 participants in the interventions with an average of around 20 participants in the intervention groups. This scholarly project engaged 24 total participants, with 12 participants completing the target number of classes. Although this sample size is small, it is comparable with some of the available published literature citing reduced burnout after MBSR in healthcare professionals. Given this similarity, the results of the improvements in this work should not be discounted merely upon participant numbers.

Impact of Project on People and Systems

The unintended impact on people in this intervention was the added stress of the class date, time, and length. Additionally, the need to perform the intervention virtually may have impacted the ability of some participants to engage completely and receive the full benefit of MBSR classes. For some participants, including nurse leaders, the project created a perceived conflict between ED operational needs and class attendance. Due to class timing, there was also less participation in nurses working on night and evening shifts. Finally, two individuals did not improve burnout despite attending the targeted number of classes and two additional did not have improved mindfulness although their burnout improved.

Differences in Observed versus Expected Outcomes

Outcomes for attendance were less than expected for this pilot intervention. This difference was due to pandemic response, social commitments, and increased work demands for both staff nurses and nurse leaders in the ED. In addition, MBSR class timing made it difficult for some participants to attend regularly, and the timing was particularly difficult for those working night or evening shifts. It is uncertain if offering the class in June and July (when patient volumes were lower) as originally planned would have impacted attendance.

The outcomes of increased mindfulness and decreased burnout were less than expected for MBSR participants. A virtual meeting platform delivered MBSR classes for both the nurse leader and staff nurse participants due to pandemic-related modified operations on the hospital campus. It is unclear what impact a virtual format had on the level of engagement in the intervention and resulting outcomes. Participants also experienced increased pandemic-related work and social stressors (staffing challenges, personal protective equipment requirements, patient volume, acuity changes, and childcare challenges). These stressors may have negatively impacted the participants leading to increased burnout or a muted positive impact of MBSR

classes. It is possible that performing the pilot project during normal operations with in-person attendance could have more significantly improved mindfulness and burnout scores.

Costs and Strategic Tradeoffs

The costs of sixteen hours of education for staff nurse participants could be financially prohibitive to replicate this project under a different leadership structure or budget. Not all hospitals have the means to provide sixteen hours of paid education time to staff nurses. The costs of trainer time, classroom space, and technical resources could also be prohibitive in some settings. For instance, smaller hospitals with fewer resources would likely not have the funding to repeat such a robust or lengthy program.

Modifications may need to be made in the length of the program to increase participation and engagement during class and decrease overall cost. Further, since participants found it hard to practice longer meditation sessions outside of class, homework sessions should be made shorter. Incorporating mindfulness into normal operations by providing shorter mindfulness sessions during the workday or integrating mindfulness into existing huddles or meetings should be considered. This may be easier to explore when hospitals no longer operate under pandemic considerations such as limiting shared space.

Policy Implications

The US faces a nursing shortage and needs an anticipated 1.2 million nurses by 2030 (National Academies of Sciences, Engineering, and Medicine, 2021). This anticipated shortage was predicted based on expected workforce retirements. However, over the last two years, burnout in the nursing workforce has worsened related to the COVID-19 pandemic (Feist, Feist, & Cipriano, 2020; Rosa & Rushton, 2020). As a result, more nurses intend to leave, or have left, their organizations and, in some cases, the nursing profession. Hospitals need to address nursing

burnout and resultant turnover to preserve current nursing staff, lessen the workforce shortage, and address the challenges facing nursing over the next decade. Addressing the stressors within the organization, at the regulatory level, and teaching nurses resilience strategies can reduce or eliminate burnout (National Academies of Sciences, Engineering, and Medicine, 2021).

Nursing associations such as the American Organization for Nursing Leadership (AONL), the National League of Nursing (NLN), the American Nurses Association (ANA), and the Emergency Nurses Association (ENA) can leverage current political relationships to draw attention to the problem of nursing burnout and resilience. These associations can publish guidelines and policy statements to help hospitals support strategies and efforts to decrease nursing burnout such as creating policy statements and toolkits with evidence-based programs like MBSR to decrease nursing burnout. These organizations can also leverage lawmakers for policy reform, such as creating laws that incentivize hospitals for clinician wellness.

Lawmakers can assist in decreasing nursing burnout by eliminating policies that add to rigorous documentation standards or regulatory requirements that unnecessarily add nursing burden (National Academies of Sciences, Engineering, and Medicine, 2021). Advocating to eliminate redundant documentation between physicians and nurses, reduce documentation requirements for patient visits and incentivize hospitals for aligning documentation with the clinical workflow are some ways in which law makers can reduce the documentation burden of nurses (The Office of the National Coordinator for Health Information Technology, 2021).

Individual organizations or hospital systems can reduce burnout and turnover by adopting the best practices highlighted in the Future of Nursing Report 2020-2030 (National Academies of Sciences, Engineering, and Medicine, 2021). These evidence-based approaches include teaching leaders to respond after stressful events, training nurses to cope with stress, developing ethical

competence, and incorporating wellbeing into the workplace (National Academies of Sciences, Engineering, and Medicine, 2021). Evidence-based programs such as MBSR, specifically, can help decrease stress and develop resilience in nurses. Mindfulness helps foster self-compassion, treats emotional distress, and improves the quality of life by assisting nurses in reframing stressful events (National Academies of Sciences, Engineering, and Medicine, 2019). Utilizing a proactive approach to addressing burnout will reduce the burden of the nursing shortage for organizations over time.

Limitations

The first limitation of this pilot project was the total number of participants. Only 12 people attended the target of at least 75% of the MSBR classes. Given the large number of nurses working in these EDs, a larger number of participants was desired to demonstrate project success. A second limitation was the timeline in which the project occurred. Due to the academic timeline for implementation as well as MBSR instructor availability the project had to be implemented in early Spring. Staff nurses did not time to adjust their schedules for attendance. Additionally, the intervention took place during a worldwide pandemic and the classes occurred via a virtual format rather than face-to-face, as originally intended. These modifications to the project limited the ability to fully implement the evidence-based interventions as intended and may have negatively impacted the results.

Conclusions

Most organizations do not offer resilience training or stress reduction programs for employees. However, offering resilience training and teaching coping techniques such as MBSR early in the onboarding of staff nurses or nurse leaders may prepare them to handle stressors at work. The resulting improvement in resilience could impact retention, absenteeism, health, and

engagement in our nurses. In turn, addressing burnout and teaching resilience will improve nursing practice, patient outcomes, patient and family satisfaction, and cost to the organization. Addressing caregiver burnout should be a consideration for all organizations, particularly in post-pandemic operations.

In this pilot, MBSR classes were implemented to reduce nursing burnout and increase resilience. The result was an overall increase in mindfulness and a modest improvement in emotional exhaustion, depersonalization, and personal accomplishment, areas associated with burnout. Nurse leaders experienced a more significant improvement in the components of burnout than staff nurse participants. Given the intervention's ability to increase mindfulness and decrease measures of burnout during a pandemic, it is likely an effective intervention and worthwhile for use in the ED setting for both staff nurses and nurse leaders.

Usefulness of the Work

Although the results of this pilot were modest, teaching MBSR to RNs increased mindfulness, decreased emotional exhaustion and depersonalization. An unanticipated result was an increased personal accomplishment reported by the participants. The need to address caregiver burnout and improve resilience is particularly important as we face an inadequate number of nurses to meet healthcare demands (National Academies of Sciences, Engineering, and Medicine, 2021). Using an evidence-based intervention to improve burnout and increase resilience, such as MBSR, can reduce turnover, improve morale, and improve patient outcomes (Ghawadra et al., 2019; Lamothe et al., 2016; Luken & Sammons, 2016). The improvement in burnout components for RN participants in this small cohort and the favorable rating of the class indicates that this work has the potential to improve the coping ability of nurses at work.

Although it warrants further exploration, MBSR is a potentially useful intervention for cohorts of ED staff nurses and nurse leaders.

Sustainability

The sustainability of this project is affected by three factors: organizational support, trainer availability, and leadership support. The first factor of project sustainability is organizational support for the intervention, including financial support for the costs of the trainer and non-productive nursing time. The ability to fund this project may depend on the favorability of hospital finances which are uncertain given the shifting resources due to the pandemic and response. Alternate funding such as applying for grant money may be a consideration if the organization's financial climate is not favorable. Additionally, if employee wellness is a strategic goal, based on the Future of Nursing 2020-2030 recommendations, there will be an increased likelihood of organizational commitment.

The second factor of sustainability is the commitment of a qualified instructor or trainer to teach MBSR classes. The organization employs a qualified trainer and is committed to teaching classes through the employee wellness program. Having an employed trainer decreases the risk to sustainability. It also makes it more likely that ED-only cohorts, where participants feel comfortable sharing, can occur in the future. If the MBSR trainer were to leave additional costs may be incurred to train or find a new qualified trainer.

The third factor of sustainability is leadership support to enroll, coordinate, track, and participate in the intervention. The leadership team is likely able to take on these activities for future cohorts, making it a unit-level strategic goal. Threats to sustainability may occur if responsibilities shift within the ED related to leadership turnover within the department. This uncertainty can be reduced by having more than one leader responsible for program support.

Potential for Spread to other Contexts and Implications for Future Study

This intervention was offered to participants in an academic medical center ED, which is a high-stress environment. Both staff nurse and nurse leader participants saw an improvement in burnout after attending MBSR classes. Given this improvement, MBSR could be offered to the entire population of staff nurses and nurse leaders within the ED to improve burnout. Future studies should explore offering the class early in a nurse's career or during the onboarding process to prevent rather than treat burnout. There is also a potential to include MBSR instruction for nursing students during their ED leadership practicum to prepare them for their future careers.

Although the cohort was small, nurse leaders had an 18% improvement in overall burnout and a 34% improvement in depersonalization after attending MBSR classes. There is a potentially rich opportunity to replicate this pilot with nurse leaders overseeing other high acuity, stressful operational areas such as intensive care, progressive care, and medical and surgical units. Teaching nurse leaders the skills to reframe their stress and cope better may impact burnout and turnover. As with staff nurses, future studies should explore teaching MBSR early in the nurse leader's career as an aspect of onboarding to explore potential preventative effects of mindfulness.

Next Steps and Dissemination

The results of this pilot will be disseminated to organizational sponsors and human resource stakeholders. In addition, the results will be shared with the executive nursing committee with recommendations on the direction for future exploration of MBSR to reduce burnout in staff nurses and nurse leaders. It is the recommendation, based on the literature and the favorable results of this pilot intervention, MBSR classes be repeated for nurse leaders in

operational areas with high acuity and stressors as soon as feasible. Nurse leaders may benefit from attending MBSR classes over the next few months as they process their response to the pandemic. It is also recommended that MBSR be expanded to all interested ED nurses. Although virtual classes may be less engaging, the impact of decreased burnout may be particularly poignant as nurses process the trauma of the pandemic. It is also recommended that mindfulness be incorporated early in ED nurse onboarding or in nursing education to potentially prevent future burnout.

This pilot intervention has the potential to impact nurses outside of this single organization. As such, the work should be shared broadly to influence wellness plans and strategic efforts for nursing retention. Further dissemination will include a nursing association affiliate meeting to share findings with regional Chief Nurses and Nursing School Deans. The work will also be submitted as an abstract for presentation and discussion at regional or national conferences. Through dissemination and discussion of these results, attention will be drawn to the issue of nursing burnout and MBSR as a potential solution.

References

Adriaenssens, J., De Gucht, V., & Maes, S. (2012). The impact of traumatic events on emergency room nurses: Findings from a questionnaire survey. *International Journal of Nursing Studies*, 1411-1422.

Adriaenssens, J., De Gucht, V., & Maes, S. (2015). Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research. *International Journal of Nursing Studies, 52*, pp. 649-661.

American Nurses Association. (2017). *Executive Summary: American Nurses Association Health Risk Appraisal.* Retrieved October 2019, from nursingworld.org: https://www.nursingworld.org/~495c56/globalassets/practiceandpolicy/healthy-nurse-healthy-nation/ana-healthriskappraisalsummary_2013-2016.pdf

American Nurses Association. (n.d.). *Why Become a Magnet Hospital*? Retrieved from Nursingworld.org: https://www.nursingworld.org/organizational-programs/magnet/about-magnet/why-become-magnet/benefits/

Arnetz, B. B., Arble, E., Backman, L., Lynch, A., & Lublin, A. (2013). Assessment of a prevention program for work-related stress among urban police officers. *International Archive of Occupational and Environmental Health, 86*, 79-88.

Au, W. T., Wong, Y. Y., Leung, K. M., & Chiu, S. M. (2018). Effectiveness of emotional fitness training in police. *Journal of Police and Criminal Psychology*.

Baer, R. A., Carmody, J., & Hunsinger, M. (2012). Weekly change in mindfulness and perceived stress in a Mindfulness-Based Stress Reduction program. *Journal of Clinical Psychology*, 755-765.

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 27-45.

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., Walsh, E., Duggan, D., & Williams, J. M. (2008). Construct validity of the Five-Facet Mindfulness Questionnaire in mediating and nonmediating samples. *Assessment*, 329-342.

Berlanda, S. P., Fraizzoli, M., & de Cordova, F. (2019). Addressing risks of violence against healthcare staff in Emergency Departments: The effects of job satisfaction and attachment style. *Biomedical Research International.* https://doi.org/10.1155/2019/5430870.

Bernburg, M., Groneberg, D., & Mache, S. (2019). Mental health promotion intervention for nurses working in German psychiatric hospital departments: A pilot study. *Issues in Mental Health Nursing.* https://doi.org/10.1080/01612840.2019.1565878.

Bhui, K. S., Dinos, S., Stansfeld, S. A., & White, P. (2012). A synthesis of the evidence for managing stress at work: A review of the reviews reporting on anxiety, depression, and absenteeism. *Journal of Environmental and Public Health*, doi:10.1155/2012/515874.

Bock, T., Carlton, A., Waxman, K. T., & Maxworthy, J. (2018). Financial Statements and the DNP: Essential Knowledge for Success. In K. T. Waxman, *Financial and Business Management for the Doctor of Nursing Practice, 2nd Ed.* (pp. 183-199). Springer Publishing Company.

Brosnan, C. A., & Swint, J. M. (2017). Economic Evaluation. In J. V. Hickey, & C. A. Brosnan, *Evaluation of Health Care Quality for DNPs, (2nd ed.)* (p. 317). Springer Publishing Company.

Brown, K. W., & Ryan, R. M. (2003). The Benefits of Being Present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*.

Capella, E., & Nakfoor, K. M. (2018). Evolution of a Project: The DNP as Project Manager. In K. T. Waxman, *Financial and Business Management for the Doctor of Nursing Practice (2nd ed.)* (p. 264). Springer Publishing Company.

Centers for Medicare and Medicaid Services. (2012, March 26). *Emergency Medical Treatment & Labor Act (EMTALA).* Retrieved from CMS.gov: https://www.cms.gov/Regulations-and-Guidance/Legislation/EMTALA

Chitra, T., & Karunanidhi, S. (2018). The impact of resilience training on occupational stress, resilience, job satisfaction, and psychological well-being of female police officers. *Journal of Police and Criminal Psychology*. https://doi.org/10.1007/s11896-018-9294-9

Christie, W., & Jones, S. (2014). Lateral violence in nursing and the theory of the nurse as wounded healer. *Online Journal of Issues in Nursing, 19*(1). https://doi.org/10.3912/OJIN.Vol19No01PPT01.

Conti-O'Hare, M. (2004). Walking wounded or wounded healer? *Reflections on nursing leadership*.

Copeland, D., & Henry, M. (2018). The relationship between workplace violence, perceptions of safety, and Professional Quality of Life among emergency department staff members in a Level 1 Trauma Centre. *International Emergency Nursing, 39*, pp. 26-32. https://doi.org/10.1016/j.ienj.2018.01.006.

Corcoran, C. (2020). Use of Psychological First Aid for Nurses. *Nursing Economics, 38*(1), 26-32.

Dang, D., & Dearholt, S. L. (2018). J*ohns Hopkins Nursing Evidence-Based Practice: Model and Guidelines.* Indianapolis: Sigma Theta Tau International.

Davidson, J. R., Stein, D. J., Shalev, A. Y., & Yehuda, R. (2004). Posttraumatic Stress Disorder: acquisition, recognition, course, and treatment. *The Journal of Neuropsychiatry and Clinical Neurosciences, 16*(2), 135-147.

Dressner, M. A., & Kissinger, S. P. (2018, November). Occupational injuries and illnesses among registered nurses. *Monthly Labor Review*. Retrieved from BLS.gov: https://www.bls.gov/opub/mlr/2018/article/occupational-injuries-and-illnesses-among-registered-nurses.htm

Drybre, L., Shanafelt, T. D., Sinsky, C. A., Cipriano, P. F., Bhatt, J., Ommaya, A., West, C., Meyers, D. (2017). Burnout Among Health Care Professionals: A Call to Explore and Address This Underrecognized Threat to Safe, High-Quality Care. *National Academy of Medicine*.

Edrees, H., Connors, C., Paine, L., Norvell, M., Taylor, H., & Wu, A. W. (2016). Implementing the RISE second victim support program at the John's Hopkins Hospital: a case study. *BMJ Open*, doi:10.1136/bmgopn-2016-011708.

Eom, S. B., Ashill, N., & Wen, H. J. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education: An empirical investigation. *Decision Sciences Journal of Innovative Education,*, 215-235.

Estryn-Behar, M., van der Heijden, B., Camerino, D., Fry, C., Le Nezet, O., Conway, P. M., & Hasselhorn, H.-M. (2008). Violence risks in nursing-results from the European 'NEXT' Study. *Occupational Medicine*, pp. 107-114.

Feist, J. B., Feist, J. C., & Cipriano, P. (2020, August 6). *Stigma Compounds the Consequences of Clinician Burnout During COVID-19: A Call to Action to Break the Culture of Silence.* Retrieved from National Academy of Medicine: https://nam.edu/stigma-compounds-the-consequences-of-clinician-burnout-during-covid-19-a-call-to-action-to-break-the-culture-of-silence.

Ferguson, D. (2016, March 4). *Depression: A silent epidemic for nurses.* Retrieved October 2019, from FierceHealthcare.com: https://www.fiercehealthcare.com/healthcare/depression-a-silent-epidemic-for-nurses

Forbes, D., Lewis, V., Varker, T., Phelps, A., O'Donnell, M., Wade, D. J., Ruzek, J. I., Watson, P., Bryant, R. A., & Creamer, M. (2011). Psychological First Aid Following Trauma: Implementation and Evaluation Framework for High-Risk Organizations. *Psychiatry*, 224-239.

Gates, D. M., Gillespie, G. L., & Succop, P. (2011, March-April). Violence against nurses and its impact on stress and productivity. *Nursing Economics, 29*, pp. 59-66.

Ghawadra, S. F., Abdullah, K. L., Choo, W. Y., & Phang, C. K. (2019). Mindfulness-based stress reduction for psychological distress among nurses: A systematic review. *Journal of Clinical Nursing, 28*, pp. 3747-3758. DOI: 10.111/jocn.14987.

Graystone, R. (2018, January 25). *Memo: Change in Site Visit eligibility requirement for 2019 Magnet Application Manual.* Retrieved from nursingworld.org: https://www.nursingworld.org/~495227/globalassets/docs/ancc/web-notice-12518.pdf

Groenewold, M. R., Sarmiento, R., Vanoli, K., Raudabaugh, W., Nowlin, S., & Gomaa, A. (2018). Workplace violence injury in 106 US hospitals participating in the Occupational

Health Safety Network (OHSN), 2012-2015. *American Journal of Industrial Medicine, 61*, pp. 157-166.

Gu, J., Strauss, C., Crane, C., Barnhofer, T., Karl, A., Cavanaugh, K., & Kuyken, W. (2016). Examining the factor structure of the 39-item and 15-item versions of the Five-Facet Mindfulness Questionnaire before and after Mindfulness-Based Cognitive Therapy for people with recurrent depression. *Psychological Assessment*.

Gómez-Gutiérrez, M. M. (2016). Posttraumatic Stress symptomatology in pre-hospital emergency care professionals assaulted by patients and/or relatives. *Journal of Interpersonal Violence, 33*(1), https://doi.org/10.1177/0886260514555370.

Halter, M., Boiko, O., Pelone, F., Beighton, C., Harris, R., Gale, J., Gorlay, S., & Drennan, V. (2017). The determinants and consequences of adult nursing staff turnover: a systematic review of systematic reviews. *BMC Health Services Research*(17), 1-20.

Harker, R., Pidgeon, A. M., Klaasen, F., & King, S. (2015). Exploring resilience and mindfulness as preventative factors for psychological distress and secondary traumatic stress among human service professionals. *Work*, 631-637.

Harris, J. L., Roussel, L., Dearman, C., & Thomas, P. (2020). *Project Planning and Management, 3rd Ed.* Burlington, MA: Jones & Bartlett Learning.

Hechanova, M. R., Manaois, J. O., & Masuda, H. V. (2019). Evaluation of an organization based Psychological First Aid intervention. *Disaster Prevention and Management*, 401-411.

Hetzel-Riggin, M. D., Swords, B. A., Tuang, H. L., Deck, J. M., & Spurgeon, N. S. (2020). Work engagement and resiliency impact the relationship between nursing stress and burnout. *Applied Psychology*, 1835–1853.

Hooper, C., Craig, J., Janvrin, D. R., Wetsel, M. A., & Reimels, E. (2010). Compassion satisfaction, burnout, and compassion fatigue among emergency nurses compared with nurses in other selected inpatient specialties. *Journal of Emergency Nursing,* 420-427.

Jeong, I., & Kim, J. (2018). The relationship between intention to leave the hospital and coping methods of emergency nurses after workplace violence. *Journal of Clinical Nursing, 27.* https://doi.org/10.1111/jocn.14228.

Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice of mindfulness meditation: theoretical considerations and preliminary results. *General Hospital Psychiatry, 4*(1), 33-47.

Laeeque, S. H., Bilal, A., Babar, S., Khan, Z., & Rahman, S. U. (2018). How patient-perpetrated workplace violence Leads to turnover intention among nurses: The mediating mechanism of occupational stress and burnout. *Journal of Aggression, Maltreatment, and Trauma, 27*(1), pp. 96-118.

Lamothe, M., Rondeau, E., Malboeuf-Hurtubise, C., & Duval, M. (2016). Outcomes of MBSR or MBSR-based interventions in healthcare providers: A systematic review with a focus on empathy and emotional competencies. *Complementary Therapies in Medicine, 24*, 19-28.

Lampert, L. (2016, March 1). Depression in nurses: The unspoken epidemic. *Minority Nurse*.

LaPointe, J. (2018, March 2). *Hospitals Target Labor Costs, Layoffs to Reduce Healthcare Costs.* Revcycle Review. Retrieved from https://revcycleintelligence.com/news/hospitals-target-labor-costs-layoffs-to-reduce-healthcare-costs#:~:text=The%20health%20system%20aims%20to,the%20local%20news%20source%20stated.&text=Through%20labor%20cost%20reductions%2C%20the,patient%20care%20and%20healthcare%20affordability.

Li, N., Zhang, L., Xiao, G., Chen, J., & Lu, Q. (2019). The relationship between workplace violence, job satisfaction and turnover intention in emergency nurses. *International Emergency Nursing, 45*, p. https://doi.org/10.1016/j.ienj.2019.02.001.

Li, Y. M. (2018). Nurses' intention to resign and avoidance of emergency department violence: A moderated mediation model. *International Emergency Nursing, 39.* https://doi.org/10.1016/j.ienj.2017.09.004.

Ludwig, D. S., & Kabat-Zinn, J. (2008). Mindfulness in Medicine. *Journal of the American Medical Association, 300*(11), 1350-1352.

Luken, M., & Sammons, A. (2016). Systemic review of mindfulness practice for reducing job burnout. *The American Journal of Occupational Therapy, 70*.

Martin-Asuero, A., & Gloria, G.-B. (2010). The Mindfulness-Based Stress Reduction Program (MBSR) Reduces Stress-Related Psychological Distress in Healthcare Professionals. *The Spanish Journal of Psychology*, 897-905.

Maslach, C. (1982). *Burnout: The cost of Caring.* Prentice Hall.

Masterson, L. (2017). Nurses are burnt out. Here's how hospitals can help. *Healthcare Drive*.

Mastren, A. (2020, April). Speaking of Psychology: The Role of Resilience in the Face of COVID-19. (K. Mills, Interviewer)

Mastren, A. S., & Monn, A. R. (2015). Child and family resilience: A call for integrated science, practice, and professional training. *Family Relations*, 5-21.

Mbombi, M. O., Mothiba, T. M., Malema, R. N., & Malatji, M. (2018). The effects of absenteeism on nurses remaining on duty at a tertiary hospital of Limpopo province. *Curations, 41*(1).

Mind Garden Inc. (2019). *MBI: Human Services Survey for Medical Personnel*. Retrieved from Mindgarden.com: https://www.mindgarden.com/315-mbi-human-services-survey-medical-personnel

Moran, K., Burson, R., & Conrad, D. (2017). *The Doctor of Nursing Practice Scholarly Project, 2nd Ed.*

National Academies of Sciences, Engineering, and Medicine. (2019). *Taking Action against clinician burnout: A systems approach to professional wellbeing.* The National Academies Press.

National Academies of Sciences, Engineering, and Medicine. (2021). *The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity.* The National Academies Press.

Nowrouzi, B., Lightfoot, N., Lariviere, M., Carter, L., Ruckholm, E., Schinke, R., & Belanger-Gardner, D. (2015). Occupational stress management and burnout interventions in nursing and their implications for healthy work environments. *Workplace Health and Safety*, 308-315.

NSCBN. (2011). *Substance Use Disorder in Nursing: A Resource Manual and Guidelines for Alternative and Disciplinary Monitoring Programs.* Chicago, IL: The National Council for State Boards of Nursing.

Park, J. L. (2017). Hardiness mediates stress and impact level in ED nurses who experienced a Violent Event. *JEN: Journal of Emergency Nursing, 43*(6), p. https://doi.org/10.1016/j.jen.2017.04.011.

Penner, S. J., & Spencer, M. D. (2018). Budgeting for acute and ambulatory care: Hospital utilization, staffing, and financial Indicators. In K. T. Waxman, *Financial and Business Management for the Doctor of Nursing Practice* (p. 53). Springer Publishing.

Pérez-Fuentes, M. d., Juardo, M. d., Rubio, I. M., Sanchez, J. G., & Linares, J. J. (2020). Mindfulness for preventing psychosocial risks in the workplace: A systematic review and meta-analysis. *Applied Sciences, 10*.

Reavy, K. (2016). *Inquiry and Leadership: A resource for the DNP project.* F.A. Davis Company.

Roelen, C. A., van Hoffen, M. F., Wage, S., Schaufeli, W. B., Twisk, J. W., Bjorvatn, B., Moen, B. E., & Pallesen, S. (2018). Psychosocial work environment and mental health-related long-term sickness absence among nurses. *International Archives of Occupational and Environmental Health*, 195–203.

Rosa, W. E., & Rushton, C. (2020). A Blueprint for Leadership During COVID-19: Minimizing burnout and Moral Distress among the nursing Workforce. *Nursing Management, 51*(8).

Sallon, S., Katz-Eisner, D., Yaffe, H., & Bdolah-Abram, T. (2017). Caring for Caregivers: Results of an extended, five-component stress-reduction intervention for hospital staff. *Behavioral Medicine, 43*(1), 47-60.

Schooley, B., Hikmet, N., Tarcan, M., & Yorgancioglu, G. (2016). Comparing burnout across emergency physicians, nurses, technicians, and health information technicians working for the same organization. *Medicine. DOI: 10.1097/MD.0000000000002856*.

Shea, T., Cooper , B., De Cieri, H., Sheehan, C., Donohue, R., & Lindsay, S. (2018). Post incident support for Healthcare Workers experiencing occupational violence and aggression. *Journal of Nursing Scholarship, 50*(4), 344-352.

Slatten, L. A., Carson, K. D., & Carson, P. P. (2011). Compassion fatigue and burnout what managers should know. *The Healthcare Manager, 30*(4), pp. 325-333.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*.

Statistics Solutions. (2021). *Maslach Burnout Inventory (MBI)*. Retrieved from Statisticssolutions.com: https://www.statisticssolutions.com/maslach-burnout-inventory-mbi/#:~:text=Reliability%20and%20Validity&text=Cronbach%20alpha%20ratings%20of%200.90,used%20for%20test%2Dretest%20reliability.

Tannenbaum, R. (2018, January 3). *A brief overview of Brofenbrenner's Ecological Theory*. Retrieved from YouTube: https://www.youtube.com/watch?v=HV4E05BnoI8

Taylor, C., Xyrichis, A., Leamy, M. C., Reynolds, E., & Maben, J. (2018). Can Schwartz Center Rounds support healthcare staff with emotional challenges at work, and how do they compare with other interventions aimed at providing similar support? A systematic review and scoping reviews. *BMJ Open*, doi:19.1136/bmjopen-2018-024254.

The Office of the National Coordinator for Health Information Technology. (2021, May 4). *Strategy on Reducing Regulatory and Administrative Burden Relating to the Use of Health IT and EHRs.* Retrieved from healthit.gov: https://www.healthit.gov/sites/default/files/page/2020-02/BurdenReport_0.pdf

US Bureau of Labor Statistics. (2018, March 30). *Occupational Employment Statistics.* Retrieved from bls.gov: https://www.bls.gov/oes/2017/may/oes291141.htm#st

US Bureau of Labor Statistics. (2020, September 11). *Consumer Price Index, West Region — August 2020*. Retrieved from BLS.org: https://www.bls.gov/regions/west/news-release/consumerpriceindex_west.htm

US Census Bureau, Population Division. (2019, April). *Annual Estimates of the Resident Population: April 1, 2010, to July 1, 2018.* Retrieved September 2019, from American Fact Finder: https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk

University of Massachusetts Memorial Medical Center. (2020). *Center for Mindfulness: MSBR 8 Week Online Live*. Retrieved from umassmemorialhealthcare.org: https://www.umassmemorialhealthcare.org/umass-memorial-medical-center/services-treatments/center-for-mindfulness/mindfulness-programs/mbsr-8-week-online-live

Van Breda, A. (2018). A critical review of resilience theory and its relevance for social work. *Social Work.*

Virkstis, K., Herleth, A., & Langr, M. (2018). Cracks in the foundation of the care environment undermine nurse resilience. *The Journal of Nursing Administration, 48*(12), 597-599.

Vrablik, M. C. (2019). Identification of processes that mediate the impact of workplace violence on emergency department healthcare workers in the USA: results from a qualitative study. *BMJ Open, 9*, pp. https://doi.org/10.1136/bmjopen-2019-031781.

Wei, R., Ji, H., Li, J., & Zhang, L. (2017). Active intervention can decrease burnout in ED Nurses. *Journal of Emergency Nursing, 43*(2), pp. 145-9. http://dx.doi.org/10.1016/j.jen.2016.07.011.

Wessely, S., Bryant, R. A., Greenberg, N., Earnshaw, M., Sharpley, J., & Hughes, J. H. (2008). Does psychoeducation help prevent post traumatic psychological distress?/Does psychoeducation help prevent Post Traumatic Stress Disorder? *Psychiatry*, 303-7.

Williams, M. J., Dalgleish, T., Karl, A., & Kuyken, W. (2014). Examining the Factor Structures of the Five Facet Mindfulness Questionnaire and Self-Compassion Scale. *Psychological Assessment*.

WK Kellogg Foundation. (2004). *Logic Model Development Guide.* Retrieved from https://www.wkkf.org/resource-directory/resources/2004/01/logic-model-development-guide

Wolf, L., Delao, A. M., & Perhats, C. (2014, July). Nothing changes, nobody cares: understanding the experience of emergency nurses physically or verbally assaulted while providing care. *Journal of Emergency Nursing,* pp. 305-310.

World Population Review. (2019, August 28). *Portland Population.* Retrieved September 2019, from World Population Review: http://worldpopulationreview.com/us-cities/portland/

Zaccagnini, M. E., & Pechacek, J. M. (2021). *The Doctor of Nursing Practice essentials: A new model for advanced practice nursing (4th ed.).* Jones and Bartlett.

Zhou, B., Marchand, A., & Guay, S. (2017). I see so I feel: coping with workplace violence among victims and witnesses. *Work, 57*, pp. 125-135.

Appendix A

Literature Review Summary Table

TITLE OF ARTICLE	AUTHORS	RESEARCH QUESTION OR AIM OF THE ARTICLE	TYPE OF STUDY (DESIGN)	LEVEL / QUALITY OF EVIDENCE	Description Of Sample (if applicable)	OUTCOME MEASURES	RESULTS/KEY FINDINGS
ARTICLES ASSOCIATED WITH PROBLEM STATEMENT							
Nurses more frequently impacted by WPV than other disciplines							
B1 Addressing Risks of Violence against Healthcare Staff in Emergency Departments: The Effects of Job Satisfaction and Attachment Style.	Berlanda, S. P., Fraizzoli, M., & de Cordova, F. 2019	What is the frequency of violent events occurring to MDs and Nurses in EDs, and by whom (patients or visitors)? What is the impact of psychosocial factors such as emotional attachment and job satisfaction on the experience of violence?	Online Questionnaire utilizing 4 item Likert scales	Level III; Quality A	N= 149 MDs and RNs working in 8 Italian Emergency Departments. 79 male, 69 female, 1 decline to answer Age range 24-72. Mean length of Service 18.47 years 58% MDs 42% nurses	Type of violence at work and perpetrator: • Physical/patient 0.699 • Emotional/patient 0.83 • Physical/visitor 0.754 • Emotional/visitor 0.886 • Physical/patient &Visitor 0.754 • Emotional/patient & visitor 0.982 • Sexual/patient and/or	Doctors perceive less violence than nurses. Patients were more often the perpetrators of both emotional and physical violence. Workers with and Avoidant attachment style were more likely to experience emotional violence from patients and visitors and patient-perpetrated physical violence

						visitor was below acceptable level. Demographics of respondents (gender, age, occupation, length of service) Type of Attachment style (Adult attachment types): Secure, Avoidant or Anxious on a 4-point Likert scale Job Satisfaction: 5-item "Global Job Satisfaction" questionnaire. 0.873	Inappropriate sexual behavior was correlated with avoidant and anxious attachment styles Workers with secure intact attachment have lower levels of patient and visitor perpetrated emotional violence Patient and visitor perpetrated violence occurs more often in those with poor job satisfaction and younger age.
A6 Workplace violence injury in 106 US hospitals participating	Groenewold , et al.,	What is the incidence and distribution of workplace violence events and associated risk factors	Retrospectiv e analysis of worker safety reports from 106 facilities.	Level III, Quality B	Sample is "WPV events" n=1311.	Reported WPV incident rates Occupation Demographic Data	Nurses sustained the most WPV injuries at 40%, Then other HCW including non-patient care personnel at 32.7%

in the Occupational Health Safety Network (OHSN), 2012-2015	(2018)	among workers in OHSN participating hospitals?					and 19.8% Nursing assistants Females sustained 66.4% of injuries. 19.3% of the injuries were in the ED. Patients were reported as the most common assailant Total injury rate was 4.4 per 1000 FTE in 2012 and up to 7.6/1000 in 2014. The rate of non-fatal injuries rose by 39% between 2011 and 2014. 60% of incidents occurred in a direct patient care area
Psychological and physiological consequences of WPV exposure							
A3 The impact of Traumatic events on emergency room nurses:	Adrianssens, deGucht, Maes, 2012	What is the frequency of exposure and nature of traumatic Events in ED nurses? What	Cross sectional questionnaire survey.	Level III, Quality B	N=248 Nurses at 15 Belgian hospitals, ED nurses with Patient contact,	Demographic variables Frequency of Exposure Coping Strategy	87% of respondents hand a traumatic event in the last 6 months Which is more than general (Med/Surg) Nursing populations

Findings from a questionnaire survey.		percentage report PTSD symptoms? What is the contribution of the rate of Events on PTSD symptoms, psychological distress and impaired sleep in ED Nurses?			voluntary participation. Nurses who have worked in the ED over the last 6 months.	for Stressful situations (CISS-21) Social support for stressful situations (LQWQ-N) IES subscales of PTSD (focusing on intrusion and avoidance) somatic complaints, fatigue, sleep problems, length of time and nature of most impactful traumatic events over last year. Psychological Distress and Somatic Complaints (BSI) Fatigue (CIS-20R) Sleep problems	Most distressing Events were: • Sudden Death of a child or adolescent • Severe injury or mutilation of trauma patients • Managing Grief of relatives or family. • Confrontation or potential of danger. Subclinical Findings: • PTSD symptoms were present in 1 in 4 nurses. • 28.7-37.2% had both psychological distress and somatic complaints Clinically significant findings: • Fatigue 28.7% • 8.5% PTSD Emotion-focused coping was

						5-point Likert based on DSM-IV No Cronbach's α included.	associated with increased psychological distress and fatigue. Avoidant coping behaviors were associated with increased somatic complaints. Additionally, they were associated with Increased Absenteeism, decreased productivity, change in professional attitude. Active problem-focused coping had less adverse symptomatology.
A2 I see so I feel: Coping with workplace violence	Zhou, Marchand, Guay, 2017	What are the consequences for witnesses and victims of workplace violence?	Cross sectional self-report questionnaire.	Level III, Quality B	N=211 (118 of which were female) Police Department, Administrative	Witness or victim to violent events, rating the frequency over the recent 12 months.	Workplace violence psychologically impacts both victims and witnesses. It has consequences for their work and psychology.

among victims and witnesses					Workers, Civil Service, Bus Drivers, Healthcare staff who experienced violence over the previous 12 months in Quebec Canada.	Time since most recent exposure Presence of psychological signs or symptoms (flashbacks, nightmares, avoidance, loss of interest, sleeping, hypervigilance, communication problems, irritability, guilt). 0.88 % of reduction in work function Presence or absence of physical injury Services sought to mitigate trauma	Direct victims of violence at work from clients have more severe psychological symptoms and more impacts on work performance than witnesses. Those who have more severe psychological implications are more likely to seek formal treatment from a psychiatric professional The majority of victims and witnesses used informal methods (peers, family, etc.) to cope with violence.
Articles with burnout and intent to leave as a result of workplace violence exposure.							
B12 The relationship	Copeland, Henry,	Is there a relationship between WPV	Cross-sectional design survey	Level III, Quality B	N=147	Demographics Violence exposure	Compassion fatigue and burnout were correlated with

between workplace violence, perceptions of safety, and Professional Quality of Life among emergency department staff members in a Level 1 Trauma Centre.	2018	exposure, tolerance of violence, perceptions of safety and compassion fatigue?			RNs in a Level 1 trauma center ED in the US 63% Female Median age 31-40	Perception of Violence as a part of the job Perceived professional quality of life (Compassion Satisfaction and Fatigue v. 5 tool) Subscales: • Compassion Satisfaction 0.88 • Secondary Trauma 0.81 • Burnout 0.75 Compassion fatigue, Secondary Trauma, Burnout, Compassion Satisfaction	violence and low perceptions of safety. Authors suggest interventions to treat non-verbal violence more similarly to physical violence may mitigate the impacts.
A4 Violence risks in nursing-results from the European 'NEXT' Study	Estryn-Behar, Van Der Heijden, Camerino, Fry, Le Nezet, Conway,	What is the prevalence of violence from patients/relatives in different clinical areas?	Baseline assessment and follow-up assessment at 1 year. .	Level III, Quality B	N=13,537 Stratified Sample of Direct care staff across 8 countries (Belgium,	Demographics including work setting Time pressures on 4- point Likert Uncertainty	22% of subjects report frequent violent episodes from patients or relatives. Violence was more prevalent in EDs,

	Hasselhorn 2008	What is the influence of teamwork characteristics upon violence? What is the relationship between violence and burnout and intent to leave nursing or leave the employer? What are the changes in violence over time?			Germany, Finland, Italy, The Netherlands, Poland, Slovakia, France) 30% Nurses aids, the rest were Registered, Nurses.	regarding patient treatment 5-point Likert Quality of Teamwork (Copenhagen Psychosocial Questionnaire) Satisfaction with teamwork (4-pt scale) and quality of information sharing (5-pt scale) *0.70* Physical Load frequency Harassment by supervisors (5-pt scale) Interruptions (yes/no) Satisfaction with patient hand-off (yes/no)	Psychiatric, and Geriatric settings. Violence happened more frequently to male nurses, newer nurses, and those on the night shift. Conditions predicting violent events were an uncertainty of patient treatment, decreased teamwork, high time pressures. Nurses with violence exposure had more burnout and intention to leave the organization.

						Hours worked per week Violence exposure (5-pt scale) • Frequency of violence • Frequency of aggression Intention to leave over the past year Burnout (Copenhagen Burnout Inventory)	
A5 How Patient-Perpetrated Workplace Violence Leads to Turnover Intention Among Nurses: The Mediating Mechanism of Occupational	Laeeque, Bilal, Babar, Khan, Ul Rahmand, 2018	What is the relationship between violence, exposure, occupational stress, burnout, and turnover intent?	Non-experimental Questionnaire	Level III, Quality B	N=216 Nurses working at four Pakistani hospitals in the central area of Pakistan. • 74% female, • 36% in 20s • 41% in 30s • 23% in 40s	23 question 5-pt Likert reflecting the last 3 months of nursing service. Patient perpetrated workplace violence (self-constructed scale)	Workplace Violence negatively impacts turnover intention. Occupational stress and burnout mediate the plan to turn over.

Stress and Burnout					• 76% BSN 21% 2-5 years as a nurse	Occupational Stress (Adapted from Crank et al, 1995), Burnout (Adapted Copenhagen burnout inventory), Turnover intentions (adapted from Ganesan and Weitz, 1996)	
B5 The relationship between intention to leave the hospital and coping methods of emergency nurses after workplace violence.	Jeong, Kim, 2018	How do WPV coping methods influence a nurse's intention to stay at the hospital after experiencing violence?	Non-experimental Questionnaire survey	Level III; Quality B	N= 214 Emergency nurses from 7 different hospitals in South Korea; mean age 28.7 86.9% female 58.9% have less than 5 year in the profession.	Demographic Data Workplace Violence Scale 0.95 Coping after workplace violence 0.90 Job satisfaction scale 0.75 Intention to leave hospital (yes/no)	87.9% experienced verbal aggression from patients. Most frequent response to violence was a report to the supervisor, soliciting help from colleagues, or avoiding and accepting violence as part of the job.

							More than half of participants intended to leave their job. Job satisfaction influenced the decision to stay. Employing problem-based coping was even more associated with intent to stay.
B6 The relationship between workplace violence, job satisfaction and turnover intention in emergency nurses.	Li, Zhang, Xiao, Chen, Lu 2019	Is workplace violence correlated with job satisfaction and turnover intention in the ED? Does job satisfaction mediate the relationship between job satisfaction and turnover intention?	Non-experimental Cross-sectional questionnaire survey.	Level III, Quality B	N= 385 Emergency nurses with greater than 1 year of experience working within 13 hospitals throughout Beijing. 94.3% Female 36.4% Bachelor's prepared 55.8% Associates prepared.	Demographics Job Satisfaction using McClosky/Muller scale 0.95 Turnover Intention using a modified Michaels/Spector turnover intention tool 0.778 Violence experiences=	89.9% of respondents experienced verbal violence, 70.6% threats, 20.5% physical violence, 3.9% sexual harassment. After the event 84.4% felt angry 83.2% Felt wronged 68% had decreased enthusiasm for work

					29.6 median age. Median experience 9 years.	verbal attack, threats, physical attack, sexual harassment, frequency of events up to 3 calculated. 0.659	and 50.9% had the intention to leave. Higher job satisfaction was associated with less WPV and less turnover intention. WPV lead to Turnover intention but was partly mitigated by job satisfaction.
B3 Nurses' intention to resign and avoidance of emergency department violence: A moderated mediation model.	Li, Chau, Shih, 2017	How does ED violence affect nurses' intent to resign and avoidance tendencies via emotional reactions to violence? What individual nurse characteristics moderate emotions-behaviors pathway?	Non-experimental questionnaire survey.	LEVEL III, Quality B	N=137 ED nurses from an academic medical center in Taiwan. 93% Female 57% less than 5 years in ED	Violent incidents (Number of incidents of WPV over previous 6 months) Negative feelings toward work (5-pt Likert) 0.84 Negative psychological state and physical symptoms, 0.86	Nurses who had negative feelings toward work were more likely to have an intent to leave after further events. Nurses who had increased emotional or physical symptoms would avoid violence or engage in adaptive behaviors. Nurses with more experience were less

						Intent to resign(5-pt Likert) Avoidance tendencies (5-pt Likert) Burnout Scale (adapted and validated from an English version) • emotional exhaustion 0.92 • Depersonalization 0.87 • Low personal achievement 0.90 Professional ranking of nurse	likely to protect themselves. Nurses with more burnout had less intent to resign. Nurses with less experience were more likely to resign rather than learn to adapt or deal with WPV.
Impacts to patient care							
A9 Nothing Changes, Nobody Cares: Understanding the Experience of Emergency	Wolf, Lisa Delao, Altair M. Perhats, Cynde 2014	"Tell me about your experience with violence in the Emergency Setting."	Qualitative descriptive Exploratory Design-written narratives	Level III, Quality C	N=36 8 Men 37 women 1 unknown gender	Physical Environment and culture, Impact on the nurse/victim, Antecedents to the violent event	Contributing factors to violence are: • long wait times • psychiatric patients,

Nurses Physically or Verbally Assaulted while providing care.							• Influence of Drugs or alcohol (patient) • Lack of administrative support for change • Lack of cue recognition: the history of violence, drugs or ETOH, SI/HI, Police escort Nurses report: • lost productivity • attrition • impeded the ability to deliver effective nursing care.
A10 Violence Against Nurses and Its Impact on	Gates, Gillespie, Succop, 2011	Is violence from Patients and visitors related to ED nurses' work	A cross-sectional design, questionnaire survey	Level III, Quality B	N=224 91.1% White, 80% of female	Description of a recent violent event that caused the most stress	37% of respondents had a negative productivity score following a traumatic event.

Stress and Productivity		productivity and symptoms of PTSD?				Impact of Events Scale to measure PTSD (0.75) A Healthcare productivity scale 0.871) Demographic Data (age, education level, workplace characteristics)	Decreased performance included ability to: • keep mind on work • think clearly, • control emotional reactions, • provide emotional support for patients • be empathetic toward patients and families. 17% of respondents had a score on the IES scale to be probable for the diagnosis of PTSD. 15% Had scores indicated suppressed immune functioning.

Bridging Coping as a mechanism to treat negative impacts of WPV in nurses							
B10 Determinants and prevalence of burnout in emergency nurses: A systematic review of 25 years of research	Adriaenssens, De Gucht, Maes, 2015	Examine the level of burnout in ED nurses in the body of literature and burnout causes.	Systematic Review with inclusion criteria of sample size >40, nurses, in ED or EMS,	Level II, Quality B	NA	Emergency Nurses Burnout Personality Characteristics Coping mechanisms	Younger aged nurses at higher risk of burnout. Low levels of hardiness (Trouble with change, lower sense of control) were equated with emotional exhaustion. Depersonalization and emotional exhaustion were decreased with higher levels of commitment and control. Coping: Active Problem focused coping related to lower exhaustion and higher personal accomplishment. Avoidance was associated with lower ability to deal with stress.

							Avoidant behaviors were also associated with emotional exhaustion and Depersonalization. Aggression and trauma exposure was related to PTSD. emotional exhaustion and depersonalization is higher in these groups. Increased psychological demands were predictive of emotional exhaustion. Physical demands in ED nurses do not impact burnout. Level of perceived job control (lack of job control lead to burnout) Lack of emotional support from

							supervisor lead to all 3 components of burnout. Lack of support from colleagues can cause burnout. Recommended mitigation strategies: Supervisor support, Team culture, Time out for exposed nurses, limit exposure to trauma if able, Training ED nurses on coping skills.
B2 Hardiness Mediates Stress and Impact Level in ED Nurses Who Experienced a Violent Event.	Park, Lee, Kong, Moon, 2017	Is there a mediating effect of hardiness (Resilience) on the relationship between violence related stress and the impact of a violent event?	Analysis of a previously conducted questionnaire study:	Level III, Quality A	n=321 ED nurses from 31 Emergency Departments in a Korean City who experienced a violent event within 4 weeks of the study. 91.9% female,	Stress from violence using a 0-10 visual analog scale; Impact of violent event (IES-R) (invasiveness, avoidance, hypervigilance) 5 pt. Likert 0.97	Nurses had a higher than average violence related stress. The hardiness of ED nurses partially mediated the impact of the violent event and the level of stress experienced by the nurse.

					Mean tenure 3.9 years, 163 of the respondents had between 1-5 years of experience	Hardiness Dispositional Resilience Scale (DRS-15) Control, Commitment and Challenge 4 pt. Likert 0.70	Hardiness decreased both the stress related to the violent event and the impact level.
D9 Post-incident support for Healthcare Workers experiencing occupational violence and aggression	Shea, et al., 2018	What is the likelihood of receiving post incident support following an occupational violence event in nurses or nurse midwives? What is the relationship between post incident support, the occupational health and safety climate and a workplace aggression policy or education plan.	Cross-sectional Survey	Quality III, Level B	N=3072 Nurses or nurse midwifes in Australia 92% Female 37% between ages 46-55 years old 58% worked in a public hospital	Violence presence in last 12 months with frequency Was post incident support provided Yes/no Type of organization Presence of violence prevention policy yes/no Perceptions of the Occupational Health and Safety environment (OPM-MU Organization Performance	Nurses who had post incident responses following workplace violence had statistically significant scores in organizational performance, perception of supervisor support for safety, and team psychological safety.

						Metric-Monash University (0.91) Supervisor support safety scale (0.91) Team Psychological Safety Scale (0.69)	
Mindfulness Training as an intervention to decrease stress and burnout							
C10 Mindfulness for Preventing Psychosocial Risks in the Workplace: A Systematic Review and Meta-Analysis	Del Carmen Pérez-Fuentes, del Mar Molero Juardo, Mercader Rubio, Soriano Sánchez, Gazquez Linares 2020	Do Mindfulness-based intervention programs positively influence engagement, mindfulness and resilience. Does mindfulness practice positively influence sleep quality, self-efficacy,	Systematic Review and Meta-Analysis with RCTs and quasi-experimental articles over the last 10 years	Level II, Quality B	NA	Mindfulness, (CAMM, CAMS-R, FFMQ, FFM, Mindfulness Questionnaire, Freiburg Mindfulness Scale, KIMS and MAAS) Instruments used: Mindfulness (CAMM, CAMS-R, FFMQ, FFM, Five-Facet Mindfulness Questionnaire, Freiburg	Mindfulness Based Stress Reduction and modified Mindfulness Based stressed reduction programs decrease emotional exhaustion and stress at work. It also increases resilience and coping, decreases burnout and decreases emotional exhaustion.

		wellbeing, positive affect, and reduce burnout, fatigue, emotional exhaustion and negative effects				Mindfulness Scale, KIMS, and MAAS); depression (BDI-II, CCAPS-34, CES-D, DASS, DASS21, and STAI); anxiety (CCAPS-34, DASS, DASS21, SAS and STAI); stress (C-SOSI, DASS, DASS21, EEP-14, PSM-9, PSS, PSS-10, PSS-14, PSM-9, and PSQ); positive and negative affect (PANAS); fatigue (CIS, Fatigue Scale and the Checklist Individual Strength Questionnaire); burnout (BM, BO, MBI, and ProQOL); emotional exhaustion (CDPE and	

						MBI); engagement (UWES); resilience (CD-RISC and CD-RISC10); engagement (UWES); wellbeing (WHO-Five); job satisfaction (JSQ); and, sleep quality (JSS and PSQI).3.3.	
B9 Mindfulness-based Stress Reduction for Psychological Distress among Nurses: A Systematic Review.”	Ghawadra, Abdullah, Choo, Phang 2019	Is there evidence of Mindfulness-Based stress reduction interventions within studies to decrease psychological stress among nurses?	Systematic Literature review	Level II, Quality C	NA	Decreased stress, burnout, and improvement in psychological symptoms, life satisfaction. Abbreviations: AAQ-II, Acceptance and Action Questionnaire – II; BDI, Beck Depression Inventory; BSS, The Brief Serenity Scale; CBI, Copenhagen	Consistently results showed reduced stress, anxiety, burnout, and better job satisfaction after a brief version of Mindfulness based stress reduction. However, there was inconsistency in whether or not the results were sustained. 1/9 studies showed no impact on nurses with PTSD,

						Burnout Inventory; CES, Caring Efficacy Scale; CFST, The Compassion Fatigue Self-Test; DASS-21, Depression, Anxiety, and Stress Scale 21; FACIT- Sp, Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale; FFMQ, Five Facets of Mindfulness Questionnaire; GHQ, General Health Questionnaire; GHQ-12, General Health Questionnaire −12; IJS, Intrinsic Job Satisfaction; JSOPE, The Jefferson Scale Of Physician	2/9 showed no impact on job satisfaction

						Empathy; LEC, The Life Events Checklist; MAAS, Mindfulness Attention Awareness Scale; MBI, Maslach Burnout Inventory; MBSR, Mindfulness-Based Stress Reduction; PCL-C, Post-traumatic stress disorder Checklist-Civilian; ProQOL-5, Professional Quality of Life Scale version 5; PSS, Perceived Stress Scale; QCT, Quasi Control Trial; RCT, Randomized Control Trial; RRS, Ruminative Responses Scale-Short form; SCL-	

						90-R, Symptom Checklist 90-Revised Subscale; SCS, Self-Compassion Scale; SDM, Smartphone Delivered Mindfulness; SF-12, SF-12v2 Health Survey; SHS, Subjective Happiness Scale; SOC, Sense Of Coherence; SRP, Stress Reduction Program; STAI: State-Trait Anxiety Inventory; SWLS, Satisfaction With Life Scale; SRDI, Smith Relaxation Dispositions Inventory; TDM, Traditionally Delivered Mindfulness; t-MBSR, Telephonic Mindfulness-	

						Based Stress Reduction; WHOQOL-BREF, World Health Organization Quality Of Life-BREF; WSS, Work Stress Scale	
C8 Outcomes of MBSR or MBSR-based interventions in health care providers: A systematic review with a focus on empathy and emotional competencies	Lamothe, Rondeau, Malboeuf-Hurtubise, Duval 2016	What are the outcomes in studies of the effect of Mindfulness-Based Stress Reduction (MSBR) on healthcare providers? What is the impact of these outcomes? What is the current knowledge on whether capabilities central to patient care are positively impacted by	Systematic Review	Level III, Quality C	NA	38 different outcomes including: mental health, physical wellbeing, mindfulness skills, burnout, psychological distress, PTSD, emotional intelligence, patient satisfaction, empathy, anxiety and depression CRS—Empathy Construct Rating Scale (adapted version, 42-item); FFMQ—Five Facets	MSBR favorably impacts the mental health of its subjects. In 95% of studies perceived stress in healthcare providers was decreased after MSBR. In 53% of studies burnout was reduced. 82% of studies showed that the physical health and wellbeing of providers was increased. Mindfulness was increased in 82% of the studies assessing mindfulness.

		MBSR				Mindfulness Questionnaire; FMI—Freiburg Mindfulness Inventory; IRI—Interpersonal Reactivity Index; JSPE—Jefferson Scale of Physician Empathy; KIMS Kentucky Inventory of Mindfulness Scale, SREIT Schutte Emotional Intelligence Scale TMS Toronto Mindfulness Scale	
C6 Systematic Review of Mindfulness Practice for Reducing Job Burnout	Luken, and Sammons 2016	What is the evidence for practicing mindfulness to treat job burnout and what are the implications for occupational therapy	Systematic Review and Critical Appraisal of Randomized Controlled Trials	Level I, Quality B	NA	Mindfulness, Job Burnout Maslach Burnout Inventory	One half of the studies appraised showed decreased job burnout in healthcare workers after mindfulness training. Most of the study participants were females. Both Traditional and

		practitioners?					Modified Mindfulness-Based stress reduction training reduced burnout.
C4 Caring for the Caregivers: Results of an extended, five-component stress-reduction intervention for hospital staff.	Sallon, Eisner, Yaffe, Bdolah-Abram 2017	Do hospital staff who participate in a multifactorial self-care and mindfulness intervention (Caring for Care Givers or CCG) experience less job-related tension, stress, burnout, mental health symptoms and express improved mood, wellbeing, and higher work productivity?	Quasi-experimental study	Level II, Quality B	N= 82 hospital workers in Jerusalem. 75% Nurses and remaining were administrative employees.	Demographics Medical History Burnout: Maslach Burnout Inventory (no ∝) Perceived Stress Scale (PSS) (no ∝) General Health Questionnaire (GHQ) (no ∝) Job Related tension index (JRTI) (no ∝) The Productivity Scale(PS) (no ∝) The Positive and Negative Affect Scale (PANAS) (no ∝)	Intervention recipients experienced: less burnout ($p<.001$) and decreased job-related stress ($p<.001$)

						Stress history in the 6 months prior to intervention Quality of life at work (job tension, work productivity, ability to cope with stress) Complaints (stress and burnout, mental health status, symptoms) Indices of health (Upper respiratory infections, healthcare visits, wellbeing) Stress-related behaviors: tobacco, alcohol or drug use Satisfaction with interventions	
Teaching Coping/ Resilience to minimize burnout							

C5 Assessment of a prevention program for work-related stress among urban police officers	Arnetz, Arble, Backman, Lynch, Lublin 2013	Do officers trained to have a sense of control over stress-provoking situations demonstrate superior coping abilities in stressful events.	A randomized control trial of a training program versus standard training.	Level I Quality B	N= 75 Early career Swedish Police Officers, 1/3 of each group were women.	Somatic Symptoms Coping Scale 0.62 Mental Well-being: 4-point Likert Sleep Quality The Karolinska Institute Sleep Questionnaire (no ∝) Exhaustion Maastricht Questionnaire (no ∝) Stress Hormone presence in blood (no ∝)	During the intervention period both the control group and the intervention group had similar exposure to violence. The intervention group experienced reduced physical and psychological responses to stress, ($p<.05$) lower depression and anxiety, less social dysfunction and sleep difficulty. The intervention group had more use of coping strategies 18 months after intervention.
C Effectiveness of Emotional Fitness training in Police	Au, Wong, Leung, Chiu 2018	Does a campaign of Emotional Fitness training enhance resilience,	A quasi-experimental study using a time lag control group.	Level II, Quality B	N= 168 Hong Kong Police Officers at all levels of rank within the Hong Kong Police	Resilience: (Brief Resilient Coping Scale 0.74 and State Hype Scale 0.76)	Participants in the first phase of emotional fitness training which focused on front line

		positive emotions, cognitive flexibility and emotional well-being amongst police officers? Does emotional fitness promote professional pride and organizational commitment?			department	Positive emotions, (The Positive State of Mind PSOM 0.71) Cognitive Flexibility (The Cognitive Flexibility Scale 0.82) Emotional Wellbeing (GHQ- General Health Questionnaire 0.86 and Satisfaction with Life Scale 0.88) Frequency of skill practice 0.81 Professional pride 8 item scale 0.944 Organizational commitment	police officers experienced: • stronger coping p <.05 • Increased Resilience 11.49-point change p<.05 • more positive emotions (10 pt increase p<.05) • More cognitive flexibility (12-point increase p<.05) • Better emotional wellbeing (10 pt increase p<.05) Practicing the skills outside the workshop resulted in higher coping 1 year after the intervention.

						12 item adapted scale 0.947	
C3 The impact of resilience training on occupational stress, resilience, job satisfaction, and psychological wellbeing of female police officers.	Chitra Karunanidhi 2018	What is the effect of resilience training on occupational stress, level of resilience, job satisfaction and psychological wellbeing of female police officers? What is the sustainability of resilience training among female police officers.	A randomized control trial with a pre-test post-test follow up design.	Level I, Quality B	N= 63 female Southern Indian police officers who work in the Armed Reserve division who were in good physical health, had greater than 3 years of experience, were available during the treatment and evaluation period, and not pregnant.	Occupational Stress: Occupational Stress Inventory 0.93 Connor-Davidson Resilience Scale (CD-RISC) 0.87 Overall Job satisfaction 0.87 Psychological wellbeing Psychological General wellbeing index 0.64-0.94	The resilience training reduced stress in female public safety officers and was similar to previous study findings. (18.3, p<.01) The Resilience scores in the intervention group rose by 43% compared to 2% in the control group, p<.01) Job satisfaction, and psychological health also improved as a result of the intervention. P<.01
B8 Active Intervention Can Decrease Burn out in ED Nurses	Wei, Ji, Li, Zhang, 2017	Does active intervention decrease job burnout and improve performance in ED nurses?	Randomized control trial over 6 months.	Level I, Quality B	N=102 ED nurses with greater than 1-year experience in 3 high level Chinese hospitals. 86% Female	Maslach Burnout Inventory • Levels of Emotional exhaustion 0.88 • Deperson alization 0.83 • Personal	Post testing showed statistically significant changes in the intervention group: emotional

					14% Male Age range 20-48 years	Achievement 0.82	exhaustion (gain of 6.92 points p<.05) Depersonalization (gain of 6.442 p<.05) that remained after 6 months.
D3 Mental Health Promotion Intervention for Nurses Working in German Psychiatric Hospital Departments: A pilot study	Bernberg, Monika Groneberg, David A Mache Stefanie 2019	Does a 12-week stress management and coping skill training effective at reducing perceived job stress, coping skills perception and the quality of client-nurse relations.	Randomized Control Study	LEVEL I, Quality B	N=86 Psychiatric Nurses in a German Hospital 44 in intervention group. Average ages were similar with a mean of 32 82% female Mean experience as a nurse 8 years (9 in Waitlist group)	Perceived job stress using a 30 item, 4-pt Likert scale 0.60 Emotional regulation skills (ERSQ-27) (no ∝) Brief Resilience Coping Scale (BRCS), Self-efficacy, optimism and Pessimism (SWOP-K9) (no ∝) German Quality of Relationship Inventory (QRI) (no ∝)	Following 12 weeks of 1-2 hour sessions, the psychiatric nurses had decreased stress, increased resilience and increased patient connection
Psychological First Aid as an Intervention to Reduce Stress							

D1 Psychological First Aid Following Trauma: Implementation and Evaluation Framework for High-Risk Organizations	Forbes, et al., 2011	How can one implement and evaluate Psychological First Aid within a high-risk organizational setting? What are the frameworks and phased approaches to implement PFA in this type of organization and how can you use a logic model or theory-based approach to evaluate success?	Expertise driven framework from Australian PhD researchers in PTSD.	Level IV, Quality B	NA		A phased model of PFA is proposed based on experience and research-focused on psychological recovery: Phase 1 Development of Policies and Procedures Phase 2 Promotion and Staff Training Phase 3 Delivery of PFA Response Phase 4 Monitoring and Staff Follow up.
D2 Program offers Psychological First Aid, Support to Healthcare Workers Following	Wu, Albert Connors, Cheryl 2017	How did John's Hopkins implement the RISE (Resilience in Stressful Events) program to develop a Peer initiated	Expert Opinion and Program Evaluation	Level IV, Quality B	NA	Cost of nurse support program multiplied by number of nurse encounters Qualitative stories of success from peer supporters and	Based on Psychological First Aid principles John's Hopkins implemented a peer support program, available 24/7 that can respond within 30 minutes to a clinicians needs a

Traumatic Events		Psychological First Aid Program for clinical Staff?				users of the program	conservative ROI of $1.81 million dollars a year is realized and the RISE (Resilience in stressful events) program is utilized across the hospital with increasing popularity across all disciplines. One use of the program is in the ED after healthcare assaults by patients or visitors. A toolkit is available for replication by Armstrong Institute
D5 Use of Psychological First Aid for Nurses	Corcoran, Christine M 2020	What evidence exists regarding the use of Psychological First aid in Nurses to reduce vicarious trauma and compassion fatigue.	Systematic Review	Level III, Quality B	NA	Not described	Little evidence exists on the impact of the effectiveness on Psychological First Aid on nurses, however the RISE program at John's Hopkins shows promising outcomes on using PFA as a method of peer support.

D7 Occupational Stress management and burnout interventions in nursing and their implications for healthy work environments A literature review	Nowrouzi, et al., 2015	What workplace interventions, associated with work environments and Quality of work life target nurses' occupational stress and burnout.	Literature review	Level V Quality B	NA	Maslach Burnout Scale(no ∝) Knowledge Attitudes and Burnout (Pre-post tests) (no ∝) Review of Care plans Perceived Stress Scale (no ∝) Self-compassion (no ∝)	Problem evidence: Occupational health risks including musculoskeletal injuries in nurses can stem from mental stress. Psychosocial intervention training in a group of forensic health nurses decreased burnout.
D8 Does Psychoeducation on help prevent Post Traumatic Psychological Distress?/Does Psychoeducation on help prevent Post Traumatic Psychological Stress Disorder? In reply	Wessely, et al., 2008	What evidence is there that psycho-education prevents rather PTSD or Psychological distress following a traumatic event, rather than to treat the event.	Literature review	Level V, Quality B	NA	NA	Literature supports used of Psychological first aid as a first line treatment for victims of trauma including education on trauma effects, information on available resources and stress buffering from colleagues. Some studies suggest that if people are given information about

							trauma they might experience, they may be more likely to manifest trauma so care has to be given when educating potential future victims Critical Incident Stress Debriefing is ineffective in most cases and in those most likely to be traumatized are more likely to experience harm. Military organizations, and systematic reviews and metanalysis support not debriefing those who experienced trauma. People prefer talking with colleagues, peers or family/friends to process trauma

							rather than seek professional help or interventions following an event.
D10 Evaluation of an organization-based psychological first aid intervention	Hechanova, Manaois, & Masuda, 2019	Is an organizational intervention consisting of psychological first aid and open space technology effective at improving resilience and perceived organizational support?	Pilot Intervention with a pre-post test	Level III, Quality B	N=65 Employees of a governmental agency whose building was destroyed by fire while they were not present. 66% Female Mean age 44	Resilience Connor-Davidson Resilience Scale (0.87) Organizational Support 5-pt Likert(0.96) Post-Traumatic Stress Symptoms PCL-6 (0.84)	Peer support should provide skills practice, role playing and feedback/coaching. Psychological First Aid improved employee resilience, perceived organizational support, and stress relief Improved resilience positively correlated with perceived employee support.
Formal Debriefing to reduce Burnout							
D4 Can Schwartz Center Rounds support healthcare staff with	Taylor, Cath Xyrichis, Andreas Leamy, Mary C	Is there an evidence base for Schwartz Rounds and does evidence exist for interventions	Systematic Review	Level III, Quality B	NA	Non-standardized Likert scales of satisfaction rating, emotional aspects of clinical care, Teamwork	Schwartz rounds is an effective way to debrief clinical events monthly in an interdisciplinary way. They focus on the physical, ethical

emotional challenges at work, and how do they compare with other interventions aimed at providing similar support?	Reynolds, Ellie Maben, Jill 2018	with similar aims. How do the effectiveness and key features compare with Schwartz Rounds.				(no $\propto$) Outcomes of other interventions not discussed beyond review of the study quality as Low, Moderate, or high. Most studies were low to moderate quality.	and emotional burdens of patient care. They are not intended to replace other forms of coping. They revolve around learning from a specific clinical scenario Other viable and successful interventions not based on a clinical scenario, are Mindfulness Based Stress Reduction, psychosocial intervention training, resilience training
D6 A synthesis of the Evidence for Managing Stress at Work: A review of the reviews reporting on	Bhui, Dinos, Stansfeld, & White 2012	What is the effectiveness of individual, organizational, and mixed interventions on two outcomes: mental health and Absenteeism	Systematic Review and Metanalysis of Published Metanalysis	Level I, Quality A	NA	Improvement, deterioration or no effect on mental health and absenteeism. Work attendance, SCL-90 depression subscale (no $\propto a$)	Review of metanalysis papers between 1990-2011, Individual interventions were more effective than organizational interventions.

anxiety, depression and absenteeism						This is a synthesis of previous synthesis CES-D BSI Standardized measures of anxiety and depression and composite measures Mood State and trait anxiety index STAI, Beck Depression Scale TQ4 GHQ (no ∝)	Physical activity programs improved anxiety and mental health. CBT was effective and improving mental health. Training in behavioral techniques improved wellness in psychiatric nurses. A 15 week training course reduced psychological distress. Personal support rather than environmental management seemed most effective at decreasing absenteeism and improving mental health CISD had mixed results

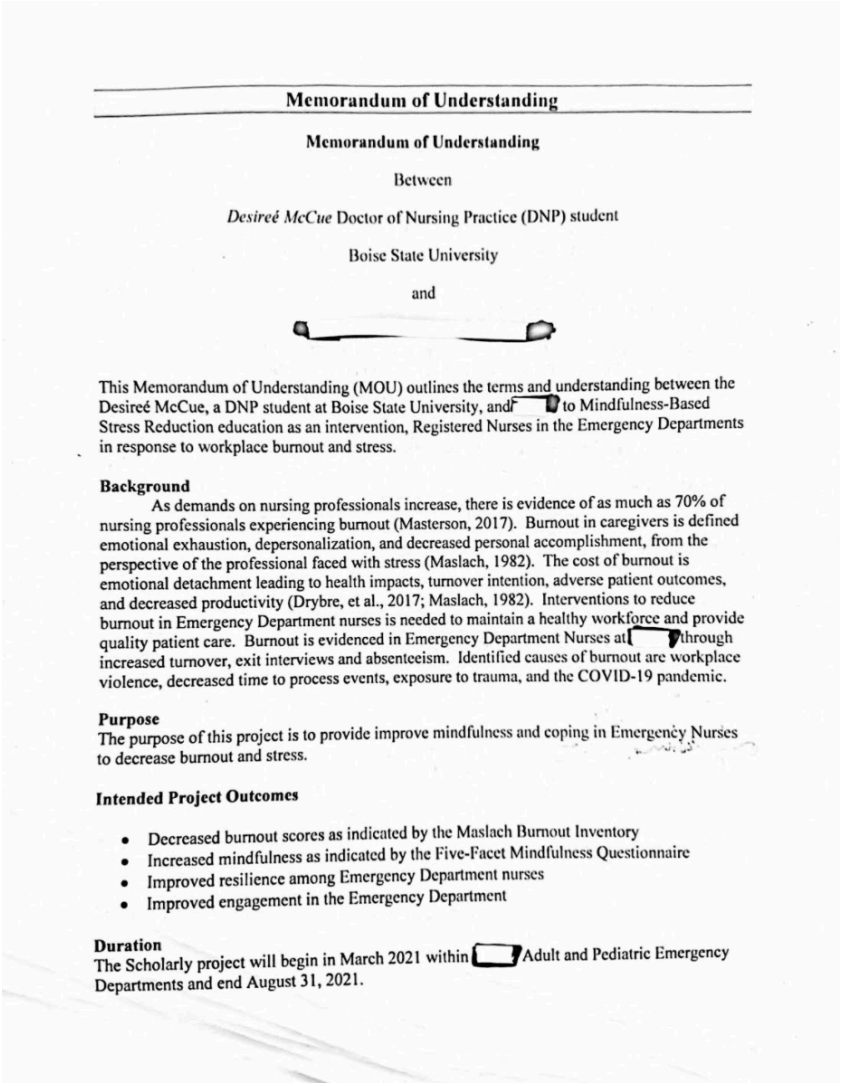
							Seminar based programs had slightly better outcomes.

Appendix B

Resilience Theory Model

Appendix C

MOU



Memorandum of Understanding

Memorandum of Understanding

Between

Desireé McCue Doctor of Nursing Practice (DNP) student

Boise State University

and

[redacted]

This Memorandum of Understanding (MOU) outlines the terms and understanding between the Desireé McCue, a DNP student at Boise State University, and [redacted] to Mindfulness-Based Stress Reduction education as an intervention, Registered Nurses in the Emergency Departments in response to workplace burnout and stress.

Background

As demands on nursing professionals increase, there is evidence of as much as 70% of nursing professionals experiencing burnout (Masterson, 2017). Burnout in caregivers is defined emotional exhaustion, depersonalization, and decreased personal accomplishment, from the perspective of the professional faced with stress (Maslach, 1982). The cost of burnout is emotional detachment leading to health impacts, turnover intention, adverse patient outcomes, and decreased productivity (Drybre, et al., 2017; Maslach, 1982). Interventions to reduce burnout in Emergency Department nurses is needed to maintain a healthy workforce and provide quality patient care. Burnout is evidenced in Emergency Department Nurses at [redacted] through increased turnover, exit interviews and absenteeism. Identified causes of burnout are workplace violence, decreased time to process events, exposure to trauma, and the COVID-19 pandemic.

Purpose

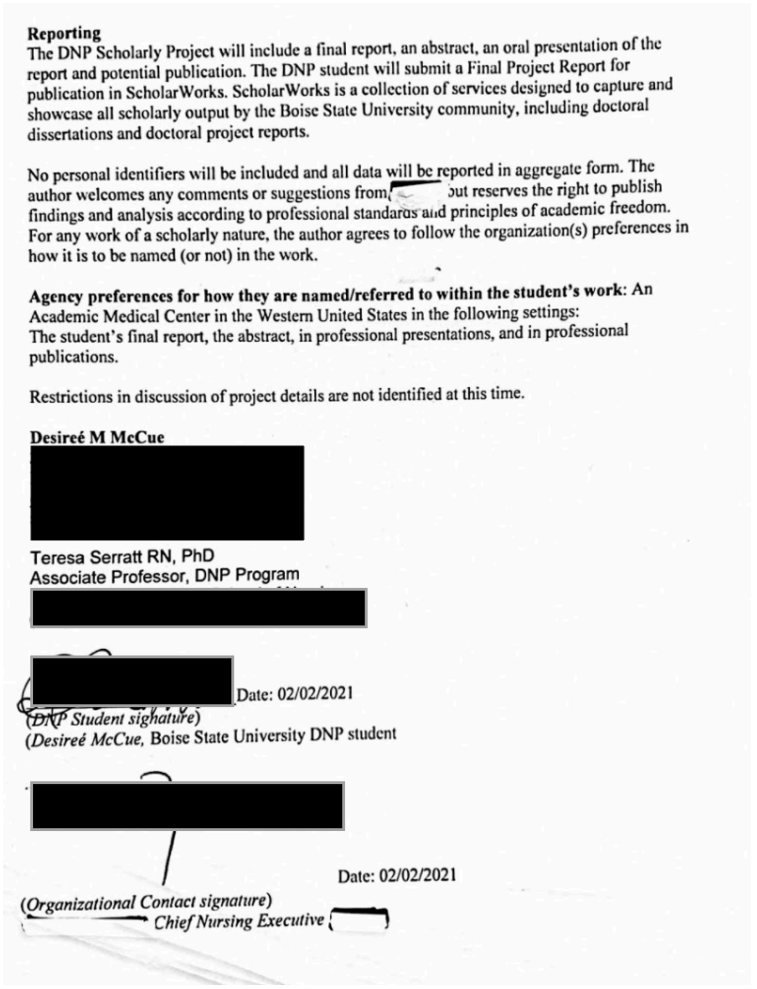
The purpose of this project is to provide improve mindfulness and coping in Emergency Nurses to decrease burnout and stress.

Intended Project Outcomes

- Decreased burnout scores as indicated by the Maslach Burnout Inventory
- Increased mindfulness as indicated by the Five-Facet Mindfulness Questionnaire
- Improved resilience among Emergency Department nurses
- Improved engagement in the Emergency Department

Duration

The Scholarly project will begin in March 2021 within [redacted] Adult and Pediatric Emergency Departments and end August 31, 2021.



Reporting

The DNP Scholarly Project will include a final report, an abstract, an oral presentation of the report and potential publication. The DNP student will submit a Final Project Report for publication in ScholarWorks. ScholarWorks is a collection of services designed to capture and showcase all scholarly output by the Boise State University community, including doctoral dissertations and doctoral project reports.

No personal identifiers will be included and all data will be reported in aggregate form. The author welcomes any comments or suggestions from [redacted] but reserves the right to publish findings and analysis according to professional standards and principles of academic freedom. For any work of a scholarly nature, the author agrees to follow the organization(s) preferences in how it is to be named (or not) in the work.

Agency preferences for how they are named/referred to within the student's work: An Academic Medical Center in the Western United States in the following settings:
The student's final report, the abstract, in professional presentations, and in professional publications.

Restrictions in discussion of project details are not identified at this time.

Desireé M McCue

[redacted]

Teresa Serratt RN, PhD
Associate Professor, DNP Program

[redacted]

[redacted] Date: 02/02/2021
(DNP Student signature)
(Desireé McCue, Boise State University DNP student

[redacted]

Date: 02/02/2021
(Organizational Contact signature)
[redacted] *Chief Nursing Executive* [redacted]

Appendix D

Logic Model

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
Training/ Education Outcomes						
Human Resources: • Trainer-Experienced MBSR practitioner within the institution • Nurse participants within emergency services • ED Nurse Leaders (Nurse Managers, Assistant Nurse Managers, Specialty Practice Leaders, Associate Chief Nurse in the Division of Emergency Services.) **Supplies and Equipment** • Paper for curriculum handouts • Access to a CD player, MP3	**Identification of Nurse Participants:** Selected RNs were chosen by March 31, 2021 **Classes were made available** for sign up in Learning Management System by April 1, 2021 **Training dates finalized with MBSR trainer** dates to start in the	**MBSR class** is delivered to nurse participants **Attendance** Tracked Via the Learning Management System **Class Effectiveness measurement** including a net promotor score of likely to recommend class to a colleague	Nurse participants across day shift, mid shift and night shift Nurse Leaders (Nurse Managers, Assistant Nurse Managers, Specialty Practice Leaders, Associate Chief Nurse in the Division of Emergency Services.)	1. 12% of nurses from the Emergency Department (ED) n= 15 attended at least six of the eight Mindful-Based Stress Reduction (MBSR) sessions by July 31, 2021 **2.** 80% of Emergency nursing leaders attended 6 out of 8 MBSR	7. A second cohort of staff, including nurses n= 20 (approximately 15%) were trained in MBSR attending at least six of the eight sessions by December 2021. 8. A second cohort of nurse leaders (10) were trained in MBSR attending at least 75% of sessions by December 2021 in	**13.** MBSR training was available to all nurses upon hire to the Emergency Department. The department maintains a training rate of 75% or more of staff members and was able to show favorable metrics for sustainability

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
player, or smartphone to listen to homework recordings • AV equipment • Permissions to use Maslach Burnout Inventory • Maslach Burnout Inventory interpretation and scoring guide **Information Technology Resources:** • Learning Management system for class sign up and attendance tracking • Web meeting platform (Assuming classes in modified operations related to pandemic) • Redcaps software for pre-post test	last week of April 2021 **Nurse participants signed up for classes** by April 1, 2021 **Staff Nurse and Nurse Leader Participants take Spark Wellness Survey for HR** by April 1, 2021. Required by HR for class support and attendance by ED Participants.			training classes by July 31, 2021. **3.** 75% of nurses who attended training between April and July of 2021, would recommend the course to a colleague	another area of the organization. 9. New nurses entering the Emergency Department were enrolled in MBSR training as a part of their Transition to Practice Program on a quarterly basis beginning in June 2022.	

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
• Excel for Data Analysis • Spreadsheet for project tracking **Space:** • Classrooms or • Computer labs for learning						
Measuring Educational Intervention Impact						
Human Resources: • DNP Student • ED Leadership Team • Nurse Participants **Supplies and Equipment** • Paper handouts and huddle reminders • Distraction tools (Sensory items, art supplies, etc.)	**Pre and post Assessment survey material:** Surveys were was created and finalized by March 19, 2021 **Pre-assessment survey completed** by staff nurse and nurse leader	**Mindfulness knowledge for staff nurses** is increased and measured by pre-post test **Manager Knowledge** of Mindfulness process is evaluated by a pre/post test	Nurse participants across day shift, mid shift and night shift Nurse Leaders(Nurse Managers, Assistant Nurse Managers, Specialty	4. 60% participants in the MBSR education group filled out both the Pre-Intervention and post intervention assessments by July 31, 2021 5. Following the completion of MBSR training, sixty percent of MBSR participants engaged in at least one mindfulness	10. 75% of staff nurses report regularly using mindfulness techniques in June of 2022. 11. 75% of nurses in the Emergency Department report an intent to remain in their position for the next 3 or more years	**14.** MBSR training available to all nurses upon hire to the Emergency Department. The department maintains a training rate of 75% or more of staff members and was able to show favorable

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
• Cleanable Yoga Mats • Posters for change management campaign **Information Technology Resources:** • Qualtrics for post intervention staff surveys **Space:** • Use of quiet space (Meditation rooms, etc.)	participants by April 15, 2021 **Kits** Kits are created to support mindfulness at work by August 2021 **Post Assessment:** Completed by staff nurse and nurse leader participants by July 31, 2021	**Post Intervention Survey Created** Post intervention survey including the Maslach Burnout Inventory and 5-Facet Mindfulness Questionnaire, as well as intervention quality metrics created by March 19, 2021 **Leadership Modeling** Leaders include mindfulness activities in staff meetings, huddles, and educational	Practice Leaders, Associate Chief Nurse in the Division of Emergency Services.)	activity principle three times a week for four weeks by July 31, 2021. There was a forty percent or more increase in overall mindfulness between April 2021 and July 2021 as measured by the Five Facet Mindfulness Questionnaire short form. 6. There was a fifty percent improvement in at least two categories of Burnout as measured by the Maslach Burnout Inventory- Health and Human Services for Medical	on the employee engagement survey in 2023. 12. Nursing engagement scores increased by thirty percent in the 2023 press Ganey Employee Engagement survey and decreased burnout components on the workplace safety survey.	metrics for sustainability

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
		events to reinforce mindfulness principles following initial educational classes by July/ August 2021.		Professionals (emotional exhaustion, Depersonalization, or personal accomplishment) among staff nurses who attended at least 6 of the MBSR sessions between April and July 2021.		

Appendix E:

Timeline

Project: Reducing ED Burnout																								
	Projected Timeframe																							
		Summer 20			Fall 20				Spring 21				Summer 21				Fall 21				Spring 22			
KEY ACTIVITIES	FALL/SP 19/20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar 22	Apr 22
PLANNING ◆																								
Problem Statement	◆																							
Environmental Assessment	◆																							
SWOT	◆																							
Literature Review	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆												
Schedule/ Timeline		◆	◆																					
CITI Training		◆	◆																					
Theoretical Frame work		◆	◆																					
Logic Model		◆	◆																					
Interviews with Wellness Stakeholders		◆	◆																					
Meetings to update stakeholders			◆		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆										
Outcome Development					◆	◆	◆	◆																
Methods and instruments identified					◆	◆	◆	◆																
Develop budget plan					◆	◆	◆	◆																
Non-monetary investments identified					◆	◆	◆	◆																
Marketing and communication plan finalized							◆	◆																
Identification of Implementation Risks/ pitfalls							◆	◆																
MOU drafted							◆	◆																
IRB Application Process							◆	◆	◆	◆														
MOU signed with organization									◆	◆														
Strategic implementation plan developed								◆																

KEY ACTIVITIES CONTINUED	FALL/SP 19/20	Summer 20			Fall 20				Spring 21				Summer 21				Fall 21				Spring 22			
		Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar 22	Apr 22
PLANNING ◆																								
Final outcomes identified								◆	◆															
Form student advisory committee									◆	◆														
Class dates Finalized										◆														
Change management plan begins										◆	◆													
Dates in Learning Management System										◆	◆													
Identify Education Participants										◆	◆													
Post-tests created in survey software										◆	◆													
Pre-tests created in survey software										◆	◆													
Rooms reserved for In-person Training										◆	◆													
DNP student takes Mindfulness Training and creates list of support items and tools for workplace sustainability											◆	◆												
Marketing am communication plan rolled out											◆	◆	◆											
Pre-tests complete													◆											
Post-Testes complete													◆											
Toolkit of mindfulness resources at work created														◆										
IMPLEMENTATION ✸																								
Set Regular Student Advisory Committee meeting Cadence												✸												
MBSR Classes Commence for Managers and Champions													✸	✸	✸									
Staff Meetings and Safety Huddles start incorporating a mindful moment															✸	✸								
Kits to support mindfulness at work rolled out															✸	✸								

KEY ACTIVITIES CONTINUED	FALL/SP 19/20	Summer 20			Fall 20				Spring 21				Summer 21				Fall 21				Spring 22			
		Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar 22	Apr 22
DATA COLLECTION ■																								
Staff Pre-test survey administered												■												
Manager Pre-tests administered												■												
Staff post-tests administered																■								
Manager Post-tests administered																■								
DATA ANALYSIS ●																								
Staff Demographics compiled												●												
Validation of Completed Surveys/Tools												●	●	●	●	●								
Pre-tests for staff analyzed													●											
Pre- tests for managers analyzed													●											
Post intervention staff survey analyzed																●	●							
Manager post intervention survey analyzed																●	●							
Analyze and graphically represent data																	●	●						
DISSEMINATION ✚																								
Decide on dissemination plan with committee involvement																		✚						
Expansion and continued sustainability plan approved																		✚	✚					
Prepare materials for dissemination																					✚	✚	✚	✚
Disseminate to stakeholders																								
Disseminate to organization																								
Disseminate findings during Executive Session																							✚	
Identify post project monitoring/ evaluation methods																							✚	
Consider public Presentation																							✚	✚
Consider publication																							✚	✚
Final Report ★																								
Written																					★	★	★	★

Appendix F

Outcome Measures:

Outcome	Data Collection Instrument/Data	Analysis Goal	Analytic Technique
1. Twelve percent of nurses from the Emergency Department (ED) n= 15 attended at least six of the eight Mindful-Based Stress Reduction (MBSR) sessions by July 31, 2021	**Instrument:** MBSR attendance tracker It is tracked via the hospital's learning management system—attendance taken by employee identification number (EID). **Data:** Count of the number of participants at each session, the date, time, and duration of the session.	To quantify the number and percentage of nurses attending the educational offering with a target of 15 of the 20 volunteer participants completing at least seventy-five of the MBSR sessions To have 12 percent of the ED nursing workforce attend the initial educational offering.	Count of the total number of nurses attending the education sessions compared to expected attendance. The report provides data for determining the nominal count and percentage of participants in the educational sessions. Allows comparison of actual participation to goal participation.
2. Eighty percent of Emergency nursing leaders attended six out of eight MBSR training classes by July 31, 2021.	**Instrument:** MBSR Attendance tracker Tracked via the hospital's learning management system. **Data:** Attendance at training sessions, the date, time, and duration of the session.	To quantify the number and percentage of unit leaders within the Emergency Department participating MBSR. Goal of 5/6 or eighty percent of nurse leaders attend seventy-five percent of the training classes.	Count the total number of leaders attending the entire MBSR eight-session series. The report provides data for determining the nominal count and percentage of nurse leaders participating in the education intervention. Allows comparison of actual participation to goal participation.

3. Fifty percent of nurses who attended training between April and July of 2021, would recommend the course to a colleague	**Instrument:** Post-Intervention Assessment RedCaps survey components: Staff satisfaction with educational offering. **Data:** Overall satisfaction with class (Likert Scale 1-5) Overall satisfaction with delivery method Overall Satisfaction with trainer (Likert Scale 1-5) Likeliness to recommend course to a colleague (Likert Scale 1-5)	To quantify the usefulness of the course offering to the attendee. To quantify the level of satisfaction with the trainer, method of instruction and time spent in intervention.	Average and mean Likert scale scores taken for course appraisal measured. Net promotor score calculated by taking summing positive responses (Very likely to recommend, likely to recommend) and subtracting detractors (very unlikely to recommend, unlikely to recommend). Percentage of positive responses versus negative taken to ascertain 50% of participants reporting they would recommend the course to a colleague. Average frequency of each coping skill taken and rank ordered from most frequently used to least frequently used in report.
4. Sixty-percent of participants in the MBSR education intervention filled out both the Pre-Intervention and post intervention assessments by July 31, 2021.	**Instrument(s):** Pre- Intervention and Post Intervention Assessments Delivered via Redcaps **Data:**	To evaluate the nominal count of participants returning educational intervention evaluation data.	Nominal counts of data for pre-assessment and post assessment are compared with total enrolled participant count to obtain a percentage of participation.

	Total number of returned pre-assessments and Total number of returned post assessments		
5. Following the completion of MBSR training, sixty percent of MBSR participants engaged in at least one mindfulness activity principle three times a week for four weeks by July 31, 2021. There was a forty percent or more increase in overall mindfulness between April 2021 and July 2021 as measured by the Five Facet Mindfulness Questionnaire short form.	**Instrument(s):** Pre-Intervention Assessment and Post Intervention Assessments Redcaps Survey components: Five-Facet Mindfulness Questionnaire Short form (FFMQ-sf) and Staff engagement in coping interventions outside of class **Data**: Pre and Post intervention mindfulness data. FFMQ-sf is a 15 item survey characterizing 5 Facets of mindfulness including Observing, describing, Acting with Awareness, Non-judging, and Non-reactivity. Coping strategies engagement: A list of each coping principle and a scale of how often the principle was used by participant (Abdominal breathing, body scan, sitting meditation, lying	To evaluate the nominal count of participants in educational intervention using the coping strategies taught during the intervention period. To obtain information on which coping strategies were effective and adopted post training. To measure the amount of mindfulness present in participants pre-intervention and post intervention.	Percentage of staff nurses in educational intervention using a new coping method. Most frequently used coping techniques are shown by frequency using a histogram. The percentage using more than one coping principle tabulated. Increase in mindfulness calculated by comparing overall FFMQ scores pre-intervention to those post intervention. Percentage of improvement between pre-test and post-test performed. Perform an unpaired T-test on overall scores FFMQ-sf differences between pre-intervention group and post intervention group to determine if a statistically significant change in mindfulness occurred between the pre-intervention and post intervention group. Determines more specifically

	down yoga, identification of being stuck, mindful moments, curiosity, silent seated meditation): Daily, Several times a week, Once Weekly, Once, Never used FFMQ-sf is a 15 item assessment created by Baer et al, (2008) and is a subset of the full 39-item FFMQ (Baer et al, 2006). The Cronbach's alpha for the 15-item short form ranges between 0.80 - 0.85. Although the longer form is more thorough and tested more often with mindfulness interventions, the short form decreases the cognitive burden on participants (Baer, Carmody, & Hunsinger, 2012) Use of the survey is granted with proper citation of the author's work.		the value of the change. Although a percentage change may be more valuable to some stakeholders, T-test values may allow DNP student to assess the effectiveness of this offering against reported effectiveness in literature.
6. There is a fifty-percent improvement in staff nurses who attended at least six of the MBSR sessions in overall resilience scores	**Instrument:** Pre-Intervention Assessment and Post Intervention Assessment	Evaluate change in total burnout and burnout within each subcategory of pilot	Sum of scores for overall burnout calculated as well as sums for each subcategory (emotional exhaustion,

between April and August 2021 in at least two categories of Burnout (emotional exhaustion, Depersonalization, or personal accomplishment).	RedCaps Survey: The Maslach Burnout Inventory-Human Services Survey- for Medical Personnel ((MBI-HHS(MB)). **Data:** Baseline levels of burnout measured by Maslach Burnout Inventory- Human Services Survey- for Medical Personnel ((MBI-HHS(MB)) The Survey is a 22 item self-assessment of burnout within the domains of emotional exhaustion, depersonalization, and personal accomplishment. Use of the survey is purchased from the author's website. Permission has been obtained by DNP student to use via web-survey application (Mind Garden Inc., 2019). There is a seven-point frequency scale for each inventory item from symptoms experienced 1 (never) to 7 (everyday).	participants before and after the intervention period	Depersonalization, and personal accomplishment).The average score is then calculated by taking dividing the scores by the number of participants. The averages of pre assessment and post assessment are compared to derive a percentage of change for participants after the educational intervention. Perform an unpaired T-test on overall scores FFMQ-sf differences between pre-intervention group and post intervention group to determine if a statistically significant change in mindfulness occurred between the pre-intervention and post intervention group. Determines more specifically the value of the change. Although a percentage change may be more valuable to some stakeholders, T-test values may allow DNP student to assess the

	The Cronbach's alpha for the Inventory is between 0.76-0.90 (Statistics Solutions, 2021).		effectiveness of this offering against reported effectiveness in literature.

Appendix G

Expense Report						
				Grand Total		**$ 30,417.32**
Expense Category	**Expense Description**	**Explanation of Expense**	**Type of Cost (variable /fixed)**	**Volume**	**Cost per Unit**	**Total**
Labor Expenses Associated with Training						
Personnel	ED RN Wages	ED RN Staff. Hourly rate is based on average salary of a nurse in first 3 years of practice (1/3 of our workforce).	Variable	2.3 hours per week x 15 nurses x 8 weeks= 276 hours	$49/hour	$ 13,524.00
Personnel	Expert Trainer-Wages MBSR	Experienced MSBR trainer. Typically charges $325 per participant for full course.	Variable	20 participants	$325/each	$ 6,500.00
Personnel	Assistant Nurse Manager Wages	Assistant nurse manager equivalent time in salary to participate in Education (average salary divided by 2080 to get approximate hourly rate).	Variable	2.3 hours per week x 8 weeks x 2 ANMS= 36.8 hours	53/ hour	$ 1,950.00

Personnel	Nurse Manager Wages	Nurse manager equivalent time in salary to participate in Education (average salary divided by 2080 to get approximate hourly rate).	Variable	2.3 hours x 2 Nurse Managers x 8 weeks= 36.8 hours	57/hour	$ 2,098.00
Personnel	Specialty Practice Leader Wages	Practice Leader equivalent time in salary to participate in Education (average salary divided by 2080 to get approximate hourly rate).	Variable	2.3 hours x 1 Nurse Educator x 8 weeks	54/hour	$ 994.00
Materials and Supplies Associated with Training						
Materials and Supplies	Survey Fees	Permissions to use MBI-HSS (MP) Burnout inventory.	Fixed	20 pre-tests and 20 post-tests (Min Purchase n=50)	2.50/each x 50	$125.00
Materials and Supplies	Survey Fees	Scoring and administration handbook for MBI-HSS (MP) Burnout Inventory.	Fixed	One Manual	60/ each	$60.00
Material and Supplies	Laminating Machine	Laminator to laminate signs and instructions for	Fixed	1 laminator	104.99/each	$ 104.99

		mindfulness activities.				
Material & Supplies	Copying Services	Wellness handouts.	Variable	1 x 170 copies	0.30/copy	$ 51.00
Material and Supplies	Distraction tools, sensory tools	Stress balls (homemade), and figit toys (Amazon). Items to supplement mindfulness through touch.	Variable	1x 30 toys	1.25/each	$ 37.50
Material and Supplies	Cleanable Yoga Mats	2 yoga mats for quiet time/ yoga practice. Most yoga taught in MBSR will be chair poses. Mats will be used for those with a preference for lying yoga.	Fixed	2 mats	9.99/each	$ 19.98
Space Use and Rentals						
Space	Meeting Space	Average cost of small meeting room taken from 5 websites. Room for trainer to teach from. Room can also accommodate participants should restrictions related to the COVID-19 pandemic be lifted.	Fixed	24 total hours of meeting time	100/hour	$ 2,400.00

Space	Computer labs	Campus library computer use free of charge for drop-in use.	Fixed	PRN to fill out surveys	$ -	$ -
Space	Quiet Rooms	Space for alone time, meditation or quiet conversations. Made out of available space on campus. At this institution reservations are required but no fee is charged for space use.	Fixed	1 room prn	$ -	$ -
Space	Huddle Space	Huddle space is designated out of existing space in each unit. Not charged in this climate.	Fixed	Nurses station	0	$ -
Software/ Equipment Associated with Training						
Equipment	Computer	Computer for use by DNP student to analyze and create pre-post assessments, send emails, and analyze data. Dell laptop used.	Fixed	1 laptop	$289.99/each	$ 289.99
IT	Survey Tool, Annual subscription	Online Pre-post Assessment platform for participants with	Fixed	1 year	$1500/year	$ 1,500.00

		encryption services. Software subscription renews in 1 year increments.				
IT	Word Processing and database, and presentation software	1 year subscription to cover all word processing needs. Software used for drafting communication, displaying and trending data, and running simple statistical analysis.	Fixed	1 year	99/yearr	$ 99.00
IT	Secure Virtual Meeting platform	Virtual class platform (example Zoom) as needed for educational offering. Plans sold on a per year basis for encrypting and security support.	Fixed	1 year	149.90/year	$ 149.90
IT	Learning Management System (LMS)	Software allows a platform to schedule classes and track training.	Fixed	30 users at 12.50 per month per user	12.50/ user	$ 375.00
IT	Project management tracking software	Included in LMS platform	Fixed	0	$ -	$ -
IT	Meditation Application or MP3 recordings	A medication application, MP3 Recordings or CD	Fixed	Free trial for nurses up to 6 months	$ -	$ -

	of meditation practice	recordings of Meditation Homework is included in the trainer costs associated with delivering MSBR.				
IT	Cloud document and Data Management system	Secure, password protected platform used to store master copies of documents and data.	Fixed	Minimum 12 months encrypted storage then data provided to project site to store.	16.58/month	$ 198.96
IT	Email Access	Free commercial email account or employer provided account that allows communication and reminders between DNP student and trainers or participants.	Fixed	$ -	$ -	$ -
IT	Phone access	DNP phone access to connect with trainers, stakeholders or participants as needed. DNP will use land lines available at sponsoring facility.	Fixed	$ -	$ -	$ -
Travel	NA					

Marketing/ Advertising	NA					

Appendix H

2-3 Year Budget

Desiree McCue 2-3 Year Budget				
Yearly Totals:	**$85,141**	**$ 55,871**	**$22,994**	
Expense Category	Year 1	Year 2	Year 3	Rationale
Personnel	$79,172.00	$47,089.00	$17,582.00	**In Year 1** Pilot first 3 months; additional 20 Nurses trained at 6 months and 9 months, and 5 additional Nurse Leaders over the course of 1 year. Includes additional licenses to measure burnout In Year 2: Accounts for New Employee Orientation Expansion at year 2 and ongoing in years 2 and 3 Assumes 2% contractual pay increase for nurses Assumes no nurse leaders trained in year 2 and 60 additional staff trained. Modest increase predicted related to COVID-19 recovery, and governmental uncertainty In Year 3, assumes 1 ANM and 1 Nurse manager trained. Staff training changes to New Orientation only. Assumes 2% pay increase
Material & Supplies	$581.00	$393.00	$52.00	Consumer Price Index (US Bureau of Labor Statistics, 2020) of 1.9% average in Portland Metro Area/ West Oregon on goods Some initial costs preserved over 3 year period such as stapler, laminated materials and re-usable coping items and Yoga mats
Space	$2,400.00	$6,000.00	$2,560.00	Assumes virtual classes in year one and return to in-person thereafter

Equipment	$290.00	$ -	$ -	
IT	$2,698.00	$ 2,749.00	$2,800.00	Assumes new contract terms in line with Consumer Price Index Changes

Appendix I

Statement of Operations

Operating Income		**$ -**
	Revenue Total	**$ 94,477.32**
Source	**Description**	**Amount**
DNP Student Rate (In kind donation)	Hourly wages estimated @ 1000 hours x $64	$ 64,000.00
Organizational donations	Space, equipment, materials & supplies, personnel, trainers, education time	$ 30,477.32
	Expenses Total	**$ 94,693**
Expenses	**Description**	**Amount**
Personnel	Wages including: DNP, MBSR Trainer (donated by HR). Education hours for Direct Care RNs, Specialty Practice Leader, Nurse Mangers, Assistant Nurse Managers.	$ 89,066.00
Material & Supplies	Supplies for education, and project interventions. Including: Office Supplies, Photocopy Services, Coping Activity supplies, and Mindfulness at work supplies, permissions to use copyright materials	$ 398.47
Space	Education Space, Computer lab access, and quiet rooms	$ 2,400.00
Equipment	Laptop computer for facilitation/ DNP student work	$ 290.00
IT	Software applications including: Word processing, Wellness App for Mindfulness Homework, Survey Administration Learning Management System, Project Tracking System and Secure Cloud-based Storage.	$ 2,322.96
Travel		$ -
Marketing/Advertising	Internal Marketing included in Material/Supplies	$ -
Fees		$ -
Incentives		$ -

Appendix J

Permissions to Use Maslach Burnout Inventory

Desiree McCue

Remote online use of the Mind Garden instrument stated below is approved for the person on the title page of this document.

Your name:
Desiree McCue
[redacted]

Email address:
[redacted]

Company/institution:
[redacted]

Mind Garden Sales Order or Invoice number for your license purchase:
JIZWJTKJQ

The name of the Mind Garden instrument you will be using:
Medical Personnel - MBI-HSS (MP)

Please specify the name of and web address for the remote online survey website you will be using and describe how you will be putting this instrument online:
The website managing the survey will be REDCAP https://octri.ohsu.edu/redcap/. Study Participants will receive an individual log in to complete the survey pre and post intervention. They will access their survey with a user name and password

Please include any other comments or explanations you would like to provide about your remote online use of a Mind Garden instrument:
Instrument will be used along with the Five-Facet Mindfulness Questionnaire to answer a research question about the utility of a Mindfulness Based education course on a cohort of Emergency Room nurses.

Desiree McCue

The Remote Online Survey License is a data license for research purposes only. This license grants one permission to collect and disclose (a) item scores and scale scores, (b) statistical analyses of those scores (such as group average, group standard deviation, T-scores, etc.) and (c) pre-authorized sample items only, as provided by Mind Garden, for results write-up and publication.

The instrument items, directions, manual, individual report, group report, and any other descriptive information available through Mind Garden is the intellectual property of the copyright holder and can be used only with purchase or written permission from Mind Garden.

added 13 September 2018

Appendix K

Outcome Summary Table

Outcome Number	Timeline	Outcome	Met/Unmet and Date	Details
Outcome 1	Short-term	12% of nurses (n=15) from the Emergency Department (ED) attended at least six of the eight Mindful-Based Stress Reduction (MBSR) sessions by July 31, 2021.	Partially Met June 15, 2021	7% of nurses (n=9) attended at least six of the eight MBSR sessions by July 31, 2021.
Outcome 2	Short-term	80% of Emergency nursing leaders attended six out of eight MBSR training classes by July 31, 2021.	Partially Met May 26, 2021	60% of Emergency Nursing leaders attended six out of eight MBSR training classes by July 31, 2021.
Outcome 3	Short-term	75% of participants attended training between April and July of 2021 would recommend the course to a colleague.	Met by May 26, 2021	92% of nurses attending at least one session would recommend the course to a colleague
Outcome 4	Short-term	60% of participants in the MBSR education participants filled out both the pre-assessment post-assessment by July 31, 2021.	Met – June 24, 2021	95% of participants attending at least one MBSR class filled out both the pre-assessment and post assessment by June 24, 2021
Outcome 5	Short-term	During MBSR training, 60% of MBSR participants engaged in at least one mindfulness activity principle three times a week for four weeks by July 31, 2021. There was a 40% or more increase in overall mindfulness between April 2021 and July 2021 as measured by the Five Facet Mindfulness Questionnaire short form (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).	Partially Met – July 4, 2021	80% of the MBSR participants engaged in at least one mindfulness activity principle three times a week for four weeks. There was a 11% increase in mindfulness in all participants attending at least one MBSR class. There was an 12% increase in participants attending at least 75% of classes and a 13% increase in those who practiced mindfulness at least three times a week at attended 75% of classes.

Outcome Number	Timeline	Outcome	Met/Unmet and Date	Details
Outcome 6	Short-term	There was a 50% improvement in at least two categories of burnout as measured by the Maslach Burnout Inventory- Health and Human Services for Medical Professionals (emotional exhaustion, Depersonalization, or personal accomplishment) among staff nurses who attended at least six of the MBSR sessions between April and August 2021.	Partially Met	There was a 1% decrease in emotional exhaustion, 4% decrease in de-personalization, and a 10% increase in personal accomplishment for participants attending at least six of the MSBR sessions. This was an improvement however fell short of the targeted improvement of 50%.

Appendix L

Pre-Assessment

Confidential

Pre-Assessment for Mindfulness Based Stress Reduction

Thank you for enrolling in Mindfulness Based Stress Reduction to reduce Stress.

Please complete the survey information below. Your information will be kept confidential.

If you have questions or concerns, please contact Desi McCue mccude@ohsu.edu.

Thank you!

1) What is today's date in Month- Day- Year format

_____

2) How Long have you worked in the ED?

- ◯ 1 Year or Less
- ◯ 1-3 Years
- ◯ 3-5 years
- ◯ More than 5 years

3) Which of the choices below best describes you?

- ◯ Staff Nurse (directly care for patients most shifts)
- ◯ Formal Nurse Leader (hold an unclassified leadership position Nurse Manager, SPL, etc.)

4) How long have you been a nurse?

- ◯ Less than 1 year
- ◯ 1-3 years
- ◯ 3-5 years
- ◯ 5-10 years
- ◯ 10-15 years
- ◯ More than 15 years

5) How often do you intentionally practice mindfulness?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

6) What is your primary shift?

- ◯ Day shift
- ◯ Night Shift
- ◯ Mid Shift or Swing Shift

Appendix M

Mindfulness Assessment Five Facet Mindfulness Questionnaire Short Form

Used in Pre and Post Surveys

Confidential

Mindfulness Assessment

Please rate each of the following statements using the scale provided. Write the number in the blank that best describes your own opinion of what is generally true for you.

1. When I take a shower or a bath, I stay alert to the sensations of water on my body.

◯ Never or very rarely true
◯ Rarely True
◯ Sometimes
◯ Often True
◯ very often or always true

2. I'm good at finding words to describe my feelings.

◯ Never or very rarely true
◯ Rarely True
◯ Sometimes
◯ Often True
◯ very often or always true

3. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.

◯ Never or very rarely true
◯ Rarely True
◯ Sometimes
◯ Often True
◯ very often or always true

4. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.

◯ Never or very rarely true
◯ Rarely True
◯ Sometimes
◯ Often True
◯ very often or always true

5. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.

◯ Never or very rarely true
◯ Rarely True
◯ Sometimes
◯ Often True
◯ very often or always true

6. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

◯ Never or very rarely true
◯ Rarely True
◯ Sometimes
◯ Often True
◯ very often or always true

.onfidential

7. I have trouble thinking of the right words to express how I feel about things.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

8. I do jobs or tasks automatically without being aware of what I am doing.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

9. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

10. When I have distressing thoughts or images I am able just to notice them without reacting.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

11. I pay attention to sensations, such as the wind in my hair or the sun on my face.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

12. Even when I'm feeling terribly upset I can find a way to put it into words.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

13. I find myself doing things without paying attention.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

14. I tell myself I shouldn't be feeling the way I am feeling.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

15. When I have distressing thoughts or images I just notice them and let them go.

- ◯ Never or very rarely true
- ◯ Rarely True
- ◯ Sometimes
- ◯ Often True
- ◯ very often or always true

From Baer, R. et al, (2006). Using self-report assessment methods to explore facets of mindfulness. Assessment, 13, 27-45.

Appendix N

Maslach Burnout Inventory Redacted Per Copyright

Used in Pre and Post Assessment Surveys

This survey takes 10-15 minutes to complete

Please provide honest answers. Your results will remain confidential.

Subject to IRB STUDY00022751 and is not human research.

Contact Mccude@ohsu.edu for questions.

The purpose of this survey is to discover how various people in the human services or the helping professions view their job and the people with whom they work closely. When you see the word patient please answer as if it is refering to the people for whom you provide your service, care, treatment, or instruction. (patient, families, employees, Please answer honestly your confidentiality will be maintained.
Instructions: Below are 22 statements of job-related feelings. Please read each statement carefully and decide if you ever feel this way about your job.

If you have never had this feeling, select never among the choices after the statement.

If you have had this feeling, indicate how often you feel it by selecting the range that best describes how frequently you feel that way.

---

1. [redacted]

◯ Never
◯ A few times a year or less
◯ Once a month or less
◯ A few times a month
◯ Once a week
◯ A few times a week
◯ Every Day

---

2. [redacted]

◯ Never
◯ A few times a year or less
◯ Once a month or less
◯ A few times a month
◯ Once a week
◯ A few times a week
◯ Every Day

---

3. [redacted]

◯ Never
◯ A few times a year or less
◯ Once a month or less
◯ A few times a month
◯ Once a week
◯ A few times a week
◯ Every Day

4. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

[redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

6. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

7. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

8. I feel burned out from my work.

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

9. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

10. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

11. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

12. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

13. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

14. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

15. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

16. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

17. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

18. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

19. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

20. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

21. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

22. [redacted]

- ◯ Never
- ◯ A few times a year or less
- ◯ Once a month or less
- ◯ A few times a month
- ◯ Once a week
- ◯ A few times a week
- ◯ Every Day

Time Survey Completed

_____

MBI - Human Services Survey for Medical Personnel - MBI-HSS (MP): Copyright ©1981, 2016 Christina Maslach & Susan E. Jackson. All rights reserved in all media. Published by Mind Garden, Inc., www.mindgarden.com

Appendix O

Post Survey

Confidential

Page 1

Mindfulness Based Stress Reduction Post Survey

Please complete the survey below. You will be paid for up for your time taking this survey.

If you have questions, please reach out to mccude@ohsu.edu

Thank you!

Please answer the following classes regarding your experience with Mindfulness-Based Stress Reduction instruction

---

1) Today's Date

_____

---

2) How many of the MBSR Classes did you attend?

◯ None
◯ 1-3
◯ 3-5
◯ 6-7
◯ All 8 Sessions

---

3) On average about how much total time did you spend OUTSIDE of CLASS practicing MBSR?

◯ Never
◯ Five Minutes Per Day
◯ 5-10 minutes per day
◯ 10-15 minutes per day
◯ 15-20 minutes per day
◯ 20-30 minutes per day
◯ 30-45 minutes per day
◯ More than 45 minutes per day

---

4) Over the last month, how often did you engage in MINDFUL BREATHING outside of class?

◯ Daily
◯ 4-6 times a week
◯ 2-3 times a week
◯ Once a week
◯ Never

---

5) Over the last month, how often did you engage in MINDFUL EATING outside of class?

◯ Daily
◯ 4-6 times a week
◯ 2-3 times a week
◯ Once a week
◯ Never

---

6) Over the last month, how often did you engage in BODY SCAN outside of class?

◯ Daily
◯ 4-6 times a week
◯ 2-3 times a week
◯ Once a week
◯ Never

7) Over the last month, how often did you engage in LYING DOWN YOGA outside of class?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

8) Over the last month, how often did you identify being STUCK?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

9) Over the last month, how often did you engage in MINDFUL MOVEMENT outside of class?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

10) Over the last month, how often did you engage in CURIOUSITY outside of class?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

11) Over the last month, how often did you engage in SILENT SEATED MEDITATION outside of class?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

12) Over the last month, how often did you engage in MINDFUL YOGA PRACTICE outside of class?

- ◯ Daily
- ◯ 4-6 times a week
- ◯ 2-3 times a week
- ◯ Once a week
- ◯ Never

13) How knowledgeable was the instructor about the subject?

- ◯ Extremely knowledgeable
- ◯ Very knowledgeable
- ◯ Moderately knowledgeable
- ◯ Slightly knowledgeable
- ◯ Not knowledgeable at all

14) Please rate the effectiveness of your instructor, [redacted]

- ◯ Extremely effective
- ◯ Very effective
- ◯ Moderately effective
- ◯ Slightly effective
- ◯ Not effective at all

15) The length of the instruction sessions were

- ◯ Too long
- ◯ Too short
- ◯ Just right

16) How would you rate your satisfaction with the class delivery format (taking this class via a web/ application platform)?

- ◯ Extremely satisfied
- ◯ Very satisfied
- ◯ Moderately satisfied
- ◯ Slightly satisfied
- ◯ Not satisfied at all

17) How likely are you to recommend MBSR to a colleague?

- ◯ Extremely Unlikely
- ◯ Very Unlikely
- ◯ Unlikely
- ◯ Moderately unlikely
- ◯ Neutral
- ◯ Moderately Likely
- ◯ Likely
- ◯ Very Likely
- ◯ Extremely Likely

18) Tell us about your experience taking this class with a cohort of your peers.

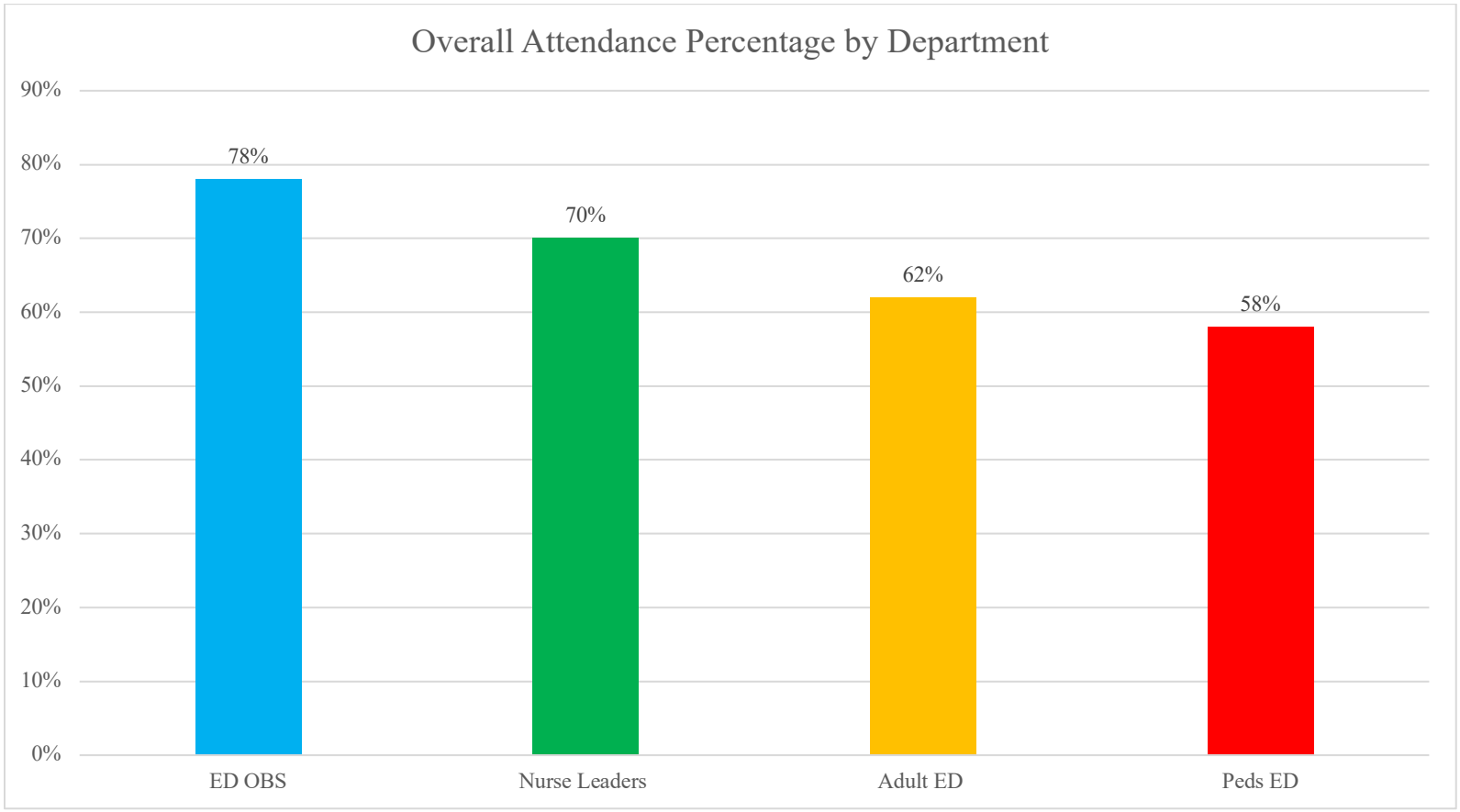
19) Any Comments you would like to add about your experience with the MBSR Class

Appendix P

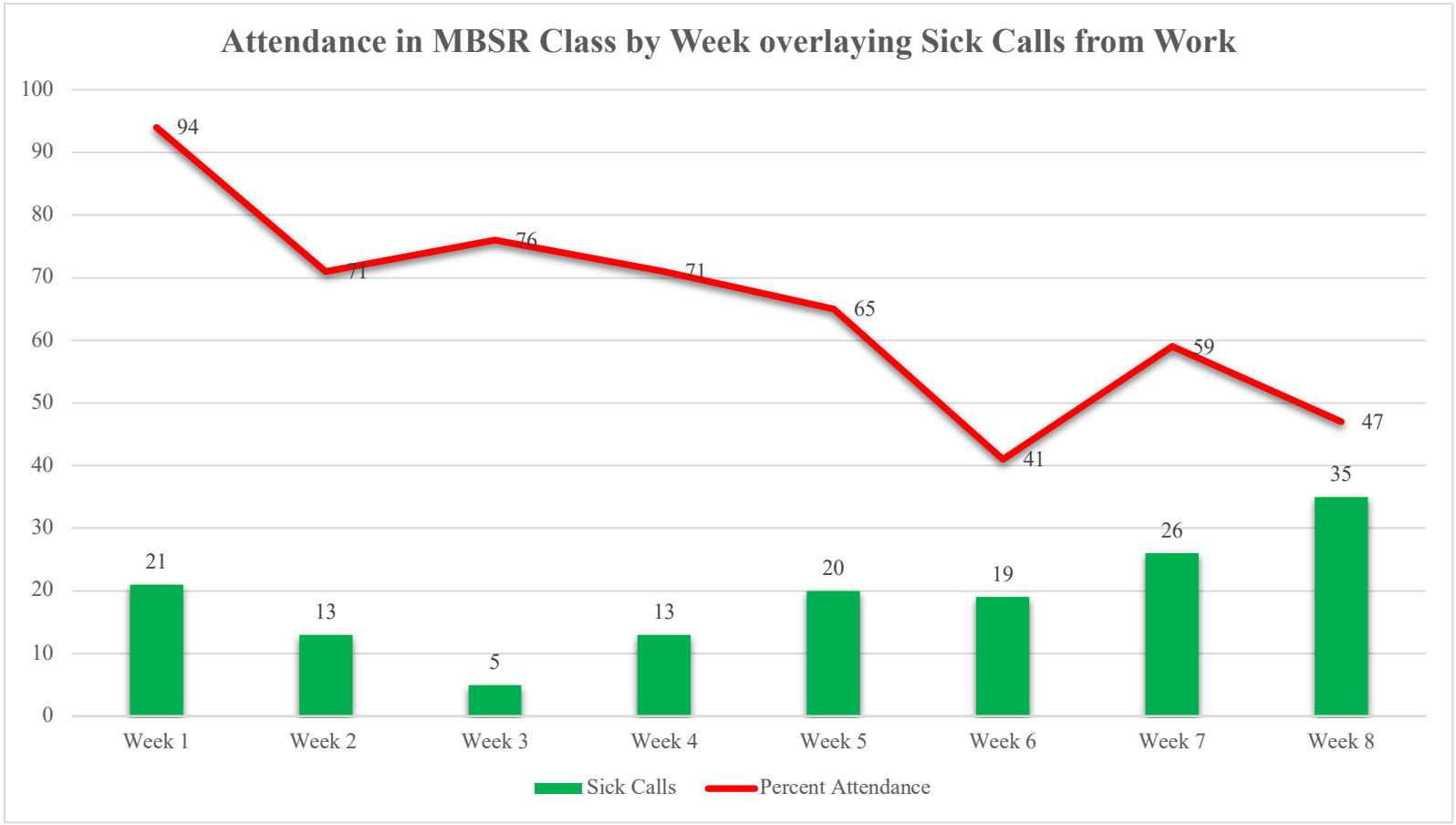
Final Statement of Operations

Operating Income		**$ -**
	Revenue Total	**$ 86,567**
Source	**Description**	**Amount**
DNP Student Rate (In kind donation)	hourly wages estimated @ 1000 hours x $64	$ 64,000.00
Organizational donations	space, equipment, materials & supplies, personnel	$ 22,567.00
	Expenses Total	**$ 86,567**
Expenses	**Description**	**Amount**
Personnel	Wages including: DNP, Psychological First Aid Trainer (donated). Education hours for Direct Care RNs, Champions, Specialty Practice Leader, Nurse Mangers, Assistant Nurse Managers.	$ 83,989.15
Material & Supplies	Supplies for education, and project interventions. Including: Office Supplies, Photocopy Services, Coping Activity supplies, and Paper storage	$ 340.99
Space	Education Space, Computer lab access, huddle space, and quiet rooms	$ -
Equipment	Laptop computer for facilitation/ DNP student work	$ 289.00
IT	Software applications including: Word processing, Survey Administration Learning Management System, Project Tracking System and Secure Cloud-based Storage.	$ 1947.86
Travel, Marketing/Advertising, Fees and Incentives		$ -

Appendix Q


Overall Attendance Percentage by Department
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
78%
70%
62%
58%
ED OBS
Nurse Leaders
Adult ED
Peds ED

Appendix R


Attendance in MBSR Class by Week overlaying Sick Calls from Work
100
90
80
70
60
50
40
30
20
10
0
94
71
76
71
65
41
59
47
21
13
5
13
20
19
26
35
Week 1
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Sick Calls
Percent Attendance

Appendix S

Average FFMQ-sf Mindfulness and Maslach Burnout Inventory Scores

Staff Nurse participants with at least 75% attendance in MBSR Classes

Attendance	Average Percent Improvement in Mindfulness	Average % Improvement Emotional Exhaustion	Average % Improvement Depersonalization	Average % Improvement Personal Accomplishment
100%	6%	17%	16%	8%
87.50%	17%	-21%	-35%	21%
75%	10%	11%	31%	3%
Average	11%	1%	6%	10%

11% Average Improvement in Mindfulness

Appendix T

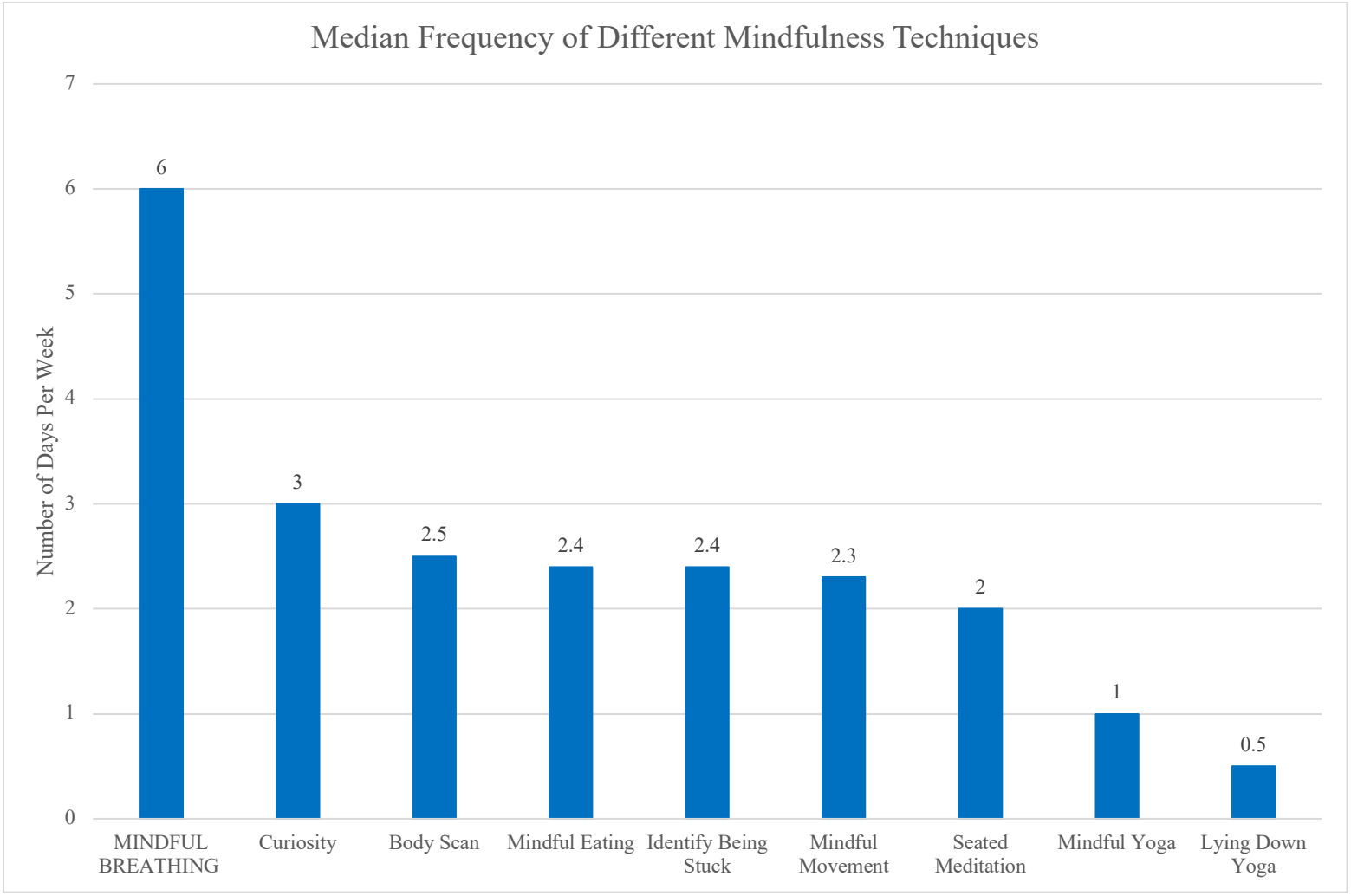
Average FFMQ-sf Mindfulness and Maslach Burnout Inventory Scores

Staff Nurse participants with at least 75% attendance in MBSR Classes with outlier score omitted*

Attendance	Average % Improvement in Mindfulness	Average % Improvement in Emotional Exhaustion	Average % Improvement Depersonalization	Average % Improvement Personal Achievement
100%	6%	17%	16%	8%
87.50%	16%	-10%	-5%	13%
75%	10%	11%	31%	3%
Average Change	11%	6%	18%	7%

*Outlier with increased burnout eliminated from analysis

Appendix U

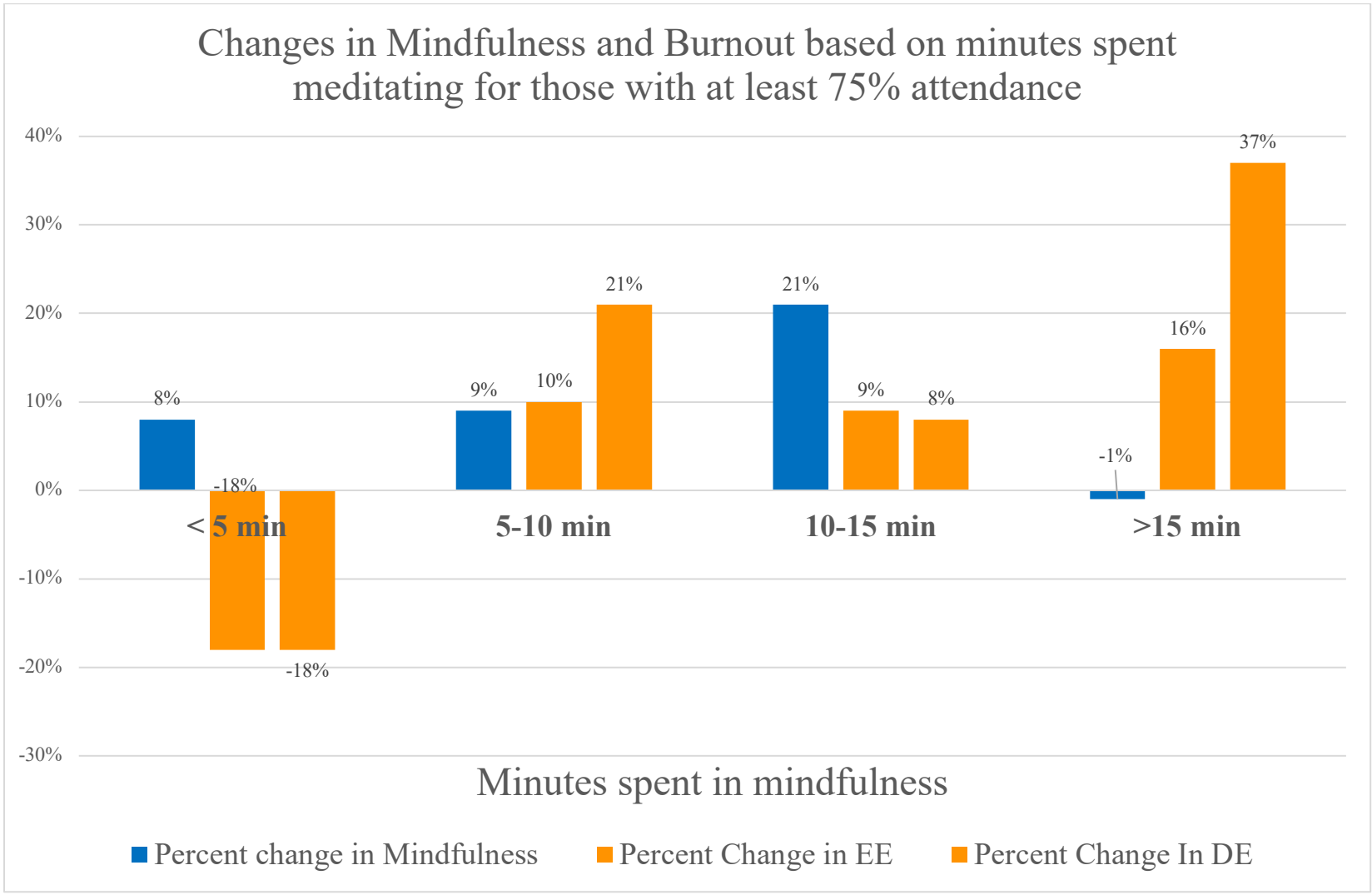

Median Frequency of Different Mindfulness Techniques
Number of Days Per Week
0
1
2
3
4
5
6
7
6
3
2.5
2.4
2.4
2.3
2
1
0.5
MINDFUL BREATHING
Curiosity
Body Scan
Mindful Eating
Identify Being Stuck
Mindful Movement
Seated Meditation
Mindful Yoga
Lying Down Yoga

Appendix V

Nurse Leader Participant Scores

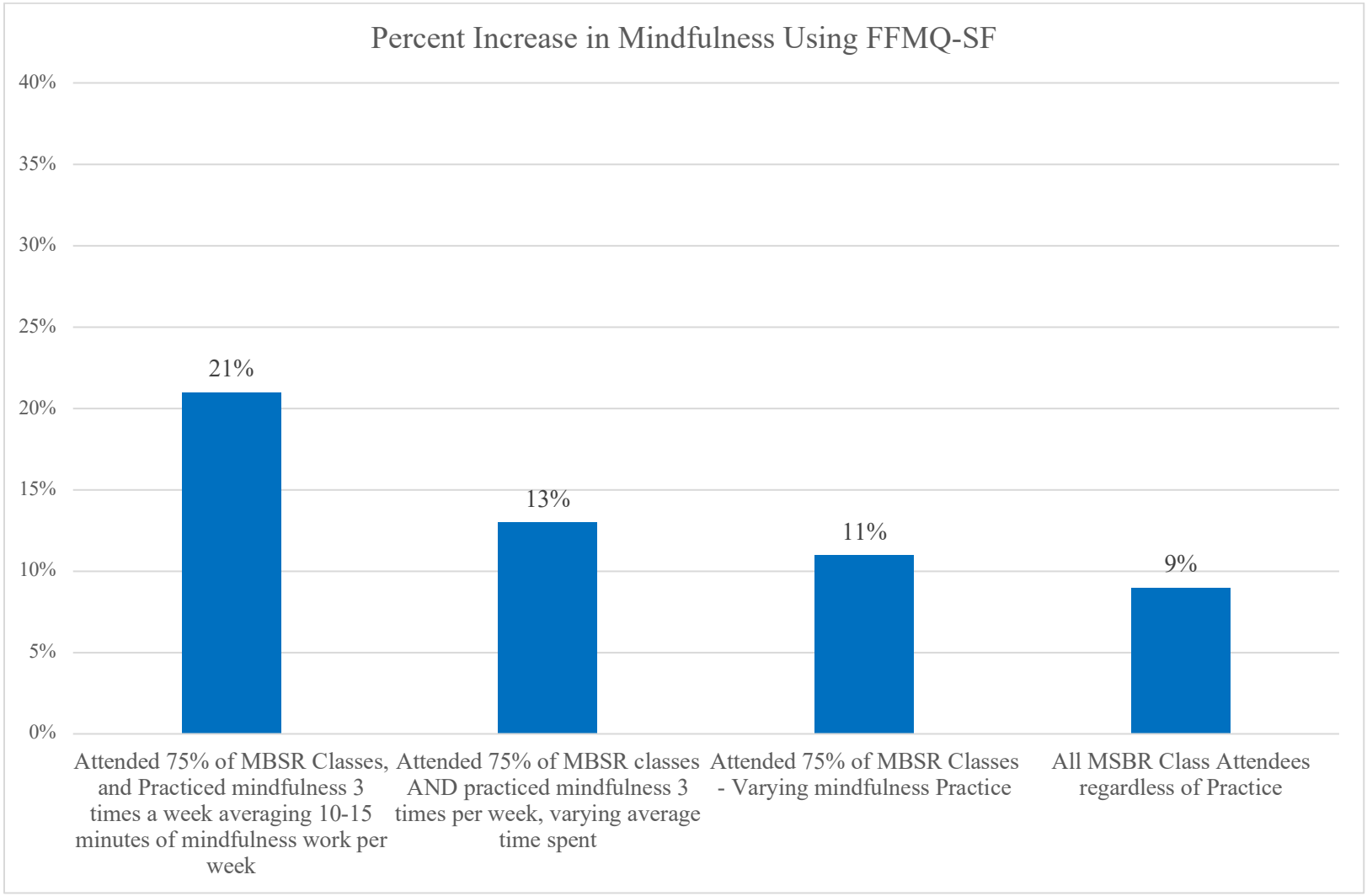
All Nurse Leader MBSR participants			
Change in mindfulness	Average Change EE	Average Change DE	Average Change PA
-1%	10%	34%	1%
Nurse Leader MBSR Participants with at least 75% attendance			
Change in mindfulness	Average Change EE	Average Change DE	Average Change PA
7%	14%	36%	4%

Appendix W



*EE is Emotional Exhaustion, DE is Depersonalization, two components of burnout

Appendix X


Percent Increase in Mindfulness Using FFMQ-SF
40%
35%
30%
25%
20%
15%
10%
5%
0%
21%
13%
11%
9%
Attended 75% of MBSR Classes, and Practiced mindfulness 3 times a week averaging 10-15 minutes of mindfulness work per week
Attended 75% of MBSR classes AND practiced mindfulness 3 times per week, varying average time spent
Attended 75% of MBSR Classes - Varying mindfulness Practice
All MSBR Class Attendees regardless of Practice