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Implementation of Mindfulness-Based Intervention to Reduce Compassion Fatigue and Burnout

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Executive Summary

Background and Problem Statement

Compassion fatigue and burnout are commonly experienced by healthcare professionals due to working in stressful situations while utilizing their sense of self in the provision of care (Baguley et al., 2020; Lee et al., 2019; Zhang et al., 2018). Compassion fatigue and burnout are attributed to high turnover rates seen in the nursing field, estimated to reach 400,000 by 2025 (Brown et al., 2018). In addition to the financial burden incurred by healthcare systems, burnout can have detrimental health consequences for the nurses (Ameli et al., 2020; Lee et al., 2019; Pospos et al., 2018). Although most employers provide access to employee assistance programs and promote self-care, accessible and effective stress reduction strategies are rarely used in real-time. Addressing these issues through the implementation of strategies and supportive programs rooted in mindfulness has the potential to decrease burnout and improve retention (Brown et al., 2018). The need to address these issues inspires the following question: Does implementation of a mindfulness-based intervention in the workplace reduce the development of compassion fatigue and burnout among nurses and other healthcare professionals?

Purpose and Aims

The purpose of this project was to implement and evaluate a mindfulness-based intervention for high-risk providers in a long-term healthcare facility. The aims of this project were: (a) to assess a baseline level of compassion satisfaction and compassion fatigue, which includes burnout and secondary traumatic stress, among the healthcare staff members; (b) to implement an effective and accessible mindfulness-based intervention; and (c) reduce the negative implications related to compassion fatigue and burnout.

Methods

Project design and setting. Quality improvement with a quasi-experimental pre and post-test design in a long-term care skilled nursing facility in King County.

Participants and recruitment. Participants included certified nursing assistants, registered nurses, and other allied health professionals. The project was introduced to prospective participants during daily team huddles. Invitations to participate along with informed consent were conducted via work email.

Intervention. A mindfulness intervention was delivered via the mobile application *Headspace*, which introduces techniques that could be utilized in real time during work hours.

Data collection and Results. Data was collected via a combination of qualitative and quantitative questions and the use of a pre and post-intervention administration of the Professional Quality of Life Scale (ProQOL) Version 5 to measure compassion satisfaction, burnout, and secondary traumatic stress. Data was analyzed following the completion of the interviews and surveys. Trends in the pre- to post-intervention ProQOL scores indicated increased compassion satisfaction and decreased burnout and secondary traumatic stress among project participants.

Implications for Practice

This project provided findings regarding the current levels of burnout and compassion fatigue experienced by patient-facing staff members and provided effective mindfulness-based strategies that can be utilized to actively mitigate stress and promote resiliency in the workplace. These findings should prompt future allocation of resources toward the reduction of burnout and compassion fatigue at the organizational level.

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Implementation of Mindfulness-Based Intervention to Reduce Compassion Fatigue and Burnout

Statement of the Problem

It is well documented that compassion fatigue and burnout are commonly experienced by healthcare professionals due to their propensity to work in stressful situations while utilizing their sense of self in the provision of care (Lee et al., 2019). Compassion fatigue and burnout are often attributed to high turnover rates seen within the nursing field, estimated that a rise in the nursing shortage will reach 400,000 by 2025 (Brown et al., 2018). In addition to the financial burden incurred by healthcare systems totaling over $30,000 per nurse, burnout can have detrimental health consequences for nurses, including increased rates of depression and suicidality (Ameli et al., 2020; Lee et al., 2019; Pospos et al., 2018). Although most healthcare employers provide access to employee assistance programs and often promote self-care, readily accessible and effective stress reduction strategies are rarely encouraged or used during work hours. Addressing compassion fatigue and burnout in healthcare settings through the implementation of strategies and supportive programs rooted in mindfulness and resilience strengthening have the potential to decrease burnout and improve retention (Brown et al., 2018).

Available data clearly indicate that healthcare providers are at high risk for the development of compassion fatigue and burnout leading to a plethora of health issues for the individual, as well as many negative implications for healthcare employers. A review of current literature indicates a relationship between compassion fatigue and burnout. The need to address the issues of compassion fatigue and burnout experienced by nurses and other healthcare professionals inspires the following question: Does implementation of a mindfulness-based intervention in the workplace reduce the development of compassion fatigue and burnout among nurses and other healthcare professionals?

Background and Literature Review

Compassion and Compassionate Care

Individuals are often drawn toward caring professions due to their desire to care for and heal others (Lee et al., 2019). Thus, healthcare professions, specifically nursing, have become synonymous with compassion. Nurses are known to provide support, healing, and encouragement, and these qualities are not only expected from healthcare professionals, but also anticipated by all patients, further emphasizing compassion as a virtue inherent to the nursing profession (Baguley et al., 2020; Lee et al., 2019; Zhang et al., 2018). Compassion can be defined as empathy toward the suffering of others coupled with a desire to alleviate it or more simply as the deliberate participation in another's suffering (Lee et al., 2019; Zhang et al., 2018). Of note, it is suggested that compassion consists of various elements—recognition of suffering, understanding the universal nature of human suffering, empathy for the individual suffering, tolerability of uncomfortable feelings, and motivation to act or alleviate suffering (Baguley et al., 2020). Additionally, compassionate care can be further explained as an altruistic quality that is fundamental to the nursing profession, and thus of equal value when compared to other nursing qualities such as critical thinking skills and clinical competency (Lee et al., 2019). It can be surmised that nurses and other healthcare professionals are prone to the negative consequences that arise from the frequent provision of compassionate care.

Compassion Fatigue and Burnout

Due to the frequency in which nurses actively provide compassionate care, it is natural that frequent exposure to the suffering of others can result in consequences such as the development of compassion fatigue and burnout. Compassion fatigue is described as stress resulting from repeated exposures to sick and/or traumatized individuals, and it is a convergence

of secondary stress and burnout. It is important to emphasize that compassion fatigue is a progressive, cumulative process due to interactions that are prolonged, intense, and continuous in high-stress environments (Cocker, F., & Joss, N., 2016; Lee et al., 2019; Monsalve-Reyes et al., 2018; Zhang et al., 2018). Similarly, burnout is described as a prolonged response to chronic emotional and interpersonal stressors caused by work and resulting in a syndrome marked by depersonalization and emotional exhaustion combined with feelings of low personal accomplishment—depleting one's ability to cope with their environment—and it is implicated in the development of compassion fatigue (Botha et al., 2015; Cocker & Joss, 2016; Zhang et al., 2018; Zhang et al., 2020). Both compassion fatigue and burnout are cumulative outcomes that are experienced because of multiple contributing factors.

Factors Contributing to Compassion Fatigue and Burnout

The incidence of compassion fatigue and burnout are multifactorial. As mentioned previously, nurses are continuously required to provide high levels of compassionate care to patients in stressful environments. Other important factors contributing to these negative outcomes include workload, moral distress, poorly established support systems, and workplace bullying (Brown et al., 2018). Botha et al. (2015) further postulate that stress related to staffing shortages, an increase in medically complex patients, financial constraints imposed by upper-level management, and the requirement to remain up to date with constantly changing policies, procedures, and technology can also impact the development of burnout. In relation to stress, causative factors impacting workload include turnover, increases in nurse-to-patient ratios, and an increase in inexperienced coworkers, while causative factors of moral distress include inadequate training related to end-of-life care (Botha et al., 2015; Brown et al., 2018).

Implications of Compassion Fatigue and Burnout

There are many negative consequences that arise from repeated exposure to the stress experienced by nurses. Compassion fatigue and burnout impact both personal and professional quality of life and ultimately compromise the quality of care provided to patients and their families, and over time, nurses can become callous and uncaring toward patients and unhappy about their work environment which exacerbates compassion fatigue and burnout for all involved (Brown et al., 2018; Lee et al., 2019; Monsalve-Reyes et al., 2018). As shown in Table 1, the manifestations of compassion fatigue experienced by healthcare workers can be categorized into four categories: physical, behavioral, psychological, and spiritual (Lee et al., 2019). The accumulation of these manifestations can lead to debilitating conditions such as depression, anxiety, post-traumatic stress disorder (PTSD), and increased dependence on negative coping behaviors such as alcohol and drug abuse (Ameli et al., 2020; Brown et al., 2018; Cocker & Joss, 2016; Lee et al., 2019). Of significant importance is the increased rate of depression and suicidality experienced by healthcare professionals (Ameli et al., 2020; Pospos et al., 2018). Specifically, the Centers for Disease Control and Prevention (2021) reported that 93% of healthcare workers are experiencing stress, 86% anxiety,76% exhaustion and burnout, and 75% report feeling overwhelmed (CDC, 2021).

In addition to the negative impacts that are experienced individually, Lee et al. (2019) further describe how compassion fatigue can create significant burdens for healthcare systems. Along with increases in absenteeism and decreased quality of care in the form of medical errors and decreased patient safety, employers can encounter an increase in worker's compensation costs related to stress and anxiety, high turnover rates, and increased interpersonal friction between employees and management (Brown et al., 2018; Lee et al., 2019; Pospos et al., 2018).

The issues of absenteeism and evolving interpersonal relationships can intensify and result in decreased productivity. Furthermore, increased turnover rates and absenteeism can result in significant financial burden for organizations that cannot be overlooked (Brown et al., 2018; Lee et al., 2019; Pospos et al., 2018). For example, the turnover associated costs for a registered nurse range from $37,700 to $58,400, while costs associated with absenteeism are estimated at $3,660 per year for hourly employees and $2,660 per year for salaried employees (Lee et al., 2019).

Table 1

Manifestations of Compassion Fatigue in Healthcare Workers

Physical	Behavioral	Psychological	Spiritual
● Exhaustion ● Insomnia ● Compromised immunity ● Somatization ● Headaches ● Sleep disturbance ● Fatigue ● Emotional exhaustion ● Hypochondria	● Increased alcohol intake ● Anger and irritability ● Strained personal relationships ● Absenteeism ● Attrition ● Avoidance of patients ● Impaired clinical decision making ● Compromised patient care	● Emotional exhaustion ● Relational distancing ● Negative self-image ● Depression ● Reduced ability to feel sympathy and empathy ● Cynicism ● Resentment ● Professional helplessness ● Diminished enjoyment & career satisfaction ● Irrational fears ● Intrusive imagery ● Avoidance	● Lack of spiritual awareness ● Disinterest in introspection ● Poor judgement ● Decrease in discernment

Note. Adapted from Lee et al. (2019) pg. 770.

Screening and Measurement Tools

It is imperative to identify and measure compassion fatigue and burnout to effectively address the consequences they pose (Lee et al., 2019). The selection of appropriate tools should be limited to those with demonstrated reliability and validity for the population in question, and they should target compassion fatigue, burnout, stress, and resilience at baseline and at other appropriate intervals (Lee et al., 2019). A variety of validated tools can be utilized such as the Maslach Burnout Inventory (Kriakous et al., 2020; Orellana-Rios et al., 2018; Zhang et al., 2020), the Perceived Stress Scale-10 (Ameli et al., 2020; Botha et al., 2015; Kriakous et al., 2020; Orellana-Rios et al., 2018; Zhang et al., 2020), and the Professional Quality of Life Scale (Cocker, F., & Joss, N., 2016; Lee et al., 2018). Other effective measurement tools include the Compassion Fatigue Short Scale (Zhang et al., 2020), the Connor-Davidson Resilience Scale (Brown et al., 2018; Zhang et al., 2020), and the Depression and Anxiety Stress Scale (Botha et al., 2015; Zhang et al., 2020).

Management Strategies

Several strategies can be implemented to mitigate the effects of compassion fatigue and burnout. Resilience building, mindfulness and compassion-based interventions, and technology-based interventions such as web and mobile applications have been studied in the management of compassion fatigue and burnout experienced by nurses and other healthcare professionals.

Resilience. Brown et al. (2018) postulate that there is a correlation between resilience and burnout among nurses. Thus, the introduction and implementation of strategies that increase resiliency should be of high priority for organizational leaders. According to Brown et al. (2018), resiliency can be defined as “an individual’s ability to overcome an adverse situation with optimism and self-control” (pg. 349); as well as “the ability to overcome stress by using external

and internal coping strategies" (pg. 349). Nurses who are skilled in resiliency possess a variety of similar personality traits. These include optimism, self-efficacy, hope, flexibility, and they are skilled in the areas of problem solving and critical thinking (Brown et al., 2018). Additionally, there is a possibility that resilience increases with increased nursing experience, however further research needs to be conducted in this area to confirm a correlation (Brown et al., 2018). The following management strategies are effective in increasing resiliency and overcoming the challenges created by compassion fatigue and burnout.

Mindfulness-Based Interventions. Mindfulness can be defined as "paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of moment-by-moment experiences" (Ameli et al., 2020, para. 2; Botha et al., 2015, pp. 22–23; Kabat-Zinn, 2013). Management strategies rooted in mindfulness have been proven to be effective and feasible when implemented at individual and organizational levels. At the individual level, they have shown efficacy in the reduction of occupational stress, anxiety, depression, and burnout, while they have been shown to improve self-compassion and spiritual wellbeing, increase patient satisfaction, error recognition, clinical insight, and decrease medical errors at the organizational level (Ameli et al., 2020; Brown et al., 2018; Conversano et al., 2020; Orellana-Rios et al., 2018). Additionally, mindfulness is often regarded as a tool that effectively enhances work sustainability (Orellana-Rios et al., 2018).

Mindfulness-Based Stress Reduction (MBSR) is an evidence-based method for the improvement of the psychological health outcomes experienced by healthcare providers (Conversano et al., 2020; Kriakous et al., 2020). MBSR is typically an eight-week long program consisting of weekly two-and-a-half hour meetings and concluding with a one-day six-hour retreat (Ameli et al., 2020; Botha et. al, 2015). MBSR programs generally consist of mindfulness

meditation, body awareness, and yoga to increase mindfulness. It ultimately facilitates relaxation and calms the mind by focusing on the present moment (Botha et al., 2015). Of note, mindfulness-based interventions have been shown to improve attention, concentration, cognition, and behavior and psychological processes which influence day-to-day functioning and quality of life (Botha et al., 2015; Conversano et al., 2020). Mindfulness exercises are associated with promoting lower reactivity to stressors and negative emotional stimuli due to its influence on the body's stress response through reduced activation of the hypothalamic-pituitary-adrenal axis and secretion of cortisol, which in turn results in greater brain neuroplasticity (Conversano et al., 2020).

Compassion-Based Interventions. Compassion-based interventions are like mindfulness-based interventions in that they also utilize meditation. Loving-kindness meditation and compassion meditation, both focus on intentionally cultivating happiness and eliciting feelings of impartial kindness, warmth, and benevolence towards the self and others (Conversano et al., 2020; Orellana-Rios et al., 2018). Engaging in these meditative practices has been correlated to the activation of the positive affect system, including the medial orbitofrontal cortex, the nucleus accumbens, and the ventral striatum, resulting in increased positive emotions, affiliation, connectedness, altruism, and love when encountering stressful situations (Conversano et al., 2020; Orellana-Rios et al., 2018). Overall, engaging in self-care behaviors is an effective strategy to maintain compassion and continue providing compassionate care (Baguley et al., 2020).

Technology-Based Interventions. According to Pospos et al. (2018), web-based and mobile applications have been shown to effectively mitigate stress, burnout, depression, and suicidal ideations in several populations. Web and mobile application-based interventions are

attractive for many healthcare professionals for a multitude of reasons. For example, healthcare workers cite concerns related to confidentiality, stigma, career implications, cost, and time constraints as barriers impacting their ability to seek traditional interventions. Additionally, digital resources offer convenience, affordability, and confidentiality, and they can act as catalysts for participants to seek formal treatments as needed. There are a variety of applications currently available that specifically target stress, burnout, depression, and suicide prevention, and they are generally rooted in mindfulness and Cognitive Behavioral Therapy principles. Pospos et al. (2018) acknowledge further evaluation is necessary to fully determine efficacy and relevance since most applications target the general public and do not specifically cater to healthcare professionals.

Current literature reveals healthcare professionals, including nurses, are high risk for experiencing compassion fatigue and burnout, causing a multitude of detrimental manifestations impacting physical, behavioral, psychological, and spiritual wellbeing. Additionally, many costly implications exist, ultimately impacting management teams and healthcare organizations due to compassion fatigue and burnout. A variety of effective management strategies shown to mitigate the negative consequences of this phenomenon of interest were also reviewed.

Project Purpose and Aims

Given the prevalence of compassion fatigue and burnout among nurses and other healthcare professionals, the purpose of this project was to implement and evaluate a mindfulness-based intervention for nurses and other high-risk providers in a long-term healthcare facility. As mentioned previously, mindfulness-based interventions have been proven to increase resiliency and mitigate the challenges that arise from increased stress, anxiety, depression, and burnout. Specific aims of project were: (a) to assess a baseline level of compassion satisfaction

and compassion fatigue, which includes burnout and secondary traumatic stress, among the healthcare staff members; (b) to implement an effective and accessible mindfulness-based intervention; and (c) reduce the negative implications related to compassion fatigue and burnout.

Theoretical Framework

A translational science theory provides an organizational framework for this project. Specifically, Lewin's Change Theory was selected due to its assertion that behavioral change is a dynamic balance of driving and restraining forces working against each other, as well as a state of equilibrium, within an organization or field (Camacho Carr, 2021; Petiprin, 2020). Lewin's change theory process consists of three stages: unfreezing, changing, and refreezing. The goal of the unfreezing stage involves assessing what needs to change, obtaining support from leadership, creating a need for change, and addressing doubts or concerns (Camacho Carr, 2021; Shirey, 2013). In this stage, it is imperative to increase driving forces that positively impact the change and decrease restraining forces that negatively impact the proposed change (Petiprin, 2020). Next, the change phase is largely rooted in effective communication, empowering, and involving the appropriate stakeholders to ensure that the proposed change effectively targets thoughts, feelings, and behaviors (Camacho Carr, 2021; Pepitrin, 2020). Lastly, the refreezing stage is aimed at anchoring and sustaining the change into the organization's culture, as well as providing continued support and training (Camacho Carr, 2021; Pepitrin, 2020).

Methods

Design

This project focused on quality improvement using a quasi-experimental one group pre and post-intervention design to implement and evaluate a mindfulness-based intervention for health care providers in a long-term care facility. The project aimed to assess the baseline level

of compassion fatigue and burnout among health care staff, implement and effective and accessible mindfulness-based intervention, and evaluate the efficacy of the intervention in reducing compassion fatigue and burnout.

A pre and post-test design was followed using electronic 5-point Likert scale surveys administered before and after implementation of the intervention. The surveys were the primary source of data, and they were utilized to assess the level of compassion fatigue and burnout currently experienced by program participants. The post-intervention survey incorporated open-ended questions, consistent with qualitative methods.

Seattle University's College of Nursing and Institutional Review Board (IRB) approved the project prior to implementation. Informed consent was obtained prior to project participation. All participants were given a physical and electronic copy of the informed consent information sheet to keep for their records.

Setting

Implementation occurred at Bailey-Boushay House (BBH), a 35-bed long-term skilled nursing facility and outpatient program associated with a larger hospital system in Seattle, WA (Bailey-Boushay House, 2022). Bailey-Boushay House specializes in the provision of specialized and comprehensive care for underserved populations, individuals with HIV/AIDS, and end-of-life care for individuals suffering from various neurodegenerative diseases (Bailey-Boushay House, 2022).

Participants

Project participants included certified nursing assistants, registered nurses, and other allied health professionals working within the facility; however, participation was opened to all interested BBH employees. The participation of patient-facing employees was imperative to the

project's success due to the frequency in which they provide direct patient care. Thus, inclusion criteria were based on regular and direct interaction with patients, while exclusion criteria were determined by lack of patient interaction. Bailey-Boushay House currently employs a variable number of staff, thus, it was impractical to estimate the final number of project participants. Twenty-two (n= 22) participants completed the pre-intervention survey. Of those participants, a total of 12 (n= 12) participants completed the post-intervention survey. There were no exclusions due to lack of direct patient care. Due to the small sample size and the need to ensure confidentiality, additional demographic information was not requested from participants.

The project description and intent were initially introduced to prospective participants during daily huddles, and additional invitations to participate in the project were delivered electronically via email to capture staff members who were not present for the daily huddles.

Intervention

The intervention was conducted via the mobile mindfulness and meditation smartphone application, *Headspace*, to promote flexibility among participants and safety in accordance with facility-imposed infection control precautions (Headspace, 2022). Online and smartphone-based mindfulness interventions have been shown to reduce stress, anxiety, depression. They also improve overall well-being and quality of life when compared to in-person mindfulness trainings (Economides et al., 2018; Pospos et al., 2018). Participants were asked to complete the *Meditate: Basics* series, which consisted of a total of 10 introductory meditation and mindfulness sessions, which incorporate breath awareness and body scanning (Economides et al., 2018). Each session was approximately 10 minutes in duration, completed over a two-week period beginning on February 24, 2022 and ending on April 15, 2022. Participants were given the freedom to complete their sessions within two weeks during the specified dates to accommodate their

schedules. They were encouraged to complete one session per day and to incorporate the mindfulness techniques learned into their workday.

Measures

The Professional Quality of Life (ProQOL) Version 5 measure (See Appendix A) was selected for this project as it is a widely used, reliable, and valid tool for the measurement of the positive and negative aspects of helping others (Cocker, F., & Joss, N., 2016; Lee et al., 2018; ProQOL, 2021; Stamm, 2010). The ProQOL is a self-report 30-item Likert scale measuring compassion satisfaction, burnout, and secondary traumatic stress. Ten questions are used within each of the 3 constructs. (ProQOL, 2021; Stamm, 2010). Each item is rated by participants from 1 (never) to 5 (very often), with results indicating the frequency in which one experiences that corresponding statement (ProQOL, 2021; Stamm, 2010). Examples of items include: "I get satisfaction from being able to help people" (compassion satisfaction) (Stamm, 2010, p.26), "I feel worn out because of my work as a helper" (burnout) (p. 27), and "I feel depressed because of the traumatic experiences of the people I help" (secondary traumatic stress) (p. 26). ProQOL uses clear and concise language to minimize misinterpretation and account for varying literacy levels.

Data Collection

The online Qualtrics platform was utilized to gather quantitative and qualitative data including the ProQOL survey. Each participant was given access to an informational flyer describing the project containing the hyperlink and a QR code specific to the pre-intervention and post-intervention ProQOL (See Appendix B). The post-intervention ProQOL contained two additional open-ended questions. Each participant received a randomly assigned unique identification (ID) number via Qualtrics in the pre-intervention survey and then given a prompt to enter the ID number upon beginning the post-intervention survey. Participant responses

remained anonymous while comparing each participant's pre and post-intervention responses. Demographic information was not collected to protect anonymity due to the small sample size.

Data Analysis

Quantitative data analysis began following the completion of the post-intervention ProQOL surveys. A Seattle University Data Science graduate student was consulted for data analysis. Pre and post-intervention survey data was analyzed from Qualtrics to Excel. Collaboratory, a product from Google Research, was then utilized to conduct data analysis. Due to the attrition rates of participants for post-test an independent *t*-test was used. Pre and post-intervention differences were analyzed using the bootstrap confidence intervals technique. Qualitative data analysis began following the post-intervention survey which incorporated open-ended questions. Open-ended questions were transcribed and coded into corresponding categories with the goal of uncovering common themes from the data (Lobiondo-Wood & Haber, 2020).

Results

Quantitative Results

Twenty-two (n= 22) participants completed the pre-intervention survey, 12 (n= 12) participants completed the post-intervention survey. Mean and standard deviations for participants who completed both surveys, including those who completed only the pre-intervention surveys are depicted in Tables 2-3.

Table 2

Complete Study Participants Mean and Standard Deviation Comparisons

	Mean	**Standard Deviation**
CS	32.75	4.38
BO	30.17	3.46
STS	27.83	4.96

Note. N=12, pre + post-intervention survey participants. Complete study only includes participants who completed both the pre-intervention and post-intervention surveys.

Table 3

Incomplete Study Participants Mean and Standard Deviation Comparisons

	Mean	**Standard Deviation**
CS	37.0	6.6
BO	27.3	4.84
STS	22.5	4.98

Note. N=22, pre-intervention survey participants. Incomplete study only includes participants who completed the pre-intervention survey. CS = Compassion Satisfaction, BO = Burnout, and STS = Secondary Traumatic Stress.

Independent *t*-tests identified differences in each of the three constructs: compassion satisfaction, burnout, and secondary traumatic stress. Table 4 depicts the p values for participants with complete surveys (both pre and post) and participants who only completed the pre-intervention survey. Using an alpha level of 0.05, participants who completed both surveys did not differ significantly from those who only completed the pre-intervention survey in terms of

scores on the "compassion satisfaction" and "burnout" scales. There was a statistically significant difference in their scores on the "secondary traumatic stress" scale. The participants that did not complete both parts of the study (M = 22.5, SD = 4.98) scored significantly lower than those that did (M = 27.83, SD = 4.96). This indicates evidence of attrition bias, meaning that participants who only completed the pre-intervention survey had less secondary traumatic stress.

Table 4

Independent t-test for Differences in Scores for Complete vs. Incomplete

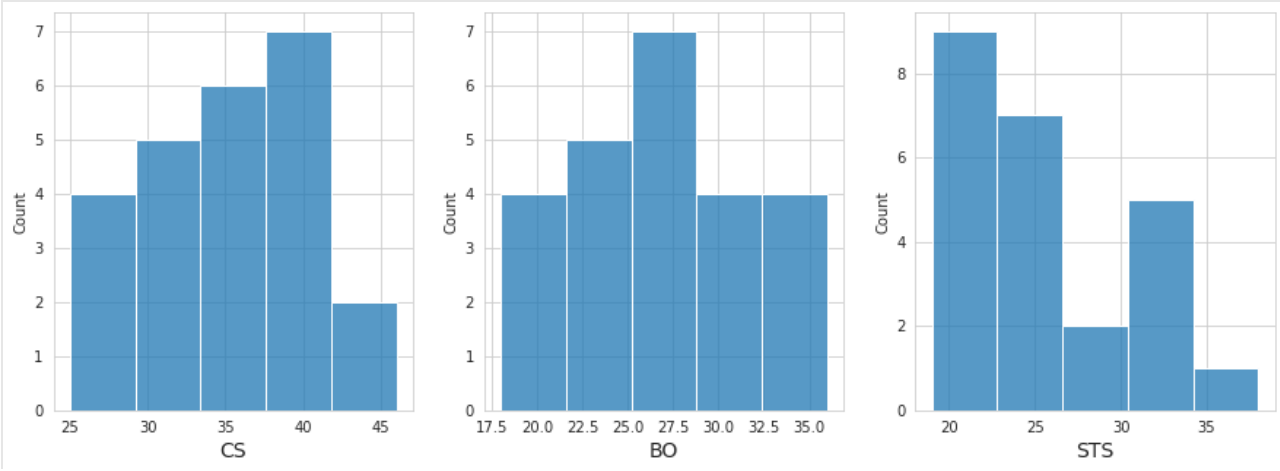
	***t*-test p value**
CS	0.101
BO	0.139
STS	0.027

Note. CS = Compassion Satisfaction, BO = Burnout, and STS = Secondary Traumatic Stress.

Figure 1 plots the distribution of scores for each of the constructs. The distribution of scores for the STS scale did not demonstrate a traditional bell curve, as most of the scores were on the lower end. The CS and BO scores did show normal distribution. Due to the lack of normality and small sample size, the use of paired-samples *t*-test was deferred.

Figure 1

Distribution of Scores for each Construct of the ProQOL



Note. N=12. ProQOL = Professional Quality of Life scale, CS = Compassion Satisfaction, BO = Burnout, and STS = Secondary Traumatic Stress.

A bootstrap confidence interval analysis was completed due to the abnormal distribution of the data and small sample size. Table 5 shows participants had a significant increase in CS scores from the pre-intervention to the post-interventions, with the average being an increase of five points. The 99% confidence interval of (1.83, 8.08) indicates that in 99% of samples, one would expect the increase in CS scores to be between 1.83 and 8.08 points. For the BO scale, participants showed a significant decrease in scores from pre-intervention to post-intervention, with the average change being a decrease of 6 points. The 99% confidence interval of (-3.58, -8.67) indicates that in 99% of samples, one would expect the decrease in BO scores to be between 3.58 and 8.67 points. Finally, for the STS scale, participants showed a significant decrease in scores from pre-intervention to post-intervention, with the average change being a decrease of 4.82 points. The 95% confidence interval of (-1.67, -7.83) indicates that in 99% of samples, one would expect the decrease in STS scores to be between 1.67 and 7.83 points. Figure 2 depicts a comparison of the scores for each construct from the pre-intervention survey to the post-intervention survey.

Table 5

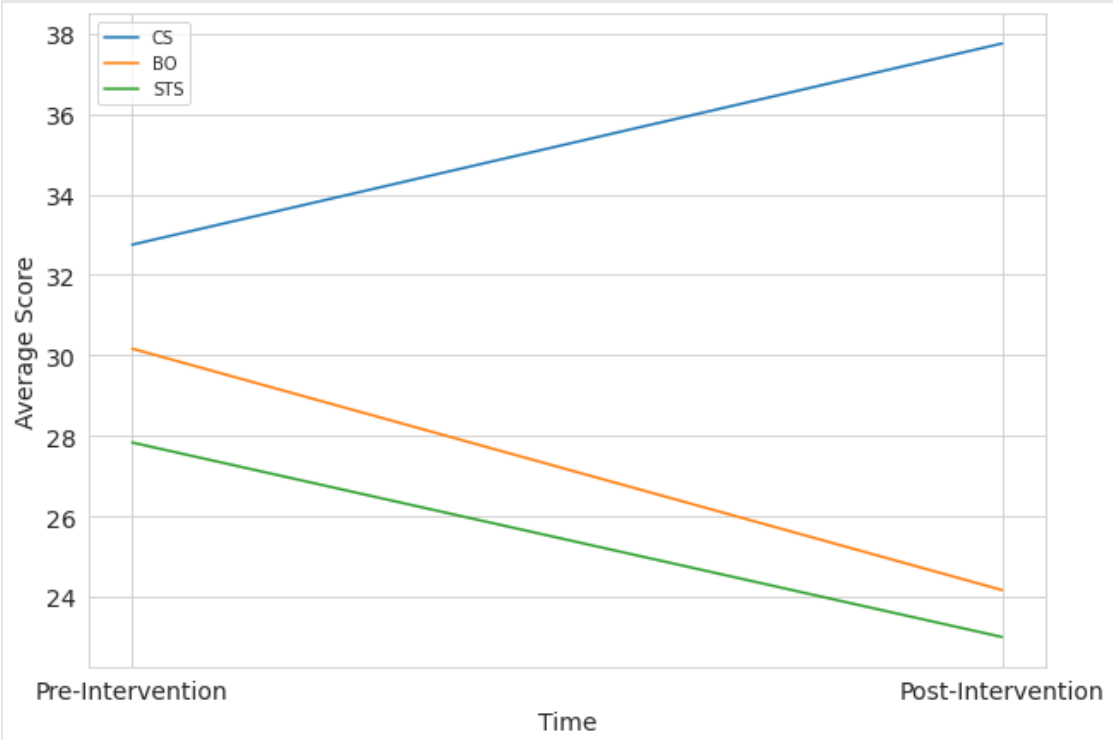
Bootstrap Analysis

	Bootstrap Mean Difference	99% CI for Mean Difference
CS	5.0	(1.83, 8.08)
BO	-6.0	(-3.58, -8.67)
STS	-4.82	(-1.67, -7.83)

Note. N=12. CI = Confidence Interval, CS = Compassion Satisfaction, BO = Burnout, and STS = Secondary Traumatic Stress.

Figure 2

Comparison of Pre and Post-Intervention Scores by Construct



Note. N=12. CS = Compassion Satisfaction, BO = Burnout, and STS = Secondary Traumatic Stress.

Qualitative Results

Analysis of the post-intervention open-ended questions revealed two prominent themes. Theme 1 revealed the use of the intervention, the *Headspace* mobile application, was beneficial. Subthemes of Theme 1 included: ease and simplicity of use and learning of mindfulness techniques in real time. Theme 1 addressed the open-ended question: "What did you enjoy about the Headspace mindfulness sessions?" Theme 2 indicated time, or lack thereof, was the primary obstacle preventing participants from utilizing mindfulness techniques in real time. Subthemes of Theme 2 included hectic, busy schedules and work-related distractions. Theme 2 addressed the open-ended question: "What barriers will prevent you from implementing mindfulness strategies during the workday?" Exemplar statements for Themes 1 and 2 are included in Tables 5-6.

Table 5

Exemplars for Theme 1

Benefits of Using the *Headspace* Mobile App
"Giving my mind/body time to rest and recover from the fatigue of helping others and busy workload."
"They allowed for dedicated quiet time which is often hard for me to do."
"[It was] short and easy to use."
"[It] helped me clear my head and focus on the moment."
"They help you relax in the moment and remember to breathe."
"A newer and better understanding of how to meditate and what to get out of it."
"Change up to the daily grind."
"Challenged by attempting new practices, due to fatigue."
"Taking a moment to myself."

"Easy app to use." *"They were simple and quick ways to get present & into my body, they really changed how I felt throughout the rest of the day."*

Table 6

Exemplars for Theme 2

Time
"Constant needs from clients, getting caught up in helping others versus helping myself."
"Time constraints; emergent patient needs."
"Hectic schedule."
"Busy-ness."
"Getting distracted with tasks and stress."
"Time. When I need to be mindful the most, that's when I have the least time to do it."
"Time."
"Feeling too frenetic at work to add anything."
"Finding time."
"Feeling crunched on time, noisy chaotic environments, sleep deprivation, etc."

Discussion

This project provided insight into the benefits of implementing mindfulness techniques within a long-term skilled nursing facility and outpatient program. Healthcare workers are more likely to develop compassion fatigue and burnout, and they suffer from the negative manifestations described in Table 1 (Cocker, F., & Joss, N., 2016; Lee et al., 2019; Monsalve-Reyes et al., 2018; Zhang et al., 2018). Thus, this project focused on the reduction of

compassion fatigue and its two subsets: burnout and secondary traumatic stress following completion of the intervention, the *Headspace* mobile application. Then intervention introduced participants to the basic mindfulness techniques of mediation, breath awareness, and body scanning. Additionally, the ProQOL was utilized prior to engagement with the intervention and again at the conclusion with the goal of detecting significant differences in participants' scores.

Evaluation of the project indicates the primary aims: assessment of the baseline level of compassion fatigue and burnout, implementation of an effective and accessible mindfulness-based intervention, and evaluation of the efficacy of the intervention in the reduction of compassion fatigue and burnout were met. This project has highlighted the stressors faced by that staff at the project site and will be foundational in the promotion of mindfulness strategies for this population.

Analysis of the participants' pre-to-post ProQOL scores yielded insights regarding the benefits and potential barriers of incorporating mindfulness techniques into a healthcare setting. Of the 12 fully completed pre/post surveys a positive trend is noted as depicted in Figure 2. Compassion satisfaction increased, while burnout and secondary traumatic stress each decreased following the completion of the introductory mindfulness meditation sessions. Additional benefits of the mindfulness intervention included self-reported relaxation and application of breath awareness and meditation techniques in real-time. Despite the initial plan to conduct mindfulness sessions in person, many of the participants alluded to the benefits of utilizing a mobile application-based intervention as the method of delivery. As mentioned previously, there are a multitude of reasons that make a mobile application-based method of delivery attractive for healthcare workers such as convenience, affordability, and confidentiality (Pospos et al., 2018). Project participants have expressed satisfaction given the statements highlighted in Table 5.

Identified barriers to the successful application of learned mindfulness techniques primarily include issues with finding time to engage in mindfulness due to the time-consuming nature of each participant's job responsibilities.

Overall, these insights emphasize the benefits that healthcare workers can derive from incorporating mindfulness techniques into their daily lives. Moreover, the hectic and emotional nature of healthcare demonstrates the impact on the mental and physical well-being of individuals working in the profession, exacerbated by the current pandemic, and further highlights the need for similar interventions for this specific population.

Limitations

Several limitations exist including issues related to the ongoing pandemic and participant attrition. One significant limiting factor was in relation to the ongoing pandemic and the associated facility-imposed infection control restrictions. While the author does not dispute the need for protocols aimed at reducing the spread of infection—especially within the context of a long-term care facility whose vulnerable patients are at higher risk for illness—it is difficult to overlook the obstacles that result from such restrictions. The principal investigator's initial plan included conducting mindfulness sessions in person at mandatory in-service events held by the organization's administration. This may have allowed for the potential increase in participant numbers as well as a meaningful dialogue and demonstration of mindfulness techniques between the principal investigator and project participants. Additionally, the intended implementation would have allowed consenting participants to the complete the pre-intervention ProQOL and ask questions in real time prior to practicing the learned techniques on their own over a two-week period. It would have culminated with the completion of the post-intervention ProQOL in-person at daily work huddles. This method of implementation posed significant challenges given

the inability to gather in large numbers in accordance with the facility's pandemic mitigation protocols. While the final method of delivery for the intervention allowed for more flexibility, it is important to note that a less structured format dependent on everyone's motivation could have the unintended outcome of less participation. This also speaks to the current feelings of burnout and inability to engage in self-care, likely contributing to attrition and overall small sample size.

Another limiting factor was the attrition of approximately 10 participants from beginning to end of the project. It is difficult to infer why these participants made the decision to discontinue their participation in the project. Due to confidentiality, it is unknown which participants did not continue, therefore, it was impractical to attempt to elicit information from them in the form of an additional survey. The principal investigator can only speculate that the small sample size was influenced by multiple external factors impacting participants such as stress related to home, work, and the pandemic; perceived time constraints; and the preexisting presence of the negative manifestations of compassion fatigue, burnout, and secondary traumatic stress.

Implications for Practice

The literature and findings discussed above indicate that nurses and other healthcare providers face a significant risk for the development of compassion fatigue and burnout due to their natural inclination to provide compassionate care for others in stressful environments. They are subsequently at risk for the development of a multitude of physical, behavioral, psychological, and spiritual manifestations. Additionally, prolonged compassion fatigue and burnout can increase turnover rates as well as lead to the development of various debilitating medical issues and increase suicidality. Anecdotally, nurses have felt increased pressure at work due to pandemic-imposed protocols, acuity of patients, unsafe nurse-to-patient rations, and long

hours combined with short-staffing. There is seemingly minimal to no opportunity to destress as life at home and in the community also comes with its own stressors, which contributes to the ever-present nursing shortage, creating a cyclical pathway to burnout for nurses who remain in the field (Brown et al., 2018).

The consequences of compassion fatigue and burnout reveal major concerns for healthcare organizations. Not only is there a significant financial impact incurred by organizations to continually replace and retrain new nurses, there is also an ethical duty to prioritize patient safety. Adopting and implementing policies including allocating time and resources for mindfulness-based interventions at the organizational level is imperative if nurses and other healthcare professionals are to effectively continue using their interpersonal and technical skills on a long-term basis.

Future Considerations and Recommendations

It is clear that compassion fatigue and burnout must be addressed using various management strategies to mitigate stress and increase resiliency. Evidence suggests that implementation of mindfulness-based stress reduction programs is not only feasible, but effective in the reduction of the detrimental consequences of compassion fatigue and burnout experienced individually as well as those experienced at the organizational level. The use of a web-based or mobile application can address barriers impacting participation in traditional interventions. Ultimately, utilization of an accessible mindfulness-based intervention will better equip nurses and other healthcare professionals with essential tools to provide high-quality compassionate care without depleting their innate desire to care for others while simultaneously caring for themselves.

Additionally, it is imperative to have a larger sample size to properly determine impact if this project is conducted at this site in the future. Utilization of a pre and post-intervention survey, such as the ProQOL, is recommended to collect data for analysis. Further in-depth analysis, perhaps via consultation from data analysists within the larger parent organization is warranted to ensure that findings are optimized. Lastly, qualitative analysis of the project indicated that time, or lack thereof, was an obstacle for most participants. It is essential on a systems level to incorporate self-care and allow for designated time for employees to engage in mindfulness techniques as part of the workday.

Lastly, application of Lewin's Change Theory as a guiding framework can be especially useful in the future as it helps establish a baseline assessment of compassion fatigue and burnout of nurses and begins to unfreeze previous behaviors. Concepts associated with change and refreezing can be seen as mindfulness-based interventions are introduced and new behaviors are learned. Ultimately, these newly learned behaviors and skills have the power to increase resiliency of clinical staff members, consequently reducing compassion fatigue and burnout.

Conclusion

This project offers valuable insight into the demand for mindfulness-based interventions within healthcare organizations and the impact these interventions can have on the compassion fatigue and burnout experienced by healthcare workers. Healthcare organizations typically offer some wellness resources; however, these services are underutilized and far from sufficient. Incorporating accessible mindfulness techniques into the day-to-day workflow of their employees must be prioritized. Healthcare workers have a moral and ethical obligation to their patients' wellbeing, and it is time for organizations to do the same for their staff to create long-term sustainability and overall health. This project's findings indicate that integration of

mindfulness interventions can be effective and have the potential for success when implemented at the systems level. Given the current state of healthcare, mindfulness interventions are more imperative than ever before, now is the time to act.

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Appendix A

PROFESSIONAL QUALITY OF LIFE SCALE (PROQOL)

COMPASSION SATISFACTION AND COMPASSION FATIGUE (PROQOL) VERSION 5 (2009)

When you *[help]* people you have direct contact with their lives. As you may have found, your compassion for those you *[help]* can affect you in positive and negative ways. Below are some-questions about your experiences, both positive and negative, as a *[helper]*. Consider each of the following questions about you and your current work situation. Select the number that honestly reflects how frequently you experienced these things in the *last 30 days*.

1=Never 2=Rarely 3=Sometimes 4=Often 5=Very Often

_____ 1. I am happy.
_____ 2. I am preoccupied with more than one person I *[help]*.
_____ 3. I get satisfaction from being able to *[help]* people.
_____ 4. I feel connected to others.
_____ 5. I jump or am startled by unexpected sounds.
_____ 6. I feel invigorated after working with those I *[help]*.
_____ 7. I find it difficult to separate my personal life from my life as a *[helper]*.
_____ 8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I *[help]*.
_____ 9. I think that I might have been affected by the traumatic stress of those I *[help]*.
_____ 10. I feel trapped by my job as a *[helper]*.
_____ 11. Because of my *[helping]*, I have felt "on edge" about various things.
_____ 12. I like my work as a *[helper]*.
_____ 13. I feel depressed because of the traumatic experiences of the people I *[help]*.
_____ 14. I feel as though I am experiencing the trauma of someone I have *[helped]*.
_____ 15. I have beliefs that sustain me.
_____ 16. I am pleased with how I am able to keep up with *[helping]* techniques and protocols.
_____ 17. I am the person I always wanted to be.
_____ 18. My work makes me feel satisfied.
_____ 19. I feel worn out because of my work as a *[helper]*.
_____ 20. I have happy thoughts and feelings about those I *[help]* and how I could help them.
_____ 21. I feel overwhelmed because my case [work] load seems endless.
_____ 22. I believe I can make a difference through my work.
_____ 23. I avoid certain activities or situations because they remind me of frightening experiences of the people I *[help]*.
_____ 24. I am proud of what I can do to *[help]*.
_____ 25. As a result of my *[helping]*, I have intrusive, frightening thoughts.
_____ 26. I feel "bogged down" by the system.
_____ 27. I have thoughts that I am a "success" as a *[helper]*.
_____ 28. I can't recall important parts of my work with trauma victims.
_____ 29. I am a very caring person.
_____ 30. I am happy that I chose to do this work.

YOUR SCORES ON THE PROQOL: PROFESSIONAL QUALITY OF LIFE SCREENING

Based on your responses, place your personal scores below. If you have any concerns, you should discuss them with a physical or mental health care professional.

Compassion Satisfaction _____

Compassion satisfaction is about the pleasure you derive from being able to do your work well. For example, you may feel like it is a pleasure to help others through your work. You may feel positively about your colleagues or your ability to contribute to the work setting or even the greater good of society. Higher scores on this scale represent a greater satisfaction related to your ability to be an effective caregiver in your job.

If you are in the higher range, you probably derive a good deal of professional satisfaction from your position. If your scores are below 23, you may either find problems with your job, or there may be some other reason—for example, you might derive your satisfaction from activities other than your job. (Alpha scale reliability 0.88)

Burnout_____

Most people have an intuitive idea of what burnout is. From the research perspective, burnout is one of the elements of Compassion Fatigue (CF). It is associated with feelings of hopelessness and difficulties in dealing with work or in doing your job effectively. These negative feelings usually have a gradual onset. They can reflect the feeling that your efforts make no difference, or they can be associated with a very high workload or a non-supportive work environment. Higher scores on this scale mean that you are at higher risk for burnout.

If your score is below 23, this probably reflects positive feelings about your ability to be effective in your work. If you score above 41, you may wish to think about what at work makes you feel like you are not effective in your position. Your score may reflect your mood; perhaps you were having a "bad day" or are in need of some time off. If the high score persists or if it is reflective of other worries, it may be a cause for concern. (Alpha scale reliability 0.75)

Secondary Traumatic Stress_____

The second component of Compassion Fatigue (CF) is secondary traumatic stress (STS). It is about your work related, secondary exposure to extremely or traumatically stressful events. Developing problems due to exposure to other's trauma is somewhat rare but does happen to many people who care for those who have experienced extremely or traumatically stressful events. For example, you may repeatedly hear stories about the traumatic things that happen to other people, commonly called Vicarious Traumatization. If your work puts you directly in the path of danger, for example, field work in a war or area of civil violence, this is not secondary exposure; your exposure is primary. However, if you are exposed to others' traumatic events as a result of your work, for example, as a therapist or an emergency worker, this is secondary exposure. The symptoms of STS are usually rapid in onset and associated with a particular event. They may include being afraid, having difficulty sleeping, having images of the upsetting event pop into your mind, or avoiding things that remind you of the event.

If your score is above 41, you may want to take some time to think about what at work may be frightening to you or if there is some other reason for the elevated score. While higher scores do not mean that you do have a problem, they are an indication that you may want to examine how you feel about your work and your work environment. You may wish to discuss this with your supervisor, a colleague, or a health care professional. (Alpha scale reliability 0.81)

WHAT IS MY SCORE AND WHAT DOES IT MEAN?

In this section, you will score your test so you understand the interpretation for you. To find your score on **each section,** total the questions listed on the left and then find your score in the table on the right of the section.

Compassion Satisfaction Scale

Copy your rating on each of these questions on to this table and add them up. When you have added then up you can find your score on the table to the right.

3. ____
6. ____
12. ____
16. ____
18. ____
20. ____
22. ____
24. ____
27. ____
30. ____

Total: ____

The sum of my Compassion Satisfaction questions is	And my Compassion Satisfaction level is
22 or less	Low
Between 23 and 41	Moderate
42 or more	High

Burnout Scale

On the burnout scale you will need to take an extra step. Starred items are "reverse scored." If you scored the item 1, write a 5 beside it. The reason we ask you to reverse the scores is because scientifically the measure works better when these questions are asked in a positive way though they can tell us more about their negative form. For example, question 1. "I am happy" tells us more about the effects of helping when you are *not* happy so you reverse the score

You Wrote	Change to
	5
2	4
3	3
4	2
5	1

*1. ____ = ____
*4. ____ = ____
8. ____
10. ____
*15. ____ = ____
*17. ____ = ____
19. ____
21. ____
26. ____
*29. ____ = ____

Total: ____

The sum of my Burnout Questions is	And my Burnout level is
22 or less	Low
Between 23 and 41	Moderate
42 or more	High

Secondary Traumatic Stress Scale

Just like you did on Compassion Satisfaction, copy your rating on each of these questions on to this table and add them up. When you have added then up you can find your score on the table to the right.

2. ____
5. ____
7. ____
9. ____
11. ____
13. ____
14. ____
23. ____
25. ____
28. ____

Total: ____

The sum of my Secondary Trauma questions is	And my Secondary Traumatic Stress level is
22 or less	Low
Between 23 and 41	Moderate
42 or more	High

Appendix B

SEATTLEU.
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Mindfulness for the Reduction of Compassion Fatigue and Burnout

Background:

Compassion fatigue and burnout can lead to physical, behavioral, psychological, and spiritual manifestations, which can accumulate and result in depression, anxiety, post-traumatic stress disorder, dependence on negative coping mechanisms, and even suicide (Ameli et al., 2020; Brown et al., 2018; Cocker & Joss, 2016; Lee et al., 2019).

Mindfulness-based interventions are proven to be effective when implemented at individual and organizational levels, and they are associated with lower reactivity to stressors and negative emotional stimuli (Ameli et al., 2020; Brown et al., 2018; Conversano et al., 2020; Orellana-Rios et al., 2018).

Step 1: Take Pre-Mindfulness Intervention Survey

- Scan the QR Code on the right or use this clikcable link: https://seattleux.qualtrics.com/jfe/form/SV_3VgkPPIQBN1oCto.
- Complete the Professional Quality of Life survey to measure your current level of compassion satisfaction, burnout, and compassion fatigue.
- Please write down or take a photo of your ID number.
- Your results will remain anonymous.

Step 2: Complete Mindfulness Intervention

- Download the Headspace App on your smartphone.
- Register for a FREE 14-Day Headspace Account*.
- Complete all ten sessions in the ***Meditate: Basics*** section.

Please see the attached document for instructions on how to navigate the Headspace app.

*If trial is not canceled within the 14-day trial period, charges to your account may apply.

Dont Forget: Take Post-Mindfulness Intervention Survey

- After completing the mindfulness intervention within your 14-day trial, scan the QR Code on the right or use this clickable link: https://seattleux.qualtrics.com/jfe/form/SV_beJzrdKeKpwCcMC.
- Complete a final Professional Quality of Life survey.
- You will have a chance to enter a raffle for one of four **$25 Amazon gift cards**.
- Your results will remain anonymous.

Questions?
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SEATTLEU.
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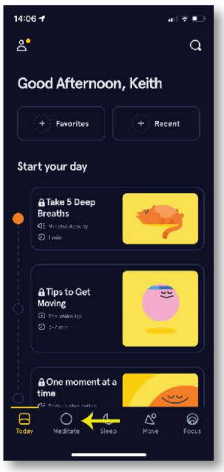
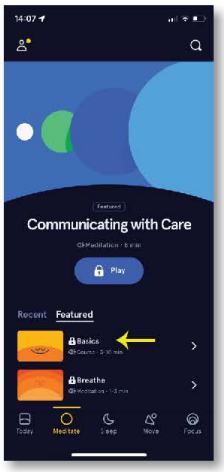
Mindfulness for the Reduction of Compassion Fatigue and Burnout

Installing the Headspace Smartphone App

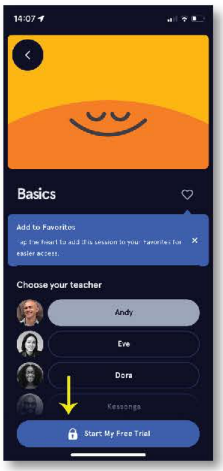
Step 1:
Download Headspace from your smartphone app store and create account.



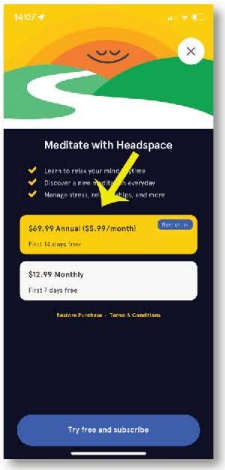
Step 2:
Click Meditate from the bottom menu.



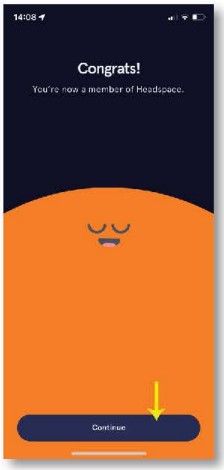
Step 3:
Click Basics from the featured menu.



Step 4:
Click the Start My Free Trial button.

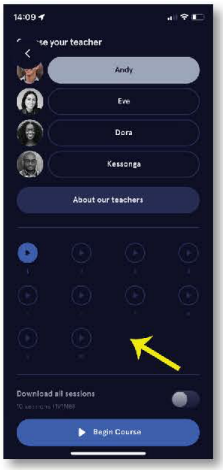


Step 5:
Choose the Annual option to receive 14 days free.
(Note: You must cancel to avoid charges)



Step 6:
Click the Continue button.

Step 7:
Choose your teacher and click the Begin Course button.



NOTE:
Complete all ten lessons within 14 days before completing final survey.

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