2020

# Mindfulness in Healthcare: Exploring the Gap Between Leadership Practice and Employee Burnout

Bryn Saunders
*Walden University*

# Walden University

College of Health Sciences

This is to certify that the doctoral study by

Bryn Saunders

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Suzanne Richins, Committee Chairperson, Health Sciences Faculty
Dr. Brittany Smalls, Committee Member, Health Sciences Faculty
Dr. Rabeh Hijazi, University Reviewer, Health Sciences Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2020

Abstract

Mindfulness in Healthcare: Exploring the Gap Between Leadership Practice and Employee Burnout

by

Bryn Saunders

MA, Wake Forest University, 2016

BA, Carroll University, 2015

BS, Carroll University, 2015

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

Walden University

May 2020

## Abstract

A healthcare employee's ability to provide proficient, or quality, care to patients is impeded by burnout. Previous studies showed high levels of burnout is a common problem in healthcare, indicating there is a lack of support for employee health. The purpose of this quantitative study was to determine whether mindfulness training reduced burnout in healthcare professionals. The study focused on increasing knowledge between the leadership practices and programs used to improve healthcare proficiency by analyzing the relationship between mindfulness and three measures of burnout: sense of efficacy, depersonalization, and emotional exhaustion. The Western concept of mindfulness that emphasizes self-awareness and emotional intelligence was analyzed along with the biopsychological construct of burnout. The research questions were designed to determine whether a relationship exists between mindfulness and burnout. A set of pretest and posttest data, collected through the Maslach Burnout Inventory Human Service Survey before and after a mindfulness program with 136 participants, was analyzed using a MANOVA and simple linear regressions. The analyses for this study showed that levels of burnout, depersonalization, and emotional exhaustion in healthcare professionals improved after the mindfulness program. The results of this study contribute to positive social change by informing healthcare leadership on what programs contribute towards reducing employee burnout.

# Mindfulness in Healthcare: Exploring the Gap Between Leadership Practice and Employee Burnout

by

Bryn Saunders

MA, Wake Forest University, 2016

BS, Carroll University, 2015

BA, Carroll University, 2015

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Healthcare Administration

Walden University

May 2020

# Acknowledgments

I would like to thank Dr. Suzanne Richins and Dr. Brittany Smalls for their guidance and support throughout this doctoral capstone. I would also like to acknowledge my advisor from my master's program at Wake Forest, Dr. Nancy King, who refined my academic writing skills. My advisors and mentors during my educational journey have refined and equipped me with a valuable skillset.

My family, friends, and coworkers have provided me with unparalleled support in completing this doctoral capstone project. My parents, Lizbeth and Jeffery Saunders, have done nothing but encourage and motivate me to achieve my educational goals and I would not have reached this point without them. Thank you to everyone in my life for your constant positivity and support.

Table of Contents

List of Tables

List of Figures

Section 1: Foundation of the Study and Literature Review

## Introduction

Currently, many healthcare professionals experience symptoms of burnout when performing everyday job functions, leading to decreased levels of quality in patient care and high employee turnover rates (Lee & Young, 2018; Ludwig & Kabat-Zinn, 2008; Pipe, FitzPatrick, Doucette, Cotton, & Arnow, 2016; Shapiro & Carlson, 2017; Wasylkiw, Holton, Azar, & Cook, 2015). Healthcare leaders often do not provide programs to improve the mental and physical health of employees. The lack of support for physical and mental health is a problem because employees in healthcare need to have good mental and physical health to deliver services to patients proficiently (Kramer & Son, 2016). Proficiency is the ability of a professional to perform job tasks competently, efficiently, and accurately (Attri & Wing, 2019; Eugène, & Olle ten, 2018). One method of counteracting stress, burnout, fatigue, and turnover is mindfulness (Lee & Young, 2018).

Negative symptoms of burnout diminish healthcare professionals' abilities to proficiently provide care (Golpalkumar, Pier, & Costales, 2017; Hellebuyck, Nguyen, Halphern, Fritze, & Kennedy, 2017). Mindfulness practices allow employees to improve their mental health to combat emotional exhaustion, low sense of efficacy, and depersonalization, which are symptoms of burnout stemming from the healthcare environment (Ludwig & Kabat-Zinn, 2008; Pipe et al., 2016). Leaders in healthcare should consider methods to combat negative environmental factors to reduce burnout in healthcare professionals.

In this study, I explored whether mindfulness practices can be an effective tool to minimize burnout in healthcare professionals. The findings of this research study can contribute to positive social change by generating knowledge that will help leaders in healthcare determine what practices, programs, and training reduce employee burnout, sustain a healthy work-life balance, improve healthcare proficiency, and support the health and wellbeing of employees. This study also generated knowledge about how to counteract burnout in U.S. healthcare professionals that can contribute to positive social change. In this chapter, I discuss the major themes found in the literature regarding mindfulness and the search performed to find the literature and justify the research methodology.

## Problem Statement

Healthcare leaders have not found an effective strategy to sustain and improve the mental and physical health of employees. Healthcare can be a challenging career field compared with other industries regarding employee burnout (Gopalkumar, Pier, & Costales, 2017). Several key differences between healthcare and other professions put healthcare professionals at a higher risk of experiencing burnout. First, the healthcare environment is constantly changing, mainly due to the implementation of the Affordable Care Act (ACA), which expanded access to care and reformed how healthcare is delivered (Bluementhal, Abrams, & Nazum, 2015). Second, employees in healthcare work irregular hours and longer shifts than the typical 8-hour workday or 40-hour workweek (Gopalkumar et al., 2017). Third, there is a shortage of healthcare professionals, creating heightened workloads (Caruso, 2014).

The unique pressures from the external and internal environments in healthcare cause higher levels of emotional exhaustion, depersonalization, and low perceived sense of efficacy, which results in burnout in healthcare professionals (Berg, 2017; Gopalkumar et al., 2017). Currently, many healthcare professionals are burnt out when performing everyday job functions, leading to decreased levels of quality in patient care and high employee turnover rates (Shea, Turner, Albritton, & Reiter, 2018). Burnt out employees are at a higher risk of causing medical errors and compromising patient safety (Dunne et al., 2019). Furthermore, burnt out employees are more likely to experience poor psychological health, physical health, and work-life balance (Berg, 2017; Dunne et al., 2019). Therefore, burnout is a barrier to providing proficient care and having a healthy work-life balance. Programs established to improve and sustain the mental health and wellbeing of healthcare employees is essential to combat the negative effects of the external and internal healthcare environments and promote a healthy work-life balance.

A reduction in employee burnout would maximize not only the ability of employees to perform job tasks proficiently but also improve the work-life balance and overall health of employees (Berg, 2017). Mindfulness practices allow people to improve their emotional and mental health to combat burnout (Shigaki, Glass, & Schopp, 2006; Vaclavik, Staffileno, & Carlson, 2018; Wright & Cropanzano, 1998). Leaders in healthcare should be looking for useful programs and training to combat burnout and promote a healthy work-life balance. An employee's ability to provide proficient care is inhibited by raised levels of burnout, that is measured through three variables: emotional exhaustion, depersonalization, and sense of efficacy (Berg, 2017; Dunne et al., 2019;

Kramer, 2016). The specific problem for this study was that the current rate of burnout demonstrates that healthcare leaders are failing to implement methods that support employee health (Ellis, Bauer, Edogan, & Truxillo, 2019; Hayes et al., 2012; Inceoglu, Thomas, Chu, Plans, & Gerbasi, 2017; Lo et al., 2017).

The purpose of the study was to determine whether mindfulness training reduces burnout in healthcare professionals as measured through emotional exhaustion, sense of efficacy, and depersonalization. In this study, I sought to fill the current gap between leadership practices and programs used to minimize barriers to proficiency for healthcare professionals, such as burnout. The relationship between mindfulness and the three measures of burnout (i.e., sense of efficacy, depersonalization, and emotional exhaustion) were examined to fill this gap. Past researchers demonstrated that other factors influence burnout, such as personality traits and lifestyle habits (Eby et al., 2017). Therefore, more than one approach may be needed to create and sustain a healthy work-life balance in employees who do not have healthy lifestyles. In this study, I determined whether one program (i.e., mindfulness) could improve work-life balance and reduce burnout. A healthy work-life balance is an equilibrium of needs between an individual's emotional, physical, and mental health and the demands of their job. If a program is shown to result in an improvement in the proficiency of healthcare professionals and reduces burnout, then this implementing this program would contribute to building a healthier work-life balance.

## Purpose of the Study

The purpose of this quantitative study was to determine whether mindfulness training reduces burnout in healthcare professionals as measured through emotional exhaustion, sense of efficacy, and depersonalization. Programs aimed at the mental and physical health of employees can maximize employees' abilities to perform job tasks proficiently and improve their work-life balance (Kramer & Son, 2016; Lo et al., 2018; Ludwig & Kabat-Zinn, 2008). In this study, I aimed to determine whether a mindfulness program could reduce burnout. The independent variable in this study was mindfulness, and the dependent variable was burnout, which was measured through the quantitative variables of depersonalization, emotional exhaustion, and sense of efficacy. I generated evidence to address the goals of this study by discovering whether a correlational relationship exists between mindfulness and the three measures of burnout: sense of efficacy, depersonalization, and emotional exhaustion.

## Research Questions and Hypotheses

To determine whether a relationship exists between mindfulness and burnout in healthcare professionals currently employed in the state of Washington, I developed the following research questions and corresponding hypotheses:

Research Question 1: To what extent does a 5-week mindfulness program affect factors that inhibit proficiency in healthcare professionals, such as burnout, as measured through depersonalization, sense of efficacy, and emotional exhaustion?

$H_0$1: There is no relationship between the pretest and posttest levels of burnout after a 5-week mindfulness program.

$H_a1$: There is an improvement in levels of burnout between the pretest and posttest levels of burnout after a 5-week mindfulness program.

Research Question 2: To what extent does a 5-week mindfulness program affect the sense of efficacy in healthcare professionals?

$H_02$: There is no relationship between the pretest and posttest sense of efficacy scores of healthcare professionals after a 5-week mindfulness program.

$H_a2$: There is an improvement in the pretest and posttest sense of efficacy scores of healthcare professionals after a 5-week mindfulness program.

Research Question 3: To what extent does a 5-week mindfulness program affect depersonalization in healthcare professionals?

$H_03$: There is no relationship between the pretest and posttest depersonalization scores of healthcare professionals after a 5-week mindfulness program.

$H_a3$: There is a negative relationship between the pretest and posttest depersonalization scores in healthcare professionals after a 5-week mindfulness program.

Research Question 4: To what extent does a 5-week mindfulness program affect emotional exhaustion in healthcare professionals?

$H_04$: There is no relationship between the pretest and posttest emotional exhaustion scores in healthcare professionals after a 5-week mindfulness program.

$H_a4$: There is a negative relationship between the pretest and posttest emotional exhaustion scores in healthcare professionals after a 5-week mindfulness program.

## Theoretical Foundation of the Study

The theoretical framework for this study was grounded in the foundation of mindfulness practices and the biopsychological construct of burnout (see Gethin, as cited in Perlman, 2015; Lee & Young, 2018; Maslach, Jackson, & Schwab, 1996). Mindfulness is a Buddhist concept of self-awareness, which emphasizes a nonjudgmental mindset and a heightened awareness of emotions, feelings, or preconceived ideas that may affect decision-making (see Gethin, as cited in Perlman, 2015). Burnout is a condition that has been characterized to have psychological, social, and biological aspects (Wood, Cramer, & Keller, 2011).

### The Western Concept of Mindfulness

Mindfulness is a contemplative practice that has been a core element of the Buddhist tradition (Shapiro & Carlson, 2017). Historically, mindfulness is a Buddhist concept defined as a skill that can be learned and developed over time to learn how to "live right" or live by good morals (Harrington & Dunne, 2015). Buddhism is a belief or value system purposely developed to provide theories, practices, and concepts that can apply to any person at any time (Lee & Young, 2018). The practice of mindfulness often includes some elements of meditation and is viewed as a process an individual can continually improve upon over time through regular practice (Lee & Young, 2018). Mindfulness in the Buddhist tradition requiring an individual to actively and continually

be present in the moment or reach a type of self-awakening, where people are challenged to follow a path of good ethics and morals (Eby et al., 2017; Kang & Whittingham, 2010). Mindfulness has also been described as an individual's ability to be present in the moment by attending to their emotions, thoughts, and surroundings; this ability is often referred to as emotional intelligence or self-awareness (Nahavandi, 2015). The practice and development of mindfulness skills mature a person's wisdom and ethical code (Harrington & Dunne, 2015). In Western research, mindfulness is measured as a single-faceted trait that conceptualizes present-centered attention and awareness (Chisea, Serretti, & Jakobsen, 2013). In this study, I analyzed mindfulness as a single construct composed of a structured program that teaches self-awareness and present-centeredness.

Mindfulness began to be adapted in Western culture in the form of mindfulness-based interventions (MBIs) in medical settings and used to reduce a person's physical and emotional pain (Grossman, Niemann, Schmidt, & Walach, 2004). In current literature, mindfulness focuses on constantly developing and building a person's self-awareness and is practiced to reduce social, physical, and emotional distress (Berg, 2017; Perlman, 2015). Self-awareness encourages a circular way of thinking, where an individual begins with an idea or experience and moves into a reflective state (Perlman, 2015). Researchers have shown that self-awareness is related to a healthcare provider's level of proficiency in providing culturally competent care (Pipe et al., 2016). Culturally competent care aligns with patient preferences, or in other words, is proficiently delivered care (Nahavandi, 2015). Studies also showed that mindfulness improves job satisfaction and resilience and reduced burnout (Gopalkumar et al., 2017; Hellebuyck et al., 2017;

Wasylkiw et al., 2015). Mindfulness is often used in tandem with other programs, such as eating disorders, chronic pain, and other health issues (Harrington & Dunne, 2015). The structured practice of mindfulness techniques, such as meditation, gratitude, self-reflection, or focusing on the present moment, boosts creativity, adaptability, and professional development (Day & Gregory, 2015).

Mindfulness programs train a person to be resilient and self-aware, improve emotional intelligence, and continually develop and grow (Lee & Young, 2018; Perlman, 2015). In this study, I analyzed a 5-week mindfulness program that includes current Western mindfulness practices of meditation, education, and mindfulness exercises to determine whether mindfulness practices reduce levels of burnout. Western mindfulness practice is rooted in the Buddhist tradition; therefore, the framework for the independent variable of mindfulness was grounded in the current Western construct of mindfulness.

**The Biopsychological Construct of Burnout**

The dependent variable for this study, burnout, is a multifaceted concept. Burnout is described in research as an indicator of mental and physical health and characterized by exhaustion, distress, decreased motivation and sense of effectiveness, and the development of dysfunctional work attitudes and behavior (Ruotsalainen, Verbeek, Marine, & Serra, 2014). Researchers historically referred to burnout as a person's relationship to work, measured through three variables: emotional exhaustion, depersonalization, and personal achievement (otherwise known as sense of efficacy; D'Onofrio, 2019; Dunne et al., 2019; Maslach et al., 1996; Maslach & Leiter, 2016). In this study, burnout was measured through the three quantitative variables of

depersonalization, sense of efficacy, and emotional exhaustion. Burnout has been researched as a common problem in healthcare in the United States and across the globe (Dunne et al., 2019; Gopalkumar et al., 2017; Lee & Young, 2018). If not treated, burnout depreciates employee effectiveness and increases turnover rates (D'Onofrio, 2019; Rumschlag, 2017).

While illness used to refer to only physical illnesses, burnout originates from the idea that other relational aspects of human suffering can cause illness (Wood et al., 2011). A biopsychological model supports the idea that physical, mental, and social health are connected (Engel, 1977; Wood et al., 2011). Therefore, behavioral factors, social conditions, and biological characteristics all contribute to health and illness (Wood et al., 2011). In the current literature, burnout is measured as a combination of three variables: depersonalization, sense of efficacy, and emotional exhaustion. Depersonalization, sense of efficacy, and emotional exhaustion coincide with a biopsychological model. Depersonalization is a person's sense of detachment from their surroundings, which includes relationships or social conditions (Medford et al., 2016). Sense of efficacy is a person's perceived ability to succeed (Bandura, 1982). This variable relates to biological characteristics, such as the ability to grow and change, and behavioral factors that determine a person's reaction to the current environment or situation (Bandura, 1982). Emotional exhaustion can be a result of the current social conditions in a workplace and behavioral factors, such as sleeping and diet (Medford et al., 2016). The three variables used to measure burnout fit within the biopsychological model and support that burnout involves physical, mental, and emotional illness.

## Summary

A proficient healthcare professional would maximize outcomes by performing tasks at a highly skilled level. The progression of burnout inhibits the development of job proficiency but can be prevented through the practice of mindfulness (Harker, Pidgeon, Klaasen, & King, 2016). Healthcare professionals suffering from burnout experience barriers to proficiency from a sense of detachment from the workplace environment (i.e., depersonalization), feeling unequipped or prepared to perform job tasks (i.e., low sense of efficacy), or experiencing stress and fatigue (i.e., emotionally exhausted). Burnout also negatively affects the employee and the people the employee has a relationship with or interacts with (Rumschlag, 2017). Burnout has also been shown to result in more severe consequences, such as addictive behavior and suicide, but current research has demonstrated that mindfulness can be used as a protective factor to counteract burnout (Berg, 2017; D'Onofrio, 2019).

In this study, I sought to determine whether mindfulness, the independent variable, can reduce burnout, the dependent variable, as measured through levels of depersonalization, sense of efficacy, and emotional exhaustion in healthcare professionals currently employed in the state of Washington. I developed the research questions to address the relationship between the two frameworks of the Western concept of mindfulness and the biopsychological construct of burnout. I conducted a MANOVA and ANOVA of pretest and posttest data generated from the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) to analyze the relationship of interest. The theoretical framework for this study supports exploring whether the Western concept of

mindfulness reduces burnout in healthcare professionals. In this study, the effects of a 5-week mindfulness program for healthcare professionals in the state of Washington were analyzed by quantitative measures of burnout, which linked the current Western concept of mindfulness to the biopsychological construct of burnout.

## Nature of the Study

In this study, I employed a quantitative research design with a correlational analysis to determine whether a relationship exists between the independent variable of mindfulness and the dependent variable of burnout. For this study, proficiency was defined as the ability of a professional to perform job tasks competently, efficiently, and accurately, and a healthy work-life balance was defined as an equilibrium of needs between an individual's emotional, physical, and mental health and the demands of their job.

To uncover whether a relationship exists, I analyzed a data set generated through a pretest and posttest scores of healthcare professionals working in the state of Washington before and after a 5-week mindfulness program across measures of depersonalization, emotional exhaustion, and sense of efficacy. A one-way repeated measures MANOVA and two-way ANOVA were used to determine whether a difference in mean scores of burnout measures exists. The analysis of the data generated knowledge to fill the current gap between leadership practices and programs used to foster a healthy work-life balance, that minimizes burnout. The results of the quantitative analysis highlighted whether any relationships exist between levels of burnout in healthcare

professionals and mindfulness and provided insight into whether leadership practices should be changed to reduce burnout better.

## Literature Search

I performed the literature search using the Walden University Library online search engine Thoreau and Google Scholar for peer-reviewed, full-text articles published between 2014 and 2020. Various search terms, such as *mindfulness, MBI-HSS, MBSR, mindful, healthcare, mental health, physical health, wellbeing, stress, burnout, turnover, fatigue, anxiety, sense of efficacy, depersonalization, emotional exhaustion, healthcare professional, quality, delivery, environment,* and *culture* were used. I used various combinations of these terms, and some terms may not be included in this list. When the search resulted in a limited amount of relevant resources, it was altered to include articles published between 2010 and 2020. Some citations are older than 10 years; however, these citations mainly supported the historical background and origins of the major concepts in this study or were used when current literature could not be found. Articles outside the 10-year publication time frame contributed information considered to be fundamental to this study.

## Background of the Problem

Currently, the United States is experiencing a shortage of healthcare professionals (Caruso, 2014). One common problem for healthcare organizational leaders is reducing levels of turnover, stress, burnout, and fatigue (Hellebuyck et al., 2017). To perform job tasks proficiently, an individual must be able and equipped to do so. Part of a healthcare employee's job is physically demanding, walking around a large healthcare facility and

providing physical support or treatments to patients; therefore, healthcare professionals' health is crucial to providing sufficient care because it affects individual patients, family members, and organizational performance (Kramer & Son, 2017). Healthcare professionals provide services to people who need them rather than providing purely optional services (Kramer & Son, 2016). If healthcare professionals are not physically well, they cannot provide necessary care to improve a patient's health, diminishing the care provided to the community overall (Kramer & Son, 2017). Therefore, not only is the physical health of healthcare professionals important to those directly related to patients, it is important to society as a whole, so healthcare leaders should work to foster an environment that supports and sustains the physical health of employees.

Apart from the fact that turnover, burnout, and fatigue factors influence the shortage of healthcare professionals, they are also common factors experienced by healthcare professionals. With the implementation of the ACA, numerous changes are occurring in healthcare organizations, such as migrating to Accountable Care Organizations, new payment structures, and higher patient volumes (Bluementhal et al., 2015). Navigating these changes can be difficult for healthcare leaders and employees. When several large changes occur within an organization, like restructuring into an Accountable Care Organization, transitioning to value-based care, and implementing bundled payments, some changes are completed before others; therefore, numerous new changes may be implemented before others are finished (Borkowski, 2016). Multiple changes with different completion dates result in employee burnout and fatigue or negative mental health (Borkowski, 2016). The added pressures of the ACA increased the

likelihood of burnout in healthcare professionals (Borkowski, 2016). Another factor influencing burnout is the little to no sense of control employees perceive they have over their jobs. Healthcare professionals have no control over work hours, which is the main driver of burnout and negative mental health (Kramer & Son, 2016).

Mindfulness has been demonstrated to be a part of good medical practice in the past. One survey found that 79% of medical schools provided mindfulness related activities to their students, which consisted of wellness programs, research opportunities, and education (Barnes, Hattan, Black, & Schuman-Oliver, 2016). Healthcare leaders who implemented initiatives to promote healthy work-life balance improved not only the health and wellbeing of employees but also promoted better patient outcomes and safety (Boamah, Spence Laschinger, Wong, & Clarke, 2018; Edwards, 2016). Healthcare professionals that took part in mindfulness courses have reported improved focus, quality of life, and empathy as well as reduced levels of burnout (Ludwig & Kabat-Zinn, 2008). However, the current healthcare environment has high levels of employee dissatisfaction and turnover, which may point to the fact that mindfulness is not practiced beyond medical school (Shigaki et al., 2006; Halbesleben & Rathert, 2008). A study of healthcare providers and related patients found that cynicism in the healthcare provider was associated with longer postdischarge recovery time and lower patient satisfaction (Halbesleben & Rathert, 2008).

In the United States, job satisfaction for nurses is much lower than the national average job satisfaction rate, upholding the fact that turnover is high in healthcare, and employees may be suffering from aspects of burnout, such as poor mental and physical

health (Kramer & Son, 2017). Occupational turnover, or when an employee leaves a profession for another, is most commonly caused by deteriorating health (Kramer & Son, 2017). Occupational turnover is costly to organizations because it is a loss in human capital (Kramer & Son, 2017). The National Health Care Retention & RN Staffing Report indicated that it takes between $56,300 and $138,600 to replace excess labor, and the current national turnover rate is 17.2% for RNs (Nursing Solutions Inc., 2019). The cost of turnover for an RN ranged from $40,300 to $64,000, costing a hospital in-between $4.4 million to $6.9 million each year (Nursing Solutions, 2019). Therefore, the physical and mental health of employees should be a priority of healthcare leaders and organizations to avoid high turnover rates and counteract the daily stress, fatigue, and burnout brought on by everyday tasks of a healthcare professional.

**Proficiency in Healthcare**

I drew three major concepts from the research questions and purpose statements: proficiency, mindfulness programs, and burnout. The first concept, proficiency, is a healthcare professionals' capability of performing job tasks competently, efficiently, and accurately (Kramer & Son, 2017). Proficiency was not identified as a core concept in the existing literature; however, the literature surrounding mindfulness and burnout sought to improve the proficiency of healthcare professionals. A proficient healthcare employee delivers a high quality of care that satisfies patient needs and desires, maximizing healthcare outcomes (Harker et al., 2016; Perlman, 2015). I reviewed performance, efficiency, and outcomes in healthcare in the literature because these are all factors that are results of proficiency.

Saeed, Yousafzai, and Engelen (2015) found that the education interventions implemented in healthcare do not include the behavior or practices of healthcare professionals. Leaders in healthcare monitor outcomes to manage and align patient desires and goals to treatment plans (Saeed et al., 2015). For decades, healthcare organizations have been attempting to improve the quality and efficiency of care (Chalmers et al., 2014). Healthcare leaders could implement programs to improve the proficiency of healthcare professionals, which would result in improved outcomes and efficiency. Proficient employees continuously develop and learn new ways to understand information and solve problems, which are characteristics of mindfulness and self-reflection and contribute to improved outcomes (Day & Gregory, 2017). Burnout inhibits the development of job proficiency in healthcare professionals; therefore, programs to improve proficiency should be considered by healthcare leaders (Harker et al., 2016).

A workplace culture centered around supporting employees' work-life balance nurtures factors that enable employees to achieve and succeed and reduces negative environmental factors (Hunter, Pearson, & Wright, 2019; Shea et al., 2018). Focusing on improving the proficiency of healthcare professionals could reduce turnover and costs (Orszag, 2016). When an employee is not performing job tasks proficiently, medical waste can occur (Orszag, 2016). Furthermore, quantitative observational studies showed that an employee who is not proficient in performing job tasks is either burnt out or experiencing symptoms of burnout, which leads to high turnover rates (Harker et al., 2016). Turnover causes a loss of organizational knowledge, productivity, and replacement costs (Kovner et al., 2016). One systematic review of turnover in the United

States estimated the costs of nurse turnover to range between $1.4 billion and $2.1 billion for the combined losses in healthcare nationwide (Gilmartin et al., 2017). Engaging and educating employees has been shown to reduce factors that influence turnover (Akenroye & Kuenne, 2015). Employees who feel equipped to perform job tasks at a highly skilled level and are empowered to grow and develop in their role promote not only innovation but also develop a healthy emotional attachment to the organization and their job role (Akenroye & Kuenne, 2015). A healthy emotional relationship with a job and organization is also known as a healthy work-life balance, which has been demonstrated to be a protective factor against turnover (Gopalkumar et al., 2017). Employees who are empowered and equipped to perform job tasks at a highly skilled level (or proficiently) increase productivity and profitability (Gilmartin et al., 2017). Therefore, programs that improve and sustain the proficiency of employees are essential to providing high-quality care, reducing costs, and promoting a healthy employee work-life balance.

**Burnout**

Burnout is a major factor in inhibiting the proficiency of employees and decreases the mental, physical, and emotional health of employees (Gopalkumar et al., 2017; Maslach et al., 1996). Burnout was first researched extensively in the medical and law professions due to the consistent exposure to traumatic situations (Doulougeri, Georganta, & Montgomery 2016; Geuens, Braspenning, Van Bogaert, & Frank, 2015). An employee who has experienced burnout feels that they can no longer contribute physically, emotionally, or mentally due to depleted emotional resources and the development of a cynical attitude towards others (Maslach et al., 1996). Continued

research on burnout led researchers to develop coping techniques, such as Mindfulness Based Stress Reduction (MBSR; Maslach et al., 1996). In this study, I utilized the biopsychological construct of burnout, which defines burnout as a multifaceted factor that affects physical, mental, and social health and can be measured through levels of depersonalization, sense of efficacy, and emotional exhaustion. Burnout was operationalized by scores of depersonalization, emotional exhaustion, and sense of efficacy on the MBI-HSS through a 6-point Likert scale.

Burnout is often talked about concurrently with stress in research because one factor can cause the other and vice versa (Lee & Young, 2018). Stress induces fatigue, where employees are strained and both their physical and mental health is negatively affected by their jobs (Kramer & Son, 2016). This is consistent with ideas presented in burnout research that showed burnout as self-sourced rather than environmentally sourced (Lee & Young, 2018; Maslach et al., 1996). Thus, the healthcare environment itself is not to blame, since the employee interacts with the environment in ways that cause burnout (Maslach et al., 1996). Predictors of job burnout in the healthcare field include working too many hours, personality traits, personal relationships, lack of emotional support, fatigue, and a low sense of efficacy (Lacy & Chan, 2018).

Research on burnout has expanded and evolved along with research on methods to combat burnout, such as mindfulness practices (Lacy & Chan, 2018). While burnout prevention techniques have been incorporated in medical school education and various professions, rates of stress, burnout, and fatigue are high for healthcare professionals (Barnes et al., 2016; Kramer & Son, 2017). Studies implementing mindfulness practices

to reduce burnout in healthcare professions demonstrated that mindfulness reduces symptoms of burnout (Lee & Young, 2018); however, these studies were specific to a healthcare profession such as nurses, physicians, or emergency medical technicians. Additional research is needed to close the gap in the literature that exists between mindfulness practices implemented by healthcare leaders for all healthcare professionals.

**Mindfulness**

The first study examining mindfulness in the field of healthcare showed that mindfulness practices reduced pain, emotional disturbance, psychological distress, and chronic pain among patients who did not improve with traditional care (Kabat-Zinn, 1982). Mindfulness research has expanded the applications of mindfulness practice to result in the improvement of job satisfaction and the reduction of stress, burnout, and turnover (Gopalkumar et al., 2017; Wasylkiw et al., 2015). It is important to note that these factors influenced proficiency in past research and contribute to the shortage of U.S. healthcare professionals (Caruso, 2014). Research has shown that people who practice mindfulness are more confident in overcoming challenges, less stressed, and are continually learning new ways to interpret knowledge and experiences (Day & Gregory, 2017). Therefore, mindfulness may be a way to counteract the negative effects of working in the healthcare environment.

Mindfulness practices are commonly applied as interventions in research, otherwise known as MBIs. Research on mindfulness is rooted in studying the therapeutic and psychological effects of mindfulness practices (Lee & Young, 2018). Currently, mindfulness interventions are used as a behavioral or cognitive improvement method to

reduce anxiety, regulate emotions, and alleviate stress (Lee & Young, 2018). Studies of MBIs provide evidence that mindfulness practices reduce levels of psychological distress and cultivate greater focus, awareness, and acceptance (Greeson, 2008). A systematic review of MBIs showed that mindfulness significantly improves mental, psychological, and physical health among a diverse spectrum of populations (Baer, Carmody, & Hunsinger, 2012; Brown, Ryan, & Creswell, 2007). Other mindfulness intervention studies showed that healthcare professionals with high levels of mindfulness have higher levels of self-compassion and happiness and lower levels of stress (Benzo, Kirsch, & Nelson, 2017). MBSR techniques provided evidence of the positive effects of mindfulness in reducing distress and emotional exhaustion and improving anxiety levels (Astin, 1997; William, Kolar, Reger, & Pearson, 2001 as cited in Brown et al., 2007).

While the studies above outline the studies regarding mindfulness and mental health, mindfulness also has been shown to influence physical health. Medical literature has researched many stress-induced physical health indicators such as hypertension, immune responsiveness, susceptibility to infection, and disease processes in cancers (Shigaki et al., 2006). A review of the literature showed findings from seven studies that found self-reported stress among otherwise healthy participants decreased after MBSR practices were incorporated (Chisea et al., 2013). A study consisting of a meta-analysis of randomized controlled trials and observational studies indicated that mindfulness specifically affects physical health (Grossman et al., 2004). Thus, there is significant evidence that mindfulness not only benefits mental and emotional health but physical health as well.

Mindfulness has been studied across various professions and applications, such as healthcare, schools, counseling, and the military (Harrington & Dunne, 2015). One of the most popular mindfulness programs is MBSR (Lee & Young, 2018). MBSR was developed at the University of Massachusetts and focused on self-healing to relieve stress and suffering (Lee & Young, 2018). The Stress Management and Resiliency Training is another program developed at the Mayo Clinic to teach mindfulness practices (Mayo Clinic Resilient Mind, 2018). The Stress Management and Resiliency Training program work to train the brain in practicing gratitude, mindfulness, kindness, and resilience and has been shown to reduce anxiety, stress, and burnout (Matigbay, Chesak, Coughlin, & Sood, 2017; Mayo Clinic Resilient Mind, 2018; Sood, Prasad, Schroeder, & Varkey, 2011). Studies have shown that mindfulness interventions result in decreased levels of stress, turnover, and burnout and improved employee satisfaction and motivation (Gopalkumar et al., 2017; Waslikiw et al., 2015). Thus, mindfulness can be used to sustain and improve the physical and mental wellness of employees, which is critical in delivering proficient healthcare.

## Strengths and Weaknesses

Upon review of the literature regarding proficiency, burnout, and mindfulness programs in healthcare, there are several strengths and weaknesses which are important to note. This section outlines the strengths and weaknesses of each of the major concepts for this study and note potential controversies and areas for future research.

**Proficiency**

The review of the literature regarding proficiency in healthcare supported the idea that burnout and mindfulness influence an employee's ability to provide proficient care. Proficiency was not a common term used amongst the literature; however, quality of care, productivity, and outcomes are all associated with an employees' ability to perform proficient, or highly skilled, care (Harker et al., 2016). Thus, the terms used to describe and evaluate proficiency may be controversial due to inconsistencies in definition.

The literature strongly upheld that employees who are not proficient contribute to medical waste and higher healthcare costs and are more likely to leave their position (Chalmers et al., 2014; Saeed et al., 2015). It is clear that investing in developing a proficient workforce would be useful for healthcare organizations. Future research could specifically focus on the proficiency of healthcare professionals and how proficiency levels influence outcomes or employee health and wellbeing. Studies are clear that employee engagement, empowerment, and education reduces turnover and improves the quality of care (Orszag, 2016). However, research has not been conducted on whether programs aimed to improve proficiency in healthcare professionals have been developed or implemented. Research developing quantitative measures for proficiency in healthcare professionals could be useful in evaluating whether a lack of proficiency is of concern for a given healthcare organization.

**Burnout**

Burnout has been highly studied in many fields, including law, medicine, and human services, to study the relationship between employee and work environment

(Geuens et al., 2015; Maslach et al., 1996). However, research in burnout is commonly specific to a job profession (such as nurses, physicians, first responders, etc.). Most researchers agree that burnout composes of three elements of depersonalization, emotional exhaustion, and sense of efficacy (Alarcon, Eschleman, & Bowling, 2009; Maslach et al., 1996). Thus, the measurements for burnout among research are consistent, valid quantitative measures.

One weakness of the literature regarding burnout is the evolution of the concept of burnout. Over time, burnout has expanded to include aspects of personality traits that are hard to categorize and define (Alarcon et al., 2009). While research has shown that personality influences burnout, this study does not include personality traits. It seems that further research on burnout could be done on what factors are the source of burnout and how environments and personalities influence these factors.

**Mindfulness Programs**

Mindfulness has been used in various fields and in tandem with various treatments (Harrington & Dunne, 2015). Because of this wide-ranging applicability, mindfulness has been discussed and researched in various fields. The literature supports the idea that, in theory, mindfulness can be beneficial to anyone, no matter their job or lifestyle (Perlman, 2015). Most researchers agree that mindfulness improves job satisfaction, mental, emotional, and physical health and reduces burnout, psychological distress, and turnover (Gopalkumar et al., 2017; Wasylkiw et al., 2015). Mindfulness has been studied through observations and surveys and evaluated through valid measures such as the MBI-HSS scale (Chisea et al., 2013; Harrington & Dunne, 2015). The wide-

range of mindfulness studies research is held in various settings; however, no studies sought to research whether mindfulness could be applied in a more general sense, such as an organization-wide program or in everyday life.

The application of mindfulness interventions is controversial as it deviates from the original purpose of mindfulness (Harrington & Dunne, 2015). Rather than used as guidance to 'living right,' mindfulness has been commercialized to be used as an intervention (Lee & Young, 2018). The practice of mindfulness often includes some elements of meditation and is viewed as a process an individual can continually improve upon over time through regular practice (Lee & Young, 2018). Mindfulness practices are incorporated in tandem with treatments or as a short-term treatment to reduce anxiety and stress levels (Lee & Young, 2018).

There are a few weaknesses of mindfulness programs. First, mindfulness has become widely commercialized as an intervention used to reduce stress and anxiety. Mindfulness is commonly associated with yoga or self-improvement topics and used as a short-term fix rather than a daily practice to improve character and morals (Lee & Young, 2018; Perlman, 2015). Second, there are many different scales, programs, and interventions for mindfulness. Some research uses different scales to measure the effects of mindfulness than others. For example, MBSR techniques use a strict scale of measures, which include (but are not limited to) commitment, stress, acceptance, and patience (Lee & Young, 2018). The MBI-HSS scale utilizes a 6-point Likert scale to measure burnout through three variables of emotional exhaustion, depersonalization, and personal achievement (otherwise known as sense of efficacy; Maslach et al., 1996). Other

models use measures such as burnout, resilience, relationships, anxiety, fatigue, or gratitude (Sood et al., 2011). The literature provides several different definitions of mindfulness. Many variables can be interchanged or are highly correlated such as stress, burnout, and anxiety; however, several mindfulness scales and interventions exist. In this paper, mindfulness is defined consistently with current Western practices which include possessing an unbiased mindset and a high level of self-awareness (Gethin, as cited in Perlman, 2015). Thus, finding universal mindfulness measures would be useful to generalize mindfulness practices, applicability, and research. In this paper, the measures used are depersonalization, emotional exhaustion, and sense of efficacy.

## Variables, Concepts, and Justification

The major concepts for this study are proficiency, mindfulness, and burnout. The independent variable in this study is mindfulness. Mindfulness is the practice of sustaining a self-aware and unbiased mindset which can be used to improve an individual's mental, physical, and emotional health (Gopalkumar et al., 2017). A data set of pretest and posttest scores of a 5-week mindfulness program was analyzed; thus, mindfulness is the concept of interest. The dependent variable in this study is burnout, which is measured through three variables of depersonalization, sense of efficacy, and emotional exhaustion. Burnout is widely acknowledged as a problem in healthcare and the literature often cites mindfulness techniques to counteract burnout (Geuens et al., 2015; Maslach & Leiter, 2016). The three variables used to measure burnout are generally accepted and acknowledged as quantitative measures of burnout (Ludwig & Kabat-Zinn, 2008; Maslach & Leiter, 2016). Burnout has been shown to diminish a

healthcare professional's ability to perform tasks proficiently (Harker et al., 2016). The literature surrounding burnout and mindfulness programs indicate that when burnout is minimized the work-life balance of employees is improved, turnover is reduced, employee engagement increases and employees feel more equipped to provide highly-skilled care (Attri & Wang, 2019; Baer et al., 2012; Chisea, Serretti, & Jakobsen, 2013; Caruso, 2014; Day & Gregory, 2017; Maslach & Leiter, 2016). Thus, the concept of proficiency is of interest in this study because it summarizes the potential a healthcare professional has when burnout is minimized.

A gap in research exists between mindfulness and factors which inhibit proficiency in healthcare professionals such as burnout. Many mindfulness interventions, programs, and practices were conducted in various settings and professions; however, research that determines whether mindfulness would be beneficial to the healthcare profession as a whole does not exist. Mindfulness was shown to be a protective factor against burnout and result in improved mental, physical, and emotional health that equips healthcare professionals to perform job tasks proficiently (Chiesa et al., 2013; Eby et al., 2017; Grossman et al., 2004; Harrington & Dunne, 2015; Hunter et al., 2019). To deliver proficient care, healthcare professionals must be healthy; thus, keeping employees healthy is vital to the health of individuals, families, and society. To contribute to this gap in the literature, a data set of healthcare professionals' levels of burnout before and after a mindfulness program were analyzed to determine whether mindfulness reduces barriers to proficiency such as burnout. The results of this study will generate knowledge that can

help healthcare leaders determine what types of programs are effective in reducing burnout for healthcare professionals.

## Definitions

This section of the paper provides definitions for the variables and concepts used in this study. The following terms are defined in this section: proficiency, mindfulness, depersonalization, emotional exhaustion, and self-efficacy. The independent variable in this study is mindfulness. The dependent variable is burnout, which is measured through three variables of depersonalization, emotional exhaustion, and sense of efficacy.

### Proficiency

Proficiency is performing a task with expertise (Attri & Wing, 2019). Proficient healthcare professionals possess the abilities to drive innovation and foster healthy relationships that maximize patient outcomes (Hellebuyck et al., 2017). In healthcare research, proficient healthcare is care delivered to the highest degree of quality (Eugene & Olle, 2018). Proficiency is often termed with other adjectives such as high performance, expertise, giftedness, or skilled (Subotnik, Olszewski-Kubilius, & Worrell, 2019). Proficiency is used in research as a measure of performance in various applications such as sports, job training, or literacy (Attri & Wing, 2019; Eugene & Olle, 2018; Geide-Stevenson, 2018; Subotnik et al., 2019). Proficiency requires mental skills such as stress management and self-regulation (Eugene & Olle, 2018). To optimize a workforce's sustainability in a competitive, demanding environment, an organization needs proficient employees (Attri & Wing, 2019). Time is required for employees to reach full proficiency, therefore, minimizing barriers for employees to develop

proficiency is crucial to an organization (Attri & Wing, 2019). Proficiency is defined in this paper as a high level of performance. Proficient care is defined as care delivered by an employee with high job performance levels.

**Mindfulness**

Mindfulness, in the original Buddhist terms, means the practice of self-awareness which requires a nonjudgmental mindset and emotional intelligence (Perlman, 2015). Mindfulness is a skill that can be learned and developed over time to learn how to 'live right,' or live by good morals (Harrington & Dunne, 2015). As people practice and develop mindfulness skills, they will cultivate wisdom and a good ethical code (Harrington & Dunne, 2015). Literature refers to mindfulness as a type of self-awakening, where people are challenged to follow a path of good ethics and morals. Literature also refers to mindfulness as an ability to be present in the moment by an individual attending to his or her own emotions, thoughts, and surroundings (Eby et al., 2017). An individual attending to his or her emotions and thoughts and responding accordingly to his or her surroundings is often referred to as emotional intelligence or self-awareness (Nahavandi, 2015). For the purpose of simplicity, the term self-awareness will be used to describe someone who is highly conscious of their internal environment (their thoughts and emotions) and the external surroundings. Mindfulness is defined in this paper as a high level of self-awareness that enables an individual to sustain a nonjudgmental mindset and develop a good moral sense (Gethin, as cited in Perlman, 2015; Lee & Young, 2018).

## Burnout

Burnout is a combination of emotional exhaustion, depersonalization, and sense of efficacy (D'Onofrio, 2019; Dunne et al., 2019). Research historically refers to burnout as an individual's relationship to work, measured through three variables of emotional exhaustion, depersonalization, and sense of efficacy (Maslach et al., 1996). Burnout has been researched as a common problem in healthcare in the United States and across the globe (Dunne et al., 2019; Gopalkumar et al., 2017; Lee & Young, 2018). If not treated, burnout has been shown to depreciate employee effectiveness and increase turnover rates (D'Onofrio, 2019; Rumschlag, 2017). Burnout also negatively affects the employee and the people the employee has a relationship with or interacts with (Rumschlag, 2017). Burnout can also lead to more severe consequences such as addictive behavior and suicide (D'Onofrio, 2019). In this study, burnout is defined as an employee's relationship with his or her job, measured through levels of emotional exhaustion, depersonalization, and sense of efficacy (D'Onofrio, 2019; Dunne et al., 2019; Maslach et al., 1996; Maslach & Leiter, 2016).

## Depersonalization

Depersonalization is the detachment from a person's identity or sense of self (Maslach et al., 1996). Accountability, rewards, and recognition help employees form relationships with others and stay connected in their position (Hellebuyck et al., 2015). Depersonalization can grow serious enough to be characterized as a disorder, referred to as depersonalization disorder (Medford et al., 2016). Depersonalization disorder is an out-of-body sensation where you perceive that the things around you are not real or you

feel as though you are observing yourself from outside your body like you are living in a dream (Medford et al., 2016). Depersonalization experienced less severely is an impersonal response towards an individual's job, health, or instruction (Rumschlag, 2017). The characteristics of depersonalization are related to a person's emotions (Medford et al., 2016) In healthcare depersonalization occurs when healthcare professionals feel as though patients cannot be helped and feel detached from their job duties and health (Rumschlag, 2017). In this paper, depersonalization is defined as an individual having a feeling of detachment from his or her job, resulting in impersonal interactions (D'Onofrio, 2019; Dunne et al., 2019; Maslach et al., 1996)

**Emotional Exhaustion**

Emotional exhaustion occurs when a person feels emotionally and physically depleted from professional or personal demands (Wright & Cropanzano, 1996). Emotional exhaustion is similar to depersonalization at is characterized by emotions. A common factor cited in the literature for causing emotional exhaustion is a high demand from work or personal life (Klusmann, Richter, & Ludtke, 2016). People experiencing emotional exhaustion tend to deviate from job tasks, resulting in low productivity and performance (Amyx & Jarrell, 2016; Klusmann et al., 2016). Healthcare professionals do not have much control over their work schedule, which contributed to emotional exhaustion (Lee & Young, 2018). Not only does emotional exhaustion affect work performance, but it also affects relationships within the workplace (Amyx & Jarrell, 2016). People who are emotionally exhausted actively distance themselves from their job, becoming less involved with others and putting in less effort to job tasks (Amyx &

Jarrell, 2016). In this paper, emotional exhaustion is defined as a feeling of emotional and physical depletion which causes an individual to negatively detach from his or her job (Amyx & Jarrell, 2016; D'Onofrio, 2019; Dunne et al., 2019).

**Sense of Efficacy**

Sense of efficacy is an individual's belief in their own ability to attain goals (Bandura, 1982). Pressures from society and intrinsic motivation regulate and drive a person's behavior (Honicke & Broadbent, 2016). Research used sense of efficacy to measure behaviors across a wide range, including academics, addictions, and employment (Honicke & Broadbent, 2016; Maddux, 2016). Studies typically relate levels of sense of efficacy to performance (Honicke & Broadbent, 2016). To attain a certain goal or fulfill a desire, a person must exhibit appropriate behaviors and have the necessary abilities (Maddux, 2016). Thus, the concept of sense of efficacy is rooted in the desired outcome (Maddux, 2016). Sense of efficacy is also seen as a measurement of an individual's ability to cope with demands (Shoji et al., 2016). Demands in the workplace can be viewed as goals, making sense of efficacy a perception of a person's ability to complete job tasks and complete the tasks well (Shoji et al., 2016). People who have a low sense of efficacy tend to have negative attitudes towards work and have low levels of personal development (Honicke & Braodbent, 2016; Shoji et al., 2016). People with high levels of sense of efficacy can combat negative stressors in the workplace and actively continue to develop and adapt to changes within the organization (Shoji et al., 2016). In this paper, sense of efficacy is defined as a person's perception of their abilities to achieve desired outcomes and cope with negative pressures.

## Operational Definitions

*Healthcare professional*: A person who professionally diagnoses, studies, or provides treatment for health needs, both mental and physical (World Health Organization, 2013).

*Self-awareness*: A person with the ability to be highly conscious of their internal environment (his or her thoughts and emotions) and the external surroundings (Nahavandi, 2015; Perlman, 2015).

*Cultural sensitivity*: The ability to retain a nonjudgmental mindset by sustaining an awareness that other people have similarities and differences from yourself (Nahavandi, 2015).

## Assumptions

It was assumed that the data contains honest responses and that the mindfulness program was implemented accurately. A data set consisting of 136 healthcare professionals' responses to a pretest and posttest MBI-HSS test measuring burnout levels before and after a mindfulness program answer the research questions of the study. It was also assumed that the MBI-HSS is capable of reflecting levels of burnout through measurements of burnout, emotional exhaustion, and depersonalization. The MBI-HSS is a widely used tool for measuring burnout and has been shown to be a reliable tool for data collection (Lee & Young, 2018). Another assumption of this study was that the variables for this study would determine whether mindfulness can be used as a tool to influence levels of burnout in healthcare professionals.

## Limitations

There are several limitations to this research design. The data for this study were limited to healthcare professionals who are currently employed. Measures used for this study were subjective and subject to vary based on each participant's perception. Other factors can influence a person's ability to be mindful, such as spirituality, diet, exercise, sleep, and relationships, which limit the effects of a mindfulness program.

## Scope and Delimitations

The focus of the study is burnout levels of healthcare professionals, as employees in various departments and fields of healthcare experience burnout. All healthcare professionals play a role in the treatment and diagnosis of patients and the quality of care delivered. Therefore, the physical and mental health of healthcare professionals is vital to the quality of care and population health (Kramer & Son, 2016). The scope of this study included 136 healthcare professionals who are currently employed in the United States. The results of this study will be able to be generalized to the U.S. healthcare professional population. This study analyzed the data information necessary to determine whether mindfulness can reduce levels of burnout in healthcare professionals, better equipping healthcare leadership to support the mental and physical health of employees. Additionally, the results of the study may provide insight into whether mindfulness could be a useful tool for occupations outside of healthcare to reduce employee burnout.

A delimitation of the study was that other variables might impact levels of burnout beyond the variables used in this study. An individual's personal life and background also influence the levels of burnout (Klusmann et al., 2016; Maddux, 2018).

A person's level of emotional intelligence and self-awareness are also related to an individual's resilience to burnout; however, these variables could not be addressed within the scope of this study as the focus is whether mindfulness influences burnout (Matigbay et al., 2017; Nahavandi, 2015). These variables could be studied in future research regarding mindfulness practices and employee burnout levels.

## Significance

The major themes in the literature present the idea that burnout is a common problem for professionals in the healthcare field. Proper training and programs which focus on employee health were demonstrated in the literature as an essential method to combat the negative effects of the external and internal healthcare environments—including employee burnout. Healthcare leaders who implemented changes to create positive workplace conditions improved not only the health and wellbeing of employees but also promoted better patient outcomes and safety (Boamah et al., 2018). Healthcare leaders are responsible for fostering a climate that supports the emotional, mental, and physical health of employees. (Ellis et al., 2019; Hayes et al., 2012; Inceoglu et al., 2017; Lo et al., 2018). Burnout is a common problem among working professionals in healthcare, supporting the claim that healthcare leaders are not fulfilling their responsibilities to employees (Ellis et al., 2019; Hayes et al., 2012: Inceoglu et al., 2017; Lo et al., 2018). Leaders in healthcare need to address burnout and turnover rates by training employees to sustain a healthy work-life balance through initiatives that maximize their abilities to perform job tasks proficiently.

Another theme in the literature was the idea that burnout, or symptoms associated with burnout, can be reduced through mindfulness practices. One study incorporated the use of online self-training to improve the work-life balance of employees in various professions (Michel, Bosch, & Rexroth, 2014). A poor work-life balance results in cognitive dissonance, where employees exhibit negative behaviors and attitudes which affect their job performance (Ellis et al., 2019; Lo et al., 2018). Programs and training should foster healthy work-life balances to ensure employees can perform job tasks proficiently. Another study determined that an in-person mindfulness intervention reduced moral distress in nurses (Vaclavik et al., 2018).

Moral distress occurs when a person encounters a moral problem but is unable to determine how to react to the problem and, therefore, is unable to fulfill job duties (Vaclavik et al., 2018). Programs aimed at supporting mental health nurtures employees' skills to mitigate morally distressing situations, allowing employees to combat symptoms of burnout. Other mindfulness research presents mindfulness as a course or training (Day & Gregory, 2017; Fortney, Luchterhand, Zakletskaia, Zgierska, & Rakel, 2013; Golpalkumar et al., 2017). Thus, mindfulness could be applied in healthcare in the form of interventions, training, online programs, or in-person course based on past research. Improvement in leadership practices to reduce employee burnout can support and improve professional practice by promoting proficiency and a healthy work-life balance in healthcare professionals.

It is important to note that the workplace environment is influenced by the programs and training used to support employee development and wellbeing. Workplace

culture influenced the capability of an organization to take on new initiatives and increased the quality of patient care. (Shea et al., 2018). Healthcare leaders who cultivate a positive workplace environment improve patient safety, patient outcomes, and foster a healthy work-life balance for employees (Boamah et al., 2018). Healthcare leaders directly influence employee work-life balance, development, training, and behaviors (Ellis et al., 2019; Inceoglu et al., 2018). Improvement in work-life balance, development, training, and behaviors of employees resulted in a decrease in employee turnover and increased productivity (Inceoglu et al., 2018).

The problem of high rates of burnout in healthcare professionals is addressed in this study through the analysis of a mindfulness program for healthcare professionals. This study may determine whether leaders should use mindfulness programs as a tool to reduce burnout and improve the ability of healthcare professionals to perform their jobs proficiently. The potential findings of this study may generate knowledge about how to reduce burnout and support employee wellbeing, health, development, and work-life balance in the healthcare field. Further, the knowledge generated from this study may contribute to the field by providing a deepened understanding of mindfulness practices and burnout reduction techniques in the healthcare field, filling the gap between employee burnout and leadership practices in healthcare. Thus, this research has the potential to drive social change through the improvement of healthcare leadership practices, programs, and training used to reduce employee burnout, sustain a healthy work-life balance, improve healthcare proficiency, and support the health and wellbeing of employees. A quantitative analysis research design, as discussed in the next section

was generated to perform the analyses between mindfulness and burnout and mindfulness and each variable of burnout; sense of efficacy, depersonalization, and emotional exhaustion. The findings of this study apply to healthcare leaders and will help further knowledge about methods to reduce employee burnout.

Section 2: Research Design and Data Collection

## Introduction

The purpose of this study was to determine whether a relationship exists between mindfulness practices and three measures of burnout: sense of efficacy, depersonalization, and emotional exhaustion. In this study, I conducted a secondary analysis of existing data generated from a mindfulness training program. Data were collected from an MBI-HSS program conducted with healthcare professionals from various healthcare organizations in the United States. Pretest and posttest scores of the MBI-HSS were analyzed in this study to determine if there was a difference in levels of burnout before and after a mindfulness training program.

## Research Design and Rationale

In this study, I sought to determine to what extent mindfulness influences levels of burnout in healthcare professionals as measured through variables of emotional exhaustion, sense of efficacy, and depersonalization. A quantitative research design is appropriate to determine whether there is a difference between the pretest data and posttest data because the data sets are numerical by nature and the research questions were deduced from past research (Creswell & Creswell, 2018). There is a lack of previous research on mindfulness applied to the healthcare profession to reduce levels of burnout. Past researchers tended to focus on specific departments, job titles, or organizations, such as nurses or the oncology department. In this study, I sought to determine whether the burnout level of any healthcare professional is affected by mindfulness. The research design and analysis for this study was consistent with the

research questions because both were aligned with determining whether the variables of burnout (i.e., emotional exhaustion, depersonalization, and sense of efficacy) change after the implementation of a mindfulness program. The results of this study will advance knowledge in the discipline by determining whether levels of burnout in healthcare professionals are influenced by mindfulness practice and how to reduce burnout levels.

The independent and dependent variables for this study were mindfulness and burnout, respectively. Using quantitative research designs, researchers seek to determine whether a causal relationship exists where the independent variable (X) causes the dependent variable (Y; Creswell & Creswell, 2018). Burnout has been commonly measured in past research on a quantitative Likert scale through levels of emotional exhaustion, depersonalization, and sense of efficacy (Alarcon et al., 2009; Berg, 2017; Gay & Airasian, 2000; Iwanicki & Schwab, 1981). Emotional exhaustion, sense of efficacy, and depersonalization are moderating variables because they may affect the strength of the relationship between burnout and mindfulness. I developed the research questions to address the relationship between mindfulness and burnout; therefore, a quantitative approach was appropriate to this study to generate generalizable knowledge that can contribute to the field.

Many other explanatory variables can affect levels of burnout and mindfulness in healthcare professionals that were not measured in the data set used for this study. Some explanatory variables that present future avenues for research regarding the relationship between mindfulness and burnout are age, family size, income, socioeconomic status, weekly hours worked, work shift, ethnicity, health status, department, and attitude

towards mindfulness practices. The time and resource constraints for this study were minimal because this study was conducted as a secondary analysis of preexisting data. I obtained the data by e-mailing the organization under study and talking with a representative over the phone about the type of data needed for the study. A signed data use agreement was obtained via e-mail from the appropriate representative at the organization after allowing the representative to review and sign the agreement. Time was taken to clean up the data because there were some missing responses and I checked for outliers. The following research questions and hypotheses guided this study:

Research Question 1: To what extent does a 5-week mindfulness program affect factors that inhibit proficiency in healthcare professionals, such as burnout, as measured through depersonalization, sense of efficacy, and emotional exhaustion?

$H_0$1: There is no relationship between the pretest and posttest levels of burnout after a 5-week mindfulness program.

$H_a$1: There is an improvement in levels of burnout between the pretest and posttest levels of burnout after a 5-week mindfulness program.

Research Question 2: To what extent does a 5-week mindfulness program affect the sense of efficacy in healthcare professionals?

$H_0$2: There is no relationship between the pretest and posttest sense of efficacy scores of healthcare professionals after a 5-week mindfulness program.

$H_a$2: There is an improvement in the pretest and posttest sense of efficacy scores of healthcare professionals after a 5-week mindfulness program.

Research Question 3: To what extent does a 5-week mindfulness program affect depersonalization in healthcare professionals?

$H_0$3: There is no relationship between the pretest and posttest depersonalization scores of healthcare professionals after a 5-week mindfulness program.

$H_a$3: There is a negative relationship between the pretest and posttest depersonalization scores in healthcare professionals after a 5-week mindfulness program.

Research Question 4: To what extent does a 5-week mindfulness program affect emotional exhaustion in healthcare professionals?

$H_0$4: There is no relationship between the pretest and posttest emotional exhaustion scores in healthcare professionals after a 5-week mindfulness program.

$H_a$4: There is a negative relationship between the pretest and posttest emotional exhaustion scores in healthcare professionals after a 5-week mindfulness program.

## Methodology

I obtained a signed data use agreement along with the data set from the study site organization. The target population for this study was healthcare professionals. A total of 136 participants took part in the mindfulness program and completed the MBI-HSS survey before and after the program. The data set consisting of pretest and posttest MBI-HSS scores was analyzed through a MANOVA and simple linear regression to determine

whether mindfulness practice influences levels of burnout as measured through the variables of emotional exhaustion, depersonalization, and sense of efficacy.

I used the Statistical Package for Social Sciences (SPSS) statistical software to run the analyses for this study. A MANOVA and simple linear regression were used to determine the difference in observations before and after the mindfulness program (see Albright & Winston, 2017; Hinkle, Wiersma, & Jurs, 2003). A MANOVA was appropriate to use to answer these research questions because a MANOVA determines whether there are differences among multiple dependent variables and if the differences between means are due to chance (see George & Mallery, 2007). The MANOVA is similar to ANOVA analysis but more than one dependent variable can be examined at a time using the MANOVA (George & Mallery, 2007). The dependent variable for this study, burnout, was measured through three moderating variables of depersonalization, emotional exhaustion, and sense of efficacy. The MANOVA analysis allows the moderating variables to be input as multiple dependent variables to determine whether there is a difference in burnout by analyzing the differences between the multiple measures of burnout. A simple linear regression model is used to analyze the impact of an interval-ratio predictor variable on an interval or ratio criterion variable (Hinkle et al., 2003). Therefore, a simple linear regression model was appropriate to determine whether the independent variable impacts each moderating variable.

## Sampling Procedures

The data for this study was obtained from an organization that provided mindfulness programs to organizations, individuals, and patients; specific programs are

offered for healthcare professionals. In this study, I used preexisting data generated from an MBSR program for healthcare professionals. The program is a 5-week class and included healthcare professionals from 20 different healthcare programs in the state of Washington. Organizations elected to participate in the program and enrolled through the organization that provided the mindfulness program. A healthcare professional is someone who professionally diagnoses, studies, or provides treatment for health needs (World Health Organization, 2013). The participants included in the study were full-time healthcare professionals.

The MBI-HSS was administered before and after the 5-week program to measure burnout through the three variables of emotional exhaustion, sense of efficacy, and depersonalization. The MBI-HSS is the most utilized method of measuring the effectiveness of MBSR by measuring burnout (Alarcon et al., 2009). The MBI-HSS uses a 6-point Likert scale to measure burnout through the three variables of emotional exhaustion, depersonalization, and personal achievement (which is also commonly known as sense of efficacy; Maslach et al., 1996). The organization that provided the mindfulness program indicated that the 5-week course consisted of eight in-person classes, one extended session, and daily home practice. The goal of the program is to train healthcare professionals and healthcare leaders in the core elements of MBSR. This program is shorter than others offered by the organization to accommodate the different needs and times of healthcare professionals. I obtained a signed data use agreement (see Appendix A) to access a de-identified data set for this study.

I determined the sample size for this study using a G*Power 3.1.9.2 analysis calculation. Both a calculation for a MANOVA and simple linear regression were performed. For the MANOVA, the test family for this study is the F test because a one-way MANOVA was used (see Faul, Erdfelder, Buchner, & Lang, 2013). The repeated measures MANOVA accounts for multiple dependent variables and determines whether a difference exists between pretest and posttest data (Faul et al., 2013; Tabachnick & Fidell, 2006). In this study, the moderating variables of depersonalization, sense of efficacy, and emotional exhaustion were analyzed in a simple linear regression and burnout was analyzed in a MANOVA. To calculate the minimum sample size for the MANOVA, I used a medium effect size of 0.25, a generally accepted power of 0.80, and an alpha of 0.05 in the G*Power analysis (see Faul et al., 2013; George & Mallery, 2007; Tabachnick & Fidell, 2006). The number of groups was two since the pretest and posttest scores are considered independent of one another. The number of measurements was also two because data were collected from the participants twice. Using these parameters, a sample size of 106 was calculated. The data for this study contained a sample of 136 participants; therefore, the sample size for the MANOVA provided statistically valid results.

For the simple linear regression model, I used a medium effect size of 0.15, a generally accepted power of 0.80, and a significance value of 0.05 in the G*Power analysis (see Faul et al., 2013). The simple linear regression only used one predictor variable as each moderating variable was analyzed separately. Using these parameters, a minimum sample size of 55 was needed. Since the data set consisted of 136 participants,

the sample size for the simple linear regression model provided statistically significant results.

## Instrumentation

In this study, I utilized the MBI-HSS for the pretests and posttests implemented before and after the mindfulness intervention. The MBI-HSS is the most widely used tool for measuring burnout in research regarding human service professionals, has been validated in research over the past 35 years, and is appropriate for adults in the human services profession (Alarcon et al., 2009; Iwanicki & Schwab, 1981; Mindgarden, 2019; Worley, Vassar, Wheeler, & Barnes, 2008). The MBI-HSS originated from MBSR practices, is a 22-item survey that measures levels of depersonalization, emotional exhaustion, and sense of efficacy, and was created in 1981 (Maslach et al., 1996; Mindgarden, 2019). Because the survey was created for human services professionals, it is appropriate for populations in a variety of occupations (Mindgarden, 2019). The scale measures three variables: emotional exhaustion, depersonalization, and personal accomplishment (which is referred to as self-efficacy in this paper; Iwanicki & Schwab, 1981; Maslach et al., 1996; Mindgarden, 2019). A 7-point Likert scale measures each participants' response to the 22-item survey (Maslach et al., 1996). High scores for emotional exhaustion and depersonalization and low scores for personal accomplishment (or sense of efficacy) indicate a high level of burnout; the opposite scores would indicate a low level of burnout (Maslach et al., 1996).

## Data Analysis Plan

The problem of interest is determining whether mindfulness reduces burnout in healthcare professionals as measured by sense of efficacy, depersonalization, and emotional exhaustion. The MBI-HSS instrument measured levels of depersonalization, emotional exhaustion, and sense of efficacy in healthcare professionals to determine levels of burnout. A one-way repeated measures MANOVA and a simple linear regression model were used to compare the mean scores of healthcare professionals from the pretest and posttest data. A quantitative analysis was performed using SPSS Version 25.0 and a standard confidence interval of 95% and an alpha of 0.05 was used as parameters. The conventional medium effect size of 0.25 was used (Cohen, 1992; George & Mallery, 2007). The data were screened for missing data and outliers before performing the analysis. Any cases with missing data were excluded from the data set before analysis.

The quantitative data analysis was designed to address the following four research questions:

### Statistical Analysis

The statistical tests that were used to answer the research questions is a one-way repeated measures MANOVA and simple linear regression. A MANOVA is appropriate for determining whether there are any differences between multiple dependent variables over time, such as pretest and posttest data (Albright & Winston, 2017). The participants' scores on each measure of the dependent variable prior to the mindfulness course were compared to their scores on the same measures after the mindfulness course. Thus, the

independent variable of mindfulness was considered as two independent variables of the pretest (no mindfulness program) group and posttest group (mindfulness program). The MBI-HSS survey is a 22-item survey that uses a Likert-scale to measure burnout, thus, providing continuous interval variables. The dependent variable is burnout, which is measured by three moderating variables; depersonalization, emotional exhaustion, and sense of efficacy. For the purpose of this analysis, the moderating variables are used as dependent variables in the one-way repeated measures MANOVA. Research Question 1 was answered by the overall results of the MANOVA. A MANOVA tested whether there are differences between the means of the pretest and posttest groups on the combination of all moderating variables of burnout; depersonalization, sense of efficacy, and emotional exhaustion. An F-test was used to determine if the null hypothesis should be rejected with a 0.05 level of significance. In order to verify the results are statistically significant, Wilk's Lambda was used (Hand & Taylor, 1987). Wilk's lambda is similar to an F-statistic in an ANOVA test and measures the proportion of variance in a combination of dependent variables (Hand & Taylor, 1987). A value of zero indicates that all variance is explained by the independent variable, which is an ideal result (Creswell, 2014; Hand & Taylor, 1987). The smaller the value of Wilk's lambda, the higher the explanatory power of the model is (Creswell, 2014). If the *p* value for the Wilk's lambda output is lower than the conventional level of 0.05 for the Wiki's Lambda test results in SPSS, then the results are statistically significant (Hand & Taylor, 1987).

Several assumptions for the MANOVA must be met. The MANOVA assumes that the dependent variable is normally distributed, measured on an interval level, the

pairs of scores are independent of one another, and the variances of the dependent variables are the same as in other dependent variables (Albright & Winston, 2017; George & Mallery, 2007). The distance between the values of each measurement for burnout has meaning, and there is an absolute zero which is meaningful (Burkholder, Cox, & Crawford, 2016; Creswell & Creswell, 2018). Thus, the second assumption is met. The pairs of scores were obtained from individual participants. Participants only needed to be employed in the healthcare profession and came from different healthcare organizations. Thus, it can be assumed that the paired scores are independent of one another and the third assumption is met. The first assumption, normality, was assessed using a normality test. The final assumption of variance was assessed using Box's M test of equality of covariance during the analysis (George & Mallery, 2007).

For Research Questions 2, 3, and 4 a simple linear regression model was used. The independent variable of mindfulness is a continuous variable and was analyzed separately with each moderating variable. Each of the moderating variables of depersonalization, sense of efficacy, and emotional exhaustion are considered dependent variables in the simple linear regression model. A simple linear regression is used to determine if there is a correlation between two variables (Leedy & Ormond, 2015). Thus, three simple linear regressions were run between each dependent variable and mindfulness. The results of the simple linear regression determined whether a significant association exists between mindfulness and each moderating variable (Campbell & Stanley, 1963). There are four assumptions for a linear regression model. The relationship between the independent and dependent variables is linear, the variance of

the residuals is the same for any independent variable value, the observations are independent of each other, and the data were normally distributed (Leedy & Ormond, 2015). It was assumed that the data were normally distributed and the relationship between the independent and dependent variables is linear. Homoscedasticity was checked for by plotting the residuals (Frankfort-Nachmias & Leon-Guerrero, 2018). If the plot does not appear to have an obvious pattern, then the assumption of homoscedasticity is met (Frankfort-Nachmias & Leon-Guerrero, 2018). The variance inflation factor (VIF) values were used to meet the assumption that the observations are independent of each other by testing for multicollinearity (Frankfort-Nachmias & Leon-Guerrero, 2018). If the VIF value is lower than 10, then it can be assumed that the variables are not highly correlated with each other (Frankfort-Nachmias & Leon-Guerrero, 2018).

An F test was used to determine whether the predictor variable explains the criterion variable. The *F* value is the difference between the variation in sample means and the variation within the samples (Albright & Winston, 2017). A low *F* value means that the difference between the variation within the samples and the variation within the means is similar (Frankfort-Nachmias & Leon-Guerrero, 2018). A high *F* value means that the evidence of the explained variation is large when compared to the unexplained variation that indicates that the model has explanatory power (Albright & Winston, 2017). The R-squared value generated from the linear regression was used to determine how much variance in each moderating variable can be accounted for by the independent variable (Frankfort-Nachmias & Leon-Guerrero, 2018). An R-squared value of 0

indicates that the independent variable has no effect on the dependent variable (Frankfort-Nachmias & Leon-Guerrero, 2018). An R-squared value closer to 1 would indicate that the independent variable has a large effect on the dependent variable (Frankfort-Nachmmias & Leon-Guerrero, 2018). A *p* value at or below the conventional level of 0.05 was used to determine whether the results of the interaction between the independent and dependent variables are statistically significant.

**Threats to Validity**

One potential threat to external validity is that participants in this study were selected from a group of professionals participating in a 5-week mindfulness program. Organizations elected to participate in this mindfulness program, thus, the results of this study may not be generalizable to organizations or healthcare professionals who would not elect to participate in a mindfulness intervention.

Maturation, attrition, history, and instrumentality may affect the internal validity of the study (Campbell, 1957; Gay & Airasian, 2000; Onwuegbuzie, 2000). People experience natural changes over time. Therefore, the data may be influenced by the maturation of participants outside of the study (Campbell, 1957). The second threat stems from the possibility that some participants dropped out of the study and influenced the results (Campbell, 1957; Gay & Airasian, 2000). Personal experiences have the ability to influence responses as outside factors relating to a person's background affect how he or she responds to the survey (Campbell, 1957). Lastly, the instrumentation is a threat to validity as participants may have been more concentrated taking the MBI-HSS the second time around (Campbell, 1957; Gay & Airasian, 2000; Onwegbuzie, 2000). The MBI-HSS

scores are self-reported so that participants may have given different values on the pretest than the posttest (Onwegbuzie, 2000).

**Ethical Procedures**

A signed data use agreement (Appendix A) was obtained from the appropriate representative at the organization that implemented the mindfulness program and collected the pretest and posttest scores which were analyzed in this study. The data set was deidentified to ensure confidentiality and minimize ethical concerns. As indicated by the representative at the organization, healthcare organizations elected to participate in the mindfulness program, and participants who were offered to take part in the mindfulness program elected to participate. Participants could withdraw from the program at any time. The mindfulness program included meditation and education that were provided at, online, and onsite at organizations. The mindfulness program does not present any ethical concerns or adverse effects and the data set obtained is deidentified so there are no chances of divulging participant's information.

Institutional Review Board approval was obtained from Walden IRB before performing the statistical analysis for this study. The IRB approval number for this study is 02-12-20-0746104. The main ethical concern for this study is keeping the organization and participants' information confidential and anonymous, respectively. The data set was deidentified before analysis, so the participants' identity and personal information are protected as even I, the researcher, did not know who participated in this study. The data were stored on my personal laptop and external hard drive and will be destroyed 5 years after the conclusion of the study.

## Summary

The research design is a quantitative analysis consistent with answering the four research questions for this study. A MANOVA was used to answer the first research question by analyzing the relationship between mindfulness and burnout and a simple linear regression model was used to answer the second, third, and fourth research questions to determine whether a relationship between mindfulness and each moderating variable exist. Before conducting the analyses, the data were cleaned for missing values and each assumption of the statistical test was evaluated to ensure no assumptions are violated. The results of these analyses provide insight into the relationships of interest in this study.

Section 3: Presentation of the Results and Findings

## Introduction

The purpose of the study was to determine whether mindfulness training reduces burnout in healthcare professionals as measured through emotional exhaustion, sense of efficacy, and depersonalization. The following research questions were addressed through the statistical analyses in this study:

Research Question 1: To what extent does a 5-week mindfulness program affect factors that inhibit proficiency in healthcare professionals, such as burnout, as measured through depersonalization, sense of efficacy, and emotional exhaustion?

$H_0$1: There is no relationship between the pretest and posttest levels of burnout after a 5-week mindfulness program.

$H_a$1: There is an improvement in levels of burnout between the pretest and posttest levels of burnout after a 5-week mindfulness program.

Research Question 2: To what extent does a 5-week mindfulness program affect the sense of efficacy in healthcare professionals?

$H_0$2: There is no relationship between the pretest and posttest sense of efficacy scores of healthcare professionals after a 5-week mindfulness program.

$H_a$2: There is an improvement in the pretest and posttest sense of efficacy scores of healthcare professionals after a 5-week mindfulness program.

Research Question 3: To what extent does a 5-week mindfulness program affect depersonalization in healthcare professionals?

$H_0$3: There is no relationship between the pretest and posttest depersonalization scores of healthcare professionals after a 5-week mindfulness program.

$H_a$3: There is a negative relationship between the pretest and posttest depersonalization scores in healthcare professionals after a 5-week mindfulness program.

Research Question 4: To what extent does a 5-week mindfulness program affect emotional exhaustion in healthcare professionals?

$H_0$4: There is no relationship between the pretest and posttest emotional exhaustion scores in healthcare professionals after a 5-week mindfulness program.

$H_a$4: There is a negative relationship between the pretest and posttest emotional exhaustion scores in healthcare professionals after a 5-week mindfulness program.

In this section, I describe the secondary data set along with the analyses used to address the research questions. The results of the statistical analyses, including the assumptions, posthoc tests, and statistical hypothesis testing, are presented in this section. I use the results to conclude whether the statistical analyses for this study provided statistically significant results and if the null hypotheses should be rejected or failed to be rejected.

## Secondary Data Types and Sources of Information

I obtained the de-identified data set from the appropriate representative at the organization that implemented the mindfulness program as well as a signed data use agreement. The research questions were addressed through the three variables included within the data set that measure levels of burnout in healthcare professionals: emotional exhaustion, depersonalization, and sense of efficacy. The pretest and posttest variables included in the data set were obtained before and after the implementation of a mindfulness program. The level of each variable of burnout was measured through the MBI-HSS to provide insight into the average level of burnout of a healthcare professional before and after the mindfulness program. A reduction in emotional exhaustion and depersonalization scores indicates an improvement in burnout, while the opposite, an increase in sense of efficacy scores indicates an improvement in burnout.

## Data Collection of Secondary Data Set

The participants included in the data set belonged to 1 of 20 organizations in the state of Washington that elected to participate in a 5-week mindfulness program. The mindfulness program took place in 2016, and the organizations were invited to participate that year. It is unknown what the response rate was for participants because participants signed up for the mindfulness program directly through their organization. The population included in the data set was reported by the authorizing representative at the organization to include mostly frontline healthcare workers, although it was indicated that administrative and other medical staff also participated in the mindfulness program. All

participants were employed full time at a healthcare organization in the state of Washington.

This sample is representative of full-time healthcare employees in the state of Washington and other states with similar healthcare needs as Washington. The population size, culture, socioeconomic status, and environment can differ from state to state; therefore, the findings of this study have the potential to be generalized across the United States assuming that the healthcare needs of patients in Washington are similar to that of the general U.S. population. It is important to note that different occupations in healthcare experience burnout differently than others. For example, a nurse interacts with the healthcare environment differently than a physician; therefore, these two professions may experience burnout differently. In this study, I aimed to determine whether a program implemented on an organizational level would reduce burnout for healthcare workers in general; therefore, the sample population included in the data set was appropriate for this study.

## Results

### MANOVA

I ran two analyses to answer the four research questions. A MANOVA was used to answer the first research question. For the MANOVA, the means of the moderating variables of emotional exhaustion, sense of efficacy, and depersonalization were analyzed as dependent variables over time (i.e., before and after the mindfulness program), which served as the independent variable. A one-way repeated measures MANOVA determines whether there is a difference in the combined variables of burnout (Norušis, 2012). The

MANOVA cannot be used to assess where the differences lie; therefore, it could not be used to tell if sense of efficacy affects burnout more than emotional exhaustion (see Norušis, 2012). Because of this fact, I ran a simple linear regression for each moderating variable to determine if the variation in burnout was explained more by any specific moderating variable.

First, I assessed the assumptions of the MANOVA. The MANOVA assumes that the independent variable is categorical and contains two or more groups, the dependent variable is normally distributed and measured on an interval level, the pairs of scores are independent of one another, and the variances of the dependent variables are the same as in other dependent variables (Albright & Winston, 2017; George & Mallery, 2007). The first assumption was met because the independent variable of mindfulness was categorical and there were two groups (i.e., the pretest group and the posttest group). The second assumption was met because the distance between the scores of each moderating variable of burnout had meaning, and there was an absolute zero, which is meaningful (see Burkholder et al., 2016; Creswell & Creswell, 2018). Each variable was measured on a numerical Likert scale, where values are ordinal because there was an order to the scoring system. The assumption of normality is tested through a Shapiro-Wilks test as part of the analysis. The third assumption of independence of observations was met through the study design. The pairs of scores were obtained from individual participants at different times (i.e., before and after the mindfulness intervention). This assumption concerns the design of the study so there is not a specific statistical test (Norušis, 2012). Based on the design of the test, I assumed that the paired scores are independent of one

another and this third assumption was met. The final assumption of variance was assessed using Box's M test of equality of covariance (see Norušis, 2012).

There were no missing data values in the data set, so no data were eliminated from the data set. I ran the MANOVA through a general linear model of repeated measures in SPSS Statistics Version 25.0. Time was entered as the within-subjects factor to serve as the independent variable with the three levels of depersonalization, emotional exhaustion, and depersonalization. Time was used as the difference between the sets of measures: before and after the mindfulness program. The variables in the data set were correlated to each level of time and the MANOVA analysis was performed. Since each participant provided all three measures of depersonalization, emotional exhaustion, and sense of efficacy, a within-subjects factors study design was used (see Norušis, 2012).

First, the two assumptions for normality and assumption for equal variance were tested using Box's M test of equality of covariance and the Shapiro-Wilk test, respectively. I aggregated the pretest and posttest data into two groups: the pretest data group and the posttest group for the Shapiro-Wilk test. I used the explore function in descriptive statistics of SPSS to run the test. The extreme values table provides insight into whether outliers exist in the data set. Table 1 shows that the case number of the highest and lowest values frequently occurred within the data set, indicating that no outliers exist.

Table 1

*MANOVA Shapiro-Wilk's Test of Normality Output*

| | Shapiro-Wilk Statistic | *df* | Sig. |
|---|---|---|---|
| Pretest | 0.945 | 408 | 0.004080 |
| Posttest | 0.911 | 408 | 0.000 |

*Note.* Tests null hypothesis of equal population covariance matrices

The tests of normality indicate that the pretest data and posttest both have *p* values of 0.000, which is below the conventional level of 0.05. These *p* values indicate that the null hypothesis that the data does not follow a normal distribution can be rejected and the assumption of normality is met.

I conducted Box's M test of equality using SPSS Version 25.0 and by rearranging the data into the three scale variables of emotional exhaustion, depersonalization, and sense of efficacy and one grouping variable of pretest (1) and posttest (2). As shown in Table 2, the test results indicated that Box's M test of equality provided statistically significant results because the *p* value of 0.006 falls below the conventional level of 0.05.

Table 2

*MANOVA Box's M Test of Equal Covariance Output*

| | | |
|---|---|---|
| | Box's M | 18.157 |
| F | Approx. | 2.990 |
| | *df1* | 6 |
| | *df2* | 528181.132 |
| | Sig. | 0.006 |

Therefore, the null hypothesis that the covariance matrices are equal can be rejected and the assumption that the observed covariance matrices for the dependent variables are equal across groups is met.

The descriptive statistics in Table 3 show that all the data from all 136 participants were used in the model.

Table 3

*MANOVA Descriptive Statistics Output*

| | *M* | *SD* | *N* |
|---|---|---|---|
| Pretest emotional exhaustion | 18.83 | 9.850 | 136 |
| Posttest emotional exhaustion | 15.26 | 8.259 | 136 |
| Pretest depersonalization | 13.21 | 8.720 | 136 |
| Posttest depersonalization | 10.80 | 7.598 | 136 |
| Pretest sense of efficacy | 37.70 | 8.393 | 136 |
| Posttest sense of efficacy | 39.09 | 6.874 | 136 |

The mean for each pair of scores showed some differences. For example, the mean score of emotional exhaustion for the pretest data is 18.83, and the mean score for the posttest data is 15.26. This indicates that overall, the emotional exhaustion levels decreased over time. The mean depersonalization scores from the pretest to the posttest group decreased, and the mean sense of efficacy scores increased from the pretest to the posttest group. A decrease in emotional exhaustion and depersonalization scores and an increase in sense of efficacy scores indicate an improvement in burnout. Therefore, the mean differences indicate that burnout improved over time, which was further analyzed in the remainder of the MANOVA results. I used Wilk's lambda to determine whether the MANOVA was statistically significant. Wilk's lambda is a measure of determining the ratio unexplained variance to explained variance, so an optimal value for this statistic would be small (Norušis, 2012). The value of Wilk's lambda as seen in Table 4 is 0.9 with a significance of 0.003.

Table 4

*MANOVA Multivariate Tests Output*

| Effect | Between Subjects Intercept | | | Within Subjects | | |
|---|---|---|---|---|---|---|
| | Pillai's trace | Wilk's lambda | Hotelling's trace | Pillai's trace | Wilks' lambda | Hotelling's trace |
| Value | 0.982 | 0.018 | 54.334 | 0.100 | 0.111 | 0.111 |
| F | 2408.787 | 2408.787 | 2408.787 | 4.932 | 4.932 | 4.932 |
| Sig | 0.000 | 0.000 | 0.000 | 0.003 | 0.003 | 0.003 |
| Partial eta squared | 0.982 | 0.982 | 0.982 | 0.100 | 0.100 | 0.100 |
| Noncent parameter | 7226.361 | 7226.361 | 7226.361 | 14.796 | 14.796 | 14.796 |
| Observed power | 1.000 | 1.000 | 1.000 | 0.904 | 0.904 | 0.904 |

[a.] Design: Intercept
Within Subjects Design: Time (Mindfulness Program)
[b.] Exact Static
[c.] Computed using alpha = 0.05

I used the conventional level of 0.05 for this study; therefore, the results of the MANOVA are statistically significant as 0.003 is below 0.05 (see Albright & Winston, 2017). This indicates that there is no relationship between burnout and mindfulness and the null hypothesis can be rejected.

The parameter estimates table as seen in Table 5 summarizes the effects of each dependent variable (see Norušis, 2012).

Table 5

*MANOVA Parameter Estimates Output*

| | | Dependent Variable Parameter Intercepts | | | | | |
|---|---|---|---|---|---|---|---|
| | | Pretest emotional exhaustion | Posttest emotional exhaustion | Pretest depersonalization | Posttest depersonalization | Pretest dense of efficacy | Posttest sense of efficacy |
| B | | 18.831 | 15.265 | 13.206 | 10.801 | 37.699 | 39.088 |
| Std. Error | | 0.845 | 0.708 | 0.748 | 0.652 | 0.720 | 0.589 |
| T | | 22.294 | 21.554 | 17.662 | 16.579 | 52.384 | 66.317 |
| Sig. | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 95% CI | Lower bound | 17.160 | 13.864 | 11.727 | 9.513 | 36.275 | 37.923 |
| | Upper bound | 20.501 | 16.665 | 14.685 | 12.090 | 39.122 | 40.254 |
| Partial eta squared | | 0.786 | 0.775 | 0.698 | 0.671 | 0.953 | 0.970 |
| Noncent parameter | | 22.294 | 21.554 | 17.662 | 16.579 | 52.384 | 66.317 |
| Observed power | | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

A positive coefficient indicates a positive relationship between the dependent and independent variables while a negative coefficient indicates an inverse relationship (George & Mallery, 2007; Norušis, 2012). The table shows that all dependent variables have a statistically significant relationship with the independent variable as the *p* value for all dependent variables is 0.000 which is below the conventional level of 0.05. Each beta coefficient indicates the degree of change in the independent variable for every one unit increase in the predictor (or dependent variable; Albright & Winston, 2017). The posttest coefficient is 15.265 for emotional exhaustion, 10.801 for depersonalization, and 39.088 for sense of efficacy. It is important to note the differences between the coefficients between the pretest and posttest data. The pretest coefficients are 18.831 for emotional exhaustion, 13.206 for depersonalization, and 37.699 for sense of efficacy. The difference between the coefficients for emotional exhaustion and depersonalization is

both negative while the difference between the coefficients for sense of efficacy is positive. This indicates that depersonalization and emotional exhaustion scores decreased and the sense of efficacy scores increased after the mindfulness program. Emotional exhaustion and depersonalization decreased by 3.566 and 2.405, respectively and sense of efficacy increase by 1.389. The variable with the largest coefficient was sense of efficacy, indicating that sense of efficacy has the largest effect on mindfulness. The variable with the largest difference from pretest to posttest group was emotional exhaustion, indicating that the negative relationship between mindfulness and emotional exhaustion increased the most over time.

The partial eta-squared values in the parameter estimates table in Table 5 show the amount of variation in the independent variable that can be explained by each dependent variable (Albright & Winston, 2017). The partial eta-squared values for posttest scores was 0.775 for emotional exhaustion, 0.671 for depersonalization, and 0.970 for sense of efficacy. These values indicate that 77.5% of the variability in mindfulness can be accounted for by emotional exhaustion, 67.1% of the variability in mindfulness can be accounted for by depersonalization, and 97.0% of the variability in mindfulness can be explained by sense of efficacy. The differences between the et-squared values for the pretest and posttest groups follow the same trends as the coefficients; emotional exhaustion and depersonalization decrease by .011 and 0.027, respectively, from pretest to posttest group and sense of efficacy increases by 0.017 from pretest to posttest group. These values indicate that the dependent variables have larger explanatory power after the mindfulness intervention when compared to before the

mindfulness intervention, with depersonalization displaying the largest increase in explanatory power over time. These results suggest that the alternative hypothesis that burnout scores improve after the mindfulness program should be accepted.

**Simple Linear Regression**

Three linear regression models were used to analyze the relationship between each moderating variable and mindfulness. The scatter plot checks the assumption that the relationship between the two variables is linear and checks for homoscedasticity. If the spread of the data is not cone-shaped, curved, or demonstrates any other pattern, then the assumption of homoscedasticity is met (Leedy & Ormund, 2015). The scatter plots as seen in Figures 1, 2, and 3 did not seem to demonstrate any patterns so the assumption of homoscedasticity was met.

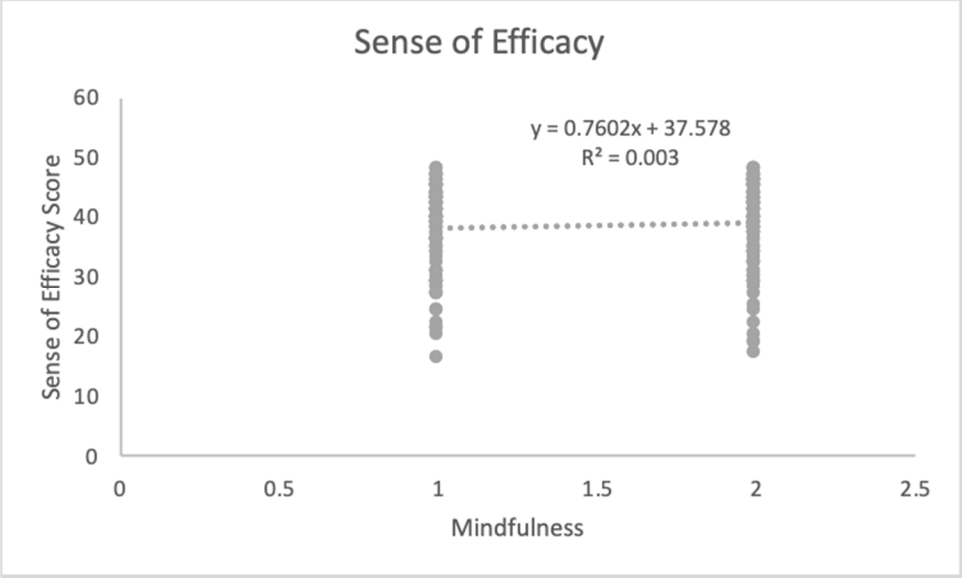


*Figure 1.* Simple scatter plot of sense of efficacy scores versus mindfulness with best fit linear trend line.

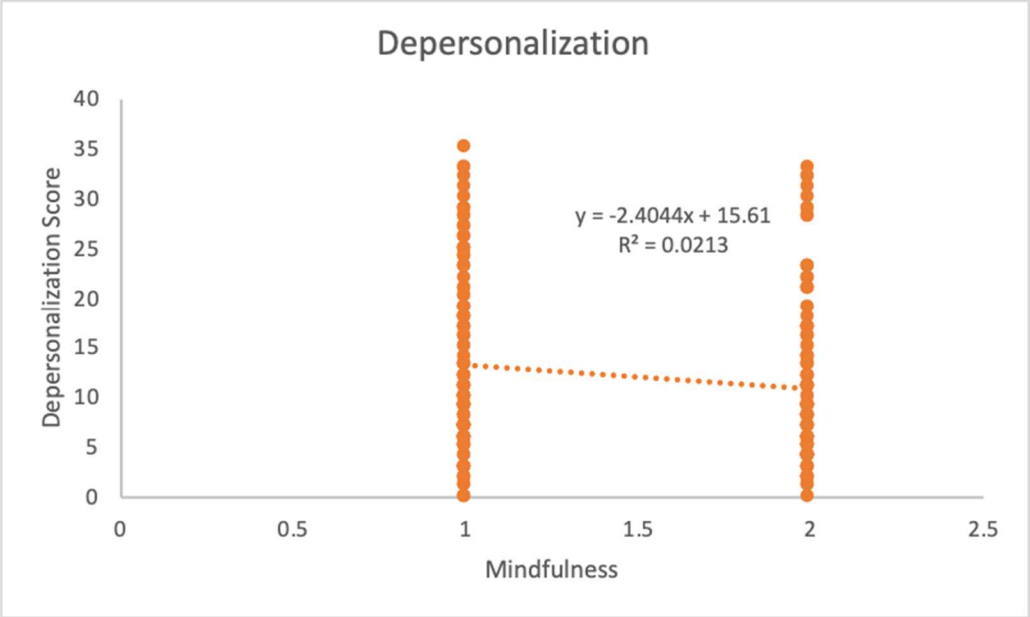


*Figure 2.* Simple scatter plot of depersonalization scores versus mindfulness with a best fit linear trend line.

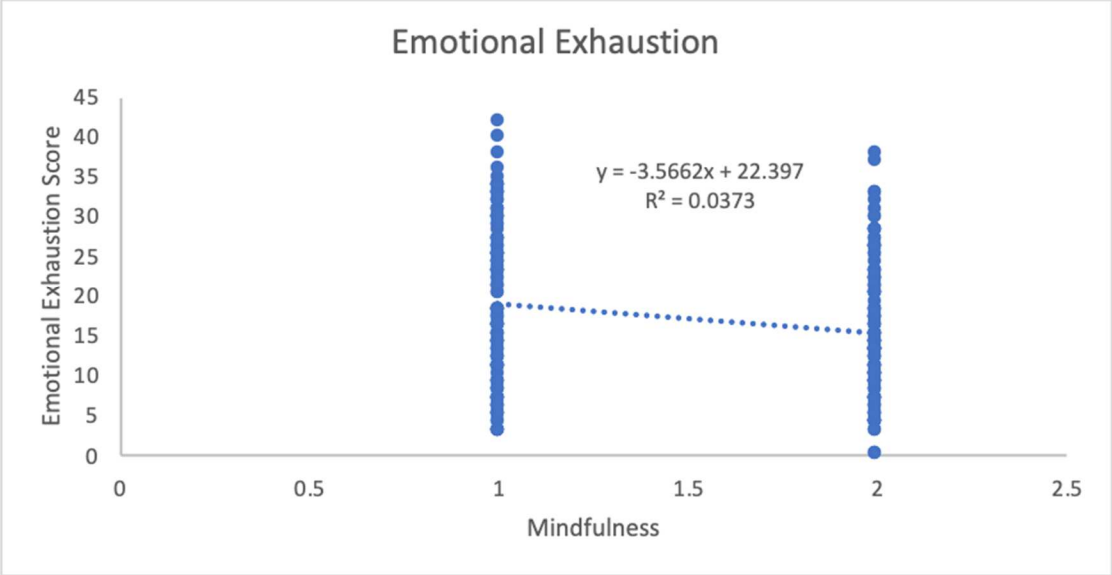


*Figure 3.* Simple scatter plot of emotional exhaustion scores versus mindfulness with a best fit linear trend line.

A best fit linear line was inserted into each scatterplot and a linear trend was observed to be fit for each data set. Thus, it was assumed that the data set observed linear

trends and a linear regression model would be appropriate to answer Research Questions 2, 3, and 4.

**Sense of Efficacy**

A simple linear regression model was used to answer Research Question 2. Mindfulness, the dependent variable was assigned to each sense of efficacy score. A 1 was assigned to the pretest scores and a 2 was assigned to the posttest scores. The remaining assumptions for the simple linear regression were checked before interpreting the results of the regression for sense of efficacy. First, the residual minimum and maximum values were checked to be within -3.29 and 3.29 to verify that no outliers existed in the data set (Leedy & Ormund, 2015). The maximum residual value was, as seen in Table 6, 2.002 and the minimum residual value was -4.915, indicating that there are outliers with low values.

Table 6

*Simple Linear Regression Residuals Statistics Output for Sense of Efficacy*

| | Minimum | Maximum | *M* | *SD* | *N* |
|---|---|---|---|---|---|
| Predicted value | 38.2612 | 39.1418 | 38.7015 | 0.44112 | 268 |
| Residual | -22.26119 | 9.73881 | 0.00000 | 6.93244 | 268 |
| Standard predicted value | -0.998 | 0.998 | 0.000 | 1.000 | 268 |
| Standard residual | -3.205 | 1.402 | 0.000 | 0.998 | 268 |

The outliers were determined using the standard deviation values provided in the descriptive statistics output, as seen in Table 7.

Table 7

*Simple Linear Regression Descriptive Statistics Output for Sense of Efficacy with 136 Participants Included in the Data Set*

| | *M* | *SD* | *N* |
|---|---|---|---|
| Sense of efficacy | 38.3934 | 7.68821 | 272 |
| Mindfulness | 1.5000 | 0.50092 | 272 |

[a.] Lillefors Significance Correction

The values lying over three standard deviations away from the mean were eliminated from the data set, decreasing the sample size to 134. The regression was run again as a sample size of 134 still meets the requirements for a simple linear regression. The updated regression output provided a maximum residual value of 1.402 and a minimum value of -3.205, as seen in Table 7, indicating that there are no longer outliers in the data set. Next, the Durbin-Watson statistic was evaluated to check the assumption of independence of observations (Leedy & Ormund, 2015). The Durbin-Watson value of 2.163 in Table 8 is greater than 1 and less than 3, thus, the assumption of independence of observations is met.

Table 8

*Simple Linear Regression Model Summary Output for Sense of Efficacy*

| Model 1 | | |
|---|---|---|
| R | | 0.064 |
| R square | | 0.004 |
| Adjusted R square | | 0.000 |
| Standard error of the estimate | | 6.94545 |
| Change statistics | R square change | 0.004 |
| | F change | 1.007 |
| | *df1* | 1 |
| | *df2* | 266 |
| | Sig. F change | 0.300 |
| Durbin-Watson | | 2.163 |

[a.] Predictors: (Constant), Mindfulness
[b.] Dependent Variable: Sense of Efficacy

The VIF value of 1 as seen in Table 9 also verifies this assumption is met as the VIF value of 1 is lower than 10 (Frankfort-Nachmias & Leon-Guerrero, 2018).

Table 9

*Simple Linear Regression Correlations Output for Sense of Efficacy After Correcting for Outliers*

| | | Sense of Efficacy | Mindfulness |
|---|---|---|---|
| Pearson correlation | Sense of efficacy | 1.000 | 0.064 |
| | Mindfulness | 0.064 | 1.000 |
| Sig. (1-tailed) | Sense of efficacy | | 0.150 |
| | Mindfulness | 0.150 | |
| *N* | Sense of efficacy | 268 | 268 |
| | | 268 | 268 |

The last assumption of normality was checked using the histogram. The histogram in Figure 4 shows the data follows a normally distributed bell curve indicating that the assumption of normality is met.

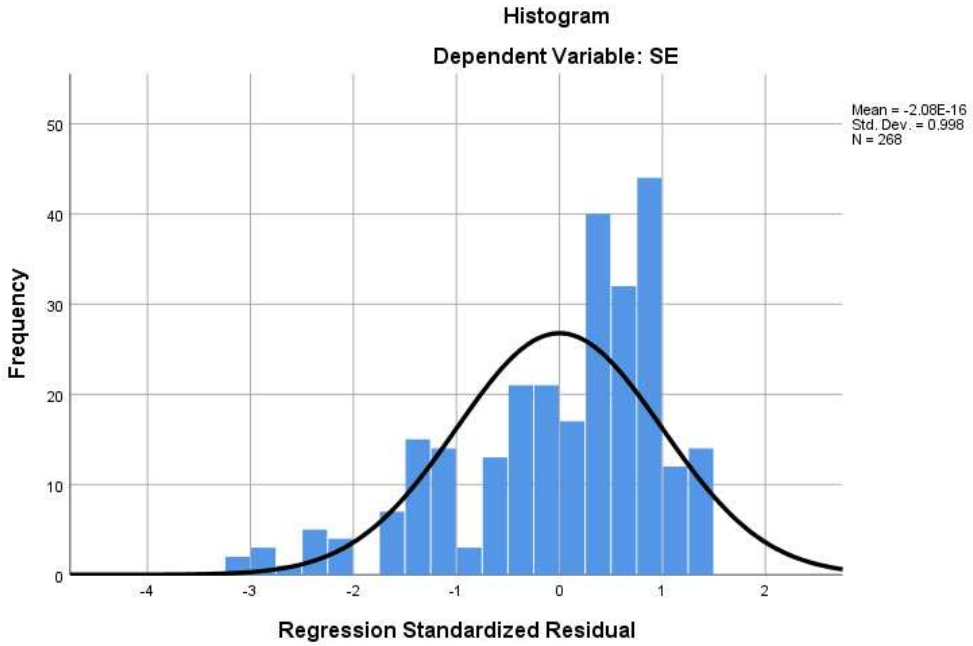


*Figure 4.* Histogram of sense of efficacy scores.

The descriptive statistics in Table 7 shows that two values were eliminated from the data set as they were outliers, providing a sample size of 134. The value of *n* is shown to be 268 as each of the 134 participants provided two scores. The mean for sense of efficacy scores overall is 38.702, with a standard deviation of 6.946. The correlations table seen in Table 9 indicates a moderate positive relationship of 0.064 exists between sense of efficacy and mindfulness. The R square value of 0.04 in the model summary in Table 8 table indicates that 4% of the variability in mindfulness can be explained by sense of efficacy (Albright & Winston, 2017). The ANOVA in Table 10 provides insight into whether the null hypothesis should be accepted or rejected.

Table 10

*Simple Linear Regression ANOVA Output for Sense of Efficacy*

| | Sum of Squares | *df* | Mean Squares | F | Sig. |
|---|---|---|---|---|---|
| Regression | 51.955 | 1 | 51.955 | 1.077 | 0.300 |
| Residual | 12831.664 | 266 | 48.239 | | |
| Total | 12883.619 | 267 | | | |

[a.] Dependent Variable: Sense of Efficacy
[b.] Predictors (Constant), Mindfulness

The *p* value in the ANOVA table is 0.300 which is higher than the conventional value of 0.05. Therefore, the null hypothesis that there is no relationship between mindfulness and sense of efficacy is accepted and the alternative hypothesis is rejected for Research Question 2.

The table of coefficients, as seen in Table 11, provide the variables to create the linear regression equation for mindfulness and sense of efficacy.

Table 11

*Simple Linear Regression Coefficients Output for Sense of Efficacy*

| | | Constant | Mindfulness |
|---|---|---|---|
| Unstandardized coefficients | B | 37.381 | 0.881 |
| | Standard error | 1.342 | 0.849 |
| Standardized coefficients | Beta | | 0.064 |
| t | | 27.862 | 1.038 |
| Sig. | | 0.000 | 0.300 |
| 95% CI for B | Lower bound | 34.739 | 2.551 |
| | Upper bound | 40.022 | -0.790 |
| Colinearity statistics | Tolerance | | 1.000 |
| | VIF | | 1.000 |

[a.] Dependent variable: Sense of efficacy

The A value is found under the constant box and is 37.381 (Albright & Winston, 2017). The unstandardized coefficient is the b value that indicates the amount of change

in the independent variable caused by one unit increase in the dependent variable (Albright & Winston, 2017). The b value is 0.881, therefore for every one unit increase in mindfulness, sense of efficacy increases by 0.881. The following equation can be used to predict sense of efficacy based on pretest sense of efficacy scores:

Sense of Efficacy Score = 37.381 + 0.81(Mindfulness)

This equation would indicate that sense of efficacy scores can be predicted to improve before and after the mindfulness program; however, the analysis is not statistically significant. More data needs to be collected and analyzed for sense of efficacy scores before and after a mindfulness program to verify whether a relationship between mindfulness and sense of efficacy exists.

**Depersonalization**

Research Question 3 was answered using a simple linear regression model after checking the remainder of the assumptions were met. All participants provided answers to the depersonalization section of the MBI-HSS so the full sample size of 136 participants, or 272 total scores, was used. The same coding for mindfulness was used with every pretest score assigned a mindfulness value of 1 and every posttest score assigned a mindfulness value of 2. First, the residuals were evaluated to ensure that the data set did not contain any outliers. The minimum residual value as seen in Table 12 was -1.615 and the maximum residual value was 2.714. These values fall in-between -3.29 and positive 3.29, indicating that there are no outliers in the data (Leedy & Ormund, 2015).

Table 12

*Simple Linear Regression Residual Statistics Output for Depersonalization*

| | Minimum | Maximum | *M* | *SD* | *N* |
|---|---|---|---|---|---|
| Predicted value | 10.8015 | 13.2059 | 12.0037 | 1.20442 | 272 |
| Residual | -13.20588 | 22.19853 | 0.00000 | 8.16298 | 272 |
| Standard predicted value | -0.998 | 0.998 | 0.000 | 1.000 | 272 |
| Standard residual | -1.615 | 2.714 | 0.000 | 0.998 | 272 |

Next, the independence of observation assumption was checked using the Durbin-Watson statistic. The Durbin-Watson statistic of 1.772 provided in Table 13 is larger than 1 and less than 3, thus the assumption of independence of observations is met (Albright & Winston, 2017).

Table 13

*Simple Linear Regression Model Summary Output for Depersonalization*

| Model 1 | | |
|---|---|---|
| R | | 0.146 |
| R square | | 0.021 |
| Adjusted R square | | 0.018 |
| Standard error of the estimate | | 8.17808 |
| Change statistics | R square change | 0.021 |
| | F change | 5.878 |
| | *df1* | 1 |
| | *df2* | 270 |
| | Sig. F change | 0.016 |
| Durbin-Watson | | 1.772 |

[a.] Predictors: (Constant), Mindfulness
[b.] Dependent Variable: Depersonalization

The VIF value of 1 provided in Table 14 is less than 10 which reinforces that this assumption is met (Frankfort-Nachmias & Leon-Guerrero, 2018).

Table 14

*Simple Linear Regression Correlations Output for Depersonalization*

| | | Depersonalization | Mindfulness |
|---|---|---|---|
| Pearson correlation | Depersonalization | 1.000 | -0.146 |
| | Mindfulness | -0.146 | 1.000 |
| Sig. (1-tailed) | Depersonalization | | 0.008 |
| | Mindfulness | 0.008 | |
| *N* | Depersonalization | 272 | 272 |
| | | 272 | 272 |

The last assumption of normality was checked using the histogram in Figure 5.

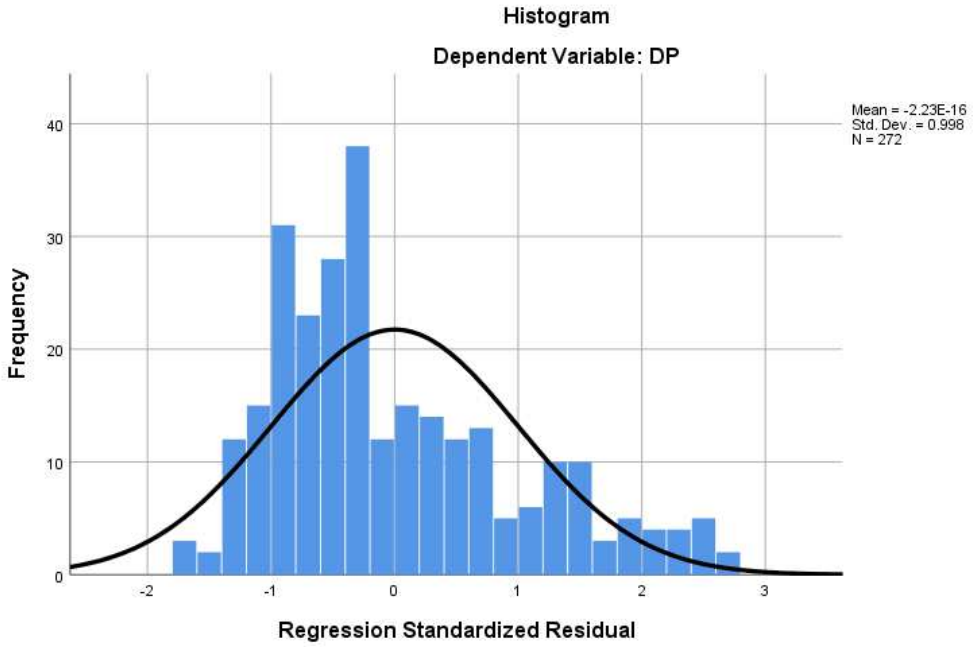


*Figure 5.* Histogram for depersonalization.

The histogram shows that the data mostly follows a normally distributed bell curve, although it is skewed towards the left a little bit. For this study, it was determined that this was sufficient enough to meet the assumption of normality (Leedy & Ormund, 2015).

The descriptive statistics in Table 15 show that all cases were included in the linear regression model and the mean depersonalization score for the pretest group was 12.004 with a standard deviation of 8.251.

Table 15

*Simple Linear Regression Descriptive Statistics Output for Depersonalization*

| | *M* | *SD* | *N* |
|---|---|---|---|
| Depersonalization | 12.0037 | 8.25135 | 272 |
| Mindfulness | 1.500 | 0.50092 | 272 |

The correlation table in Table 16 provides a correlation value of -0.146, which shows a negative relationship between mindfulness and depersonalization (Leedy & Ormund, 2015).

Table 16

*Simple Linear Regression Correlations Output for Depersonalization*

| | | Depersonalization | Mindfulness |
|---|---|---|---|
| Pearson correlation | Depersonalization | 1.000 | -0.146 |
| | Mindfulness | -0.146 | 1.000 |
| Sig. (1-tailed) | Depersonalization | | 0.008 |
| | Mindfulness | 0.008 | |
| *N* | Depersonalization | 272 | 272 |
| | | 272 | 272 |

The R squared value provided in the model summary table in Table 13 is 0.021 which indicates that 2.1% of the variability in mindfulness can be explained by depersonalization (Albright & Winston, 2017). The ANOVA output in Table 17 provides insight into whether the null hypothesis should be accepted or rejected (Albright & Winston, 2017).

Table 17

*Simple Linear Regression ANOVA Output for Depersonalization*

| | Sum of Squares | *df* | Mean Squares | F | Sig. |
|---|---|---|---|---|---|
| Regression | 393.121 | 1 | 393.121 | 5.878 | 0.016 |
| Residual | 18057.875 | 270 | 66.881 | | |
| Total | 18450.996 | 271 | | | |

[a.] Dependent Variable: Depersonalization
[b.] Predictors (Constant), Mindfulness

A *p* value of 0.016 is lower than the conventional level of 0.05, therefore the null hypothesis that there is no relationship between mindfulness and depersonalization can be rejected.

Next, the coefficients table as seen in Table 18 were used to create the linear regression equation to predict depersonalization scores from pretest to posttest.

Table 18

*Simple Linear Regression Coefficients Output for Depersonalization*

| | | Constant | Mindfulness |
|---|---|---|---|
| Unstandardized coefficients | B | 15.610 | -2.404 |
| | Standard error | 1.568 | 0.992 |
| Standardized coefficients | Beta | | -0.146 |
| t | | 9.955 | -2.424 |
| Sig. | | 0.000 | 0.016 |
| 95% CI for B | Lower bound | 12.523 | -4.357 |
| | Upper bound | 18.698 | -0.452 |
| Colinearity statistics | Tolerance | | 1.000 |
| | VIF | | 1.000 |

[a.] Dependent Variable: Depersonalization

The value for A can be found in the constant box and is 15.610 (Albright & Winston, 2017). The unstandardized coefficient of -2.404 indicates that for every one unit increase in mindfulness, depersonalization scores decreased by 0.235 (Albright &

Winston, 2017). This indicates that depersonalization scores decreased over time, or from pretest to posttest. Since a lower depersonalization score equals an improvement, this result indicates that the alternative hypothesis that depersonalization scores improve over time should be accepted. The following equation can be used to predict posttest scores of depersonalization:

Depersonalization Score = 15.610 – 2.404 (Mindfulness)

**Emotional Exhaustion**

A simple linear regression was used to answer Research Question 4. All of the participants provided an answer to the emotional exhaustion section of the MBI-HSS so all 136 participants' 272 scores were used in the analysis. The same coding for mindfulness was used, with 1 begin assigned to pretest scores and 2 being assigned to posttest scores to provide the independent variable values. Before interpreting the results of the simple linear regression, the remaining assumptions for the linear regression model were checked. The minimum and maximum values for the residuals as seen in Table 19 should not exceed positive or negative 3.29 as that indicates the data set contains outliers (Leedy & Ormund, 2015).

Table 19

*Simple Linear Regression Residual Statistics Output for Emotional Exhaustion*

| | Minimum | Maximum | *M* | *SD* | *N* |
|---|---|---|---|---|---|
| Predicted value | 15.2647 | 18.8309 | 17.0478 | 1.78638 | 272 |
| Residual | -15.83088 | 23.16912 | 0.00000 | 9.07270 | 272 |
| Standard predicted value | -0.998 | 0.998 | 0.000 | 1.000 | 272 |
| Standard Residual | -1.742 | 2.549 | 0.000 | 0.998 | 268 |

As seen in the residual statics table the minimum value for the standard residual is -1.742 and the maximum value is 2.548. Thus, the data set does not contain outliers. Next, the independence of observations can be checked in the model summary. If the Durbin-Watson statistic provided in Table 20 is less than 1 or greater than 3, the assumption of independence of observations is violated (Leedy & Ormund, 2015).

Table 20

*Simple Linear Regression Model Summary Output for Emotional Exhaustion*

| Model 1 | | |
|---|---|---|
| R | | 0.193 |
| R square | | 0.037 |
| Adjusted R square | | 0.034 |
| Standard error of the estimate | | 9.08948 |
| Change statistics | R square change | 0.037 |
| | F change | 10.467 |
| | *df1* | 1 |
| | *df2* | 270 |
| | Sig. F change | 0.001 |
| Durbin-Watson | | 1.890 |

[a.] Predictors: (Constant), Mindfulness
[b.] Dependent variable: Emotional exhaustion

A Durbin-Watson value of 1.890 falls within this range, thus, the assumption of independence of observations is met. The last assumption to check for is normality, which can be checked in the histogram in Figure 6 (Albright & Winston, 2017; Leedy & Ormund, 2015). The histogram also shows the data follows a normally distributed bell curve shape, so the assumption for normality is met.

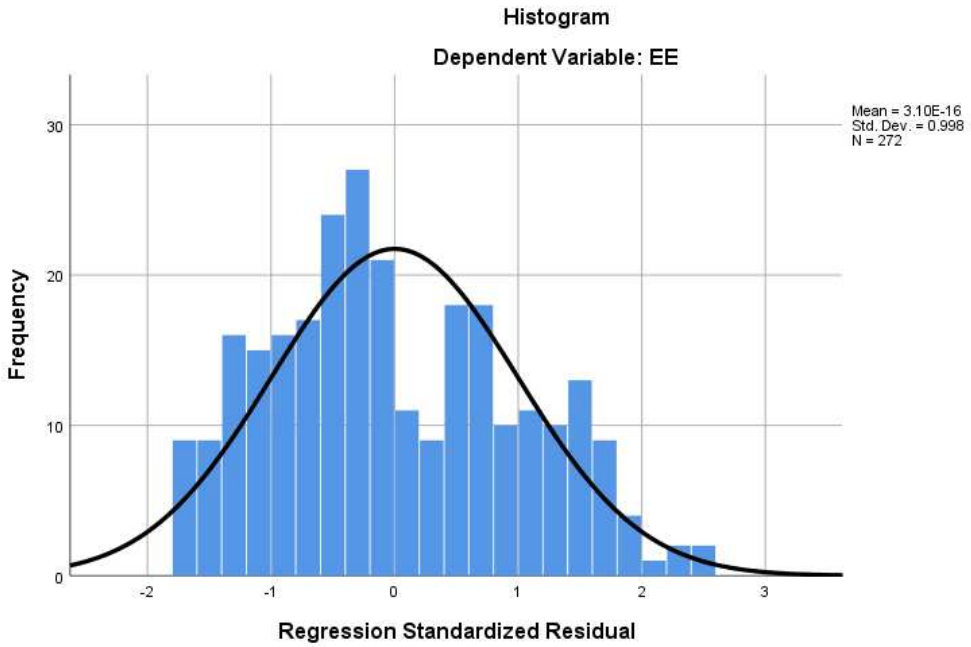


*Figure 6.* Histogram for emotional exhaustion.

The descriptive statistics in Table 21 verify that all 136 participants' data, or 272 total scores, of emotional exhaustion were used in the model and show the mean and standard deviations for pretest and posttest scores.

Table 21

*Simple Linear Regression Descriptive Statistics for Emotional Exhaustion*

| | *M* | *SD* | *N* |
|---|---|---|---|
| Emotional exhaustion | 17.0478 | 9.24690 | 272 |
| Mindfulness | 1.500 | 0.50092 | 272 |

The mean emotional exhaustion score was 17.048 and the standard deviation was 9.247. A correlation value of -0.193 is provided in the correlations table, or Table 22, which shows a negative correlation between mindfulness and emotional exhaustion.

Table 22

*Simple Linear Regression Correlations Output for Emotional Exhaustion*

| | | Emotional Exhaustion | Mindfulness |
|---|---|---|---|
| Pearson correlation | Emotional exhaustion | 1.000 | -0.192 |
| | Mindfulness | -0.193 | 1.000 |
| Sig. (1-tailed) | Emotional exhaustion | | 0.001 |
| | Mindfulness | 0.001 | |
| *N* | Emotional exhaustion | 272 | 272 |
| | | 272 | 272 |

The R Square value of 0.037, or the coefficient of determination, as seen in the model value shows the proportion of variance in emotional exhaustion explained by burnout (Albright & Winston, 2017). Thus, 3.7% of the variance in emotional exhaustion can be explained by mindfulness. The ANOVA summary table in Table 23 determines whether the results of the linear regression are statistically significant.

Table 23

*Simple Linear Regression ANOVA output for Emotional Exhaustion*

| | Sum of Squares | *df* | Mean Squares | F | Sig. |
|---|---|---|---|---|---|
| Regression | 864.798 | 1 | 864.798 | 10.467 | 0.001 |
| Residual | 22307.081 | 270 | 82.619 | | |
| Total | 23171.879 | 271 | | | |

[a.] Dependent variable: Emotional exhaustion
[b.] Predictors (Constant), Mindfulness

A *p* value of 0.001 falls below the conventional level of 0.05, therefore the model provides statistically significant results. This indicates that the null hypothesis that no relationship exists between mindfulness and emotional exhaustion should be rejected.

The last table of coefficients as seen in Table 24 provide the variables to create the linear regression for mindfulness and emotional exhaustion.

Table 24

*Simple Linear Regression Coefficients Output for Emotional Exhaustion*

| | | Constant | Mindfulness |
|---|---|---|---|
| Unstandardized coefficients | B | 22.397 | -3.566 |
| | Standard error | 1.743 | 1.102 |
| Standardized coefficients | Beta | | -0.193 |
| t | | 12.851 | -3.235 |
| Sig. | | 0.000 | 0.001 |
| 95% CI for B | Lower bound | 18.966 | -5.736 |
| | Upper bound | 25.828 | -1.396 |
| Colinearity statistics | Tolerance | | 1.000 |
| | VIF | | 1.000 |

[a.] Dependent Variable: Emotional exhaustion

The value of A is a constant, which can be found under the B (constant) box (Albright & Winston, 2017). The value of A is 22.397 and the value of B is -3.566. The B value indicates that for every one unit increase in mindfulness, emotional exhaustion decreased by -3.566. This indicates that emotional exhaustion scores decreased over time, or after the mindfulness program. Thus, emotional exhaustion scores improved after a mindfulness program as a lower emotional exhaustion score indicates an improvement. The negative linear relationship indicates that the alternative hypothesis that there is an

improvement in emotional exhaustion over time should be accepted. An equation for emotional exhaustion was created based on the results of the linear regression:

Emotional Exhaustion Score = 22.397 – 3.566(Mindfulness)

## Summary

Through the two statistical analysis models of MANOVA and simple linear regression, the four research questions for this study were answered. The null hypothesis for Research Questions 1, 3, and 4 were rejected and the alternative hypotheses were accepted. The null hypothesis for Research Question 2 was accepted. Therefore, the results of this study suggest that a relationship between mindfulness, burnout, depersonalization, and emotional exhaustion exist and no relationship between sense of efficacy and mindfulness exists. The results of this study also indicate that an improvement in mindfulness and burnout, depersonalization, and emotional exhaustion was observed and statistically significant.

The MANOVA indicated that the null hypothesis for research question 1 should be rejected and the alternative hypothesis should be accepted. The parameter estimates provided beta coefficients that showed emotional exhaustion and depersonalization decreased after the mindfulness intervention and sense of efficacy scores increased. Sense of efficacy had the largest coefficient in both the pretest and posttest data, indicating that sense of efficacy has a larger explanatory power than the other two variables. However, emotional exhaustion showed the largest change in coefficient from pretest to posttest, indicating that emotional exhaustion scores exhibited the highest degree of change from pretest to posttest. The MANOVA analyzed burnout as a multifaceted factor while each

simple linear regression analyzed a single moderating variable of burnout as a single factor. A multivariate analysis such as a MANOVA was more appropriate to analyze a multifaceted concept such as burnout as multicollinearity may exist within the data set. Multicollinearity exists when one variable in the data set has a predictive linear relationship with another dependent variable (Albright & Winston, 2017).

The results of the linear regression model showed similar results and trends as the MANOVA. Sense of efficacy scores increased while emotional exhaustion and depersonalization scores decreased after the mindfulness intervention, showing improvement in all three variables. However, the results of the simple linear regression did not provide statistically significant results. Thus, the results of this study indicate that no relationship exists between sense of efficacy and mindfulness. This may indicate that a larger sample size is needed or more datapoints need to be collected during the mindfulness program to give more than two (1 for pretest and 2 for posttest) independent variable scores.

The linear regression model created an equation for each variable to predict posttest scores using pretest data. The means of each moderating variable were within the pretest mean and posttest mean range for the MANOVA, verifying that the data set analyzed were the same. Emotional exhaustion had the largest coefficient of -3.566, which matched the difference between the pretest coefficient and posttest coefficient from the MANOVA. The difference between the pretest coefficient and posttest coefficient from the MANOVA for emotional exhaustion also equaled the coefficient from the simple linear regression. The same was not true for sense of efficacy, which

may be due to the fact that the simple linear regression indicated no statistically significant relationship existed between mindfulness and sense of efficacy.

The simple linear regression showed different results for explanation in variation from the MANOVA. The simple linear regression results indicated that 4% of the variance in mindfulness is accounted for by sense of efficacy, 2.1% accounted for by depersonalization, and 3.7% accounted for by emotional exhaustion. The MANOVA results indicated much higher levels of explanatory power, with sense of efficacy accounting for 97% of the variance in mindfulness, 77.5% for depersonalization, and 67.1% for emotional exhaustion. These large differences may be due to the fact that explanatory power is measured by a different statistic in the MANOVA and simple linear regression. This also may point to the fact that burnout has more explanatory power when analyzed as a multifaceted factor rather than analyzing each moderating variable of burnout separately. These results provide generalizable knowledge that can be implemented into professional practice and contribute to positive social change, as discussed in Section 4.

Section 4: Application to Professional Practice and Implications for Social Change

## Introduction

In this study, I employed a quantitative approach with a correlational analysis to determine whether a relationship existed between the independent variable of mindfulness and the dependent variable of burnout. The purpose of the study was to determine whether a mindfulness program reduced burnout in healthcare professionals as measured through scores of emotional exhaustion, sense of efficacy, and depersonalization. The results of the MANOVA determined that burnout as a multifaceted factor was reduced after the mindfulness program. The results of the simple linear regression analyses showed that emotional exhaustion and depersonalization improved after the mindfulness intervention, supporting the results of the MANOVA.

## Interpretation of the Findings

The specific problem addressed in this study was that leaders in healthcare are failing to implement methods that support employee health (Ellis et al., 2019; Hayes et al., 2012; Inceoglu et al., 2017; Lo et al., 2017). Current literature showed that proficiency is inhibited by the progression of burnout and can be prevented through the practice of mindfulness (Harker et al., 2016). Both statistical analyses used to answer the four research questions in the current study indicated that depersonalization and emotional exhaustion had a negative relationship with mindfulness or improved after the mindfulness program. The MANOVA indicated that sense of efficacy improved over time, while the simple linear regression indicated that no relationship existed between sense of efficacy and mindfulness. Emotional exhaustion had the largest coefficient in the

simple linear regression and exhibited the largest difference between pretest and posttest coefficients in the MANOVA when compared to sense of efficacy and depersonalization. These findings show that emotional exhaustion had was influenced to a larger degree after the mindfulness training compared to sense of efficacy and depersonalization. Therefore, depersonalization and sense of efficacy may be more difficult variables to improve through mindfulness. Another possibility is that the mindfulness program needs to occur over a longer period or be studied over a longer period to improve levels of burnout, sense of efficacy, depersonalization or emotional exhaustion.

The results of the study support the biopsychological construct of burnout as a multifaceted concept and the incorporation of the Western concept of mindfulness as a preventative technique against burnout. The mindfulness program in this study incorporated Western elements, such as meditation, and the implementation of an intervention to reduce physical and emotional distress and increase resiliency (see Berg, 2017: Perlman, 2015). The first research question addressed whether burnout was reduced before and after the mindfulness program. Burnout is a result of a person's interaction with their environment and is a multifaceted concept that connects physical, mental, and social health (D'Onofrio, 2019; Wood et al., 2011). The results of the MANOVA used to answer Research Question 1 showed that burnout was reduced before and after the mindfulness program. The results of the linear regression model were similar but not exact to the MANOVA, indicating that burnout provides different results when analyzed as a multifaceted concept than a combination of single-faceted concepts. Past researchers indicated that burnout is caused by other factors, such as personality

traits and lifestyle habits (Eby et al., 2017). The small amount of variation in mindfulness explained by each linear regression supports the idea that many other variables affect burnout. Both the MANOVA and linear regression showed that sense of efficacy, depersonalization, and emotional exhaustion improved after the mindfulness program; however, the simple linear regression for sense of efficacy did not provide statistically significant results. Using a larger sample size may increase the likelihood that the linear regression for sense of efficacy provides statistically significant results. Overall, the findings from the study support those from current literature that mindfulness can be used as a preventative factor to reduce burnout (see Berg, 2017; Lee & Young, 2018; Perlman, 2015).

## Limitations of the Study

Several limitations to this research design existed. The data set used for this study was limited to healthcare professionals in the state of Washington who worked at organizations that elected to participate in the mindfulness program. This limits the potential generalizability of the findings of this study because certain characteristics may be prevalent among people who elect to participate in a mindfulness program. People who desire to participate in a mindfulness program may train to be resilient as part of their regular habits and be open to trying new methods to improve their health.

Another limitation was the lack of demographic information. The data set did not contain demographics, which limits the generalizability and is a threat to external validity. Certain professions in healthcare may experience burnout at higher levels or differently than other professions due to the nature of their position. The needs and

demand for healthcare in Washington may differ from other states, which also limits the generalizability of this study. Other locations and states across the country may not have the same demands and needs as Washington.

The design of the mindfulness program was also a limitation to this study. The measures used in the MBI-HSS survey are subjective and, therefore, can vary based on each participant's perception. Other factors can influence a person's ability to be mindful and a person's rate of burnout, such as spirituality, diet, exercise, sleep, or relationships (Lee & Young, 2018). Therefore, other factors can limit the effects of the mindfulness program. Furthermore, the length of the mindfulness program could have been a limitation. The program lasted 5 weeks and only took two measures: pretest and posttest of burnout scores. A longer program or more frequent measures of the variables would have provided a more robust data set to be utilized in the analyses for this study.

The internal validity threats of this study were maturation and instrumentation. Maturation, or the fact that people experience natural changes over time, may have impacted the effects of the mindfulness program depending on the maturation exhibited by each participant (see Campbell, 1957). Personal experiences and background affect how a participant responds to survey questions; therefore, each participant included in the sample of the data set has a different relationship with burnout and could have been affected by the mindfulness program differently (see Campbell, 1957). Instrumentation was a threat to validity because participants may have been more focused taking the MBI-HSS the second time around (see Gay & Airasian, 2000; Onwegbuzie, 2000). Some of the variables may have been harder to provide accurate scores than others. For

example, an individual rating his or her level of sense of efficacy on a scale of 1 to 6 may be more difficult than rating his or her level of emotional exhaustion on a scale of 1 to 6. The MBI-HSS is also self-reported, so it is possible that participants weighted the questions differently from the first round to the second and differently from each other (see Gay & Airasian, 2000; Onwegbuzie, 2000).

## Recommendations

There are several avenues this research could be extended to to build upon the findings of the current study. One avenue for future research would be to analyze the trends of mindfulness, sense of efficacy, depersonalization, and emotional exhaustion more in depth. Obtaining larger sample sizes is another in-depth method. A larger sample size for the simple linear regression may provide statistically significant results for sense of efficacy because increasing the sample size is often the first step in improving statistical validity (see Albright & Winston, 2018). The histograms for depersonalization and emotional exhaustion were slightly skewed, indicating that perhaps more data needs to be collected to demonstrate normality. The skewed histograms could also point to the fact that another model besides a linear model could be used to analyze the relationships between burnout and mindfulness.

Using more longitudinal data is another way the findings of this study could be extended. For example, analyzing a data set that collected data more than twice over the course of a mindfulness program would provide more points for analysis. A mindfulness program that lasted over a period longer than 5 weeks is another way more points of data collection could occur. Both of these methods would provide a more robust data set,

which would provide further insight into the relationship between mindfulness and burnout. A third method to increase the datapoints analyzed would be to increase the amount of data used for analysis. Increasing the amount of data could be accomplished by gathering more data sets of mindfulness programs that were measured through the MBI-HSS. These data sets could aggregate more pretest and posttest data gathered before and after a mindfulness program that could verify the results and build upon the findings of this study.

A final avenue for research would be to obtain and analyze data sets that contain demographic information, such as job title, age, gender, or race, or collect data that contains demographic information during a mindfulness program. Demographic information would provide insight into the characteristics of people who are at a higher risk of burnout and improve generalizability.

## Implications for Professional Practice and Social Change

The findings of this study showed that burnout, as a multifaceted concept, was reduced after the mindfulness program and that mindfulness does exhibit a relationship with burnout, sense of efficacy, depersonalization, and emotional exhaustion. Findings from my review of the literature supported the idea that mindfulness can be used as a protective factor against burnout; therefore, leaders in healthcare can use the findings of this study to inform decision-making about which methods can be implemented to reduce employee burnout. The findings of this study contribute to generalizable knowledge by providing information on whether a mindfulness program can reduce burnout in healthcare professionals in the state of Washington. The results of this study contribute to

positive social change by generating knowledge and insights into methods that can be incorporated to reduce employee burnout in healthcare. Positive social change is created through the findings of this study by contributing to the gap between leadership practices in healthcare and employee health.

## Conclusion

In this study, I sought to determine whether a relationship existed between mindfulness and burnout as measured through the three variables of sense of efficacy, emotional exhaustion, and depersonalization. A review of the literature indicated that burnout is a common problem in healthcare across the globe and the United States and is a significant problem that impacts the proficiency of care delivered by employees and employee health (Halbesleben & Rathert, 2008; Hayes et al., 2012; Hunter et al., 2019). In this study, I sought to fill the gap between leadership practices and programs used to reduce employee burnout. A set of pretest and posttest scores collected through the MBI-HSS before and after a 5-week mindfulness program from a sample of healthcare professionals in the state of Washington were analyzed through a MANOVA and simple linear regression. The findings of the statistical analyses showed that burnout as a multifaceted factor, emotional exhaustion, and depersonalization improved after the mindfulness program. The results of this study generated knowledge about whether mindfulness programs and training are a good idea for leaders in healthcare to implement in order to combat employee burnout. Further research using different sample sizes, populations, mindfulness programs, and variables can be carried out to validate the results of this study.

# References

Akenroye, T., & Kunne, C.W. (2015). Key competencies for promoting service innovation: What are implications for the health sector? *Innovation Journal, 20*(1). Retrieved from https://www.innovation.cc/

Alarcon, G., Eschelmann, & Bowling, N. (2009). Relationships between personality variables and burnout: A meta-analysis. *Work and Stress, 23*(3), 244-263. doi:10.1080/02678370903282600

Albright, S. C., & Winston, W. L. (2017). *Business analytics: Data analysis and decision making* (6th ed.). Stamford, CT: Cengage Learning.

Amyx, D., & Jarrell, L. (2016). The influence of salesperson depression, low performance, and emotional exhaustion on negative organizational deviance. *Journal of Managerial Issues, 3–4*, 127. Retrieved from https://www.pittstate.edu/business/journals/journal-of-managerial-issues.html

Apple, R. (2015). Mindfulness matters: A powerful resource for over-stressed physician leaders. *Physician Leadership Journal*, *2*(3), 42–44. Retrieved from https://www.physicianleaders.org/publications/journal

Astin, J. A. (1997). Stress reduction through mindfulness and meditation: Effects on psychological symptomatology, sense of control, and spiritual experiences. *Psychotherapy and Psychosomatics, 66*(2). doi:10.1159/000289116

Attri, R. K., & Wing, W. S. (2019) Model of accelerated proficiency in the workplace: Six core concepts to shorten time-to-proficiency of employees. *First Australia and New Zealand Conference on Advanced Research in Melbourne, Austrailia*.

Retrieved from https://apiar.org.au/conference/1st-australia-and-new-zealand-conference-on-advanced-research-anzcar-2017-melbourne/

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, 68*(7), 755–765. doi:10.1002/jclp.21865

Bandura, A. (1982). Sense of efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147. doi:10.1037/003-006X.37.2.122

Barnes, N., Hattan, P., Black, D. S., & Schuman-Olivier, Z. (2017). An examination of mindfulness-based programs in US medical schools. *Mindfulness, 8*(2), 489-494. doi:10.1007/s12671-016-0623-8

Benzo, R. P., Kirsch, J. L., & Nelson, C. (2017). Original research: Compassion, mindfulness, and the happiness of healthcare professionals. *Explore: The Journal of Science and Healing*, *13*, 201–206. doi:10.1016/j.explore.2017.02.001

Berg, S. (2017). Physician well-being again a burning topic in 2017. *AMA Wire*. Retrieved from https://www.ama-assn.org/

Bluementhal, D., Abrams, M., & Nuzum, R. (2015). The Affordable Care Act at 5 years. *New England Journal of Medicine, 372*, 2451-2458. doi:10.1056/NEJMhpr1503614

Boamah, S. A., Spence Laschinger, H. K., Wong, C., & Clarke, S. (2018). Effect of transformational leadership on job satisfaction and patient safety outcomes. *Nursing Outlook*, *66*(2), 180–189. doi:10.1016/j.outlook.2017.10.004

Borkowski, N. (2016). *Organizational behavior, theory, and design in health care.* Burlington, MA: Jones & Barlett.

Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry, 18*, 1–26. doi:10.1080/10478400701598298

Burkholder, G. J., Cox, K. A., & Crawford, L. M. (2016). *The scholar-practitioner's guide to research design.* Baltimore, MD: Laureate Publishing.

Campbell, D. T. (1957). Factors relevant to the validity of experiments in social settings. *Psychological Bulletin, 54*, 297-312. doi:10.1037/h0040950

Campbell, D. T. & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research.* Boston, MA: Houghton Mifflin.

Caruso, C. (2014). Negative impacts of shiftwork and long work hours. *Rehabilitation Nursing: The Official Journal of the Association of Rehabilitation Nurses, 39*(1), 16-25. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4629843/

Chalmers, I., Bracken, M. B., Djulbegovic, B., Garattini, S., Grant, J., Gulmezogul, A.,… Oliver, S. (2014). How to increase value and reduce waste when research priorities are set. *The Lancet, 383*(9912). doi:10.1016/S0140-6736(13)62229-1

Chiesa, A., Serretti, A., & Jakobsen, J. C. (2013). Mindfulness: Top–down or bottom–up emotion regulation strategy? *Clinical Psychology Review, 33*(1), 82-96. doi:10.1016/j.cpr2012.10.006

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159. doi:10.1037/0033-2909.112.1.155

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods* (5th ed.). Thousand Oaks, CA: Sage.

Day, D. V., & Gregory, J. L. (2017). Mindfulness as a prerequisite to effective leadership: Exploring the constructs that foster productive use of feedback for professional learning. *Interchange: A Quarterly Review of Education*, *48*(4), 363–375. Retrieved from https://www.springer.com/journal/10780

D'Onofrio, L. (2019). Physician burnout in the United States: A call to action. *Alternative Therapies in Health & Medicine, 25*(2), 8–10. Retrieved from http://www.alternative-therapies.com/

Doulougeri, K., Georganta, K., & Montgomery, A. (2016). "Diagnosing" burnout among healthcare professionals: Can we find consensus? *Cogent Medicine, 3*(1). doi:10.1080/2331205X.2016.1237605

Dunne, P. J., Lynch, J., Prihodova, L., O'Leary, C., Ghoreyshi, A., Basdeo, S. A.,… White, B. (2019). Burnout in the emergency department: Randomized controlled trial of an attention-based training program. *Journal of Integrative Medicine, 17*(3), 173–180. doi:10.1016/j.joim.2019.03.009

Eby, L. T., Allen, T. D., Conley, K. M., Williamson, R. I., Henderson, T. G., & Mancini, V. S. (2017). Mindfulness-based training interventions for employees: A qualitative review of the literature. *Human Resource Management Review, 29*, 159-178. doi:10.1016/j.hrmr.2017.03.004

Edwards, M. T. (2016). An organizational framework for patient safety. *American Journal of Medical Quality, 32*(2), 148-155. doi:10.1177/1062860616632295?

Ellis, A. M., Bauer, T. N., Erdogan, B., & Truxillo, D. M. (2019). Daily perceptions of relationship quality with leaders: implications for follower well-being. *Work & Stress*, *33*(2), 119. Retrieved from https://www.tandfonline.com/loi/twst20

Engel, G. (1977). The need for a new medical model: A challenge for biomedicine. *Science, 196.* doi:10.1126/science.847460

Eugène J. F. M. C., & Olleten, C. (2018). The history of medical education in Europe and the United States, with respect to time and proficiency. *Academic Medicine (3S Competency-Based, Time-Variable Education in the Health Professions),* S49. doi:10.1097/ACM.0000000000002079

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2013). G*Power Version 3.1.7 [Computer software]. Uiversität Kiel, Germany. Retrieved from http://www.psycho.uni-duesseldorf.de/abteilungen/aap/gpower3/download-andregister

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191. Retrieved from https://www.springer.com/journal/13428

Fortney, L., Luchterhand, C., Zakletskaia, L., Zgierska, A., & Rakel, D. (2013). Abbreviated mindfulness intervention for job satisfaction, quality of life, and compassion in primary care clinicians: A pilot study. *Annals of Family Medicine*, *11*(5), 412–420. doi:10.1370/afm.1511

Frankfort-Nachmias, C., & Leon-Guerrero, A. (2018). *Social statistics for a diverse society* (8th ed.). Thousand Oaks, CA: Sage Publications.

Gay, L. R., & Airasian, P. W. (2000). *Educational research: Competencies for analysis and application* (6th ed.). Englewood Cliffs, N.J.: Prentice Hall.

Geide-Stevenson, D. (2018). Does English proficiency affect academic performance? *International Review of Economics Education, 28*, 41–48. doi:10.1016/j.iree.2018.04.002

Gethin, R. M. L. (2001). *The Buddhist path to awakening.* Oxford, England: One World.

George, D., & Mallery, P. (2007). *SPSS for Windows step by step: A simple guide and reference 14.0 update* (7th ed.). Boston, MA: Pearson Education, Inc.

Geuens, N., Braspenning, M., Van Bogaert, P., & Franck, E. (2015). Individual vulnerability to burnout in nurses: The role of Type D personality within different nursing specialty areas. *Burnout Research, 2*(2), 80-86. doi:10.1016/j.burn.2015.05.003

Gilmartin, H., Goyal, A., Hamati, M. C., Mann, J., Saint, S., & Chopra, V. (2017). Brief mindfulness practices for healthcare providers – A systematic literature review. *The American Journal of Medicine, 130*(10), 1219.e1-1219.e17. doi:10.1016/j.amjmed.2017.05.041

Gopalkumar, R., Pier, K., & Costales, T. L. (2017). A call for action: Cultivating resilience in healthcare providers. *The American Journal of Psychiatry, 12*(4), 3-5. doi:10.1176/appi.ajp-rj.2017.120402

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress

reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research, 57*(1), 35-43. doi:10.1016/S0022-3999(03)00573-7

Halbesleben, J. R., & Rathert, C. (2008). Linking physician burnout and patient outcomes: Exploring the dyadic relationship between physicians and patients. *Health Care Management Review, 33*(1), 29-39. doi:10.1097/01.HMR.00000204493.87898.72

Hand, D. J., & Taylor, C. C. (1987). *Multivariate analysis of variance and repeated measures*. London, England: Chapman and Hall.

Harker, R., Pidgeon, A. M., Klaassen, F., & King, S. (2016). Exploring resilience and mindfulness as preventative factors for psychological distress burnout and secondary traumatic stress among human service professionals. *Work, 54*(3). 631-637. doi:10.3233/WOR-162311

Harrington, A., & Dunne, J. D. (2015). When mindfulness is therapy: Ethical qualms, historical perspectives. *The American Psychologist, 70*(7), 621–631. doi:10.1037/a0039460

Hayes, L. J., O'Brien-Pallas, L., Duffield, C., Shamian, J., Buchan, J., Hughes, F., Laschinger, H.K., North, N. (2012). Nurse turnover: A literature review - An update. *International Journal of Nursing Studies*, *49*(7). doi:10.1016/j.ijnurstu.2011.10.001

Hellebuyck, M., Nguyen, T., Halphern, M., Fritze, D., & Kennedy, J. (2017). Mind the workplace. *Mental Health America.* Retrieved from https://www.mentalhealthamerica.net/sites/default/files/Mind%20the%20Workpla

ce%20-
%20MHA%20Workplace%20Health%20Survey%202017%20FINAL.PDF

Hinkle, D. E., Wiersma, W., & Jurs, S. G. (2003). Applied statistics for the behavioral Sciences (5th ed.). Boston, MA: Houghton Mifflin Company.

Honicke, T., & Broadbent, J. (2016). The relation of academic self-efficacy to university student academic performance: A systematic review. *Educational Research Review, 17*, 63-84. doi:10.1016/j.edurev.2015.11.002

Hunter, D., Wright, C., & Pearson, S. (2019). Employing positive psychology to improve radiation therapy workplace culture. *Journal of Medical Radiation Sciences,* (2), 139. doi:10.1002/jmrs.321

Inceoglu, I., Thomas, G., Chu, C., Plans, D., & Gerbasi, A. (2018). Leadership behavior and employee well-being: An integrated review and a future research agenda. *The Leadership Quarterly*, *29*(1), 179–202. doi:10.1016/j.leaqua.2017.12.006

Iwanicki, R. & Schwab, L. (1981). A cross validation study of the Maslach Burnout Inventory. *The Journal of Indexing and Measurement: Educational and Psychological Measurement, 41*(4), 1167-1174. doi:10.1177/001316448104100425

Kang, C., & Whittingham, K. (2010). Mindfulness: A dialogue between Buddhism and clinical psychology. *Mindfulness, 1*(3), 161–173. doi:10.1007/s12671-010-0018-1

Klusmann, U., Richter, D., & Lüdtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale

assessment study. *Journal of Educational Psychology, 108*(8), 1193–1203. doi:10.1037/edu0000125

Kramer, A., & Son, J. (2016). Who cares about the health of health care professionals? An 18-year longitudinal study of working time, health, and occupational Turnover. *ILR Review, (4),* 939. doi:10.1177%2F0019793916640492

Lacy, B. E., & Chan, J. L. (2018). Physician burnout: The hidden health care crisis. *Clinical Gastroenterology and Hepatology, 16*(3), 311-317. doi:10.1016/j.cgh.2017.06.043

Lee, S. F. & Young J. L. (2018). Mind the gap: The history and philosophy of health psychology and mindfulness. *Revista Psicologia e Saúde,* (2), 25. doi:10.20435/pssa.v10i2.693

Leedy, P., & Ormond, J. (2015). *Practical research: Planning and design* (11th ed.). Boston, MA: Pearson.

Lo, K., Waterland, J., Todd, P., Gupta, T., Bearman, M., Hassed, C., & Keating, J. L. (2018). Group interventions to promote mental health in health professional education: A systematic review and meta-analysis of randomized controlled trials. *Advances in Health Sciences Education, 23.* doi:10.1007/s10459-017-9770-5

Ludwig, D. S., & Kabat-Zinn, J. (2008). Mindfulness in medicine. *JAMA, 300*(11), 1350-1352. doi:10.1001/jama.300.11.1350.

Maddux, J. E. (2016). *Interpersonal and intrapersonal expectancies, 1st ed*. London, England: Routledge.

Maslach, C., Jackson, S. E., & Schwab, R. L. (1996). Maslach Burnout Inventory-Educators Survey (MBI-ES) In C. Maslach, S. E. Jackson, & M. P. Leither (Eds.), *MBI Manual* (3rd ed.). Palo Alto, CA: Consulting Psychologists Press.

Maslach, C. & Leiter, M.P. (2016) Understanding the burnout experience: Recent research and its implications for psychiatry. *Word Psychiatry, 15*(2), 103-111. doi:10.1002/wps.20311

Mayo Clinic Resilient Mind. (2018). Mayo Clinic Resilient Mind. Retrieved from https://resilience.mayoclinic.org/

Michel, A., Bosch, C., & Rexroth, M. (2014). Mindfulness as a cognitive–emotional segmentation strategy: An intervention promoting work–life balance. *Journal of Occupational and Organizational Psychology*, *87*(4), 733–754. Retrieved from https://onlinelibrary.wiley.com/journal/20448325

Mindgarden. (2019). MBI: Human services survey. Retrieved from https://www.mindgarden.com/314-mbi-human-services-survey

Nahavandi, A. (2015). *The art of science and leadership.* Boston, MA: Pearson.

Norušis, M. J. (2012). *IBM SPSS Statistics 19 advanced statistical procedures companion*. Upper Saddle River, NJ: Prentice Hall.

Nursing Solutions Inc. (2019). National healthcare retention & RN staffing report. Retrieved from http://www.nsinursingsolutions.com/Documents/Library/NSI_National_Health_Care_Retention_Report.pdf

Onwuegbuzie, A. J. (2000). Expanding the framework of internal and external validity in quantitative research. Retrieved from https://eric.ed.gov/?

Orszag, P. (2016). U.S. health care reform: Cost containment and improvement in quality. *Journal of the American Medical Association, 316*(5), 493-495. doi:10.1001/jama.2016.9876

Perlman, A. (2015). Informed mindfulness as the foundation for leadership. *Explore*, *11*(4), 324–325. doi:10.1016/j.explore.2015.04.012

Pipe, T., FitzPatrick, K., Doucette, J. N., Cotton, A., & Arnow, D. (2016). The mindful nurse leader: Improving processes and outcomes; restoring joy to nursing. *Nursing Management*, *47*(9), 44–48. https://journals.lww.com/nursingmanagement/pages/default.aspx

Rumschlag, K. E. (2017). Teacher burnout: A quantitative analysis of emotional exhaustion, personal accomplishment, and depersonalization. *International Management Review, 13*(1), 22–36. doi:10.3389/fpsycg.2016.00432/full

Ruotsalainen, J. H., Verbeek, J. H., Mariné, A., & Serra, C. (2014). Preventing occupational stress in healthcare workers. *Cochrane Database of Systematic Reviews. 12*(2892). doi:10.1002/14651858

Saeed, S., Yousafzai, S., & Engelen, A. (2015). On cultural and macroeconomic contingencies of entrepreneurial orientation: Performance relationship. *Entrepreneurship: Theory & Practice, 38*(2). doi:10.1111/etap.12097

Shapiro, S. L., & Carlson, L. E. (2017). Mindfulness-based interventions in mental health

populations. *American Psychological Association*, 69-80. doi:10.1037/0000022-006

Shea, C.M., Turner, K., Albritton, J., & Reiter, K.L. (2018). Contextual factors that influence quality improvement implementation in primary care: The role of organizations, teams, and individuals. *Health Care Management Review, 43*(3), 261-269. doi:10.1097/HMR .0000000000000194

Shigaki, C. L., Glass, B., & Schopp, L. H. (2006). Mindfulness-based stress reduction in medical settings. *Journal of Clinical Psychology in Medical Settings, 13*(3), 209-216. doi:10.1007/s10880-006-9033-8

Sood, A., Prasad, K., Schroder, D., & Varkey, P. (2011). Stress management and resilience training among department of medicine faculty: A pilot randomized clinical trial. *Journal of General Internal Medicine, 26*(8), 858-861. doi:10.1007/s11606-011-1640-x

Subotnik, R. F., Olszewski-Kubilius, P., & Worrell, F. C. (2019). High performance: The central psychological mechanism for talent development. In R. F. Subotnik, P. Olszewski-Kubilius, & F. C. Worrell (Eds.), *The psychology of high performance: Developing human potential into domain-specific talent.* (pp. 7–20). Washington, DC: American Psychological Association. doi:10.1037/0000120-002

Tabachnick, B. G., & Fidell, L. S. (2006). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn & Bacon.

Vaclavik, E. A., Staffileno, B. A., & Carlson, E. (2018). Moral distress: Using mindfulness-based stress reduction interventions to decrease nurse perceptions of

distress. *Clinical Journal of Oncology Nursing*, *22*(3), 326–332. doi:10.1188/18.CJON.326-332

Wasylkiw, L., Holton, J., Azar, R., & Cook, W. (2015). The impact of mindfulness on leadership effectiveness in a health care setting: a pilot study. *Journal of Health Organization and Management*, (7), 893. doi:10.1108/JHOM-06-2014-0099

Wood, N. D. Crane, D. R., & Keller P. S. (2011). Tracking marital adjustment, hostility, and physical functioning across time in a therapy population: A biopsychosocial model. *Contemporary Family Therapy, 33*, 242-252. doi:10.1007/s10591-011-9164-4

World Health Organization. (2013). Health professions networks. Retrieved from https://www.who.int/hrh/professionals/en/

Worley, J., Vassar, M., Wheeler, D. & Barnes, L. (2008). Factor structure of scores from the Maslach burnout inventory: A review and meta-analysis of 45 exploratory and confirmatory factor-analytic studies. *Educational and Psychological Measurements, 68*(5), 797-823. doi:10.1177/0013164408315258

Wright, T. A., Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology, 83*(3). doi:10.1037/0021-9010.83.3.486