ASSESSMENT OF BURNOUT WITH IMPLEMENTATION OF A BRIEF MINDFULNESS INTERVENTION IN PALLIATIVE CARE CLINICIANS

by

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ABSTRACT

RACHEL DIANNE SNYDER. Assessment of burnout with implementation of a brief mindfulness intervention in palliative care clinicians. (Under the direction of DR. SUSAN LYNCH)

Background: While work in palliative and hospice care can be a rewarding experience in helping those suffering with complicated and terminal illnesses, it can also expose those involved to significant work stress, potentially leading to burnout. Palliative medicine is a medical specialty wherein clinicians provide care for the medical, psychosocial and spiritual needs of seriously ill patients, and facilitate their understanding and coping skills through the illness progression. These clinicians are especially vulnerable to frequent exposure to traumatic situations due to the high density of complicated patients under their care, placing them at risk for burnout. **Objective**: The objective of this quality improvement project was to better understand burnout levels in palliative nurse practitioners and nurses in a large inpatient, academic hospital system and to determine the feasibility and effectiveness of implementing mindfulness meditation to reduce burnout levels. **Design**: The Maslach Burnout Inventory (MBI) was used to assess burnout pre and post implementation of a brief, self-guided mindfulness intervention via smartphone application. The intervention was performed individually, remotely, and asynchronously with volunteers. **Setting/participants**: A total of 12 palliative care nurse practitioners and nurses volunteered from an inpatient palliative care group within a large healthcare system in North Carolina. **Results**: MBI domains analysis revealed a statistically significant decrease in emotional exhaustion (Pre: 2.2; Post: 1.5; p=.016). The depersonalization domain (emotional disconnect) score did not show a statistically significant decrease in the

post-intervention score, but a numerical decrease was reported (Pre: 0.82; Post: 0.65). The personal accomplishment domain score did not show any significant change (Pre: 4.6; Post: 4.5). The reflective questions indicated that many participants felt the mindfulness exercise was feasible, tended to feel calmer, were more relaxed, and were satisfied with the intervention. This correlates to the statistically significant result on the emotional exhaustion subscale, leading to the conclusion that the mindfulness intervention was valuable to those who participated and had efficacious results. **Conclusion**: The information gained from this project is vital to better understanding burnout in palliative clinicians given its consequences are detrimental to healthcare systems, patient care and clinicians themselves. By developing evidence-based interventions and training, burnout could be prevented, thereby promoting longevity and satisfaction of clinicians in palliative care. If burnout can be eased, seasoned clinicians can be retained, leading to reduced financial burden on the healthcare system and improved patient care and satisfaction.

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LIST OF ABBREVIATIONS

AAHPM	American Academy of Hospice and Palliative Medicine
DNP	Doctor of Nursing Practice
IRB	Institutional Review Board
MBI	Maslach Burnout Inventory
HSW-MP	Human Service Survey - Medical Personnel
MBSR	Mindfulness Based Stress Reduction
PCC	Palliative Care Clinicians
REDCap	Research Electronic Data Capture
SPSS	Statistical Package for the Social Science

CHAPTER 1: INTRODUCTION

As one faces the end of life, there is often emotional distress, as well as psychological challenges and complicated symptom management. For those who provide care for patients facing the end of life, there is also emotional and psychological stress. While work in palliative and hospice care can be a rewarding experience in helping those suffering with complicated and terminal illnesses, it can also expose those involved to significant work stress, potentially leading to burnout. Professionals who are involved in end-of-life decision making may experience stress as a result of their responsibility in helping families with the decision to maintain or discontinue life-sustaining interventions, managing complicated symptom management regimens, advocating for patient wishes in a procedure-driven healthcare culture, and bearing witness to repeated death. Palliative medicine is a medical specialty wherein clinicians provide care for the medical, psychosocial and spiritual needs of seriously ill patients, and facilitate their understanding and coping skills through the illness progression. These clinicians are especially vulnerable to frequent exposure to traumatic situations due to the high density of complicated patients under their care, placing them at risk for burnout (O'Mahony et. al., 2018).

The objective of this quality improvement project is to better understand burnout levels in palliative nurse practitioners and nurses in a large inpatient, academic hospital system using the Maslach Burnout Inventory (MBI). During this project, implementation of a brief mindfulness intervention was performed with volunteers to determine its feasibility and also assess for effectiveness in reducing burnout levels. The information gained from this project is vital to better understanding burnout in palliative clinicians given its consequences are detrimental to healthcare systems, patient care and clinicians

themselves. If burnout can be reduced, seasoned clinicians can be retained, leading to reduced healthcare costs and improved patient care and satisfaction.

1.1 Background

The origins of research regarding burnout were in caregiving and service occupations where the basis of the job was a relationship between a provider and a recipient. Several related terms are often used interchangeably: compassion fatigue, secondary traumatic stress, and burnout. Compassion fatigue describes the weariness experienced by health care clinicians who are repeatedly exposed to seriously ill, suffering, and dying patients. The term secondary traumatic stress describes the reactions of healthcare clinicians who experience trauma vicariously by caring for seriously ill and dying patients. Burnout describes distress experienced by employees related to job expectations and working conditions (Melvin 2015). For the purpose of this scholarly project, the focus will be on burnout.

According to Maslach et al. (2001) the concept of burnout is not new; the relationship between people and their work, and the problems that can result, is a significant phenomenon of the modern age. Maslach et al. (2001) defines burnout "as a psychological state characterized by emotional exhaustion, feelings of cynicism (depersonalization), and a low sense of personal accomplishment". The exhaustion piece represents the individual stress aspect, feelings of overextension and depletion of one's emotional and physical resources. The cynicism aspect of burnout is the interpersonal context of burnout; it involves negative and detached feelings in relation to the job.

Reduced accomplishment characterizes the self-evaluation dimension and refers to feelings of incompetence and lack of productivity and achievement at work (Maslach et al. 2001).

Burnout sources can be related to organizational workplace stressors as well as individual characteristics and stressors. Many organizations operate with the belief that burnout is an individual problem; however, evidence suggests that the organization and practice environment play critical roles (Shanafelt and Noseworthy, 2017). Multiple studies have analyzed burnout sources, which can be grouped into systemic or organizational stressors, patient-centered stressors, and personal challenges. Systemic stressors can originate from limited resources, inefficient work processes, increased workload, interprofessional tensions, regulatory and institutional concerns, long work hours, frequent overnight call, and high work acuity. Patient-centered concerns included intensity of individual cases, managing patient and family expectations and chronic exposure to suffering. Personal challenges may come from inability to set boundaries, self-judgement, work/life balance, loss of support from colleagues, and lack of meaning in work (Perez et al. 2015; West et al. 2018).

Depending on the source of burnout, literature suggests strategies for improvement of burnout. Healthcare organizations can increase support with adequate staffing, sufficient time off, predictable work schedules, and reduced on-call hours. Individually focused solutions include training for improved self-awareness, mindfulness-based stress reduction, education on self-care practices (both physical and cognitive), time for reflection, and support from colleagues (Perez et al. 2015; West et al. 2018). Regardless of the source of burnout or the approach taken to remedy the problem, it must be a shared responsibility between the healthcare system and the individual clinician (West et al. 2018).

Resilience is an evolving process of fostering positive attitudes and effective strategies and is associated with lower burnout and increased compassion (Koh, 2019). Mehta et al. (2016) described resiliency as the capacity of a malleable system to withstand the challenges to its stability and viability. With evidence-based, appropriate resilience intervention and training, burnout could be prevented, thereby promoting longevity and satisfaction of clinicians in palliative care.

1.2 Problem Statement

The negative consequences of burnout are numerous and can affect multiple components of healthcare, including patient care, health care systems, and clinician health. Burnout has been linked with increased risk of medical errors, poor patient satisfaction, and longer recovery times, leading to suboptimal patient care. The health care system is affected by burnout with reduced clinician productivity, increased clinician turnover, and less patient access. Finally, clinician personal health and relationships can suffer due to burnout (Shanafelt and Noseworthy, 2017; Kavalieratos et al., 2017; West et al. 2018).

A significant consequence for healthcare systems regarding burnout is the financial burden. Return on investment can be reduced with increased turnover from staff, decreased productivity leading to reduced revenue, as well as long term viability of the healthcare system due to poorer quality of care, lower patient satisfaction, and compromised patient safety (Shanafelt et. al., 2017). Turnover impacts direct costs related to recruitment as well as lost revenue during onboarding a new clinician as it takes time for that clinician to reach peak efficiency (Shanafelt et. al., 2017). Misra-Herbert et al. (2004) noted the lost revenue

for one hospital generated by just one departing physician is estimated at $400,000 to 1,000,000.

The prevalence of burnout in healthcare clinicians is grim. According to Shanafelt et al., (2017) burnout was seen nearly twice as often among physicians compared with U.S. workers in other areas even after adjusting for sex, relationship status, age, level of education, and hours worked. It is now accepted that 50% of U.S. physicians are experiencing a syndrome generated by their occupation that is associated with significant personal and professional costs. Reith (2018) reported that in a 2011 study on burnout, prevalence was 33% among hospital nurses and 37% in nurses providing patient care in nursing facilities. Kamal et al. (2016) observed a burnout prevalence of 38.7% for hospice and palliative care clinicians.

1.3 Purpose

A career in medicine is often looked upon as a calling and tends to have a culture of prioritizing work over personal needs. Unfortunately, this lack of balance potentially leads to burnout. The purpose of this Doctor of Nursing Practice (DNP) scholarly project was to assess baseline burnout in a sample group of palliative nurse practitioners and registered nurses in a local hospital system, then implement a brief mindfulness intervention via smartphone to reduce burnout. If clinicians can be provided with strategies aimed at reducing burnout, retention of seasoned providers could improve, thereby reducing the financial burden on healthcare systems and, more importantly, improve clinician quality of life and improve patient outcomes.

1.4 Clinical Question

In palliative care nurse practitioners and nurses (P), does implementation of a brief mindfulness intervention (I) reduce burnout (O)?

1.5 Project Objectives and Goals

Traditional mindfulness interventions can be time consuming for busy clinicians. Mindful meditation programs using smartphone applications require minimal financial investment and the least amount of time away from clinical work. Leading to the idea that brief programs could be more helpful to clinicians in healthcare settings (Gilmartin et. al. 2017). Perez et al. (2015) concluded skill-building interventions that utilize brief strategies for use during the workday, would improve palliative care clinician sustainability and aid in stress reduction. Keeping this in mind, a brief intervention that could be done during the workday might be most beneficial to busy clinicians. Individually centered solutions are those that focus on strengthening the individual's internal resources or help alter their behaviors, thereby enhancing the capacity of individuals to cope with the workplace (Maslach et al. 2001). Considering the needs of this DNP's practice group and evidence from the literature, an objective of this project was to provide an intervention that could be done individually, remotely, and asynchronously by using a self-guided mindfulness intervention via smartphone applications.

The sample group of palliative nurse practitioners and nurses had a baseline assessment with the Maslach Burnout Inventory (MBI) to assess the three components of burnout including emotional exhaustion, depersonalization, and personal accomplishment. Post intervention, the tool was used again to evaluate the sample group and determine any

statistically significant change in scores. A goal was for post-intervention scores on the MBI to show decreased emotional exhaustion, decreased depersonalization, and increased personal accomplishment. Several reflective questions were asked after the intervention to assess the feasibility of adding mindfulness into the clinician's daily schedule as well as positive or negative feelings towards the exercise. Another goal of this intervention was increased personal resilience, thereby reducing potential for burnout and improving job satisfaction, retention of palliative care clinicians, and patient care.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Literature Review

For this DNP project, a search of the literature for evidence to answer the clinical question was conducted using PubMed, Cochrane Library, CINAHL, and ProQuest databases. Search terms included *hospice, palliative, nurse, provider, clinician, burnout, stress, compassion fatigue, resilience, intervention, treatment, therapy, strategy, mindfulness*. For best results, a Boolean search was used to combine terms and help limit irrelevant information. Initial searches included over 300 articles. Inclusion criteria were that the studies be written in English and published in the last 10 years. This was narrowed down based on relevance and for the purpose of this project. Inclusion criteria were peer-reviewed articles, written in English, and narrowed down based on relevance to for the purpose of this project. Core studies on burnout and solutions were reviewed as well as the literature that focused primarily on burnout in palliative and hospice clinicians. Excluded literature focused mainly on compassion fatigue and secondary traumatic stress. Types of studies favored included those with highest scientific evidence, including systematic reviews, randomized controlled trials, cohort and case studies as well as examination of the reference lists of the most valuable studies.

Kamal et al. (2016) studied the prevalence and predictors of burnout specifically among palliative care clinicians by partnering with the American Academy of Hospice and Palliative Medicine (AAHPM) - one of the largest palliative care organizations in the United States. The authors used electronic surveys to capture demographics, job responsibilities and to administer the Maslach Burnout Inventory (MBI) tool, finding a burnout rate of 38.7%. This study highlights the significant problem of burnout for this

specialty and initiated the original interest in better understanding burnout in this population and finding better ways to improve their experience. They found working longer hours, in smaller organizations, age younger than 50 and weekend work were all causes of increased burnout.

Common stressors or reasons for burnout emerged from the literature review. Perez et al. (2015) reported that systemic stressors included limited resources (time, staff), competing role demands (no administrative time), unpredictable schedules (long hours) and conflicts with non-palliative service providers. Patient-centered stressors include management of intense caseloads and handling patient and family expectations. Personal challenge stressors included boundary setting and recognizing and accepting limitations. Koh et al. (2019) noted that the major themes of burnout included clinician exhaustion from the emotional work, challenges with maintaining work-life balance, interprofessional differences with non-palliative providers, and having multiple roles (management duties along with clinical duties). Kavalieratos et al. (2017) found that common sources of burnout included increased workload, tension between non-specialists and palliative care specialists, regulatory issues, and stability of the palliative care workforce.

One clear theme in the literature was conflict or tension between non-palliative and palliative service lines. From transcribed interviews, documented statements show that many palliative care clinicians (PCC) have struggled to advocate for patient wishes in the setting of a system that tends to focus on more aggressive treatments, leading to moral distress of the clinician. Limited resources such as time and staffing, balancing multiple roles, and worry about the overall stability of the palliative care workforce were also

common themes among the studies done by Perez et al. (2015), Koh et al. (2019), and Kavalieratos et al. (2017).

Additional findings from the literature included common solutions and strategies for coping. Perez et al. (2015) noted physical self-care, distancing oneself from work, and support from colleagues as helpful strategies. Koh et al. (2019) reported finding meaning in one's work, drawing boundaries, and finding personal space as techniques for dealing with burnout concerns. Kavalieratos et al. (2017) reported potential solutions that included self-regulation (work-life balance, mindfulness), relying on colleagues for support, and organizational and policy support to promote culture changes to reduce burnout. Kavalieratos et al. (2017) had final recommendations of allowing PCCs time to rotate off service and improved organizational support for self-care as ways to improving resiliency.

In their pilot study, Mehta et al. (2016) demonstrated an intervention to remedy some of the findings from their previous article by Perez et al. (2015). They concluded that an intervention aimed at PCC sustainability should build skills that focus on stress reduction during work hours. The intervention was delivered to 16 PCCs over two months, broken into five sessions totaling 12 hours, and tested the Relaxation Response Resiliency Program. Participants showed preliminary evidence of reduction in perceived stress and an increased trend toward perspective-taking, but overall, the study was not statistically significant.

Mindfulness Based Stress Reduction (MBSR) is a non-religious evidence-based program developed by Jon Kabat-Zinn in 1979 at the University of Massachusetts Medical School; it is designed to help people improve attention and awareness through the practice of mindfulness. It is frequently cited in the literature and has been well researched over the

last several decades. It is a highly structured program, involving an 8-week, 10-session course requiring 31 hours of instruction by a certified instructor (Center for Mindfulness, 2020). Kabat-Zinn (2003) defines mindfulness "as the awareness that emerges through paying attention intentionally and nonjudgmentally in the present moment to the unfolding of experience moment by moment".

A systematic literature review of brief mindfulness practices for healthcare providers done by Gilmartin et al., (2017) found that nine of 14 studies reported positive changes in levels of mindfulness, anxiety, stress, burnout symptoms and resiliency. Variables included type of modality of mindfulness, dose, setting, duration, and tool of measure, but all were brief, being four hours or less. Eight of the fourteen studies found participants were interested in the material, verbalized benefits from the program and found time to participate in the intervention. The authors found attrition and nonattendance in all the studies despite the brief sessions and ease of accessibility. There was a noted benefit in the studies that offered meditations while on the hospital unit or via virtual platforms (Gilmartin et al. 2017). Studies that have targeted healthcare providers, including nurses, have found that mindfulness meditation training reduced anxiety, depression, and burnout, and increased empathy, focus, and mood (Fortney, et al. 2013).

Goodman and Schorling (2012) reported reduction in burnout scores with a mindfulness course intervention that involved two and half hours a week for eight weeks, with a 7-hour retreat. Work-related burnout was measured by MBI and scores improved significantly pre to post intervention. Fortney et al. (2013) found similar conclusions by using an abbreviated version of the 8-week MBSR program that included a full weekend training of 14 hours, 2 evening education sessions totaling 4 hours, and 10 to 20 minutes

of daily mindfulness practice. Participants had improvements compared to baseline on all MBI subscales.

While the findings of Goodman and Schorling (2012) and Fortney et al. (2013) were significant, Gilmartin et. al. (2017) reported that brief mindfulness programs require little time away from clinical care and reduced capital investment as compared to traditional mindfulness interventions. As a result, brief interventions may be more appropriate in busy healthcare situations (Gilmartin et al. 2017). For this DNP project, the needs of the practice require an intervention that can be done individually, remotely, and asynchronously. Therefore, utilization of a self-guided mindful intervention via smartphone application was chosen.

A 2014 study by Howells et al. (2014) used a randomized control trial exploring the viability of using a smartphone application to deliver mindfulness training, and whether or not it enhanced wellbeing. The intervention included the use of HeadSpace ™, where participants were directed to utilize the daily mindfulness exercises feature from the "Take 10" program over a span of 10 days, for 10 minutes each day. Results showed a statistically significant increase in positive affect and reduced depressive symptoms, supporting the feasibility of smartphone-based interventions to enhancement of health (Howells et. al., 2014).

Taylor et al. (2016) examined the feasibility of a brief mindfulness intervention using a smartphone application with resident physicians. While post intervention scores on the MBI did not show a statistically significant change, participants did report improved perception of mindfulness as a useful tool personally and for patients.

Heeter et al. (2017) completed a pilot study that examined a 6-week technology-assisted meditation program focusing on attention, breathing, and gentle movements. Five 10- to 12-minute meditations were used via smartphone applications with hospice and palliative professionals in a U.S. healthcare system. The program required minimal time and was able to reduce burnout and improve emotional awareness and self-regulation (Heeter et.al., 2017).

A review of the literature demonstrates the prevalence and impact of burnout, and evidence shows strong data on the use of mindfulness to reduce stress, compassion fatigue, burnout, depression, anxiety, and improve resilience. Its use is now mainstream across multiple domains, including Fortune 500 companies, universities, healthcare systems and individuals. Mindfulness is an individually-centered solution that focuses on strengthening individuals' internal resources to help alter their behaviors and enhance their capacity to cope with the workplace (Maslach 2001).

2.2 Conceptual Framework

In support of this DNP scholarly project, two theoretical and conceptual frameworks were found to be applicable: The Transactional Model of Stress and Coping framework and the Social Cognitive theory. They both uniquely speak to the harm that results from burnout, how individuals learn to cope and how people must possess self-efficacy as the building blocks to resiliency.

The Transactional Model of Stress and Coping framework emphasizes appraisal to evaluate harm, threat, and challenges, which results in the process of coping with stressful events (Lazarus & Folkman, 1984). The model evaluates daily irritations and key life

events impact emotions, with the emphasis on cognitive appraisal and coping with stress. Cognitive appraisal includes a primary appraisal that assesses whether the situation or threat is irrelevant, benign, positive, or stressful. Secondary appraisal judges the situation and determines what can be done and how to cope with the situation. Lazarus and Folkman concluded that how an individual appraises a situation directly influences the coping process and coping styles. This framework explains how individuals - nurse practitioners and nurses - identify stressors and learn strategies to cope with potential burnout symptoms (Lazarus & Folkman, 1984).

The Social Cognitive theory discusses how an individual must possess self-efficacy, which is the ability to perform in specific situations and complete the tasks of their work. Bandura (1989) explains that in social cognitive theory, learning occurs if the observer has a high level of self-efficacy, meaning the individual believes they can master a particular skill. Individuals with high self-efficacy can recover quickly from setbacks and disappointments. With this DNP project, mindfulness training could provide opportunity for skill development in the sample group, giving them the confidence and ability to persist in daily hardships of the job (Kritsonis, 2004).

These two frameworks complement each other and help build a strong foundation for the ways in which individuals identify stress, how they cope, develop self-efficacy and resilience, hopefully preventing burnout from occurring. These frameworks assist in understanding the process happening at the cognitive level, and in designing strategies to aid individuals processing stressful stimuli, reducing harmful reactions, and improving sense of self and well-being.

CHAPTER 3: PROJECT DESIGN AND METHODOLOGY

3.1 Subjects

For this DNP scholarly project, subjects volunteered from an inpatient palliative care group. Inclusion criteria were those working both full and part time and in good standing with the practice. Excluded from participation were students or fellows who may be temporarily working with the group but who are not employed by the practice group. The focus centered on nurse practitioners and nurses in this group as their physician colleagues had previously been offered burnout assistance from hospital administration. The nurse practitioners and nurses had not been surveyed nor been previously offered training on burnout solutions.

3.2 Setting

The setting for this DNP project was within a large, local healthcare system across 8 major hospital sites in Cleveland, Lincoln, Cabarrus, Mecklenburg, and Union counties in North Carolina. The sample group came from an inpatient palliative care practice group who work in the above-mentioned sites and who volunteered to be part of the intervention.

3.3 Measurement tools

The intervention began with obtaining basic demographic data via REDCap (Research Electronic Data Capture). REDCap is web-based, secure software program designed to capture data for research studies, including research survey management (Harris et al., 2009; Harris et al., 2019). Demographic questions included age, years of experience in palliative care, type of provider (nurse practitioner or nurse), gender (male,

female or prefer not to answer), hospital bed size (>500 or <500), and average daily palliative census at the participant's worksite (<20 or >20). Next, the Maslach Burnout Inventory (MBI) was administrated electronically via REDCap to the sample group of nurse practitioners and nurses to assess baseline level of burnout. It is a validated tool used in numerous studies to measure the three components of burnout. Both the demographic survey and MBI were administered prior to the start of intervention implementation.

3.4 Intervention

The smartphone application utilized for this scholarly project was Headspace ™. It was formally launched in 2010 and includes meditations, animations, articles, and videos all with the mission to improving health and happiness. Scientific rigor is valued by the company and they are dedicated to furthering the field of mindfulness meditation through clinically validated research. They are focused on improving digital health solutions and are partnered with several large academic and research institutions with the goal of conducting large mindfulness trials.

Assistance from a statistician was utilized to securely gather data via REDCap web application and to administer the MBI surveys electronically, de-identified and without knowledge of individual results. Pre-survey demographics and initial MBI were sent out November 16, 2020 and completed electronically within 2 days. Participants began the self-guided intervention utilizing mindfulness via Headspace ™ starting on November 18, 2020. Electronic instructions on the intervention itself were sent for review, along with instructions on how to download a free subscription to HeadSpace ™. Participants were instructed on how to navigate the application and which section of the application to use.

The post-intervention survey was electronically delivered December 15, 2020 and officially closed on January 8,2021.

The intervention involved each individual clinician listening to a brief guided meditation approximately 5 to 10 minutes long. Clinicians were asked to complete a mindful meditation when they need a moment to relax, refocus or calm their thoughts. They were encouraged to do this when it was most convenient for them – before work, after work, or during the workday. The goal was to not pull staff away from patient care, and to allow the participants to listen at a time that was most convenient for them. This was not meant to feel mandatory but rather to be viewed as a tool to reduce their stress. There was no requirement on the number of times they should log on, but they were instructed that literature shows the more one participates, the better mindfulness works. This project also evaluated the intervention's feasibility by discovering whether clinicians could find the extra 5-10 minutes needed in their busy day.

Within the application, there is a section called Basics, intended for beginners, that has 10 sessions ranging from 3 to 10 minutes. This section guided the participant through how to begin meditation, including time of day, body positions, and best locations for meditation. It gave the participant an option for either a male or female voice to guide them through a meditation. HeadSpace ™ also has a search option that allowed the participants to tailor the meditation specifically to their needs. For this DNP project, the Basics section was used so that the participants all experienced the same meditations, ensuring greater rigor for the intervention. The goal was to listen daily, but participants were encouraged to do as much as they could, in order to determine the feasibility of this intervention. At the

end of the 3-week period, participants were asked to reflect on their amount of participation.

3.5 Data Collection

The tool selected for use in this project was the Maslach Burnout Inventory (MBI) because it can be helpful in understanding the nature of burnout. Its purpose is to assess professional burnout in three areas, including emotional exhaustion, depersonalization, and personal accomplishment, and can potentially aid in development of effective interventions. The resources found at www.mindgarden.com report the tool is recognized as one of the leading measures of burnout, validated by more than 35 years of research.

Maslach and Jackson (1981) found internal consistency was estimated by Cronbach's coefficient alpha, which yielded reliability coefficients of 0.83 (frequency) and 0.84 (intensity) for the scale. The authors demonstrated validity in several ways. They correlated individual MBI scores with behavioral ratings from a person who knew the individual well. Also, MBI scores were correlated with specific expected job characteristics known to contribute to burnout. And finally, MBI scores were correlated with measures hypothesized to be related to burnout. Hence, these sets of correlations provided considerable evidence for the validity of the MBI, determining that various psychometric analyses illustrated the scale had both high reliability and validity as a measure of burnout (Maslach & Jackson, 1981).

According to www.mindgarden.com website, the MBI has several options depending on the audience: Human Service Workers (MBI - HSS), Medical Personnel (MBI - HSS (MP)), Educators (MBI - ES), General Use (MBI - ES) and Students (MBI -

ES (S)). For this project, the MBI - HSS (MP) was used. It is 22 items in length, with an average completion time of 10 minutes. The MBI - HSS (MP) is similar to the original but has slightly modified wording: instead of referring to "recipients," it uses the term "patients."

Data collection began with the pre survey (demographic questions and MBI) being electronically delivered on November 16, 2020. The post intervention data collection surveys (MBI and reflective questions) were electronically delivered December 15, 2020 and officially closed January 8, 2020. The mindfulness intervention ran just over a period of three weeks. A longer period could have potentially improved results, but this was a pilot feasibility study to determine if this was a practical experience for the busy clinicians. The intervention served as a brief introduction on the concept of mindfulness meditation without being overwhelming. There was a reflective, qualitative question component administered at the end of the intervention inquiring about the amount of participation with the mindful meditation activity, beliefs about the feasibility of the intervention, and a request for a short phrase describing participants' satisfaction with the intervention.

3.6 Project Analysis

Microsoft Excel was used to help organize the demographic data and all other analysis was performed using StataCorp v.16 statistical software (2019). The data was reviewed closely to look for any improvement in scores pre-intervention to post-intervention. The qualitative questions were formulated by the DNP student and committee chair specifically for this intervention and study group. The participants qualitative questions were downloaded into Excel and individual answers were quoted.

Confidentiality was ensured via the use of an independent statistician, de-identified data collection, and safe storage practices. The project lead did not discuss participants outside of the research setting; individual names or identifiable data were not collected, and the statistician sorted all data to ensure confidentiality. Prior to beginning the intervention, informed consent was obtained in electronic format from participants. The DNP scholarly project was approved by the Atrium Health Institutional Review Board and was submitted to the Institutional Review Board at the University of North Carolina at Charlotte where it was deemed it did not constitute human subjects research.

CHAPTER 4: PROJECT FINDINGS AND RESULTS

4.1 Characteristics of Sample Group

Participant characteristics can be found in Table 1 below. Given the specialized work of palliative care professionals, the sample size was small, with 12 participants completing the surveys out of 27 initially invited to participate. Most participants were 30-49 years old (58.3%), female (91.7%), nurse practitioners (66.7%), worked in hospitals with less than 500 beds (72.7%), and indicated their daily palliative census was more than 20 (72.7%).

Table 1. Participant characteristics

Baseline Characteristics	**Count (%) N=12**
Age	
30-49	7 (58.3)
50-64	5 (41.7)
Female Gender	11 (91.7)
Length worked in palliative care	
0-5	5 (41.7)
6-10	5 (41.6)
11-15	2 (16.7)
Clinical role	
Nurse	4 (33.3)
Nurse Practitioner	8 (66.7)
Hospital bed size	
Less than 500 beds	8 (72.7)
More than 500 beds	3 (27.3)
Daily palliative census	
Less than 20	3 (27.3)
More than 20	8 (72.7)

4.2 Survey / Measurement Tool

The measurement tool was the electronically administered Maslach Burnout Inventory (MBI); more specifically, the Human Services Survey version for Medical Professionals

(MBI-HSS (MP)). The MBI is a seven-point Likert scale: 0 – never, 1 – a few times a year or less, 2 – once a month or less, 3 – a few times a month, 4 – once a week, 5 – a few times a week and 6 – every day. Scoring includes breakdown of the three subscales (emotional exhaustion, depersonalization, and personal accomplishment) for separate interpretation, so there is not a single burnout score. Data was downloaded from REDCap and responses converted to numerical format, according to MBI-HSS authors (Mindgarden.org). The authors of the MBI give two options for calculating results. The first is Method 1, which is the sum of each subscale. Method 2 is the average or mean response for each subscale, with the mean scores ranging from 0 (never) to 6 (daily). For this scholarly project, Method 2 was utilized to calculate scores. Composite emotional exhaustion, depersonalization, and personal accomplishment domain scores were created by averaging the total score from individual survey items that were designated in those domains, per the authors. Higher scores on the emotional exhaustion and depersonalization subscales and lower scores on the personal accomplishment subscale indicate higher burnout. According to Maslach et al. (2001), the emotional exhaustion subscale is the most significant predictor of burnout.

Descriptive statistics were performed on pre and post intervention variables. Categorical variables were reported as counts and percentages, continuous variables were reported as mean, median, and standard deviation. Wilcoxon matched-pairs signed-ranks test was performed, and exact probabilities were reported due to sample size < 200. Statistical significance was set at $p \leq .05$ and all analysis was performed using StataCorp v.16 statistical software (2019).

Table 2. Pre- and post-survey scores

Maslach Burnout Inventory Questions	Pre-Intervention n =12 mean, median (sd)	Post-Intervention n =12 mean, median (sd)	p-value
I have accomplished many worthwhile things in this job [a]	4.4, 4 (1.1)	4.3, 5 (1.4)	1.0
I feel patients blame me for some of their problems	1.1, 0.5 (1.4)	0.92, 1 (0.79)	.656
I feel burned out from my work	1.8, 1.5 (1.6)	1.6, 2 (0.90)	1.0
I've become more callous toward people since I took this job	0.83, 0 (1.2)	0.67, 0.5 (0.78)	.625
In my work, I deal with emotional problems very calmly [a]	4.7, 5 (1.5)	4.8, 5 (1.0)	1.0
I don't really care what happens to some patients	0.5, 0 (1)	0.5, 0 (1)	1.0
I feel emotionally drained from my work	2.9, 3 (1.6)	2.4, 3 (1.1)	.242
I deal very effectively with the problems of my patients [a]	5.1, 5.5 (1.2)	4.6, 5 (1.7)	.531
I feel very energetic [a]	4.3, 5 (1.3)	4.6, 5 (1.1)	.719
I feel exhilarated after working closely with my patients [a]	4.3, 4 (0.87)	4.2, 4 (1.1)	1.0
I feel fatigued when I get up in the morning and have to face another day on the job	2.3, 2 (1.7)	1.8, 2 (1.3)	.246
I feel frustrated by my job	2.7, 2.5 (1.7)	1.7, 1.5 (1.4)	.039*
I worry that this job is hardening me emotionally	1.2, 0.5 (1.6)	0.75, 1 (0.75)	.375
I feel I treat some patients as if they were impersonal objects	0.5, 0 (0.67)	0.42, 0 (0.67)	1.0
I feel I'm positively influencing other people's lives through my work [a]	4.8, 5 (1.1)	4.2, 4.5 (1.5)	.531
I can easily create a relaxed atmosphere with my patients [a]	5, 5 (1.0)	5.3, 5 (0.49)	.438
I feel like I'm at the end of my rope	0.91, 1 (1.4)	0.17, 0 (0.39)	.031*
Working with people all day is really a strain for me	1.5, 1 (1.2)	1, 1 (0.95)	.109
Working with people directly puts too much stress on me	1.1, 1 (1.1)	0.92, 1 (0.79)	.680

I can easily understand how my patients feel about things [a]	4.8, 5 (1.0)	4, 4.5 (1.5)	.211
I feel used up at the end of the workday	3.3, 3.5 (1.9)	2.4, 3 (1.1)	.055
I feel I'm working too hard on my job	2.9, 2.5 (2.2)	1.7, 1 (1.6)	.055
*** indicates statistically significant at p<.05** **[a] indicates sentiment is direct to numerical value, e.g., an increase in numerical value is a positive sentiment**			

Table 3. *Pre- and post-survey scores by domain*

Maslach Burnout Inventory Domains	**Pre-Intervention n =12 mean, median (sd)**	**Post-Intervention n =12 mean, median (sd)**	**p-value**
Personal accomplishment [a]	4.6, 4.9 (0.75)	4.5, 4.4 (0.63)	1.0
Emotional exhaustion	2.2, 2.1 (1.2)	1.5, 1.7 (0.85)	.016*
Depersonalization	.82, 0.2 (1.1)	.65, 0.5 (0.67)	.547
*** indicates statistically significant at p<.05** **[a] indicates sentiment is direct to numerical value, e.g., an increase in numerical value is a positive sentiment**			

4.3 Results from MBI Survey

One hundred percent of pre-intervention surveys sent received a response (14/14). The post-intervention survey received a response rate of 85.7% (12/14). Analysis was performed on complete matched data (n=12). Method 2 (the mean) was used to calculate scores with consideration of where the result falls on the on the 7-point response scale.

Table 2 demonstrated pre to post intervention changes on individual items. While not statistically significant, the decrease in many MBI items post intervention was desirable, including participants reporting feeling less emotionally drained (Pre: 2.9; Post: 2.4), fatigue (Pre: 2.3; Post: 1.8), used up (Pre: 3.3; Post: 2.4), and fewer sentiments of working too hard (Pre: 2.9; Post: 1.7). Again, however, these decreases were not statistically significant. Table 2 did show several statistically significant items including decreases in

the respondents feeling frustrated by their job (Pre: 2.7; Post: 1.7; p=.039) and feeling like they were at the end of their rope (Pre: 0.91; Post: 0.17; p=.031).

Table 3 domain's analysis revealed a statistically significant decrease in emotional exhaustion (Pre: 2.2; Post: 1.5; p=.016). The depersonalization domain score did not show a statistically significant decrease in the post-intervention score, but a numerical decrease was reported (Pre: 0.82; Post: 0.65). Personal accomplishment domain score did not show any significant change (Pre: 4.6; Post: 4.5). The post intervention emotional exhaustion mean score of 1.5 would be interpreted as indicating the respondent felt emotionally exhausted a few times a year but not as often as once a month. For depersonalization, the post intervention mean was .65, indicating the respondents felt this a few times a year or less. For personal accomplishment, the post intervention mean was 4.5, indicating respondents felt this once to several times a week.

Table 4. Reflective responses

How often were you able to participate / log into the app over the 21-day period?	Did you find a particular time of day to be more effective to use mindfulness meditation?	List one positive aspect of the intervention	List one negative aspect of the intervention	In your opinion, is including brief mindfulness exercise into your day a feasible option?	In a short phrase, how did you feel after the mindful exercise?	Please describe your satisfaction with this intervention
twice	nighttime	easy to access and use	takes a time commitment, although relatively minimal	yes	slightly calmer and more focused	
12	morning was good before I started my day	it took me out of the immediate problems to focus on the big picture and connect to purpose	It was easy to say, "I'll do it later" and forget to use it	Yes, as I develop it as a habit	more calm and focused	Am glad to be introduced to this practice as it is a valuable tool in managing stress
less than once a week	at night	opened up the idea of a meditation app	having/taking the time to use it	Habits are built over time, so may take more than 3 weeks to make a habit	relaxed	It allows one to focus on a voice or music to then let the day go
couple times	n/a	Very soothing	Time consuming	Yes	calm	

3-4 times a week	no	I could feel the tension subside in my neck and shoulders	Nothing negative. I feel like I would have been more successful if I had scheduled a time daily	I think it is feasible.	Calm	I enjoyed this interventi on. I often found myself utilizing the interventi on at night when I went to bed. I did not log on but I went through the exercise. It actually helped me to relax and go to sleep faster.
1	no	nice app	no time	no	no different. more to do.	no time left in the day for me. I didn't think it would be that hard. sorry.
a few times a week	no, mornings helped me prepare for the day and nighttime was great to unwind	less tense feeling	none	yes	more calm, relaxed, and ready for another day	I am highly satisfied with this interventi on. I would like to incorpora te this as

	from the day					a regular part of my routine, it was helpful in several ways.
about 7 times	evening	helped calm my mind	remembering to do it	probably not	relaxed	very satisfied
1	No	relaxing	NA	Should be, but wasn't for me during this trial	relaxed and grounded	I liked having the app. I like meditating a lot, but I have struggled with finding the time to do it.
Daily	during charting, evening doing work	free app on phone	need to be in mindset to create daily ritual/habit to make routine	Yes, if I desire to	continued acceptance with my life and choices I make	satisfaction with app for music and additional mindfulness resources available that are easily accessible and feasible to daily life
4 times a week	Yes, in the AM prior to work and kids being awake.	Made me more aware of my stress.	None	Yes.	More thoughtful and aware of my stress.	Very satisfied.

3	Mondays	slowing down and not feeling rushed all the time	none	Yes, and very necessary. It's important to take a few minutes each day to be still	calmer	This is important work for all of us. Not only for work related stress, but for everyday life. Taking time for oneself is the greatest gift you can give to yourself. Thank you.

4.4 Reflective Question Analysis

Determination of feasibility was a strong interest of this scholarly project, as the inpatient palliative team is a busy service combined with excess work from the COVID-19 pandemic. Also, a goal of the reflective component of the intervention was to better understand the experience of the participants with the mindfulness exercise. Table 4 includes the qualitative portion of this project, by capturing the experience of the clinicians using the Headspace ^{TM} application for mindfulness meditation.

For the question "In a short phrase, how did you feel after the mindful exercise?" six participants responded with "calm / calmer," four indicated they felt "relaxed," two felt "more focused," one felt more "grounded" and one "more thoughtful and aware of my stress." One "felt no different with only more to do."

For the question “Please describe your satisfaction with this intervention,” responses ranged from “enjoyed,” “slept better,” “highly satisfied,” “very satisfied,” “glad to be introduced,” “focused and let go,” “liked having the app,” “satisfaction with the app,” “easily accessible,” and “no time left, sorry.”

Review of responses about the number of times the exercise was utilized varied widely from once to as often as twelve times throughout the implementation period. In response to best time of day for mindfulness, answers varied by individual without indication for a better time of day.

For the question “In your opinion, is including brief mindfulness exercise into your day a feasible option?” eight participants responded positively, with three participants stating it was not feasible and one indicating it would take longer than three weeks to determine. Based on the small sample size, results would suggest this intervention is potentially feasible, however a larger sample size would help demonstrate feasibility more clearly. The complications with COVID were a significant limitation during implementation, thus re-attempting this intervention during a non-pandemic year could have yielded different results. Overall, eight out of twelve respondents found it to be feasible which is positive.

4.5 Discussion of Results

The results of the project indicated that the sample had scores on the lower end of the emotional exhaustion and depersonalization subscales that point to a lower level of burnout. Emotional exhaustion is the domain most significant in predicting burnout, as it relates to being emotionally depleted from one’s work. When looking at palliative care clinicians, O’Mahoney et al., (2018) found with years of service, providers who had

worked in the specialty longer had higher satisfaction and less burnout. The sample group included nearly 60% of clinicians with greater than 6 years of work in palliative care; this may help explain the lower burnout levels found in this scholarly project. Kamal et al. (2016) found factors associated with higher rates of burnout included working longer hours, age younger than 50 years, being in a smaller organization, and weekend work. This sample group includes almost 42% of participants over the age of 50 which could also help explain the lower burnout scores found in the project.

The authors include a note of caution in interpreting the MBI scale scores, advising that it is important to understand there is no definitive score that "proves" a person is "burned out." They also state that judgements about whether the experience of each aspect of burnout is sufficiently frequent to be of concern are best left to the respondent and/or others who are in a position to take corrective steps (mindgarden.org). Hence, there is no specific score that indicates when an intervention is required. In review of the literature for this scholarly project, organizations and medical practice groups decided independently when to assess burnout and when to initiate interventions without regard to burnout assessment scores.

Maslach and Jackson (1981) discussed the relationship between the subscale domains of emotional exhaustion, depersonalization, and personal accomplishment:

> With the emotional exhaustion and depersonalization subscales, higher mean scores indicate higher levels of burnout. There is a moderate correlation between these two subscales however they are separate but related facets of burnout. For the personal accomplishment subscale, lower scores indicate higher burnout. The personal accomplishment subscale is independent of the other subscales as its

> items do not load negatively on them. Therefore, personal accomplishment is not the opposite of emotional exhaustion and depersonalization. (Maslach & Jackson, 1981, pp. 101 – 104)

This would indicate that the higher findings on personal accomplishment in this project do not correspond and are not protective against emotional exhaustion or depersonalization.

In review, the domains analysis revealed a statistically significant decrease in emotional exhaustion (Pre: 2.2; Post: 1.5; p=.016). According to Maslach, it is the domain most significant in predicting burnout, since emotional exhaustion relates to being emotionally depleted from one's work. The depersonalization domain (emotional disconnect) score did not show a statistically significant decrease in the post-intervention score, but a numerical decrease was reported (Pre: 0.82; Post: 0.65). The personal accomplishment domain score did not show any significant change (Pre: 4.6; Post: 4.5), which is understandable given the short time frame of the 3-week intervention. It is unlikely to see much change in such a short period, relating to one's opinions on work accomplishments. Other factors affecting the scores included the pre-intervention sample size (14), with post-intervention sample respondents at 12.

Maslach (2001) noted that mindfulness is an individually centered solution that focuses on strengthening individuals' internal resources to help alter their behaviors and enhance their capacity to cope with the workplace. A systematic literature review of brief mindfulness practices for healthcare clinicians by Gilmartin et al. (2017) found nine of fourteen studies reported positive changes in levels of anxiety, burnout symptoms, stress, mindfulness, and resiliency. This scholarly project had findings

similar to other studies, with the reflective questions indicating that many participants felt the mindfulness exercise was feasible, tended to feel calmer, were more relaxed, and were satisfied with the intervention. This correlates to the statistically significant result on the emotional exhaustion subscale, leading to the conclusion that the mindfulness intervention was valuable to those who participated and had efficacious results.

CHAPTER 5: SIGNIFICANCE AND IMPLICATIONS

5.1 Limitations

This project has several limitations. It was originally extended to 27 clinicians; however, the final sample size was small, with 12 respondents completing both pre and post intervention assessment scales. There is the concern for selection bias, given that participants volunteered for this intervention. Those with previous mindfulness experience or interest may have volunteered, missing those not familiar with or disinterested in this type of mental exercise. Those clinicians with the highest degree of burnout may have felt too disengaged to even volunteer.

COVID-19 was also a critical concern throughout the duration of this scholarly project, from design to implementation and evaluation. Restrictions for in-person gatherings and social distancing prevented face-to-face roll out of the intervention, requiring education to be done completely electronically. With the influx of COVID-19 patients into the inpatient hospital setting, the participants were under significant strain from their increased workload/census. The inpatient palliative teams in this study have seen a substantial increase in referrals for those struggling with terminal complications from COVID-19, potentially leading to greater exhaustion and less time to participate with the activity.

As a chief advanced practice provider in this palliative group, special attention was paid to creating non-identifiable questions, as many participants who volunteered might directly report to this DNP student. Extra care was taken to ensure participants would not feel identified when answering sensitive questions.

Other limitations include the short implementation timeframe of three weeks, but this was designed to not be burdensome for participants and to assess feasibility of the

intervention in a busy inpatient setting. There was no control group for comparison. Only nurses and nurse practitioners were included, no physicians or social workers. There was no ability to precisely monitor the use of the Headspace ™ app for practicing mindfulness, thus reliance falls on accurate self-reporting of participation by the volunteers. This study is not generalizable to the population given the modest number of participants and its focus within the specialty of inpatient palliative care. Therefore, in future studies a larger sample across multiple disciplines over a longer period may provide more data to support implementation. As such, health care systems can consider this a potential meaningful intervention to assist providers in managing burnout.

5.2 Summary

The purpose of this scholarly project was to assess baseline burnout in a sample group of palliative nurse practitioners and registered nurses in a local hospital system, then determine if implementation of a brief mindfulness intervention could reduce burnout. The objective was to provide an intervention that could be done individually, remotely, and asynchronously by using a self-guided mindfulness intervention via smartphone application. As noted previously, Kamal et al. (2016) observed a burnout prevalence of 38.7% for hospice and palliative care clinicians, prompting a need for further study in this specialty area.

In conclusion, this low cost, asynchronous, individualized exercise is feasible for implementation across multiple locations. This intervention provided busy clinicians with a strategy aimed at reducing burnout, hopefully leading to retention of seasoned providers, improved patient outcomes, and reduction of the financial burden on

healthcare systems. More importantly, this intervention appears to have improved clinician quality of life. Ideally, healthcare organizations and medical practice leadership would focus on prevention of clinician burnout with strong organizational support, including adequate staffing, appropriate time away from work, and general support of clinician work–life balance. Finding effective management strategies and tools for burnout will help the nursing discipline continue to provide sustainable palliative care for patients and clinicians across the continuum of serious illness.

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