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Los Angeles

Mindful Moments: Use of Mindfulness to Reduce Stress and Alleviate Burnout among Nurse  
Practitioners

A dissertation submitted in partial satisfaction of the  
requirements for the degree  
Doctor of Nursing Practice

by

Hamida Khanmohammed

2022

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## ABSTRACT OF THE DISSERTATION

Mindful Moments: Use of Mindfulness to Reduce Stress and Alleviate Burnout among Nurse  
Practitioners

by

Hamida Khanmohammed

Doctor of Nursing Practice

University of California, Los Angeles, 2022

Professor Jian Li, Chair

**Background:** Nurse practitioners have significant responsibilities for providing optimal care for acutely ill-patients, which can result in potentially harmful physical and psychological stress. Practicing mindfulness can help reduce stress and build resilience among nurses.

**Objectives:** To explore the feasibility of a brief mindfulness technique to reduce stress and burnout among Nurse Practitioners. **Design:** Pilot DNP project, pre-test, post-test. **Methods:** Perceived Stress Scale (PSS), Copenhagen Burnout Inventory (CBI) and a demographic questionnaire were administered at pre-intervention and at 10 weeks (post-intervention) to

evaluate the effectiveness of a brief mindfulness intervention. The feasibility of the using Headspace application was assessed with a Likert scale. **Results:** Perceived Stress Scale (PSS), Copenhagen Burnout Inventory (CBI), a demographic questionnaire, was administered at pre-intervention and at ten weeks (post-intervention) to evaluate the effectiveness of brief mindfulness inter. Significant declines were found for total stress ( $t = 5.38, p = .001; z = 3.15, p = .002$ ), client-related burnout ( $t = 4.94, p = .001; z = 3.05, p = .002$ ), and work-related burnout ( $t = 3.93, p = .002; z = 2.84, p = .005$ ). However, no significant change in personal burnout was found ( $t = 1.33, p = .206; z = 1.29, p = .196$ ). The feasibility of Headspace application use showed that 57.1% of participants either agreed or strongly agreed to use the mindfulness application in the future **Conclusion:** As the benefits of intervention are highlighted in the literature and from this pilot project, there is growing evidence that mindfulness can benefit nurses by decreasing stress levels and addressing work-related burnout.

The dissertation of Hamida Khanmohammed is approved.

Kristen Choi

Carol Pavlish

Wendie Robbins

Jian Li, Committee Chair

University of California, Los Angeles

2022

This dissertation is dedicated to my incredibly loving husband, Imtiaz; your unequivocal support has enabled me to overcome the challenges I have been put through and make my passion like yours. I am grateful for constantly reminding me that dreams become a reality through personal commitment and diligence. I genuinely appreciate the unwavering support of my boys, Zayan and Zaanir. I hope you both remember and cherish your mother's hard work and perseverance to always reach for higher goals. I do not doubt that you both will change the world for a better place.

I wholeheartedly dedicate my dissertation to my father, Shamsuddin, and my late mother, Habiba. Thanks for reminding me that true happiness is to lose oneself in the service to the greater good and teaching me the value of being educated, especially as a woman. I will always appreciate your words of wisdom, generosity, and love for me that knows no bounds.

To my sisters, my mother-in-law, and the rest of the family, I want you to know that it would be impossible for me to navigate this academic journey without your tremendous encouragement and sincere understanding. I am grateful to my friends for their insightful suggestions, extraordinary compassion, and moral support.

The project is in honor of all the nurses who feel overstressed and overworked while underappreciated. This project aims to infuse mindful moments into a daily work schedule for nurses across the country.

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This journey would have been impossible without the support of my dearest classmates and my co-workers. You have taught me why nursing is such a caring and empathetic profession, and I will remember your love and support forever.

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Questionnaires Utilized:

Perceived Stress Scale -10 (PSS) permission not required

Copenhagen Burnout Inventory (CBI) permission not required

## VITA

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- Provide focused and comprehensive physical basement, diagnostic workups, and provide in-house treatments for the patients.
- Diagnose and treat both chronic and episodic disorders.
- Serve as a Preceptor for Nurse practitioner students, new graduates, and new hires.
- Serve as a lead NP to develop a curriculum for Nurse Practitioners.
- Leading an initiative in developing annual evaluation criteria for nurse practitioner working in the Department of Internal Medicine and Palliative care.

The Heart Group, 2010 - 2011

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**COMMUNITY/OUTREACH ACTIVITIES**

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- Involve in health screening and education activities at a local community health clinic which includes flu vaccination, blood pressure, blood glucose monitoring, and health education on a weekly basis
- Lifestyle Coach for choices for a health community group- 2018-20
- Ismaili Health Professionals Nursing Alliance Lead for California 2016-2019
- Ismaili Women’s Group member 2016-2018 for Bay Area
- Aga Khan Health Board member 2010-2019
- Lead for Bone Marrow Drive in collaboration with the Sama Group partner with the National bone marrow program.

## CHAPTER ONE: INTRODUCTION

The Institute of Medicine [IOM] (2011) hallmark report on healthcare quality in the United States (U.S.) calls upon healthcare organizations to promote health care that is safe, effective, and focused on patient needs. The American Nurses Association Health Risk Appraisal Report (2016) showed that 82% of nurses perceive they are at a high risk of illness due to work-related stress. The American Nurses Association Healthy Nurse Healthy Nation (2016) reported that nearly 75% of nurses reported feeling exhausted over the previous two weeks; another survey found that 69% of nurses said they put patient health and safety before their own, while only 31% said they felt their employers cared about their mental health. Such findings should call attention to the need for changes within the culture of health professions to address issues of stress and its impact.

Nursing professionals are given responsibilities for providing optimal care for patients. The expectation to deliver quality health care with scarce resources, varying shift hours, excessive patient workloads, and contact with the suffering patient, which can result in significant physical and psychological stress (Cohen & Venter, 2020). Stress is a consequence of an imbalance between external and internal demands and the resources accessible to meet those physical and psychological demands (Salman, 2020). Stress can be a trigger for pathological conditions, and those individuals working in a stressful environment are a higher risk for many disorders (Montanari et al., 2019). Literature review suggest that chronic and unmanaged stress can lead to anxiety and depression, difficulty showing compassion, and impaired decision-making (Ameli et al., 2020). These manifestations of chronic stress can eventually lead to fatigue and burnout (Duarte & Pinto-Gouveia, 2016).

Research suggests that practicing mindfulness can help reduce stress, alleviate burnout, construct strength, and build resilience among nurses (Slatyer et al., 2017). Mindfulness can be characterized as a state in which one is aware of one's surroundings and pays close attention to the present moment's reality, accepting and recognizing it, fostering clear thinking, and unfolding situations in an unbiased manner (Martínez-Zaragoza et al., 2020). Mindfulness-based stress reduction (MBSR) is a practicing mindfulness intervention program to promote physiological and psychological wellbeing (Montanari et al., 2019). The program's goal is to teach the participant to be present with oneself intentionally and the environment, recognize unhelpful thoughts and develop innovative ways of responding to life's challenges and stressful situations. Data on MBSR training have found multiple benefits to reducing stress and burnout among health care providers (Daigle et al., 2018, Braun et al., 2019). Daigle et al. (2018) carried out a randomized controlled trial on MBSR among nurses, and the study demonstrated that MBSR can help nurses develop a deeper connection with patients and significant decrease in stress and burnout

## CHAPTER TWO: THEORETICAL FRAMEWORK

This project was guided by Orem's Self-Care Deficit Theory, which posits that self-care is required to maintain life and focuses on an individual's motivation and capability to care for oneself (Orem, 2005). It provides a theoretical framework for leading nurses to balance self-care deficits with self-care concepts. This framework suggests that self-care can balance mind-body activities that individuals initiate and conduct to maintain life, health, and overall well-being. The primary goal of self-care is to balance the impact of daily stressors with activities that encourages the restoration and rehabilitation of an individual's mind, body, and spirit (Orem, 1995). Three interconnected theories composed of Dorothea Orem's self-care theory of nursing:

1) the theory of self-care, 2) the self-care deficit theory, and 3) the theory of nursing systems (Orem, 1995) (see Appendix A). Those related to the person are self-care, self-care agency, therapeutic self-care demand, and self-care deficit. According to this theory, burnout among nurses may be driven in part by self-care deficits.

### **Self-care**

Self-care is performing on one's behalf to preserve health and wellbeing. If self-care is not achieved, then the person shows signs of decline. Self-care is caring for oneself to be able to care for others (Orem, 1995). Learning to manage stress and balance work and personal life effectively is essential to self-care, and mindfulness is one form of self-care that can help resolve self-care deficits. Health care providers who practice mindfulness to counter high levels of stress and burnout can build resilience and are more satisfied and at peace with themselves and their coworkers, helping deliver quality care to patients (Gilmartin et al., 2017).

### **Self-care agency**

Self-care agency is the person's ability to be involved in efforts directed towards one's health and wellbeing (Orem, 1995). Mindfulness training evolved from Buddhist teachings and uses meditation, self-awareness, and self-care (Penque, 2019). MI benefits participants in various forms of agency, including self-improvement and increased self-reliance (Cohen-Katz et al., 2005).

### **Self-care deficit**

Self-care deficit explains the gap between self-care agency and the self-care activities that an individual can execute. The imbalance between self-care activities that nurses can do for themselves and the self-care activities needed leads to chronic stress. High stress has been linked to negative affect states presenting as anxiety and anger, which may ultimately affect patient care



outcomes (Penprase et al., 2015). Nurses themselves may feel overworked, pulled in different directions, stress from extended shift hours, and difficulties dealing with pain, loss, and traumatic events (Gilmartin et al., 2017).

### **Self-care demand**

Self-care demand arises when there is an imbalance between what an individual can perform (self-care agency) and what needs to be accomplished to maintain maximum functioning (self-care demand) (Roberson & Kelley, 1996). The nurse's role in this system is to encourage and support a self-care agent. Nurses themselves may also need training and support through self-care and engaging in stress reduction programs to meet self-care demand.

## CHAPTER THREE: REVIEW OF LITERATURE

### **Evidence Search**

A literature search was performed in CINAHL, PubMed, and Embase using Mesh subject headings, search terms, and Boolean operators. The search terms included "mindful" OR "mindfulness" OR "nurs' (nurses)" OR "Nurse Practitioner" AND "stress." This search total of 138 articles were found in various databases. References from original articles, systematic reviews, and metanalysis were explored, and 86 articles were excluded. The investigation was then narrowed to randomized controlled trials, clinical trials, clinical guidelines, and meta-analyses published between 2015 and 2021. Abstracts, reviews, and case reports were excluded, which resulted in 52 articles. After removing duplicates, 40 articles were further screened to include studies conducted within the last ten years. All the articles were screened for study design (randomized, controlled), outcome measures, and limitations, and 28 reports were excluded based on study design criteria. The search was then limited to articles within acute care settings,

which yielded ten articles. The research was also augmented by reviewing items within the reference lists.

### **Feasibility of MI/mindfulness practice among nurses**

Ameli et al. (2020) performed a randomized clinical trial to explore the effectiveness and feasibility of a brief mindfulness intervention among health care professionals. Eighty-two subjects were randomized; 45 participants received a mindfulness intervention over five weeks consisting of 60-minute mindfulness sessions, and 37 participants were randomized to the control group. The Perceived Stress Scale (PSS)-10 was used to evaluate stress levels. Assessments were done at baseline and after 5-weeks. Participants in the intervention group followed a mindfulness plan, and to develop a sense of community, a buddy system was established. Results of the study illustrated that the brief mindfulness intervention during work hours decreased stress among health care professionals. The results of the study illustrated that intervention group reported a reduced levels of stress (mean [SD] score, 17.29 [5.84];  $P.02$ ) and anxiety (mean [SD] score 2.58;  $P < .001$  and improved positive affect mean [SD] score 35.69,  $P < .001$ , state mindfulness (mean [SD] score 3.74,  $P < .001$ ). Burnout negative affect and trait mindfulness levels did not differ between groups. A limitation of the study was that it only included female participants who had a high educational level, limiting the generalizability of these findings to the general population. This research supports the DNP project by affirming that mindfulness programs can help nurses reframe difficult situations and redirect negative thoughts.

Fortney et al. (2013) conducted a pilot study with 30 primary care practitioners participating in mindfulness. The study's goals were to understand the influence of burnout, attrition, and low work satisfaction on health care and gauge if a mindfulness intervention could

help to increase job satisfaction, quality of life, and compassion among primary care clinicians. A pre-and post-assessment survey was conducted at baseline and one day, eight weeks, and nine months post interventions. Linear mixed-effects models were utilized to analyze study data. The study results showed that there was significant decrease on MBI compared with baseline in emotional exhaustion scores on surveys 2, 3 and 4 ( $P = .46$ ,  $P = .006$  and  $P = .009$ , respectively). There was also a significant reduction in depersonalization scores on surveys 3 and 4 ( $P = .03$ ,  $P = .005$  respectively). At nine months post-intervention, there was a notable improvement in Maslach Burnout Inventory subscales – emotional exhaustion ( $P = 0.009$ ), depersonalization ( $P = .005$ ), depression ( $p = .001$ ), anxiety ( $p = .006$ ). In regard to PSS, the study subjects had a statistically significant reduction in stress from baseline to post intervention on all 3 follow up surveys ( $P < .011$ ,  $P < .001$  and  $P = .002$  respectively). The study findings showed that a low-budget, time-saving way to manage burnout, which in turn can help reduce symptoms of depression, anxiety, stress and might have positive implications for patient care. Future research is warranted to confirm these findings. This study concluded that a mindfulness intervention provides multiple benefits to health care providers and enhances patient care. Mindfulness can improve provider wellbeing and reduce stress in individuals, enhancing team communication and delivering better under pressure. This mindfulness intervention may be a feasible and doable method to integrate mindfulness, resilience, and teamwork training in an interdisciplinary team. Future research is warranted to fully understand this intervention's scope, leading to practical mindfulness training approaches, improved nursing team performance, and better patient outcomes.

### **Scales measuring mindfulness practices**

Montanari et al. (2019) conducted a feasibility pilot pre/post study to explore the usefulness of brief mindfulness intervention on nurses' stress and burnout levels using PSS and Maslach Burnout Inventory (MBI). The nurses and healthcare professionals were recruited in acute care hospital settings with a sample size (N=14). The nurses described in the studies work in an acute care hospital setting. Assessments were done two weeks prior and immediately following six weeks post-intervention. The intervention included weekly guided mindful meditation, and gratitude journaling. The study's findings showed no statistically significant changes in PSS score ( $p=.79$ ); however, MBI scores for subscales of Emotional Exhaustion, Depersonalization, and Personal Accomplishment showed an improvement. The study concluded that 75% of the participants reported that a mindfulness intervention helped reduce stress, 84.9% of the participants showed interest in engaging in a similar mindfulness practice in the future, and 60.6% of the respondents reported a lack of time during shifts to implement mindfulness. The limitation of the study includes a shorter duration of the mindfulness intervention, which made it challenging to detect changes in stress and burnout, and a smaller sample size, which may not be sufficient to capture the difference in the MBI and PSS scores.

### **Impact of mindfulness intervention**

Penque (2019) conducted a quasi-experimental, pre-test and post-test study to explore the result of MBSR on self-compassion, empathy, serenity, and work satisfaction among nurses. Eighty-three nurses were recruited from all patient care units. Inclusion criteria included age 21 or older, English speaking with no history of psychiatric illness. Nurses participated in four intervention groups, and an expert instructor taught MBSR techniques. Data were collected by self-report survey three months before the intervention, eight weeks, and three months post-intervention. Each session was a 2.5-hour class, followed by a retreat between weeks six and

seven. At the end of intervention phase, the intervention group as compared to control group showed marked reduction in stress levels (mean [SD] score 17.29 and  $P=.002$ ). The intervention group showed a significant difference in mindfulness, self-compassion, and serenity.

A quasi-experimental study was performed by Ceravolo & Raines (2018) with a pre/post-intervention to understand the effect of implementing mindfulness on 13 nurse managers in a hospital setting. The mindfulness series included weekly 60-minute group sessions for eight weeks, and the sessions were developed from the principles of MBSR (Kabat-Zinn, 2003). The settings of the sessions took place away from the clinical area, thus providing the space for the nurse managers to focus on the session. Data was collected pre-and post-intervention during the three-month follow-up using the Professional Quality of Life (Pro-QOL) scale and Copenhagen Burnout Inventory (CBI) scale. Pre- to post-intervention showed significant change in CBI subscales, especially the personal ( $p=.023$ ) and work-related ( $p=.029$ ) subscales. On the ProQOL scale, the most considerable score changes, before and after the intervention, were in the compassion satisfaction ( $p = .002$ ) and risk of burnout subscales ( $p = .016$ ). At the 3-month follow-up, there were no statistically significant changes ( $p = .810$ ) compared to post-intervention data, suggesting that the mindfulness intervention should be reinforced on an ongoing basis. The limitation of the study included a small sample size and the inclusion of subjects in a similar organizational role from different organizations.

Braun et al. (2019) conducted a quantitative study to explore the effect of mindfulness on health care providers and to recognize the benefits and barriers to the practice of mindfulness in the long term. Mindfulness was introduced as an 8-week course for health care providers and nursing students, followed by weekly meditation training, gentle yoga, and discussions on applying mindfulness to everyday stress situations faced by health care providers. Participants

showed improvement in subscales of burnout and mindfulness. The researchers suggested that the findings should be further investigated with a more extensive, randomized controlled study, and interventions should focus on developing a mindfulness practice that can be integrated into nurses' daily routines. The survey findings showed a marked improvement in burnout and mindfulness. These results should be further explored with a more extensive, controlled study. The study concluded that brief mindfulness intervention could be integrated into the hectic shift work of health care providers.

Duggan & Julliard (2018) performed a qualitative study in a medical center to understand the perceptions of facilitators followed by a short MMI (the mindfulness moment initiative) dose, typically lasting 1–3 minutes. The assessment was done pre-program and at six weeks post-implementation. Twenty subjects were recruited: seven physicians, four social workers and therapists, seven nurses, and seven administrative staff to conduct MMI with staff and students. Six subjects from the pre-implementation interviews were expected to find varying responses to the mindfulness intervention, typically demonstrated in an enthusiastic response, neutral response, or hesitant response. Hectic work schedule and staff resistance was a projected barrier to implementing mindfulness intervention. The mindfulness intervention facilitators stated that to successfully implement mindfulness programs into the organization, including support from leadership, educational support around the benefits of mindfulness, and expansion of mindfulness for the staff and patients as needed.

Penprase et al. (2015) conducted a cross-sectional study of 21 nursing students and 14 critical care nurses; each group worked in different clinical settings. Subjects were enrolled in an 8-week mindfulness program developed by Jon Kabat-Zinn (Kabat-Zinn, 1990). The program included guided meditation practices, stretching, journaling, and group dialogue sessions. The

nursing students took part in the 8-week training that included journaling and meditation techniques to describe stressful academic, financial, or personal life. Post-training participants reported that the program was valuable. After participating in the program, subjects anticipated signs of stress, directed attention to their surroundings, and developed bonds with patients. The participants describe post program feedback as “feeling calmer and more relaxed after meditation” and “able to focus more, less distraction noted” and “less physical aches.” Study limitations include no students completing the entire training, and only four nurses completed the full 8-week program. With a small sample size, no significant statistical analysis could be made. Descriptive data showed a positive impact on the ability of students and nurses to cope with stressful situations. The program can still be helpful if the strategy is incorporated for shorter intervals. Additionally, in a hectic acute care setting, longer sessions would be challenging to implement.

### **Synthesis of the Literature**

The body of evidence employs diverse methodologies and research design, including two randomized controlled trials, two quantitative analyses, and four quasi-experimental studies. In two studies, a mindfulness intervention was implemented to compare results with the control group. Four pre-post intervention studies analyze the effect of mindfulness programs with the follow-up from immediately after the intervention up to six months. Among the studies in the literature review, the findings concluded that mindfulness could help to reduce stress in multiple ways, such as reducing the perception of job demands and improving performance at work which is directly correlated to job satisfaction (Ceravolo & Raines, 2018; Penprase et al. 2015). The literature review also suggests that nurses face increasing demands and responsibilities at work, driving high stress and burnout rates (Montanari et al., 2019; Ameli et al., 2020). In 2020, the

turnover rate for registered nurses has increased by 2.8% and currently stands at 18.7% (Abrams & Szeffler, 2020). Based upon Orem's Self-Care Deficit Theory, nurses must practice self-compassion for themselves while caring for others. In addition, research suggests that nurses who practice mindfulness have improved quality patient-centered communication and can better handle stressful situations rather than reacting and walking away from them (Ameli et al., 2020). Nurses cannot necessarily always take significant time away from patient care to attend weekly classes or retreats, which costs the institutions considerably, limiting the interventions' sustainability (Montanari et al., 2019). The DNP project will present a realistic, simplified, and flexible version of the brief mindfulness intervention to accommodate a nurse's hectic work schedule and play a pivotal role in promoting fulfilling, compassionate, and patient-centered care.

### **Gaps in research**

To eradicate work-related stress for nurses is not a realistic goal. There is evidence that mindfulness has proven to be an effective intervention in helping nurses cope with stressful situations. Additionally, given nurses' busy workload, exploring short, sustainable mindfulness interventions focus on learning to deal more effectively with stress can be a realistic outcome. While much research has focused on the effectiveness of mindfulness in improving psychological symptoms among nurses in general, further work needs to be done on studying mindfulness among nurse practitioners and measuring mindful engagement in their work on an ongoing basis with the nurse practitioners working in the acute setting. Further research is warranted to incorporate mindfulness as part of professional development for nurse practitioners. The recurrent screening for early recognition of stress and burnout symptoms among nurse



practitioners and early attention to its management is essential and may also be identified during implementation of a mindfulness intervention.

## CHAPTER FOUR: METHODS

### **Study Design**

The mindfulness project design is a pilot, pre-test and post-test intervention with no control group. The project aims assess whether a brief mindfulness intervention that can be incorporated into the acute care nurse practitioners' daily work routine will decrease stress and burnout levels which, in turn, could improve wellbeing.

The pre-post design can help assess if the project's objectives are being met and which subjects are improving or not progressing. This design can also illustrate if the improvement is based on the amount of intervention given. According to Zaccagnini and Pechacek (2019), positive results from a pre-post design can be fulfilling to staff and help meet organizations' funding requirements. Favorable results can also lead to further support and resources, driving future research (Zaccagnini & Pechacek, 2019). When products are less than favorable, it shows that action must be taken to improve services. Given that stress levels are correlated with daily struggles, significant events, and changes in coping resources, the PSS-10 level was expected to fall off rapidly after four to eight weeks. The project included data collection points at baseline and following the 10-week intervention, in addition to and along with a weekly check via email on usage of the Headspace application.

### **Sample and Setting**

The scholarly project was implemented among nurse practitioners working at a 600-bed public teaching hospital, the largest academic county facility in the United States. Institutional Review Board (IRB) permissions and protocols were reviewed during this phase, and the project

chair according to the guidelines decided that the project met the criteria for an evidence-based project and did not require formal IRB approval. The project was further narrowed to all nurse practitioners who had volunteered to participate and currently were working in the medicine service. A total of 14 nurse practitioners were recruited via convenience sampling. The sample size is in line with the previous studies conducted (Montanari et al. 2019; Penprase et al. 2015). The recruitment process included an invitation from the project lead to the nurse practitioners via email and marketing flyers posted in the nurse practitioner room in the medical center to participate in the “Mindful Moment (MM)” project. The nurse practitioners were asked to complete the pre-intervention data collection surveys before the education session.

Subject ages were from 30 to 55 years, and ethnic backgrounds included Chinese, White, African American, Hispanic, and Filipino. This pilot project excluded physician attendings, care coordinators, and social workers assigned to the medicine service. A project timeline for critical deliverables was created to keep the project on track (see Appendix B). Copyright permission for the instruments and the mindfulness app (mobile bases application) was also sought, and neither required permission to use in an educational setting. The DNP project used a mobile application-based mindfulness intervention that offers flexibility to participants, which was a unique feature of the project. Marketing material and nurse practitioner focused educational content for the presentation was developed and finalized by the project lead.

### **Intervention**

The implementation phase began with an educational session for all nurse practitioners participating in the “Mindful Moment (MM)” project. A 45-minute mindfulness education session was conducted which aimed to: 1) introduce the philosophy of mindfulness, 2) outline the impact of mindfulness on stress reduction, 3) discuss the goals of the current MM project,

and 4) empower and encourage the participants to enroll in the program. The recording of the session was made available to all the nurse practitioners who volunteered to participate in the study. The introductory phase of MM was followed by nurse practitioners adopting, self-practice using a 10-minute pre-programmed mindfulness application (Headspace), two times per week for ten minutes for ten weeks. Throughout the self-practice phase, the project lead was frequently in touch with each NP weekly via email to answer any questions, assess their prior experience with application usage, and identify any challenges for following self-practice. At the end of the ten-week intervention, data were collected to evaluate the baseline change in stress and burnout levels.

### **Instruments**

For measuring stress levels, the Perceived Stress Scale (PSS) was utilized. PSS is a brief, easy to use, widely acceptable, psychological instrument to evaluate stress perception and the level to which circumstances in one's life are considered stressful (Cohen et al., 1983). PSS has high specificity and reliability of 0.83 (Cohen et al., 1983). The higher the score on the PSS, the more prominent the respondent perceives that demands exceed their ability to cope with the stressful environment. Items were designed to identify how overwhelmed and overburdened respondents find their lives to be. PSS questions inquire about the emotions and thoughts during the past month and the frequency of stress-related symptoms. The scale directs several queries on current levels of experienced stress (Simon, 2020). The scale is relevant to the DNP project as PSS helps determine an individual's perceptions of stress rather than how often stress occurs (Cohen et al., 1983) (see Appendix C).

The Copenhagen Burnout Inventory (CBI) designed by Kristensen et al. (2005) was administered along with the PSS to measure burnout. This instrument is divided into three sub-

scales: Personal burnout (6 questions), work-related burnout (7 questions), and client-related burnout (6 questions). All questions have five possible answers, and each of the answers has a given number of points: 0, 25, 50, 75, and 100. The value of the burnout level is computed as the mean value; therefore, every scale has a value of 0-100 (Kristensen et al., 2005). Montgomery et al. (2021) reported the CBI to have adequate validity and reliability for measuring burnout among frontline nurses. The Cronbach's alpha for Personal Burnout, Work-related Burnout, and Client-related Burnout were 0.91, 0.89, and 0.92, respectively, and showed internal consistency reliability for the subscales at .80 (Kristensen et al., 2005) (See Appendix D).

A demographics questionnaire designed by the project lead was administered via email during the pre-implementation phase to collect information on age, gender, years of NP experience, and the use of stress relief measures in the past, and the effectiveness of the current techniques utilized in the project (Table 1).

Weekly checks via Google Forms were used to assess compliance with the usage of the Headspace application, and the participants' experience of using the Headspace app was assessed on a Likert scale (Appendix E and F).

### **Data Analysis**

The Statistical Package for the Social Sciences (SPSS) version-27 software was utilized to analyze data, and parametric tests explored relationships among variables identified. Descriptive statistics were utilized to summarize responses participants' experiences survey (Appendix F), adherence to the program, and the amount of time that mindfulness was practiced. A paired t-test was applied to compare the mean pre-intervention stress level (baseline) to the mean stress level post-intervention was conducted. Wilcoxon matched pairs were included for statistical verification purposes due to small sample size (N = 14). The attrition rate, as well as

missing data, were also reported. Group analysis was performed at ten weeks using an alpha of  $<.05$  for statistical significance.

## CHAPTER FIVE: RESULTS

Table 1 displays the frequency counts for the demographic variables. The ages of the participants [ $N = 14$ ] were from 30 to– 40 years [ $N = 14$ ] (21.4%) to 41 and above years [ $N = 14$ ] (78.6%). All but one [ $N = 14$ ] (92.9%) were women. With [ $N = 14$ ] over half [ $N = 14$ ] (57.1%) were Asian, followed by fewer African Americans [ $N = 14$ ] (21.4%) and Hispanics [ $N = 14$ ] (14.3%). All 14 participants [ $N = 14$ ] (100.0%) had more than 11 years of experience as an NP. Two participants [ $N = 14$ ] (14.3%) reported previously used mindfulness applications. As for feasibility, [ $N = 14$ ] 57.1% either agreed or strongly agreed (Table 1).

Compliance and feasibility of the usage of mindfulness apps were part of the data collection, and results were analyzed, given it can impact the reliability and validity of project findings. As for acceptability, 57.1% of the 14 participants either agreed or strongly agreed to use the mindfulness application in the future [ $N=14$ ] (Table 1).

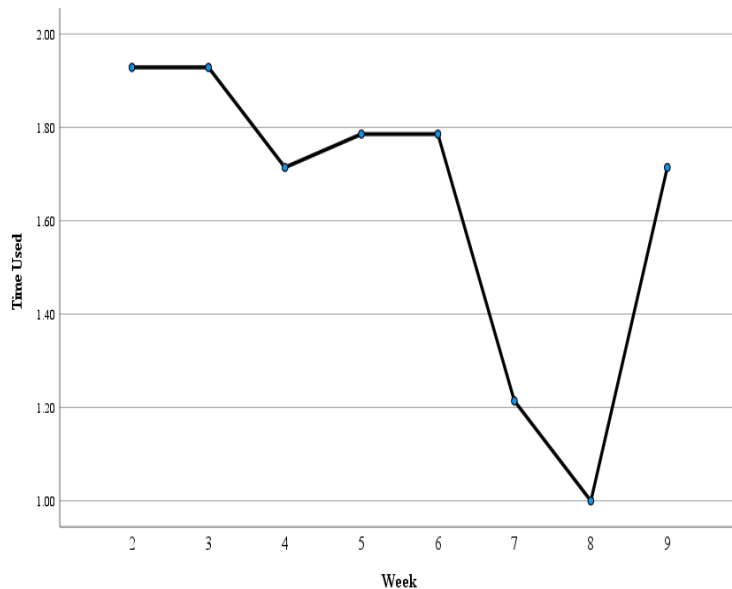
Appendix G displays the descriptive statistics, for time spent on mindfulness, feelings ratings, and days used. “Time” used ratings were based on a 3-point scale: 0 = none, 1 = 10 minutes, and 2 = 10+ minutes. Across the intervention period, the longest times used were for weeks 2 and 3 ( $M = 1.93$ ,  $SD = 0.27$ ) while the shortest time used was week 8 ( $M = 1.00$ ,  $SD = 0.00$ ). Figure 1 displays this trend graphically.

The “feelings” rating was based on a 6-point scale: 0 = no difference to 5 = Amazing. Across the eight weeks, the highest feelings rating was for week 4 ( $M = 4.43$ ,  $SD = 0.51$ ), while the fewest days used was week 9 ( $M = 3.14$ ,  $SD = 1.83$ ). Figure 2 displays this trend graphically.

The “days” used rating, these ratings were based on a 4-point scale: 1 = 0 Days, 2 = 1 Day, 3 = 2 Days, 4 = > 2 Days. Across the eight weeks, most days used was for week 4 ( $M = 2.29$ ,  $SD = 1.90$ ) while the lowest week was week 7 showed the fewest days used ( $M = 0.21$ ,  $SD = 0.58$ ). Figure 3 displays this trend graphically.

Paired t tests and Wilcoxon matched pairs test showed significant declines for total stress ( $t = 5.38$ ,  $p = .001$ ;  $z = 3.15$ ,  $p = .002$ ), client burnout ( $t = 4.94$ ,  $p = .001$ ;  $z = 3.05$ ,  $p = .002$ ), and work-related burnout ( $t = 3.93$ ,  $p = .002$ ;  $z = 2.84$ ,  $p = .005$ ). However, no significant change in personal burnout was found ( $t = 1.33$ ,  $p = .206$ ;  $z = 1.29$ ,  $p = .196$ ) (see Figure 4 and Table 2).

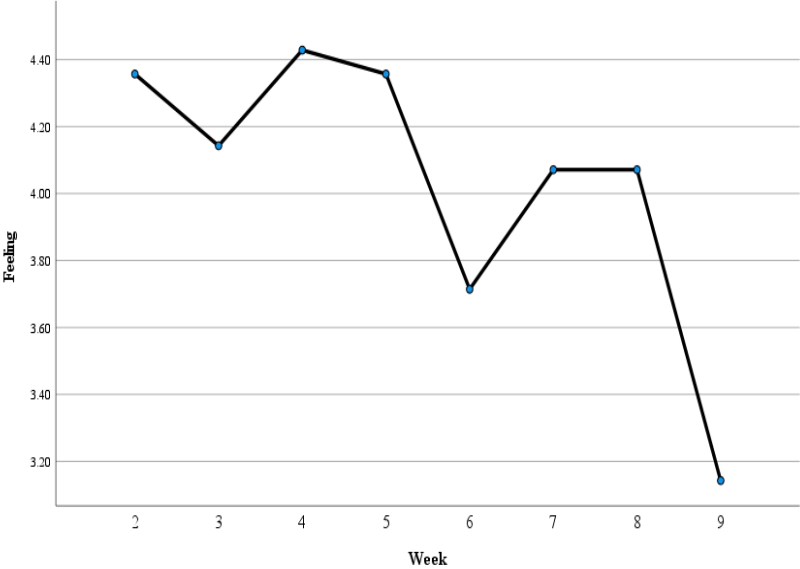
Figure 1: *Time Used Across Weeks*



Note. Time Used: 0 = None, 1 = 10 Minutes, 2 = 10+ minutes.

Note.  $N = 14$

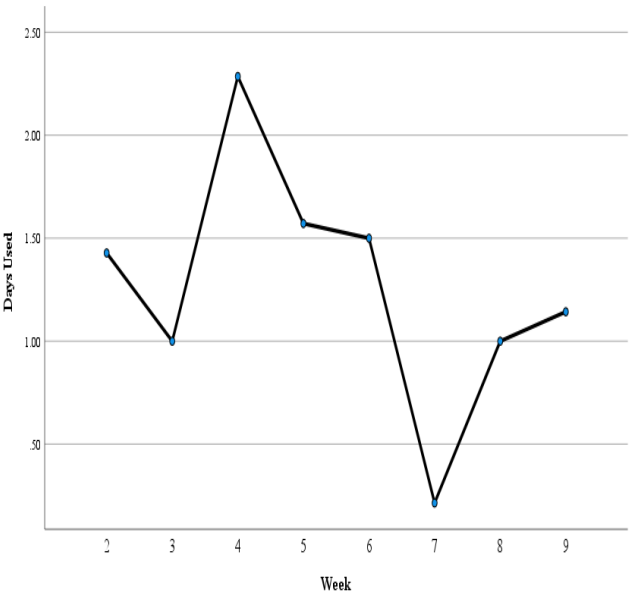
Figure 2: *Feeling Ratings Across Weeks*



*Note. Feeling: 0 = No difference to 5 = Amazing.*

*Note. N = 14*

Figure 3: Days Used Across Weeks

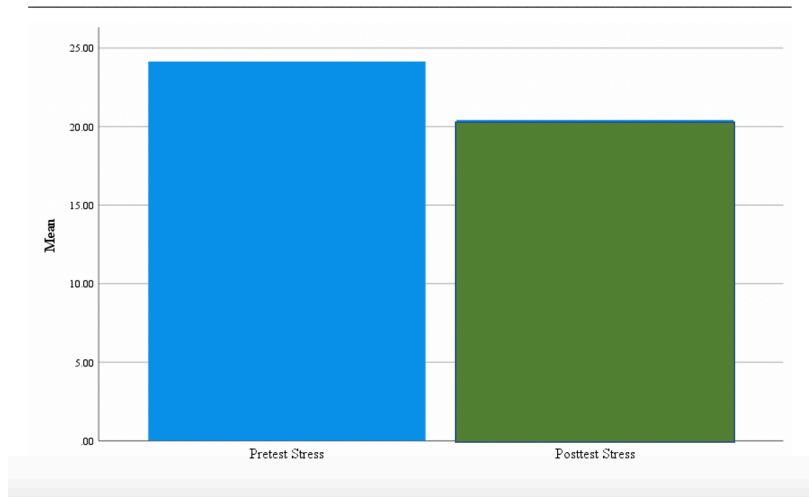


Note. Days Used: 1 = 0 Days, 2 = 1 Day, 3 = 2 Days, 4 = > 2 Days.

Note. N = 14

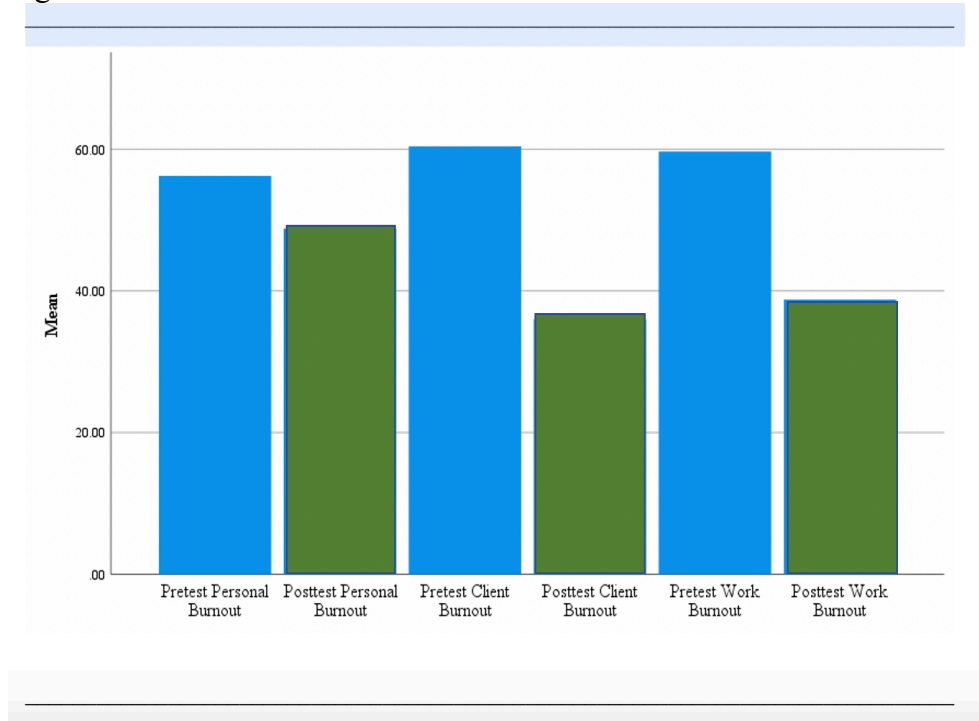


Figure 4 Part 1: *Pretest and Posttest Stress Scores*



Note.  $N = 14$ .

Figure 4 Part 2: *Pretest and Posttest Burnout Scores*



Note.  $N = 14$ .

Table 1: *Frequency Counts for Demographic Variables*

Variable	Category	<i>n</i>	%
Age Category	30-40 Years	3	21.4
	41 and above	11	78.6
Gender	Female	13	92.9
	Male	1	7.1
Race/Ethnicity	Asian	8	57.1
	Hispanic	2	14.3
	African-American	3	21.4
	White	1	7.1
Years of Nurse Practitioner	11+ years	14	100.0
Used Mindfulness Application in the past	No	12	85.7
	Yes	12	14.3
Feasibility	Neither Agree or Disagree	6	42.9
	Agree	3	21.4
	Strongly Agree	5	35.7

*Note.* *N* = 14.

Table 2: Paired *t* Tests and Wilcoxon Matched Pairs for the Study Variables

Variable	Time	<i>M</i>	<i>SD</i>	Paired <i>t</i>		Wilcoxon	
				<i>t</i>	<i>p</i>	<i>z</i>	<i>p</i>
PSS Total	Pretest	24.14	2.77	5.38	.001	3.15	.002
	Posttest	20.43	3.39				
Personal	Pretest	56.23	13.65	1.33	.206	1.29	.196
	Posttest	48.80	12.37				
Client	Pretest	60.41	15.82	4.94	.001	3.05	.002
	Posttest	36.01	24.60				
Work Related	Pretest	59.69	12.00	3.93	.002	2.84	.005
	Posttest	38.77	15.14				

Note. *N* = 14.

Table 2 displays the paired *t* tests and Wilcoxon matched pairs test the study variables.

Wilcoxon matched pairs were included for statistical verification purposes due to the small sample size (*N* = 14). Significant declines were found for total stress ( $t = 5.38, p = .001; z = 3.15, p = .002$ ), client burnout ( $t = 4.94, p = .001; z = 3.05, p = .002$ ), and work-related burnout ( $t = 3.93, p = .002; z = 2.84, p = .005$ ). However, no significant change in personal burnout was found ( $t = 1.33, p = .206; z = 1.29, p = .196$ ) (see Table 2).

## CHAPTER SIX: DISCUSSION

The overarching goal of this study was to evaluate the impact of using mindfulness intervention to decrease and burnout among nurse practitioners. The secondary aim was to assess the feasibility of using the mindfulness application. The scholarly project evaluated an innovative nurse-led intervention promoting nurse mindful engagement as it focused on the

need to teach mindfulness techniques to nurse practitioners. The findings of this pilot study demonstrated that even a brief mindfulness activity practiced at least two times a week for 10 weeks can help improve psychological wellbeing. Project findings illustrated a decrease in perceived stress as well as client-related and job-related burnout among nurse practitioners. In the project, participants reported less anxiety, increase emotional awareness, and decrease stress level after the intervention.

Literature suggests that there is a minimal emphasis on the mental well-being of nurses in the workplace. This Project appears to verify those findings. At baseline measurement, the average burnout level in all three sub-scales among nurse practitioners in this project was fairly high. Stress and burnout are part of everyday routine among care providers as they strive to cope with an increasingly complicated healthcare system and sicker patients (FitzPatrick et al., 2016). Ceravolo & Raines, 2018 reported a statistically significant change in burnout scale ( $p = .029$ ) after implementing mindfulness techniques. The studies also pointed out the fact that nurses often, to help others, push their self-care needs aside (Penprase et al., 2015).

The use of mindfulness has the potential to improve nurses' overall well-being and decreased reported burnout levels (Ceravolo & Raines, (2018); Montanari et al., 2019,); Penrose et al., 2015). It is essential that nurses find productive ways to manage their stress to deliver care in a meaningful and empathetic manner, and mindfulness can be one strategy to accomplish this goal (Penprase et al., 2015). Findings from this project align with prior studies which have demonstrated that mindfulness can reduce stress, increase coping, and improve empathy among healthcare professionals (Ameli et al., 2020, Duggan & Julliard 2018, Montanari et al., 2019). The findings among NP participants in this DNP Project appears to further substantiate the expanding evidence on the positive effects of mindfulness-based interventions. Overall, this

project builds the body of evidence suggesting that mindfulness is a useful tool for nurses to utilize to manage work-related burnout.

A holistic approach and multidisciplinary teamwork across services would be beneficial and remain pivotal to the future of health and social care delivery. Upon literature review, the studies suggest that potential benefits of mindful intervention are a viable measure to help nurse practitioners and health care teams at large. Some methods used in the literature for outcome evaluation include decreased stress, burnout, anxiety, and ability to focus, which may provide safer patient care. As the healthcare industry begins to grow, the patient care demands continue to rise. There is a considerable need for stress reduction programs available on-site in the clinical setting for nurses. As the benefit of mindful interventions are highlighted in the literature, there might be a need for policy change to offer mindfulness intervention to nurses and health care teams routinely.

Given the negative effects of work-related stress and burnout symptoms, it is pivotal for the organizational leadership, including advanced practice clinicians, nurse managers, administrators to identify the reasons for stress and burnout among nurses. Literature reviews show a direct correlation between staffing levels and patient outcomes for specific nurse-sensitive signals, with lower patient-to-nurse ratios, 1:4 or less, associated with better results (Shuldham, Parkin, Firouzi, Roughton, & Lau-Walker, 2009). Higher quantity of work and staff satisfaction directly affected facility productivity and patient outcomes.

Organizational leadership should be empowered to initiate an implementation program to help avert and decrease burnout symptoms among the nurses. Leaders can influence the introduction and initiate mindfulness intervention program that assist nurses with burnout symptoms. Hence, nurse managers must involve the nurses in policy decision-making related to

the execution of burnout prevention programs and interventions designed to manage work-related stress and burnout symptoms. Additionally, there should be educational counseling programs for nurses during the academic training years, which will focus on burnout prevention and intermittent screening for prompt recognition of stress and burnout symptoms and early attention to its management. While much research has focused on the effectiveness of MIs in improving psychological symptoms, measuring engagement in the intervention is also crucial. If the concentration is poor, this will limit effectiveness and increase a sense of hopelessness for participants.

### **DNP Leadership, interdisciplinary Practice, and Ethical implications**

The attainment of the knowledge, skills, and capacities gained through DNP acquisition fosters a transformational leadership experience. A transformational leader inspires and motivates interdisciplinary team members by engaging them with a common purpose and meaning to achieve a higher set of goals. Data suggests that nursing staff have a higher commitment to the organization when they perceive the nurse leaders as transformational leaders (FitzPatrick et al., 2016). Given the negative effects of work-related stress and burnout symptoms, it is pivotal for the organizational leadership, including nurse managers, nurse practitioners, and nurse administrators, to identify the reasons for stress and burnout among nurses and empower executive leadership to implement programs to help avert and decrease burnout symptoms.

### **Implications for Practice and Research**

The DNP scholarly project addresses one of the possible solutions to nurses' work-related stress, personal health, and burnout, which may result in learning to manage work stress through mindfulness and awareness of the present. Implementing new evidence into practice is always

complex and challenging. Many nurses can viably handle the demands of working in an acute care setting; however, they may develop job fatigue and burnout and potentially leave the profession. The time allocated to nursing care is frequently filled with nursing tasks and finding persistent quality time may be difficult. Thus, nurses also may end their shift feeling dissatisfied. Given the negative impact of stress on mental health and job satisfaction, nurse leaders must advocate in their organizations for strategies to decrease workplace stress and create healthy work environments for nurses. Periodically screening nurses and other care providers for workplace stress, resiliency, depression, and anxiety symptoms can identify nurses who need evidence-based interventions for depression and anxiety, such as cognitive-behavioral skills-building that includes coping skills, emotional regulation, problem-solving, and goal settings.

Additionally, there should be educational sessions for future nurse practitioner students during the academic training program, focusing on stress and burnout prevention.

### **Strengths**

The explicit goal of the project was to implement mindfulness intervention techniques for nurse practitioner to attend to their inner thoughts while taking care of the patient and regain the caring and empathetic attitude that they may have lost with dealing with work-related stress. Building and retaining a mindful workforce is paramount to navigate the shifting paradigm. This project utilizing mindfulness technique to help reduce stress by attaining self-awareness and staying in the moment, which results in a reduction of emotional exhaustion and an increase in a positive attitude and improves overall mood. At the organizational level, the strength of this project included reducing employee's stress levels and positive perspectives which can have a remarkable impact on job satisfaction. Employee performance improvement directly results in a high retention rate and improvement in employee satisfaction surveys offered every year by LAC-USC. Reducing

stress can also positively impact chronic health conditions and potentially limit the long-term health expenditures on an organization.

### **Limitations and Future Research**

Although the study included yielded statistically significant results, there are several limitations. Methodological limitations include small sample size, convenience sampling, self-selection, and non-randomization. Another limitation of the study included bias given only self-reporting scales and no external validation measures were utilized. These factors threaten external validity, therefore, decreasing the generalizability of findings. A shorter study duration also minimized the impact of the above threat. Additionally, given the study sample included majority of female participants with only one male, gender differences could not be analyzed. One of the potential threats to external validity includes modifying the MI to make it practical to implement in the hospital setting. Another project limitation includes system-wide slow operations in approving and implementing projects and insufficient county funding given to the need for the vulnerable population it serves. Lack of resources could serve as a barrier to making necessary policy changes to implement the use of brief MI in a daily work setting for nurse practitioners

## **CHAPTER SEVEN: CONCLUSION**

High-stress levels are often associated with attrition among healthcare providers (Suyi et al., 2017). Decreased job satisfaction and low retention can be the aftermath of a stressful work environment. The adverse effects of stress underlie nearly all primary care visits and disproportionately affect nursing professionals. There is a considerable need for a brief mindfulness program available for nurses. As the benefits of mindfulness intervention are highlighted in the literature and from this study, there is a definitive need for policy change to



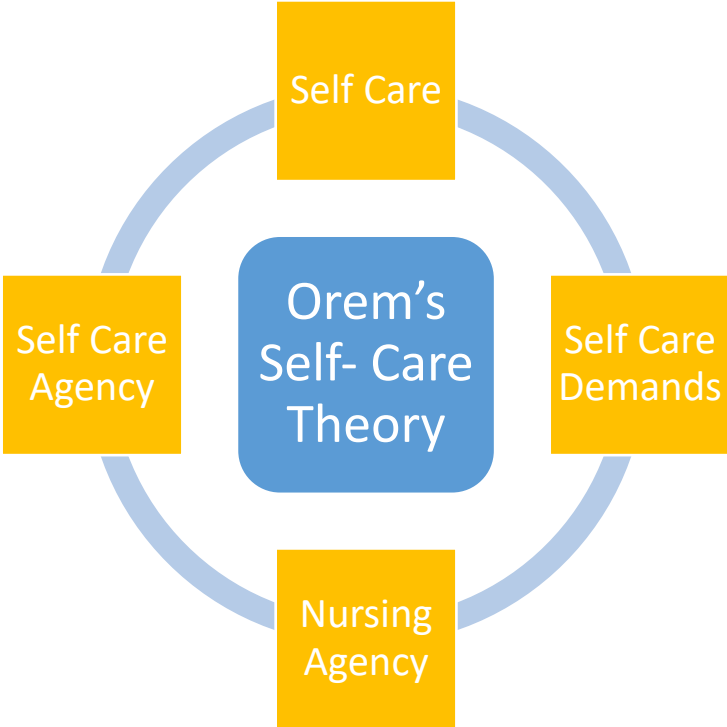
offer and incorporate mindfulness routinely in clinical settings. The primary goal is to promote clinician self-care with secondary plans to improve patient outcomes. Organizational leadership needs a comprehensive and personalized assessment of the effects of stress and burnout among health care professionals to initiate various innovative strategies to unwind stress and its associated negative consequences.

## APPENDICES



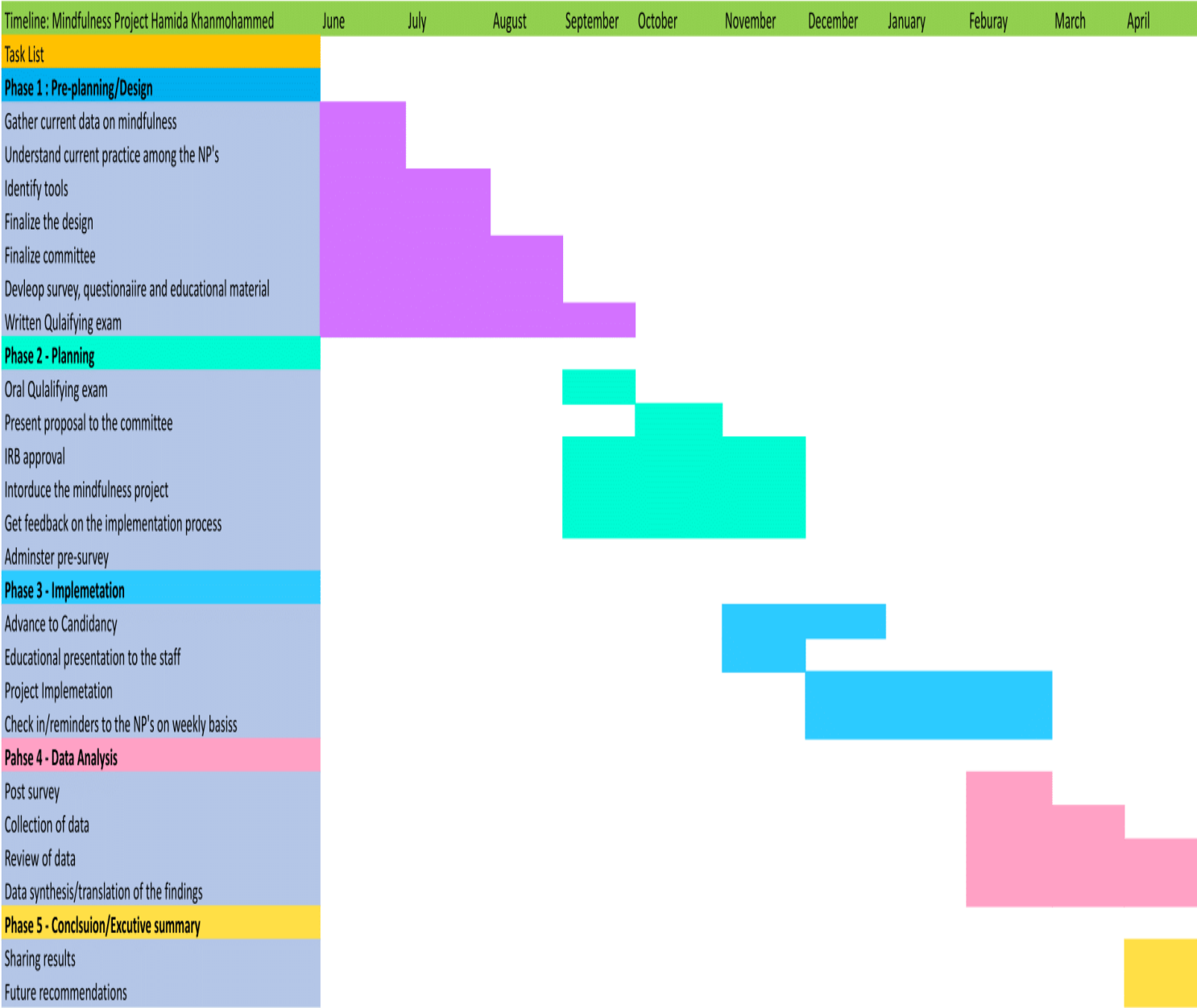
Appendix A

Orem's Self-Care Theory



Appendix B

**Project Timeline- Gantt Chart**



## Appendix C

### PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name \_\_\_\_\_ Date \_\_\_\_\_

Age \_\_\_\_\_ Gender (Circle): **M** **F** Other \_\_\_\_\_

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

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

#### References

The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.  
Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

## Appendix D

### **Copenhagen Burnout Inventory (English version) used in the PUMA study**

**NB: The questions of the CBI are *not* being printed in the questionnaire in the same order as shown here. In fact, the questions are mixed with questions on other topics. This is recommended in order to avoid stereotyped response patterns.**

#### **Part one: Personal burnout**

**Definition: Personal burnout is a state of prolonged physical and psychological exhaustion.**

##### **Questions:**

1. How often do you feel tired?
2. How often are you physically exhausted?
3. How often are you emotionally exhausted?
4. How often do you think: "I can't take it anymore"?
5. How often do you feel worn out?
6. How often do you feel weak and susceptible to illness?

Response categories: Always, Often, Sometimes, Seldom, Never/almost never.

Scoring: Always: 100. Often: 75. Sometimes: 50. Seldom: 25. Never/almost never: 0.  
Total score on the scale is the average of the scores on the items.

If less than three questions have been answered, the respondent is classified as non-responder.

#### **Part two: Work-related burnout**

**Definition: Work-related burnout is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work.**

##### **Questions:**

1. Is your work emotionally exhausting?
2. Do you feel burnt out because of your work?
3. Does your work frustrate you?

4. Do you feel worn out at the end of the working day?
5. Are you exhausted in the morning at the thought of another day at work?
6. Do you feel that every working hour is tiring for you?
7. Do you have enough energy for family and friends during leisure time?

Response categories:

Three first questions: To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree.

Last four questions: Always, Often, Sometimes, Seldom, Never/almost never. Reversed score for last question.

Scoring as for the first scale. If less than four questions have been answered, the respondent is classified as non-responder.

### **Part three: Client-related burnout**

**Definition: Client-related burnout is a state of prolonged physical and psychological exhaustion, which is perceived as related to the person's work with clients\*.**

**\*Clients, patients, social service recipients, elderly citizens, or inmates.**

**Questions:**

1. Do you find it hard to work with clients?
2. Do you find it frustrating to work with clients?
3. Does it drain your energy to work with clients?
4. Do you feel that you give more than you get back when you work with clients?
5. Are you tired of working with clients?
6. Do you sometimes wonder how long you will be able to continue working with clients?

Response categories:

The four first questions: To a very high degree, To a high degree, Somewhat, To a low degree, To a very low degree.

The two last questions: Always, Often, Sometimes, Seldom, Never/almost never.

Scoring as for the first two scales. If less than three questions have been answered, the respondent is classified as non-responder.

**Appendix E**

**Mindfulness Application (Headspace usage log) – Week 1**

Objective: To help nurse practitioners keep a bi-weekly record of Headspace usage record

Instructions: In the table given below, write down your routine on a bi-weekly basis. Mention the topic of the mindfulness application that you used

Day used	Time used (min 10min each episode)	Feeling after Headspace use
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday		



**Appendix F**

**Mindfulness Application Experience Survey**

Please circle your answer:

1. The mindfulness exercises were helpful in your daily life:

Strongly Agree----- Agree----- Disagree----- Strongly Disagree-----

2. The exercise on the mindfulness app was easy to use:

Strongly Agree----- Agree----- Disagree----- Strongly Disagree-----

3. I will continue to use and practice mindfulness:

Strongly Agree----- Agree----- Disagree----- Strongly Disagree-----

## Appendix G

### *Descriptive Statistics for the Three Weekly Outcome Measures*

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Outcome Variable	Week	<i>M</i>	<i>SD</i>
Time Used <sup>a</sup>	Week 2	1.93	0.27
	Week 3	1.93	0.27
	Week 4	1.71	0.47
	Week 5	1.79	0.43
	Week 6	1.79	0.58
	Week 7	1.21	0.58
	Week 8	1.00	0.00
	Week 9	1.71	0.73
	Feeling <sup>b</sup>	Week 2	4.36
Week 3		4.14	0.77
Week 4		4.43	0.51
Week 5		4.36	0.50
Week 6		3.71	1.27
Week 7		4.07	0.27
Week 8		4.07	0.62
Week 9		3.14	1.83
Days Used <sup>c</sup>		Week 2	1.43
	Week 3	1.00	1.71
	Week 4	2.29	1.90
	Week 5	1.57	1.79
	Week 6	1.50	1.79
	Week 7	0.21	0.58
	Week 8	1.00	1.04
	Week 9	1.14	0.86

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<sup>a</sup> Time Used: 0 = *None*, 1 = *10 Minutes*, 2 = *10+ minutes*.

<sup>b</sup> Feeling: 0 = *No difference* to 5 = *Amazing*.

<sup>c</sup> Days Used: 1 = *0 Days*, 2 = *1 Day*, 3 = *2 Days*, 4 = *> 2 Days*.

**TABLE OF EVIDENCE**

CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Ameli, R., Sinaii, N., West, C. P., Luna, M., Panahi, S., Zoosman, M., Rusch, H. L., &amp; Berger, A. (2020). Effect of a brief mindfulness-based program on stress in healthcare professionals at a US biomedical research hospital JAMA Network Open, 3(8), e2013424. <a href="https://doi.org/10.1001/jamanetworkopen.2020.13424">https://doi.org/10.1001/jamanetworkopen.2020.13424</a></p>	<p>To evaluate the effect of mindfulness program on stress in health care professionals during work hours. To assess the time commitment to the training as a barrier or an opportunity for the staff.</p>	<p>Setting: At a research hospital Participants were randomized 82 recruited 78 completed the study 43 participants in MI 35 participants in the control group Age: 32 (23-48 years) Gender (F- 83%)</p>	<p>Design: Randomized control trial Description: MI included five-week, 1.5 hours in-person sessions to practice mindfulness. Measures/Instruments used: Perceived Stress Scale 10-item version. Mindfulness (trait and state) Description 5 sessions, a total of 7.5-hour program was implemented on an intervention group of health care professionals during work hours at a research hospital setting. The Control group was not provided any MI MI included body scan, mindful breathing, eating, walking, and kindness meditation. Participants enrolled in an hour of mindful practice in each class.</p>	<p>A MI was a practical and feasible method to reduce stress in HCPs MI group had reduced levels of Stress: (mean [SD] score, 17.29 [5.84] vs. 18.54 [6.30]; P = .02) Anxiety (mean [SD] score, 2.58 [1.52] vs 4.23[1.73]; P &lt; .001) State mindfulness (mean [SD] score, 3.74 [1.18] vs 2.78 [1.16]; P &lt; .001)</p>	<p>Mindfulness practice and stress improved towards the end of the intervention and follow-up. There was no improvement in Trait mindfulness at the end of the intervention Limitations This study was performed in a research hospital with mainly female subjects with a high level of academic education. The generalizability of the findings to other types of organizations, lower level of academic education, and men may be limited Relying on self-measures and expectancy bias in self-motivating volunteers can be another limitation.</p>

CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Braun, S., Kinser, P., Carrico, C. K., &amp; Dow, A. (2019). Being mindful: A long-term investigation of an interdisciplinary course in mindfulness. <i>Global Advances in Health and Medicine</i>, <a href="https://doi.org/10.1177/2164956118820064">https://doi.org/10.1177/2164956118820064</a></p>	<p>To investigate the effect of Mindfulness for HCP's and to evaluate the benefits and barriers to the practice of mindfulness in the long term.</p>	<p>Setting: Hospital - Virginia Commonwealth University.  Sample: 18 HCPs (88% female)  Participants were majorly white in origin (n = 13, 81%) and female (n = 14, 88%).  Qualitative data was collected by interviewing participants' experience with mindfulness regarding HCP work and identifying strengths and weaknesses based on the intervention.</p>	<p>Design: mixed-method, repeated measures subject design  MIHP at baseline, post-MIHP.  follow-up at six months to 1.5 years post MIHP intervention.  Scales: Health Services Survey and the Five Facet Mindfulness Questionnaire  Maslach Burnout Inventory  Perceived Stress Scale (PSS-10)  MIHP is a program for 8 weeks for HCPs and students, including weekly meditation sessions, yoga, relaxation sessions, and discussions on applying everyday stresses HCPs in their daily workday routine.</p>	<p>Marked reductions were found after the intervention for two subscales of burnout: depersonalization, <math>F(2, 17) = 5.98, P = .01</math>, and emotional exhaustion, <math>F(2, 17) = 2.64, P = .10</math>.  Three facets of mindfulness showed a significant increase at long-term follow-up: <math>F(2, 15) = 4.47, P = .03</math>, nonjudge: <math>F(2, 15) = 4.7, P = .03</math>, and nonreactivity: <math>F(2, 15) = 3.58, P = .05</math>.</p>	<p>MIHP illustrates statistically significant effect on subscales of burnout and mindfulness.  Limitations: The findings can be further explored with a larger sample size.  Future recommendations: Interventions on implementing a daily mindfulness practice can be a part of the hectic work schedules of HCPs. Participants are encouraged in establishing a peer-led mindfulness group following the intervention and offered extra sessions on a need basis.</p>

CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Ceravolo, D., &amp; Raines, D. A. (2018). The impact of a mindfulness intervention for nurse managers. <i>Journal of Holistic Nursing</i>, 37(1), 47–55  <a href="https://doi.org/10.1177/0898010118781620">https://doi.org/10.1177/0898010118781620</a></p>	<p>To understand the effect of implementing mindfulness on professional quality of life, burnout, and perceived mental wellness among nurse leaders working in an acute care hospital setting.</p>	<p>Setting: Acute care hospital setting</p> <p>Sample N=13 nurse managers</p> <p>All the Nurse manager participants in pre-intervention data collection</p> <p>One nurse manager dropped out from the</p>	<p>Design: A quasi-experimental study with a pre/post-intervention to understand the effect of implementing mindfulness in a hospital setting</p> <p>The mindfulness series included weekly 60-minute group sessions for 8 weeks and the sessions were developed from the principles of MBSR</p> <p>Data were collected before the intervention, immediately post intervention at eight weeks and at 3-month follow-up.</p> <p>Scales used: ProCOL CBI</p>	<p>ProCOL scale: Post-intervention results show statistical changes on the compassion satisfaction (<math>p = .002</math>)</p> <p>CBI: Burnout subscales (<math>p = .016</math>), Personal burnout (<math>p = .023</math>) and work-related burnout (<math>p = .029</math>)</p> <p>3-month follow-up scores: Compassion satisfactions were significant (<math>p = .810</math>). Scores on the burnout scales were less than preintervention, were reported to be higher at the 3-month follow-up than immediately following the intervention.</p>	<p>Limitation small sample size and that the nurse managers were from the same organization. Recruiting subjects from various organizations can bring different experiences to the study group.</p> <p>Interpretation The study's findings show a beneficial effect of mindfulness on the quality of life and burnout among nurse leaders. A 3month follow shows less clear impact – suggesting that recurrent reinforcement of the MI is necessary to sustain the practice of mindfulness among nurse managers.</p>

CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Fortney, L., Luchterhand, C., Zakletskaia, L., Zgierska, A., &amp; Rakel, D. (2013). 05. abbreviated mindfulness intervention for job, satisfaction, quality of life, and compassion in primary care clinicians: A pilot study. <i>Global Advances in Health and Medicine</i> 2(1_suppl), gahmj.2013.097 C. <a href="https://doi.org/10.7453/gahmj.2013.097cp.s05">https://doi.org/10.7453/gahmj.2013.097cp.s05</a></p>	<p>The study intended to establish the influence of attrition, burnout, and low work satisfaction of clinicians on health care. To understand and establish that the mindfulness intervention could enhance job satisfaction, quality of life and increase compassion among primary care providers.</p>	<p>Sample: Thirty primary care providers were recruited working at the university hospital department of family medicine, internal medicine, and pediatrics.</p> <p>Recruitment included word of mouth, email invite, flyers.</p> <p>Inclusion Criteria: A primary care physician, a nurse practitioner, works 50% of the time with direct patient care to attend most interventions.</p>	<p>Method A pilot study, pre-and post-design. Linear mixed-effect model analysis was used to evaluate changes in outcome measures.</p> <p>Intervention: At baseline, one day prior, eight weeks, and then nine months post-interventions.</p> <p>Participants completed online measures to explore burnout, anxiety, resilience, compassion, and stress.</p>	<p>The study confirms the findings that the mindfulness training course in decreasing job burnout indicators, depression, anxiety, and stress. Participants exhibited Improvements at baseline and at all three follow-up time points. At nine month post-intervention, there were marked improved scores on the Maslach Burnout Inventory Emotional Exhaustion (p = .009) Depersonalization (p = .006), Stress (p = .002) Depression (p = .001) Anxiety (p = .006) No significant changes in the 14-item Resilience Scale and the Santa Clara Brief Compassion Scale.</p>	<p>Discussion: Post-modified mindfulness intervention, which included a weekend training and two short follow-up evening sessions, significantly reduced burnout, depression, anxiety, and stress.</p> <p>Interpretation: Mindfulness intervention can help alleviate burnout among staff members and support the mental well-being of primary care providers.</p> <p>Limitations: The absence of a control group makes it difficult to know whether mindfulness interventions or normalizing effects worked over the period. Another limitation was the smaller sample size.</p> <p>Future Recommendations: Generalization is limited as study participants worked on their own level.</p>

CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Montanari, K. M., Bowe, C. L., Chesak, S. S., &amp; Cutshall, S. M. (2018). Mindfulness: Assessing the feasibility of a pilot intervention to reduce stress and burnout. Journal of Holistic Nursing, 37(2), 175–188. <a href="https://doi.org/10.1177/0898010118793465">https://doi.org/10.1177/0898010118793465</a></p>	<p>A pilot pre/post study to explore the feasibility of the usefulness of brief mindfulness intervention (MI) on nurse’s stress and burnout levels</p>	<p>Setting: Inpatient hospital setting</p> <p>Sample: N=77 RNs were recruited</p> <p>Age ranges from 29-31 years, &gt; 1-year experience in a hospital setting.</p> <p>Pre-survey N=52 Post Survey = 32 Completion rate of 42.8%</p>	<p>Design: Pre/post design, single-arm Qualitative and quantitative study</p> <p>Scales: MBI PSS Pre/post demographic questionnaires</p> <p>Intervention: A Mindfulness CD (9-20 min), soothing’s sounds machine along with breathing technique, weekly gratitude journal for a total of 6 weeks on weekends. A quiet place and dim lighting were utilized to practice mindfulness.</p>	<p>The study's findings showed no statistically significant changes in PSS score (p=.79). There was some increase in the mean PSS score</p> <p>MBI scores for subscales of EE, depersonalization, and personal accomplishment (PA) showed an improvement.</p> <p>75% of the participant reported a feeling of being positive and will assist in managing stress at work.</p> <p>84.9% of the participants reported that they would engage in future mindful programs.</p> <p>60.6% of the respondents reported a lack of time during shifts to implement MI.</p>	<p>Discussion: A barrier to using MI was lack of time. This study warrants for more research into brief MI.</p> <p>Participants related mindfulness as a time to refocus, rejuvenate and relax.</p> <p>Limitations: Small sample size which made it challenging to detect changes in stress and burnout. Another limitation is the self-reporting on account of using MI. The small sample size impedes the need to detect differences in the MBI and the PSS scores.</p>

CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Penprase, B., Johnson, A., Pittiglio, L., &amp; Pittiglio, B. (2015). Does mindfulness-based stress reduction training improve nurse satisfaction? <i>Nursing Management</i>. 46(12), 38–45. <a href="https://doi.org/10.1097/01.numa.000470772.17731.e6">https://doi.org/10.1097/01.numa.000470772.17731.e6</a></p>	<p>To establish that teaching mindfulness techniques to students during nursing programs and RNs in the ICU setting in the hospital can assist in learning to stay in the moment, which can contribute to higher job satisfaction, lower risk of burnout, and improved physical health.</p>	<p>Setting: Large hospital and a nursing school</p> <p>Sample: BSN accelerated program nursing students at a nursing school and ICU nurses at a large hospital.</p> <p>n=14 ICU nurses n=21 nursing students</p> <p>Recruitment of participants was tough as nurses push their own self-care to help others.</p>	<p>Design A quality improvement project. Pre-pilot program Pre/post interventions.</p> <p>An eight-week in-person MBSR program to analyze the reduced stress in nursing students and ICU nurses.</p> <p>Interventions: Mindfulness techniques included meditation techniques, discussions, and homework assignments.</p> <p>Activities included walking meditation, yoga, journaling, breathing techniques</p>	<p>Weekly logs showed practicing mindfulness practice had a strong impact, also contributed to better job satisfaction, lower burnout, and enhanced physical health</p> <p>Descriptive results showed mindfulness training positively influenced the reaction of nursing students and ICU nurses to stressors.</p> <p>The nurse manager and the nursing faculty noted a positive change in how the staff handled stressful situations. Attrition rate 100%</p>	<p>Discussion Of the 14 nurses, four nurses only completed the entire 8week program. Several continued to last two weeks due to a small sample size unable to evaluate the program statistically. Of 21 nursing students, none of them completed the full training. Interpretation: Mindfulness training can help nurses decrease stress, burnout and increase positive attitude and overall mood Limitations The attrition rate impacted the study. Small sample size Nurses were busy in their hectic settings. Need to find nurse coverage during the interventions. Future research needs t to apply a shorter MBSR program to accommodate nurses and nursing students' busy schedules.</p>



CITATION	PURPOSE	SAMPLE/SETTING	METHODS (Design, Interventions, Measures)	RESULTS	DISCUSSION, INTERPRETATION, LIMITATIONS
<p>Penque, S. (2019b). Mindfulness to promote nurses well-being. Nurse Manager, 50(5), 38–44.  <a href="https://doi.org/10.1097/01.numa.000557621.42684.c4">https://doi.org/10.1097/01.numa.000557621.42684.c4</a></p>	<p>To evaluate the effect of MI on work satisfaction and reduction in stress</p>	<p>A convenience sample of clinical nurses from all patient care units 83 RNs were recruited, 61 RNs completed the MBSR program  Age Group: Age 21 or older  Inclusion Criteria: English speaking with no pre-existing psychiatric history  Exclusion Criteria: Previously, MBSR program trained RNs were excluded or were already practicing mindfulness or were going to relocate in 6 months</p>	<p>Design: Quasi-experimental, longitudinal, pretest and posttest, correlational study design.  Intervention: 2 hours of MI per class 7-hour retreat in between weeks 6 and 7. Kabat-Zinn's MBSR program inspired the program  The instructor was inspired by mindfulness practice center and a licensed family therapist and Before enrolment of participants  Prior power analyses were completed. The sample was calculated so 50 samples would influence 80% power to detect P&lt;.05  Instruments: Brief Freiburg Mindfulness Inventory, Maslach Burnout Inventory, Self-compassion Scale.  Data collection 3 months before intervention, right before intervention and three months after the intervention.</p>	<p>Results were analyzed with paired t-tests from 53 nurses to measure the pre-and post-reaction to MBSR intervention 95% sample was female, which is representative of this hospital's nurse population.  Within-group analysis - paired t-tests demonstrated a statistically marked positive change in self-compassion and mindfulness, patience after the MBSR intervention. Empathy was measured on the Interpersonal Reactivity Index, illustrated a statistically significant difference after MBSR implementation.  A paired comparison technique was used, and staff numbered the significance of each Index of Work Satisfaction subscale: interaction (4.69), autonomy (3.7), task (3.0), pay (3.0), organizational policies (2.9), and professional status (2.7).</p>	<p>Discussion: Significant changes need to be made in MI to adapt to the hectic schedules of hospital nurses.  Interpretation: There is a decrease in fatigue and burnout and improvement in mindfulness, self-compassion, and patience using MBSR and its daily practice.  The most a critical aspect of implementing MI training for nurses is to develop a program that can accommodate the busy schedules  The limitation is that the study didn't utilize a randomized controlled trial, and there was no comparison/control group.  Strength of the the study includes a low attrition rate, efficiency of recruitment, and analysis.</p>

BSN= Bachelor of Science in Nursing, CBI = Copenhagen Burnout Inventory, EE= Emotional Exhaustion, HCP= Health Care Providers, MBI = Maslach Burnout Inventory, MBSR – Mindfulness, Based Stress Reduction, MI = Mindfulness Intervention, MIHP = Mindfulness Intervention for Health Care Providers, Perceived Stress Scale (PSS), Professional Quality of Life scale = ProQOL,

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