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Tackling Burnout: Investing in Nurse Managers to Secure the Future of Nursing, Enhance

Manager Effectiveness, and Support High Quality Patient Care

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Abstract

Background: Burnout is a widespread, pervasive issue the healthcare industry. Many efforts related to burnout reduction have been focused on front line caregivers but there is continued opportunity to address burnout in leadership. The global aim of this quality improvement project was to reduce burnout among the nursing leadership team at a large, academic medical center in the greater Boston area.

Problem Description: A preliminary survey was completed to assess for the presence of burnout within the leadership team. Results revealed that more than half of the nurse leaders surveyed were experiencing burnout at least 50% of the time. This quality improvement project was designed with these results in mind.

Methods: A review of the literature was completed to determine available knowledge relative to burnout in leadership. One study conducted by Prochnow et al. (2021), was similar in nature and was used to frame the survey for this initiative. The survey developed by Prochnow et al. (2021) was utilized to measure burnout drivers, components, outcomes, as well as thriving factors and mentorship. The Plan Do Study Act method was utilized as a framework for improvement. The *Plan* phase included collecting preliminary burnout data to establish and define the local problem. The *Do* phase included a pre-intervention survey to establish a baseline, followed by delivery of burnout education and a *burnout reduction toolkit*. This phase was completed with a post-intervention survey. Additional survey questions were added by the project team to assess demographic characteristics of participants, as well as evaluate the perceived effectiveness of the education and toolkit. In the *Study* phase, data was reviewed and statistical analysis completed. The *Act* phase included dissemination of findings and integration into the nursing strategic plan for 2023.

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Intervention: The nursing leadership team was provided with an educational session addressing burnout during the annual nursing strategic retreat. This education provided an overview of the literature, review of available resources within the organization, and a summary of evidencebased interventions to reduce burnout. Nurse leaders were also given a burnout reduction toolkit with a summary of each intervention, available references if applicable, and a link to locally based options to employ that intervention. Examples included outdoor walking routes close to the hospital campus, local massage therapist, and employee assistance program information. **Results:** A total of 29 nurse leaders participated in the pre-intervention survey and intervention, with 24 nurse leaders completing the post-intervention survey. The survey collected data in three areas; demographics, burnout assessment, and a qualitative section to elicit further, individualized feedback. Demographic data revealed that the majority of participants (37.9%) had been in their role less than one year. In addition, when asked about total years in nursing leadership and not just current role, the majority (51.7%) also reported having less than 5 years of experience. The burnout assessment revealed that nurse leaders were generally satisfied with their job and engaged in their work, but felt a great deal of stress associated with their work. Participants also reported experiencing burnout symptoms at least weekly. When evaluating knowledge of burnout, there was a notable increase after the intervention with more than 75% of leaders reporting significant knowledge of burnout post education. In addition, many openended question comments revealed nurse leaders felt better prepared to address their burnout in the future. There were no statistically significant changes in any burnout metrics post intervention as analyzed with a paired t-test as well as a Wilcoxon Signed Rank test. However, there were two areas of interest regarding job satisfaction and work appreciation. These two areas demonstrated a medium effect per the Cohen's d statistic.

Conclusion: The specific aim of this quality improvement project was to reduce nurse leaders reporting burnout 50% of the time by 10% and those reporting burnout 75% of the time, by 3%. The specific aim was not met, however, there was a notable increase in knowledge of burnout. If more time was allotted between the intervention and the post survey, and a larger group of participants were included, it is possible the results may have been significant. Several nurse leaders commented that time was a limiting factor for them in trialing burnout reduction interventions. It will be important to continue to survey nurse leaders as time continues, to measure the long-term effectiveness of the interventions.

Keywords: burnout, nurse manager, leadership, wellness, quality improvement

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Tackling Burnout: Investing in Nurse Managers to Secure the Future of Nursing, Enhance Manager Effectiveness, and Support High Quality Patient Care Introduction

Problem Description

The health care industry has been plagued with burnout at every level for decades. The high demands of the work being done, the exposure to human suffering, and an ever-changing environment are just a few key contributors. Pair those factors with increased workload and fewer resources and it becomes clear why burnout is present at all levels and in all disciplines within our healthcare organizations. Healthcare workers, including physicians, physician's assistants, nurse practitioners, and nurses, have been well studied, with consistently high rates of burnout reported in the literature. There are a variety of burnout reduction tactics in the literature that are based on individual and organization wide interventions. Many of these interventions are specifically dependent on organizational and departmental leadership, which in this case would translate to nurse managers and directors. More attention must be paid to nurse leader burnout and meaningful interventions in order to secure the future of the profession and ultimately, patient care.

While there is focused attention on front line care providers, there has not been the same attention focused on the leadership team that would be expected to oversee the frontline caregivers, provide necessary resources, and prevent burnout on their teams. In fact, in 2018 nearly 35% of nurse managers reported symptoms of burnout. With a marked increase in healthcare complexity associated with the emergence of a global pandemic, burnout rates among nurse managers are projected to be closer to 75% based on recent data (Warshawsky, 2022). To expect nurse managers or directors, who may also be experiencing symptoms of burnout, to

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initiate interventions to prevent the same in their frontline caregivers is simply not realistic. Expecting those struggling with their own burnout to mitigate it and foster resilience in others may further contribute to the current healthcare labor crisis. As a profession, it is critical to work with our respective organizations to put interventions into action that preserve the resilience of our nurse managers and prevent burnout.

Within a large health system in New England, a preliminary burnout assessment was completed exploring five themes noted in a review of the literature. These themes were: symptoms of chronic exhaustion, feeling negative or cynical toward work, feeling ineffective, overall workplace stress, and interference with home life activities (Bogue & Carter, 2019). This survey was sent out electronically with an email explaining the intent of this quality improvement project as well as addressing the voluntary nature of the survey. Fifty nurse leaders were eligible to participate with a response rate of 74%. All but one of the respondents experienced symptoms of burnout to some extent with more than half experiencing symptoms of burnout 50% of the time or more. More specifically, 38% of respondents experienced symptoms of burnout 50% of the time and 13% experienced symptoms of burnout 75% of the time. With this initial survey, it is clear that there is opportunity to address burnout among this population. A review of the literature provided the foundational knowledge needed to assess for burnout in the nursing leadership team, as well as identify potential interventions.

Available Knowledge

Burnout is defined throughout the literature as a "chronic stress syndrome, including chronic feelings of exhaustion and negative feelings toward work (cynicism) and reduced professional efficacy" (Bakker & de Vries, 2021, p. 2). The term *burnout* was first used in the context of healthcare professionals in 1974 by Herbert Freudenberger (Bogue & Carter, 2019).

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The term was used after observation of caregivers working in clinical areas that were high risk and highly emotional, accompanied by low success rates for patients (Bogue & Carter, 2019). As reported by Bogue and Carter (2019), Freudenberger noted that burnout was a result of wholehearted caring for patients with rare success stories and an overall lack of decompression or detachment from the trauma of those patients' situations. The caregivers were not able to distinguish their professional role from themselves as a person and thus, the emotional toll that came with the healing work was insurmountable (Bogue & Carter, 2019). Over time, burnout has become fully acknowledged by the medical and nursing community as well as given its own International Classification of Diseases code (ICD), which gives specific diagnostic criteria to place around work-related burnout using the Maslach Burnout Inventory (Bogue & Carter, 2019). While it has been acknowledged in this fashion as a medical disorder or disease, it has not been openly acknowledged as such despite being one of the most prevalent mental health challenges among healthcare workers (Bogue & Carter, 2019). As the discussion around healthcare worker burnout has blossomed and expanded, national and international healthcare organizations have begun to shape initiatives around reducing burnout and ensuring we are caring for the mental health and wellbeing of our essential caregivers. The global pandemic has catapulted this conversation to the forefront of the global healthcare community and will continue to drive discussions for years to come. Even pre-pandemic, the Institute for Healthcare Improvement (IHI) adopted a fourth aim to its triple aim of healthcare quality improvement. The first three aims that make up the original *Triple Aim* are reducing cost, improving population health, and patient experience (Arnetz et al., 2020). The fourth aim focuses on the care of those who are caring for patients (Bogue & Carter, 2019). While this is not a new concept, it is one that has not been at the forefront of organizational execution as there are not tangible dollars or

patient outcomes that are readily tied to it. However, it is critical that organizations and healthcare professionals acknowledge the importance of caregiver wellness and resilience. Burnout among healthcare professions may translate to decreased staff engagement and productivity, poor patient experience scores, increased risk of medical errors and will further contribute to exaggerated attrition among the healthcare workforce (Prochnow et al., 2021). With more than 50% of frontline caregivers experiencing burnout, and a staggering 75% of healthcare leaders experiencing burnout, more attention is needed to secure our future in the healthcare industry (Prochnow et al., 2021).

Individuals will experience burnout differently and have symptoms or manifestations that vary widely. Some may experience a state of pure exhaustion after a day at work that interferes with their home life. Others may experience a more severe mental state that extends beyond a single day or afternoon and translates to sustained symptoms of depression and detachment. (Bakker & de Vries, 2021). Even mild symptoms of burnout have been linked to longer term physiological and psychological consequences including anxiety and depression, cardiovascular disease, diabetes, and all-cause mortality (Bakker & de Vries, 2021). In an effort to serve others and care for others, our healthcare providers and leaders are suffering severe consequences that transcend a bad day at work. Burnout runs much deeper than a frustrating meeting, or unexpected speed bumps in a project. Burnout is a state of existence that drives leaders or caregivers to lose parts of themselves and make sacrifices they did not expect to make to serve their career.

Throughout the literature, there are a variety of strategies that are suggested to combat burnout and drive improvements for our frontline caregivers and leaders. The first among those is specifically focused on organizational culture. Graystone (2019) suggests that employing the

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fundamentals of a Magnet [®] culture in an organization, specifically, autonomy, strong nursing leadership and meaningful recognition, will lead to better outcomes and less burnout. The author further suggests that stressed nurses are likely to experience errors or make poor decisions, are less likely to have meaningful professional conversations and connections with their peers, and more likely to leave their jobs as a result of these feelings (Graystone, 2019). An unhealthy work environment and high demand workload are both primary drivers of burnout and can be addressed through collaborative work at the organizational level to manage workloads and the work environment appropriately (Graystone, 2019). While much of what is described above is focused on the bedside clinician, these factors can be transferable to frontline nurse leaders. Many highly skilled clinicians are promoted into leadership roles due to their skill at the bedside, with little training, development, or skill transfer from other leaders prior to assuming their role (Kelly et al., 2019). Being placed in a situation to run a unit, with little to no mentorship or development and no organizational infrastructure to support new leaders is a primary driver of burnout among the nurse manager population. Many studies to date have acknowledged this challenge and the presence of burnout in the nurse manager role but have not studied interventions or any associated sequalae of burnout (Kelly et al., 2019). In order to realize success in this arena, organizations and senior nursing leaders must acknowledge the presence and risk of burnout in their management teams and take action to prevent burnout from overtaking new nurse leaders. One group studying burnout in Canadian nurses cited that workload, and challenges with one's supervisor are two primary drivers (Stelnicki & Carleton, 2021). The same can likely be said in the nurse leader population and thus directors, senior directors, associate chief nurses and chief nurses must be aware of mitigation strategies, professional development opportunities, and interventions specific to burnout.

In additional to interventions aimed at addressing organizational culture, there are several strategies cited in the literature to combat and reduce burnout. In one systematic review (SR) conducted by Brand et al (2017), there were system level interventions recommended based on themes throughout various studies on burnout. These included: "understanding local staff needs, staff engagement at all levels, strong visible leadership, support for health and wellbeing at the senior management and board level, and a focus on management capability and capacity to improve staff health and well-being" (Brand et al., 2017, p. 3). The authors acknowledge that the studies included in their review were considered to be poor in terms of reliability and validity and more research needs to be conducted on whole system changes in relation to their influence on burnout (Brand et al., 2017). While this statement should certainly caution readers on the applicability of the interventions or actions listed above, it does not deter us from gaining better insight to the widespread prevalence of burnout and the need for future research and interventions. It is interesting that the recommendations derived from the literature in this SR would suggest that organizational senior leadership understand the needs of their team, ensure engagement at all levels, be visible, and support the health and well-being of their teams while also ensuring local leaders have the ability to ensure the health and well-being of the teams that report to them. These are lofty recommendations and further underscore the importance of ensuring a resilient management team that can provide what is suggested above to their caregivers.

There are also a variety of individual based interventions throughout the literature that are aimed at reducing burnout at a personal level, rather than a systems-based approach. One study examined using a Job Demands-Resources theory to shift individuals to a place of resilience to combat and reduce burnout. This study first examined the behaviors associated with burnout which included two primary actions or mental states associated with the term maladaptive selfregulation; self-undermining and coping inflexibility (Bakker & de Vries, 2021). Maladaptive self-regulation is a cycle of behaviors that is brought on by burnout that drives individuals to act in a certain manner, which then contributes to the burnout cycle even further. Essentially, their mindset becomes a self-fulfilling prophecy that leads to their severe burnout (Bakker & de Vries, 2021). Self-Undermining is a behavior or series of actions that creates barriers to success that would not otherwise be there (Bakker & de Vries, 2021). Self-undermining ultimately impairs job performance as the individual creates additional stressors by adding perceived obstacles on to their work tasks. For example, a nurse manager may find it challenging to complete a staff schedule because they simply do not have time. Rather than blocking time to do the schedule or considering delegating the task, the nurse manager will use time as the primary barrier and create additional barriers to prevent them from making time. This results in a schedule that is published late, staff that are frustrated, and the manager feeling inadequate (Bakker & de Vries, 2021, 2021). Coping inflexibility is characterized by utilizing the same coping strategy for all situations. Typically, an individual will cope with a stressful situation by trying to decrease or eliminate the stressor. If the stressor is workload, the individual might cope with that by working extra hours or weekends in order to meet deadlines on time. When this is short term, it is sustainable and contributes to further success at work that leaves the individual feeling satisfied. In a maladaptive coping state, the individual may shy away from the work, avoid getting it completed or discussing with their supervisor that they do not have the bandwidth at the present time, allowing the work to pile up, and subsequently increasing their stress level about the amount of work needing to be completed. These strategies are known as adaptive and avoidance coping respectively (Bakker & de Vries, 2021). Ensuring flexibility in coping strategies is

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critical to long term success. If an individual is always using adaptive coping, they will burnout as they are always willing to work extra or take on more work to meet deadlines. Conversely, avoidance coping will have the same affect if used all the time, as the individual will never be able to get their work done. Avoidance coping in the short term, can be restorative by giving an individual the chance to take a break and recharge (Bakker & de Vries, 2021). Overall, maladaptive self-regulation is a human behavior that individuals who are in a state of burnout may naturally turn to without realizing what they are doing. This can worsen the challenges of burnout and create a continuous cycle that leaves the individual experiencing increased burnout as time goes on. It is important to educate individuals and teams to recognize these behaviors in themselves and identify strategies to act when these behaviors begin infiltrating into daily work.

To combat these self-destructive but unintentional behaviors, Bakker & de Vries (2021) offer adaptive self-regulation strategies; recovery and job-crafting. Recovery is centered in exactly what one may expect based on the word recover; taking time away from the work to reset and recharge. This will look different for each individual and can include a variety of actions including physical activity, tapping into personal interests or hobbies, mindfulness practices such as meditation, and socializing with friends or family (Bakker & de Vries, 2021). There are four essential experiences that have demonstrated impact on an individual's recovery including psychological detachment, relaxation, mastery, and control (Bakker & de Vries, 2021). It is important that individual team members understand the importance of participating in recovery activities that work for them. During periods of high work demand, it is highly likely that individuals will not participate in recovery activities putting them at risk for burnout (Bakker & de Vries, 2021). In addition to recovery, job-crafting is the second behavior suggested in this study. Job crafting, is an exercise in perspective in which an individual will categorize or label

their tasks in a more purpose driven fashion (Bakker & de Vries, 2021). This may look like labeling a task as essential to completing because without it, the work product of that person's team will suffer. In the earlier scheduling example, the nurse manager could view the schedule as a necessary task to ensure timely, safe patient care rather than an arduous administrative task. This may increase their motivation to complete that task as they focus more on the result of safe patient care, and less on the tedious or time-consuming nature of producing a balanced schedule. This is the individual's connection to purpose and what drives them to continue to do the work that they do every day. Honing in on this and using it to drive everyday tasks is critical to supporting success and reducing burnout.

With prevalence of burnout at an all-time high in the healthcare industry, it is critical that interventions to reduce burnout be employed at all levels of nursing practice to secure our future. Current research indicates that there is burnout present in the nurse leader population. This contributes to dissatisfaction in their role with intent to leave, poor decision making and a decrease in emotional intelligence (Kelly et al., 2019). Current estimations of healthcare leaders experiencing burnout are as high as 75%, highlighting the need for action (Warshawsky, 2022). In one small sample of nursing leaders, 10 out of 12 expressed that they were considering leaving their leadership role but that they found joy in their work and would stay with hopes of seeing increase organizational support, mentorship, and administrative support (Prochnow et al., 2021).

Focused attention on nurse manager burnout, with an intent to reduce burnout, increase job satisfaction, and decreased turnover is critical to the success of the nursing profession in the future. Turnover in the nurse manager role has a variety of implications including decreased productivity and departmental throughput, decreased department efficacy, interruptions in quality improvement work, negative patient experience events, and increased operational costs (Prochnow et al., 2021). While nurse managers are able to find some joy in their work, and some will stay with the profession in hopes of improvements in support and mentorship, senior nursing leaders must take action to measure and combat burnout in order to secure future success.

The themes in the literature are clear. Burnout is endemic to our healthcare workforce at alarming rates. It is more important than ever to dedicate focused attention on management and reduction of burnout. Within nursing leadership, focusing on cultural adaptations coupled with individual mentorship and support is critical to the success of our leadership workforce and the future of healthcare.

Rationale

This quality improvement project employed a Plan-Do-Study-Act, or PDSA methodology. In the *Plan* stage, a preliminary survey was completed to establish the presence of burnout within this health system. This information was then reviewed by the author, the practice mentor, and the faculty mentor to surmise themes and confirm or deny the hypothesis that burnout was a challenge at this organization. Once the presence of perceived burnout was established, the practice mentor and DNP project lead worked together to identify opportunities to intervene with the population in question. Lastly, in the planning stage, the proposal was reviewed by the UNH Department of Nursing Quality Review Committee as well as the facility Institutional Review Board.

In the *Do* stage, a retreat focused on quality, safety, and nursing excellence was held with the nursing leaders. As part of this retreat, a discussion focused on burnout took place to educate the leadership team on what burnout is, how to recognize it, and some potential reduction and prevention strategies. During this education, there was also an opportunity to try a few

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interventions to reduce stress and burnout as well as a more comprehensive list of interventions to take home post retreat. Each participant in the retreat left with a *burnout reduction toolkit* comprised of a link to a burnout self-assessment that can be completed at any time and provide insight into level of burnout, or risk for burnout, the individual is experiencing at that moment in time. In addition, the *burnout reduction toolkit* provided a list of available resources and strategies available to the nursing leadership team. One week post retreat, the participants completed a follow up survey to re-evaluate burnout and assess utilization of interventions from the toolkit. The team rated their burnout using the same survey questions used to measure perceived burnout in the pre-survey. This post survey also provided a series of open-ended questions to discuss barriers to burnout prevention and any perceptions of burnout that may have changed as a result of the presentation or toolkit.

In the *Study* stage, the results of the post education survey were reviewed to assess overall burnout reduction effectiveness. Effectiveness of the intervention was determined by conducting a paired sample t-test and Wilcoxon Signed Rank test. This statistical analysis provided a review of each survey question and evaluated for any statistically significant change. In addition, the qualitative elements were analyzed for themes. Effectiveness of the burnout education provided was measured by comparing pre and post education knowledge levels of burnout. Lastly, the effectiveness of each burnout intervention was evaluated by participants to inform future iterations of the toolkit.

In the *Act* stage, the results of this quality improvement project were shared with the leadership team with a review of any notable implications for practice. Following the review of the results of this project, strategic initiatives focused on reducing burnout in the nursing leadership team were set for 2023. One of these implications included the replication of the

leadership retreat in the coming year. As a result, the retreat will be repeated in 2023 with time dedicated to addressing burnout. Nurse leaders were given the opportunity to provide feedback on the effectiveness of the *burnout reduction toolkit* through the post intervention survey. In addition, the senior nursing leadership team will plan to resurvey the entire nursing leadership team on an annual basis to assess the status of burnout within the organization. This annual assessment could also inform future interventions for the senior nursing leadership team and future nursing strategic plans.

Specific Aims

The global aim of this work was to reduce the perception of burnout among the nurse leader population at the medical center. This can strengthen the team, lead to more resilient leaders, and possibly drive improved staff nurse retention through leadership stabilization. This stabilization also has the potential to lead to improved patient outcomes for the organization.

To establish the need for this quality improvement initiative, burnout was first measured using a five-question survey addressing common themes of burnout noted in the literature. These included: negative feelings toward work, work related stress, emotional exhaustion, and interference with home-life activities. The measure used to define burnout was the percentage of time at which nurse managers, clinical nurse leaders, and assistant nurse managers experience burnout symptoms. These symptoms include negative feelings toward work, high stress levels, and emotional exhaustion. In the preliminary survey, 38% of respondents experienced symptoms of burnout 50% of the time and 13% experienced symptoms of burnout 75% of the time. The specific aim of this project will be to reduce those reporting burnout 50% of the time by 8% and those experiencing burnout 75% of the time by 3% by December 2022.

The long-term goal of this quality improvement initiative will be to establish a regular process for measurement and mitigation of burnout within the organization to ensure the future success of the nursing leadership team.

Methods

Context

This project was conducted at a 334-bed academic medical center that is part of a larger healthcare system comprised of 14 hospitals in the greater Boston area. The medical center is a teaching affiliate of a local university and has a robust clinical residency program, nursing education programs, clinical research programs, and additional up and coming clinical affiliations within the department of nursing. The medical center is a level I trauma center, a comprehensive stroke center, a HeartCARE center of excellence, and is home to Worldrenowned liver and kidney transplant programs.

The leadership structure within nursing is as follows: The executive leader of the division is the chief nursing officer. There are four associate chief nursing officers (ACNO) in charge of subdivisions within nursing; Inpatient nursing, surgical & interventional services, ambulatory and emergency nursing, and professional development. Each ACNO has anywhere from 1-6 directors, depending on scope, to oversee specific areas within their subdivision. Each director has anywhere from 1-10 nurse managers overseeing individual departments within that director's purview. Each nurse manager may or may not have an assistant nurse manager depending on their scope and size of their department(s). An example organizational chart can be seen below in Figure 1. This structure is replicated across four subdivisions of nursing all overseen by associate chief nursing officers and ultimately reporting up to the chief nursing officer.

Figure 1

Organizational Chart



The Doctor of Nursing Practice (DNP) project lead identified the need to address burnout within the nursing leadership team through various personal experiences and themes noted in the literature throughout the course of the DNP program. The project team consisted of a faculty mentor with the department of nursing at UNH, as well as the medical center's chief nursing officer as the practice mentor in which this project was conducted.

Cost Benefit Analysis

This project can have significant impact on the future success of the organization. With recent nurse manager turnover at 18% in 2021, there is potential opportunity to intervene and prevent further turnover from occurring relative to burnout. Each time a nurse leader leaves the organization, there is risk of losing staff nurses in that specific area, implications with quality measures, decreased efficiency, and decreased departmental effectiveness (Prochnow et al., 2021). Average recruitment of a nurse manager at the organization is about 4 months, leaving another manager to cover double the workload for that period of time. Training and onboarding a new manager will take approximately 3 months with 40 hours of formal training provided.

Based on average nurse manager salaries at the organization that is a cost of about \$39,000 dollars per manager in training. An 18% turnover rate translates to 9 nurse managers, costing the organization \$351,000 dollars in 2021 alone. In addition, the inherent opportunity cost of losing a valuable and knowledgeable leader in any clinical area has long standing implications and creates instability in that department for many months after the manager departure. The completion of this survey and intervention is a negligible cost compared to the potential loses the organization faces with continued nurse manager turnover.

Interventions

Based on themes throughout the literature, burnout reduction is centered in three main areas: self-awareness of burnout manifestations, organizational culture, and individual based burnout reduction interventions. For the purposes of this quality improvement project, the focus will be on individual based interventions. The organization is simultaneously employing culturebased strategies to support leader well-being and success including modified work schedules, a comprehensive new leader orientation and development plan, and ongoing professional development opportunities.

Nurse managers were the primary participants in this quality improvement project. This is a group of nurse leaders that oversee department operations and clinical practice across all areas within the organization. The participants have varying scopes of responsibility depending on their respective areas and experience. Nurse managers have direct reports varying anywhere from 2-150. Some nurse managers oversee one singular department such as an inpatient unit, while others may oversee 3-5 departments with several ambulatory clinics or procedural areas within a similar division. The participants have varying levels of experience with some who have been in a formal leadership role for 90 days and others who have been in their nurse

manager role for 30 years. Educational preparation varies across the population with the minimum requirement being a bachelor's degree.

In order to meet the specific aim of this quality improvement project, there were two primary interventions. The first intervention was an educational presentation and discussion about burnout during an all-day leadership retreat taking place in October, 2022. This retreat took place for a full day, offsite, with the nurse managers, directors, ACNOs and CNO. The second intervention the use of the *burnout reduction toolkit*.

Burnout Educational Presentation

The burnout education was a presentation and facilitated discussion that took place in a 90-minute session during the annual nursing strategic retreat. This discussion was led by the DNP project lead and overseen by the practice mentor. The presentation included a summary of the findings from the literature review, a review of preliminary survey results indicating the need to address burnout within the nursing leadership team at the medical center, and a review of potential interventions. After the presentation portion, discussion took place with the team to garner their thoughts on burnout and reduction strategies that they find helpful. The goal of the discussion was to learn from each other, and generate new ideas for burnout reduction above and beyond those presented. In addition, this discussion allowed for the team to identify organization-based interventions already implemented within the last year.

Burnout Reduction Toolkit

The second intervention was the use of a *burnout reduction* toolkit. This toolkit was developed by the DNP project lead based on the current literature and available resources. The toolkit provided a variety of self-guided interventions that nurse leaders can employ to reduce their own burnout. The *burnout reduction toolkit* has a link to a free burnout assessment that

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provided the leaders with an opportunity to complete a brief survey that generates a burnout risk score. This self-assessment is housed on a free, external site with resources for burnout reduction and prevention. Information regarding reliability and validity as well as authorship was requested, however, the company providing this free service was not able to share that information. For those reasons, this was a supplemental tool nurse leaders could use to augment their own burnout reduction plans and was not be used for data analysis in this project. The toolkit also contained a list of various interventions and ideas that can be employed to reduce stress and burnout. Examples of interventions included are: physical activity and wellness recommendations including walking paths around the organization, gym membership discounts through the health insurance provider, various mindfulness and meditation resources, nutritional guides, and sleep hygiene tips. In addition to physical activity and wellness, there are links to the employee assistance program (EAP) vendor to make connections with mental health professionals as needed. The EAP vendor also provides services such as recommendations for home cleaning or home improvement work, childcare providers, and a variety of other services aimed at making the stressors of work and home easier to handle. At the closing of the retreat, participants were encouraged to pick one burnout reduction intervention to employ over the course of the following week. One week after the retreat, the participants were asked to complete a follow up survey measuring perceived burnout after the retreat and employing an intervention of their choosing.

Study of the Interventions

This quality improvement project is centered on measuring and reducing burnout with a specific aim to reduce burnout within the nursing leadership team. One week prior to the presentation and discussion regarding burnout, the leadership team was given a pre-survey

measuring burnout. Each team member entered a random 4-digit number and was asked to enter that number in to the survey pre and post intervention. One week after the retreat, the same survey was sent out to each leader asking for their unique number to allow for a paired sample ttest to be completed. Pre intervention and post intervention responses were also compared in aggregate to measure effectiveness. To evaluate the *burnout reduction toolkit*, participants evaluated each burnout intervention with how effective or not effective a particular strategy was in reducing burnout. This toolkit has not been evaluated previously and data obtained through this evaluation will inform any future iterations. This information was also used to inform future initiatives for the 2023 nursing strategic plan.

Measures

Operational Definitions

Burnout: a "chronic stress syndrome including chronic feelings of exhaustion, negative feelings toward work (cynicism) and reduced professional efficacy (Bakker & de Vries, 2021, p. 2).

Nurse Manager: Nurse leader overseeing a department of nurses, nursing assistants, unit coordinators, clinical nurse leaders and assistant nurse managers. This role has direct reports and human resource responsibility.

Assistant Nurse Manager/Clinical Nurse Leader: Department clinical leader and content matter expert, working under the supervision of the nurse manager to oversee day-to-day operations and practice in a given nursing department. This role does not have direct reports or human resource responsibility.

Nursing Leadership: Nursing leadership is defined as a formal leadership role such as nurse manager, assistant nurse manager or clinical nurse leader. This does not include experience as a charge nurse.

Data Collection

This survey was administered via *Qualtrics XM*, an electronic survey platform. Anonymity was maintained and only aggregate data was shared. For any grouping where there are less than five total respondents, data will be presented as total percentages and not stratified by any demographical information to preserve anonymity. Participants were asked to enter a unique 4-digit number of their choosing to facilitate a paired sample t-test post intervention. This number was not known to the DNP project team, and thus anonymity was maintained.

Demographic Data

Demographic data was collected specific to years of experience in nursing leadership, and years of experience in the participant's current leadership role, as well as clinical area of oversight. In addition, educational preparation was collected. Within the available literature, there was no commentary on any connection between years of experience or educational preparation and burnout. However, it is possible that with more years of experience and professional wisdom, burnout may be reduced. It is also possible that more experienced leaders report a higher level of burnout. It is possible that educational preparation may have influence on burnout. With more educational training, one may have a broader perspective of healthcare and leadership and thus may experience less burnout. Demographic survey questions can be reviewed in detail in Appendix B.

Pre-Intervention Survey

A pre-intervention survey was used to measure the frequency nurse leaders are experiencing manifestations of burnout. The survey utilized was developed by Jenny Prochnow et al. (2021), and is based on the Maslach Burnout Inventory (MBI), Areas of Worklife Survey (AWS), and the Mini Z burnout survey instrument. Permission has been obtained by Prochnow to use the survey published in their 2021 article. In discussion with Prochnow, no psychometric testing was performed on the survey utilized, however, each of the three surveys used to make up this 17-question survey has validity and reliability information available.

The Maslach Burnout Inventory has demonstrated reliability above the recommended levels for all three sections of the tool. In addition, there have been a number of studies that have demonstrated the correlation between the job characteristics assessed and burnout (Maslach et al., 2018). A number of studies have examined the psychometric properties of the MBI and have demonstrated consistent reliability and validity. Specifically, reliability of the tool was assessed using Cronbach's coefficient alpha with scores for the MBI as follows: Emotional Exhaustion 0.90, Depersonalization 0.79, and Personal Accomplishment 0.71. Validity was assessed using a correlation scale comparing observed behaviors with reported behaviors (Maslach et al., 2018). The Areas of Worklife Survey has also demonstrated strong reliability and validity. Reliability of the AWS was confirmed with test re-test correlation which demonstrated consistency over time. Validity was confirmed with correlation between scores on the AWS assessment and verbal or written comments (Leiter & Maslach, 2022). Lastly, the Mini Z burnout survey is a validated tool used to measure burnout in physicians, nurse practitioners, and physician's assistants. This tool was validated by assessing internal consistency with a Cronbach's alpha and

MacDonald's Omega Coefficient (Linzer et al., 2022). Specific statistical values were not available for the Mini Z burnout survey, but Linzer et al. (2022) confirm validity and reliability.

There is currently a gap in the literature relative to the population of this quality improvement project. There are several tools that have been validated for clinicians, however, many have not been used in the nurse leader population. Prochnow et al., (2021) was able to combine applicable sections from each of these three validated tools to create one, concise survey that can be used to examine burnout in this population. While no psychometric testing was done on this particular survey, the surveys from which this was derived have all be shown to be valid and reliable. The survey is 17 questions centered around five core sections; outcomes, burnout components, and drivers of burnout, thriving factors, and mentorship (Prochnow et al., 2021). Nine of the questions are answered via a 1 to 5 Likert scale (Strongly Agree to Strongly Disagree). The remaining eight questions have multiple choice answer selections that are specific to the context of that question. The burnout component of the survey is included in Appendix A.

Post-Intervention Survey

A post-intervention survey was completed one week after the retreat and introduction of the *burnout reduction toolkit*. The post intervention survey was composed of the same burnout assessment developed by Prochnow et al. (2021), with the addition of an evaluation of the burnout education and interventions. Each intervention presented in the *burnout reduction toolkit* was listed and asked participants to indicate if they have employed the intervention as well as perceived effectiveness. The full list of post-intervention additional survey questions can be reviewed in Appendix C.

Analysis

Demographic Data

Demographic data has been analyzed as categorical data, looking at frequency and percentage of participants in each category being measured. Participants were asked which role they serve in at the organization; Nurse manager or assistant nurse manager/clinical nurse leader. Demographic data collected was used to assess the overall experience mix of the participants, including years of experience in current role, years in nursing leadership, as well as level of education and area of oversight.

Burnout Assessment

Burnout was assessed using a modified survey, developed by Prochnow et al. (2021) that combined the Maslach Burnout Inventory (MBI), Areas of Worklife Survey (AWS) and the Mini Z Burnout Survey. For each question data is reported as the total number of participants who answered a particular answer expressed as a percentage of the total participants. The burnout survey also included two open ended questions: Please describe what you find most satisfying and engaging about your work as a nurse leader; and describe any interventions you have previously implemented that you found effective in reducing burnout. Comments will be compiled and analyzed for any commonalities. This was done by manually reviewing all comments from any open-ended question and highlighting key words for themes.

To evaluate pre and post intervention effectiveness, a paired sample t-test and Wilcoxon Signed Rank test was completed by directly comparing pre and post intervention surveys. Originally, only a paired sample t-test was to be conducted, however, the decision was made to analyze data with the Wilcoxon Signed Rank test as the Likert scale items generated data that was more ordinal in nature. In order to pair survey responses, each participant was asked to enter a 4-digit number for the pre and post survey. Their results were paired and differences in mean and median responses were calculated for each question. This was then used to assess for any statistically significant changes.

Burnout Reduction Toolkit

The *burnout reduction toolkit* was evaluated using descriptive statistical analysis for each survey question asked. This section of the survey asked if nurse leaders have used any strategies identified in the toolkit and if so, to rank overall effectiveness on a 1-4 scale. This was analyzed as categorical data assessing effectiveness of each intervention provided in the toolkit according to the participants. This data was also presented as categorical data looking at frequency at which an intervention was used and overall percentage of nurse leaders using a particular intervention. This information was helpful in understanding common interventions among the team and will help guide the organization in future opportunities for burnout reduction on the team. Leaders were also asked open ended questions about their perception of burnout post implementation of an intervention as well as any barriers they have experienced to implementing interventions. These comments were analyzed for themes.

Survey Timing

The pre-intervention survey was administered one week before the retreat to ensure burnout was measured before the burnout educational presentation and review of the *burnout reduction toolkit*. The post survey was sent to the participants of the retreat one week after the event to measure effectiveness of the *burnout reduction toolkit* and reassess overall manifestations of burnout with the same pre-intervention burnout questions.

Ethical Considerations

Burnout is deeply personal and challenging to share. There are potential limitations in that nurse managers may not be comfortable sharing their true answers in a survey and there is potential for some to have reservations participating in a discussion about burnout. With the author and lead of this quality improvement initiative serving in the director role with seven nurse managers reporting to them, inclusion or exclusion of those seven direct reports was considered. Due to the anonymity and optional nature of survey participation, the decision was made to include all nurse managers, despite reporting structure. It was also critical to maintain anonymity and assure nurse managers that there are not punitive consequences based on information shared through this project.

Results

Results

The interventions for this quality improvement project were designed in conjunction with the DNP practice mentor who is also the chief nursing officer (CNO) within the organization and ultimately oversees strategic planning. The decision was made to use time during the annual nursing strategic retreat to review the burnout education and reduction toolkit with all nurse managers within the organization. A timeline summary can be seen below in Figure 2.

Figure 2

Timeline of Interventions



Modifications to Interventions

The original intervention plan for this quality improvement project included scheduling specific time with all of nursing leadership to present content about burnout. Based on the preproject survey results identifying burnout was present in the nurse manager group, the DNP project team determined it would be best to integrate this work into our nursing strategic retreat. The intention of this was to ensure leaders were relieved of their everyday operational duties to facilitate more meaningful learning and discussion. An additional modification included the *burnout reduction toolkit* to provide nurse leaders with a sampling of available resources. This modification was made after identifying that many leaders were not aware of what resources were available to them within the organization and locally.

Contextual Elements

The support of the organization's nursing executive team was imperative to this work. The CNO encouraged the participation of all nurse managers by supporting time to complete the survey, and allotted 90 minutes on the strategic retreat agenda to deliver the educational content. The organization is in the final stages of a Magnet journey, which also highlighted the importance of this work. In the coming year, the 2023 Magnet program manual will be introducing new standards around wellness that will underscore the importance of burnout reduction in the leadership team.

Demographic Data

Participants in this DNP quality improvement project consisted of nurse managers at the organization. Many participants had been in their current role for less than 1 year, with the majority of respondents in their role 5 years or less. When participants were asked about their overall years in nursing leadership, not just their current role, the experience mix shifted to a

wider distribution ranging from 1 year to more than 15 years. Clinical area of oversight varied across the three subdivisions with 39.3% of participants in the inpatient setting, 14.3% in the surgical and interventional setting, and 46.4% in the ambulatory, emergency, professional development, or quality settings. Level of education revealed all participant have at least a Bachelor's degree with the majority having a Master's degree, and one participant has a Doctoral degree. Full detail can be seen below in Table 1.

Table 1

Demographic Information	n (%)
Role	
Nurse Manager	29 (100)
Assistant Nurse Manager/Clinical Nurse Leader	0 (0)
Experience in Current Role	
Less than 1 year	11 (37.9)
1-3 years	9 (31.0)
4-5 years	5 (17.2)
6-9 years	3 (10.3)
10-14 years	0 (0)
15 years or more	1 (3.5)
Experience in Nursing Leadership	
Less than 1 year	3 (10.3)
1-3 years	4 (13.8)
4-5 years	8 (27.6)
6-9 years	4 (13.8)
10-14 years	4 (13.8)
15 years or more	6 (20.7)
Clinical Area of Oversight	
Inpatient Nursing	11 (39.3)
Surgical & Interventional Services	4 (14.3)
Ambulatory, Emergency Services, Professional	13 (46.4)
Development, Nursing Quality	
Education	
Diploma Program	0 (0)
Associate's Degree	0 (0)
Bachelor's Degree	12 (41.4)
Master's Degree	16 (55.2)
Doctoral Degree	1 (3.5)
Note Total Sample (N=29) n (%)	

Note. Total Sample (N=29) n (%)

Pre-Intervention Burnout Assessment

Burnout Outcomes, Components, and Drivers. The tool utilized in this quality improvement project was developed by Prochnow et al. (2021) and measured burnout by assessing three main areas; outcomes, components, and drivers. A majority of questions used a 1-5 Likert scale indicating 1 as strongly agree and 5 as strongly disagree. Based on the structure of the Likert questions and the associated scoring, a lower mean indicates the majority of nurse leaders agreed with a particular statement. There are two questions that use different language as they ask about level of engagement or teamwork. The question addressing engagement is also on a 1-5 scale with 1 indicating a very engaged employee and 5 indicating a very disengaged employee. In this case, a lower mean would indicate higher levels of engagement. The teamwork question is on a 1-5 scale, with 1 indicating poor teamwork, and 5 indicating optimal teamwork. Thus, a higher mean would indicate more optimal teamwork taking place. There are two burnout component questions that utilize a scale ranging from never (1) to every day (7). For these questions, a lower mean would indicate the respondent noted fewer days experiencing burnout.

In general, the majority of nurse leaders agreed that they are satisfied with their job and they are engaged, or even very engaged in their work. The majority also agreed they feel a great deal of stress because of their job. When asked specifically about burnout, the majority (51.6%) experienced burnout frequently noting symptoms weekly (20.7%), a few times per week (24.1%), and daily (6.9%). In comparison, only 44.8% report infrequent symptoms and 3.5% have never experienced burnout. When asked about alignment with senior leaders, the majority of nurse leaders agreed (51.7%) or strongly agreed (20.7%) that their values were aligned with those of senior leadership. Relative to leadership teamwork, 10.3% rated teamwork as optimal,

51.7% rated teamwork as good, 31% rated it as satisfactory, 6.9% rated it as marginal, and none of the nurse leaders felt leadership teamwork was poor. Nurse leaders were asked if they feel they have enough time to do what is important in their job. On a 1-5 Likert scale with 1 being strongly agree and 5 being strongly disagree, the mean was 3.03 (*SD 1.00*, Range 1-5), indicating a neutral response relative to having enough time to complete their daily work. When asked about control over the work that they do, the mean was 2.34 (*SD 0.92*, Range 1-5) indicating most nurse leaders agreed with the statement and felt that they had control over their work. Most leaders perceived sufficient independence and autonomy (M=2.14, *SD*=0.86, Range 1-5). Work appreciation was also measured using a 1-5 Likert scale. With a mean of 2.38 (*SD 1.10*, Range 1-5), most nurse leaders felt that their work was appreciated. Relative to resource allocation, the mean was 2.79 (*SD 0.96*, Range 1-5) indicating a neutral response with the statement that resources are allocated fairly. When asked about the organization's commitment to quality, the majority agreed that the organization was committed to quality with a mean of 2.21 (*SD 0.66*, Range 1-5). Detailed results for each question can be found below in Table 2.

Table	2
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Burnout Assessment	M	<u>SD</u>	Range
Burnout Outcomes			
Overall satisfaction with current job	1.97	0.61	1-5
Job related stress	2.28	0.98	1-5
Work engagement	1.66	0.66	1-5
Burnout Components			
Work related burnout	4.34	1.65	1-7
Negative impact to interpersonal relationships	2.21	1.35	1-7
Value Alignment with senior leadership	2.21	0.96	1-5
Leadership teamwork	3.66	0.76	1-5
Time to complete work	3.03	1.00	1-5
Control over work	2.34	0.92	1-5
Professional autonomy	2.14	0.86	1-5
Drivers of Burnout			
Work is appreciated	2.38	1.10	1-5
Fair resource allocation	2.79	0.96	1-5
Organization commitment to quality	2.21	0.66	1-5

Thriving Factors. Participants were asked to select their top three drivers of stress and

burnout in their own work experience. Overall, 26% selected work/life balance, followed by 13.8% selecting meaningful work. Following the top two selected factors, there was equal selection of fairness, organizational support for high quality care, and value alignment between self and organization. Full detail of the selections can be seen below in Table 3.

Table 3

Thriving Factors	n (%)
Control over work	5 (5.8)
Fairness	11 (12.6)
Financial stability of the organization	7 (8.1)
Organizational support of high-quality care	11 (12.6)
Meaningful quality metrics	2 (2.3)
Meaningful work	12 (13.8)
Recognition	5 (5.8)
Social Connections	0 (0)
Value Alignment between self and organization	11 (12.64)
Work life balance	23 (26.4)

Note: Total Sample (N=29) n (%)

Mentor and Peer Support. Participants were asked if they had utilized a mentor or coach for support in their leadership development. 34.5% stated they did have a mentor, 44.8% stated they have had a mentor in the past, and 20.7% stated they have not had a mentor before. The participants were also asked about forms of peer support in their work. A majority stated they utilize informal social networks or obtain peer support in other ways. Full detail can be seen below in Table 4.

Table 4

Peer Support	n (%)
Participation in peer support through organization	8 (27.6)
Informal social networks	10 (35.5)
Professional organization affiliation	0 (0)
Peer support in other ways	10 (34.5)
No opportunity for support	1 (3.5)
Note: Total Sample (N=29) n (%)	

Pre-Intervention Qualitative Assessment

Prior to the retreat and presentation of the *burnout reduction toolkit*, nurse leaders were asked to describe what they found most engaging and satisfying about their work. The importance of teamwork was a common theme throughout the responses. A total of 18 out of 29 comments (62.1%) referenced team in some way. One nurse leader stated; "The resilience of my team; I am often inspired by my team and I want to do better for them and our patients; I have wanted to leave many times and am still on the fence. It's the team of staff that pulls me back in". Several participants also referenced autonomy and problem-solving opportunities. One participant stated "I enjoy problem solving, meeting new challenges, and learning new things". The same question was asked of the participants post intervention, specifically asking if anything had changed about what they found most engaging in their work. The theme across most responses was no, nothing has changed. A total of 15 out of 24 comments (62.5%) indicated that there was no change in what they found most engaging in their work.

Nurse leaders were also asked to describe any interventions that they had previously implemented and found effective in reducing burnout. The consistent theme noted throughout was a dedication to time management and time away from work. A total of 17 out of 29 responses (58.6%) discussed some iteration of time management, time off from work, remote work, or work life balance. One leader stated; "Having the ability to have time off, with no phone or need to have a focus now that may or may not be occurring at work. Another shared; Making outside commitments a priority and recognizing that the work is still being done".

Post Intervention Survey Results

Post intervention, participants were asked to complete a similar survey ranking the components of burnout described above. In addition, they were given the opportunity to evaluate

the burnout education and *burnout reduction toolkit*. Each intervention presented was ranked for utilization and effectiveness. Overall, there was an observed decrease in job satisfaction with the mean increasing from 1.97 to 2.13 (*SD 0.73*, Range 1-5). Participants were faced with the statement *I am satisfied with my job*. Based on a Likert scale of 1-5, with 1 representing strongly agree and 5 representing strongly disagree, a lower mean indicates agreement with the statement and a higher mean indicates disagreement with a statement. A similar observation can be made relative to job related stress, work engagement, work related burnout, interpersonal relationships, alignment with senior leadership, autonomy, work appreciation, and resource allocation. The participants' responses ranking the degree to which their leadership team works efficiently together demonstrated a mean of 3.50 (*SD 0.91*, Range 1-5), a decrease of 0.16 from the pre intervention survey. This indicated an overall increase in the perceived level of teamwork. A similar result was seen relative to control over work and organizational commitment to quality.

Parametric and Non-Parametric Testing

In order to establish effectiveness of the intervention in reducing burnout, the original plan included conducting a paired sample t-test analysis. In order to do this, participants were asked to enter a unique 4-digit number at the start of their pre survey. In the post survey, they were asked to enter that same number to allow for responses to be paired pre and post intervention. There were five respondents to the pre-survey who did not complete the post survey, decreasing the post survey response total to 24. Of those 24 responses, an additional 9 responses could not be paired with pre-survey responses due to discrepancies in the 4-digit numbers. This left a total of 15 responses that could be used for a paired sample t-test analysis. Given that a paired sample t-test is measuring the difference in the mean and is better utilized for continuous data sets, a Wilcoxon Signed Rank test was also conducted (Lund Research LTD,

2013). The Wilcoxon Signed Rank test assesses differences in median and is more appropriate for ordinal data sets, such as this Likert Style instrument. This is considered the non-parametric equivalent of the paired t-test and thus can be used to determine if there was a statistically significant change in any of the measured burnout domains following the intervention (Lund Research LTD, 2013a). A paired sample t-test was still conducted as all Likert scale answers generated a number score for the question, with ability to determine mean, standard deviation, and range. Overall, both the paired sample t-test analysis did not reveal statistically significant changes in pre and post survey results. However, there were two areas of particular interest that were approaching statistical significance including a difference in reported job satisfaction and work appreciation. The results for these areas can be seen below in Tables 5.

Table 5

	Mean	N	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig (2-sided)
					Lower	Upper			
Pair 1 Job Satisfaction	-0.2000	15	0.4140	0.1069	-0.4293	0.0293	-1.871	14	0.082
Pair 2 Work Appreciation	0.2667	15	0.5936	0.1533	-0.0621	0.5954	1.740	14	0.104

Paired T-Test Results

The Wilcoxon Signed Rank test was performed to analyze the 15 respondent's pre and post survey responses for each question and then evaluating the median difference for each question (Lund Research LTD, 2013). No statistically significant results were seen, however, the same two areas noted above demonstrated a trend toward significance. These can be seen below in Table 6.

Table 6

Wilcoxon Signed Rank Summary

Null Hypothesis	Test	Significance Level
The median of differences between satisfaction pre and post equals 0	Related-Samples Wilcoxon Signed Rank Test	0.083
The median differences between work appreciation pre and post equals 0	Related-Samples Wilcoxon Signed Rank Test	0.102

One measure of statistical significance generated through the Wilcoxon Signed Rank and Paired sample t-test is the Cohen's d statistic. The Cohen's d statistic provides a measure of effect size and rates effect size as small, medium, or large (Lund Research LTD, 2013). For the same two questions of interest related to job satisfaction and work appreciation, a medium effect size was noted. This indicates that the intervention had a medium effect on these two metrics and while other measures of statistical significance did not demonstrate significant differences, the Cohen's d statistic indicates some potential impact. The detailed results for both questions can be seen below is Table 7.

Table 7

Paired Sample Effect Sizes

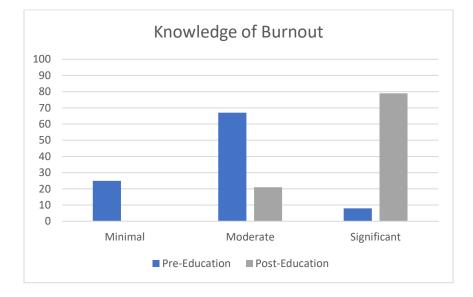
		Standardizer	Point Estimate	95% Confidence Interval	
Pair 1 Job Satisfaction	Cohen's d	0.4140	-0.483	Lower -1.012	Upper 0.061
Pair 2 Work Appreciation	Cohen's d	0.5936	0.449	-0.90	0.974

Post Intervention Knowledge Assessment

Following the educational presentation addressing burnout in nursing leadership, the participants were asked to rank their knowledge level regarding burnout on a scale of minimal, moderate, or significant knowledge. When asked to rate their knowledge level prior to the

presentation, 25% stated they had minimal knowledge, 67% stated they had moderate knowledge, and 8% stated they had significant knowledge. Post presentation, participants rated their knowledge of burnout on the same scale demonstrating an overall increase in knowledge of burnout. Details of the pre and post comparison can be seen below in Figure 2.

Figure 2



Knowledge of Burnout

Note: Each bar represents the percentage of respondents (n=24) indicating that level of knowledge.

Post-Intervention Qualitative Assessment

When asked about perceptions of burnout after attending the leadership retreat and burnout presentation, two distinct themes emerged in responses. The first was a theme of awareness of burnout and knowledge of symptoms. A total of 9 out of 24 (33%) commented on being more aware of their own role in burnout and symptom recognition. One respondent stated: "It has helped me better understand why I am feeling the way I am and that there are resources and interventions that I may need to help move through this difficult time". The second theme noted was centered on awareness and discussion of burnout. Several leaders commented on burnout being a unique and individual experience, and validating those feelings. One leader shared "Burnout is different for everyone and regardless of what others think you should feel, you may be experiencing something different".

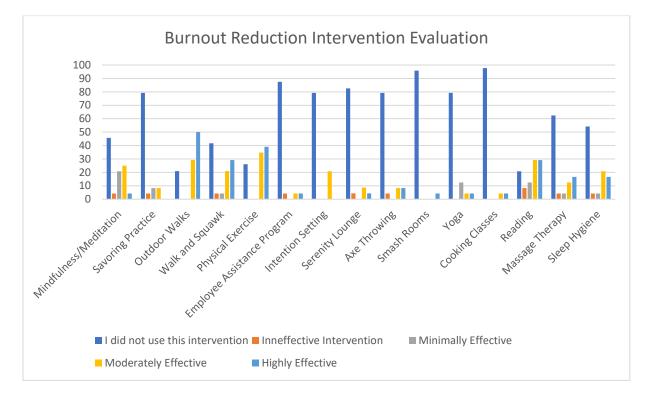
Burnout Reduction Toolkit Evaluation

Participants were educated on a variety of interventions to reduce burnout and were provided with a *burnout reduction toolkit*. This toolkit provided resources for each intervention as well as a description of the intervention. The leaders were asked if they felt the interventions presented for burnout reduction were relevant and could be implemented in their daily lives. On a 1-5 Likert scale with 1 being strongly disagree and 5 being strongly agree, the mean was 4.08 (SD 0.64, Range 1-5) indicating a majority agreed with the statement. After one week of having the toolkit, nurse leaders were asked to evaluate each intervention for usefulness and effectiveness. Overall, leaders found outdoor walks, "walk and squawk" (an outdoor walk with a trusted colleague), and physical exercise to be most effective. A total of 50% of respondents rated outdoor walks to be highly effective and another 29.2% rated them moderately effective. Similarly, 39.1% found physical exercise to be highly effective and another 34.8% found it to be moderately effective. A majority of the leaders were not able to try interventions such as yoga, the serenity lounge or the EAP resources. Those interventions ranked moderate to highly effective also included reading, massage, and sleep hygiene. Full detail of the intervention evaluations can be seen below in Figure 3.

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Figure 3.

Burnout Intervention Evaluation



Burnout Reduction Toolkit Qualitative Analysis

The nurse leaders completing the survey were asked to identify any barriers they had encountered when trying to implement burnout interventions following the retreat and presentation of the *burnout reduction toolkit*. The primary theme seen in the responses was lack of time. A total of 17 out of 22 respondents (77.3%) commented that time was a factor preventing them from utilizing an intervention. Several responses cited prioritizing self-care to be difficult, and that finding a work-life balance that supported burnout reduction was a challenge. One participant shared the following; "Work life balance. I start my day at 5:30 and most days end at 8pm". Another commented; "Not enough time in the day right now with shortstaffing. Backed up on things because I'm helping out on the floor to try and reduce the burnout of my team". The final question participants were asked to comment on was to share any thoughts they have about how to address and prevent burnout moving forward. This question received 16 out of a possible 24 responses and revealed two themes. The first was that the nurse leaders planned to continue to use interventions they already knew worked for them, or that they would be working to identify time to implement new interventions from the presentation. A total of 6 out of 16, (37.5%), indicated they had a plan to use interventions to reduce or prevent their own burnout. One commented, "Looking at resources and finding time to reboot and refocus. Another stated; "I love running and exercising as stress-reduction strategies, as they work for me". The second theme was centered on work-life balance and work hours. Several leaders commented on being more aware of their work hours and maintaining of work-life balance to prevent burnout. A total of 4 of 16, (25%), commented on the importance of work-life balance in their burnout reduction strategy.

Unintended Consequences

This quality improvement project highlighted challenges associated with time. Nurse managers did not have the time needed to trial a variety of interventions and that manifested itself in the results of this project. There were several questions where themes of time and work/life balance were prominent. The timeframe of this project may have left nurse leaders feeling rushed to try interventions and may not have supported their burnout reduction as originally intended.

Missing Data

A total of 29 nurse managers participated in the retreat. All 29 completed the pre intervention survey. There were 5 additional nurse managers that were not able to attend the retreat, and thus were not eligible to participate in the pre or post survey. In the post intervention data collection, 24 of 29 eligible participants responded, leaving 5 responses missing from the post intervention data collection. Participants were also asked to create a unique, four-digit number to be used for a paired sample t-test. Nine participants either forget their number or entered a new number and thus, their responses could not be paired. A sample of 15 responses was used for the paired t-test and Wilcoxon Signed Rank test, representing 51.7% of the original sample. In addition, the retreat included nurse managers, but did not include clinical nurse leaders or assistant nurse managers. This was an intentional, operational decision as it would have been disruptive to daily operations to remove every department's nurse manager, and assistant nurse manager or clinical nurse leader from their respective daily role. For that reason, this group was also not included in the pre and post survey.

Discussion

Key Findings

This quality improvement project had a global aim of reducing burnout in the nursing leadership team. In a preliminary survey used to establish the presence of burnout on this leadership team, 38% of respondents experienced symptoms of burnout 50% of the time and 13% experienced symptoms of burnout 75% of the time. With these results in mind, the specific aim of this project was to reduce those reporting burnout 50% of the time by 8% and those experiencing burnout 75% of the time by 3% by December 2022. Over the course of the quality improvement project, the survey tools utilized evolved to include a more comprehensive burnout assessment that included elements of the Maslach Burnout Inventory, the Areas of Worklife Survey, and the Mini Z Burnout survey (Prochnow et al., 2021). This combination of validated and reliable tools was chosen to provide more complete results paying specific attention to components, drivers, and outcomes of burnout. For this reason, a goal to reduce burnout

reporting specifically would not be applicable in the same way that it was with the preliminary survey. The goal evolved to reflect a decrease in the mean of reporting components, outcomes, or drivers of burnout. In addition to reducing reported burnout symptoms, the goal also evolved to include utilizing at least one intervention from the burnout reduction toolkit. By the completion of this quality improvement project, the specific aim was not met given the evaluation of the tools being used, coupled with a lack of statistically significant changes in any of the burnout questions asked in the new survey. There were however, several key findings that will set this project up for success as it continues to evolve within the organization. These key findings are: an increase in awareness and understanding of burnout, a possible but not statistically significant increase in perceived appreciation at work, and a possible but not statistically significant decrease in job satisfaction.

Increased Awareness and Understanding of Burnout

There was a notable increase in the knowledge level reported by participants pre and post intervention. After completion of the educational presentation all participants reported at least moderate knowledge level of burnout, and 79% reporting significant knowledge. This was further echoed in the qualitative components of the study with multiple nurse leaders commenting that their knowledge and understanding of burnout had increased. They further commented that this would help them to implement interventions in the future and will support them in their leadership roles. As time progresses, it is possible that this new understanding and knowledge base will assist in reducing burnout at the organization. It will be important to continue to discuss burnout and provide information on interventions as this work progresses.

Increase in Perceived Appreciation at Work

Perceived work appreciation was an area of interest when performing statistical analysis. This question did not demonstrate statistically significant change, but did demonstrate a medium effect using Cohen's d for analysis. This points to potential for statistically significant change in future PDSA cycles and is a noteworthy finding. This increase in work appreciation can be most likely be attributed to the team recognizing the investment that was made in their wellbeing through the strategic retreat, and burnout education.

Decrease in Job Satisfaction

Similar to work appreciation, job satisfaction was also an area of interest. This question demonstrated a decrease in job satisfaction that was not statistically significant, but did demonstrate a medium effect size as well. It is possible, that with education regarding burnout, and openly discussing work related causes of burnout, that some nurse leaders realized their mental wellbeing was being negatively impacted by work. One nurse leader commented that they now recognized the symptoms they were experiencing were burnout, when they thought they were depressed. This will be an important metric to follow in future PDSA cycles.

Interpretation

Demographic Data

The nurse managers surveyed for this quality improvement project came from a variety of backgrounds and experience levels. Participants were asked to provide years of experience in their current role as well as years of experience in nursing leadership. There has been higher than usual turnover in the organization, leading to many new nurse managers on the team. This is reflected in the results with 37.9% in their current role less than 1 year, and another 31% in their role for less than 3 years. This was not surprising to the DNP project lead or the practice

mentor as much of the leadership team has transitioned over the previous two years. There has been a mix of internal promotions from assistant nurse manager or clinical nurse leader roles, along with experienced candidates hired from other organizations. As seen above in Table 1, there is a mix of experience levels, with the majority of respondents in the 4-5 years of experience group (27.6%). Evaluating years of experience and burnout is valuable as some studies have indicated that more experienced leaders have built more resilience and thus experience less severe burnout manifestations (Prochnow et al., 2021). As the onboarding of novice nurse leaders continues, it will be important to integrate burnout education into their orientation. This may help to ensure long-term success in their new leadership role.

Level of education was also evaluated and revealed all participants had at least a Bachelor's degree and a majority (55.5%) had a Master's degree. The minimum requirement for the nurse manager role is a Bachelor's degree and many nurse leaders have been encouraged to pursue their Master's degree. The leadership team supports continuing education in a variety of ways including tuition assistance, loan forgiveness, and supporting time off to complete advanced degrees. In addition, the division of nursing is actively developing several academic partnerships to support advanced degree education on site at the organization. Throughout the literature, there was not a link between burnout and level of education. Those leaders with a Bachelor's degree may have more education due to the emphasis on leadership skills at the graduate level. As the burnout reduction initiatives evolve, it may be helpful to have additional professional development opportunities addressing various leadership competencies. It would also be important to study the utility of such education in more detail in future iterations of this work.

Pre-Intervention Burnout Assessment

Burnout Assessment. The tool used to evaluate burnout in this quality improvement project was based on the tool developed by Prochnow et al., (2021). This tool analyzed burnout measuring several aspects including outcomes, components, drivers, thriving factors, and peer/mentor support. In addition to utilizing questions to measure each of the above, multiple open-ended questions were added by the DNP project team to allow for qualitative data analysis.

Relative to outcomes of burnout, nurse leaders were generally satisfied with their job (Mean=1.97, SD = 0.61, Range 1-5) and engaged in their work (Mean=1.66, SD = 0.66, Range 1-5). While the participants were satisfied with their job and engaged in their work, the majority agreed that they felt a great deal of stress because of their work (Mean=2.28, SD=0.98, Range 1-5). When considering outcomes of burnout, the above results demonstrate leaders who find purpose in their work, are satisfied by that work, and feel they are engaged. However, they report experiencing high stress levels associated with this which could lead to burnout over time if they are not armed with the right knowledge and interventions. It is also important to consider the demographic characteristics of this group. A majority (68.9%) have been in their role less than 3 years. This group has the potential to be more vulnerable to burnout. Those nurse managers with more experience in their role tend to have more satisfaction and joy in their work and could serve as valuable mentors to the new leaders on the team (Prochnow et al., 2021). Those with less experience may be more vulnerable to burnout and may not find satisfaction as readily as their more experienced counterparts. It will be important to follow up with this group in future burnout reduction efforts to ensure appropriate stress reduction tactics are being utilized to prevent or reduce burnout (Prochnow et al., 2021).

There are several burnout components that were evaluated through this survey process. The first two questions in this section asked nurse leaders to read a statement and classify the frequency at which they were experiencing these symptoms. These questions were evaluated on a 1-7 Likert Scale with 1 signifying never, and 7 signifying daily. The first question asked specifically if nurse leaders were feeling burned out from their work. The mean response was 4.34 (*SD 1.65*, Range 1-7), indicating that the majority of respondents felt burned out from their work a few times a month. The second question asked about interpersonal relationships, particularly asking if nurse leaders felt callous toward other people since starting their job. The mean response to this question was a 2.21 (*SD 1.35*, Range 1-7) indicating the majority felt this was a few times a year or less. The combination of these two questions indicates that nurse leaders are experiencing burnout with some regularity, but in general, do not feel it is impacting their interpersonal relationships. While this is not reflected in the responses, it is possible that as the frequency at which one experiences symptoms of burnout, the impact on interpersonal relationships may worsen.

In addition to the components above, participants were also asked if they felt their values aligned with those of senior leadership as well as leadership teamwork. Overall, the majority of nurse leaders agreed that their values were aligned with those of senior leadership (M=2.21, SD=0.96, Range 1-5). Most respondents also felt as though the leadership team worked well together, rating leadership teamwork as "good" on a 1-5 scale with 1 indicating poor and 5 indicating optimal. This was further echoed in the qualitative design. When asked what nurse leaders find most engaging about their work, 62.1% reference team or teamwork in their responses. This connection to team and connection to purpose was something that clearly grounds the team in their role and provided some relief from the stress they experience on a

regular basis. One nurse leader specifically called out their desire to seek another job and how the team they were a part of was the primary force in keeping them in their current role.

The final three components of burnout assessed were directly linked to time to complete assigned work, control over that work, and autonomy. In general, the respondents felt that they did have control over their work and the professional autonomy to complete that work. Time to complete work revealed a neutral response with a mean of 3.03 (*SD 1.00*, Range 1-5). Overall, this can be interpreted to indicate that nurse leaders feel that they are in control of the work that they do every day, and have autonomy to make decisions around that work. However, they may not feel as though they have enough time to complete that work on any given day. This is a common a recurring theme that senior leaders have heard when discussion nurse managers roles and workload. There have been some adjustments made to workloads at the organization as well as work schedule. Within the past year, a hybrid schedule has been introduced which allows nurse managers to work from home a few days per month to support completing work they would otherwise not be able to complete in their unit due to constant interruptions by daily operational tasks.

Key drivers are also important to understand in both the measurement, reduction, and prevention of burnout. The survey measured three drivers of burnout including work appreciation, resource allocation, and organizational commitment to quality. Nurse leaders felt their work was appreciated with a mean of 2.38 (*SD 1.10*, Range 1-5). They also felt that the organization was committed to quality with a mean of 2.21 (*SD 0.66*, Range 1-5). When asked about resource allocation, responses revealed a neutral response (Mean=2.79, *SD*=0.96, Range 1-5). Overall, these drivers reveal that the participants feel their work is appreciated and they understand the organizational mission and commitment to quality. There is some neutrality

around resource allocation. This may indicate that leaders may feel as though some departments or clinical areas receive more support than others, or it may indicate uncertainty around the question. Given the recent staffing pressure the organization has been under, coupled with the organizations centralized model for staffing, there may be some recent experiences impacting perceptions of resource allocation. Within the past two years, nurse leaders who are fully staffed have been frequently floating staff to other areas that are not fully staffed in order to balance workloads, skill sets, and ratios on all units and ensure safe patient care. More careful examination, perhaps with some qualitative questions or focus groups, around resource allocation would be helpful in gaining a deeper understanding.

Thriving Factors. The participants in this quality improvement project were asked to rate their own drivers of stress and burnout. This question was helpful in revealing what factors were most impactful for the leaders in their ability to thrive. This question listed 10 factors associated with burnout and asked participants to select the top three that were most important to their well-being. Work/life balance was the most selected with 26.4% choosing this option. Meaningful work was second at 13.8%. There was then an equal selection of fairness, organizational support of high-quality care, and value alignment of self and the organization. It was not surprising to see that work/life balance was the top selection. This has been a point of discussion within the nursing leadership team at the organization for the last two years and is the driver of several changes, including the adoption of a hybrid schedule that allows working from home up to a few days per month. In addition to seeing work/life balance as the top factor in this question, it was also a prominent theme in the open-ended question. When asked what interventions nurse leaders may have tried in the past for burnout, the theme of time, time off, remote work, and work/life balance was seen in 58.6% of answers. This closely aligns with the

selection of work/life balance outlined above and underscores the general feelings of the nursing leadership team around time away to decompress. This information will be critical to informing future interventions for burnout.

Post Intervention Survey

The nursing leadership team was asked to complete a survey one week after the burnout education and burnout reduction toolkit was provided. This survey repeated the burnout assessment questions evaluating components, outcomes, drivers, and thriving factors. In addition, this survey asked participants to rank their knowledge level of burnout before and after receiving education, as well as evaluate the interventions in the toolkit. At the closing of the burnout education, nurse leaders were challenged to choose one intervention in the toolkit and integrate it into their routine over the following week. The repeat assessment of burnout did not reveal any meaningful reduction in burnout over the course of a week. In fact, there was a slight increase in perception of job-related stress and work-related burnout. After the program, many nurse leaders shared comments in their evaluations and via email to the DNP project lead about their awareness of burnout. One leader commented: "I did not realize what I was experiencing might be burnout, I thought I was just depressed". As time progresses, it will be important to integrate burnout reduction tactics into regular leadership meetings and routines. In addition, burnout prevention has been added to the 2023 strategic plan at the direction of the CNO and the nursing executive team. Adding this to the strategic plan was a direct result of this quality improvement project and will ensure resources are dedicated to burnout reduction and prevention in the coming year. While there was not a reduction in burnout seen in the survey data in this PDSA cycle, there will be focused attention on this topic followed by repeated surveys in the coming years.

Knowledge level regarding burnout was evaluated pre and post survey to establish the effectiveness of the educational presentation and discussion at the strategic retreat. This presentation was developed and given by the DNP project lead. The presentation was comprised of a review of the literature, some personal stories and examples, and a summary of evidence-based interventions in the toolkit. This was an interactive discussion, taking place during the last 90 minutes of the nursing strategic retreat. Overall, there was a 71.3% increase in those rating their knowledge of burnout as significant following the presentation. Based on this, the discussion was effective in educating nurse leaders about burnout and the potential interventions. In addition to rating overall knowledge, nurse leaders were also asked if their perceptions of burnout had changed post education. Overall, 24.3% commented that the presentation provided increase awareness of burnout and the symptoms associated with it. By increasing awareness, and pairing that awareness with available resources, it is likely that burnout can be reduced within the leadership team over time.

Statistical Analysis

Overall, there was no statistically significant change seen in any of the burnout assessment domains after the intervention. A paired T-test and Wilcoxon Signed Rank test both determined there was not a significant impact. However, there were two areas of interest based on these statistical tests.

Job Satisfaction It was noted that job satisfaction actually decreased between the pre and post survey. The organization was experiencing many staffing challenges at the time of the post survey which caused several immediate and temporary changes. The first of which was that nurse managers were needed to assist in day-to-day staffing on the unit. This removed them from doing administrative work and caused the need for more time working off hours and

weekends. In addition, assistant nurse managers and clinical nurse leaders were also placed in clinical assignments, removing the ability to delegate some management tasks to this role group. This shift in work requirements, while temporary, combined with the survey window, may have caused this decrease in job satisfaction. It is also possible that receiving education on what burnout is and how work can impact that burnout, may have shifted participants thinking about their job.

Work Appreciation The other area of interest was a question addressing appreciation of nurse manager's work. Overall, participants' perception of whether or not they were appreciated stayed the same, or improved. Three participants indicated they felt more appreciated after the intervention. The focus of the strategic retreat the nurse leaders attended was to remove the team from their daily stressors and talk about strategy, nursing excellence, and Magnet. The retreat took place off-site to support the strategic work being done which may have contributed to some feelings of appreciation. More importantly much of the day was spent discussing the investments made in the team including burnout reduction efforts. This may have helped team members to realize the work that they do is appreciated and that the organization is invested in their wellbeing.

While neither of these questions demonstrated statistically significant change, both showed potential for significant change in the future. Tables 5 and 6 provide a summary of results for the T-test and Wilcoxon signed rank test. The Cohen's d for job satisfaction was -0.483, indicating moderate effect on this variable. The Cohen's d for work appreciation, was 0.449, also indicating a moderate effect. With these two components seeing moderate effect, there is potential that over time, there will be statistically significant change noted in these areas (Lund Research LTD, 2013).

Burnout Reduction Toolkit Evaluation

Participants were asked to rate the effectiveness of each intervention in the burnout reduction toolkit. This survey question revealed several top interventions including outdoor walks and physical exercise. Many of the nurse leaders did not have an opportunity to try interventions over the course of the week between the retreat and the post survey. When asked about barriers to implementing an intervention, the overwhelming theme was time. A total of 77.3% of nurse leaders commented that they had not had the time to try an intervention. However, when asked about future thoughts on burnout reduction, 37.5% stated they had plans to integrate an intervention(s) into their routine. The evaluation of the toolkit, coupled with the comments from the open-ended questions, highlights the importance of time in burnout reduction. It will be important to continue to reinforce burnout reduction tactics and measure burnout using this tool in the future. This could allow for nurse leaders to try multiple interventions, and truly understand which interventions work best for them.

Burnout is deeply personal and the discussion around burnout highlighted some additional challenges leaders were facing within the organization. This work was focused on individual based burnout reduction interventions and did not aim to address organization level challenges that nurse leaders were facing every day. The global aim of this project was to decrease burnout. While this continues to be the goal, this project increased awareness around burnout and thus increased reporting in the post-intervention survey. By increasing awareness and knowledge of burnout, nurse leaders may have a new ability to recognize burnout in themselves and intervene using the *burnout reduction toolkit* provided.

Outcomes

When comparing the results of this quality improvement project to others in the literature, it is clear more research around nurse leader burnout is required. The study conducted by Prochnow et. al, (2021) surveyed the membership of a professional nursing leadership organization and provided recommendations for education. Since no post survey was published, comparison of one study to the other would not be possible at this time. Further replication of this QI project and sharing of results will be important in better understanding burnout in nursing leadership. It will also be important to evaluate interventions for burnout to share lessons learned with the broader leadership community.

From a cost-benefit analysis perspective, no direct linkage can be made at this time between this quality improvement project and nurse leader retention. However, focused efforts on nurse leader wellbeing may reduce nurse leader turnover which could save the organization the financial burden of vacancies on the nurse leader team. Burnout can have significant impact on productivity, engagement, patient satisfaction, staff satisfaction, and overall attrition (Prochnow et al., 2021). In addition to the fiscal cost implications, there are opportunity costs associated with the population chosen for this quality improvement project. Burnout is prevalent at all levels of leadership and focusing on one specific role group may have impact on the burnout experienced by others. If focusing on nurse managers leads to decisions to reduce nurse manager workload, but increase that of assistant nurse managers, there may be negative impacts on the wellbeing of that team. This will be an important strategic consideration as this work continues within the organization.

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Limitations

The primary limiting factor for this quality improvement project is time. More time is needed to allow nurse leaders the opportunity to try different interventions for burnout reduction. Given the time constraints many healthcare leaders face, this could also be addressed by identifying interventions that require less time such as a mindfulness minute, or a 5-minute walk around the building rather than a 30-minute outdoor walk. Timing constraints may have inhibited overall effectiveness of the burnout reduction toolkit. Participants were given one week with the toolkit and asked to employ one intervention. Depending on their ability to trial an intervention, and severity of experienced burnout at that point in time; effectiveness of their chosen intervention may vary. More time and repeat QI projects will be needed to measure long term effectiveness of the interventions. The time period also did not allow for trial and error of interventions. Not every intervention will work in the same way for each person and thus, some trial and error may be needed to find what works for each individual. In future PDSA cycles, it will be important to consider time as a variable and allow nurse leaders more time to try different interventions to determine what works well for them in reducing burnout. Alternatively, future interventions presented could include those that require less time to implement. It may also be helpful to expand on burnout interventions and add new interventions to the toolkit as participants identify tactics that work well for them but are not already featured in the toolkit.

The sample of participants is also a limiting factor. This retreat and intervention focused on nurse managers, however, there are other levels of leadership to be considered including assistant nurse managers, clinical nurse leaders, clinical educators, nursing supervisors, nursing directors, and associate chief nursing officers. The results of this QI project are not generalizable

to the above listed populations and thus, they should be considered for future interventions related to burnout in nursing leadership.

External factors within the organization may have been a factor in burnout. The organization had a particularly challenging month in October from a staffing perspective, which placed additional strain on nurse leaders. Over the course of the month of October, a combination of resignations, and loss of some contract labor exacerbated current staffing challenges. In addition, October is the beginning of the new fiscal year, which routinely comes with more budget meetings, financial accountability, and challenging decisions. The organization also implemented a new HR data management system on October 1st which fundamentally changed many of the day-to-day processes nurse managers utilize. This new HR system created a challenge for nurse managers as they needed to relearn routine processes such as changing staff hours, hiring, and mandatory education practices.

This work may have limitations relative to generalizability across all healthcare settings. This quality improvement project took place at an academic institution, level I trauma center, and was completed within a division of nursing that was actively engaged on a Magnet journey. This work may need modifications if employed in a critical access hospital, community setting, or long-term care environment. The institutional resources are likely different than that of other organizations and thus, the most pertinent stressors may be different for nurse leaders.

The above factors may have influenced results of this quality improvement project. Repeated PDSA cycles and education will be needed, along with expansion of the populations included in order to fully understand the depth of burnout within the leadership of the organization. Burnout reduction has been set as a strategic priority within the division of nursing

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for the 2023 fiscal year and thus, resources and attention will be dedicated to burnout in the year to come.

Conclusions

Overall, this quality improvement project did not meet the specific aim of reducing burnout in the nursing leadership. However, the increased awareness of burnout symptoms and potential interventions may be the first step in addressing the specific aim. Time was noted to be the biggest limiting factor, specifically time to utilize burnout reduction tactics. It will be important to consider time and utilization of reduction tactics prior to any repeat surveys with the nursing leadership team. In addition, many nurse leaders acknowledged that they would be utilizing some of the interventions presented in their regular routine.

Implications for practice

Burnout reduction has been set as a 2023 strategic goal within this organization. This quality improvement project focused on the nurse manager population, one subset of the leadership team. As this work evolves, integrating more leadership roles will be important to fully understanding burnout. Adding the assistant nurse manager and clinical nurse leader role, as well as clinical educators, administrative supervisors, nursing directors, and associate chief nursing officers will enhance the overall knowledge around burnout. In addition, there were several factors nurse managers highlighted through this work that they found to be important in their overall well-being. One of the most prominent barriers to implementing burnout reduction tactics was time. It will be important to identify realistic burnout reduction measures that can be implemented in a short window of time during the day, such as mindfulness or savoring practices. It may also be helpful to provide more protected time in the nurse leader's day to support disconnecting and implementing an intervention such as an outdoor walk. Sharing this

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with the senior leadership team to ensure a focus on these items may enhance future iterations of this project. The organization has recently added a nurse scientist to the leadership team. This will allow for continued investigation and measurement of burnout on the nursing leadership team in the year to come.

Implications for research and future QI projects

Consideration of time is of the utmost important in burnout reduction. Future quality improvement and research regarding burnout should consider the time needed to trial interventions. In order to see meaningful reduction in burnout, it may be necessary to have a project span the course of months or years to gain a better understanding.

Next Steps

This project was completed with one group of leaders within a larger leadership team. Expanding this work to other roles, and allowing more time between survey periods will be critical in the next steps associated with this work. As it has been integrated into the organization's strategic plan, setting a survey cadence and establishing regular touchpoints regarding burnout will be important.

Other Information

Funding

The cost associated with this project were minimal and included printing costs for materials. The CNO at the organization chose to integrate this burnout reduction work into our annual strategic retreat. For these reasons, any printed materials were paid for through the Magnet program budget, at the direction of the CNO. No additional costs were incurred and thus further funding was not required.

References

- Arnetz, B. B., Goetz, C. M., Arnetz, J. E., Sudan, S., vanSchagen, J., Piersma, K., & Reyelts, F. (2020). Enhancing healthcare efficiency to achieve the Quadruple Aim: An exploratory study. *BMC Research Notes*, *13*, 362. https://doi.org/10.1186/s13104-020-05199-8
- Bakker, A. B., & de Vries, J. D. (2021). Job Demands–Resources theory and self-regulation:
 New explanations and remedies for job burnout. *Anxiety, Stress & Coping*, 34(1), 1–21.
 https://doi.org/10.1080/10615806.2020.1797695
- Bogue, R. J., & Carter, K. F. (2019). A Model for Advancing Nurse Well-Being: *Nurse Leader*, *17*(6), 526–530. https://doi.org/10.1016/j.mnl.2019.09.011
- Brand, S. L., Coon, J. T., Fleming, L. E., Carroll, L., Bethel, A., & Wyatt, K. (2017). Wholesystem approaches to improving the health and wellbeing of healthcare workers: A systematic review. *PLoS One*, *12*(12), e0188418. http://dx.doi.org/10.1371/journal.pone.0188418
- Graystone, R. (2019). Prevent Compassion Fatigue and Burnout With a Magnet Culture. JONA: The Journal of Nursing Administration, 49(5), 231–233. https://doi.org/10.1097/NNA.00000000000743
- Green, A. A., & Kinchen, E. V. (2021). The Effects of Mindfulness Meditation on Stress and Burnout in Nurses. *Journal of Holistic Nursing*, 39(4), 356–368. https://doi.org/10.1177/08980101211015818
- Kelly. (n.d.). Nurse Leader Burnout, Satisfaction, and Work-Life Balance. Retrieved October 31, 2021, from https://oce-ovid-com.unh.idm.oclc.org/article/00005110-201909000-00004/HTML

- Kelly, L. A., Lefton, C., & Fischer, S. A. (2019). Nurse Leader Burnout, Satisfaction, and Work-Life Balance. JONA: The Journal of Nursing Administration, 49(9), 404–410. https://doi.org/10.1097/NNA.000000000000784
- Leiter, M. P., & Maslach, C. (2022). Areas of Worklife Survey Manual and Sampler Set. 34.

Linzer, M., McLoughlin, C., Poplau, S., Goelz, E., Brown, R., Sinsky, C., & for the AMA-Hennepin Health System (HHS) burnout reduction writing team. (2022). The Mini Z Worklife and Burnout Reduction Instrument: Psychometrics and Clinical Implications. *Journal of General Internal Medicine*, *37*(11), 2876–2878. https://doi.org/10.1007/s11606-021-07278-3

- Lund Research LTD. (2013a). *Laerd Statistics: Paired sample t-test*. https://statistics.laerd.com/premium/spss/pstt/paired-samples-t-test-in-spss.php
- Lund Research LTD. (2013b). Laerd Statistics: Wilcoxon Signed Rank Test. https://statistics.laerd.com/premium/spss/wsrt/wilcoxon-signed-rank-test-in-spss.php
- Maslach, C., Jackson, Susan, Leiter, Michael, Schaufeli, Wilmar, & Schwab, Richard. (2018). *Maslach Burnout Inventory Manual* (4th ed.). Mind Garden, Inc.
- Naczenski, L. M., de Vries, J. D., van Hooff, M. L. M., & Kompier, M. A. J. (2017). Systematic review of the association between physical activity and burnout. *Journal of Occupational Health*, 59(6), 477–494. https://doi.org/10.1539/joh.17-0050-RA
- Prochnow, J. A., McGill, R. L., Pesut, D. J., Gordon, D., Deno, F. E., & Becknell, M. D. (2021). Challenges and choices: Insights derived from a survey of nurse leader burnout. *Nursing Management*, 52(10), 32–40. https://doi.org/10.1097/01.NUMA.0000792012.90700.f2

- Ross, A., & Thomas, S. (2010). The Health Benefits of Yoga and Exercise: A Review of
 Comparison Studies. *The Journal of Alternative and Complementary Medicine*, *16*(1), 3–
 12. https://doi-org.unh.idm.oclc.org/10.1089/acm.2009.0044
- Stelnicki, A. M., & Carleton, R. N. (2021). Nursing Leadership Has an Important Role in the Management of Nurses' Mental Health. *Nursing Leadership (1910-622X)*, 34(2), 12–15. https://doi.org/10.12927/cjnl.2021.26537
- Stewart, N. H., & Arora, V. M. (2019). The Impact of Sleep and Circadian Disorders on Physician Burnout. *Chest*, 156(5), 1022–1030. https://doi.org/10.1016/j.chest.2019.07.008
- Warshawsky, N. E. (2022). Building Nurse Manager Well-being by Reducing Healthcare System Demands. JONA: The Journal of Nursing Administration, 52(4), 189–191. https://doi.org/10.1097/NNA.00000000001127
- Zhang, M., Murphy, B., Cabanilla, A., & Yidi, C. (2021). Physical relaxation for occupational stress in healthcare workers: A systematic review and network meta-analysis of randomized controlled trials. *Journal of Occupational Health*, 63(1), e12243. https://doi.org/10.1002/1348-9585.12243

Appendix

Appendix A

Modified Burnout Survey used with permission from Prochnow et al. (2021)

- 1. Overall, I'm satisfied with my current job
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
- 2. I feel a great deal of stress because of my job
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
- 3. Which of the following statements best reflects how you feel about your work?
 - a. I enjoy my work. I have no symptoms of burnout.
 - b. I'm under stress and don't have as much energy as I did, but I don't feel stressed out.
 - c. I'm definitely burning out and have one or more symptoms of burnout, such as emotional exhaustion.
 - d. The symptoms of burnout that I'm experiencing won't go away. I think about work frustrations a lot.

- e. I'm completely burned out. I'm at the point where I may need to seek help.
- f. I'm complete burned out and I'm getting help.
- 4. Right now, which of the following describes you?
 - a. Very engaged with my work.
 - b. Engaged with my work
 - c. Somewhat engaged with my work
 - d. Somewhat disengaged from my work
 - e. Disengaged from my work
- 5. I feel burned out from my work
 - a. Never
 - b. A few times a year or less
 - c. Once a month or less
 - d. A few times a month
 - e. Once a week
 - f. A few times a week
 - g. Every day
- 6. I've become more callous toward people since I took this job
 - a. Never
 - b. A few times a year or less
 - c. Once a month or less
 - d. A few times a month
 - e. Once a week
 - f. A few times a week

- g. Every day
- 7. My professional values are well aligned with those of my senior leaders
 - a. Strongly agree
 - b. Agree
 - c. Neither agree nor disagree
 - d. Disagree
 - e. Strongly disagree
- 8. The degree to which my leadership team works efficiently together is:
 - a. Poor
 - b. Marginal
 - c. Satisfactory
 - d. Good
 - e. Optimal
- 9. I have enough time to do what's important in my job.
 - a. Strongly agree
 - b. Agree
 - c. Hard to decide
 - d. Disagree
 - e. Strongly disagree
- 10. I have control over how I do my work.
 - a. Strongly agree
 - b. Agree
 - c. Hard to decide

- d. Disagree
- e. Strongly disagree
- 11. I have professional autonomy/independence in my work.
 - a. Strongly agree
 - b. Agree
 - c. Hard to decide
 - d. Disagree
 - e. Strongly disagree
- 12. My work is appreciated.
 - a. Strongly agree
 - b. Agree
 - c. Hard to decide
 - d. Disagree
 - e. Strongly disagree
- 13. Resources are allocated fairly here.
 - a. Strongly agree
 - b. Agree
 - c. Hard to decide
 - d. Disagree
 - e. Strongly disagree
- 14. My organization is committed to quality.
 - a. Strongly agree
 - b. Agree

- c. Hard to decide
- d. Disagree
- e. Strongly disagree
- 15. There are many drivers of stress and burnout. As you think about your own work experience, what are the most important factors the organization should focus on to help you thrive?
 - a. Control over work
 - b. Fairness
 - c. Financial stability of the organization
 - d. Organizational support of high-quality care
 - e. Meaningful quality metrics
 - f. Meaningful work
 - g. Recognition
 - h. Social connections
 - i. Values alignment between self and organization
 - j. Work-life balance
- 16. Do you current have, or have you ever had, a mentor or trusted advisor while in your leadership role? Please select all that apply. By mentor or trusted advisor, we mean either someone who has been a one-on-one coach or someone who has offered ongoing problem solving support.
 - a. Yes I currently have a mentor or trusted advisor
 - b. I've had a mentor or trusted advisor in the past
 - c. No, I haven't had a mentor or trusted advisor

- 17. In what ways do you get peer support—meaning with others who are doing the same thing and can provide emotional or professional support?
 - a. I participate in "nursing salons" within my organization
 - b. I have informal social networks that I tap
 - c. My professional association offers me this opportunity
 - d. I engage in peer support in other ways
 - e. I don't have an opportunity for peer support

Appendix B

- 1. Please enter a four-digit number you will remember when you complete the post survey in one week. Note that there is no record of who was assigned what number, this is only being collected to pair pre and post surveys for statistical analysis.
- 2. What is your current role?
 - a. Nurse Manager
 - b. Assistant Nurse Manager/Clinical Nurse Leader
- 3. How long have you been in your current role?
 - a. Less than 1 year
 - b. 1-3 years
 - c. 4-5 years
 - d. 6-9 years
 - e. 10-14 years
 - f. 15 years or more
- 4. How long have you been in nursing leadership? (for the purposes of this survey, nursing leadership is defined as a formal leadership role such as nurse manager, assistant nurse manager or clinical nurse leader. This does not include experience as a charge nurse)
 - a. Less than 1 year
 - b. 1-3 years
 - c. 4-5 years
 - d. 6-9 years
 - e. 10-14 years
 - f. 15 years or more

- 5. What clinical area does your current role oversee? Please note that if you oversee multiple areas that cross different divisions, just choose one.
 - a. Inpatient Nursing (Medical Surgical Units, Critical Care Units, Float Pool)
 - b. Surgical and Interventional Services
 - c. Ambulatory, Emergency Services, Professional Development, Nursing Quality
- 6. What is your highest level of education?
 - a. Diploma Program
 - b. Associate's Degree
 - c. Bachelor's Degree
 - d. Master's Degree
 - e. Doctoral Degree

Appendix C

Post-Intervention Additional Questions

- Prior to the presentation "Tackling Nurse Leader Burnout" provided on 10/18/2022, my knowledge of burnout was:
 - a. Minimal
 - b. Moderate
 - c. Significant
- After the presentation "Tackling Nurse Leader Burnout" provided on 10/18/2022, my knowledge of burnout was:
 - a. Minimal
 - b. Moderate
 - c. Significant
- 3. The interventions presented for burnout reduction are relevant and can be implemented in my everyday life.
 - a. Strongly disagree
 - b. Disagree
 - c. Neither agree nor disagree
 - d. Agree
 - e. Strongly agree
- 4. Following the presentation at the Nurse Strategic Retreat on 10/18/2022, has anything changed about the components of your work that you find most engaging?
- 5. Now that you have attended the leadership retreat and explored burnout interventions, has your perception of burnout changed? Please explain your thinking.

TACKLING BURNOUT

- 6. Please select the interventions you found effective in reducing burnout
 - a. Mindfulness & Meditation
 - b. Savoring Practice
 - c. Outdoor walks
 - d. Walk and Squawk
 - e. Physical exercise
 - f. Employee Assistance Program
 - g. Intention Setting
 - h. Serenity Lounge
 - i. Axe Throwing
 - j. Smash Rooms
 - k. Yoga
 - 1. Cooking Classes
 - m. Reading
 - n. Massage Therapy
 - o. Sleep Hygiene
- Have there been any barriers to implementing an intervention to reduce burnout? If so, please describe them below.
- Please share any additional comments or thoughts you have about how you will address or prevent burnout moving forward.

Appendix D

Burnout reduction toolkit

Burnout Reduction Toolkit

Table of Contents:

Savoring Practice.3Outdoor Walks.4Walk and Squawk.6Physical Exercise.7Employee Assistance Program.8Intention Setting.10Serenity Lounge.11Axe Throwing.12Smash Rooms.13Yoga.14Cooking Classes.15Reading.16Massage Therapy.17Sleep Hygiene.18	Mindfulness & Meditation	2
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Walk and Squawk6Physical Exercise7Employee Assistance Program8Intention Setting10Serenity Lounge11Axe Throwing12Smash Rooms13Yoga14Cooking Classes15Reading16Massage Therapy17	Outdoor Walks	4
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Reading16Massage Therapy		
Massage Therapy17		
Sleep Hygiene	Massage Therapy	17
	Sleep Hygiene	

Burnout Self-Test - Stress Management from MindTools.com

Mindfulness & Meditation

- There is strong evidence to support mindfulness medication is effective in decreasing overall stress
- Mindfulness is also shown to decrease burnout and increase self-compassion
- Resources available for Mindfulness:
 - LHMC Wellness Page has a variety of guided meditations that can be completed in under 5 minutes
- Apps that provide Meditation and Mindfulness Resources
 - HeadSpace
 - o Calm
 - Many apps offer discounts to healthcare workers

Helpful Links:

<u>Mindfulness & Meditation – Caregiver Wellness & Resilience (lahey.org)</u> <u>Meditation and Sleep Made Simple - Headspace</u> <u>Calm - The #1 App for Meditation and Sleep</u>

References: (Green & Kinchen, 2021)

Savoring Practice

- Concept that we naturally focus on the negative and easily engrain the negative thoughts into our minds
 It takes 12 seconds for a positive memory to form
 Think about times in your day where something good happens, and you continue to focus on the negative.

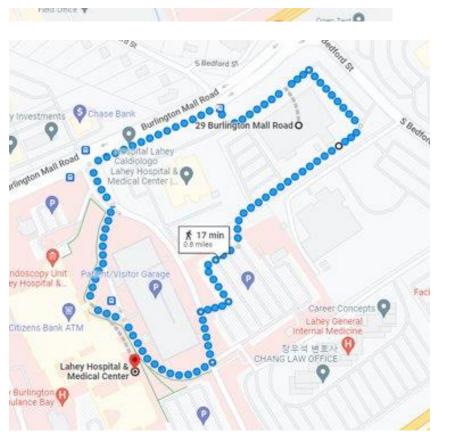
 Simply taking the 12 seconds to reflect on the good thing that just happened take a breath and acknowledge it happened can go a lot
- - happened, take a breath, and acknowledge it happened can go a long way in your overall Mindset

Helpful Links: The key to happiness: Savoring good things - YouTube

References: (Green & Kinchen, 2021)

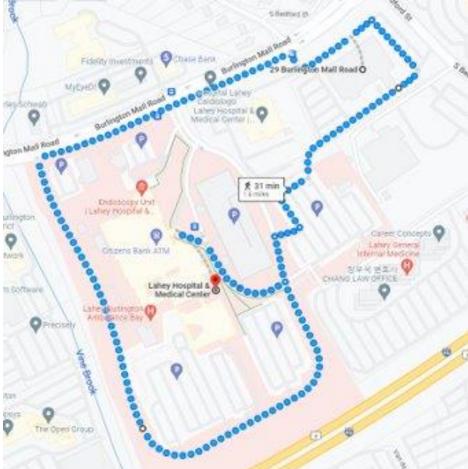
Outdoor Walks

- Physical Activity has been shown to reduce workplace related stress and fatigue
- Fresh air and time away from your unit, desk, or work can help to reset and recharge for the rest of the day
- There are a variety of options for walks locally that can be done in under 45 • minutes
 - Loop around Burlington Mall Road, South Bedford Street and Stony 0 Brook Road (34 minutes)
 - LHMC Campus Loop up to 29 Mall Road, around the building and back (17 minutes) LHMC Campus Loop as above plus a loop around all of 41 Mall Road Ο
 - Ο (31 minutes)



Maps of all of the above can be found in the Burnout reduction toolkit distributed earlier

Outdoor Walks Continued



References: (Naczenski et al., 2017)

Walk & Squawk

- •
- Use one of the walking routes above and take a friend Having a peer you can trust and confide in, and bounce ideas off of is highly valuable to resilience and success



Physical Exercise

- As previously cited, physical exercise has been shown to have direct and meaningful impact on stress and burnout
- There are many ways to get physical exercise not limited to traditional forms of exercise
- BILH Health insurance plans do offer reimbursement for gym and fitness memberships as well as a variety of discounts at fitness equipment retailers such as Runner's Alley and Marathon Sports. More info can be found logging into your BILH Harvard Pilgrim Account (form is included in your burnout reduction toolkit).

Helpful Links: BILH Living Well - Harvard Pilgrim Health Care - Microsites

References: (Naczenski et al., 2017)

Employee Assistance Program

- KGA Offers a variety of services, free of charge to BILH Employees
 - Support for Emotional & Mental Health
 - Talk with a counselor via text, call or chat
 - Schedule a conversation with a counselor
 - Have a KGA counselor contact you
 - Take a self-assessment
 - A variety of self-assessments are available and completely confidential
 - Support for Family, Home & Work
 - Contact via text, call, chat, or email
 - Schedule a conversation
 - Have a KGA Specialist contact you
 - Services that can be provided
 - Childcare and Parent support
 - Legal
 - Home services (I.e. cleaning, pet sitting, etc)
 - Work Stress management and consultation
 - Eldercare
 - Wellness
 - Financial Services
 - Nutrition
 - Support for Managers
 - Manager Consultation Service
 - Coping with Employee Related Stress
 - E-learnings for Managers
 - The Difference @ Work Podcast
 - Variety of Resources
 - Bullying
 - Communication
 - Conflict Resolution
 - Diversity
 - Employee Engagement
 - Employee Related Stress
 - Harassment
 - Leadership Support

- New Manager Resources
- Performance Management
- Team Building
- How to use KGA for managers

o Life Series

- Variety of resources
 - Life events such as marriage, having a baby, and retirement
 - Wellness information on sleep, nutrition, physical wellness, mindfulness, emotional wellbeing, and financial health
 - Resources for unexpected life events like grief, identity theft, or divorce
- Member Resources
 - Access to e books
 - Online training center
 - Mindfulness challenges
 - Meditation Podcasts
 - Member deals (exclusive discounts to KGA Members)
- Daily Wellness
 - Daily wellness tips in a variety of areas

Intention Setting

- Going into each new day or new week with a positive mindset is important and powerful
- Think of 1-3 intentions you would like to set going into a day or a week and write them down
- Place those intentions in a highly visible spot for you (I.e. on one of your computer monitors, or right near the door so you will see it throughout the day).
- When you are feeling frustrated or run down, remind yourself of those intentions.

Helpful Links: Sunday Scaries | Setting an Intention - YouTube

References (Green & Kinchen, 2021)

Serenity Lounge

- New offering at Lahey Hospital & Medical Center
- Multiple spaces to decompress
- Amenities include
 - Massage Chairs
 - O Buddha Boards
 - O Yoga Mats
 - o Journaling Materials
 - Meditation Cushions
 - Zen Garden
 - o Coloring Books





Featured Amenities:

- Buddha Board
- Coloring books
- Infinity 3D Massage Chairs
- Journaling
- Meditation Mats & Cushions
- Yoga Mat
- Zen Garden

Axe Throwing

- Alleviate some built up anger or rage and get physical activity at the same time
- There are a variety of local venues that provide a safe space to throw axes
- Local Business with this service:
 - o http://www.revolutionaxe.com/
 - <u>http://www.axelsthrowhouse.com/</u>
 <u>https://axe-play.com/contact/</u>



Smash Rooms

- If Axe throwing isn't your thing but you have some pent-up anger you need help dealing with, check out a smash room
- These are venues that have a variety of safe spaces where you can break things
- One local venue offers the following
 - <u>RAGE CAGE NH LLC</u>
 - Rage Cage-room where you can smash things by throwing them or using a baseball bat
 - Paint throwing/splattering-a room where you can splatter paint in any which direction you so choose



Yoga

- Yoga has been shown to have immediate effects on the sympathetic nervous •
- system Several literature reviews have found that yoga has direct impact on cardiovascular disease, metabolic syndrome, diabetes, cancer, and anxiety There are a variety of free, beginner Yoga classes available on YouTube. Fitness reimbursement would also be a possibility through BILH Health •
- •
- Insurance Plans by completing the appropriate form

Helpful Links: 10 Minute Beginner Yoga Video 30 Minute Beginner Yoga Video 22 Minute Beginner Yoga Class 18 Minute Chair Yoga Class

Reference: (Ross & Thomas, 2010)

Cooking Classes

- If cooking relaxes you, check out a local cooking class
- Local Venues with available classes
 - o <u>https://www.culinary-playground.com/index.html</u>
 - o <u>http://tastebudskitchen.com/northandover</u>
 - o https://www.cozymeal.com/boston/cooking-classes
 - o http://tastebudskitchen.com/beverly
 - o <u>https://www.createacook.com/</u>
 - o <u>http://www.twoapronscookery.com/</u>

Reference: (Zhang et al., 2021)

Reading

- If reading relaxes you, start to block some time during the week to read a book.
- If you want to read about burnout, relaxation, etc. check out some of the titles below
 - o Life's Messy, Live Happy –Cy Wakeman
 - Burnout: The Secret to Unlocking the Stress Cycle –Emily Nagoski and Amelia Nagoski
 - Essentialism: The Disciplined Pursuit of Less –Greg McKeown
 - Do Nothing: How to Break Away from Overworking, Overdoing, and Underliving –Celest Headlee
 - Boundaries: When to Say Yes, How to Say no to Take Control of your Life –Henry Cloud
 - High Performance Habits: How Extraordinary People Became that Way –Brendon Burchard
 - Atomic Habits: An Easy & Proven Way to Build Good Habits & Break Bad Ones –James Clear
 - The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations –James M. Kouzes and Barry Z Posner
 - Crucial Conversations: Tools for Talking When Stakes are High Joseph Grenny and Kerry Petterson
 - The Engaged Caregiver –Joseph Cabral, Thomas Lee, et al.
 - Reality Based Leadership –Cy Wakeman
 - No Ego –Cy Wakeman
 - Dare to lead –Brenee Brown

Reference:

(Zhang et al., 2021)

Massage Therapy

- Massage therapy has been linked to overall relaxation and reduction of occupational related stress
- You may be eligible for discounts on massage therapy depending on the business and your health insurance plan
- Local Venues:
 - Massage Envy Burlington
 - o Elements Massage
 - The Way Massage Therapy
 - o 3 Little Birds Massage Therapy

Reference: (Zhang et al., 2021)

Sleep Hygiene

- Sleep is critically important to our overall health and well being
- Sleep has been shown to directly impact burnout
- Examples of ways to improve sleep habits
- Go to bed and wake up at the same time every day
- Avoid Caffeine, especially in the afternoon and evening
- Avoid Nicotine
- Exercise regularly, but not too late in the day
- Avoid alcohol before bed
- Avoid large meals and beverages late at night
- Relax before bed
- Avoid distractions like noise, bright lights, TV or computer screens, or using your phone

Additional resources available through KGA:

• <u>https://my.kgalifeservices.com/articles/how-can-i-get-better-sleep</u>

Reference: (Stewart & Arora, 2019)

References

- Green, A. A., & Kinchen, E. V. (2021). The Effects of Mindfulness Meditation on Stress and Burnout in Nurses. *Journal of Holistic Nursing*, 39(4), 356–368. https://doi.org/10.1177/08980101211015818
- Naczenski, L. M., de Vries, J. D., van Hooff, M. L. M., & Kompier, M. A. J. (2017). Systematic review of the association between physical activity and burnout. *Journal of Occupational Health*, 59(6), 477–494. https://doi.org/10.1539/joh.17-0050-RA
- Ross, A., & Thomas, S. (2010). The Health Benefits of Yoga and Exercise: A Review of
 Comparison Studies. *The Journal of Alternative and Complementary Medicine*, *16*(1), 3–
 12. https://doi-org.unh.idm.oclc.org/10.1089/acm.2009.0044
- Stewart, N. H., & Arora, V. M. (2019). The Impact of Sleep and Circadian Disorders on Physician Burnout. *Chest*, 156(5), 1022–1030. https://doi.org/10.1016/j.chest.2019.07.008
- Zhang, M., Murphy, B., Cabanilla, A., & Yidi, C. (2021). Physical relaxation for occupational stress in healthcare workers: A systematic review and network meta-analysis of randomized controlled trials. *Journal of Occupational Health*, 63(1), e12243. https://doi.org/10.1002/1348-9585.12243

Appendix E

Burnout educational presentation

Tackling Nurse Leader Burnout

October 2022

Corey French MSN, RN, NEA-BC



Disclosures

- I am not a mental health professional
- This is a summary of what I have found in the literature to both identify and manage burnout
- I am receiving no corporate sponsorship or funding for this project
- I do not represent or endorse any brands or companies listed in the Burnout reduction interventions
- Burnout can be a triggering topic for some depending on previous personal experiences. If you are in need of assistance, please use our employee assistance resources or the national crisis resources below.



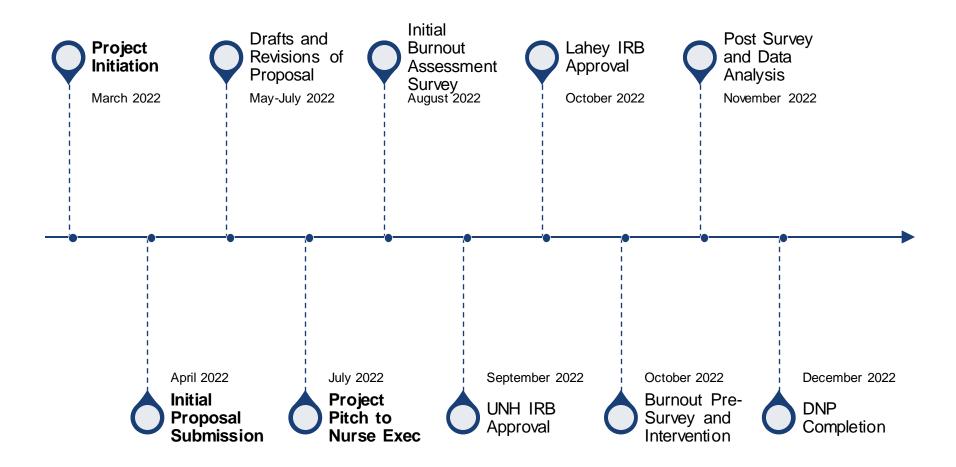
Acknowledgements

- Tracy Galvin
- Karri Davis
- Pamela Kallmerten

What is the DNP?

- Practice Doctorate in Nursing
- Designed around clinical practice and quality improvement
- Culmination of the program is a quality improvement project
- This is not a traditional research doctorate (PhD)
- Duration: 18-36 months depending on the program

Description of DNP Project and Timeline



What is Burnout and Why talk about it?

Beth Israel Lahey Health 🖈 Lahey Hospital & Medical Center

Background and Significance

- The healthcare industry has been plagued with burnout at every level for decades
- High work demands, exposure to human suffering, and constantly changing environments all paired with fewer resources and increased workloads have driven rapid rises in rate of burnout
- A great deal of focus has been put on front-line caregivers and there is opportunity to translate that work to the nurse leader population
- As of 2018, 35% of nurse managers reported symptoms of burnout. Post pandemic, it is currently estimated that close to 75% of nurse leaders experience burnout (Warshawsky, 2022)

What is burnout?

- The term "burnout" was first used in the context of healthcare professionals in 1974 by Herbert Freudenberger (Bogue & Carter, 2019)
- The term was used after observation of caregivers working in high risk, low success clinical areas in which patients often did not have positive outcomes. (Bogue & Carter, 2019).
- Burnout was a result of wholehearted caring for patients with rare success stories and an overall lack of ability to decompress or detach from the trauma of those patients' situations.
- Caregivers were not able to distinguish their professional role from themselves as a person and the emotional toll that came with the healing work was insurmountable (Bogue & Carter, 2019).
- Burnout has since been acknowledged and given an International Classification of Diseases (ICD) code
- Burnout is defined throughout the literature as a "chronic stress syndrome, including chronic feelings of exhaustion and negative feelings toward work (cynicism) and reduced professional efficacy" (Bakker & de Vries, 2021, p. 2)
- Burnout is a spectrum and can impact some individuals for days at a time and others longer term

Specific Aims & Rationale

• Reduce burnout in the nursing leadership team through burnout education and a burnout reduction toolkit with specific, actionable interventions.

Why?

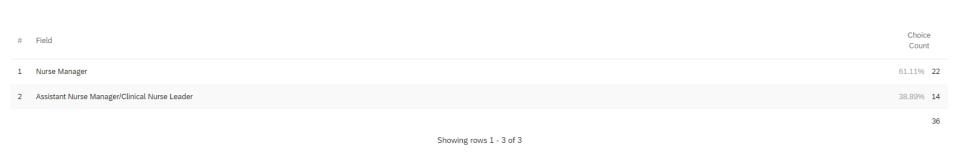
• "High turnover in the nurse manager role is associated with increased organizational costs, decreased efficiency, effectiveness, and strength" (Prochnow et al., 2021, p. 34)

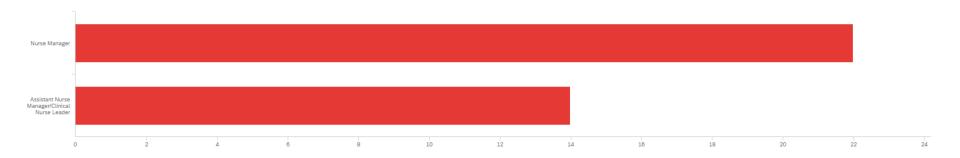
Review of data at LHMC

Survey Overview

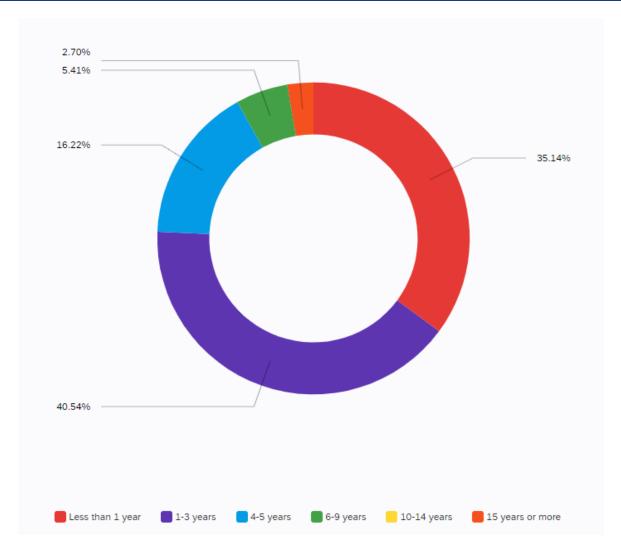
- Total Eligible Participants: 50
- Respondents: 37
- Response Rate: 74%
- Series of demographic questions
 - What is your role?
 - Years in current role
 - Years in nursing leadership
 - Clinical Area of oversight
 - Wellesley Partner's participation
- Burnout Questions
 - Symptoms of Burnout
 - Feelings of Cynicism
 - Emotional Exhaustion
 - Stress Level
 - Work/Home Life Balance

What is your current role?



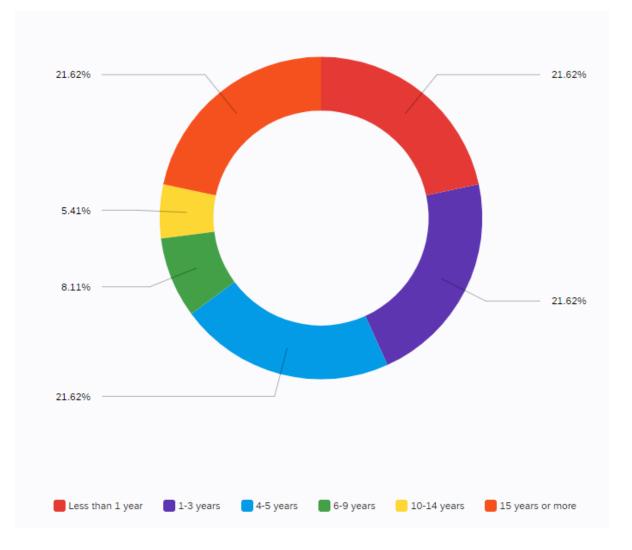


How long have you been in your current role?



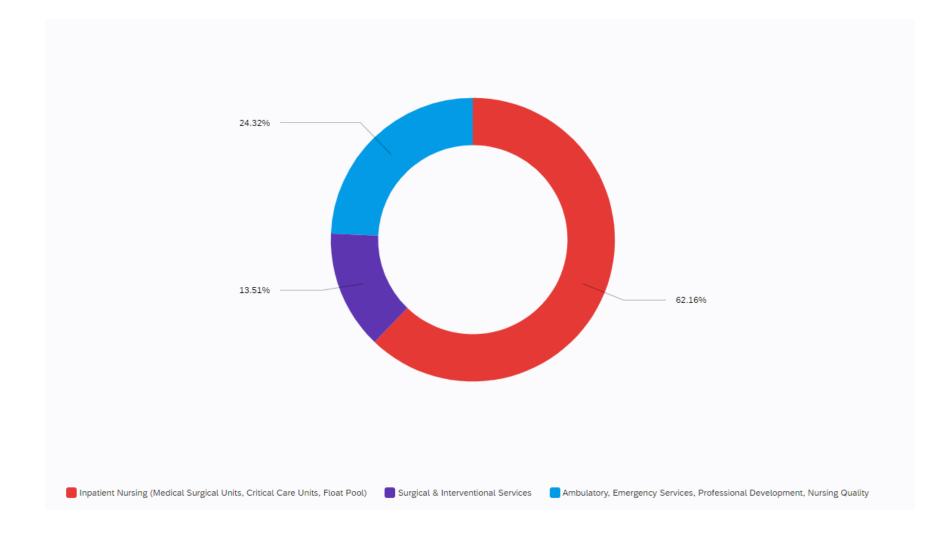
Beth Israel Lahey Health Lahey Hospital & Medical Center

How long have you been in nursing leadership?



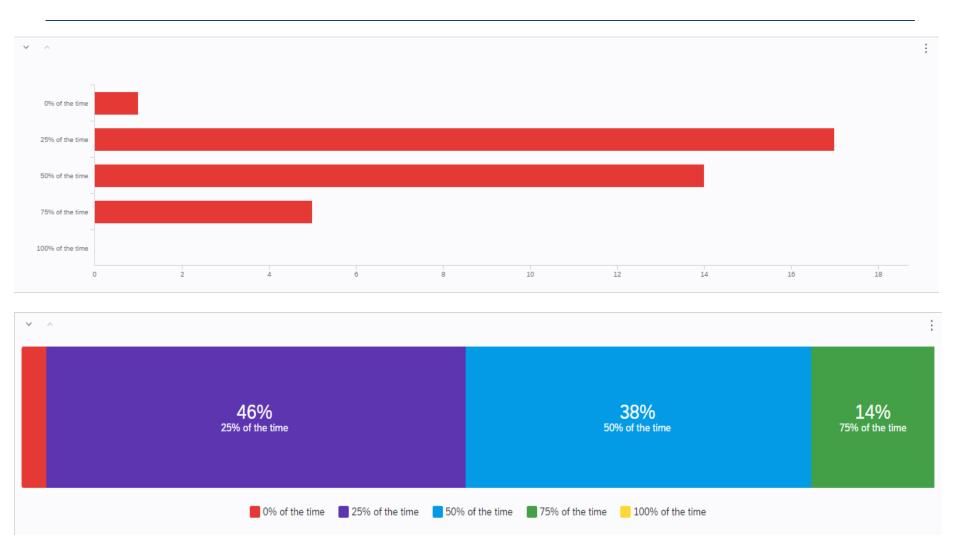
Beth Israel Lahey Health Lahey Hospital & Medical Center

What clinical area does your current role oversee?



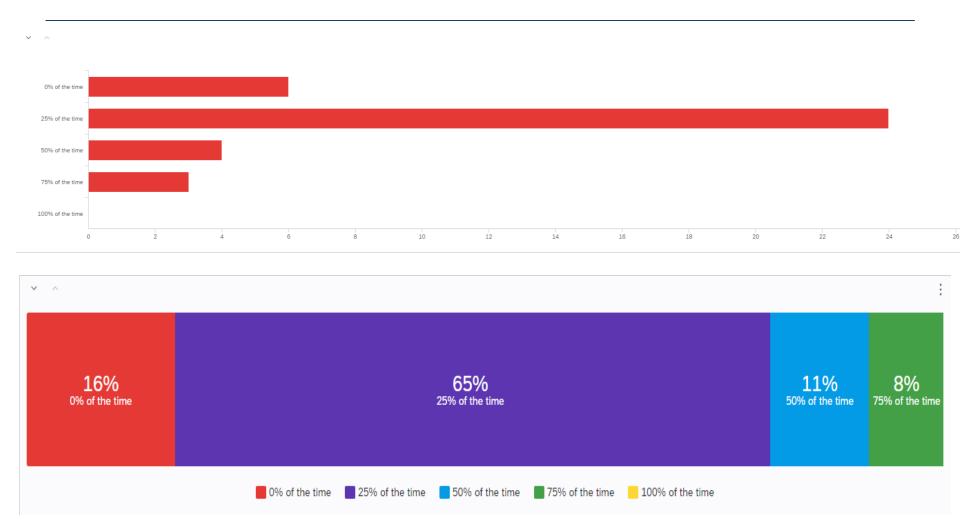
Beth Israel Lahey Health Lahey Hospital & Medical Center

I experience symptoms of burnout.

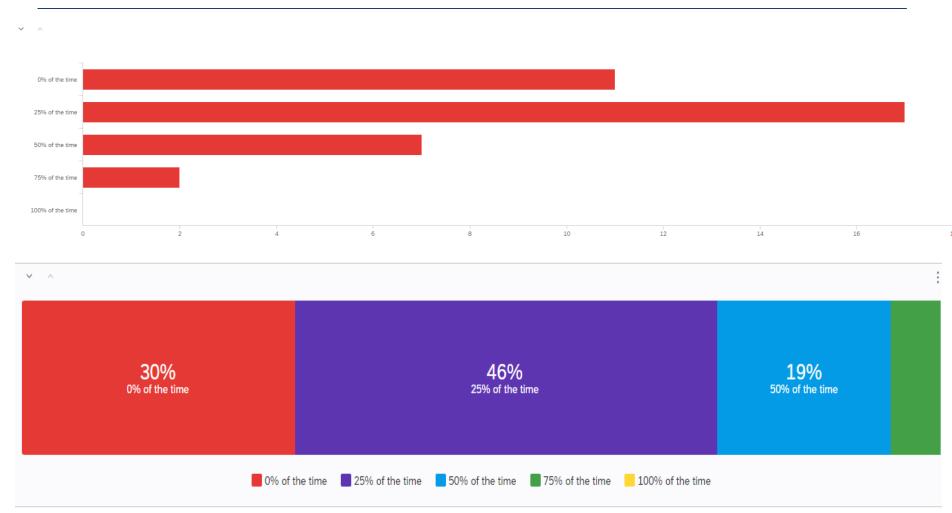


Beth Israel Lahey Health Lahey Hospital & Medical Center

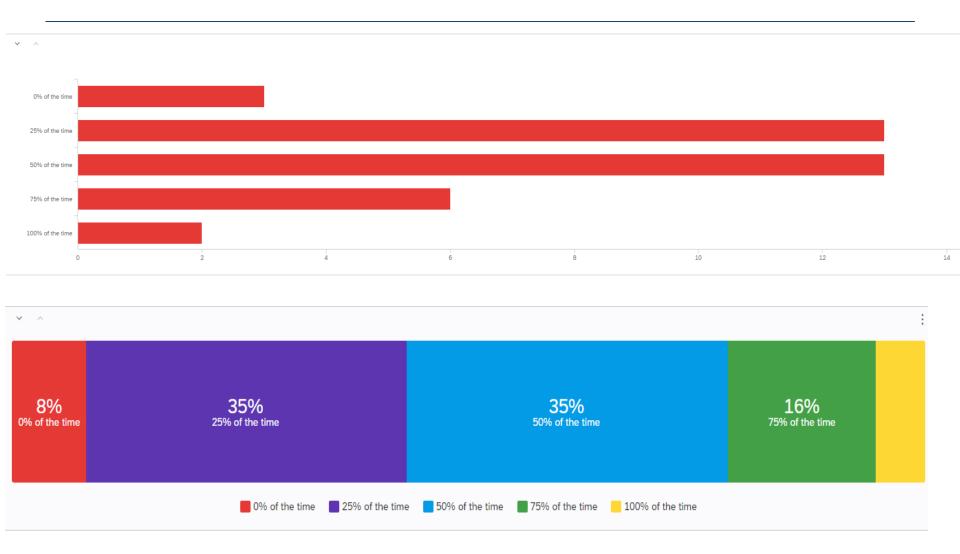
I feel negative or cynical toward the work I do



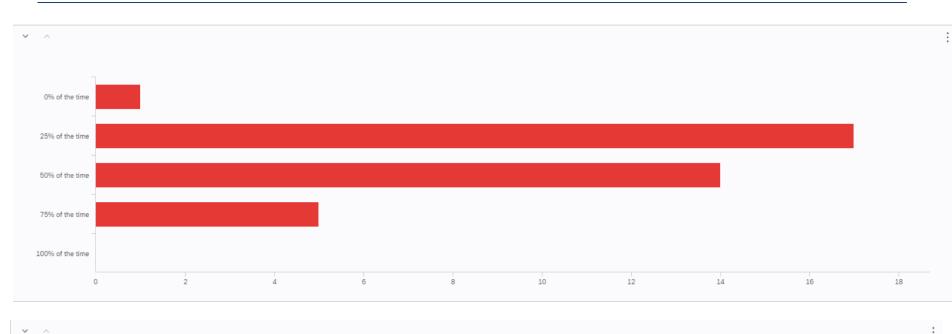
I feel like I am too emotionally exhausted to be effective in my role

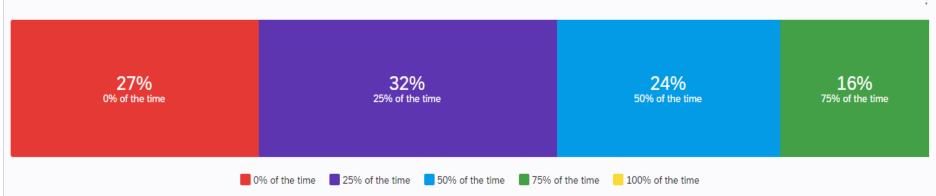


I feel the amount of stress related to my job is reasonable



I feel that my work interferes with my ability or desire to participate in home-life activities





Debrief

- 1. What initial thoughts do you have after reviewing the data?
- 2. How does seeing this make you feel?
- 3. Is there anything that surprised you?
- 4. Is there anything that didn't surprise you?
- 5. Anything anyone wants to share related to their own experience?

So now what?

Turning results into actionable interventions

Beth Israel Lahey Health Lahey Hospital & Medical Center

What does the literature say?

- Burnout in healthcare professionals contributes to decreased staff engagement, poor patient experience scores, increased risk of medical errors, and will further contribute to attrition across the healthcare workforce (Prochnow et al., 2021).
- As recently as 2021, it is estimated that nearly 75% of healthcare leaders are experiencing some degree of burnout (Prochnow et al., 2021).



What is burnout?

- A chronic stress syndrome characterized by three main attributes:
 - Depersonalization
 - Emotional Exhaustion
 - Decreased sense of accomplishment
- Personal experiences can vary
- Burnout can span a period of a week, or have longer lasting effects across months or even years
- Burnout is much more than a single frustrating day, a non-productive meeting, or being stuck on a project.
- Burnout is a state of existence that drives leaders and caregivers to lose parts of themselves and make sacrifices they did not expect to make to serve their career

What can we do about it?

- Strategies to reduce burnout can be separated into two categories
 - Organization Level Interventions
 - Individual Level Interventions



Organization Based Interventions

1. Employing a Magnet Culture

- Organizations who support autonomy, strong nursing leadership, and meaningful recognition will experience less burnout and ultimately better outcomes for patients and caregivers.
- 2. New Leader Onboarding
 - Investing time in new nurse leaders to support their transition into a leadership role is essential to their success and will reduce their risk of burnout in the first year of leadership
- 3. Ongoing professional development of leaders
 - Supporting continued professional development for established nursing leaders will allow for opportunity to debrief situations encountered in the past and will employ those leaders with new tools and tactics to use in their leadership
- 4. Managing Workloads
 - Assessing workload and ensuring nurse leaders have time, space, and resources to complete their work is critical to overall success and reduction in burnout



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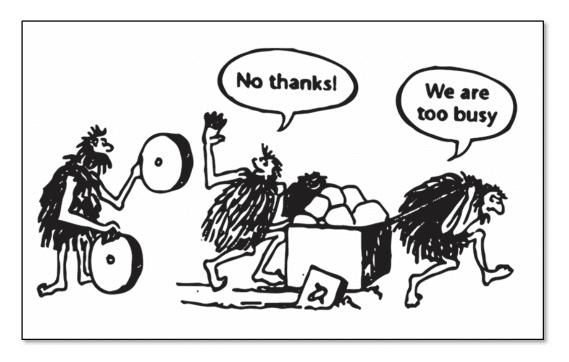
Individual Based Interventions

What can you do as an individual?

- Burnout is deeply personal
- Everyone can experience burnout in different ways at different times
- It is critical to have the tools to recognize burnout in yourself and know what tactics work for you to reduce your burnout and get back on track
- There is not one magical, one size fits all intervention here
- The work is internal and requires self-reflection, self-care, and self-awareness

Behaviors that Help and Hinder Burnout

- Job Demands-Resource Theory
 - Behaviors associated with burnout generated from a state of Maladaptive Self-Regulation
 - Self-Undermining
 - Coping Inflexibility



How to overcome these two burnout characteristics?

- Adaptive Regulation Strategies
 - Recovery
 - Job Crafting



How many of you in this room take care of patients?

Burnout Reduction Toolkit

A Tool for a Pulse Check

- Free tool available
- 15 Question assessment
- Provides a Burnout score to help identify the level of burnout you may be experiencing
- No validation or reliability data available
- This is purely an adjunct and not part of this QI project but is a tool available if you choose to use it

1	5 Statements to Answer	Not at All	Rarely	Sometimes	Often	Very Often
1	I feel run down and drained of physical or emotional energy.	0	0	0	0	0
2	I have negative thoughts about my job.	0	0	0	0	0
3	I am harder and less sympathetic with people than perhaps they deserve.	0	0	0	0	0
4	I am easily irritated by small problems, or by my co-workers and team.	0	0	0	0	0

Score Interpretation

Score	Comment
15-18	No sign of burnout here.
19-32	Little sign of burnout here, unless some factors are particularly severe.
33-49	Be careful – you may be at risk of burnout, particularly if several scores are high.
50-59	You are at severe risk of burnout – do something about this urgently.
60-75	You are at very severe risk of burnout – do something about this urgently

Mindfulness Exercises and Meditation

- There is strong evidence to support mindfulness medication is effective in decreasing overall stress
- Mindfulness is also shown to decrease burnout and increase self-compassion
- Resources available for Mindfulness:
 - LHMC Wellness Page has a variety of guided meditations that can be completed in under 5 minutes
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 - HeadSpace
 - Calm
 - Many apps offer discounts to healthcare workers





Savoring Practice

- Concept that we naturally focus on the negative and easily engrain the negative thoughts into our minds
- It takes 12 seconds for a positive memory to form
- Think about times in your day where something good happens, and you continue to focus on the negative.
 - Simply taking the 12 seconds to reflect on the good thing that just happened, take a breath, and acknowledge it happened can go a long way in your overall Mindset

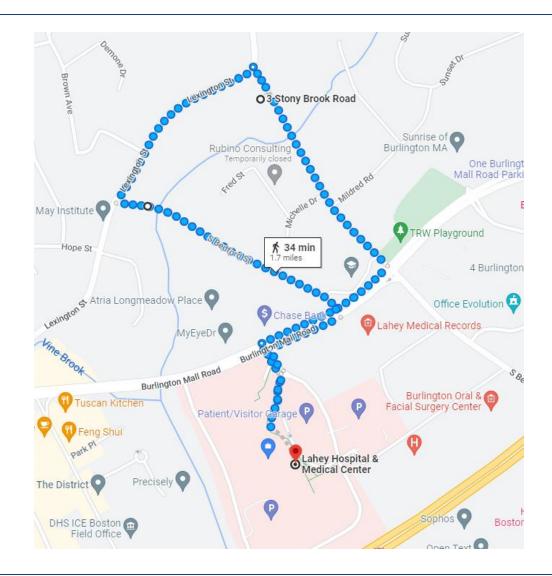
The key to happiness: Savoring good things - YouTube



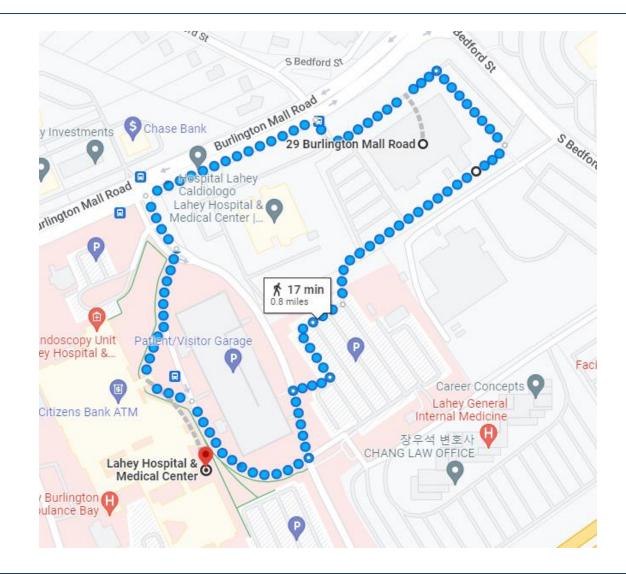
Outdoor Walks

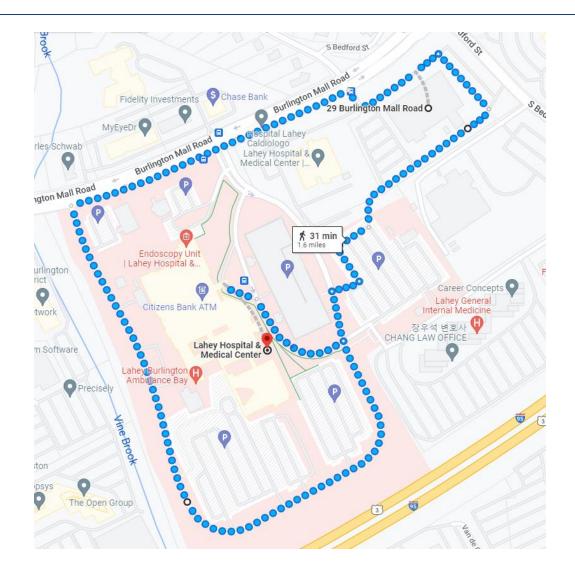
- Physical Activity has been shown to reduce workplace related stress and fatigue
- Fresh air and time away from your unit, desk, or work can help to reset and recharge for the rest of the day
- There are a variety of options for walks locally that can be done in under 45 minutes
 - Loop around Burlington Mall Road, South Bedford Street and Stony Brook Road (34 minutes)
 - LHMC Campus Loop up to 29 Mall road, around the building and back (17 minutes)
 - LHMC Capus Loop as above plus a loop around all of 41 Mall road (31 minutes)
 - Maps of all of the above can be found in the Burnout reduction toolkit distributed earlier





Beth Israel Lahey Health Lahey Hospital & Medical Center





Beth Israel Lahey Health Lahey Hospital & Medical Center

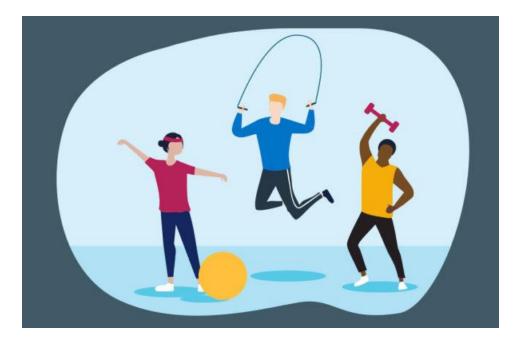
Walk and Squawk

- Use one of the walking routes above and take a friend
- Having a peer you can trust and confide in, and bounce ideas off of is highly valuable to resilience and success



Physical Exercise

- As previously cited, physical exercise has been shown to have direct and meaningful impact on stress and burnout
- There are many ways to get physical exercise not limited to traditional forms of exercise
- BILH Health insurance plans do offer reimbursement for gym and fitness memberships as well as a variety of discounts at fitness equipment retailers such as Runner's Alley and Marathon Sports. More info can be found logging into your BILH Harvard Pilgrim Account (form is included in your burnout reduction toolkit).





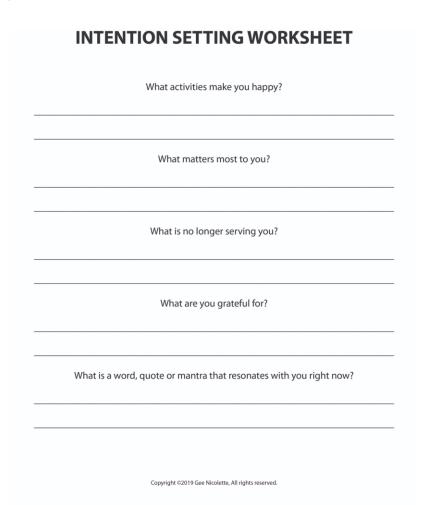
Employee Assistance Program

• There are a wide variety of resources offered through our Employee Assistance Vendor KGA

Enotional Health Physical Wellbeing Family Crisis Legal and Financial Work Managers and Supervisors Convenience Services KGA COVID-19 Resource Page Diversity. Equity & Inclusion Support For Working Parents Return To The Workplace

Intention Setting

• <u>Sunday Scaries | Setting an Intention - YouTube</u>



Serenity Lounge















Featured Amenities:

- Buddha Board
- Coloring books
- Infinity 3D Massage Chairs
- Journaling
- Meditation Mats & Cushions
- Yoga Mat
- Zen Garden

Axe Throwing

- <u>http://www.revolutionaxe.com/</u>
- <u>http://www.axelsthrowhouse.com/</u>
- <u>https://axe-play.com/contact/</u>



Smash Rooms

• RAGE CAGE NH LLC



Yoga

- Yoga has been shown to have immediate effects on the sympathetic nervous system
- Several literature reviews have found that yoga has direct impact on cardiovascular disease, metabolic syndrome, diabetes, cancer, and anxiety
- There are a variety of free, beginner Yoga classes available on Youtube.
- Fitness reimbursement would also be a possibility through BILH Health Insurnace Plans by completing the appropriate form



Sleep

- · Sleep is critically important to our overall health and well being
- Sleep has been shown to directly impact burnout
- Examples of ways to improve sleep habits
 - Go to bed and wake up at the same time every day
 - Avoid Caffeine, especially in the afternoon and evening
 - Avoid Nicotine
 - Exercise regularly, but not too late in the day
 - Avoid alcohol before bed
 - Avoid large meals and beverages late at night
 - Relax before bed
 - Avoid distractions like noise, bright lights, TV or computer screens, or using your phone
 - Additional resources available through KGA
- How Can I Get Better Sleep? Sleep Physical Wellbeing | KGA, Inc. (kgalifeservices.com)

Additional Decompression Activities

- Cooking Classes
- Reading
- Journaling
- Paint Night
- Massage Therapy

Additional Perspective on Burnout

Emily Nagoski and Amelia Nagoski: The cure for burnout (hint: it isn't self-care) | TED Talk

Summary

- Burnout is present throughout healthcare, in all roles, at alarming rates
- There are individual and organization-based interventions the reduce burnout
- The most critical component to management and prevention of burnout is self-awareness and having the tools needed to reduce and/or prevent your own burnout
- The burnout reduction toolkit is intended to provide an overview of some interventions available
 - These are not a one size fits all
 - Find what works best for you and use it

Next Steps

- Please use the toolkit if you find it helpful
- Over the next week, reflect on our conversation today. What did you find useful and what might you employ in the future?
- Complete a post survey that will be sent out 1 week from today



Questions?

References

Arnetz, B. B., Goetz, C. M., Arnetz, J. E., Sudan, S., vanSchagen, J., Piersma, K., & Reyelts, F. (2020). Enhancing healthcare efficiency to achieve the Quadruple Aim: An exploratory study. *BMC Research Notes*, *13*, 362. <u>https://doi.org/10.1186/s13104-020-05199-8</u>

Bakker, A. B., & de Vries, J. D. (2021). Job Demands–Resources theory and self-regulation: New explanations and remedies for job burnout. *Anxiety, Stress & Coping*, 34(1), 1–21. https://doi.org/10.1080/10615806.2020.1797695

Bogue, R. J., & Carter, K. F. (2019). A Model for Advancing Nurse Well-Being: Nurse Leader, 17(6), 526–530. https://doi.org/10.1016/j.mnl.2019.09.011

Brand, S. L., Coon, J. T., Fleming, L. E., Carroll, L., Bethel, A., & Wyatt, K. (2017). Whole-system approaches to improving the health and wellbeing of healthcare workers: A systematic review. *PLoS One*, *12*(12), e0188418. <u>http://dx.doi.org/10.1371/journal.pone.0188418</u>

Graystone, R. (2019). Prevent Compassion Fatigue and Burnout With a Magnet Culture. JONA: The Journal of Nursing Administration, 49(5), 231–233. https://doi.org/10.1097/NNA.000000000000743

Kelly. (n.d.). Nurse Leader Burnout, Satisfaction, and Work-Life Balance. Retrieved October 31, 2021, from https://oce-ovid-com.unh.idm.oclc.org/article/00005110-201909000-00004/HTML

Kelly, L. A., Lefton, C., & Fischer, S. A. (2019). Nurse Leader Burnout, Satisfaction, and Work-Life Balance. JONA: The Journal of Nursing Administration, 49(9), 404–410. https://doi.org/10.1097/NNA.000000000000784

Leiter, M. P., & Maslach, C. (2022). Areas of Worklife Survey Manual and Sampler Set. 34.

Linzer, M., McLoughlin, C., Poplau, S., Goelz, E., Brown, R., Sinsky, C., & for the AMA-Hennepin Health System (HHS) burnout reduction writing team. (2022). The Mini Z Worklife and Burnout Reduction Instrument: Psychometrics and Clinical Implications. *Journal of General Internal Medicine*, 37(11), 2876–2878. https://doi.org/10.1007/s11606-021-07278-3

Maslach, C., Jackson, Susan, Leiter, Michael, Schaufeli, Wilmar, & Schwab, Richard. (2018). Maslach Burnout Inventory Manual (4th ed.). Mind Garden, Inc.

Prochnow, J. A., McGill, R. L., Pesut, D. J., Gordon, D., Deno, F. E., & Becknell, M. D. (2021). Challenges and choices: Insights derived from a survey of nurse leader burnout. *Nursing Management*, 52(10), 32–40. https://doi.org/10.1097/01.NUMA.0000792012.90700.f2

Stelnicki, A. M., & Carleton, R. N. (2021). Nursing Leadership Has an Important Role in the Management of Nurses' Mental Health. *Nursing Leadership (1910-622X)*, 34(2), 12–15. <u>https://doi.org/10.12927/cjnl.2021.26537</u>

Warshawsky, N. E. (2022). Building Nurse Manager Well-being by Reducing Healthcare System Demands. *JONA: The Journal of Nursing Administration*, 52(4), 189–191. https://doi.org/10.1097/NNA.00000000001127

Burnout Reduction Toolkit References

Green, A. A., & Kinchen, E. V. (2021). The Effects of Mindfulness Meditation on Stress and Burnout in Nurses. *Journal of Holistic Nursing*, *39*(4), 356–368. <u>https://doi.org/10.1177/08980101211015818</u>

Naczenski, L. M., de Vries, J. D., van Hooff, M. L. M., & Kompier, M. A. J. (2017). Systematic review of the association between physical activity and burnout. *Journal of Occupational Health*, *59*(6), 477–494. <u>https://doi.org/10.1539/joh.17-0050-RA</u>

Ross, A., & Thomas, S. (2010). The Health Benefits of Yoga and Exercise: A Review of Comparison Studies. *The Journal of Alternative and Complementary Medicine*, *16*(1), 3–12. <u>https://doi-org.unh.idm.oclc.org/10.1089/acm.2009.0044</u>

Stewart, N. H., & Arora, V. M. (2019). The Impact of Sleep and Circadian Disorders on Physician Burnout. *Chest*, 156(5), 1022–1030. <u>https://doi.org/10.1016/j.chest.2019.07.008</u>

Zhang, M., Murphy, B., Cabanilla, A., & Yidi, C. (2021). Physical relaxation for occupational stress in healthcare workers: A systematic review and network meta-analysis of randomized controlled trials. *Journal of Occupational Health*, 63(1), e12243. https://doi.org/10.1002/1348-9585.12243