

Decreasing Employee Burnout Through Improved Resilience

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Notes from the Author

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I dedicate this DNP project in memoriam of my father, George Trapp, and my co-worker and friend, Amy Kessenich, whom I lost during the course of this program. These individuals set the ultimate example of hard work, excellence, perseverance, and integrity, which I will continually strive to emulate.

Abstract

Burnout rates for healthcare staff are continuing to rise at an alarming rate. Burnout can affect individual well-being, patient safety and satisfaction, quality of care delivered, and organizational costs. Improving staff resilience is one proven method to decrease burnout. This project aimed to reduce staff burnout rates by improving resilience. The participants were members of a healthcare unit comprised of clinical and non-clinical staff in an academic medical center that had burnout rates between 40-50% in 2019. Staff levels of burnout and resilience were measured through a web-based anonymous survey before and after the intervention. The eight-week resiliency program consisted of a 90 minute weekly virtual session alternating between guided mindfulness meditation and a didactic presentation on different resiliency-focused topics. The four weeks of mindfulness incorporated mindful breathing, body awareness, and loving-kindness through guided meditation and encouraged at-home mindfulness practice. The four weeks of education reinforced the science behind resiliency and how it can be improved with mindfulness, gratitude, kindness, and relationships. Additional optional web-based tools were provided during each educational session to enhance the utilization of resiliency skills. Sixty-five percent of staff participated in the Resiliency Program. A smaller subgroup participated in both surveys and the program, allowing for further analysis showing significant improvement in resiliency and reduction in burnout. The majority of participants were satisfied with the program and expressed interest in continuing with additional resiliency activities. This project combines several evidence-based resiliency improvement tactics that led to a reduction in burnout.

Keywords: Burnout, resiliency, resilience, mindfulness, resilience program, resilience education, well-being

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Section I. Introduction

Burnout is a term that psychologist Herbert Freudenberger began using in the 1970s to describe a phenomenon of negative physical and behavioral symptoms noted in those working with vulnerable populations (Freudenberger, 1974). Since that time, many studies have examined the causes, effects, and solutions of burnout, particularly in the healthcare setting. In 2019, burnout was added to the International Classification of Diseases, defined as a workplace condition that develops after repeated exposure to stress and manifests through feelings of emotional exhaustion, cynicism, and decreased engagement in one's job (World Health Organization [WHO], 2019). Given the prevalence and consequences of this phenomenon, organizations are actively looking for evidence-based solutions to combat burnout.

Background

The identified project site is an organizational unit within a large 957-bed academic medical center located in the Southeast. The unit furthers the organization's mission of improving community health by partnering with local hospitals to adopt evidence-based care models through consulting services and, in some cases, direct clinical care in the specialty areas of heart, cancer, stroke, and hospital quality. The unit employs 77 staff members, including 14 physicians, six advanced practice providers, 22 nurses, and additional healthcare administration, business, human resources, finance, law, and administrative professional employees (L. Purefoy, personal communication, 2021). Employees must function in highly public environments, in high-pressure situations, and in some instances, provide care in complex clinical environments (M. Sorensen, personal communication, 2021).

The organization began tracking burnout rates of employees through culture surveys in 2016 and has consistently noted rates of approximately 40% burnout of all staff and upwards of

50% burnout of clinical providers (M. Sorensen, personal communication, 2021). There has been an increased focus on the well-being of employees because this is a key driver of staff turnover, patient satisfaction, and quality (M. Volkringer, personal communication, 2021). This unit noted a staff turnover rate of 13.5% for fiscal year (FY) 2021, increasing from 8.89% in FY2020 (L. Purefoy, personal communication, 2021). This project focuses on addressing the unit's employee burnout rate.

Organizational Needs Statement

According to the National Academy of Medicine (NAM; n.d.), up to half of all nurses and physicians exhibit symptoms of burnout, with an estimated cost of \$4.6 billion per year. In addition, burnout is associated with increased organizational costs due to higher turnover rates, absenteeism, and lower employee engagement leading to decreased commitment to the job and the organization (Heijden et al., 2019; Maslach, 2018;). Burnout is also associated with quality and patient safety issues (Salyers et al., 2017), and burned-out employees can affect colleagues' performance and spread throughout the department (Maslach, 2018).

Burnout has become so prevalent and problematic in healthcare, posing a serious threat to achieving the main Triple Aim goal of population health improvement that a fourth aim was added focusing on "improving the work-life of clinicians and staff" (Bodenheimer & Sinsky, 2014, p.575). The Quadruple Aim is now broadly accepted to improve healthcare system functioning, focusing on improved clinician experience (Agency for Healthcare Research and Quality [AHRQ], n.d.). Given the prevalence and consequences of burnout, healthcare organizations need to understand how the phenomenon may be affecting the organization.

In 2019, the annual organizational employee culture survey showed a system-wide burnout rate of 38.6%, with a 3% increase among nursing and advanced practice providers

compared to 2017 (M. Sorensen, personal communication, 2021). In addition, the unit's employees had a burnout rate of 37% (M. Sorensen, personal communication, 2021), consistent with the organization as a whole and other healthcare organization burnout rates (NAM, n.d.). Well-being has since been identified as one of the organization's main strategic priorities on the journey to become a zero-harms institution (M. Volkringer, personal communication, 2021).

The FY2022 organizational strategic plan prioritized addressing burnout and wellness to improve employee well-being, especially given the recent additional demands from the COVID-19 pandemic (M. Volkringer, personal communication, 2021). During strategic planning for FY22, the targeted project unit developed a goal of improving well-being with a specific target of decreasing burnout rates compared to the FY19 baseline of 37% (D. Peter, personal communication, 2021). The 2020 organizational culture survey did not utilize a burnout tool, which is why 2019 is used for goal-setting purposes. Many studies have shown positive effects of resiliency on burnout (Brown et al., 2018; Bruschein & Gettle, 2020; Guo et al., 2017). This project focused on establishing staff's current burnout and resiliency rates, followed by evidence-based interventions to increase resiliency, and concluded with re-measuring burnout and resiliency rates.

Problem Statement

Over one-third of the targeted project unit employees reported burnout in 2019. Burnout can negatively affect the quality of work and productivity. Increased organizational costs, including turnover rates, are also a result of an environment where burnout is prevalent.

Purpose Statement

The purpose of this project was to decrease the burnout rate for unit employees through improved resilience.

Section II. Evidence

The literature search was conducted through the East Carolina University Laupus Library. Several databases were searched, including PubMed, Ovid Synthesis, and Cumulative Index to Nursing and Allied Health Literature (CINAHL). A literature search log was maintained to ensure consistency in search terms. All database searches included only articles published in English between 2016 and 2021. Given the large number of articles published on burnout and resiliency, multiple other limitations were used to result in a specific and reliable set of articles.

Literature Review

An initial search in PubMed under the term ‘burnout’ revealed over 20 thousand articles. To narrow the search to be more reliable to the unit population, studies were removed that were specifically related to direct patient care settings (emergency department and palliative care settings), COVID-19, and roles not directly related to the unit employees (pharmacists, medical students, social workers, veterinarians, teachers, students, police officers, and athletes). The remaining 9,255 articles were further narrowed by including only literature published in English between 2016 and 2021, included human subjects, was available in full text, and included either a meta-analysis, systematic review, or randomized controlled trial. Sixty-five articles met these criteria. Articles were further scanned and removed if related to the military, mental health workers, foster care workers, youth residential settings, and inpatient specific settings. Eight articles were kept for inclusion in the full literature review.

After reading these initial eight articles, specific themes emerged regarding burnout management, most notably the inverse relationship between burnout and resiliency. An Ovid Synthesis search was completed searching burnout and resiliency, narrowed by the same criteria noted above. Of the 15 articles that were identified, seven were kept after removing redundant articles or those too specific to unrelated settings.

A CINAHL search was completed, including terms related to burnout, resiliency, well-being, mindfulness, training, and remote, given that the unit is still working from home. Other related medical subject headings included hardiness, education, instruct, train, teach, and organizational culture. After combining all search terms and narrowing the articles down to those published in English between 2016 and 2021 and peer-reviewed, 110 additional articles were identified. Articles were further scanned and removed if redundant or unrelated to the healthcare setting. Articles that included levels one through four evidence were kept, as were several expert opinion papers highlighting the need for continued attention to this topic. Sixteen articles were kept for inclusion in the literature review.

Finally, two additional PubMed searches were completed after identifying self-compassion and Mindfulness-Based Stress Reduction (MBSR) as tools to combat burnout. Similar limits were set, and an additional five articles were noted for inclusion. Six additional articles were identified from references noted while reading the literature. A total of 42 articles were read in full. Of these, 24 of these articles were used to develop and support the project intervention. See Appendix A for a literature matrix summarizing these articles.

Current State of Knowledge

A systematic review of literature by Hall et al. (2016) found that 21 out of 30 studies showed burnout was associated with increased errors among healthcare staff resulting in patient safety concerns. A meta-analysis by Salyers et al. (2017) also showed a positive association between burnout and patient safety as well as perceived quality. A more recent systemic review conducted by Jun et al. (2021) showed that nursing burnout was associated with decreased patient safety and quality, decreased patient satisfaction, reduced staff productivity, and an increased intent to leave one's organization. Burnout is also associated with increased costs

related to increased occupational turnover (Brown et al., 2018; Heijden et al., 2019; Kelly et al., 2021; Maslach, 2018) and absenteeism (Maslach, 2018). The Maslach Burnout Inventory (MBI) was the most common scale used to measure burnout (Adair et al., 2020; Dossett et al., 2021; Dyer et al., 2020; Gensimore et al., 2020; Gerber & Anaki, 2020; Guo et al., 2017; Heijden et al., 2019; Kelly et al., 2021; Mistretta et al., 2018; Moffatt-Bruce et al., 2019; Ofei-Dodoo et al., 2020; Sexton & Adair, 2019; Sexton et al., 2018).

Maslach (2018) notes, "the key sources of burnout (or engagement) are six critical areas of job-person mismatch (or match): workload, control, reward, community, fairness, and values" (p. 14). A meta-analysis conducted by Aronsson et al. (2017) evaluated the effect of working conditions on burnout. Low workplace support and job control were strongly associated with emotional exhaustion, one of the three characteristics of burnout. Employees that perceive a higher level of stress and effort have higher burnout rates, while those with more job satisfaction have lower burnout rates (Heijden et al., 2019). Conversely, environments with effective communication between managers and employees, easy accessibility to leaders, employee trust in an organization, shared values with teammates, and lower workloads are associated with lower burnout rates (Genismore et al., 2020). Employees under age 50 are more likely to report higher rates of stress and burnout than those over age 50 (Rozman et al., 2019).

Due to the prevalence and impact of burnout, organizations need to regularly measure and address burnout (Kelly et al., 2021). A systematic review and meta-analysis by Deldar et al. (2018) showed an inverse relationship between resiliency and all three dimensions of burnout. A study by Genismore et al. (2020) also showed the inverse relationship between resilience and burnout and that favorable work environments could mediate the effects of low resilience, leading to lower burnout levels and subsequently less turnover and improved quality. Additional

studies have also shown that improving resilience can decrease burnout (Adair et al., 2020; Blackburn et al., 2020; Brown et al., 2018; Deldar et al., 2018; Genismore et al., 2020; Gerber & Anaki, 2020; Guo et al., 2017; Magtibay et al., 2017; Ofei-Dodoo et al., 2020).

Given the increased focus of this topic in healthcare, Stainton et al. (2019) reviewed current literature and determined that “resilience is a dynamic process by which individuals utilize protective factors and resources to their benefit” (p. 725). The American Psychological Association (n.d.) further defines resilience as the ability to cope under stress and that the ability to do this can be learned. Given the positive effect resiliency can have on burnout and the ability to learn these coping mechanisms, an additional inquiry was conducted on evidence-based methods to improve resiliency. The Connor-Davidson Resiliency Scale (CD-RISC) was the most commonly used scale to measure resiliency (Andersen et al., 2021; Blackburn et al., 2020; Delaney, 2018; Gensimore et al., 2020; Grabbe et al., 2020, Guo et al., 2017; Kelly et al., 2021; Lin et al., 2019; Magtibay et al., 2017; Martin et al., 2020; Moffatt-Bruce et al., 2019; Werneburg et al., 2018).

Current Approaches to Solving Population Problem

Mindfulness is a practice utilized to train an individual to react differently to stressful situations and is described as focusing on the present moment without judgment (Kabat-Zinn, 1994). For example, Mistretta et al. (2018) created a Mindfulness-Based Resilience Training (MBRT) course, combining mindfulness-specific skills and resilience education. Results showed an immediate improvement in burnout, which increased over time. Blackburn et al. (2020) showed an improvement in resiliency and burnout scores among oncology nurses who participated in a program incorporating mindfulness exercises in addition to art therapy, aromatherapy, yoga, acupressure, and guided imagery. Grabbe et al. (2020) conducted a

randomized controlled trial evaluating the effectiveness of a three-hour Community Resiliency Model® compared to a control group that received education on nutrition. The intervention group received training on sensory awareness techniques, a form of mindfulness, and showed improvement in well-being and resilience scores. Another study utilizing an eight-week, one-hour-per-week mindfulness training intervention in addition to gentle yoga, music, and nutrition education among healthcare providers showed a significant increase in resilience and burnout (Moffatt-Bruce et al., 2019).

Several research studies have evaluated the effects of the Stress Management and Resiliency Training program (SMART). The Benson-Henry Institute designed the SMART program to teach the utilization of mind-body techniques and self-care to build resilience (Benson-Henry Institute, n.d.). Werneburg et al. (2018) utilized the SMART program among a multidisciplinary healthcare team and showed a significant increase in resilience and other well-being attributes. Specific focus areas included gratitude, compassion, meditation, relaxation techniques, and yoga. Magtibay et al. (2017) utilized the SMART program among nurses at an academic medical center and converted the content into a 12-week web-based program. Study results showed a significant improvement in burnout and resiliency, even at three months post-intervention completion.

Several other interventions have shown an impact on resiliency and burnout. Focusing on positive emotions by intentionally identifying three good things that happened each day for 15 days has been proven to improve resilience and reduce burnout (Adair et al., 2020; Sexton & Adair, 2019). Yoga as a singular intervention or in combination with other mindfulness-focused interventions has been shown to improve resilience and decrease burnout (Aryankhesal et al., 2019; Blackburn et al., 2020; Dyer et al., 2020; Moffatt-Bruce et al., 2019; Ofei-Dodoo et al.,

2020; Rink et al., 2021). In addition to yoga, Rink et al. (2021) showed that various well-being behaviors improved resiliency, including meditation, exercise, closer relationships, and taking vacations. Gerber and Anaki (2020) showed that those with more self-compassion had lower rates of burnout. Interventions focused on improving self-compassion through Loving Kindness and Compassion meditation have been shown to improve resilience and decrease burnout (Delaney, 2018). Lastly, educating health-care professionals on the prevalence of burnout, the role of resilience in combating burnout, and introducing strategies to improve resilience can increase resilience levels among the learners (Martin et al., 2020).

This project focused on improving resiliency through an eight-week virtual interactive program incorporating formal guided mindfulness meditation and didactic education. The four-week mindfulness program incorporated mindful breathing, body awareness, and loving-kindness through guided meditation and encouraged at-home mindfulness practice. The four-week didactic program reinforced the science behind resiliency and how it can be improved with mindfulness, gratitude, kindness, and relationships. Given the virtual requirement for the intervention and the lack of research supporting web-based yoga interventions, yoga was not included in this program. The unit also hosts various fitness challenges and participates in organization-wide exercise offerings, so exercise was not included in this intervention.

Evidence to Support the Intervention

Neuroscience research has shown that behavioral and cognitive-based resiliency strategies can lead to long-term changes in brain chemistry (Tabibnia & Radecki, 2018). Based on this project's scope, not all areas within the two pathways were addressed. Mindfulness training was the focus of the cognitive pathway. Mindfulness-based programs have been shown to decrease stress and improve resiliency (Blackburn et al., 2020; Colgan et al., 2019; Grabbe et

al., 2020; Lin et al., 2019; Mistretta et al., 2018). Lin et al. (2019) conducted a randomized controlled trial utilizing a modified mindfulness-based group intervention lasting eight weeks. Content included both combined guided meditation with education and group interaction. The results showed a significant increase in resilience among the intervention group.

This unit had direct access to an expert in the field of mindfulness and resiliency training. The instructor, a psychiatrist and meditation teacher, started the organization's MBSR program in the 1990's. He offers a shortened, modified program through the organization's Integrative Medicine's unit and created a successful remote program in 2020 in response to the coronavirus pandemic.

The behavioral pathway was addressed through practicing gratitude, loving-kindness, and interpersonal relationships. Focusing on the positive and intentionally noticing things to be grateful for has been proven to improve well-being and resilience (Adair et al., 2020; Sexton & Adair, 2019). Practicing loving-kindness towards oneself and others affects the neuroendocrine system resulting in increased levels of hormones that improve mood and a sense of satisfaction (Wei et al., 2021). Demonstrating loving-kindness not only boosts the mood of the receiver but of the giver as well. The final area of focus is that of social connections and relationships. Being connected to others provides an additional coping mechanism in times of stress, providing a sense of belonging and safety, leading to better mental and physical well-being (Tabibnia & Radecki, 2018; Wei et al., 2021). The organization's Center for Healthcare Safety and Quality provides access to resiliency training taught by published researchers in the area of burnout and resiliency. This project included access to four training modules on mindfulness, gratitude, loving-kindness, and relationships.

Several studies have shown a successful virtual approach to the delivery of resiliency training (Aryankhesal et al., 2019; Magtibay et al., 2017). Additionally, a meta-analysis conducted by Heber et al. (2017) showed that internet and computer-based stress reduction interventions were effective. A more recent controlled trial by Persson Asplund et al. (2018), showed that a virtual stress reduction program effectively decreased burnout. This study also showed that interventions led by a guide and lasting between five and eight weeks were more effective than unguided, shorter, or longer programs. In a review of resilience-specific training, most programs were between six and eight weeks (Andersen et al., 2021; Blackburn et al., 2020; Colgan et al., 2019; Delaney, 2018; Dossett et al., 2021; Mistretta et al., 2018), while others consisted of one-day retreats (Cunningham & Cayir, 2021; Grabbe et al., 2020; Martin et al., 2020). The weekly programs ranged from one hour per week sessions (Colgan et al., 2019; Werneburg et al., 2018) to two or two and a half hours per week sessions (Persson Asplund et al., 2018; Delaney, 2018; Mistretta et al., 2018). After discussion with the unit leadership and consideration of the team members, the decision was made to offer an eight-week virtual program with one 90 minute session per week, incorporating guided mindfulness exercises, education, and group discussion.

Evidence-Based Practice Framework

This program was executed using Wei et al.'s (2021) unitary caring science resilience-building model. This model is based on the Watson Human Caring Theory and resilience literature, including nursing and neuroscience research. The foundation of Watson's Human Caring Theory, first published in 1979, is the reciprocal relationship and caring moments between patient and nurse through a holistic approach (Watson, 2018). Watson's theory is based on ten Caritas Processes ®: "Embrace (Loving-Kindness), Inspire (Faith-Hope), Trust

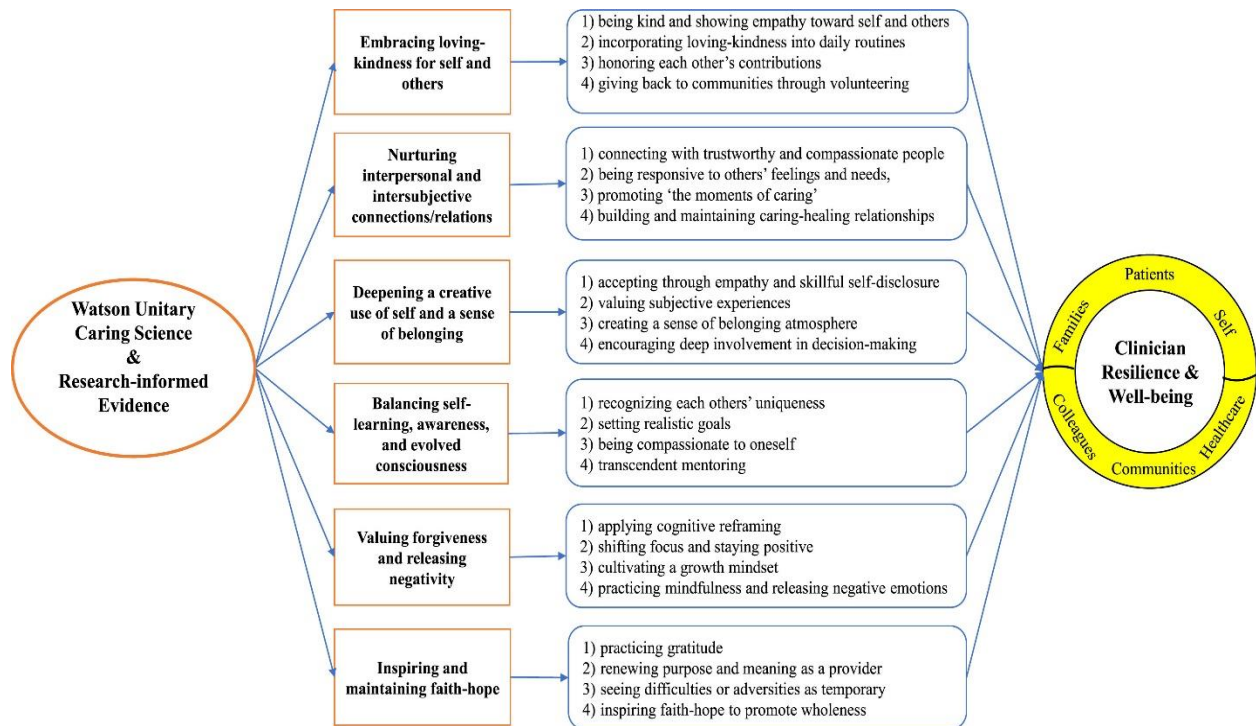
(Transpersonal Self), Nurture (Relationship), Forgive (All), Deepen (Creative Self), Balance (Learning), Co-create (Caritas Field), Minister (Humanity) and Open (Infinity)” (Watson, 2018, pp. 138-140). Wei et al. (2019) conducted a systematic review of current interventions using Watson Human Caring Theory and concluded that it is still a relevant tool that can lead to improved patient care and better nursing satisfaction and commitment.

Wei et al. (2021) noted that the clinician burnout epidemic can be addressed by focusing on well-being and improving resilience. They argue that if clinicians can change their thinking from "always giving and doing" to aligning "practice with purpose, cherish each caring moment, and value their gift of service to humanity," they can become more resilient and decrease burnout (Wei et al., 2021, p. 131). This shift is accomplished through combining core elements of Watson's Human Caring Theory and resiliency research that supports strategies to re-direct cognitive and behavioral patterns for a more positive outcome.

The Unitary Caring Science Resilience Model, noted below in Figure 1, consists of six resilience-building strategies, which include "1) *Embracing* loving kindness for self and others (Embrace); 2) *Nurturing* interpersonal and intersubjective connections/relations (Trust and Nurture); 3) *Deepening* a creative use of self and sense of belonging (Deepen and Minister); 4) *Balancing* self-learning, self-awareness and an evolved self-consciousness (Balance and Co-Create); 5) *Valuing forgiveness* and releasing negativity (Forgive); 6) *Inspiring* and maintaining faith-hope (Open and Inspire)” (Wei et al., 2021, p. 131).

Figure 1

Unitary caring science resilience model



Note. The model shows the inclusion of Watson Unitary Caring Science and resiliency research to create six resilience-building strategies leading to improved clinician resilience and well-being. From “A Unitary Caring Science Resilience-Building Model: Unifying the Human Caring Theory and Research-Informed Psychology and Neuroscience Evidence,” by H. Wei, S. R. Hardin, and J. Watson, 2021, *International Journal of Nursing Sciences*, 8(1), p. 132 (<https://doi.org/10.1016/j.ijnss.2020.11.003>). CC BY-NC-ND.

This project incorporated elements of each of the six strategies. Loving-kindness, a sense of belonging, and self-awareness were a focus of the mindfulness program and the didactic program. Relationships, inter-connectedness, and gratitude were a focus of the didactic program. Finally, self-awareness and positivity were a focus of the mindfulness program. This model

reinforces the idea that caring for oneself can increase our ability to continue to care for others through improved resilience and decreased burnout.

Ethical Consideration & Protection of Human Subjects

This intervention was made available to all employees of the targeted unit. Communication about the project was made available to all employees through multiple methods, including email announcements, the unit's intranet site, and verbal communication at an Employee Forum. The leadership team also ensured that all team members were aware of the project during team meetings. Messaging was clear about the voluntary nature of the program. At the start of the project, a Pre-Resiliency Program Survey was sent to all employees to measure current levels of burnout and resiliency (see Appendix B). Participants were informed through the email message containing the survey link that completing the survey was voluntary and that results would be anonymous (see Appendix C).

The Resiliency Program was made available via a web-based platform. Participants were able to see and interact with other participants. Two different time options were made available for each session to allow for more flexibility in attending the sessions. Attendees were encouraged to turn off their video cameras if that made them more comfortable. The Post-Resiliency Program survey included questions for employees to indicate the sessions attended, which sessions were most beneficial, and recommendations for ongoing mindfulness programming (see Appendix D). Data analysis was shared with all employees following the completion of the Post-Resiliency Program survey.

Prior to project implementation, the project leader completed the organization's Collaborative Institutional Training Initiative (CITI) training modules. The project was then submitted to the organization's Institutional Review Board (IRB) as a Doctor of Nursing Practice

(DNP) project for review (see Appendix E) and to the East Carolina University IRB for review (see Appendix F). The project leader also presented the plan to the unit's Executive Leadership Team for approval before the start of the project.

Section III. Project Design

This evidence-based project was designed to meet the needs of busy healthcare professionals working in a variety of environments. The Resiliency Program was offered at two different time periods to allow for flexibility. Due to the ongoing pandemic at the time of planning and most unit employees working remotely, the program was offered virtually. The Pre and Post-Resiliency Program surveys were intentionally made short to encourage participation and completion. Unit leadership support was established at the beginning of the planning process, allowing project participation during regular business hours.

Project Site and Population

The identified project site was an organizational unit within a large 957-bed academic medical center located in the Southeast region of the United States. This unit provides a mixture of direct patient care, primarily in the outpatient setting, and consultative healthcare services to affiliated community hospitals. One-quarter of the staff provide direct patient care, and over half have a clinical background. Historically, many staff travel to the affiliate hospitals; however, due to the COVID-19 pandemic, only those providing direct patient care are traveling. The remainder of the unit is working virtually from home.

Description of the Setting

This unit provides academic expertise to local, regional, and national partners through joint ventures and affiliations, promoting evidence-based healthcare and access to research to improve community health. The unit has 44 affiliations with 28 organizations in five states

across the central and eastern United States. Affiliate hospitals range in size from 80-bed to over 500-bed hospitals and are both non-profit and for-profit organizations. Most services are consultative; however, direct clinical care by physicians and APPs is provided at five hospitals. Twenty clinical providers administer direct patient care in affiliate site oncology clinics, some traveling over 200 miles round trip per day to the clinic. This was a barrier due to the challenge of finding a day and time that worked for all clinicians, given the variability in clinic schedules. Unit staff not administering direct patient care are working remotely, spending the majority of work hours on a computer. Due to COVID-19, the program was provided virtually which may have been a barrier given the time staff were already spending in front of a computer screen.

Description of the Population

The unit employs 77 staff members, including 14 physicians, six advanced practice providers, 22 registered nurses, and additional healthcare administration, business, human resource, finance, law, and administrative professional employees (L. Purefoy, personal communication, 2021). Although employed by a large academic medical center, most daily work is conducted with other organizations consisting of close working relationships with affiliate team members. Eighty percent of staff are female, and 60% are over age 50. All unit staff have access to computers and the internet from home.

Project Team

The project team included the Doctorate of Nursing Practice (DNP) student, an Assistant Vice President within the unit. This team member has been with the unit for over 20 years and is a member of the Executive Leadership Team. The Chief Human Resources Officer and a Senior Director were also on the project team and provided input into the project design and dissemination throughout the unit. This leadership involvement was a facilitator and helped

ensure unit commitment and support. The site champion, the Associate Chief Nursing Officer of Professional Practice and Magnet for the organization, provided input into the project design and data collection plan. The organization's Director of Nursing Research and Evidence Based Practice provided feedback on project design, data collection, and IRB submission. Lastly, the Project Faculty member provided input into project design, data analysis and interpretation, review, and feedback on written materials and guidance throughout the project.

Project Goals and Outcome Measures

The goal of this project was to examine the impact of a resiliency program on staff resiliency and burnout levels. Before the Resiliency Program, staff were asked to complete a Pre-Resiliency Program survey to determine current burnout and resilience rates (see Appendix B). Following the completion of the Resiliency Program, staff were asked to complete a Post-Resiliency Program survey to determine levels of burnout and resiliency and indicate satisfaction with the program and recommendations for future programs (see Appendix D). Participation in the surveys and the resiliency program was voluntary. The eight-week resiliency program consisted of a 90 minute weekly virtual session alternating between guided mindfulness meditation and a didactic presentation on different resiliency-focused topics. Pre and Post-Resiliency Program survey results were then analyzed to determine the change in burnout and resiliency rates among the unit members.

Description of the Methods and Measurement

This project was an eight-week, 90 minutes per week, virtual interactive program incorporating a formal guided mindfulness meditation offering and didactic education. Pre and Post-Resiliency Program surveys were completed to measure levels of burnout and resilience.

Participation was voluntary, and unit members could participate in any or all components of the surveys and intervention

Methods. The virtual sessions were provided in a synchronous format over a web-based platform and alternated between guided mindfulness and didactic sessions each week. The four guided mindfulness sessions incorporated mindful breathing, body awareness, and loving-kindness through guided meditation and encouraged at-home mindfulness practice. The four didactic sessions reinforced the science behind resiliency and how it can be improved with mindfulness, gratitude, kindness, and relationships. These didactic sessions were pre-recorded for use in a broader audience; however, the group met in real-time, participated in a brief mindfulness exercise, and viewed the recording together. In addition, each didactic session included the introduction of a topic-related evidence-based tool that has been shown to further improve well-being (Duke Center for Healthcare Safety and Quality, n.d.). The tools were smartphone or computer-based and required an additional three to ten minutes over two to eight days. The use of these tools was voluntary and not tracked.

The Pre and Post-Resiliency Program surveys included three questions utilized to create a unique identification for each participant. This allowed for anonymity and the ability to compare a data set that included participants that took both surveys. Two formal scales were used in the surveys. Burnout was measured by a scale designed and validated by the organization and is the same scale used by the organization in 2019 (see Appendix G). The CD-RISC-10 scale measured resilience. Permission was obtained to utilize the scale for this project (see Appendix H). Due to copyright restrictions, the scale could not be printed in this paper. The Pre-Resiliency Program survey also asked whether or not the team member had previously participated in a mindfulness-based stress reduction program and whether or not the individual intended to participate in this

intervention. All staff received the Post-Resiliency Program survey, which included the same burnout and resiliency scales and asked whether the employee attended any of the intervention courses. If the answer was “Yes,” the employee was asked to specifically indicate which sessions they attended, which sessions were most helpful, the satisfaction with the length of the individual sessions and the overall program length, and whether or not ongoing mindfulness sessions would be helpful. If the employee indicated they did not participate, they were asked why.

Measurement. Descriptive statistics were run on the percent of the unit staff that participated in the Pre-Resiliency Program survey, the Post-Resiliency Program survey, and levels of involvement in the intervention ranging from participation in one through eight of the weekly sessions. The percent of staff who indicated planned participation in the intervention through the Pre-Resiliency Program survey was compared to the percent of staff who indicated any participation in the intervention through the Post-Resiliency Program survey. Staff who indicated prior participation in mindfulness-based stress reduction program was compared with intent to participate in this resiliency program and actual participation in the mindfulness sessions.

A five-item scale measured burnout with questions scored on a five-point Likert scale. Scores ranged from one to five, with one indicating that particular burnout measurement question was not true for the individual and five indicating it was strongly true. Each participant’s score was converted to a total mean score for each participant. The higher the score, the greater the level of burnout. Means of three indicated mild burnout; means of four indicated moderate burnout; means of five indicated severe burnout. The percentage of individuals with each mean score was then calculated and reported as a percent of staff with any level of mild, moderate, and severe burnout. Scores were reported in aggregate for the unit pre and post-program. Percent

change in burnout was then calculated for those that completed the Pre-Resiliency Program survey, participated in the Resiliency Program, and the Post-Resiliency Program. A paired *t*-test was run comparing the mean burnout score from the Pre-Resiliency Program survey and the Post-Resiliency Program survey among this subgroup to determine if there was a statistically significant difference in the two means.

The CD-RISC-10 is a 10-item scale that measures different aspects of resiliency, including flexibility, self-efficacy, ability to regulate emotion, optimism, and the ability to maintain attention under stress. The questions are scored on a five-point Likert scale, with scores from zero to four, with zero indicating that particular resiliency statement is not true at all and four indicating the statement is true nearly all the time. The total score is obtained by adding up all of the items. The total individual score can range from zero to 40. Higher scores suggest more resilience, and lower scores indicate greater difficulty bouncing back from difficult situations. The scores were then placed in a quartile, the limits of which have been determined through other population-based studies. Those with scores ranging from zero to 29 are in the lowest quartile. The second quartile includes scores from 30 to 32. The third quartile includes scores from 33 to 36. The top quartile includes scores from 37 to 40. Scores in the lowest and second quartile may suggest these individuals have more difficulty coping and recovering from stressful situations.

Resiliency scores were reported by the percentage of staff that fell into each quartile pre and post-Resiliency Program and the mean resiliency scores. Percent change in resiliency scores were noted for all staff. Percent change was also calculated for a subgroup of those that completed the Pre-Resiliency Program, participated in the Resiliency Program, and the Post-Resiliency Program survey.

Discussion of the Data Collection Process

All staff received an email from the unit's generic email account inviting them to participate in the Pre-Resiliency Program survey (see Appendix B). The email contained a link to the online survey built in Qualtrics. Staff were given two weeks to complete the survey, with one reminder email sent seven days after the initial email. One week following the completion of the Resiliency Program, all staff received an email from the unit's generic email account inviting them to participate in the Post-Resiliency Program survey (see Appendix D). The email contained a link to the online survey built in Qualtrics. Survey results were only available to the Project Team. Survey data were organized by aggregate burnout and resiliency scores for all staff who completed the Pre-Resiliency Program survey and the Post-Resiliency Program survey. The data was also arranged into a subset, including only those employees who completed the Pre-Resiliency Program survey and the Post-Resiliency Program survey and participated in the Resiliency Program. This allowed for the comparison of burnout and resiliency scores for the group as a whole and specifically for the subset of employees that participated in all three components of the program.

Implementation Plan

Staff were made aware of the Resiliency Program during a one-hour All-Staff Employee Forum on January 13, 2022. The Assistant Director of Well-being and Research for the organization introduced the topic of burnout and resiliency and gave a brief description of the effects of each on the individual and the organization. She then provided a brief overview of the four resiliency classes that were part of the Resiliency Program. The mindfulness instructor introduced mindful meditation, including a short, guided mindfulness session. He then described what staff could expect while participating in the four guided mindfulness sessions during the

formal program. The session concluded with a description of the program and timeline and a reminder that participation was voluntary. Finally, the unit's Vice President closed with remarks about leadership support of the program, including participation during traditional work hours.

Immediately following the kick-off session, an email was sent to all staff that included the program brochure which noted the program dates and information on the topic for each session (see Appendix I). The brochure was also placed on the unit's intranet site. This allowed staff to block their calendars and leadership to remove any scheduling barriers for those that intended to participate. In addition, staff continued to receive positive support messages for participation in the program through their direct supervisors throughout the program.

The Pre-Resiliency Program survey was then emailed to all staff one week after the kick-off session. Staff were given two weeks to complete the survey. Zoom invitations were sent to all staff for both cohort series, with instructions to accept the calendar invite for the cohort that best fit their scheduling needs. Two cohorts were offered to accommodate staff schedules. Cohort A met on Friday afternoons from 12:00 pm to 1:30 pm. Cohort B met on Wednesday evening from 6:00 pm to 7:30 pm. Staff were allowed to switch cohorts when necessary to accommodate scheduling conflicts.

Staff who accepted the Zoom invitation indicating their intent to participate were also sent an email one week before the program's start with instructions and a link to a learning management system that contained additional resource material about mindfulness. This material remained accessible to participants for three months following the program completion and was also available to download for ongoing use. A weekly reminder was sent the day before each Resiliency Program session. One week following the last session, the Post-Resiliency Program

survey link was sent to all staff. Staff indicated their participation in the sessions through the survey and provided additional feedback regarding their experience.

Timeline

The concept for the project was first identified in May 2021. The specific problem was identified between May and July 2021, and a formal literature search was initiated. Between August and December 2021, the literature review was finalized, the Resiliency Program was designed, and the project received IRB review. The project was launched on January 13, 2022, with a kick-off meeting and Pre-Resiliency Program survey completion. The Resiliency Program occurred from February thru March 2022. The Post-Resiliency Program survey was completed in April 2022. The data was analyzed between May and June 2022, and the results were disseminated in July 2022. See Appendix J for the timeline graph.

Section IV. Results and Findings

Results

Overall, program participation and satisfaction were positive, with improvement noted in both burnout and resiliency scores. All 16 sessions were conducted remotely, on schedule, and without interruption or technical issues. No issues were identified with survey dissemination and completion. Executive leadership remained supportive of the initiative throughout the project, with most attending the program and all promoting staff participation.

Participation

During the program, the unit consisted of 77 full-time employees. Thirty-nine employees, or 50% of all staff, completed the Pre-Resiliency Program survey. One employee did not complete the burnout inventory in the Pre-Resiliency Program Survey but did complete the remainder of the questionnaire. Fifty-two employees, or 68% of all staff, completed the Post-

Resiliency Program Survey. One employee did not complete the burnout inventory in the Post-Resiliency Program Survey but did complete the remainder of the questionnaire. Thirty-five of the 38 staff members who completed the Pre-Resiliency Program survey indicated intent to participate in the program. Only twenty-eight of the thirty-five who intended to participate completed the Post-Resiliency Program survey, and all twenty-eight indicated participation in the program. Ten of the 38 staff members completing the Pre-Resiliency Program survey indicated prior participation in mindfulness-based programs previously. Nine of these ten completed the Post-Resiliency Program survey and indicated participation in the Resiliency Program.

Fifty employees, or 65% of staff, participated in at least one of the eight resiliency sessions. The average number of sessions an employee attended was five, with a median of five, a mode of three, and a range of seven, with a minimum of one and a maximum of eight. The Friday afternoon session was the most popular, with an average attendance of 24 employees. The Thursday evening session had an average attendance of seven employees. Some staff members did fluctuate between the two sessions as needed. The mindfulness sessions had an average attendance of 17 participants, and the resiliency education sessions had an average of 15 participants. Six staff noted they were too busy to participate, two staff noted the times offered did not work with their schedule, two staff noted no need to improve resilience, and one staff member indicated not knowing about the program.

Utilizing the unique identifiers each participant created when completing the surveys, 36% of staff (n=28) completed the burnout questionnaire on both the Pre and Post-Resiliency Program survey and participated in the Resiliency Program. Thirty-eight percent of staff (n=29) completed the resiliency questionnaire on both the Pre and Post-Resiliency Program survey and

participated in the Resiliency Program. This sub-group, referred to as the Participatory Group, was further analyzed to evaluate burnout and resiliency scores changes.

Burnout

As shown in Table 1, 57% (n=16) of the participatory group reported symptoms of burnout before participation in the program, with the majority experiencing mild or moderate symptoms. Following the program, the number of staff reporting burnout decreased to just under 36% (n=10). This represents a 37.5% decrease in the number of staff experiencing burnout symptoms. A paired-samples *t*-test was conducted to compare the mean burnout scores between the participatory group pre and post-resiliency program. There was a significant difference in the mean (M) scores before the program (M=3.01; standard deviation [SD] =1.02) and after the program (M=2.49; SD=1.01) conditions; $t(24)=2.05, p=0.007$.

Table 1

Burnout Scores for Participatory Group

	No Burnout		Mild Burnout		Moderate Burnout		Severe Burnout		Total With Burnout		Mean Burnout Score
	n	%	n	%	n	%	n	%	n	%	
Pre-program survey	12	42.86%	11	39.29%	4	14.29%	1	3.57%	16	57.14%	3.01
Post-program survey	18	64.29%	8	28.57%	2	7.14%	0	0.00%	10	35.71%	2.49*

Note. This table represents the number and percentages of the participatory group that reported none, mild, moderate, severe, and any burnout.

* $p < 0.01$.

The burnout tool measures emotional exhaustion, which can present as both mental and physical symptoms (Sexton & Adair, 2019). Table 2 shows the individual burnout questions and the mean score of each for the participatory group pre and post-resiliency program. Improvement was noted in the average burnout scores for each item, with the most considerable improvement in the physical symptom of fatigue.

Table 2

Burnout Survey Data

	Pre-Intervention Mean (n=28)	Post- Intervention Mean (n=28)	% Change
"Events in this work setting affect my life in an emotionally unhealthy way"	2.89	2.46	15%
"I feel burned out from my work"	3.07	2.75	10%
"I feel fatigued when I get up in the morning and have to face another day on the job"	3.04	2.07	32%
"I feel frustrated by my job"	3.07	2.64	14%
"I feel I am working too hard on my job"	2.96	2.54	14%

Note. This table represents the means for the pre and post-program individual burnout survey responses for the participatory group.

Resiliency

As shown in Table 3, over 55% (n=16) of the participatory group scored in the lowest resiliency quartile before participating in the program, and only 10% (n=3) scored in the highest resiliency quartile. Following the program, those scoring in the lowest quartile decreased by 44%, and those scoring in the highest quartile doubled. A paired-samples t-test was conducted to compare the mean resiliency scores between the participatory group pre and post resiliency

program. There was a significant difference in the mean scores before the program ($M=29.2$, $SD=4.78$) and after the program ($M=32.1$, $SD=4.67$) conditions; $t(28)=2.05$, $p=0.004$.

Table 3

Resiliency Scores for Participatory Group

	Lowest Quartile		Second Quartile		Third Quartile		Fourth Quartile		Mean Resiliency Score
	n	%	n	%	n	%	n	%	
Pre-program survey	16	55.17%	6	20.69%	4	13.79%	3	10.34%	29.2
Post-program survey	9	31.03%	7	24.14%	7	24.14%	6	20.69%	32.1*

Note. The lowest quartile represents those scoring in the lowest quartile of the population or the least resilient; the second quartile represents those scoring between the 25 and 50th percentile, the third quartile represents those scoring between the 50 and 75th percentile; and the fourth quartile represents those scoring above the 75th percentile, representing the most resilient (Davidson, 2021).

* $p < .01$.

Program Satisfaction

The Post-Resiliency Program survey asked multiple questions to determine satisfaction with the program. Regarding overall satisfaction with the program, 49% ($n=18$) of respondents were extremely satisfied, 46% ($n=17$) were satisfied, and 5% ($n=2$) were neither satisfied nor dissatisfied. No respondents indicated dissatisfaction. Seventy-four percent ($n=28$) of respondents indicated that the length of the program and the length of each session were just

right. Twenty-six percent (n=10) of respondents thought the duration of the eight-week course was too long, 21% (n=8) thought the duration of each session was too long, and 5% (n=2) thought it was too short.

When asked which sessions were most helpful, 32% (n=12) of staff preferred the mindfulness sessions, 16% (n=6) preferred the resiliency sessions, and 51% (n=19) preferred the mix of both. Of the resiliency courses, the majority thought the Science and Practice of Gratitude was the most helpful, followed by the Science of Mindfulness. Seventy-three percent (n=37) of staff indicated an interest in ongoing thirty-minute guided mindfulness sessions, with most preferring a session every other week versus weekly or monthly. Seventy-eight percent (n=40) of staff indicated an interest in additional didactic education on resiliency topics.

Discussion of Major Findings

Previous studies have shown the inverse relationship between resilience and burnout (Deldar et al., 2018). Resilience can be improved through practicing mindfulness (Blackburn et al., 2020; Colgan et al., 2019; Grabbe et al., 2020; Lin et al., 2019; Mistretta et al., 2018), gratitude (Adair et al., 2020; Sexton & Adair, 2019), expressing kindness towards oneself and others (Wei et al., 2021), and nurturing social connections and relationships (Tabibnia & Radecki, 2018; Wei et al., 2021). The data collected during this project supports the literature and demonstrated improved resiliency and burnout scores following participation in an eight-week resiliency program that combined mindfulness and resiliency education. The number of participants scoring in each resiliency quartile improved, indicating improved resiliency, and those that reported no burnout increased by 50%. In addition, mean burnout and resiliency scores also showed statistically significant improvements.

Participants were exposed to three types of mindfulness: mindful breathing, loving-kindness, and body awareness. The didactic sessions provided information and resilience tools to enhance relationships and the practice of gratitude and kindness. Participants were satisfied with the program and felt supported to attend during business hours, as evidenced by the level of participation. Participants also expressed an interest in continuing regular mindfulness sessions and attending ongoing resiliency education.

Section V. Interpretation and Implications

Costs and Resource Management

Most of the costs and resources associated with this program were related to staff time to research, develop, implement, and analyze the program and the time staff spent attending the program, estimated at \$43,539.10. Salaries are widely variable given the broad range of participant backgrounds. An average hourly rate of \$54.90 was utilized to calculate the cost of staff participation, which totaled 339 hours. An estimate was also utilized to calculate the cost of project staff time to research, develop, implement, and analyze the program. The only fixed cost was \$3,000 for the mindfulness facilitator. This expense was covered under the work culture budget that otherwise would have been unspent for the year. The resiliency sessions, associated continuing education, resiliency and burnout tools, and web-based platform did not add additional expense. The total estimated cost of the eight-week program is \$46,539.10. Please see Appendix K for an itemized budget.

The benefit analysis was difficult to calculate based on the current data available. As noted earlier, burnout is associated with increased organizational costs due to higher turnover rates, absenteeism, and lower employee engagement leading to decreased commitment to the job and the organization (Maslach, 2018; Heijden et al., 2019). Given the short timeline of this

project, these variables were not measured. Additionally, turnover and absenteeism may have increased during this period due to the pandemic and associated illnesses. However, if the program leads to the retention of one staff member, the program will be, at a minimum, cost-neutral.

If the organization adopted this program on a larger scale, some of the costs would not need to be incurred, specifically the research and, to a large extent, the development expenses. Per the mindfulness expert, mindfulness sessions are best when capped at 20 people per session to allow for robust interaction. More sessions would need to be planned if implemented on a wider scale, increasing the cost. The organization has an additional 20 pre-recorded webinars that employees can access for free. Additionally, the didactic portion of the web-based content is, on average, 50 minutes. The resiliency webinar time allocation could be decreased from 90 minutes to 60 minutes, allowing time for discussion while also reducing staff time requirements.

Implications of the Findings

Addressing burnout has implications for the individual healthcare worker, the patient, and the healthcare system. The findings of this project showed that it is feasible for a busy healthcare team and a healthcare system to dedicate time and prioritize individual well-being. The high participation rate, program satisfaction scores, and significant interest in ongoing offerings to maintain and bolster mindfulness and resiliency support this topic's importance and associated level of interest. The findings also support the Unitary Caring Science Resilience Model, which fortifies the idea that caring for oneself can increase our ability to continue to care for others through improved resilience and decreased burnout (Wei et al., 2021). Importantly, this project showed that combining mindfulness practice and resiliency education could improve resiliency

and reduce burnout. Lower burnout rates equate to better individual well-being, patient outcomes, and viability of the healthcare system.

Implications for Healthcare Workers

Burnout has significant adverse effects on healthcare workers, including emotional distress, physical illness, increased use of illegal drugs, relationship conflict (Sexton & Adair, 2019), and decreased job satisfaction (Jun et al., 2021). This project further supported the claim that enhancing resilience and reducing burnout can improve these symptoms, as evidenced by the improvement in the participatory group's emotional exhaustion scores. After completing the program, participants were less likely to experience fatigue, frustration, and emotional distress. Participants also expressed satisfaction with the program and a desire to continue resiliency work which is another indicator of success. Skills learned during this program can continue to be used by individuals to sustain resiliency and burnout benefits.

Implications for Patients and Healthcare Systems

Healthcare worker burnout can negatively affect patient safety, quality of care, and patient satisfaction (Jun et al., 2021; Sexton & Adair, 2019.). Burnout is also associated with increased organizational costs due to higher turnover rates, absenteeism, and lower employee engagement (Heijden et al., 2019; Maslach, 2018). Additionally, burned-out employees can affect colleagues' performance and spread throughout the department (Maslach, 2018). With the rising rates and consequences of burnout, organizations must invest in the workforce and support efforts, such as this program, which has proven to reduce burnout. This type of resiliency program directly supports the Quadruple Aim, which aims to improve healthcare system functioning by focusing on improved clinician experience (AHRQ, n.d.).

Sustainability

Although this project showed that an eight-week resiliency program could reduce burnout, it will not be feasible for the organization or participants to dedicate synchronous ninety minutes during the work week, every week, towards this topic. However, research shows that regular mindfulness practice promotes enhanced well-being (Basso et al., 2019; Lacaille et al., 2018). Lacaille et al. (2018) showed that independent daily formal mindfulness practice improved well-being. Studies have shown that just 13 minutes of mindful meditation per day can have beneficial effects similar to that of longer mindfulness practices (Basso et al., 2019). This course provided foundational knowledge and tools that participants can use independently to maintain and enhance their current level of resiliency and manage burnout.

This work unit is currently establishing strategic targets and associated tactics for FY2023 to support the five-year goal of improving employee well-being. Given the positive outcome of this project, the unit has set a target of maintaining current burnout and resiliency rates, with a stretch goal of further improving these scores over the next year. Given the interest of the program participants in continuing to partake in guided mindfulness sessions and resiliency education, a well-being strategic workgroup will continue to meet to discuss ways to support these initiatives. The organization has an additional 20 on-demand webinars that address well-being topics that may be part of the tactic. Access to live versus recorded guided mindfulness sessions will be considered, as well as developing a digital resiliency tool kit that will provide easy access to these resources.

Dissemination Plan

Project findings were presented via a PowerPoint presentation to the work unit's executive leadership team on May 23, 2022. Given the favorable results, the decision was made

to continue focused work in this area, as noted above. Project findings will also be presented to all unit staff at the next Employee Forum on August 10, 2022. In addition, this project will be presented to the health system president at the next regular update meeting, time to be determined. A poster presentation was presented at East Carolina University on July 12, 2022. This paper was submitted to The Scholarship via East Carolina University on July 27, 2022. Additional abstract submissions to nursing journals are currently being explored.

Section VI. Conclusion

Limitations

One possible limitation of the program was that it was remote due to the COVID-19 pandemic. This may not have been the ideal setting, given the computer fatigue that staff has previously reported. Interactions during discussions may have been less robust due to the remote format. Additionally, staff may have been distracted by other activities during presentations and discussions, decreasing the impact of the content. Being in front of a computer during these sessions may have allowed email and other work distractions to impact participation.

Three weeks into the program, staff were notified about potential redeployment to other areas of the hospital to cover broad staffing shortages. After this announcement, the Friday afternoon attendance dropped by an average of 32%, and the Thursday evening attendance dropped by an average of 40%. Some staff may have stopped attending the program to get other priority work done in preparation of redeployment. Another limitation was that some staff noted they were too busy to participate or that the time offerings did not fit their schedule. Given that the program was live, staff did not have the option to participate at a time that worked best for them.

Facilitators

One of the most significant facilitators of this project was that it was directly relevant to the unit and the larger organization's strategic plan. As a result, the executive leadership team fully supported the project by encouraging staff to attend and also attending themselves. Nine of the 12 executives regularly attended the program, most attending seven or all eight sessions. This show of support set an example for staff that it was acceptable to spend work hours on personal well-being initiatives.

Another facilitator was the organization's direct access to resiliency resources and strong evidence to support the program design. Although the remote nature of the program may have been a detractor in some aspects, it may have also been a facilitator. Staff did not have to contend with travel time or logistics to participate. Additionally, the technology functioned for each session with no significant disruptions. The tools utilized, such as Zoom and Qualtrics, were straightforward, familiar to staff, and easy to use. As many participants were nurses and physicians, access to continuing education for the resiliency webinars was a facilitator. Additionally, there was synergy with the broader organization's focus on burnout and resiliency, thereby helping to normalize the acceptance of staff focusing on this topic.

Recommendations for Others

This project has demonstrated that, with institutional support, healthcare professionals can successfully dedicate time to focusing on well-being and reducing burnout. Although the program design was effective, approximately a quarter of the staff noted the overall program and individual session length was too long. Some staff also noted their current workload did not allow for the dedication of 90 minutes per week. Others could consider shorter, asynchronous sessions that may allow for greater participation. A recent randomized clinical trial showed

significant burnout reduction among healthcare workers who viewed short, on-demand well-being educational content combined with active reflection (Profit et al., 2021). This study continued to show a reduction in burnout six months after the intervention.

This project did include access to additional web-based tools shown to improve well-being by enhancing mindfulness practice, gratitude, acts of kindness, and social connections (Duke Center for Healthcare Safety and Quality, n.d.). Although voluntary, participation in these tools was not measured, and their effect on resiliency and burnout scores was not considered. For those replicating this project, collecting self-reported use of these tools may be helpful in further determining program benefits and understanding their impact on outcomes.

Access to guided mindfulness tools and resiliency education is widely available, particularly for those employed by the project's organization. Despite this, most participants previously had not participated in regular guided mindfulness or resiliency education. Although only 29 participants completed all three components of the program (the pre and post-program survey and the program), 65% of the unit staff participated in the actual resiliency program. Creating a formal program that was widely publicized with set times, even to view recorded education, resulted in significant participation and is a recommendation for others to consider.

As noted previously, burnout's cost and patient safety implications are significant for healthcare organizations (Heijden et al., 2019; Maslach, 2018; NAM; n.d.; Salyers et al., 2017). Although the unit turnover rate was noted at the start of the program, this project timeline did not allow for meaningful re-measurement. Absenteeism was also not measured for this project, in part because it was implemented during a pandemic which had a significant impact on staff time away from work. This unit does intend to measure the turnover rate on a six-month rolling average and will look for notable trends during the timeline of this project. Those planning

future similar projects may want to consider direct measurement of turnover and absenteeism before and after program implementation.

Recommendations for Further Study

Although strong evidence supports well-being benefits from focused mindfulness meditation, there is a gap in knowledge identifying needed ongoing practice frequency and quality after the intervention to maintain the benefits (Ribeiro et al., 2018). Additional randomized clinical trials are needed to assess the most effective and efficient way of delivering mindfulness training to busy healthcare workers (Ghawadra et al., 2019). Although some evidence supports equivalent outcomes for those attending virtual versus in-person resiliency programs, overall fulfillment and engagement are superior for those attending in-person sessions (Sard-Peck et al., 2019). Additional research is needed to determine how to enhance the virtual learning experience related to resiliency training.

The effects of burnout on organizations are well documented and cited in the literature. Significant evidence also exists documenting effective ways to decrease employee burnout, such as through resiliency improvement. Most studies can show the direct benefit of the intervention to the staff member; however, few are designed to measure the direct correlation between burnout reduction, patient safety, and organizational cost improvement. Having additional data could enhance the healthcare system's focus and support initiatives to address burnout.

This project's approach in alternating guided mindfulness sessions and resiliency education could be replicated throughout different units within the organization, given the internal access to resources. Although nominal, the mindfulness facilitator's expense could be a limiting factor. Consideration could be given to using recorded guided mindfulness content. Given that employee well-being remains a goal of this unit and the organization, there is an

intent to continue focusing on burnout reduction through well-being initiatives. Consideration is being given to identifying well-being ambassadors to lead resiliency initiatives within this particular unit, a strategy in place in other areas of the organization.

Final Thoughts

Burnout in the healthcare setting has continued to increase and has significant adverse effects on staff, patients, and the healthcare system. One approach to address this complex problem is to increase staff resiliency. This project addressed one unit in large academic medical center, comprised of clinical and non-clinical staff that had a burnout rate of over 50% and mean resiliency scores in the least resilient quartile before the project implementation. During an eight-week time frame, 65% of staff participated in a virtual resiliency program focused on mindfulness meditation and resiliency education. Post-program findings showed a significant improvement in burnout and resiliency scores and high satisfaction with the program. The project's alignment with strategic priorities and executive leadership support was critical to the program's success. Ongoing work will continue to focus on maintaining and further improving resilience and burnout and measuring the impact on overall staff and the organization. The well-being of staff working in the healthcare environment is critical for delivering safe, cost-efficient care.

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Appendix A
Literature Review Spreadsheet

Authors	Year Pub	Article Title	Theory	Journal	Purpose and take home message	Design/Analysis/Level of Evidence	IV DV or Themes concepts	Instr. Used	Sample Size	Sample method	Subject Charac.	Comments/critique of the article/methods GAPS
Adair, Kennedy, Sexton	2020	Three good tools: Positively reflecting backwards and forwards is associated with robust improvements in well-being across		<i>The Journal of Positive Psychology</i>	To determine the effectiveness of web-based interventions on improving well-being focusing on positive emotions.	Level 4	Positive emotion elicited through web-based tools, showing a decrease in burnout and increase in resilience	MBI - EE scale, truncated, Emotional Thriving and Emotional Recovery, Subjective Happiness Scale, CES-D10 depression scale,	275, 123, 123	Convenience, enrollment shared through a website and word-of-mouth	All HCWs, clinical and non-clinical, at one academic medical center	The three interventions were 3 Good Things, Gratitude Letter, and Looking Forward tool.

		s three distinct interventions						Work-life balance climate scale, The Life Orientation Test-Revised (Looking Forward tool only)				
Andersen, Mintz - Binder, Sweatt, Song	2021	Building nurse resilience in the workplace		<i>Applied Nursing Research</i>	To determine which tools were most effective in increasing the resilience of inpatient nurses. A toolkit was available which included 6 short, self-directed interventions.	Level 4	Relationship between stress and resiliency.	Connor - Davids on 10 item resiliency scale and non-work stress related assessment.	167	Convenience, recruited by flyers and word of mouth.	RNs in four urban hospitals in the southern US providing direct patient care.	Interventions included: lavender aromatherapy via inhaler, adult coloring books, deep breathing, guided meditation, gaming, mind activity book. The most preferred and most effective methods were the breathing exercises,

												lavender aromatherapy and coloring book.
Aronsson, Theorell, Grape, Hammarstrom, Hogstedt, Martensdotter, Skoog, Traskman-Bendz, and Hall.	2017	A systematic review including meta-analysis of work environment and burnout symptoms		<i>BMC Public Health</i>	To determine the association between working conditions and risk of burnout. Strong (grade 3) evidence was found between job control and reduced emotional exhaustion, and between low workplace support and increased emotional exhaustion.	Level 1	High demands, low job control, high work load, and low reward increased risk of exhaustion.	GRADE system was used for scientific evaluation. Systematic lit search was performed for period 1990 - 2013 using the following databases: PubMed, Embase, PsychI	25 studies included in results	Lit search	work environment and burnout (not health care specific), confined to western world (Europe, North America, Australia, and New Zealand)	Burnout syndrome is influenced by work environment factors such as job demands, inability to control the work and non-supportive workplaces.

								NFO, Arblinc, Cochrane library and NIOSH TIC-2.				
Aryankhesal, Mohammadbakhs, Hamidi, Alidoost, Behzadifar, Sohrabi, Farhadi	2019	Interventions on reducing burnout in physicians and nurses: A systematic review		<i>Medical Journal of the Islamic Republic of Iran</i>	To determine effectiveness of several programs on burnout rates of doctors and nurses. Improving communication skills, teamwork, participatory programs and psychological interventions improved burnout.	Level 1	Burnout can be improved with yoga, meditation, and mindfulness.		18 studies	ISI/Web of Science, PubMed, Embase, Scopus and Cochrane CENTRAL were searched from Jan 2020 - June 2017.	Keywords were nursing or MD, burnout or depression or mental health. Non-interventional studies were excluded	Online intervention programs had good outcomes.

<p>Black burn, Thom pson, Frank enfiel d, Hardi ng, Linds ey</p>	<p>2020</p>	<p>The THRI VE progr am: buildi ng oncol ogy nurse resilie nce throu gh self-care strate gies</p>	<p>Rela tions hip base d care is the theor etical fram ewor k (mo del that help s to creat e a heal ing envir onm ent in healt hcar e orga nizat ions)</p>	<p><i>Oncol ogy Nursi ng Foru m</i></p>	<p>To develop an evidence-based program for addressing burnout and secondary trauma through resiliency in oncology healthcare providers. Burnout, resiliency, secondary trauma scores all improved significantly</p>	<p>Level 4</p>	<p>Self-care retreat using the THRI VE curricul um led to a signific ant decreas e in burnout and seconda ry trauma and an increas e in resilien ce.</p>	<p>The Compa ssion Fatigue Short Scale and the Connor - Davids Resilie nce Scale.</p>	<p>164</p>	<p>Flyer distribu tion</p>	<p>Mostl y nurse s at oncol ogy center in Ohio</p>	<p>THRIVE is an 8 hour retreat aimed at teaching self-care strategies, a social-media based six-week group interaction, and a final 2 hour session. The program focus was on breathing, mindfulness, chair yoga, art, aromatherapy, guided imagery, acupressure and self-massage.</p>
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<p>Brown, Whic hello, & Price</p>	<p>2018</p>	<p>The impact of resiliency on nurse burnout: An integrative literature review</p>		<p><i>Med Surg Nursing</i></p>	<p>Identification of nurse burnout causes, nurse resiliency characteristic and effective interventions to increase resilience. Workload, moral distress, poor support, & bullying lead to burnout in nurses. High resiliency is associated with optimism, self-efficacy, hope and flexibility.</p>	<p>Level 1</p>	<p>Confirms burnout costs (turnover, absenteeism, poor patient outcomes). Several interventions to increase resiliency and decrease burnout are identified.</p>		<p>16 articles</p>	<p>Literature search in Medline, CINAHL, PsychInfor and Health Source</p>	<p>Keywords included resiliency, burnout, stress, nursing, turnover, and nurse resiliency.</p>	<p>MBSR, emotional distancing, conflict training, and event trigger exercises improve resiliency. Several studies are provided giving examples of workshops and training to enhance resiliency.</p>
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<p>Colgan, Christopher, Bowen, Brems, Hunsinger, Tucker, Dapollonia</p>	<p>2019</p>	<p>Mindfulness-based wellness and resilience intervention among interdisciplinary primary care teams : A mixed-methods feasibility and acceptability trial.</p>	<p><i>Primary Health Care Research & Development</i></p>	<p>To determine the feasibility of a Mindfulness-based Wellness and Resilience program. The study showed a short MBWR program is feasible.</p>	<p>Level 3</p>	<p>Feasibility of MBWR program</p>	<p>The Brief Resilience Scale, The Five Facet Mindfulness Questionnaire-short form, The Self-Compassion Scale - short form.</p>	<p>31</p>	<p>Convenience. Employees were informed of the offering at office meetings</p>	<p>Employed by primary care office, speak English.</p>	<p>This was a feasibility study which showed a brief, cost effective MBWR program is feasible. This study included a control group, which was a wait-list of staff that were offered the program 3 months after the study concluded. Intervention was one hour/week for 8 weeks. Feasibility study only so was not powered for statistical significance.</p>
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Cunningham, Cayir	2021	Nurse leaders employ contemplative practices to promote health care professional well-being and decrease anxiety		<i>The Journal of Nursing Administration</i>	To determine the effect of a daylong resilience retreat on reducing anxiety levels, and increasing intent to practice mindfulness. The course was successful in decreasing anxiety levels and increasing intent to practice mindfulness.	Level 4	Resilience retreats can reduce anxiety and encourage ongoing use of mindfulness techniques	Anxiety inventory and 5-item questionnaire. Developed by the research team.	114	Nursing leadership considered Press Gamey resilience and engagement scores, low-performing units, unit leader interest, and a minimum of 10 staff members per unit.	RNs, NPs, other health professionals employed at UVA.	Retreat activities included guided breathing exercise, yoga, mindful eating, mindful walking, reflective writing, breathing exercises.
Delaney	2018	Caring for the caregivers: Evaluation		<i>PLOS ONE</i>	To examine the effect of an eight-week Mindful Self-compassion (MSC)	Level 4	Pilot study - self-compassion is negatively	Neff Self-compassion Scale, Freiberg Short	13	Convenience sample, self-selected after informa	Female nurses practicing in a	This study showed a significant correlation between self-compassion and secondary trauma

		of the effect of an eight-week pilot of mindful self-compassion (MSC) training program on nurses' compassion fatigue and resilience			course on nurses' compassion fatigue and resilience. Secondary trauma and burnout declined significantly and were negatively associated with self-compassion.		associated with burnout	Mindfulness Scale, Pool Professional Quality of Life Scale, and Connor-Davidson Resilience Scale.		tion session.	hospital in Ireland	and burnout, however no significant association between self-compassion and resilience. The study also showed a significant correlation between mindfulness and burnout, secondary traumatic stress, and resilience.
Doss et al, Needles, Nittol	2021	Stress management and resilience		<i>American College of Occupational</i>	To assess the benefit of a resilience program on health care	Level 4	SMART program resulted	Perceived Stress Scale - 10,	59	Program was advertised via email.	Faculty at Mass General Hospital	SMART program was developed at the Benson-Henry Institute for Mind Body Medicine

i, Mehta		ncy training for health care professionals		<i>pational and Environmental Medicine</i>	professionals' wellbeing and job satisfaction. Participants experienced a significant reduction in perceived stress, physician and mental health, and job satisfaction. There was no improvement of burnout		in significant reduction in perceived stress, physician and mental health, and job satisfaction.	PROMIS Global-10, 5 questions from the Physician Work life survey, Single item from EE MBI scale.			tal (physicians, nurse practitioners, faculty)	that teaches techniques effects of stress. Four main resilience building components are taught, 2 -3 weeks apart, for a total of 8 sessions. There was only one single question on burnout that was assessed which may be why there was no statistically significant change in burnout scores.
Gerber, Anaki	2020	The role of self-compassion, concern for others, and basic psychology	Self-determination theory	<i>Mindfulness</i>	To determine of self-compassion and compassion on burnout. This study confirmed the two concepts are separate and confirmed that self-compassion	Level 4	Compassion and self-compassion are resilience factors and protect against burnout.	Self-compassion Scale, Interpersonal Reactivity Index, Psychological Needs scale, MBI	109	Non-randomized. Author approached healthcare professionals about participating.	109 professional caregivers in Israel	Self-compassion and concern for others are unrelated to each other but both are related to burnout.

		cal needs in the reduction of caregiving burnout.			and concern for others reduces burnout.							
Grabbe, Higgins, Baird, Craven, San Fratello	2020	The Community Resiliency Model to promote nurse well-being	The Resilient Zone	<i>Nursing Outlook</i>	To evaluate the benefit of a Community Resiliency Model to improve emotional balance. Those that attended the class and utilized the skills had an increase in well-being and stress resistance for a long period of time (over 1 year)	Level 2	CRM resulted in improved well-being and stress resistance sustained for over 1 year.	WHO-5, Connor-Davidson Resilience Scale-10, Secondary Stress Scale, Copenhagen Burnout Inventory, Somatic Symptom	77	Convenience sample of nurses who responded to an invitation to participate. Participants were then randomly assigned to the intervention or	RNs at two urban tertiary-care hospitals	CRM is a self-care program that draws a connection between mental health and stress reactions. Based on using body sensory perception to treat trauma symptoms. The Resilient Zone is where individuals can adapt to challenges and manage stress. Trauma can move a person out of the zone. The zone is narrowed with fatigue, illness, hunger, or

								m Scale-8		control group.		pain. Using CRM, individuals can use sensory techniques to know when going outside of the zone and use self- regulation to return to balance.
Heber, Ebert, Lehr, Cuijpers, Berking, Nobis, Riper	2017	The benefit of web- and computer- based interventions for stress ; A systematic review and meta- analysis.		<i>Journal of Medical Internet Research</i>	To determine if internet and computer- based stress management interventions in adults are effective. These approaches are effective and have the potential to reduce stress- related mental health problems	Level 3	Web and computer based interventions can reduce stress	PsychINFO, PubMed, Cochrane.	23 articles	Four categories of search - stress reduction, evaluation of an intervention program, and application of a RCT as a design, delivery of web or computer	RCTs from 1990- May 2016, stress intervention	No trials were found that compared directly web-based to face-to- face interventions. Guided interventions are significantly more effective than unguided. Short and medium (up to 8 weeks) interventions were effective, greater than 9 weeks were not found to be effective. ;

										based interve ntion.		
Lin, He, Yan, Gu, Xie	2019	The effect s of a modif ied mindf ulnes s- based stress reduc tion progr am for nurse s		Work place Healt h & Safet y	To evaluate the effects of a modified MBSR program on stress levels and resilience among nurses in China	Level 2	MBSR and Resilie nce	Perceiv ed Stress Scale, Positive and Negativ e Affect Schedul e, Connor - Davids on Resilie nce Scale, The McClos key/Nu eller Satisfac tion Scale	90	Volunta ry particip ation by nurses at two hospital s in China.	Full time nurse witho ut havin g previ ously partic ipated in mindf ulnes s traini ng.	This studied used a modified MBSR schedule, decreasing weekly sessions to 2 hours from 2.5 hours, eliminated the 6 hour off site retreat, and decreased daily mindfulness practice to 20 minutes from 45 minutes. The authors found that this approach did lead to an improvement in resiliency, decrease in negative affect, increase in positive affect, and no improvement in job satisfaction. Limitations included convenience sampling, 20%

												fall out by participants.
Magtibay, Chesak, Couglin, Sood	2017	Decreasing stress and burnout in nurses		<i>The Journal of Nursing Administration</i>	To assess the ability of the Stress Management and Resiliency Training (SMART) in decreasing burnout and improving resilience. Statistically significant and meaningful decrease in burnout and increase in resilience were noted.	Level 4	SMART program led to decrease in burnout, increase in resiliency, reduction in stress, decrease in anxiety	Subjective Happiness Scale, Perceived Stress Scale, Generalized Anxiety Scale, Mindful Attention Awareness Scale, Connor-Davidson Resilience Scale, and Copenhagen	50	Convenience sample	Nurses at Mayo Clinic	SMART is designed to retrain the brain to be more intentional versus reactive when responding to stress. 12 web-based modules were offered, and 4 optional discussions with experts were offered.

								Burnout Inventory.				
Martin, Fiske, Lane	2020	Resilience Education for Health-Care Professionals	Positive psychology frameworks were used in development of the resiliency training.	<i>Creative Health Care Management</i>	To evaluate a resilience education program to improve measures of burnout and resilience in health-care professionals. The program showed statistically significant increases in resilience and decreased (although not significant) burnout.	Level 4	3.5 hour resiliency training - improved resiliency scores. Decrease in burnout but not statistically significant.	Copenhagen Burnout Inventory and Connor - Davidson Resilience Scale-25	25	Voluntary registration. Recruitment was conducted through flyers.	All disciplines in health care at a large academic medical center	Resilience content was focused on the five pillars of resilience - self-awareness, mindfulness, purpose, connection, and self-care. Intervention was one 3.5 hour workshop

Mistr etta, Davis , Temk it, Loren z, Darb y & Stonn ingto n	2018	Resili ence Traini ng for Work - Relat ed Stress Amo ng Healt h Care Work ers		<i>Ameri can Colle ge of Occu pation al and Envir onme ntal Medi cine</i>	To compare in-person vs smart-phone delivered MBRT program improved stress, well- being, and burnout in healthcare employees. Both groups showed improvement in well-being, whereas on the MBRT group showed improvement s in stress and emotional burnout over time.	Level 2	In- person and smart- phone resilien ce progra ms improv e well- being	DASS- 21, WHO- 5, MBI- HSS, Self- Compa ssion Scale, Compa ssion for Others Scale	60	Medica l center's website . Particip ants were consent ed and random ized to one of 3 arms (in- person MBRT, smartph one applicat ion, control group)		The intervention used resiliency training but no tool was used to measure resiliency. This study did look at self-compassion and included a focus on this in one of the 6 weekly MBRT sessions. Sleep was not improved in any of the groups. All groups ran for 6 weeks. Follow up was up to 3 months out of the intervention. The MBRT group showed improvement in the Emotional Exhaustion subscale of the MBI specifically,
Moff att- Bruce , Nguy	2019	Interv entio ns to reduc e		<i>Clinic al Obste trics and</i>	Decrease burnout for providers through a multiyear	Level 4	Mindfu lness training for clinical	MBI, Utrecth work engage ment	66, 32	Volunta ry	Facul ty, reside nts, SICU	Utilized Crew Resource Management training initially used to train

<p>en, Stein berg, Holli day, Klatt</p>		<p>burno ut and impro ve resilie nce: Impa ct on a health syste m's outco mes</p>		<p><i>Gyne colog y</i></p>	<p>program, focusing on improved institutional culture and resiliency enhancement. This study showed feasibility in promoting provider compassion and mindfulness while reducing burnout and improving resilience.</p>		<p>teams improv es wellnes s and outcom es.</p>	<p>scale, self- compas sion scale, self- transce ndence scale, cogniti ve-and affectiv e mindful ness scale- revised, Connor Davids on resilien cy scale.</p>			<p>care team at Ohio State Unive rsity</p>	<p>leadership, staff, and providers on how to generate culture change by leveraging safety. The next focus was on Mindfulness in Motion training, consisting of an 8-week program that is 1 hour/week consisting of different interventions, including yoga, mindfulness training, music, nutrition, and self-assessment. After the 8 weeks, a one hour monthly booster session was offered for 6 months. Mind- body skills were also offered, with 4 free online modules and 3 one hour in- person interactive</p>
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												lectures. Content was around exploring mindfulness, mind-body skill building. These led to a larger, comprehensive on-going health and wellness program at this organization. This study did measure cost savings via adverse event reduction leading to cost savings far more than the expense of the MIM program.
Ofeidodo, Cleland-Leighton, Nilson, Cloward,	2020	Impact of mindfulness-based, workplace group yoga interv	<i>Journal of Occupational and Environment Medicine</i>	To determine if group mindfulness-based yoga intervention could decrease burnout and improve wellbeing among healthcare	Level 4	8 week yoga program improved burnout, resilience, depression,	MBI-9, Depression anxiety Stress Scale, 14-item Resilience Scale, Santa Clara	43	Email invitations, flyers, work of mouth.	Healthcare professionals working at a 4-year community	Intervention included 1-hour mindfulness-based yoga activities for 8 weeks. For burnout, only personal accomplishment improved; emotional exhaustion and	

Case y		ention on burnout, self-care and compassion in health care professionals			professionals. Participants did have better scores on compassion, stress, anxiety, depression, resiliency, burnout		anxiety, stress, and compassion.	Brief Compassion Scale.			based medical school.	depersonalization did not. However, when further looking at the number of sessions attended and the impact on EE, there was significant decrease in yoga for those that participated in more than 11 sessions (some on their own .Yoga was in person.
Persson Asplund, Dago, Fjellstrom, Niemi, Kansson, Zeraati, Zuizina, Gerae	2018	Internet-based stress management for distressed managers: results from a randomized		<i>Occupational Environmental Med</i>	To determine the benefit of a guided internet-based stress management intervention among managers compared with a control group. Participants in the intervention group reported	Level 2	Internet based interventions can be successful in decreasing burnout	Perceived Stress Scale (PSS-14), Shirom - melamed burnout questionnaire, Montgomery asberg depress	117 (59 intervention, 58 control	Swedish university, recruited through advertisement and articles in regional and national venues. Rando	Had to have an adjustment disorder, working as a first-line or middle	Although not focused just on burnout, this study does support internet based interventions that reduce burnout.

<p>dts, Ljots son, Carlb ring, Ande rson</p>		<p>contr olled trial</p>			<p>significantly less symptoms of perceived stress and burnout than control group.</p>		<p>ion raging scale, insomni a severity index, alcohol use disorde rs identifi cation test, work experie nce measur ement scale, absente ism, present eeism and healthc are consum ption</p>		<p>mized by indep en dent researc her</p>	<p>mana ger.</p>	
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Rink, Silva, Adair, Oyesanya, Humphreys, Sexton	2021	The association between well-being behaviors and resilience in health care workers	<i>Western Journal of Nursing Research</i>	To explore the relationship between wellbeing behaviors and resilience. Wellbeing behaviors assessed included: exercise, yoga, meditation, spending time with a friend, vacation. All were significantly related to greater emotional thriving, and only exercise and time spent with a friend were related to emotional recovery.	Level 4	Well-being behaviors increase resilience.	Emotional Resilience scale (emotional thriving subscale and emotional recovery subscale).	2383	US HCWs enrolled in the WISER study	health care workers across the US	Resilience is made up of flourishing and bouncing back. Females and whites have lower resiliency scores that counter parts. Those with more professional experience had higher resilience. More years of experience was related to more resiliency. This study mentioned 'bite-sized' interventions to not add more overwhelming tasks to an already busy workforce.
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Sexton, Adair	2019	Forty-five good things ; a prospective pilot of Three Good Things well-being intervention in the USA for health care worker emotional exhaustion, depression, work-life	<i>BMJ</i>	To determine the benefit of Three Good Things intervention for HCWs. Those that participated in three good things had significant improvement in emotional exhaustion, depression, and happiness compared to baseline at 1, 6, and 12 months.	Level 4	Gratitude improved HCW well-being.	5 item derivative of the Emotional Exhaustion scale of the MBI, The Center for Epidemiological Studies Depression Scale-10 item version, Subjective Happiness scale by Lyubomirsky and Lepper,	228	Convenience sample with link found on health care website .	All HCWs, clinical and non-clinical, at one academic medical center	3GT is a quick and inexpensive intervention for decreasing burnout and improving well-being.
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		balance and happiness.						and work-life balance questions from the work-life climate scale.				
Tabibnia, Radecki	2018	Resilience Training that can change the brain		<i>Consulting Psychology Journal; Practice and Research</i>	To provide a review of the latest research on behavioral and cognitive strategies that affect the brain and assist in improved resilience.	Level 7	Resilience strategies - cognitive, behavioral, physical can create neuroplasticity leading to long term brain changes and increased	NA	NA	NA	NA	Cognitive pathways of building resilience in the brain: emotion disclosure, cognitive reappraisal (reframing), cognitive bias modification (CBM - change negativity bias, can be computer based exercises), mindfulness, cognitive behavioral therapy.

							resilience.					
Wei, Hardin, Watson	2021	A unitary caring science resilience-building model: Unifying the human caring theory and research-informed psychology and neuroscience	Watson's Human Caring Theory	<i>International Journal of Nursing Sciences</i>	To provide a resilience model and explain the science behind the core strategies based on Unitary Caring Science philosophy. A model was developed using the 10 Caritas-Veritas Literacy of Unitary Caring Science, resulting in 6 strategies.	Level 7	Unitary caring science resilience model can help clinicians build resilience and combat burnout .	NA	NA	Literature search in Medline via PubMed, CINAHL, PsychInfo and Google Scholar	Psychological and neuroscience studies that examined the effects of resilience strategies on brain structures and activities	Six strategies include loving kindness, nurturing connections, deepening sense of self and belonging, balancing self-learning, valuing forgiveness, and inspiring through faith/hope. Great model with examples. Supports living kindness meditation, meditation in general, giving back through volunteering, connecting with others, creating a sense of belonging, staying positive and releasing negative energy, recognizing each other uniqueness,

		ce evid ence										practicing gratitude, inspiring through faith and hope to promote wholeness.
Wern eburg , Jenki ns, Frien d, Berkl and, Clark , Rose dahl, Prest on, Danie ls, Riley, Olsen , Sood	2018	Impro ving Resili ency in Healt hcare Empl oyees		<i>Ameri can Journ al of Healt h Beha vior</i>	To determine the benefit of resiliency programs offered on- site to healthcare employees. Post intervention and 3 mo. follow up showed resiliency, perceived stress, anxiety, QOL, and health behaviors were improved.	Level 4	SMAR T progra m led to increas e in resilien cy, perceiv ed stress, anxiety, QOL, and health behavio rs	Connor - Davids on 25 item scale, Perceiv ed Stress Scale, General ized Anxiety Disorde r scale - 7, QOL, Current Health Behavi ors Questio nnaire	159	Potenti al particip ants were recruite d through employ ee publicat ions, newslet ters, and in- house wellnes s center commu nication s.	Adult welln ess center mem bers of a health care instit ution	12-week resiliency program using SMART tools. Biased group as they were already motivated based on their enrollment in the wellness center. Participants had to pay \$100 for materials. Sessions were taught by a certified wellness coach. Interventions included 60-90 min educational sessions over 12 consecutive weeks, in person. 14 total groups of 7-8 individuals per group.

Appendix B

Pre-Resiliency Program Survey

This survey is anonymous. The first three questions will help establish a unique identification that you will create and use again in the post-survey.

1. What are the first four letters of the city where you were born?
2. What month were you born, in a two-digit numerical? For example, April would be 04
3. What are the first three letters of the street you lived on in the 12th grade?
4. Have you previously participated in a mindfulness-based stress reduction program? (yes/no)
5. Do you intend to participate in Network Service’s Resiliency Program? (yes/no)
6. Please answer the following items with respect to your specific work setting.

Burnout survey	Disagree strongly	Disagree slightly	Neutral	Agree slightly	Agree strongly	Not applicable
Events in this work setting affect my life in an emotionally unhealthy way.						
I feel burned out from my work.						
I feel fatigued when I get up in the morning and have to face another day on the job.						
I feel frustrated by my job.						
I feel I am working too hard on my job.						

7. Please indicate how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

Resiliency Survey. Questions are removed due to copyright requirements from the author. See Appendix H for permission letter.	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time

Appendix C

Email Cover Letter for Survey Invitation

You are invited to participate in a quality improvement project aimed at decreasing burnout through improving resilience.

Burnout occurs as a result of chronic workplace stress and can affect your physical and mental health. Resilience is the ability to recover or bounce back from difficult situations. Research shows that increasing one's resilience can decrease burnout.

What is involved in this project?

This project involves three components. The first component is participation in a baseline survey which should take no longer than 10 minutes to complete. The survey will ask you questions to measure your current level of burnout and resiliency.

The second component is a resiliency program which consists of a 90 minute virtual meeting weekly for eight weeks. Four sessions will include live, guided instruction by an expert in the field of mindfulness. The other four sessions will consist of viewing pre-recorded talks methods to improve resiliency. Video cameras can be turned off during the sessions if preferred.

The third component is a post-program survey asking about your participation in the resiliency program and asking questions to measure your level of burnout and resiliency and should take no longer than 15 minutes to complete. The surveys and resiliency program can be completed during your regular workday.

The survey results are anonymous. You will create your own unique identification through several questions asked within the survey.

All components are completely voluntary, and you can participate in any or all of the components. Deciding not to participate in the surveys or resiliency program will not affect your employment. Your consent for participation in this project is implied by clicking on the link to complete the survey or joining the virtual meeting. You may stop participating in the sessions at any time during the eight weeks.

There are risks associated with participating in this project, which may include concerns of vulnerability when completing the survey or participating in the weekly virtual sessions. We have made every attempt to be sensitive to these vulnerabilities by making every question in the survey optional and noting optional video camera use during the sessions. If time allows during the sessions, you may choose to ask questions or comment, but this will be strictly voluntary, and you will not be called on.

Why are we doing this project?

Results from the 2019 Culture Pulse survey showed approximately one-third of (unit) staff had symptoms of burnout. This project aims to improve well-being by reducing burnout levels through improved resilience.

Thank you for your time and consideration.

If you have any questions please contact:

Melanie Watson at *(phone number redacted)*.

Appendix D

Post-Resiliency Program Survey

This survey is anonymous. The first three questions will help confirm your unique identification that you used in the pre-survey.

1. What are the first four letters of the city where you were born?
2. What month were you born, in a two-digit numerical? For example, April would be 04
3. What are the first three letters of the street you lived on in the 12th grade?
4. Please answer the following items with respect to your specific work setting.

Burnout Survey	Disagree strongly	Disagree slightly	Neutral	Agree slightly	Agree strongly	Not applicable
Events in this work setting affect my life in an emotionally unhealthy way.						
I feel burned out from my work.						
I feel fatigued when I get up in the morning and have to face another day on the job.						
I feel frustrated by my job.						
I feel I am working too hard on my job.						

5. Please indicate how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

Resiliency Survey. Questions are removed due to copyright requirements from the author. See Appendix H for permission letter.	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
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6. Did you participate in any of the Network Service’s Resiliency Program? (yes/no)

a. If no, survey will skip to question 13.

7. Which session(s) were most helpful: (check all that apply)

- a. Mindfulness sessions with Dr. Brantley
- b. Recorded session - The Science of mindfulness
- c. Recorded session - Relationship Resilience
- d. Recorded session - The Science and Practice of Gratitude
- e. Recorded session - Survival of the Kindest

8. How many sessions did you attend?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7
- h. 8
- i. Unsure

9. I thought the length of each session was

- a. Too long
 - b. Too short
 - c. The right amount of time
10. I thought the entire 8 week course was
- a. Too long
 - b. Too short
 - c. The right amount of time
11. I was satisfied with the Resiliency Program Experience
- a. Strongly Disagree
 - b. Disagree
 - c. Neither Agree nor Disagree
 - d. Agree
 - e. Strongly Agree
12. Include any additional comments about the Resiliency Program here:
13. (if no for question 6) Is there a particular reason you did not participate? (check all that apply)
- a. I am too busy
 - b. The times offered did not work for my schedule
 - c. I do not think I need to improve my resiliency
 - d. I was not aware of the program
 - e. Other (free text field)_____
14. I would attend a regular 30 minutes guided mindfulness session?
- a. yes

b. no

15. (if yes for question 14) The ideal frequency of a regularly offered 30 minutes guided mindfulness session is

a. Weekly

b. Every other week

c. Monthly

d. Other (free text field)_____


16. I would attend lunch-&-learns to view additional recorded or live resiliency education


a. Yes

b. No

Appendix E
Local Institutional IRB Letter





 **INSTITUTIONAL REVIEW BOARD DECLARATION OF ACTIVITY NOT MEETING THE DEFINITION OF RESEARCH**

The  IRB has determined that the following activity does not meet the definition of research as described in 45 CFR 46.102(d), 21 CFR 50.3(c) and 21 CFR 56.10(c) and satisfies the Privacy Rule as described in 45 CFR 164.514.

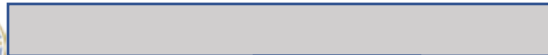
Protocol ID: Pro00109782


Reference ID: Pro00109782-INIT-1.0

Protocol Title: Decreasing Employee Burnout Through Improved Resilience at 

Principal Investigator: 

This IRB declaration is in effect from November 10, 2021 and does not expire. However, please be advised that any change to the proposed research will require re-review by the IRB.



Federalwide Assurance No. 

Appendix F**ECU IRB Approval Letter**

Click "download PDF" to save a copy of this page for your records.
Note: The IRB Office does not maintain copies of your responses.

Below is a summary of your responses

[Download PDF](#)

Quality Improvement/Program Evaluation Self-Certification Tool**Purpose:**

Projects that do not meet the federal definition of human research pursuant to 45 CFR 46 do not require IRB review. This tool was developed to assist in the determination of when a project falls outside of the IRB's purview.

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project. 11/30/2021

Appendix G
Burnout Scale

Please answer the following items with respect to your specific work setting.

	Disagree strongly	Disagree slightly	Neutral	Agree slightly	Agree strongly	Not applicable
Events in this work setting affect my life in an emotionally unhealthy way.						
I feel burned out from my work.						
I feel fatigued when I get up in the morning and have to face another day on the job.						
I feel frustrated by my job.						
I feel I am working too hard on my job.						

Appendix H

Connor –Davidson Resiliency Scale - 10 Use Agreement

Dear Melanie:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). We are pleased to grant permission for use of the CD-RISC-10 in the project you have described under the following terms of agreement:

1. You agree (i) not to use the CD-RISC for any commercial purpose unless permission has been granted, or (ii) in research or other work performed for a third party, or (iii) provide the scale to a third party without permission. If other colleagues or off-site collaborators are involved with your project, their use of the scale is restricted to the project described, and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.
2. You may use the CD-RISC in written form, by telephone, or in **secure electronic format whereby the scale is protected from copying, downloading, alteration, repeated use or unauthorized distribution. In all use of the CD-RISC, including electronic versions, the full copyright and terms of use statement must appear with the scale. The scale should not be distributed as an email attachment, nor appear on social media, or in any form where it is accessible to the public and should be removed from electronic and other sites once the activity or project has been completed. The RISC can only be made accessible in electronic form after subjects have logged in with a password or unique personal identifier.**
3. Further information on the CD-RISC can be found at the www.cd-risc.com website. The scale's content may not be modified, although in some circumstances the formatting may be adapted with permission of either Dr. Connor or Dr. Davidson. If you wish to create a non-English language translation or culturally modified version of the CD-RISC, please let us know and we will provide details of the standard procedures.
4. Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items respectively. When using the CD-RISC 25, CD-RISC 10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale.
5. The scale is provided at no cost for this project.
6. Complete and return this form via email to mail@cd-risc.com. **The scale will only be sent after the signed agreement has been returned.**
7. In any publication or report resulting from use of the CD-RISC, you do not publish or partially reproduce items from the CD-RISC without first securing permission from the authors.

If you agree to the terms of this agreement, please email a signed copy to the above email address. Upon receipt of the signed agreement, we will email a copy of the scale.

For questions regarding use of the CD-RISC, please contact Jonathan Davidson at mail@cd-risc.com.

Sincerely yours,

Jonathan R. T. Davidson, M.D.

Appendix I

Resiliency Program Brochure



Resiliency Program

You are invited to participate in a course created just for Network Services! The course consists of:

Eight weekly virtual 90-minute sessions, alternating between:

- Formal Mindfulness Training with expert [REDACTED]
- Well-Being Webinars provided by [REDACTED] ([REDACTED] continuing education credit available)

When: Two time slots are available

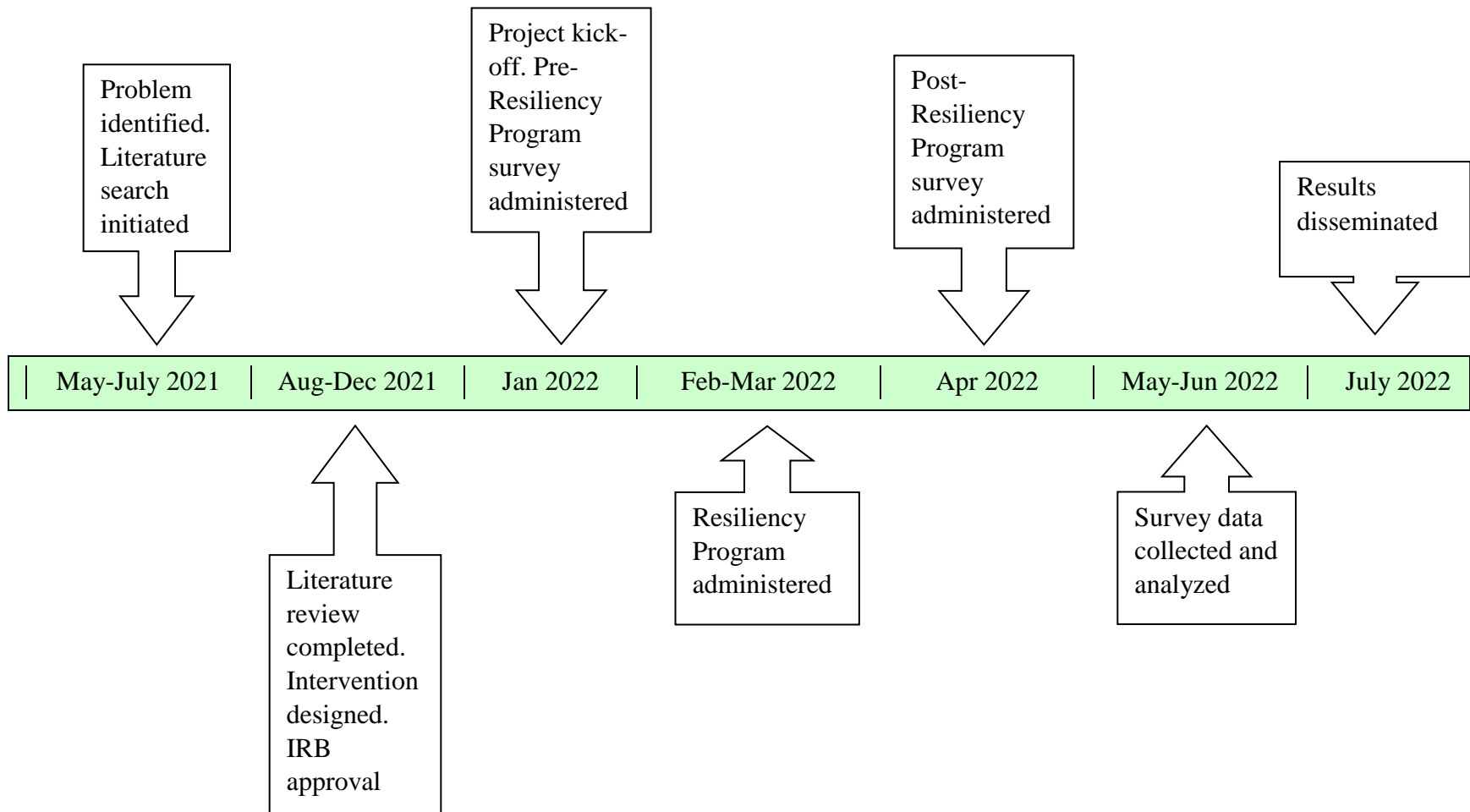
- Fridays: 12:00pm-1:30pm, February 4th – March 25th, 2022
Meeting link: <https://tinyurl.com/3fcsx3rm>
- Thursdays: 5:00pm-6:30pm, February 10th - March 31st, 2022
Meeting link: <https://tinyurl.com/2p9cp57y>
Calendar invites will be sent to your email. Accept the session that works best for you!

Complete the pre-program Well-being survey between January 18th and February 3rd

Complete the post-program Well-being survey between April 4th and April 15th

Contact Melanie Watson, [REDACTED]
with any questions

Appendix J
Project Timeline



Appendix K
Project Budget

		Hourly Wage	Number of Hours	Total Cost
Mindfulness Facilitator		n/a	n/a	\$ 3,000.00
Project Staff				
	Research	\$ 76.00	140	\$ 10,640.00
	Development	\$ 76.00	102	\$ 7,752.00
	Implementation	\$ 76.00	36	\$ 2,736.00
	Analysis	\$ 76.00	50	\$ 3,800.00
Site Staff	Staff Participation	\$ 54.90	339	\$ 18,611.10
Total Cost				\$ 46,539.10