RESTORE: Improving Resilience and Reducing Burnout in Critical Care Nursing Staff

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Abstract

Burnout remains a significant problem in nursing staff around the world. Current research posits that critical care units have some of the highest rates of burnout with an urgent need for resiliency training to decrease burnout. Resilience training is a crucial intervention for critical care staff to promote well-being and reduce burnout symptoms. The purpose of this project was to determine if a four-hour resilience class that focused on emotional intelligence, self-care, resiliency, and art therapy decreased burnout symptoms in critical care nursing staff. The study was quasi-experimental with a pretest-post-test design and included a nonequivalent control group. Participants were recruited from critical care units at a large Level I Trauma hospital in Northeast Ohio. Inclusion criteria included part or full time English-speaking critical care staff. The Maslach Burnout Inventory (Cronbach's coefficient alpha: 0.90 for Emotional Exhaustion, 0.79 for Depersonalization, and 0.1 for Person Accomplishment) was offered at the beginning of the training (n= 90) and again six weeks after training (n= 24). Demographics collected included job position, age, gender, years in current position, years in critical care, plans to leave the organization or healthcare in the next five years, and highest education level. A paired t test was used to evaluate if participants' burnout symptoms decreased after resilience training. There was not sufficient power to detect a significant difference in the research questions apart from one question; an unexpected outcome was the increase in depersonalization symptoms from the pre intervention to post intervention group. This may be explained by the study taking place during COVID and staffing challenges. Other findings showed that critical care nursing staff at this organization have worse burnout symptoms than those of the general population of workers in human services professions. Nursing staff who plan to leave the organization in the next five years showed emotional exhaustion mean scores that were significantly higher than those who do

not plan to leave. Participants who were ages 25-34 showed a significantly higher mean score of depersonalization when compared to those who were ages 45-54 and 55 and older. Additionally, participants who were ages 35-44 showed a significantly lower mean personal accomplishment score when compared to those who were ages 55 and older. Literature shows that a reduction in burnout symptoms may improve job satisfaction, decrease staff turnover, increase patient satisfaction, and improve patient outcomes. Training may be replicated for staff throughout other care areas.

Keywords: burnout, resiliency, nursing, resilience training, critical care, nurse turnover, nursing staff

Reducing Burnout in Critical Care Nursing Staff Through Resilience Training

Compassion fatigue and burnout, though not new phenomena, remain a significant problem in nursing staff around the globe. Although closely linked in the literature, compassion fatigue occurs and resolves quickly, while burnout occurs over a long period of time. Burnout is a condition of three types of symptoms including emotional exhaustion, depersonalization, and feelings of low personal accomplishment (Epp, 2012; Maslach et al., 2018). Though burnout is also referred to in the literature as feelings of cynicism and low professional efficacy, burnout in medical personnel is measured by the three previously stated terms (Maslach et al., 2018). Burnout can be conceptualized as a continuum with various ranges and intensity of the experienced feelings (Maslach et al., 2018).

Burnout can affect the entire healthcare system negatively as it increases costs related to nurse turnover, absenteeism, and poor patient outcomes (Aiken et al., 2011; Brown et al., 2018; McGinley & Kerfoot, 2013; Roth, 2020). Poor patient outcomes may include reduced patient satisfaction scores, increased falls, increased infection rates, and medication errors (Brown et al., 2018; Nantsupawat et al., 2015; Steinberg et al., 2017). Compassion fatigue is a factor that may lead to burnout; it develops when a nurse experiences stress due to repeated exposure to high acuity and high patient volumes (Kester & Wei, 2018).

Nursing is the nation's largest healthcare profession with more than 3.8 million registered nurses (RNs) (Rosseter, 2019). A survey of more than 3,000 ICU staff found that 37% were highly stressed and 29% had severe burnout (Steinberg et al., 2017). The Joint Commission reports that 15.6% of all nurses report feelings of burnout according to a national nursing engagement report in 2019 (Bronk, 2019). Alarmingly, one qualitative study of almost 2,000 emergency, trauma, and transport RNs displayed that 87% of nursing staff self-reported some

degree of burnout, with 37% stating they were “definitely burned out”, had persistent symptoms, or were “completely burned out” (Schumaker, 2020). This same study identified the ten top themes for the biggest challenges among emergency nurses; burnout was the second biggest challenge, surpassed only by concerns about staffing and nurse to patient ratios (Schumaker, 2020).

Critical care nurses experience burnout symptoms even more often than other nurse specialties (Roth, 2020). Emotional exhaustion, lack of personal accomplishment, and depersonalization are the most common burnout symptoms critical care nurses face (Roth, 2020). Nationally, work-related stress costs $200 billion annually in lost productivity (Mistretta et al., 2018). Though burnout is a leading patient safety and quality concern among healthcare organizations, only 5% of organizations report being “highly effective” at addressing staff burnout (Bronk, 2019).

There are multiple ways to combat burnout in critical care nursing staff. One successful method is the implementation of resilience training (Brown et al., 2018; Cleary et al., 2018; Roth, 2020; Steinberg et al., 2017). Resilience is the ability of a person to respond appropriately to adversity; it can be learned through practicing positive coping skills and has shown to reduce burnout symptoms (Roth, 2020). Workshops and formal training can have positive impacts on the development of resiliency in nurses (Blackburn et al., 2020; Cleary et al., 2018; Foster et al., 2018, Mealer, Conrad, et al., 2014; Poulsen et al., 2015; Steinberg et al., 2017).

Problem

Critical care units at MetroHealth are no exception to the effects of burnout. Staff have confided in leadership that they are feeling overworked, understaffed, and exhausted. The current standard of care for nursing staff training includes content related to quality metrics, clinical

skills, and annual education required by the organization; there are no educational requirements regarding burnout or resilience. The turnover rate for critical care nursing staff at MetroHealth in 2020 was 17.25%, which is consistent with the national average of 17.8% (NSI Nursing Solutions, 2020). Not included in the turnover rates are staff who have left the critical care bedside but remained at MetroHealth. This data as well as turnover rates for ancillary nursing staff have been requested from Human Resources (HR). To date of this publication, this information has not yet been made available due to competing HR priorities.

Resiliency training has been provided to the trauma nursing staff at MetroHealth for the past two years. During this time, only one nurse has left the unit; she transferred to another unit within the organization. Based on the above evidence, the researcher then generated the PICOT question: “Do critical care staff who receive resilience training when compared to those who do not have decreased burnout symptoms six weeks after training?”.

Purpose

The purpose of this project was to determine if a four-hour resilience class that focused on emotional intelligence, self-care, resiliency, and art therapy decreased burnout symptoms and improved resilience in critical care nursing staff.

Literature Review

The intention of this literature review is to provide an examination of published work on nursing staff resiliency and burnout. Search engines utilized for the literature review included CINAHL Plus Full Text and Medline, PubMed, and Medline. Key words included nurse well being clinical guideline, nurs* guideline AND well-being OR wellbeing OR well being, nurs* clinical guideline AND well-being OR wellbeing OR well being, critical care nurs* burnout, nurs* burnout, critical care nurses and burnout, intensive nurses and burnout, critical care nurses

and resilience, nurse hardiness, nurse compassion fatigue, critical care nurses and compassion fatigue, ancillary nursing staff burnout, cardiac nurses resilience, nurse professional development, nurse job satisfaction, cardiac nurse satisfaction, nurse burnout patient outcomes, and nurse resilience.

Inclusion criteria encompassed English, full text available, and publication dates 2010 – 2020. Exclusion criteria included publications prior to 2010 and non-English articles. This resulted in 23,190 articles. 22,093 of the total articles resulted from one specific key word combination: nurs* guideline AND well-being OR wellbeing OR well being. 1,097 articles resulted from all other searched key word combinations. This list was narrowed down by investigating their relevance to the PICOT question, level of evidence, and study design diversity. Additional articles found outside of this search were discovered by reviewing article references, discussions amongst content experts, and sharing of peers and mentors. Articles were selected based on content, level of evidence, and publication date.

Gaps in research include resilience training on cardiac nursing staff. While there is a moderate amount of research focused on critical care staff, many studies on burnout and resiliency include staff from other high-stress environments. Though the literature review showed supportive evidence that cardiac nursing staff are susceptible to burnout symptoms and high stress work environments, no studies were identified that linked resilience training and cardiac nursing staff. Adding evidence to the literature may help identify resilience strategies for cardiac nursing staff.

Causes of Burnout

Various factors can lead to burnout among nursing staff, including poor work environments and low staffing (Aiken et al., 2011; Nantsupawat et al., 2015; You et al., 2013).

Nurses may experience burnout due to morally distressing situations (Brown et al., 2018; Epp, 2012; Rushton et al., 2015). Other factors can include stress of responding quickly to patient crises and making correct clinical decisions, complex care, heavy workload, and high-performance expectations of critical care nurses (Epp, 2012). Compassion fatigue is another factor that may lead to burnout; it is a feeling that develops when a nurse experiences stress due to repeated exposure to high acuity and high patient volumes (Kester & Wei, 2018). Compassion fatigue can contribute to nurse dissatisfaction and turnover (Kester & Wei, 2018).

Bullying and high workload can also contribute to burnout symptoms (Brown et al., 2018). Inexperienced colleagues and increased nurse to patient ratios impact workload. An increased workload may create feelings of inability to meet patients' physical and psychological needs, contributing to burnout (Brown et al., 2018). Emotional and spiritual demands that create the perception of an excessive workload can also contribute to burnout symptoms, as well as uncertainty surrounding treatment, managing death and dying patients, and inadequate training and preparation to address the needs of patients and family members (Rushton et al., 2015). Insufficient staff support systems contribute to moral distress, which can lead to burnout (Brown et al., 2018; Rushton et al., 2015). Moral distress is a key variable influenced by nurse resiliency and is a significant predictor of burnout (Brown et al., 2018; Rushton et al., 2015).

Financial Impact of Nurse Turnover

Nurse turnover can make an enormous financial impact on a health care organization. According to NSI Nursing Solutions (2020), national nurse turnover stands at 17.8% as of January 2020. Studies show that 40% of nurses plan to leave the profession in the next decade, and 43% of new graduate nurses leave the bedside within the first three years of practice (Cleary

et al., 2018). High rates of nursing turnover are largely due to stress in the workplace (Cleary et al., 2018).

Nurses who work in behavioral health, step down, and emergency services experience the highest turnover. The cost of turnover for a bedside nurse ranges from $33,300 to $56,000 with an average cost of $44,400. Each additional percentage change in nurse turnover can cost an average hospital $306,400 per year (NSI Nursing Solutions, 2020). Nurse turnover can contribute to a reduction in the quality of patient care and an increase in costs for an organization (Steinberg et al, 2017). Rates of nurse turnover are inversely related to quality metrics, such as physical restraints and pressure injuries (Castle & Engberg, 2005, as cited in Kovner et al., 2014). The cost of caring for one pressure injury ranges from $20,900 to $151,700 (AHRQ, 2014).

In addition, turnover rates are positively correlated to patient falls (Bae et al., 2010, as cited in Kovner et al., 2014); the cost for a hospital-acquired fall is estimated at $6,694 (AHRQ, 2017). Improving nurse retention and engagement increases quality of patient care and financial wellness of an organization (Wei et al., 2018). Patient satisfaction scores can be tied closely to reimbursement and financial rewards, making these results even more impactful on cost avoidance and cost savings. The cost/benefit analysis included in Appendix A delineates cost savings and avoidance.

The Role of Nurse Leadership

Nurse leaders play a crucial role in preventing burnout (Blackburn et al., 2020; Bronk, 2019; Epp, 2012; Kester & Wei, 2018; Wang, 2018; Wei et al, 2019). As nurse leaders have opportunities to make system-wide changes, they possess the potential to greatly impact nurse satisfaction and burnout. Though the individual nurse is accountable for his or her own self-care,

the responsibility is shared with the healthcare institution. A healthcare organization should offer programs that meet a variety of staff needs (Blackburn et al., 2020).

Leadership should consider nurse resilience training as an effective way to reduce costs in the healthcare setting, as it is both feasible and cost-effective (Mealer, Conrad, et al., 2014; Mealer, Hodapp et al., 2017; Noben et al., 2015; Poulsen et al., 2015). One study of 513 nurses screened for mental health complaints (such as anxiety, depression, and more) found that within six months, costs of offering a preventative intervention were more than recuperated based on staff turnover, absenteeism, and work performance (Noben et al., 2015). Building nurse resiliency is an effective way to reduce nurse turnover (Brown et al., 2019; Kester & Wei, 2018).

Burnout Effects on Patient Safety and Satisfaction

Greater resilience and decreased burnout protect nurses from emotional exhaustion and improves patient outcomes, satisfaction, and safety (Brown et al., 2018; Kester & Wei, 2018; Nantsupawat et al., 2015; Rushton et al., 2015). Eventually, fatigue begins to affect the quality of nursing care and can lead to decreased patient safety (Kester & Wei, 2018). Patient safety can also be impacted by secondary manifestations of burnout, such as anxiety, sleeplessness, depression, and reduced job satisfaction (Kester & Wei, 2018). Disruptions in workflow, continuity of care, and variability between clinicians because of nurse turnover compound concerns of patent safety (Kelly, 2017; McGinley & Kerfoot, 2013).

Increases in nurse turnover can result in continued hire of new graduates. This can make it difficult to achieve high scores in nurse-sensitive patient outcomes, such as falls and pressure injuries (McGinley & Kerfoot, 2013). Disproportionate numbers of inexperienced nurses place an even higher amount of stress on the nurse, creating a cycle that can contribute to patient dissatisfaction (McGinley & Kerfoot, 2013).

Prioritizing nurse well-being is necessary for patient safety, experience, and quality of care (Kester & Wei, 2018; Wei et al., 2018). One study of 2,084 registered nurses from 94 community hospitals were surveyed with the Maslach Burnout Inventory (MBI). The MBI measures burnout symptoms. Higher scores of nurse burnout were associated with poorer patient outcomes. Each measurement of increasing emotional exhaustion resulted in a 30% increase in patient falls, a 47% increase in medication errors, and a 32% increase in infection (Nantsupawat et al., 2016).

Nurses with burnout symptoms are more likely to rate the quality of care on their nursing unit as poor or fair (as opposed to good or excellent) (Nantsupawat et al., 2016; You et al., 2012). Hospitals that are consistently classified as having a poor work environment by their bedside nurses are associated with lower quality of patient care (Aiken et al., 2011; You et al., 2013). When nurses have lower burnout scores and improved job satisfaction, patients are more likely to recommend the hospital, to rate their hospital highly, and to be satisfied with nurse communication (You et al., 2012).

Strategies to Address Burnout

Nurse leaders must find ways to reduce burnout and promote a healthy workplace. One way to achieve this is by supporting the development of resiliency in nurses (Brown et al., 2018; Cleary et al., 2018; Roth, 2020; Steinberg et al., 2017). Resiliency is the ability to face adverse situations, remain focused, and be optimistic about the future (Kester & Wei, 2018).

Evidence-based literature describes areas of high-stress as places with an urgent need for resilience training. Nurses who work in these high-stress areas have an increased risk of leaving the nursing profession due to burnout. Nurses who are highly resilient report a lower level of burnout (Mealer, Jones et al., 2012, as cited in Wei et al., 2018). Strategies for building nurse

resilience include formal education programs, social support, meaningful recognition, meaningful patient interactions, and physical and spiritual well-being (Blackburn et al., 2020; Cleary et al., 2018; Kelly, 2017; Kester & Wei, 2018; Mealer, Conrad, et al., 2014; Rushton et al., 2015).

Effects of Emotional Intelligence on Burnout

Emotional intelligence is the ability to recognize and regulate emotions in self and others; though it is frequently thought that health care workers are proficient in this skill, it is often not the case (Reeves, 2005). Emotional intelligence is positively associated with self-compassion and is a significant moderator of stress and burnout in nurses (Spano-Szekely et al., 2016). Patient outcomes are affected as well; emotional intelligence is correlated with an improvement in quality care outcomes, including falls, falls with injury, and medication errors (Spano-Szekely et al., 2016).

Awareness of emotions and the ability to identify feelings can allow nurses to function optimally without being controlled by their emotions (Reeves, 2005). People with high emotional intelligence can accurately identify personal strengths and weaknesses and are more likely to be hired for a position, be promoted, and be a major asset to a company (Reeves, 2005). Emotional intelligence can be developed by self-awareness, self-care behaviors, and the development of empathy (Reeves, 2005).

Effects of Art Therapy on Burnout

Research also supports art therapy as a method of reducing work-related stress and improving emotional health (Ho et al., 2019; Reed et al., 2020). Attention to emotion-focused coping skills has shown to be more effective than problem-focused strategies in reducing burnout (Ho et al., 2019). Art therapy provides a way to express oneself through images and metaphors

that exceed the barriers of language; this can be especially helpful when professionals are asked to communicate feelings or experiences that are difficult to verbalize (Ho et al., 2019; Reed et al., 2020).

Incorporating self-reflection and self-expression into art therapy can help promote the understanding of emotions and self. Art therapy can be useful in reducing burnout in health care professionals by managing stress, improving relationships, emphasizing self-care, and enabling the expression of grief (Ho et al., 2019). It may also allow health care professionals to process traumatic experiences, deepen relationships in the workplace, and create supportive networks (Reed et al., 2020).

Effects of Self-Care and Workshops on Burnout

Teaching nurses self-care strategies by ways of resilience training is a successful method at reducing and preventing burnout (Blackburn et al., 2020; Cleary et al., 2018; Epp, 2012; Foster et al., 2018; Mealer, Conrad, et al., 2014; Mistretta et al., 2018; Poulsen, et al., 2015; Steinberg et al., 2017; Wei et al., 2018). Workshops and formal training can have positive impacts on the development of resiliency in nurses (Blackburn et al., 2020; Cleary et al., 2018; Foster et al., 2018, Mealer, Conrad, et al., 2014; Poulsen et al., 2015; Steinberg et al., 2017). Resilience workshops are correlated with improvements in recovery, self-care satisfaction, perceived sleep quality, and symptoms of anxiety, depression, and burnout (Mealer, Conrad et al., 2014; Mistretta et al., 2018; Poulsen et al., 2015). Nurses who are resilient report more optimism, self-efficacy, hope, and flexibility (Brown et al., 2018; Foster et al., 2018).

Teaching healthcare workers self-care strategies can improve resilience (Blackburn et al., 2020; Mistretta et al., 2018; Poulsen et al., 2015). One study with 70 cancer care workers compared a group that received a one-day workshop on self-care and a group that received

written educational materials alone. Researchers found that the group who attended the workshop improved self-care skills, sleep quality, and recovery skills at 6-weeks post workshop when compared to the control group that received written educational materials alone (Poulsen et al., 2015). While these findings are specific to oncology nurses, the results can be projected for nurses working in other high-stress environments as well.

During a randomized and controlled 12-week study, critical care nurses were split into control and intervention groups. Those in the intervention group received a two-day educational workshop with counseling sessions, mindfulness activities, exercise regimens, and written work. The control group was asked to record their exercise only. Findings support resilience training programs with a focus on mindfulness, as participants improved symptoms of anxiety, depression, burnout, and PTSD and improved levels of resilience (Mealer, Conrad, et al., 2014).

Effects of Resilience Training on Nursing Support Staff

A Magnet hospital offered an activity plan to 180 nurses and support staff (including Licensed Practical Nurses, secretaries, nursing assistants, and patient access representatives) from five different nursing units. The goal of the intervention was to provide staff with resources to help reduce stress, create a better work-life balance, promote resilience, and decrease levels of compassion fatigue. Activities on the self-developed plan included options such as meditation, relaxation exercises, volunteering, counting blessings, and more. The activity resulted in an increase in levels of compassion and resilience and a decrease in stress levels (West et al., 2017).

Another study offered mindfulness training to 60 hospital employees from a variety of healthcare settings. They were divided into a six-week mindfulness-based resilience training, a smart phone delivered resiliency-based intervention, and an active control group. While the control group did not demonstrate any improvement, the mindfulness-based resiliency training

and the resiliency-based intervention group showed improvements in wellbeing (Mistretta et al., 2018). Furthermore, the mindfulness-based resilience training group showed improvements in stress and burnout over time (Mistretta et al., 2018).

One study through the Mayo Clinic offered resilience training via mindfulness to any employee interested within the inclusion criteria. 41.7% of participants were primarily involved in patient care, 35% had administrative responsibilities, 16.7% supported medical practice, and 6.7% were involved in research (Mistretta et al., 2018). All participants took a burnout survey; there were no significant differences in baseline scores when participants were compared based on job roles (Mistretta et al., 2018). This shows the importance of including the multidisciplinary team into resilience training when possible.

Evaluation of Strength of Evidence

The search for best evidence should begin with the PICOT question. Systematic reviews and meta-analyses are regarded as the strongest studies to glean evidence (Melnyk & Fineout-Overholt, 2019). Evidence can be displayed as a hierarchy and range from level I (evidence from a systematic review or meta-analysis of randomized control trials) to level VII (evidence from authority opinion or expert committee reports) (Melnyk & Fineout-Overholt, 2019). The higher the level of evidence used throughout a literature review, the more dependable the evidence (see Appendix B for the level of evidence table).

Models/Framework

Nursing professionals know that implementation of nursing research into practice is slow and challenging (Speroni et al., 2020). This reality makes it even more important to select the proper model when implementing EBP. The Rosswurm and Larrabee Model for Change to Evidence-Based Practice provides an organized method to each step of project implementation,

from linking the problem and intervention to integrating and maintaining changes in practice (Reavy, 2016).

The model includes six steps concentrated on critical thinking during decisions about quality and cost-effectiveness, major aims of the Doctorate of Nursing (DNP) project. The steps include assessing the need for change in practice, linking the problem, intervention, and outcomes, synthesizing best evidence, designing practice change, implementing and evaluating change in practice, and integrating and maintaining the change (Reavy, 2016). These key concepts create an organized plan to address practice issues. These concepts help the user move from the idea of process change to actual implementation of EBP (Reavy, 2016).

The Rosswurm and Larrabee Model will prove very useful in the implementation of resiliency training due to its concentration on stakeholders and its focus on outcomes. The first step of the model states to include stakeholders. Stakeholders at MetroHealth include the Director of Nursing (DON), nurse managers of critical care units, and content experts for the resilience training. Additional stakeholders include the Kent State Advisor, IRB and research resource, and DNP preceptor. This step proved very useful, as the identification of stakeholders has stimulated important conversations and considerations regarding the planning phase of the DNP project.

The first step of the model also recommends identifying the problem. After recognizing the problem of nurse burnout as evidenced by informal reports from staff and a review of the literature, the PICOT question was formed. This PICOT question helped shape the review and synthetization of literature.

Step two of the model states to identify potential interventions and activities and select outcome indicators. While there are many potential solutions, literature points to resiliency

training as an outcome-based intervention. Resiliency training is one intervention that can be linked to both the problem (critical care staff burnout) and outcome (a reduction in burnout and improvement in resiliency). Fortuitously, a resilience training pilot has already taken place at MetroHealth and provided notable outcomes regarding nurse turnover. This has helped encourage nursing leadership to take genuine interest in resiliency training.

The third step of the model is to synthesize best evidence. This includes a search related to major variables, critiquing and weighing evidence, synthesizing best evidence, and assessing feasibility, benefits, and risks (Reavy, 2016). A literature review was completed to synthesize evidence. Literature supports the practicality of resiliency training as it is both feasible and cost-effective (Mealer, Conrad, et al., 2014; Mealer, Hodapp et al., 2017; Noben et al., 2015; Poulsen et al., 2015; Steinberg et al., 2017). Teaching nurses self-care strategies by ways of resilience training is a successful method at reducing and preventing burnout (Epp, 2012; Mealer, Conrad, et al., 2014; Poulsen, et al., 2015; Wei et al., 2018).

The fourth step of the model is to design a practice change. This includes identifying needed resources, planning the implementation process, and defining outcomes (Reavy, 2016). This step in the model guided creation of a clear list of needed resources, such as stakeholders, a physical space for training, computer and projector for speakers, paid time away from the bedside for critical care staff, and funding by scholarship or support networks.

Planning the implementation process is possible by examining the pilot group as well as the literature. Workshops and formal training can have positive impacts on the development of resiliency in nurses (Blackburn et al., 2020; Mealer, Conrad, et al., 2014; Poulsen et al., 2015). Resilience has shown an improvement in nurse retention, nurse job satisfaction, and patient satisfaction and outcomes (Brown et al., 2018; Kester & Wei, 2018; Rushton et al., 2015). The

defined outcomes for this project are a reduction in burnout symptoms. If this intervention proves to be sustainable, the training may become standard for all bedside nurses. This would allow frequent measurements of staff burnout symptoms as well as long-term monitoring of nurse turnover.

The sixth step of the model is integrating and maintaining changes. This step includes communicating the recommended changes to stakeholders (see Appendix C for the project charter), presenting staff in-services, integrating the change into standards of practice, and monitoring the process and outcomes (Reavy, 2016). This includes monthly meetings with stakeholders in preparation, reservation of rooms, commitments from speakers, assurances of out of staff time, approval from Knowledge and Innovation Committee, the DNP committee, MetroHealth's and Kent State's IRB, and implementing resilience training (see Appendix D for the project timeline). This step is especially essential, as integration and maintenance require culture change and buy-in. Integration and sustainability of this project will also benefit from the delivery of a summative evaluation to the nursing leadership team.

Theoretical framework is an essential piece of project implementation and planning (Grant & Osanloo, 2014). The Rosswurm and Larrabee Model for Change to Evidence-Based Practice focuses on changing the clinical culture from status quo to incorporating an EBP process (Reavy, 2016).

Project Plan and Methodology

Measurable Objectives, Aims and Outcomes

The goal of this project was to improve staff resilience and reduce burnout by implementing training and education related to self-care, emotional intelligence, art therapy, and resilience. This can be evidenced by a reduction in burnout symptoms. Measurable outcomes

include burnout symptoms and nurse turnover. Due to the scope of this DNP project, nurse turnover will not be measured; however, due to the plethora of literature supporting reduced nurse turnover with the implementation of resiliency training, the researcher would be remiss not to mention it. The organization may wish to analyze turnover one year post intervention (September 2022).

By improving staff resilience, other positive findings may be observed, including an improvement in the culture of the workplace, improvement in the health of nursing staff, and the creation of a sustainable process within the organization to implement resilience training (see Appendix E for outcomes and impact listed in the Logic Model). These outcomes were not specifically measured; however, quality measures will continue to be collected and may reflect the impact of resilience training (i.e., patient satisfaction, nursing quality indicators, nurse satisfaction, etc.).

Objectives that must be achieved to complete the project included giving staff four hours "out of staff" time (away from the bedside), staff enrollment in resiliency sessions, stakeholder involvement and participation in resiliency sessions, approval from DNP committee, DNP Council, Knowledge and Innovation committee, and IRB, implementation of resiliency trainings, and data gathering via pre- and post-session surveys.

SMART (specific, measurable, achievable, relevant, and timely) goals created for this project include the following: at least 90 critical care nursing staff will attend resiliency trainings by the final offered training on August 24th, 2021; at least 70% of critical care nursing staff from each participating unit will attend RESTORE training; at least 60% of training participants will complete post training surveys by October 5th, 2021; at least 50% of the control group will return pre intervention surveys; at least 50% of the control group will return post intervention surveys.

Desired resources included lunch provided to staff during training, a parting gift provided to staff post training, incentive for survey completion (gift cards), and additional art supplies. Assumed resources include room, computer, and projector availability, access to staff for paper survey distribution in control group, and access to staff for paper survey distribution post intervention.

Design

The design of this practice intervention was quasi-experimental pre-test post-test design. Study designs that have an independent variable introduced but lack randomization of the intervention and control group are labeled quasi-experimental (Melnyk & Fineout-Overholt, 2019). This type of design is commonly used when an experimental design is not feasible (Terry, 2018). Though this project could have included random sampling, it was determined that the project would not be successful without administrative buy-in. This required thoughtful assessments of appropriate units to include in training. Nursing administration ultimately selected the critical care units for participation.

Additionally, cardiac nursing staff and resiliency training correlations are sparse in the literature. This inspired the desire to include cardiac nursing staff in this project to contribute to literature and supply information for future research. A non-equivalent control group was included in the study; one group of nursing staff (Medical Stepdown Unit) did not receive the training. The strength of the study was improved via control group by providing information to the researchers.

A pretest was administered to all groups - the intervention group and the control group. This was to determine whether the participants had similar scores at baseline before the intervention is implemented; since the groups are not randomized, unexplored differences

between the groups could account for any differences found in the outcomes of the study (Melnyk & Fineout-Overholt, 2019). A posttest was also administered to both the control and intervention groups to help identify any factors outside the study that affect results.

Data Analysis

Descriptive Statistics

Descriptive statistics can be used to summarize or provide information about the sample in an inferential statistics study. The value of descriptive data for researchers is the ability to check for coding errors before running an analysis, a visualization of the descriptive data (how close it reflects a normal curve), and to gain understanding of the subjects and their responses prior to inferential analysis (Polit & Beck, 2018).

Descriptive statistics collected included the measures of central tendency (mode, median, and mean) to provide information about the average values in the data set and variability (range, variance, standard deviation) to convey spread of values and provide knowledge of accuracy. Examining the distribution of quantitative data allowed the researcher to establish if the shape and center of the data appears as a normal distribution. The spread and outliers of the data informed the researcher of variation in the subjects (Polit & Beck, 2018).

Inferential statistics

Inferential statistics are used to make conclusions from the sample to the population and test hypotheses. The repeated measures design is a research design where the same participants are observed in each sample, or within groups (Kim & Mallary, 2017). A pre-test post-test design is a time-based type of repeated measures design. Researchers measure a dependent variable (burnout symptoms) both before and after the intervention (resilience training). A related samples t test (also called a paired t test) is used in this type of design. To summarize a related

samples t test, the test statistic, degrees freedom, p value, effect size, and confidence intervals are reported. A confidence interval of 95% is utilized to determine if results are statistically significant.

Setting

The resilience training was conducted in the East Dining Room at MetroHealth Medical Center. Though the critical care nursing staff work on main campus at MetroHealth Medical Center, training took place away from the bedside to alleviate fears of being pulled into staffing. This method proved successful in a pilot group and thus was adapted for this training. Pre surveys were administered in paper form before the training. Post surveys were distributed via the participants' preferred email address. The first resilience training took place on July 13th, 2021, and the last resilience training took place on August 24th, 2021. RESTORE training was given in one single session; six classes were offered to allow for as many attendees to take part in the training as possible.

Potential Barriers

As with any project, there are potential barriers that should be considered (see Appendix F for the SWOT analysis). Content experts and speakers collaborated and created a backup plan in case COVID-19 restrictions had required participants to take training virtually. In this case, participants would have received physical activity supplies prior to the virtual training (such as art supplies). Web-based education can improve students' knowledge and skills and has been evaluated with a high satisfaction rate by participants (Du et al., 2013).

Other barriers anticipated included competing priorities of stakeholders; the mitigation plan to prevent this from occurring was the creation and communication of a clear timeline and reservation of dates for the intervention as early as possible. Dates for the training were secured

in January of 2021 and confirmed with content experts and speakers. Additionally, nursing leadership and manager support were essential to help alleviate the potential for inadequate staffing, which can pull staff back to the bedside and away from the training.

Distribution and compilation of pre and post surveys were critical portions of data collection. Pre survey distribution and collection was relatively simple, as they were handed out in-person at the training. Post-surveys were distributed via participants' preferred email address. Preferred email addresses were requested instead of organization email address due to the culture of preferred nursing communication at the organization. Nursing staff at MetroHealth have the reputation of infrequently checking their organizational email account; many are unaware of how to access it.

Pre and post surveys for the control group were distributed in staff mailboxes. Though staff are familiar with receiving handouts in their mailboxes and returning them via an envelope in their break room, staff are not always reliable to complete these without multiple reminders from management. To mitigate this, signage was placed on the unit with reminders to complete the survey. Nurse managers were also asked to remind staff of the surveys during huddles or meetings. Additionally, both the pre and post surveys were incentivized with gift cards.

Finally, the high rate of staff turnover made it difficult to pinpoint class size and participation number. This made it challenging to identify the number of classes needed. Content experts and speakers requested classes sizes of 15 and no greater than 20 participants. Six sessions were planned. Staffing and speaker schedules made it very unlikely that additional classes were possible. Though this is not a complete list of potential barriers to resiliency training, the listed obstacles held the highest potential to threaten the intervention.

Sampling

Convenience sampling strategy was used. Recruitment of subjects consisted of enrollment of staff by their nurse manager into one of six classes offered. Study size was selected based on a power analysis. A power analysis with a medium effect size of 0.3, p value of 0.05 and power of 0.8 concludes a total sample size of 71. In anticipation of receiving survey completion of less than 100%, a larger sample size was used for this study. The goal sample size was approximately 100 nursing staff members total, consisting of RNs, Licensed Practical Nurses (LPNs), and Customer Care Partners (CCPs). This study achieved a sample size of 90. Per direction of the DON, these staff members were required to participate in the training. Since this project was planned months in advance, it was possible that staffing would fluctuate by the implementation date and could affect planned sample size. Staff hired on an as-needed basis (PRN), Nurse Interns (NIs) and secretaries were not required to take the training based on discretion of the DON. Staff in these roles participated in the training if they desired.

Inclusion criteria consisted of critical care nursing staff that worked part-time or full-time in the Cardiac Intensive Care Unit (CICU), Cardiac Stepdown Unit (CSDU), or Burn Intensive Care Unit (BICU) and could communicate in English. Demographics collected included job position, age, gender, years in current position, years in critical care, plans to leave the organization or healthcare in the next five years, and highest education level.

Intervention

A four-hour resiliency class consisting of presentations and activities regarding emotional intelligence, self-care, resiliency, and art therapy was offered to critical care nursing staff.

Instruments

The Maslach Burnout Inventory (MBI) is the most widely used instrument to measure burnout symptoms (Maslach et al., 2018; Roth, 2020). First created in the 1980's, it has since

been revised; the MBI in current use is edition four. It has been shown to work effectively across multiple countries, health systems, and languages; it has been translated into over 30 languages. The instrument comes in many versions, but there are three well-established, primary versions of the MBI. These are described in the MBI Manual, which was purchased for access to instructions for use, reliability and validity information, and questionnaire components. The Maslach Burnout Inventory: Human Services Survey for Medical Personnel (MBI-HSS [MP]) is one of the three primary versions of the MBI. It is designed for medical professionals such as nurses and health aids (Maslach et al., 2018).

The MBI is a 22 item 0-6 Likert style questionnaire. Typical analyzation of questionnaire results includes a comparison of MBI scores. Three scales are measured in the MBI-HSS (MP), including Emotional Exhaustion, Depersonalization, and Personal Accomplishment. The MBI-HSS (MP) has been found to be consistently reliable and valid across a wide range of settings and has a stable factor structure (Maslach et al., 2018). Longitudinal studies of the MBI-HSS have shown a high amount of stability, which is consistent with the instrument's purpose (Maslach et al., 2018). A review of 84 published studies reported reliability estimates for the three MBI scales. Authors found that reliability for the Emotional Exhaustion scale average in the high 0.80s while Depersonalization and Personal Accomplishment average mid-0.70s (Maslach et al., 2018). In addition, the MBI Manual recommends reporting internal reliability due to varied reliability estimates in published studied based on statistical estimation methods used (Maslach et al., 2018).

Internal reliability is estimated using Cronbach's coefficient alpha. Estimates for the MBI-HSS scales are 0.90 for Emotional Exhaustion, 0.79 for Depersonalization, and 0.1 for Person Accomplishment. The standard error of measurement for each scale is 3.80 for Emotional

Exhaustion, 3.16 for Depersonalization, and 3.73 for Personal Accomplishment. Reliability coefficients have shown adequate internal consistency for the MBI scales (Maslach et al., 2018). The MBI Manual recommends giving the most credence to the Emotional Exhaustion scores in applied settings as it is the most reliable. Validity of the MBI has been demonstrated by meta-analytic reviews and studies that confirm hypotheses related to job attributes and burnout experiences (Maslach et al., 2018).

The instrument is available for purchase in a variety of forms. The license to reproduce was purchased; one questionnaire was purchased per intervention group participant with the capability to administer via paper version (see below for description of purchasing and reimbursement of items). Paper versions of the MBI were also purchased for the control group; two questionnaires were purchased per control group participant in order to administer both the pre and post survey. The capability to administer the MBI via online survey was also purchased. This online version of the questionnaire (identical to the paper version) was sent to all participants in the intervention group post-intervention via their preferred email address.

Implementation Plan

Up to 100 (n=90) critical care nursing staff participated in one of six offered resiliency training classes. RESTORE (Improve **Res**iliency, Manage S**tre**ss), the title of the resiliency training, was offered nearly weekly starting on July 13th, 2021 and ending August 24th, 2021 (no class was offered on July 27th due to potential scheduling conflicts related to the hospital's shared governance day). RESTORE was offered from 11am (1100) to 3pm (1500) in the East Dining Room.

RESTORE lasted four hours long and consisted of four presentations and/or activities provided by content experts (see Appendix G for training agenda). This included emotional

intelligence, resiliency, self-care, and art therapy. Each presentation lasted between 30 and 60 minutes for a total of almost 3.5 hours of presented material. The remaining 30-40 minutes were used for introduction and conclusion of the event.

Critical care nursing staff registered for RESTORE themselves via sign up or via their nurse manager and were paid at their current wage for their time. This time was either added to their scheduled bedside hours or were included in their typical weekly hours at nurse manager discretion. Paid time away from the bedside for training was approved by the DON.

The class took place away from the nursing units to alleviate fears of being pulled into staffing and to help create a reduced-stress work environment. East Dining Room is located at MetroHealth Medical Center in a location relatively far from nursing units. Training took place in a large room with computer and projector capabilities. In accord with the guidelines associated with group activities at the health care system, participants were required to wear masks and socially distance if they were not vaccinated. Up to twenty participants were allowed in the room at once not including speakers and facilitators.

Participants signed-in for attendance and payroll purposes for their nurse managers. During sign-in they were also given an opportunity to list their preferred email address for post-survey distribution, obtain RESTORE information including an agenda, survey, and presentation handouts, select a meditation stone (for later use), and enter a raffle to win the book “Flourish” by Martin Seligman. Participants entered the raffle by writing their name on a piece of paper and placing it in a gift bag. One book was offered as a raffle prize during each RESTORE session. Books were donated by one of the content experts and intended to serve as an additional resource for improving resilience and managing stress.

The beginning of the course consisted of an introduction, time to obtain lunch and beverages (provided by the Nursing Department), and an opportunity to complete the MBI-HSS (MP). This survey was provided at the beginning of the training and again six weeks after the training (see Appendix H for an example of questionnaire format and item factors). Results were then compared. Participants had the right to refuse to take the pre- and post-survey. Participants were given a cover letter in addition to the survey to explain survey implications (see Appendix I for pre-training script and cover letter example). This information was attached to the MBI and included a demographics questionnaire.

Data was transferred from paper to electronic form. Once data was transferred to electronic form, all survey data was stored on a password protected website, Mind Garden, which functions to sell surveys, store data, and provide support with survey use and data analysis. Paper surveys were then shredded. Implied consent was assumed when participants returned a completed survey. Surveys were anonymous. Staff who opted out of the study were still able to take part in RESTORE; they simply did not complete a survey. One out of 90 participants opted out of the study.

Prior to implementation, the project went through a review and approval process by the MetroHealth DNP Council, MetroHealth Knowledge and Innovation Committee, Kent State DNP Committee, Kent State IRB, and MetroHealth IRB. These review processes ensured that all ethical matters had been considered prior to intervention implementation. Participants were not prone to any harm or risks during RESTORE; however, there were discussions about resilience and burnout which might have generated uncomfortable or unanticipated emotions. It was expected that the benefits of the training experience outweighed any risks. Counseling is

available for free through MetroHealth's Employee Assistance Program (EAP) at any time and staff was reminded of this opportunity during the training.

Instructions for the survey were given based on the provided directions listed in the MBI Manual. People have widely varying beliefs about burnout. To minimize the reactive effect of such personal beliefs or expectations, it was important that respondents were unaware that the MBI-HSS (MP) was a burnout measurement tool. For this reason, the labels used on the survey did not include the word "burnout" (Maslach et al., 2018). To minimize reactions related to the word "burnout", MBI authors recommended that participants were unaware that the instrument was used to measure burnout; instead, participants were informed that the MBI was an instrument to investigate job-related attitudes (Maslach et al., 2018).

The survey took 10-15 minutes to complete and was given via paper form. Participants were assured that their answers were confidential and not used in any way that could have consequences to them. Pre-surveys were collected in a large envelope. They were stored in a locked cabinet in a locked office until their transfer to electronic form, when they were destroyed.

Once participants had signed-in, received lunch, and had the opportunity to complete the pre-survey, presentations and activities began. The Human Resources (HR) team (emotional intelligence content experts) along with the researcher (due to unforeseen scheduling conflicts of the context experts) presented material on emotional intelligence. This team included Angela Majorle, Adriene Bodnaruk, and Denise Mutti. Content consisted of an introduction to emotional intelligence, reflection on worst and best characteristics of people in leadership positions, a self-assessment, discussion of four types of emotional intelligence, identification of

competencies to hone, description of triggers, and resources available for further learning. This presentation took about 60 minutes.

Participants were provided with a five-to-10-minute break prior to the next speaker. Katherine Kurtz, a resilience educator at MetroHealth Medial Center, presented resilience next. Content for this presentation included conversations and presentations surrounding self-compassion, self-criticism, and mindfulness. This presentation took about 50 minutes.

Anastasia Webb, LPCC-S, LICDC, CEAP, has a master's in clinical counseling and is the Director of EAP. She and her colleague, Brent Basile, alternated as content experts and provided a 30-minute presentation consisting of a brief introduction to meditation and mindfulness and an activity consisting of a guided meditation. This meditation included use of the worry stones provided to participants upon their arrival.

Laura Tetzlaff, ATR-BC, LPC, CCTP, art therapist and content expert, provided the final activity. Laura designed an art activity titled "What fills your bucket?". Participants were provided with paper plant pots, magazines, glue sticks and scissors. Participants were instructed to use the art materials to decorate the outside of the "bucket" to represent themselves by finding words or images in which they recharge and refuel. Once complete, participants had the option to share how they "fill their bucket". This activity took about 50 minutes.

At the end of RESTORE, a name was selected at random from the gift bag for a raffle winner of the book "Flourish". The book was provided to the winner at that time. Participants were thanked for participating in RESTORE and questions and comments for presenters and the facilitator were taken at that time. Participants were given a paper evaluation for the purpose of organizational implementation of similar courses in the future (see Appendix J for this

evaluation). This evaluation was specific to RESTORE training. Participants were reminded that they would receive a follow up survey in six weeks via their preferred email address.

Staff had the option to receive 100 “MetroHealthy” points for participating in the training. Points are used towards health insurance discounts or a Health Savings Account. All activities that are promoted for MetroHealthy points are approved by MetroHealthy staff. RESTORE was submitted and approved as an accepted activity for MetroHealthy points on March 16th, 2021. Staff were responsible for self-reporting their participation in RESTORE in order to receive points.

Post-survey collection occurred by online distribution via participants preferred email addresses. Surveys were sent six weeks post RESTORE session. Signage was posted on the nursing unit to remind staff of the post survey. Nurse managers were also asked to help remind staff during huddles and meetings. Staff were given one week to complete surveys, though the link to the surveys remained open until one week after the final RESTORE session was offered.

A control group, the Medical Stepdown Unit (MSDU) nursing unit, was also given the MBI-HSS (MP). They received the survey on July 13th. This control group consisted of 50 nursing staff members. 12 participants in the control group completed this survey. All staff in the control group also received the same post survey six weeks later. Six participants completed this survey. Implied consent was assumed when participants returned a completed survey. Surveys were placed in the mailbox of each participant with instructions to place the completed survey in a large envelope in the staff breakroom. Surveys were anonymous. Staff were asked to only complete the post survey if they had completed the pre survey.

This collection method mirrored methods often used for staff education and feedback requests. Staff were given one week to complete surveys. Decisions regarding survey distribution

method for the control were deliberated with DNP Mentor, Vickie Bowden. Paper versions of the survey were decided upon due to complexities of requesting staff's preferred email address.

Incentive was provided to all RESTORE participants who completed the pre survey. Participants from the intervention group who completed the pre survey were entered into a drawing for one of three $50 Target gift cards. They entered the drawing by returning their surveys prior to leaving the RESTORE session, then writing their name and email address on an index card to drop into a box. Names were collected at every RESTORE session and winners were selected once all sessions were completed. Winners were contacted via email and given the gift card by their Nurse Manager. Incentive was also provided to all participants who completed the post survey. Participants who completed the post survey also had the opportunity to win one of three $50 gift cards. Participants could choose to enter the drawing via an online platform once they completed the survey. A randomizing tool (a number generator found at www.random.org, recommended by preceptor Vickie Bowden) was used to select three winners.

Incentive was also provided to all participants in the control group who completed the pre and post survey. Three $50 Target gift cards were available as incentive for both the pre and post group. The control and intervention group were separated regarding incentive opportunities due to complexities of paper versus online survey distribution and the decision was made with input from Vickie Bowden, DNP mentor. Participants entered the drawing to win the gift cards by writing their name and email address on an index card and placing it in a separate designated envelope upon survey completion. This envelope was located on their nursing unit.

Collaborative Efforts

This training would not have been possible without a dedicated, enthusiastic, and visionary interdisciplinary team. This team was comprised of advisors and mentors including

Vickie Bowden (DNP mentor), Dr. Dana Hansen, Dr. Yvonne Smith, Kimberly Cleveland, and (Kent State University advisors). The team also involved dedicated stakeholders, including Denise Davis-Maludy (critical care DON), Brandy Kulak, Jennifer Ball, and Cheryl Howley (critical care nurse managers of the intervention group), Arianne Mastandrea (critical care nurse manager of the control group), content experts and speakers Katherine Kurtz (resiliency content expert), the HR team including Angela Majorle, Adriene Bodnaruk, and Denise Mutti (emotional intelligence content experts), Laura Tetzlaff (art therapist), Anastasia Webb (EAP director), Brent Basile (mindfulness content expert), Wendy Sarver (IRB and research expert and DNP committee leader at MetroHealth), April Largent (nurse manager of pilot group), and Kammyo Appling (DON's secretary), who helped book rooms for the training.

These stakeholders and advisors attended meetings, answered questions via emails and phone calls, anticipated and planned mitigation for barriers and challenges, donated time and energy, assembled resources, advocated for change, provided mentorship and counseling, and were consultants throughout the planning process.

Resources

Costs associated with project implementation included resources, time, measurement tools, and more (as listed below). The nursing department paid for all participants to receive four hours of "out of staff" paid time. Additionally, the nursing department paid for each participant to have a boxed Panera lunch and fruit-infused water. The hospital system allowed the project to use environmental resources for physical training needs, including a room for training, a computer and projector, and a printer to create handouts. Additional resources included the time and energy of hospital employees and content experts, including Laura Tetzlaff, Anastasia Webb and Brent Basile, the Human Resources team, and Katie Kurtz. The presentations given by

content experts were within the range of their daily activities and all presenters had approval to participate in RESTORE.

Measurement tools included the MBI questionnaires, MBI analysis, and the MBI manual. All measurement tools were required to be purchased for proper data collection and analysis. A fee was added to the price of the questionnaires due to the addition of demographic questions. 200 paper questionaries were purchased (100 for the control group and 100 for the intervention group) and 100 online questionaries were purchased for the intervention group. These questionnaires cost $420 in total after a 20% student discount was used. The MBI analysis provided a “Group Report” for each portion of the control and intervention group and cost $600. The MBI manual was purchased for reliability and validity information as well as instructions for use; the manual cost $50. Finally, the fee for the addition of demographics into the questionaries cost $230 (see Appendix A for full Cost Benefit Analysis).

Art supplies were provided by the art therapist with the exception of paper flowerpots (bought by the researcher). A parting gift was purchased for each participant; the gift was a small heart-shaped stone that could be used during mindfulness exercises. Parting gifts cost $177.12. Gift cards were purchased to incentivize survey responses and potentially improve survey response rate. Six $50 gift cards to Target were offered to both the control and intervention group.

All purchased items listed (and described above) were bought by the researcher and then reimbursed by scholarships or funding (with the exception of gift cards, which were purchased directly by the MetroHealth Foundation). The Alice Flaherty Nursing Excellence Scholarship awarded $750 towards project costs. Additionally, the MetroHealth Foundation awarded $897.67 towards project costs.

Evaluation

Formative Process Evaluation

A formative evaluation is an ongoing evaluation throughout the implementation of a project with the purpose of assessing a process before and during the project (Reavy, 2016). This type of evaluation can strengthen decision-making abilities as it improves comprehension of the objectives, costs, and processes of the project. Process evaluation is another type of formative process evaluation that focuses on input, activities, and output while evaluating whether the project is meeting its objectives as planned (Reavy, 2016).

Formative questions used to evaluate this project included: “Are the recommended actions of project participants performed as planned?”, “Is implementation of the recommendations reaching the intended patient population?”, “Are project participants satisfied with their involvement?”, “Are planned activities working for the project participants or should modifications be implemented?”, and “What lessons can be learned during implementation?”. The answers to these questions tended to be positive when considering the process of the project. RESTORE attendees attended trainings, attendees were of the intended population (critical care units), and attendees were made up of nursing staff members including nurses, secretaries, nursing assistants, and telemetry technicians.

Project participants gave overall high satisfaction ratings when asked to complete a post-training evaluation. Responses to RESTORE evaluations can be found in Appendix K and L and are further discussed in the discussion of findings. These evaluations included assessments of the speakers and room for comments. Evaluations were Likert-style with open-ended questions (see Appendix J for evaluations). Attendees were satisfied with the planned activities during

RESTORE, which included presentations on emotional intelligence and resiliency and activities of mindfulness and art therapy.

Many lessons were learned during implementation. Though preferred class size was 15, there were numerous class sizes of 18-20. It was discovered that classes of 8-12 participants was ideal for encouraging intimate conversations that brought relevance and purpose to the training. A "U shape" set up of tables was found to work for groups of 8-12; groups larger than this tended to work better in tables pushed together in groups of five.

Some nurse managers chose to register their nursing staff for training while others opted to allow participants to register themselves. Nurse managers who registered their staff did so far enough in advance that participants could plan their schedule (including childcare, etc.) accordingly. Participants who registered themselves tended to sign up on the same date as their friends and often signed up last minute. This seemed to create greater temptations for staff to have side conversations during presentations and not take the training seriously. Recommendations for the future are for nurse managers to register staff far in advance and to purposefully mix attendees to provide a richer experience for participants.

Some of the comments received in-person during the training or found in the comments section of the evaluation were that participants preferred the training to be included in their normal hours (i.e. a nurse would work 32 hours in staffing and have 4 hours to attend the training that week if his or her contract dictated 36 working hours a week). Another in-person comment made by multiple participants was that they found it difficult mentally to drive to work on their “day off”. This seemed to create an initial attitude of resentment towards their attendance for the first few minutes of training.

Though training was originally intended to take place off campus, last-minute changes to room availability made this impossible. While holding the training on-campus was more convenient for speakers and presenters, it did not promote as much mental and emotional separation from work as an off-campus training location may have. A third in-person comment made by some staff was their desire for a training offered earlier in the day from 7am-11am to cater to nurses with night shift schedules.

Staff appreciated having water and lunch provided, and vegetarian options were welcomed. It was discovered early in the training that 10-minute breaks should be offered after presentations that lasted longer than 45 minutes; otherwise, participants often excused themselves for restroom breaks or to refill their water during the next speaker session. The brief break also allowed for proper transition for the next presenter.

The beginning of the training was an excellent time to implement surveys as there was protected time for staff to complete them. Nearly a 100% completion rate of the pre-intervention surveys were observed; 89 of 90 participants completed pre-intervention surveys. Additionally, requesting evaluations prior to participants' dismissal from the training also proved to be effective with nearly a 90% completion rate. Participants were given handouts at the beginning of training; this was an effective way to get necessary materials to participants.

Staff showed ease at the training when relaxing music was played as participants signed in and ate lunch, during survey and evaluation completion, during breaks between speakers, and during the art therapy activity. Lessons learned during implementation were shared with the DON of critical care nursing (Denise Davis-Maludy) via email. Subsequently, these findings we shared with other stakeholders of the training including the nurse managers and DNP preceptor during an in-person meeting.

Summative Evaluation

A summative evaluation is completed once the project is finalized. The goal of summative evaluation is to assess the overall effectiveness of the project's objectives and achievements and assess if the defined goals or outcomes were accomplished (Reavy, 2016). This evaluation focuses on the outcomes and goals of the project, assesses what was learned, and makes suggestions for improvement. The evaluation should be focused on the priorities of the key stakeholders (Reavy, 2016).

To evaluate the outcomes of a project, questions based on the anticipated outcomes were developed. These questions included: "Did the intended numbers of patients participate?", "Are unexpected outputs occurring for patients or project participants?", "Do project participants note any changes in their skills, knowledge, attitudes, or behaviors?", "What changes or improvements were noted?", "Did the project meet the needs of the stakeholders?", "Did the EBP recommendations meet the needs that led to the project?", and "What other needs were identified that the EBP recommendations did not address?".

RESTORE was intended to be include approximately (but no more than) 100 attendees; 90 critical care nursing staff participated, achieving this goal. In the comments section of the evaluation, many participants reported that the program would affect their practice by improving their mindfulness, self-awareness, and their ability to reflect (see Appendix K for full list of responses).

The EBP recommendations of resilience training to reduce burnout symptoms were not proved in this DNP project. However, as described in the discussion of findings and outcomes, participants responded positively when asked if they would recommend the content to a colleague. In addition, common themes among the comment section of the RESTORE evaluation

showed that participants felt more prepared to self-reflect, be mindful, and have self-awareness after the training; these skills are all associated with improvements in resilience.

Participants also identified stressors in a demographic survey given to them alongside the pre-intervention survey. Stressors included lack of staffing, high patient acuity, flexing, new residents, communication between the interdisciplinary team, fatigue or irritability, lack of supplies or resources, and social issues. Staff also had the opportunity to list additional stressors; many listed management, supervisors, or floating to other units as top stressors.

Unexpected outcomes were the lack of changes in the burnout symptoms between the pre and post intervention group. Furthermore, there was an increase in one facet of burnout in the depersonalization score in the post intervention group (mean of 10.08) when compared to the pre intervention group (mean of 7.04). Depersonalization is a loss of enthusiasm and can be an impersonal response towards an individual. Additionally, the job can feel like a burden to someone with high levels of depersonalization (Maslach & Jackson, 2018).

There are many potential reasons for the lack of changes in burnout symptoms in the pre and post intervention groups. It is possible that the frustrations of staff members as expressed by their evaluation comments and in-person comments were too great to be overcome by resiliency training. The burden of COVID-19 and the care of patients during this time was an obvious source of stress for critical care nurses and took place during this study. Many nursing staff members commented on their distrust of upper management and cited this as their reasons for leaving the system in the next five years.

Though stakeholders hoped for burnout symptoms to decrease in nursing staff post project implementation, this was not achieved. However, the high rates of staff satisfaction related to the training materials and content met the expectations of the stakeholders.

Stakeholders also hoped for this project to impact turnover of nursing staff; turnover may be measured by stakeholders one year post project implementation and can be analyzed at that point if desired.

The methods for information collection included the evaluations completed by participants, the demographics survey, and the results of the pre and post intervention Likert-style MBI questionnaires surveys. Interpretation and presentation of this evaluation was provided by means of a virtual PowerPoint presentation to stakeholders and to Kent State University's Nursing Department during project defense. A written report was provided to the DNP preceptor (Vickie Bowden) and DNP advisor (Dana Hansen).

Statistical Results

Statistical results and data analysis were achieved with help from Lynette Phillips, statistician at Kent State University. T-tests were used to compare the three facets of burnout (emotional exhaustion, depersonalization, and personal accomplishment). These were compared between the pre intervention and post intervention groups, pre control and post control groups, pre intervention and pre control groups, and post intervention and post control groups. Though there was one control group, for analysis purposes it has been designated into two groups. The "pre control" group designates the staff from the control group who participated in the MBI survey at the same time as the pre intervention group. The "post control" group designates the staff from the control group who participated in the MBI survey six weeks later.

One research question asked the following: Is the mean depersonalization score for those in the post intervention group different from the mean depersonalization score for those in the pre intervention group? The null hypothesis was the following: Mean depersonalization score for those in the post-intervention group is the same as the mean depersonalization score for those in

the pre-intervention group. The type I error (the acceptable false positive rate) was set (alpha) at 0.05. The findings showed a p-value of 0.0195. Since the p-value for the test was less than 0.05, the null hypothesis was rejected and the conclusion made that there was a statistical difference between the two means. The mean score increased from pre-intervention to post-intervention. All other tests had a p-value of greater than 0.05 and thus did not show statistical significance. See Appendix M for the compared groups, hypotheses, interpretation, and their correlating means and p-values.

Mean scores for the three burnout categories were compared by age groups using one-way ANOVA. The null hypothesis were that all means were statistically equal; the research hypotheses was that at least one mean differs from at least one other. Findings included all participants grouped together, as separating the participants into intervention and control groups resulted in too few of participants to be meaningful statistically.

The first research question related to age groups asked if the mean emotional exhaustion scores differed across age groups in the entire study population. Since the p-value was greater than 0.05, researchers failed to reject the null hypothesis that all means were equal and concluded that they were not statistically different. The second research question was as follows: Do mean depersonalization scores differ across groups in the entire study population? Since the p-value was less than 0.05, researchers rejected the null hypothesis that all means were equal; post-hoc tests (using the Tukey method) showed that the 25-34 years age group mean differed significantly from the 45-54 years groups and 55 and older group.

The third research question was as follows: Do mean personal accomplishment scores differ across groups in the entire study population? Since the p-value was less than 0.05, researchers rejected the null hypothesis that all means were equal; post-hoc tests (using the

Tukey method) showed that the 34-44 years age group mean differed significantly from the 55 and older group. See Appendix N for all age groups compared by mean burnout characteristics.

Means were compared regarding nursing staffs' intention to leave the organization in the next five years. They were also compared regarding nursing staffs' intention to leave the nursing career in the next five years (see Appendix O for these results). There was a statistically significant difference between the means for emotional exhaustion for those who intend to leave MetroHealth in 5 years and those who do not. While not statistically significant, the difference in means for depersonalization between those who intend to leave nursing in the next 5 years and those who do not was also of interest.

Data Analysis

The MBI Group Reports helped break down average burnout scores by each of the three categories – emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Average scores are compared to the general population of more than 11,000 people in the human services profession by the Mind Garden company. The higher the EE and DP scores are and the lower the PA score is, the more burnout symptoms are observed. The general population scores for burnout are as follows: EE= 2.3, DP= 1.7, and PA= 4.3.

The pre intervention group displayed scores EE=2.5 (higher than the general population), DP= 1.4 (lower than the general population), and PA= 4.3 (the same as the general population). In comparison, the post intervention group displayed scores EE=3.1 (higher than the general population and the pre intervention group), DP= 2 (higher than the general population and the pre intervention group), and PA= 4 (lower than the general population and the pre intervention group).

The pre control group displayed scored EE= 2.9 (higher than the general population and pre intervention group but lower than the post intervention group), DP= 1.5 (lower than the general population and post intervention group but higher than the pre intervention group), and PA= 4.2 (lower than the general population and pre intervention but higher than the post intervention group). The post control group displayed EE= 3.2 (higher than all other groups), DP= 1.6 (lower than the general population and post intervention group but higher than the pre intervention and pre control group), and PA= 3.9 (lower than all other groups). See Appendix P for visualization of this information via graphs.

The standard deviation measures the variation in responses within each group. The smaller the standard deviation, the higher the agreement is among group members and responses; the value of zero would mean complete agreement among participants. Standard deviations from the general population were included for comparison of the standard deviation measurements of each group. General population standard deviation measurements were EE=1.2, DP=1.2, and PA=0.9. Standard deviation measurements for the pre intervention group were EE=1.4, DP=1.1, and PA=0.9. Post intervention standard deviation measurements were EE=1.4, DP=1.1, and PA=0.9. Pre control standard deviation measurements were EE=1, DP=0.8, and PA=1. Post control standard deviation measurements were EE=1.1, DP=0.5, and PA=0.9. A visualization of these measurements are shown in Appendix Q.

Demographics of Participants.

A table display of demographics for all groups are found in Appendix R. Demographics show a participant sample representative of a typical nursing unit in northeast Ohio. This includes a majority nursing staff with the job role of nurses, with nursing assistants (Customer

Care Partners and Nurse Interns) supplementing staff. Most nursing staff are female and 25-34 years old. The most common highest education level is a bachelors degree.

One demographic question asked how many years staff had worked in their current position. These were divided into increments of zero to one year, one year and one day to two years, two years and one day to five years, five years and one day to 10 years, 10 years and one day to 20 years, 20 years and one day to 30 years, and greater than 30 years. Staff have varied levels of experience, though the highest frequency of years worked in a current position are 2-5 years. Participants were also asked how long they had been working in critical care. These years were categorized the same way as the number of years in current position. Years of work in critical care are also varied; the highest frequency is 0-1 and 2-5 years (see Appendix R for more details).

Demographics of Pre Intervention Group.

A total of 89 nursing staff participated in the pre intervention survey. The highest educational level of participants varied greatly. 15 (17%) of this group selected high school diploma as their highest educational level. 11 (12%) of participants' highest educational level was an Associate Degree, 55 (62%) a Bachelors Degree, five (6%) a Masters Degree, and three (3%) other.

Participants were asked if they planned to leave the MetroHealth system (where they were currently working) in the next five years (see graph visualization of all participants' responses to this question in Appendix S). 24 participants (27%) stated yes, while 65 (73%) stated no. Those who answered yes were given the following options to give rationale for their plans to leave: retirement, benefits, location/commute, work environment, unit culture, opportunity, and other. Three participants circled "retirement" and one participant circled

"benefits". Four participants circled "location/commute"; one of these participants commented "and unit culture". Seven circled "opportunity" and one of these participants wrote "travel nurse" in the comments. Eight circled "other", and written responses included "work load/burnout", "grad school", "back to school", "schedule", "rotating shifts", and "relocation, moving out of state".

Staff were also asked if they planned to leave nursing in the next five years (see graph visualization of all participants' responses to this question in Appendix T). 13 (15%) stated yes, while 76 (85%) stated no. Those who answered yes were given the same options for rationale as listed above. Some participants circled multiple answers. Four participants circled "retirement" as their reason for leaving. One circled "benefits", one circled "location/commute", and one circled "other". The participant who circled "other" wrote into the comment section, "poor staffing, abuse from patients". Four participants circled "work environment" and one person wrote in the comment section "short staffed, bullied by supervisors, concerns not met by upper mgmt, no communication on rule changes from upper mgmt, given cookies and pizza instead of acknowledgement and support". Five participants circled "opportunity". "Opportunity" was meant to include other job opportunities or career changes and was open to interpretation by the participant. One person wrote "I want to open my own food truck" in this comment section.

Demographics of Post Intervention Group.

A total of 24 nursing staff participated in the post intervention group. 22 (92%) identified as female, one (4%) identified as male, and one (4%) identified as other; this participant wrote "non-binary" on the form. Participants were asked if they planned to leave MetroHealth in the next five years. 11 participants (45%) stated yes, while 13 (54%) stated no. Those who answered yes gave the following as rationale for their plan to leave: three participants circled "work

environment", one circled "unit culture", four circled "opportunity", and three circled "other". All three participants who circled "other" gave comments. They included "no reason to stay as no health benefits for retirees unless to receive Medicare at age 65", "CEO Vision and his leadership team", and "Manager plays favorites".

Staff were also asked if they planned to leave nursing in the next five years. Four (17%) stated yes, while 20 (83%) stated no. Those who answered yes gave the following as rationale for their plan to leave: three participants circled "work environment". One participant circled "other" and wrote "nurses are constantly disrespected by supervisors and patients. CEOs give themselves bonuses and we don't have PPE. Tired of the politics and BS" in the comment section.

Demographics of Pre Control Group.

A total of 12 nursing staff participated in the pre control group. Two participants (17%) answered "yes" when asked if they planned to leave MetroHealth in the next five years, while 10 (83%) stated no. Participants circled multiple options for rationale for leaving. "Location/commute" was circled once, "work environment" was circled once, two circled "opportunity" was circled twice, and "other" was circled once. The participant who circled "other" wrote "unless there is a better commute or opportunity". Staff were also asked if they planned to leave nursing in the next five years. Zero stated yes, while 12 (100%) stated no.

Demographics of Post Control Group.

A total of six nursing staff participated in the post control group. 100% of the post control group were RNs or LPNs, with no other health care professionals participating in the survey. 100% of this group had a Bachelors Degree as their highest educational level. Participants were asked if they planned to leave MetroHealth in the next five years. Two participants (33%) stated yes, while four (67%) stated no. One participant circled "work environment" and another circled

"opportunity" as rationale for leaving. Staff were also asked if they planned to leave nursing in the next five years. Zero stated yes, while 12 (100%) stated no.

Discussion of Findings and Outcomes

Regarding the MBI average scores, all groups had worse emotional exhaustion scores when compared to the general population. The post intervention group had worse depersonalization scores than the rest of the groups, including the general population. Finally, all groups except the pre intervention group had worse scores in personal accomplishment when compared to the general population; the pre intervention group had the same personal accomplishment score as the general population. This shows that generally the critical care nursing staff who participated in this study are more burned out than the general population of those who work in human services. The pre and post control group had the most consensus when it came to responses of the MBI; however, all four groups held similar standard deviation scores when compared to the general population.

An unexpected finding was the increase in the mean score of depersonalization from pre-intervention to post-intervention, suggesting that the resilience training negatively affected participants depersonalization scores. It is possible that the resiliency training did not cause further depersonalization and instead the change in score may be attributed to other factors. For example, staffing and the burden of COVID-19 were obvious stressors for staff during this time and may have contributed to an increase in depersonalization. Future studies might include focus groups after resiliency training to discuss unexpected (and expected) findings and identify qualitative themes that emerge.

Participants of the study (all groups combined) who were ages 25-34 showed a significantly higher (indicating worse) mean score of depersonalization when compared to those

who were ages 45-54 and 55 and older. Additionally, participants of the study who were ages 35-44 showed a significantly lower (indicating worse) mean personal accomplishment score when compared to those who were ages 55 and older. Nursing staff in these age groups may benefit from targeted burnout reduction strategies in order to improve resilience.

Furthermore, nursing staff who plan to leave the organization in the next five years showed emotional exhaustion mean scores that were significantly higher than those who do not plan to leave the system. Nursing staff who plan to leave nursing in the next five years show a difference in means for depersonalization, though not statistically significant.

Maslach & Jackson identify five types of burnout profiles constructed on the responses of participants. These include Engaged, Ineffective, Overextended, Disengaged, and Burnout. Profiles are created based on scores of the three scales of EE, DP, and PA. Burnout profiles were created by the Group Report for all participants. Profiles may be useful in the understanding of participants work experiences and the implementation of burnout interventions.

Participants with an Engaged profile score well on all three scales: low scores on EE and DP and high scores on PA. Participants with an Ineffective profile scores low on PA. This profile is characterized by low feelings of competence and achievement regarding work. It is thought that this may happen due to work that feels tedious or stressful or a work environment that does not offer sufficient recognition. Participants who display an Overextended profile have a high EE score. An example of a health care worker with this type of profile might show a dedicated nursing staff member who develops a high sense of accomplishment for his or her work but is emotionally exhausted and drained due an inability to rest and recover properly (Maslach & Jackson, 2018).

A participant with a Disengaged profile has a high DP score that displays a crisis in values or decreased confidence in management or supervisors. This person typically has energy and confidence in his or her ability to complete quality work, yet experiences conflict when attempting to dedicate him or herself to work. The previous three types of profiles are all characterized by one scale score that is problematic for the individual.

Finally, the fifth profile is the Burnout profile. Participants with this profile have troublesome results on both EE and DP scores. Appendix U gives a visual representation of these profiles and the scores represented by them. Participants are only categorized into one profile based on their MBI responses.

The pre intervention group had the following participant profiles: 29 (33%) Engaged, 25 (28%) Ineffective, 21 (24%) Overextended, three (3%) Disengaged, and 11 (12%) with Burnout. The post intervention group had the following participant profiles: three (12%) Engaged, nine (38%) Ineffective, five (21%) Overextended, zero (0%) Disengaged, and seven (29%) with Burnout. The pre control group had the following participant profiles: four (34%) Engaged, four (33%) Ineffective, three (2425 Overextended, zero (0%) Disengaged, and one (8%) with Burnout. The post control group had the following participant profiles: zero (0%) Engaged, three (50%) Ineffective, three (50%) Overextended, zero (0%) Disengaged, and 0 (0%) with Burnout. Appendix V gives a visual representation of these profiles in each group as well as a comparison of all groups.

Group Reports also gave detailed information regarding average scores per MBI item. Average scores can range between zero and six in accordance with the Likert scale of the MBI questionnaire. The score zero indicates relating to the statement “never”, a score of one indicates relating to the statement “a few times a year or less”, two indicates “once a month or less”, three

indicates “a few times a month”, four indicates “once a week”, five indicates “a few times a week”, and six indicates “every day”. For the aspects of EE and DP, a high score may indicate a problem. On the other hand, a low score of PA may indicate a problem.

The highest scored statement regarding EE in the pre intervention group, post intervention group, and pre control group was the same: “I feel used up at the end of the workday”. The scores were 3.6, 4.0, and 4.0 respectively. This indicates these three groups found this statement the most relatable in the EE category. The highest scored statement regarding EE in the post control group was “I feel I’m working too hard on my job” with a score of 4.2.

On the other hand, the lowest scored statement regarding EE in the pre intervention group, post intervention group, and pre control group was also the same: “Working with people directly puts too much stress on me”. The scores were 1.1, 1.5, and 0.9 respectively. This indicates these three groups found this statement the least relatable in the EE category. The lowest scored statement regarding EE in the post control group was “I feel like I’m at the end of my rope” with a score of 1.5.

The highest scored statement regarding DP in the pre intervention group and post intervention group was the same: “I worry that this job is hardening me emotionally”. The scores were 2.1 and 3.1 respectively. The highest scored statement regarding DP in the pre and post control group was the same: “I feel patients blame me for some of their problems” with a score of 2.4 and 2.8, respectively. The lowest scored statement regarding DP in the pre intervention group, post intervention group, and pre control group was also the same: “I don't really care what happens to some patients”. The scores were 0.3, 0.6, and 0.3 respectively. The lowest scored statement regarding DP in the post control group was “I feel I treat some patients as if they were impersonal objects” with a score of 0.2.

The lowest scored statement regarding PA in the pre intervention, post intervention, and post control group was the same: “I feel exhilarated after working closely with my patients”. The scores were 3.5, 2.5, and 2.7 respectively. This indicates these three groups found this statement the most relatable in the PA category. The lowest scored statement regarding PA in the pre control group was “I feel very energetic” with a score of 3.1.

Alternatively, the highest scored statement regarding PA in the pre intervention and pre control group was the same: “In my work, I deal with emotional problems very calmly”. The scores were 4.7 and 4.9 respectively. The highest scored statement regarding PA in the post intervention group was “I deal very effectively with the problems of my patients” with a score of 5.3. The highest scored statement regarding PA in the post control group was “I can easily understand how my patients feel about things” with a score of 5.0. These statements were the most relatable for the groups. These findings are summarized in Appendix W.

All attendees of RESTORE were given an optional evaluation to complete at the end of training. 83 of 90 participants (92%) completed the evaluation. Participants were asked the following questions: “How well did RESTORE meet your needs?”, “How likely would you be to recommend the education material you learned today to a colleague?”, “How will this program affect your practice?”. Participants were also asked to evaluate speakers, circle their top three stressors, and to give any additional comments or feedback. Most questions were given in a Likert format. Multiple questions allowed for comments (see Appendix K and L for compete list of comments and breakdown of responses).

77% of participants stated that RESTORE “exceeded” or “fully met” their needs. 87% of participants stated that they would be “very likely” or “somewhat likely” to recommend the

educational material to a colleague. Across the board, speakers were given high evaluations on teaching effectiveness on a scale of 1 (poor) to 5 (excellent).

Attendees were asked to circle their top three stressors and were given the following options: lack of staffing, high patient acuity, flexing, new residents, communication between interdisciplinary team, fatigue/irritability, lack of supplies or resources, social issues, or other. Participants were given the option to write a comment next to "other". Many participants circled more than three stressors. The top three stressors for participants were lack of staffing (67%), lack of supplies of resources (60%), and fatigue/irritability (41%). High patient acuity was the fourth stressor (34%). Of the 14 participants who circled "other" and wrote a comment (17%), the overwhelming theme of comments focused on support from management, with six of 14 comments mentioning or focusing on management. Three comments mentioned coworkers, and another three identified floating as a stressor.

Limitations

Limitations for this study include low survey response rate from the intervention group. There was not sufficient power to detect a significant difference in the research question relating to burnout and resilience training (apart from one question, of which was discussed previously). 24 (27%) of the study participants responded to the post intervention survey. A low survey response rate was also noted to the control group (n=12 at initial survey distribution; n= six upon second survey distribution six weeks later). Data collection was completed in-person by paper questionnaire in the control group and pre-intervention group and collected virtually in the post-intervention group. The change in collection methods could have contributed to the limited data collected in the post intervention group. Additionally, the stress from caring for COVID-19

positive patients as well as the stress of lifestyle changes due to COVID-19 may have partially contributed to the lack of survey responses.

This study only focused on critical care nursing staff and thus results may not be able to be generalized to nurses and staff from other care areas. Also, the study took place in Northeast Ohio in an urban environment and thus may not be able to be generalized to other locations and environments. This project was implemented a year and half after the coronavirus first presented at the hospital, and it is possible that the ramifications of the virus including the increased burnout rates and reduced staff morale could have affected the MBI scores of participants.

Sample selection of participants was not randomized; this was carefully considered during project planning in order to achieve administrative buy-in. Although many data points were analyzed to identify if they could be attributed to variance in burnout scores, it was impossible to identify all potential demographic correlations to burnout.

Resiliency training may have impacted areas that were not measured, such as staff morale, nurse job satisfaction, and patient outcomes. Though it is feasible to consider that these areas may have improved due to resiliency training, they were not measured during the study in a way that can show correlation to RESTORE. Additionally, though anticipated that a reduction in burnout symptoms and the implementation of resiliency training greatly impacts staff turnover, this was not measured during this DNP project due to time constraints and data availability.

Ethical Issues

The Institutional Review Board (IRB) is an independent ethics committee made up of a group who oversees all research involving human subjects (Moran et al., 2020). Though applying for and gaining IRB approval can be time consuming, it is essential for the success of any project involving human subjects. The purpose of the IRB is to help researchers look for risks in a

research proposal. In turn, this protects the researcher, research subjects, and organization in which the project will take place (Moran et al., 2020). The IRB is also meant to ensure that appropriate safety and protection procedures are in place for the participants (Reavy, 2016).

IRB approval was essential for this project as the training involved human subjects and required participants to complete surveys pre and post training. Federal regulations require that all research on human subjects is approved by an IRB. This ensures that risks to participants are minimized, risks are reasonable related to potential benefits, the selection of subjects is appropriate, participants give informed consent, the project data is monitored to ensure safety of participants, and information is protected and kept confidential (Moran et al., 2020).

IRBs evaluate and approve all research that involves human subjects to make sure that it is performed in accordance with federal, institutional, and ethical guidelines (Korniewicz, 2020). Ethics are associated with moral values and are described typically as common norms, though it can be varied due to different lived experiences. Ethical behaviors promote the aims of the project, the values that are essential to collaboration, and behaviors that promote accountability, public support, and moral and social values (Reavy, 2016). The three fundamental ethical principles are respect for persons, beneficence, and justice.

Respect for persons means that participants of the DNP project have the right to decide whether to participate; participants had the option to sign or not sign an informed consent to take part in the project. Participants in the resiliency training were given a cover letter prior to training; this included a statement that informed participants they had the right to withdraw from the study at any time without fear of retribution or harm (Korniewicz, 2020). Implied consent was assumed when participants returned a completed survey.

Beneficence requires the researcher to minimize risk while maximizing benefit to the participant. The researcher must also do no harm. It was anticipated that resiliency training would benefit the nurse by improving their resilience skills and decreasing compassion fatigue and burnout. Though the risk of harm during training was very low, it was possible that during some of the resilience activities a variety of emotions could surface. This could have resulted in nurses feeling uncomfortable or vulnerable. Participants were reminded that they could leave the training or step away at any point and that the Employee Assistance Program was available for confidential counseling at no cost.

Justice is the right to fair treatment and to privacy (Korniewicz, 2020). Participant privacy and protection was vital to the implementation of this project. The principle of justice was considered in this DNP project as participants were together in a classroom setting and thus privacy and anonymity were not possible. Privacy was given to participants in the form of their pre and post survey; the survey was confidential and anonymous. Participants' information was confidential and private to uphold the ethics principle of justice.

One area of concern related to this resiliency training was the potential for nurses to feel forced into attending the training as it was declared mandatory by the DON. After discussions with IRB and project advisors, it was determined that participants could be required to attend the training but could not be required to complete the surveys. Participants were paid their normal wage for attending the training.

Based on provided directions listed in the MBI Manual, participants were unaware that the measuring instrument was used to measure burnout and instead were informed that it was an instrument to investigate job-related attitudes (Maslach et al., 2018). This was in order to

minimize reactions related to the word “burnout”. Once the project was concluded, all participants were sent an email declaring that the surveys measured burnout.

The above noted concerns were some of the reasons why it was imperative for the project to be approved by the IRB. A thorough review, evaluation, and approval from the IRB can help prevent privacy or confidentiality issues with participants as well as protect the researcher, research participants, and the organization where the research will take place.

Alignment with DNP Essentials

The American Association of Colleges for Nursing (AACN) Board of Directors created the Task Force on the Essentials of Nursing Education in 2005 with the mission to develop curriculum expectations to guide DNP education (AACN, 2006; Walker & Polancich, 2015). This taskforce created eight DNP Essentials to address foundational competencies that are core to all advance practice registered nurse (APRN) roles and specialties (AACN, 2006). Though all eight essentials are useful for DNP project implementation, four essentials are described regarding their impact on the DNP project. These include Scientific Underpinnings for Practice, Organizational and Systems Leadership for Quality Improvement and Systems Thinking, Clinical Scholarship in Analytical Methods for Evidence Based Practice, and Interprofessional Collaboration for Improving Patient and Population Health Outcomes.

Scientific Underpinnings for Practice

Doctoral nursing education is designed to prepare nurses for the highest level of scientific inquiry. Preparation to address practice issues requires a strong scientific foundation (AACN, 2006). The scientific underpinnings of the practice doctorate reflect the focus of the nursing discipline; this includes focus on the wholeness or health of human beings and recognition that they are in continuous interaction with the environment (AACN, 2006). The focus of the DNP

project is nursing resiliency and burnout. These outcomes are products of the work environment; the project focuses on the health of critical care nursing staff.

A systematic review of key attributes that enable nurse leaders to create a supportive environment found that collaboration, emotional intelligence, education, positive organizational climate, professional development, and positive leadership attitudes all help optimize the quality of patient and staff outcomes (Herman et al., 2015). Many of these attributes are included in the DNP project. Education, positive climate, and emotional intelligence are woven into the training curriculum.

Organizational and Systems Leadership for Quality Improvement and Systems Thinking

Doctorate prepared APRNs are trained to initiate process improvements, provide quality care, and translate EBP; all are critical components in the healthcare environment (Walker & Polancich, 2015). APRNs should be at the forefront of decisions and discussions about quality care, patient safety, technology advances, and cost-effective, sustainable care (Walker & Polancich, 2015). Buy-in with stakeholders for the DNP project was achieved with discussions about quality care and cost-effectiveness. Systems leadership is critical for DNP graduates to improve healthcare outcomes (AACN, 2006). Nurse leaders play a crucial role in preventing burnout (Blackburn et al., 2020; Bronk, 2019; Epp, 2012; Kester & Wei, 2018; Wang, 2018; Wei et al, 2019). Since nurse leaders have opportunities to make system-wide changes, they possess the potential to greatly impact nurse satisfaction and burnout.

Clinical Scholarship in Analytical Methods for Evidence Based Practice

Critical appraisal of literature and determination of best evidence for practice are skillsets the DNP graduate finetunes throughout their education (AACN, 2006). A comprehensive literature review on nursing staff resiliency and burnout was completed prior to the

implementation phase of this project. Articles were selected based on content, level of evidence, and publication date. Gaps were identified and discussed in the literature review.

Dissemination and integration of new knowledge is a key activity of a DNP graduate (AACN, 2006). Study findings will be disseminated in multiple ways and settings to reach as many individuals as possible. Further discussion of dissemination is provided in the Dissemination Plan portion.

Interprofessional Collaboration for Improving Patient and Population Health Outcomes

The DNP project was not possible without a dedicated, enthusiastic, and visionary interdisciplinary team. Leadership skills required for leading an interprofessional team include exceptional talent in a specialty area, creativity, optimism and confidence, tolerance of risk that leads to progressive achievement, passion and purpose in their work, and learned knowledge, skills, and attitudes; these attributes are assembled in a unique leadership toolkit that assists them in bringing out the best in themselves and others (Armstrong & Sables-Baus, 2020).

Roles of a leader are to identify weaknesses, challenges, and potential barriers and prepare for them (Melnyk & Fineout-Overholt, 2019). Leaders should have adaptive thinking abilities in today's unpredictable healthcare environment (Spano-Szekely et al., 2016). Fortunately, socially distanced, in-person resilience training sessions were feasible. However, the researcher and presenters prepared for virtual classes.

As barriers and challenges present, the researcher's leadership role is required to evolve. Armstrong & Sables-Baus (2020) state, "The psychology of change is about understanding what motivates people to do a good job". The original emotional intelligence and resilience speakers notified the researcher a few weeks prior to RESTORE initiation that they were no longer

available to instruct. This required the researcher to learn the emotional intelligence content to present it and seek help from other content experts to present on resiliency.

Additionally, the original room planned for use during RESTORE was turned into a computer lab and was no longer available. An alternative room was identified a few weeks prior to start date. Finally, though visa gift cards were the originally planned incentive for participants to take surveys, these were not available through the purchasing process of the MetroHealth Foundation. Instead, Target gift cards were selected. Changing a project mid-planning requires being innovative; innovation is a vital component of leading others (Melnyk & Fineout-Overhold, 2019; White et al., 2021). All changes required the researcher to work within an interdisciplinary team to achieve project goals.

System and Practice Impact

Implications for Organization

Although this study was unable to prove that resiliency training reduced burnout symptoms of critical care nursing staff, the MBI scores provide an opportunity for the organization to acknowledge and respond to burnout scores, especially as the burnout scores of these critical care nursing staff members were higher than those of the general population. Statistically significant areas of interest include the burnout characteristics of certain age groups. Since participants who were ages 25-34 showed a significantly higher mean score of depersonalization when compared to those who were ages 45-54 and 55 and older, this may be an age group in which the organization chooses to focus burnout reduction strategies. Additionally, participants of the study who were ages 35-44 showed a significantly lower mean personal accomplishment score when compared to those who were ages 55 and older; nursing

staff in these age groups may benefit from targeted burnout reduction strategies in order to improve resilience.

Furthermore, nursing staff who plan to leave the organization in the next five years show emotional exhaustion mean scores that are significantly higher than those who do not plan to leave the system. Nursing staff who plan to leave nursing in the next five years show a difference in means for depersonalization, though not statistically significant. The organization can use this information as proof that burnout has the potential to impact turnover of their nursing staff and thus also impacts costs associated with turnover.

Each group of participants (pre intervention, post intervention, pre control, and post control) included a Group Report from Mind Garden that identified calls to action. As all four groups showed burnout symptoms, all groups can likely benefit from the calls to action provided by Mind Garden as well as other burnout reduction strategies as noted in the literature. The Group Report offers six key areas in which typically drive the burnout of employees.

These areas include workload, control and the opportunity to make choices and decisions, the ability to be professionally autonomous, and reward, such as financial and social recognition. They also consist of community (including the quality of the social contexts at work), fairness involving justice, respect, and consistent and equitable rules for all, and values that consider the degree of consistency between personal values and the values of the organization (Maslach & Jackson, 2018). The Group Reports also provided a breakdown of which statements in each category were the most and least relatable. The organization can use these to provide targeted burnout intervention efforts to groups based on their responses.

Mind Garden offers a “Recommended Reading” section for the executive team to help gain and share knowledge of burnout and how to address it. To address burnout successfully, the

executive team should consider enlisting advocates for not only localized but systemic workplace issues, empower front-line staff to identify barriers to workflow and find solutions, and engage a burnout expert as needed to provide training, resources, and external validation (Maslach & Jackson, 2018). Executive teams can consider implementing system-wide policies to help reduce burnout and increase resilience in medical staff.

As changes are considered, it can be helpful to recognize that nursing staff typically have less autonomy than providers and thus have distinct issues with control, recognition, and fairness (Maslach & Jackson, 2018). Some of the themes were prominent in the surveys completed by staff. Examples of potential preliminary actions that can be implemented as pilots or on a trial basis and reassessed include identifying drivers of burnout in the organization, choosing burnout prevention and treatment as a key strategic priority, and bridging existing gaps between administration and medical staff (Maslach & Jackson, 2018).

As MetroHealth Medical Center is currently building a new hospital, now could be an opportune time to implement new initiatives (such as annual resiliency training) that will be accepted as part of the new culture. This may also translate to a greater ability to recruit nurses and nursing staff; annual resiliency training may positively impact the nursing culture and help create a progressive reputation for the hospital. If the hospital becomes known for caring for its employees by implementing training on topics that are evidence-based to reduce burnout, it may be easier to attract and retain employees. As the majority of participants found value in the training based on RESTORE evaluations and would recommend the material to a colleague, it may be worth continuing this training in the future.

Though staff turnover will not be measured within this DNP project due to time constraints, the literature shows a strong correlation with resiliency trainings and staff turnover.

Implementing this type of training to nurses and nursing staff annually throughout the hospital may provide great potential in terms of cost savings for the hospital due to a reduction in staff turnover. The literature also correlates staff resiliency with improvements in patient satisfaction and patient outcomes, which may increase cost avoidance, cost savings, reimbursement, and improve patient experience.

MetroHealth is a leading hospital in the greater Cleveland area and implementing this initiative could serve as a powerful example for other hospitals to follow. The implementation of annual resiliency training offers an opportunity to be a leader in implementing evidence-based practice. The vision of MetroHealth Medical Center is to be the "most admired public health system in the nation, renowned for our innovation, outcomes, service and financial strength" (MetroHealth, 2021). Implementing an intervention that shows compassion for employees, financial strength for the hospital, and innovation by utilizing evidence-based practice aligns with the organization's mission. The implementation of the DNP project has provided opportunities to publish and disseminate work. The continuation of the implementation of this intervention may provide more opportunities to publish and share work at local, regional, and national conferences.

Dissemination Plan

Evidence cannot achieve its peak value to practice and improvement in patient outcomes unless communicated effectively (Melnyk & Fineout-Overholt, 2019). Dissemination of knowledge is a critical part of research; it is the spread of knowledge and involves identifying the appropriate audience and tailoring the message to the audience (White et al., 2020). This project will be disseminated in a variety of ways, including public presentation, poster presentation, virtual PowerPoint presentation, and journal submission.

The public presentation will occur as a verbal defense of the project before the project team (Kent State University advisors) as well as other optional audience members. The invitation to attend this presentation is extended to nursing faculty and students via email prior to the presentation date. Though this presentation will aim to disseminate results, it will also serve to receive feedback from advisors.

The project will also be submitted to multiple conferences via poster presentation. This includes the Advanced Nursing and Healthcare Expo. This conference takes place in Paris, France in March of 2022. Funding through a scholarship through the Graduate Student Senate (GSS) International Travel Award has been awarded to both present a poster and participate in this conference as an attendee. Additionally, the project will be presented at the Annual Graduate Research Symposium at Kent State University in April 2022. Finally, the project has been submitted to the National Summit on Promoting Wellbeing and Resilience in Healthcare Providers, a conference that takes place in September of 2022 in Ohio. Other opportunities to present will continue to be explored throughout the year.

A virtual PowerPoint presentation will be provided to stakeholders with the opportunity for questions and discussion. Following this presentation, the results will also be disseminated to nursing staff during Shared Governance at MetroHealth Medical Center. This will occur via virtual PowerPoint presentation as well.

Finally, the project results will be disseminated via an international journal for advanced nursing practice, *Clinical Nurse Specialist*. Peer-reviewed articles accepted for publication exemplify best research practices; due to this, the DNP student will only submit a manuscript to a peer-reviewed journal. The purpose of this journal is to disseminate outcomes of clinical nurse specialist (CNS) practice, foster continue development of this role, and highlight CNS

contributions to advancing nursing practice (Clinical Nurse Specialist, 2021). As the DNP project aims to advance nursing practice by improving nurse health and patient outcomes, this project would be an efficient way to highlight CNS contribution to research and translation to practice. This journal has published articles related to resilience and burnout in the past with 31 journal articles resulting in a search of "resilience" and 50 articles resulting in a search of "burnout".

Articles submitted to this journal are peer-reviewed to determine their scholarly merit. *Clinical Nurse Specialist* is promoted and advertised by Wolter Kluwer, a global company with a substantial influence on healthcare and education. They maintain operations in over 40 countries and provide solutions related to healthcare with advanced technology. As a widely known company, their partnership could result in a significant impact if the DNP project manuscript is published in this journal.

Scholarly dissemination is an essential aspect of becoming part of a network of scholars and substantiating the rigor of doctoral level work (Moran et al., 2020). Though publication of the article may not occur prior to graduation, a journal article will be submitted for publication in the spring of 2022. Depending on the journal, it may take three months or longer to review the article and send feedback to the author (Moran et al., 2020).

Sustainability

Sustainability refers to "locking in" the process made by an improvement initiative; the spread of best practices and knowledge about interventions that are successful should be actively disseminated (Moran et al., 2020). As identified in the above section, Implications to Organization, the hospital system may benefit greatly from the inclusion of this training in annual education for the nursing staff. Potential benefits to the organization include cost savings,

improvement in staff morale and retention, opportunities to publish and disseminate work related to the continuation of this project, and more.

The implementation of this training annually to all critical care nursing staff and potentially all nursing staff require thoughtful securement of resources. Resources needed in order for this project to endure over time include protected time away from the bedside for staff, securement of speakers, the creation of a schedule that satisfies the schedules of speakers and of nursing staff on all shifts, the reservation of rooms, and registration of all nursing staff into classes. Reserved rooms would need a computer and projector. Additional resources that are desirable but not necessary include small gifts for participants, coffee or water during class, and lunch.

To reduce the complication of registering staff for classes, MetroHealth could utilize their current online LEAP program. LEAP is an online platform used by MetroHealth to distribute annual education to all employees. Additionally, LEAP offers the ability to sign-up for a variety of required or optional courses (such as BLS, ACLS, and career-focused classes). Staff are familiar with the process of logging into LEAP and registering for classes through the platform. Administration could create an option to register for RESTORE classes in LEAP with a maximum attendee limit; this could reduce complications and scheduling issues for nursing staff. Staff would be help accountable for classes the same way they are currently held accountable for other LEAP classes (such as BLS).

Critical short-term strategies needed to ensure sustainability include the dissemination of project results to RESTORE participants and stakeholders and the discussion of future plans to implement resiliency training annually. Communication to nursing staff about the content, purpose, and evidence-based research behind RESTORE is both a short- and long-term strategy

that could prove useful for staff buy-in. The communication of the organization's desire to boost staff morale and resiliency while decreasing burnout symptoms may help uplift the overall culture of the nursing staff and contribute to more productive RESTORE training sessions. The expectation that this training is mandatory for all staff may also help instill a culture change and improve long-term buy-in with staff. Other short-term strategies include identifying a project leader to secure training for the following year which would include ensuring registration of staff, securing content experts and rooms, and organizing logistics related to lunches and communication to attendees.

Critical long-term strategies needed to ensure sustainability include a financial commitment to paying for staff to get four hours of "out of staff" time a year for the training. Funding for this training may be provided by the organization. On the other hand, grants and scholarship benefactors may be interested and willing to help provide funding for this evidence-based intervention. In this case, a person would need to be identified for the role of creating and submitting applications to funding opportunities related to this topic.

Additionally, a long-term leader or leaders of the project should be assigned to RESTORE. This person or team would ensure registration of staff, secure content experts and rooms, organize logistics related to lunches and communication to attendees, and distribute, collect, and analyze any further surveys or studies related to the implementation of resiliency training. Additionally, the discussion of who would disseminate results should be considered and discussed. A staff nurse may be an appropriate person to present findings at a conference and can be mentored by a Clinical Nurse Specialist in the planning process. Expectations of what data should be collected and disseminated should be clearly stated by the stakeholders of the training.

A checklist and annual timeline may be helpful tools for implementation when aiming to make training sustainable.

Continued evaluation of the training and data collection can help obtain buy-in from stakeholders and assist with continued project support from the organization. Continued evaluation could include annual or more frequent measurements of staff turnover and retention, the comparison of NDNQI nurse satisfaction scores (annually), and/or the continued implementation of the MBI questionnaires.

Recommendations for Nursing Practice

Although this study was unable to prove that resiliency training reduced burnout symptoms of critical care nursing staff, the MBI scores provide an opportunity for health care leadership to recognize that critical care nursing staff typically have more burnout symptoms than the general population. This study offers a talking point for not only the health care organization in which the study took place, but critical care units across the nation. Nursing staff members are eager for nursing leadership to recognize their struggle. This study and the results of the MBI surveys offer interventions and solutions to help manage burnout symptoms.

Calls to action from the Group Reports include enlisting advocates for localized and systemic workplace issues, empowering front-line staff to identify barriers to workflow and find solutions, and engaging a burnout expert as needed to provide training, resources, and external validation (Maslach & Jackson, 2018). Executive teams can consider implementing system-wide policies to help reduce burnout and increase resilience in medical staff. Additional calls to action include exploring resources from a “Recommended Reading” section for the executive team to help gain and share knowledge of burnout and how to address it. These reading

recommendations are listed in the Group Reports and can be provided to stakeholders upon request.

RESTORE can help provide new insight into existing knowledge about resiliency training where there is a gap. Currently there is a gap regarding cardiac nurses and the impact of resiliency training their burnout symptoms. Based on evaluation responses from the training, it can be understood that this training has positively impacted the nursing staff. One nurse from the cardiology unit approached the researcher a few weeks after the training took place to discuss the impact of the training. She reported that the training had such an effect on her that immediately following the RESTORE class she visited her coworkers to inform them of its positive influence on her overall outlook on nursing.

This study confirms and validates other studies which prove the same phenomenon; nurses are facing burnout symptoms, are at risk for leaving organizations and nursing all together, and value training on management of burnout symptoms and the learning of resilience strategies. Hospitals, organizations, and nursing schools can use this knowledge to incorporate resilience training and transparent discussions about the risk of burnout. Training and interventions related to emotional exhaustion, depersonalization, and personal accomplishment may help mitigate the effects of burnout and prepare nursing staff better for their chosen careers. Early resilience training has the potential to impact the nursing profession positively and should be considered by nursing education leaders in curriculum planning.

The clinical significance of RESTORE cannot be fully realized without additional measurements of nurse turnover, patient outcomes, and staff satisfaction. However, the potential outcomes as shown by previous studies include an improvement in patient satisfaction, improvement in nurse job satisfaction, a reduction in nurse turnover and therefore cost savings of

the hospital, and improvement in patient outcomes. The potential impact on everyday life of the critical care nurse is an improvement in team morale and an overall uplifted unit and hospital culture.

These impacts, though difficult to measure, provide a strong argument in favor of implementing an annual four-hour course with the goal to improve resiliency and decrease burnout symptoms. Even when unable to prove statistical significance in the reduction of burnout symptoms, these anticipated changes should be contemplated when considering current mandatory programs for nursing staff. The potential positive impact of resiliency training should also be closely considered when creating health care policy at the local, state, and federal level.

Finally, the systematic investigation of the effects of resiliency training on critical care staff should be considered. RESTORE and resilience training has been shown throughout the literature to make positive impacts on health care workers and patients. Through clinical inquiry, it can be observed that even without meticulously analyzing the data, resilience training is a clinically relevant intervention to improve the health of critical care nursing staff.

Future Studies

Though survey response rate post intervention was 27%, 99% of participants participated in the pre intervention survey. It is possible that the high rate of response pre intervention was partially due to dedicated time given to staff to complete surveys. Additionally, pre surveys were given via paper questionaries and post intervention surveys were given in online form to the participants' preferred email address. It was believed that this would provide sufficient means to achieve adequate survey responses; however, it is obvious that this was not the case.

It is anticipated that a higher survey response rate would be observed in post surveys if they were given to nursing staff in huddles or placed in break rooms and collected. The high

response rate of training evaluation (92%) also supports the theory that staff are willing to complete evaluations and surveys if given protected time to complete them. Though the survey cover letters requested that staff only take the post survey in both the intervention and control group if they had taken the pre survey, it is possible that different staff members took the pre vs the post survey. Ensuring that only those who took the pre survey were given the post survey could make the data analysis more meaningful.

Additionally, small focus groups could be utilized to identify themes and add qualitative informaton to the study. The control group's low response rate could be partially attributed to only having one week to complete surveys; giving staff a longer time period to complete surveys in the future may contribute to higher survey responses.

Future studies can glean information from this project. The majority of RESTORE participants found that the training exceeded or fully met their needs, and they were very or somewhat likely to recommend the material to a colleague. As mentioned previously, hospitals could compare NDNQI data from one year to the next (post resiliency training) to help identify if there was a positive change in nursing job satisfaction.

Additional information that may be gleaned from future studies include the impact of staff resiliency training on patient experience scores. A survey could be given to patients before and after nursing staff receive resiliency training. Patients can be asked questions that relate to their perceived quality of care, staff morale, and more. This can help identify if resiliency training has a positive impact on patient experience. Many hospitals also collect patient satisfaction data monthly; these rates could be compared before and after staff have received resiliency training and observed for changes.

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Appendix A

Costs			
Category	**Details**	**Costs in first year**	**Potential Funding**
Salary or wages	Up to 100 participants, including RNs, LPNs, CCPs, NI, Tele techs, secretaries Average salary for RN in Cleveland OH is $35.05/hr Average salary for Nurse Assistant in Cleveland OH is $13.43/hr	Assuming 80 RNs, potential cost of $11,216 Assuming 20 Nurse Assistants, potential cost of $1,074	Nursing Department
	Content experts including EAP, Sarah Spengler, Dr. Bob, Laura Tetzlaff	Within range of daily activities	Departments unique to each content expert
Physical training needs	Room		Available resource
	Computer and Projector		Available resource
	Handouts		Available resource
	Art Supplies (Paper flowerpots for art activity)	~~$150~~ (actual) $170.55	Scholarship/Grant
Measurement Tool	Maslach Burnout Inventory (200 paper questionnaires, 100 online questionnaires intervention group)	~~$525~~ (20% student discount) $420	Scholarship/Grant
	MBI analysis; Group Report (one per pre and post intervention and control group)	~~$800~~ (actual, multi-purchase discount) $600	Scholarship/Grant
	MBI fee for addition of demographics	$230	Scholarship/Grant
	MBI Manual for reliability and validity information	$50	Scholarship/Grant
Participation Incentive	Gift cards (three $50 gift cards offered pre and post survey for intervention group, three $50 gift cards offered pre and post control group)	$600	Scholarship/Grant
Participant gifts	Lunch (estimated cost $10 per participant)	$900	Unit budget
	Parting Gift (estimated cost $2 per participant)	~~$200~~ (actual) $177.12	Scholarship/Grant
Total from Nursing Department*			$13,190
*Excludes salary of content experts, includes food for staff from unit budget			
Total from Scholarships (additional funds will add resources for parting gift, incentive for survey completion, and potential art supplies)			$2,247.67
Alice Flaherty Nursing Excellence Scholarship towards project costs			$750
Sponsorship from The MetroHealth Foundation towards project costs			$1497.67

Benefits		
Benefit	**Cost association**	**Benefit within 12 months**
Reduced Nurse Turnover	Cost savings Nurse Turnover nationally is 17.8% Average turnover cost of one nurse is $44,400	Each percent change in nurse turnover will cost (or save) the average hospital $306,400
Reduced Ancillary Staff Turnover		
Increased patient satisfaction	Cost avoidance	
Increased staff satisfaction	Cost avoidance	
Improvement in patient outcomes	Cost avoidance	
Total		

Cost of not implementing this project includes continued staff turnover, continued staff burnout, and missed opportunities related to impact on patient and staff satisfaction and patient outcomes.

Appendix B

Level of Evidence Table

Theme	Authors	Level of Evidence
Building nurse resiliency is an effective way to reduce nurse turnover	Brown et al., 2018 Kester & Wei, 2018	V
Nurse turnover is associated with poor patient outcomes	McGinley & Kerfoot, 2013	VII
Greater resilience and decreased burnout improves patient outcomes, satisfaction, and safety	Brown et al., 2018 Kester & Wei, 2018	V
	Nantsupawat et al., 2015 Rushton et al., 2015	IV
Resilience workshops are correlated with improvements in resilience and decreased burnout	Cleary et al., 2018 Mealer, Conrad et al., 2014 Poulsen et al., 2015	I
	Mistretta et al., 2018 Steinberg et al., 2017	II
	Blackburn et al., 2020	IV
	Foster et al., 2018	VI
Nurse leaders play a crucial role in preventing burnout	Mistretta et al., 2018 Steinberg et al., 2017	II
	Blackburn et al., 2020	IV
	Foster et al., 2018	VI
	Bronk, 2019	VII
Resilience training is feasible and cost effective	Mealer, Conrad et al., 2014 Poulsen et al., 2015	I
	Noben et al., 2015 Steinberg et al., 2017	II
	Mealer, Hodapp et al., 2017	IV
Improved work environments result in decreased nurse turnover	Aiken et al., 2011	I
	You et al., 2013	IV
Web-based learning can be an acceptable alternative to in-person classes	Du et al., 2013	I

Appendix C

Project Charter

Project Name: Reducing Burnout in Critical Care Nursing Staff Through Resilience Training
Lead: Rachel Ogilby
Date: 1/2021

Executive Summary

Problem Statement: Compassion fatigue and burnout remain a large problem in nursing staff around the world. Resilience training is a crucial intervention for critical care staff to promote well-being and self-care and reduce burnout symptoms. Evidence-based literature describes areas of high-stress (such as critical care units) as places with an urgent need for resilience training.

Purpose: Determine if a 4-hour resilience class that focuses on emotional intelligence, self-care, resiliency, and art therapy will decrease burnout symptoms in critical care nursing staff.

Methods: The study will be quasi-experimental with a pretest-post-test design. Participants will be recruited from critical care units. The study will also include a nonequivalent control group. The Maslach Burnout Inventory will be offered at the beginning of the training and again six weeks after the training.

Inclusion Criteria: English speaking critical care staff that work part-time or full-time in critical care units. Demographics to be collected include age, gender, years in current position, years working in critical care, and highest education.

Analysis: A paired t test will be used to evaluate if participants' burnout symptoms decreased after resilience training. Additionally, nurse turnover will be compared.

Implications for Practice: A reduction in burnout symptoms may improve job satisfaction, decrease staff turnover, increase patient satisfaction, and improve patient outcomes. Additionally, training may be replicated for staff throughout other areas if successful.

Project Scope

To fulfill project goals, up to 100 critical care nursing staff (which may include staff with these titles: RN, LPN, CCP, NI, Secretary, and/or Tele technician) will receive four hours of out of staff time. Six 4-hour sessions of resilience training will be offered to allow ample opportunities for attendance. Resilience training may be deemed mandatory by Nurse Leadership. Nurse managers will register their employees for one of the five sessions.

One critical care unit will not receive resilience training as they will be the nonequivalent control group.

Training will take place the East Dining Room. This room holds up to 300 participants without social distancing. It is anticipated that the East Dining Room holds 100 participants with social distancing. Six dates have been reserved. This room has been reserved on these dates: 7/13/21,

7/20/21, 8/3/21, 8/10/21, 8/17/21, and 8/24/21. Content experts/speakers request groups of 15 with 20 as a maximum.

The first 20 minutes of the session will include an introduction and allow participants the opportunity to complete the Maslach Burnout Inventory Questionnaire. Sessions consist of lectured content from four content experts, including Mildred Porter-Duncan or her team (emotional intelligence), Katherine Kurtz (resilience), Anastasia Webb or the EAP team (Self-care), and Laura Tetzlaff (Art Therapy). Each lecture will last about 60 minutes. Remaining time will be used for further discussion and conversation on the speaker topics.

EAP may provide brochures or other paper handouts for nursing staff.

Katherine Kurtz, Mildred Porter-Duncan or her team, Anastasia Webb, and Laura Tetzlaff have agreed to create content and speak at these sessions. Rachel Ogilby may participate as a resilience speaker during the sessions as well. Laura Tetzlaff will provide art supplies for up to 15 people and may need additional resources.

Project planning begins 12/2020. Stakeholders have agreed to be updated by email monthly with the potential for virtual meetings or phone calls closer to project implementation.

Project goals

The goal of this project is to improve staff resilience and reduce burnout by implementing training and education related to self-care, emotional intelligence, art therapy, and resilience. This will be evidenced by a reduction in burnout symptoms (measured prior to training and again six weeks later).

The overarching goal of this project is to improve the culture of the workplace, improve health of our nursing and nursing support staff, and create a sustainable process within the organization to implement resilience training.

Specific goals:

- Decrease burnout symptoms in nursing staff as a result of resilience training
- Implement training to up to 100 critical care staff members by September of 2021 (number achieved by a power analysis with a medium effect size of 0.3, p value of 0.05 and power of 0.8 concludes a total sample size of 71)

Stakeholders and Project Team

	Stakeholder	Project Team	Role(s)
Denise Davis-Maludy	X	X	Support and assistance securing out of staff time
Critical Care Nurse Managers TBD	X	X	Assigning staff to trainings, support with post surveys, support with control group surveys
Katherine Kurtz	X	X	Speaker and content expert

Anastasia Webb	X	X	Speaker and content expert
Laura Tetzlaff	X	X	Art Therapist and content expert
Wendy Sarver	X	X	IRB and research expert; DNP committee leader
Vickie Bowden	X	X	DNP Mentor and Preceptor
Yvonne Smith	X	X	Kent State Advisor
April Largent		X	Resilience training resource
Megan Simpson/Sara Hendrickson		X	Trauma Survivors Group and potential funds
Nurse Senate		X	Potential funds
HR team	X	X	Speakers and content experts

Objectives: (Must be achieved to complete the project)

1. Staff given 4 hours out of staff time
2. Staff enrollment in resiliency sessions
3. Stakeholder involvement and participation in resiliency sessions
4. Receive approval from DNP committee
5. Receive approval from Knowledge and Innovation committee
6. Receive IRB approval
7. Implement resiliency trainings
8. Gather data via pre session surveys
9. Gather data via post session surveys

Project Deliverables (those tasks that must be achieved to meet the objective/complete the project)

Metric	Target
Staff given 4 hours out of staff time	Support from DON, NMs; goal 3/2021
Staff enrollment in resiliency sessions	6/2021
Receive approval from DNP committee	4/15/2021
Receive approval from Knowledge and Innovation committee	4/15/2021
Submit to IRB	5/1/2021
Obtain IRB approval	6/2021

Implement resiliency trainings	7-8/2021
Gather data via pre session survey	7-8/2021
Gather data via post session surveys	8-9/2021

Project Timeline (see Appendix D)

Project risks/constraints and mitigation plan (any event that could have a negative impact on the project objective and what will be done to address it proactively)

Risks	**Mitigation**
Inability to meet in person due to COVID	Virtual Class
Staff unable to get OOS time	PRN and float staff given opportunity to sign up for these dates in advance Voluntary unpaid time
Speaker to become unavailable	Recorded lecture
Training location to become unavailable	Discuss with Kammyo. Scott auditorium? R170?
Inadequate staffing – staff pulled bedside	Nurse leadership and manager support to prevent
COVID requires social distancing resulting in less than 25 people able to participate in each session due to room size	Decreased participants and/or increased sessions May not be an issue if goal group size is 15
Stakeholder support – competing priorities	Prevent if possible with clear timeline; prevent with project dates reserved in advance

Assumptions (factors that are assumed, i.e. access to the setting, access to participants where applicable, and use of equipment)

1. Room, computer, and projector availability
2. Access to staff for paper survey distribution in control group
3. Access to staff for paper survey distribution post intervention

Additional desired resources

1. Provide staff with lunch during training
2. Provide staff with parting gift post training
3. Incentive for survey completion (Gift cards in raffle drawing)
4. Additional art supplies as needed

Appendix D

Resiliency Training Project Timeline

	11/20	12-1 /20	2/21	3/21	4/21	5/21	6/21	7/21	8/21	9/21	10/21	11/21	12/21	1/22
Develop timeline draft	X													
Create needs assessment (Moran p 130)		X												
Create a SWOT analysis			X											
Identify Key Stakeholders (Moran p 135)		X												
Write introductory email and invite members into the committee (and/or during pre-scheduled meetings)		X												
Determine Project Goals (Moran p 135)		X												
Determine Project Scope (Moran p 136)		X												
Determine Theory and Framework (Moran p 138)			X											
Create cost-benefit analysis (discuss with mentor/advisor) (Reavy, p 201; Moran, 225)			X											
Develop LOGIC model (second semester) Objectives, aims, outcomes. SMART goals			X											
Develop official timeline (second semester)			X											

Stakeholder meeting as needed and/or monthly summary including formative evaluation (Reavy, p 190)			X	X	X	X	X	X	X	X	X	X	X	
	11/20	12-1/20	2/21	3/21	4/21	5/21	6/21	7/21	8/21	9/21	10/21	11/21	12/21	1/22
Introduce self to advisor (Yvonne Smith)		X												
Consult/meet with IRB rep? Discuss with advisor			X											
Meet with DNP Committee (monthly)				X	X	X	X	X	X	X	X	X	X	X
Complete proposal manuscript					X									
Present proposal to advisor and DNP committee					X									
Get approval from DNP committee/content mentor					X									
Purchase paper form of the Maslach Burnout Inventory Questionnaire						X								
Submit for IRB approval (takes 6-8 weeks to gain approval)						X								
SWOT analysis with practice council committee							X							
Obtain IRB approval							X							
Implement project (3rd semester)								X						

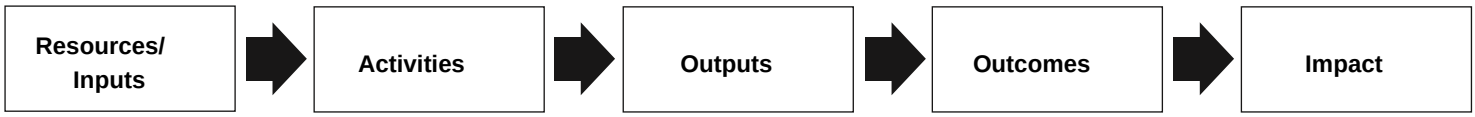
Post-test at 6 weeks										X				
Gather Data										X	X	X		
Analyze Data													X	
Provide summative evaluation to committee (Reavy, p 190, 193 and 199)													X	
Discuss sustainability potential													X	
Finish final paper and submit to chair and committee Present final presentation with findings Publish article Make sure to disseminate findings with study participants – also debrief to find out what went well (Kornieicz, p 95, 121)													X	X

Appendix E

Logic Model

Planned Work
Resilience Training

Intended Results
Reduced Burnout Symptoms



Resources/ Inputs

- Stakeholders (see collaborative efforts for full list)
- Room, computer, and projector availability
- Access to staff for paper survey distribution in control group
- Access to staff for paper survey distribution post intervention
- Lunch for staff during training
- Parting gift for staff post training
- Incentive for survey completion (Gift cards in raffle drawing)
- Additional art supplies as needed

Activities

- Create needs assessment
- Create a SWOT analysis
- Identify key stakeholders
- Create project charter
- Determined theory and framework
- Create cost benefit analysis
- Develop Logic model
- Develop objectives, aims, outcomes, and SMART goals
- Create Timeline
- Hold stakeholder meetings as needed and monthly
- Consult with Kent State advisor
- Consult with DNP mentor
- Consult with IRB and research expert
- Consult with statistician
- Submit for IRB approval
- Obtain IRB approval
- Purchase MBI questionnaire
- Establish content speakers and experts
- Purchase supplies for training
- Recruit nursing units for training
- Recruit control group
- Register staff for training

Outputs

- Offer six 4-hour resiliency classes containing content on resilience, emotional intelligence, self-care, and art therapy
- Enroll up to 100 critical care nursing staff in six total offered resilience training classes
- Staff receive 4 hours paid time out of staff time
- Participation in resilience training from CICU, CSDU, BICU
- Survey participation from MSDU

Outcomes

- At least 90 critical care nursing staff will attend resiliency trainings by the final offered training on August 24th, 2021
- at least 70% of critical care nursing staff from each participating unit will attend RESTORE training
- At least 60% of training participants will return post training surveys by October 5th, 2021
- At least 50% of the control group will return pre intervention surveys
- At least 50% of the control group will return post intervention surveys
- At least 50% of critical care nursing staff will report a decrease in burnout symptoms six weeks after resiliency training
- Resilience training will be offered to all critical care nursing staff annually
- Resilience training will be offered to all nursing staff annually
- Creation of a sustainable process within the organization to implement resilience training

Impact

- Robust, healthy, happy, emotionally intelligent nursing workforce with low rates of turnover, high rates of staff satisfaction, and excellent patient outcomes
- Culture of teamwork and resilience
- Cultivated workplace culture organization wide that considers staff health and wellness as high a priority as patient health and wellness
- Reduced burnout symptoms in all staff
- Reduced nursing staff turnover in all settings
- Improved patient outcomes and satisfaction
- Improved staff satisfaction

Assumptions *Beginnings (Prior to Planned Work)*

- Room, computer, and projector availability
- Access to staff for paper survey distribution in control group
- Access to staff for paper survey distribution post intervention
- Organization cares about nursing staff burnout, resiliency, and turnover

1 2 3 4 5

Appendix F

SWOT Analysis

Strengths *Project attributes that align to the org? What resonates with executives? What resonates with your team?*	**Weaknesses** *How does the problem put the org at risk? What about this project will be hard to do? Culturally, politically, structurally?*
• The **mission** of MetroHealth is "Leading the way to a healthier you and a healthier community through service, teaching, discovery and teamwork." This project algins with the mission of the organization by uplifting our community of nursing staff through service and teaching. • This project aligns with the **vision** for MetroHealth as this project is innovative, outcome-driven, and cost-effective. MetroHealth's Vision: "MetroHealth will be the most admired public health system in the nation, renowned for our innovation, outcomes, service and financial strength. • This project also aligns with the **STAR-IQ** values (Service to Others, Teamwork, Accountability, Respect, Inclusion, Diversity and Racial Equity, and Quest for Excellence) as it aims to improve our quest for excellence regarding patient outcomes. • Content experts and speakers are well versed with the topics and have experience with resiliency training classes • Resiliency training is an intervention already of interest by stakeholders such as the Associate CNO and Critical Care Director of Nursing • Resilience training is well supported by literature • Resilience training dates are planned out far enough in advance to secure speakers/content experts	• Staff will be pulled away from bedside, potentially causing temporary increase in cost to the organization by paying for additional staff to care for patients (such as floats, PRN staff, etc.) • Culturally, staff could see this as a "flavor of the month" and not as a sustainable change with the goal of benefitting them, as this has happened in the past with quality improvement projects • Structurally this may be difficult as there are barriers to getting staff paid time away from the bedside, including potential call offs, fluxes in patient acuity, and unit staffing budgets. • Competing priorities to stakeholders, content experts, and speakers • Limited research regarding cardiac nursing staff and resiliency training • Current high-turnover of staff makes it difficult to pinpoint class size and participation number
Opportunities *While this project and why now? What will the potential benefits be?*	**Threats** *Factors that can threat the success of the project*
• New hospital is being built and this initiative could also be seen as part of the new culture	• Resistance among external stakeholders; change is difficult

• High potential to set MetroHealth as an example for other large hospitals in the area • Opportunities to publish and share work at local, regional, and national conferences after implementation • Potential for greater ability to recruit nurses due to cultural impact of higher resilience of staff • Potential to save money due to reduction in staff turnover • Potential to improve patient satisfaction and patient outcomes, which can improve cost avoidance, cost savings, reimbursement, and improve patient experience • Opportunities may exist after implementation to use training as an intervention for all nursing staff, further reducing turnover rates and saving the organization money • Opportunity for the hospital to be a leader in implementing EBP	• Cost of taking staff away from the bedside for four hours at a time • Inadequate staffing to allow all staff to attend training • COVID threat to in-person classes, potential for virtual class • Buy-in from Nurse Managers – message will have to be carefully given to staff • Difficulty of getting surveys completed once staff is away from training; may have low survey completion rate • Training is planned out far in advance and, as life is unpredictable, speakers may unexpectedly become unavailable • Unforeseen demands on staff • Unforeseen changes in stakeholders or stakeholders' availability to support the project due to competing priorities or budgetary reasons

Appendix G

RESTORE Agenda

Improve **Res**iliency, Manage S**tre**ss in Critical Care Nursing Staff

Time	Topic/Activity	Speaker/Content Expert
1100 – 1130	Introduction and opportunity to complete pre-survey	Rachel Ogilby
1130 – 1230	Introduction to Emotional Intelligence	A. Majorle/A. Bodnaruk/D. Mutti
1230 – 1330	Resiliency	Katherine Kurtz
1330 – 1400	Self-Care Activity	Anastasia Webb
1400 – 1450	Art Therapy Intervention	Laura Tetzlaff, ATR-BC, LPC, CCTP
1450 – 1500	Conclusion and wrap up	Rachel Ogilby

Appendix H

Figure 1. MBI-HSS Item Format

Item 8: I feel burned out from my work.							
	0	1	2	3	4	5	6
How often?	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day

Table 5. Item Factor Loadings for the MBI-HSS

Scale Items	Factors		
	I	II	III
I. Emotional Exhaustion			
1. I feel emotionally drained from my work.	.74	.06	.02
2. I feel used up at the end of the workday.	.73	.04	.03
3. I feel fatigued when I get up in the morning and have to face another day on the job.	.66	.18	.15
6. Working with people all day is really a strain for me.	.61	.22	-.10
8. I feel burned out from my work.	.84	.19	-.09
13. I feel frustrated by my job.	.65	.23	-.12
14. I feel I'm working too hard on my job.	.56	.08	.07
16. Working with people directly puts too much stress on me.	.54	.31	-.06
20. I feel like I'm at the end of my rope.	.65	.21	-.08
II. Depersonalization			
5. I feel I treat some recipients as if they were impersonal objects.	.11	.67	-.09
10. I've become more callous toward people since I took this job.	.23	.66	-.13
11. I worry that this job is hardening me emotionally.	.37	.55	-.10
15. I don't really care what happens to some recipients.	.12	.62	-.16
22. I feel recipients blame me for some of their problems.	.13	.41	-.04
III. Personal Accomplishment			
4. I can easily understand how my recipients feel about things.	.11	-.06	.50
7. I deal very effectively with the problems of my recipients.	-.01	-.07	.54
9. I feel I'm positively influencing other people's lives through my work.	-.02	-.17	.58
12. I feel very energetic.	-.30	-.04	.43
17. I can easily create a relaxed atmosphere with my recipients.	-.06	-.08	.51
18. I feel exhilarated after working closely with my recipients.	.00	-.23	.55
19. I have accomplished many worthwhile things in this job.	-.10	-.17	.57
21. In my work, I deal with emotional problems very calmly.	-.07	.07	.59

Note: Occupations represented in this scale development analysis included 142 police officers, 132 nurses, 125 agency administrators, 116 teachers, 97 counselors, 91 social workers, 68 probation officers, 63 mental health workers, 43 physicians, 40 psychologists and psychiatrists, 31 attorneys, and 77 others.

Appendix I

DNP Project Cover Letter

For scientific reasons, this memo does not include complete information about the study hypotheses and the research questions being tested. You will be fully debriefed following your participation in the research. You are being asked to participate in a research study to learn about resiliency training (RESTORE - Improve **Res**iliency, Manage S**tre**ss) and its effects on job-related attitudes. Your involvement will include completing a short survey before the presentation and again six weeks later. You will receive the post survey via your preferred email address. Each survey will take 10 - 15 minutes.

By participating in the research study, you will help investigators learn more about resiliency training and to gain insight on whether critical care nursing staff would benefit from ongoing training. This project has been implemented by Rachel Ogilby for her Doctorate of Nursing Practice Project.

This is a research study and participation is completely voluntary. Some of the questions you will be asked may make you feel uncomfortable. You have the right to skip any questions that you do not wish to answer or to stop your participation at any time. You may still participate in the resiliency training if you do not wish to complete the surveys.

Although this survey is anonymous, a rare risk of breach of confidentiality exists. Results will not be reported in any way that it would be possible to identify a participant.

You will not be paid for your participation in the surveys; however, anyone asked to participate in this study will be entered into a drawing to win one of three $50.00 visa gift cards (winners may be taxed about $4 via payroll deduction). Participation in or completion of the study is not required in order to participate in the drawing. The winner will be chosen by random drawing. The winner will be notified by email by August 31st. Your chances of winning the drawing will depend on the number of people asked to be in the study (e.g., approximately 1 in 100). An additional drawing will be available during the post survey six weeks later. Each drawing is considered separate and entrance into this drawing submits you to this drawing only. A decision to not participate in this research study will not affect your employment or result in any loss of benefits to which you are otherwise entitled.

The surveys themselves will not collect identifying information, will not be linked to you if you provide information for the gift card drawing, and will not if be linked to your email addresses if you take part in the post survey.

If you have questions about any part of the research study now or in the future or if you wish to communicate concerns or a complaint, you should contact Rachel Ogilby who may be reached at 216-778-2556 or Vickie Bowden at (216) 778-5442. If you have any questions about your rights as a research participant, or if you wish to express any concerns or complaints please contact the MetroHealth Medical Center's Institutional Review Board (which is a group of people who review the research to protect your rights) at 216-778-2021.

By completing this questionnaire, you are agreeing to participate in the research study. If you do not wish to participate in the research study, then simply do not complete the questionnaire. Please return this survey to the designated envelope at the sign-in table. If you wish to enter the drawing to win one of three gift cards, please write your email address on the attached index card and place it in the separate designated envelope upon survey completion.

Please circle the correlating answer or write in comment field.

1. My job position is:
    a. Registered Nurse or Licensed Practical Nurse
    b. Customer Care Partner
    c. Nurse Intern
    d. Secretary
    e. Telemetry Technician
    f. Other _____

2. My age is:
    a. 18 – 24
    b. 25 – 34
    c. 35 – 44
    d. 45 – 54
    e. 55 +

3. My gender is:
    a. Female
    b. Male
    c. Other _____

4. My highest educational level is:
    a. Highschool/GED
    b. Associate Degree
    c. Bachelor's Degree
    d. Master's Degree
    e. Other _____

5. I have worked ___ years in my current position.
    a. 0 – 1
    b. 1 – 2
    c. 2 – 5
    d. 5 – 10
    e. 10 – 20
    f. 20 – 30
    g. 30 +

6. I have worked ___ years in critical care.
    a. 0 – 1
    b. 1 – 2
    c. 2 – 5
    d. 5 – 10
    e. 10 – 20
    f. 20 – 30
    g. 30 +

7. I plan to leave MetroHealth in the next 5 years.
    a. Yes
    b. No

8. If you plan to leave MetroHealth in the next 5 years, why?
    a. Retirement
    b. Benefits
    c. Location/Commute
    d. Work environment
    e. Unit Culture
    f. Opportunity
    g. Other _____

9. I plan to leave nursing in the next 5 years.
    a. Yes
    b. No

10. If you plan to leave nursing in the next 5 years, why?
    a. Retirement
    b. Benefits
    c. Location/Commute
    d. Work environment
    e. Unit Culture
    f. Opportunity
    g. Other _____

Appendix J

The MetroHealth System

RESTORE Evaluation Form

1. How well did RESTORE meet your needs?

5	*4*	*3*	*2*	*1*
Exceeded	*Fully met*	*Neutral*	*Partially met*	*Did not meet*

2. How likely would you be to recommend the education material you learned today to a colleague?

5	*4*	*3*	*2*	*1*
Very likely	*Somewhat likely*	*Neutral*	*Somewhat unlikely*	*Very unlikely*

3. How will this program affect your practice?

4. Evaluate the speakers on teaching effectiveness on a scale of 1 (poor) to 5 (excellent):

Speaker:	A. Majorle/A. Bodnaruk/D. Mutti	5	4	3	2	1
	Katherine Kurtz	5	4	3	2	1
	Anastasia Webb	5	4	3	2	1
	Laura Tetzlaff	5	4	3	2	1

5. Circle your top three stressors:
    a. Lack of staffing
    b. High patient acuity
    c. Flexing
    d. New residents
    e. Communication between interdisciplinary team
    f. Fatigue/irritability
    g. Lack of supplies or resources
    h. Social issues
    i. Other _____

6. What other feedback or comments do you have about RESTORE?

Appendix K

Question	Number of participants who selected associated response	Percentage of participants who selected associated response
How well did RESTORE meet your needs?	83 total participants answered this question	
5 (Exceeded)	29	35%
4 (Fully met)	35	42%
3 (Neutral)	17	20%
2 (Partially met)	1	1%
1 (Did not meet)	1	1%
How likely would you be to recommend the education material you learned today to a colleague?	83 total participants answered this question	
5 (Very likely)	47	57%
4 (Somewhat likely)	25	30%
3 (Neutral)	10	12%
2 (Somewhat unlikely)	0	0%
1 (Very unlikely)	1	1%
Evaluate the speakers on teaching effectiveness on a scale of 1 (poor) to 5 (excellent): A. Majorle/A. Bodnaruk/D. Mutti	76 total participants answered this question	
5	62	82%
4	12	16%
3	2	3%
2	0	0%
1	0	0%
Katherine Kurtz	83 total participants answered this question	
5	69	83%
4	11	13%
3	3	4%
2	0	0%
1	0	0%
Anastasia Webb/Brent Basile	74 total participants answered this question	
5	61	83%
4	10	14%
3	2	3%
2	1	1%
1	0	0%
Laura Tetzlaff	82 total participants answered this question	
5	65	79%
4	13	16%

3	3	4%
2	1	1%
1	0	0%
Circle your top three stressors? *(many participants circles more than 3)	83 total participants answered this question	
Lack of staffing	57	67%
High patient acuity	28	34%
Flexing	12	14%
New residents	10	12%
Communication between interdisciplinary team	20	24%
Fatigue/irritability	34	41%
Lack of supplies or resources	50	60%
Social issues	7	8%
Other	14	17%

Comments under "Other" option from previous question (N=14)	
"Floating/favoritism/schedule/coworkers"	"Management"
"Floating"	"Management"
"Floating!"	"Supervisors, upper management, and lazy coworkers"
"Rate of pay"	"Supervisors"
"Co-workers who don't do their job correctly"	"Being new"
"Staff complaining, pt refusing care"	"Dietary not coming on time"
"Management's lack of empathy when nurses talk about our stressors including upper management not just out floor manager"	"Placement acuity"

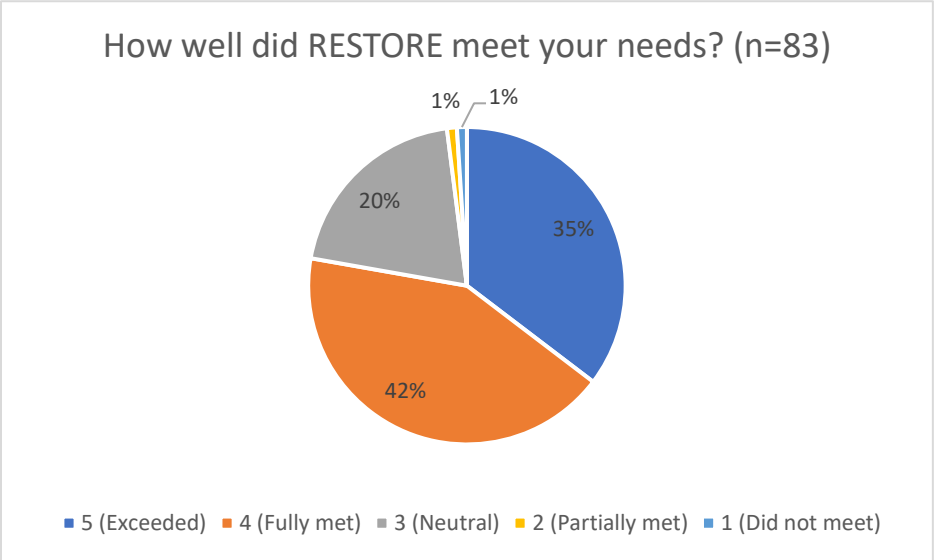
What other feedback or comments do you have about RESTORE? (N=26)			
Comment	Positive	Neutral	Negative
"Excellent class and loved being here"	X		
"Great idea!"	X		
"Extremely helpful – written resources for follow up and individual sessions would be great"	X		
"Great job!"	X		
"People give themselves permission to say some very stupid stuff they should stop giving themselves permission to say or do such stuff"			X
"The art project was the best"	X		
"RESTORE was a very relaxing experience"	X		
"Instead of floor hours, not in addition to"		X	

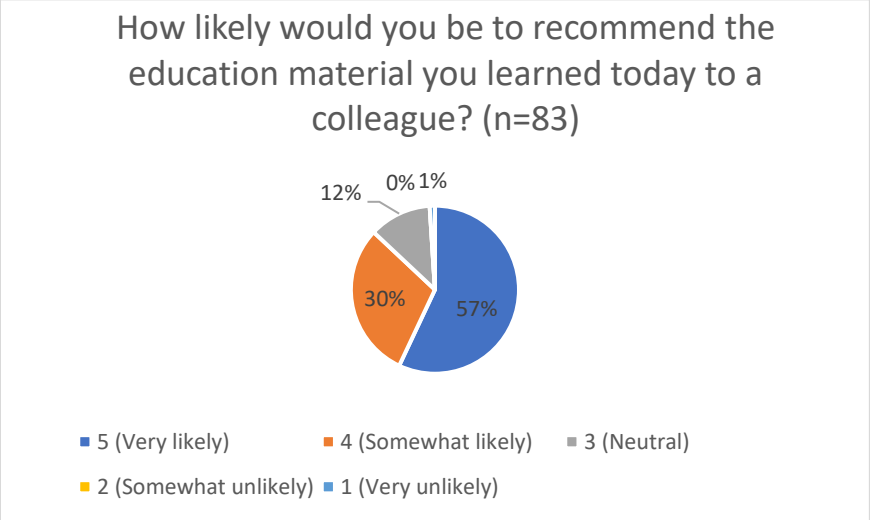
"Great class"	X		
"I loved the positivity and meditation and the personal feeling of class. I would have preferred to be more critical care nursing related way to help in our units/administration ect"	X		
" 😊 "	X		
"Enjoyed the class!!"	X		
"All is well!"	X		
"This should be a voluntary program rather than a mandate"		X	
"I liked the art activity"	X		
"Do this more often"	X		
"I was pleasantly surprised, very helpful info, enjoyed the lunch"	X		
"Keep it basic not too abstruse"		X	
"Very good class"	X		
"Brent was great! Meditative techniques were fun to learn!"	X		
"This was very relaxing and informative"	X		
"Loved art therapy"	X		
"It was very well done, thank you!"	X		
"This was a helpful program"	X		
"Beneficial"	X		
"Helps to learn to restore our energy"	X		

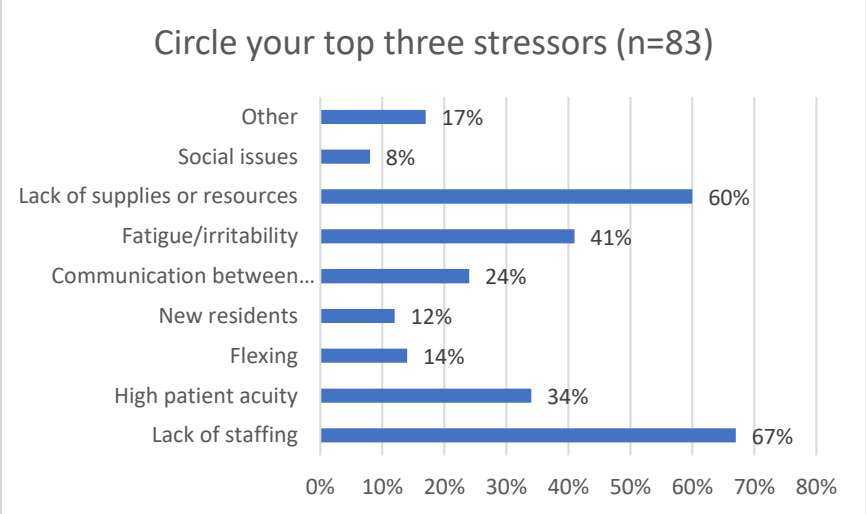
How will this program affect your practice? (N=48)	
Comments	
"Giving myself permission"	"Taking me back to the basics!"
"Reminds me to take a breath"	"Made me think and be more mindful"
"It reminds me to self reflect in situations at home and work"	"Practicing more self care"
"Makes me more mindful of my actions"	"I will be a much better rn after this program"
"Implement mindful meditation"	"Work better with others, self care"
"Happy"	"I don't think i'll change"
"Could help personally but others issues are work"	"It will give me a better way of accepting the patient experience"
"It'll help with communication skills"	"Help me cope with work stress"
"It will allow me to be more self aware"	"It will help me manage myself more"
"Take more time to consider my pts situation"	"I will use it in my work life"
"Incorporated a lot of these strategies before this course"	"Yes"
"Very much, gave me much insight"	"More focus on myself"
"Minimally"	"Deep breathing"
"I will be more mindful of my reactions and responses"	"Helps me work on empathy more"

“Practice mindfulness”	“Greater self awareness – abilities and limitations” “
“It will not”	This program will positively affect my practice”
“Think more positive”	“Positively”
“I will be able to increase EI”	“Be more mindful”
“Self care!”	“I will remember to ground myself”
“It will help me be more mindful”	“Will take time to restore”
“Try to relax yourself”	“Help center me”
“Make me a better nurse, caring, compassionate for patients and coworkers”	
“Relaxation techniques, self reflect and build off of that”	
“Pay more attention to being in the present and how I may be perceived by others (my actions)”	
“This program reminded me to breathe and count to 10 when I’m stressed at work”	
“The relaxation and grounding techniques I will use in my practice and with myself/patients”	
“Would possibly use the social services Katie Kurtz talked about, I didn’t know about them. Great services!”	

Appendix L


How well did RESTORE meet your needs? (n=83)
1%
1%
20%
35%
42%
5 (Exceeded)
4 (Fully met)
3 (Neutral)
2 (Partially met)
1 (Did not meet)


How likely would you be to recommend the education material you learned today to a colleague? (n=83)
12%
0%
1%
30%
57%
5 (Very likely)
4 (Somewhat likely)
3 (Neutral)
2 (Somewhat unlikely)
1 (Very unlikely)


Circle your top three stressors (n=83)
Other
17%
Social issues
8%
Lack of supplies or resources
60%
Fatigue/irritability
41%
Communication between...
24%
New residents
12%
Flexing
14%
High patient acuity
34%
Lack of staffing
67%
0%
10%
20%
30%
40%
50%
60%
70%
80%

Appendix M

Research Question	Null Hypotheses	Type 1 Error	Burnout Component	Groups Compared	Mean (SD)	p-value from t-test	Interpretation
Is the mean emotional exhaustion score for those in the post-intervention group different from the mean emotional exhaustion score for those in the pre-intervention group?	Mean emotional exhaustion score for those in the post-intervention group is the same as the mean emotional exhaustion score for those in the pre-intervention group.	The alpha is set as 0.05.	Emotional Exhaustion	Pre Intervention Post Intervention	22.73 (12.58) 28.21 (13.31)	0.064	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean depersonalization score for those in the post-intervention group different from the mean depersonalization score for those in the pre-intervention group?	Mean depersonalization score for those in the post-intervention group is the same as the mean depersonalization score for those in the pre-intervention group.	The alpha is set as 0.05.	Depersonalization	Pre Intervention Post Intervention	7.04 (5.54) 10.08 (5.69)	0.0195	Because the p-value for the test is less than 0.05 (the type 1 error level), we reject the null hypothesis and conclude there is a statistical difference between the two means. The mean score increased from pre-intervention to post-intervention.
Is the mean personal accomplishment score for those in the post-intervention group	Mean personal accomplishment score for those in the post-intervention	The alpha is set as 0.05.	Personal Accomplishment	Pre Intervention Post Intervention	34.49 (7.48) 32.08 (7.14)	0.16	Because the p-value for the test is greater than 0.05 (the type 1 error

different from the mean personal accomplishment score for those in the pre-intervention group?	group is the same as the mean personal accomplishment score for those in the pre-intervention group.						level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean emotional exhaustion score for those in the post-control group different from the mean emotional exhaustion score for those in the pre-control group?	Mean emotional exhaustion score for those in the post-control group is the same as the mean emotional exhaustion score for those in the pre-control group.	The alpha is set as 0.05.	Emotional Exhaustion	Pre Control Post Control	26.25 (9.03) 28.67 (10.76)	0.62	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean depersonalization score for those in the post-control group different from the mean depersonalization score for those in the pre-control group?	Mean depersonalization score for those in the post-control group is the same as the mean depersonalization score for those in the pre-control group.	The alpha is set as 0.05.	Depersonalization	Pre Control Post Control	7.25 (4.29) 7.83 (2.79)	0.77	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean personal accomplishment score for those in the post-control group different	Mean personal accomplishment score for those in the post-control group is	The alpha is set as 0.05.	Personal Accomplishment	Pre Control Post Control	33.08 (8.33) 30.83 (7.36)	0.58	Because the p-value for the test is greater than 0.05 (the type 1 error

from the mean personal accomplishment score for those in the pre-control group?	the same as the mean personal accomplishment score for those in the pre-control group.						level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean emotional exhaustion score for those in the pre-control group different from the mean emotional exhaustion score for those in the pre-intervention group?	Mean emotional exhaustion score for those in the pre-control group is the same as the mean personal accomplishment score for those in the pre-intervention group.	The alpha is set as 0.05.	Emotional Exhaustion	Pre Intervention Pre control	22.73 (12.58) 26.25 (9.03)	0.35	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean depersonalization score for those in the pre-control group different from the mean depersonalization score for those in the pre-intervention group?	Mean depersonalization score for those in the pre-control group is the same as the mean personal accomplishment score for those in the pre-intervention group.	The alpha is set as 0.05.	Depersonalization	Pre Intervention Pre control	7.04 (5.54) 7.25 (4.29)	0.90	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean personal accomplishment score for those in the pre-control group different from the mean	Mean personal accomplishment score for those in the pre-control group is the same as the	The alpha is set as 0.05.	Personal Accomplishment	Pre Intervention Pre control	34.49 (7.48) 33.08 (8.33)	0.55	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to

personal accomplishment score for those in the pre-intervention group?	mean personal accomplishment score for those in the pre-intervention group.						reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean emotional exhaustion score for those in the post-control group different from the mean emotional exhaustion score for those in the post-intervention group?	Mean emotional exhaustion score for those in the post-control group is the same as the mean personal accomplishment score for those in the post-intervention group.	The alpha is set as 0.05.	Emotional Exhaustion	Post Intervention Post control	28.21 (13.31) 28.67 (10.76)	0.94	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean depersonalization score for those in the post-control group different from the mean depersonalization score for those in the post-intervention group?	Mean depersonalization score for those in the post-control group is the same as the mean personal accomplishment score for those in the post-intervention group.	The alpha is set as 0.05.	Depersonalization	Post Intervention Post control	10.08 (5.69) 7.83 (2.79)	0.36	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null hypothesis and conclude there is no statistical difference between the two means.
Is the mean personal accomplishment score for those in the post-control group different from the mean personal	Mean personal accomplishment score for those in the post-control group is the same as the mean personal	The alpha is set as 0.05.	Personal Accomplishment	Post Intervention Post control	32.08 (7.14) 30.83 (7.36)	0.71	Because the p-value for the test is greater than 0.05 (the type 1 error level), we fail to reject the null

accomplishment score for those in the post-intervention group?	accomplishment score for those in the post-intervention group.						hypothesis and conclude there is no statistical difference between the two means.

Appendix N

Age group (years)	N	Emotional Exhaustion Mean (SD)	Depersonalization Mean (SD)	Personal Accomplishment Mean (SD)
18-24	21	22.38 (11.29)	6.43 (4.94)	35.0 (6.16)
25-34	49	26.27 (10.52)	9.28 (5.11)*	33.84 (7.66)
35-44	33	26.33 (16.57)	8.48 (6.66)	30.82 (8.27)**
45-54	14	19.07 (6.35)	4.79 (3.38)*	34.07 (6.20)
55+	14	21.0 (12.73)	4.71 (3.24)*	38.21 (5.82)**
ANOVA p-value		0.197	0.006	0.0284

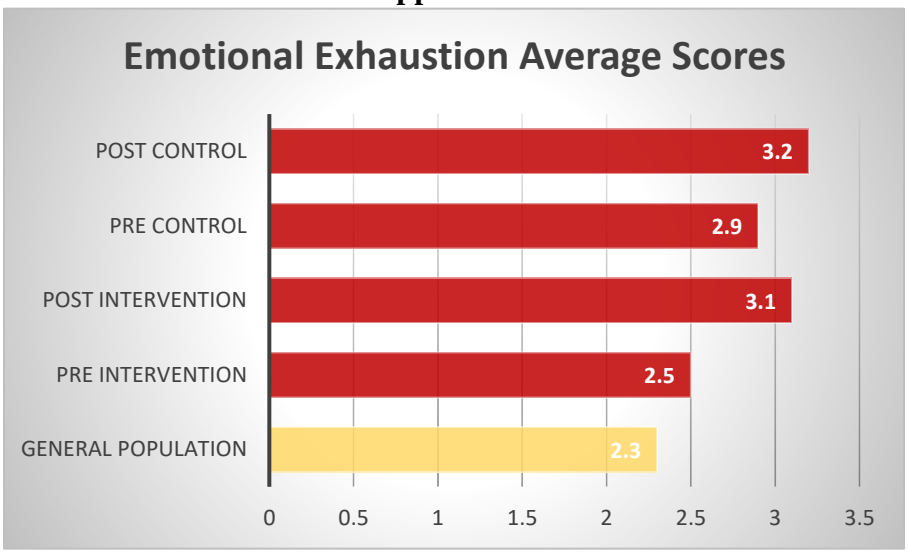
*Mean for depersonalization for age group 25-34 differed significantly from both the 45-54 and 55+ age group means.

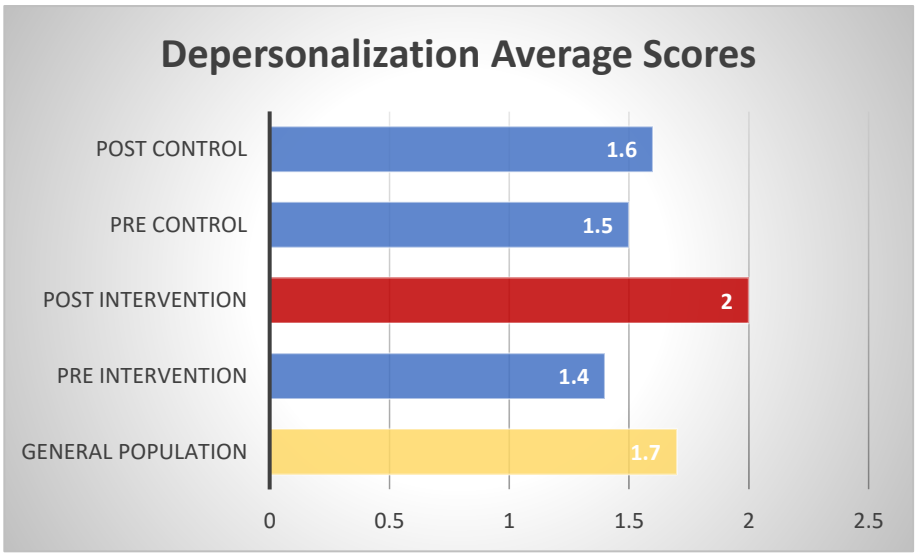
**Mean for personal accomplishment for age group 35-44 differed significantly from the 55+ age group.

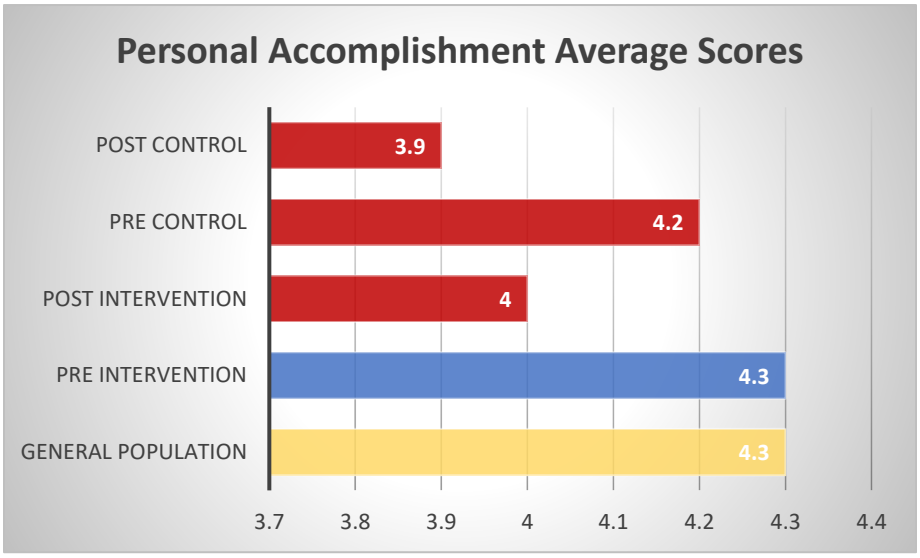
Appendix O

Category	N	Emotional exhaustion Mean (SD)	Depersonalization Mean (SD)	Personal accomplishment Mean (SD)
Leave MetroHealth				
Yes	39	29.10 (13.19)	8.69 (5.34)	33.38 (7.35)
No	92	22.30 (11.64)	7.22 (5.47)	33.91 (7.59)
p-value from t-test		0.004	0.158	0.714
Leave Nursing				
Yes	17	27.65 (15.69)	10.59 (7.45)	31.0 (9.51)
No	114	23.83 (11.92)	7.22 (4.99)	34.17 (7.10)
p-value from t-test		0.241	0.088	0.104

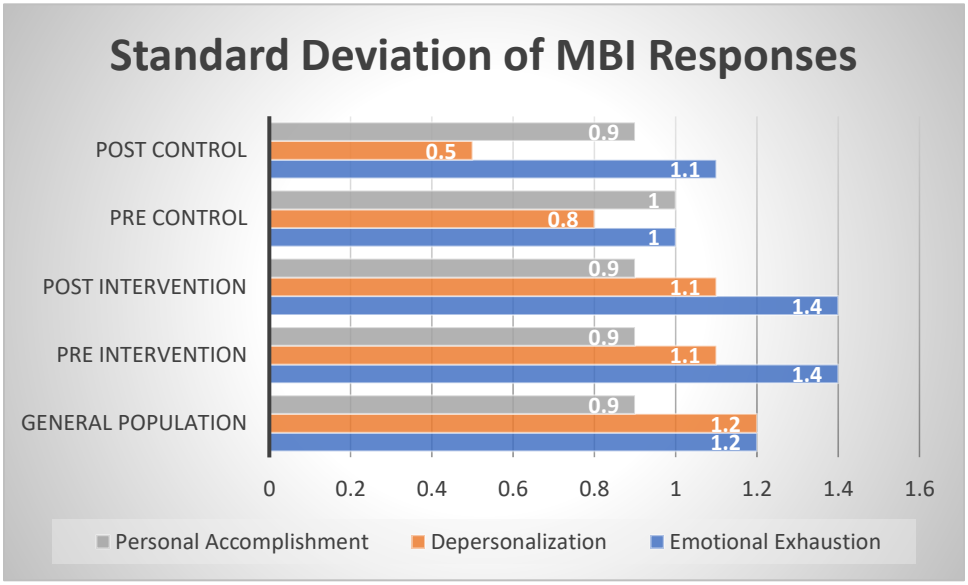
Appendix P


Emotional Exhaustion Average Scores
POST CONTROL
PRE CONTROL
POST INTERVENTION
PRE INTERVENTION
GENERAL POPULATION
3.2
2.9
3.1
2.5
2.3
0
0.5
1
1.5
2
2.5
3
3.5


Depersonalization Average Scores
POST CONTROL
PRE CONTROL
POST INTERVENTION
PRE INTERVENTION
GENERAL POPULATION
1.6
1.5
2
1.4
1.7
0
0.5
1
1.5
2
2.5


Personal Accomplishment Average Scores
POST CONTROL
PRE CONTROL
POST INTERVENTION
PRE INTERVENTION
GENERAL POPULATION
3.9
4.2
4
4.3
4.3
3.7
3.8
3.9
4
4.1
4.2
4.3
4.4

Appendix Q


Standard Deviation of MBI Responses
POST CONTROL
PRE CONTROL
POST INTERVENTION
PRE INTERVENTION
GENERAL POPULATION
0.9
0.5
1.1
1
0.8
1
0.9
1.1
1.4
0.9
1.1
1.4
0.9
1.2
1.2
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Personal Accomplishment
Depersonalization
Emotional Exhaustion

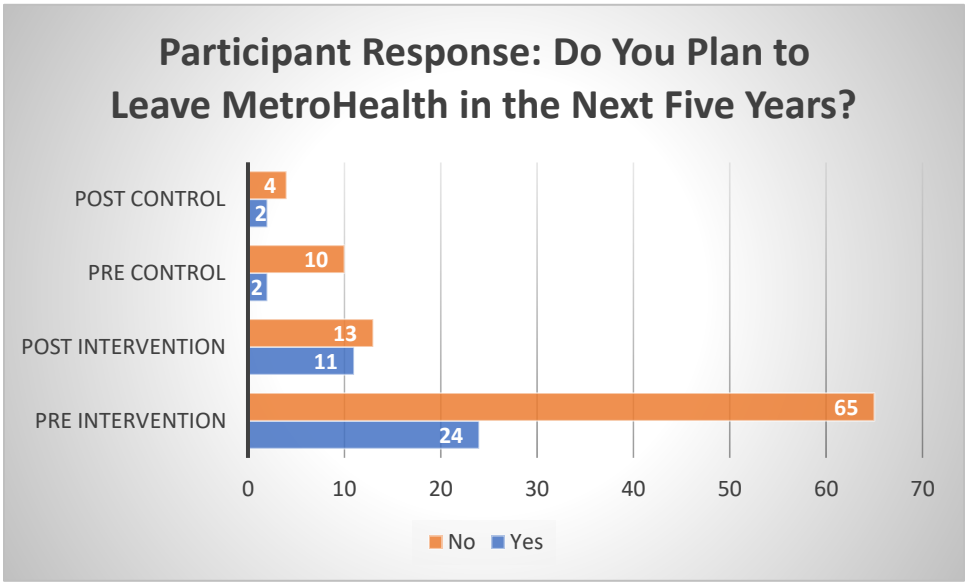
Appendix R

Group	Job Position					Age					Gender		
Frequency Row Pct	RN/LPN	Customer Care Partner	Nurse Intern	Secretary	Telemetry Technician	18-24	25-34	35-44	45-54	55+	Female	Male	Other
Pre intervention	64 71.91	15 16.85	4 4.49	5 5.62	1 1.12	15 16.85	31 34.83	23 25.84	9 10.11	11 12.36	77 86.52	12 13.48	0 0.00
Post intervention	22 91.67	0 0.00	1 4.17	1 4.17	0 0.00	3 12.50	10 41.67	7 29.17	2 8.33	2 8.33	22 91.67	1 4.17	1 4.17
Pre control	9 75.00	2 16.67	1 8.33	0 0.00	0 0.00	2 16.67	6 50.00	2 16.67	2 16.67	0 0.00	10 83.33	2 16.67	0 0.00
Post control	6 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 16.67	2 33.33	1 16.67	1 16.67	1 16.67	5 83.33	1 16.67	0 0.00
Total	101	17	6	6	1	21	49	33	14	14	114	16	1

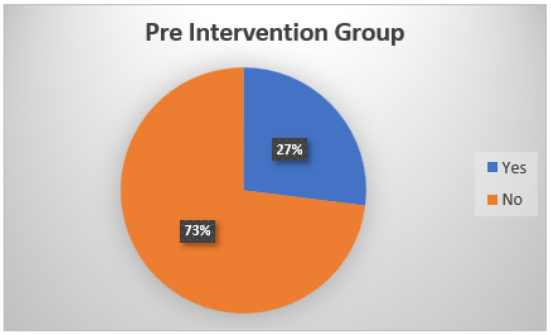
Group	Highest Education Level					Plan to Leave MH in Next 5 Years		Plan to Leave Nursing in Next 5 Years	
Frequency Row Pct	Highschool/GED	Associate Degree	Bachelors Degree	Masters Degree	Other	Yes	No	Yes	No
Pre intervention	15 16.85	11 12.36	55 61.80	5 5.62	3 3.37	24 26.97	65 73.03	13 14.61	76 85.39
Post intervention	1 4.17	0 0.00	20 83.33	2 8.33	1 4.17	11 45.83	13 54.17	4 16.67	20 83.33
Pre control	2 16.67	1 8.33	8 66.67	0 0.00	1 8.33	2 16.67	10 83.33	0 0.00	12 100.00
Post control	0 0.00	0 0.00	6 100.00	0 0.00	0 0.00	2 33.33	4 66.67	0 0.00	6 100.00
Total	18	12	89	7	5	39	92	17	114

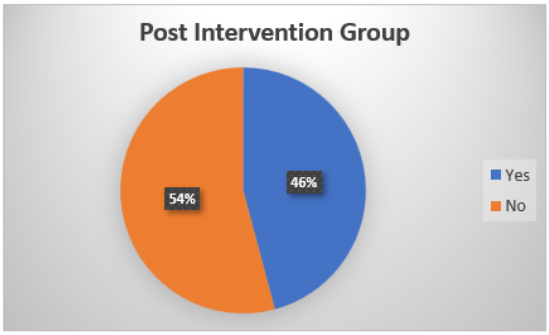
Group	Years of Work in Current Position							Years of Work in Critical Care						
Frequency Row Pct	0-1	1-2	2-5	5-10	10-20	20-30	30+	0-1	1-2	2-5	5-10	10-20	20-30	30+
Pre intervention	20 22.47	14 15.73	22 24.72	10 11.24	18 20.22	4 4.49	1 1.12	25 28.09	12 13.48	25 28.09	11 12.36	11 12.36	4 4.49	1 1.12
Post intervention	1 4.17	7 29.17	6 25.00	5 20.83	3 12.50	2 8.33	0 0.00	2 8.33	8 33.33	4 16.67	5 20.83	3 12.50	2 8.33	0 0.00
Pre control	5 41.67	1 8.33	2 16.67	2 16.67	1 8.33	1 8.33	0 0.00	5 41.67	2 16.67	2 16.67	2 16.67	0 0.00	1 8.33	0 0.00
Post control	0 0.00	2 33.33	1 16.67	1 16.67	1 16.67	1 16.67	0 0.00	0 0.00	2 33.33	1 16.67	1 16.67	1 16.67	1 16.67	0 0.00
Total	26	24	31	18	23	8	1	32	24	32	19	15	8	1

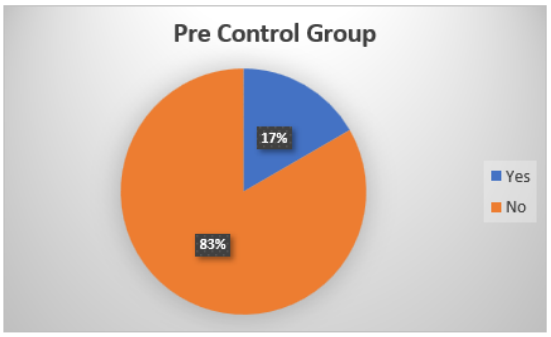
Appendix S

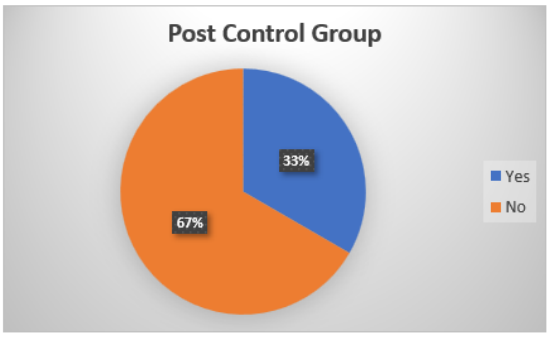


Response to the question: "Do you plan to leave MetroHealth in the next 5 years?"

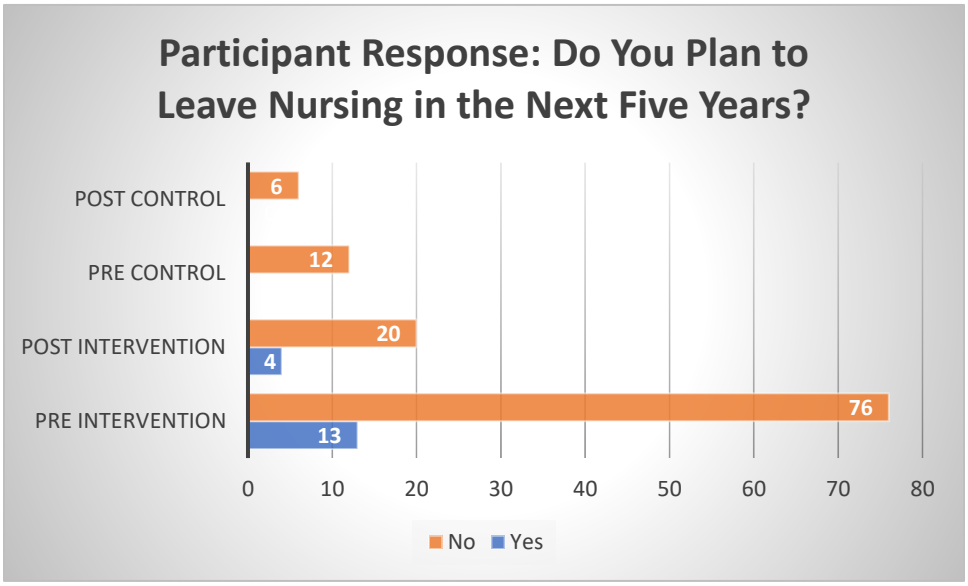




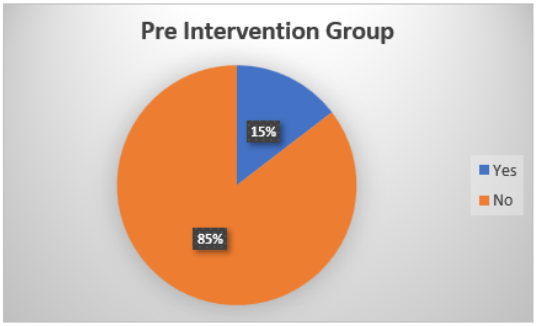


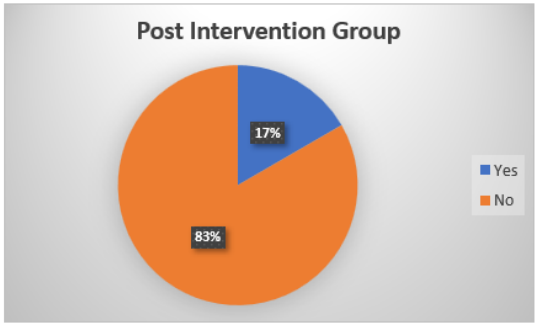


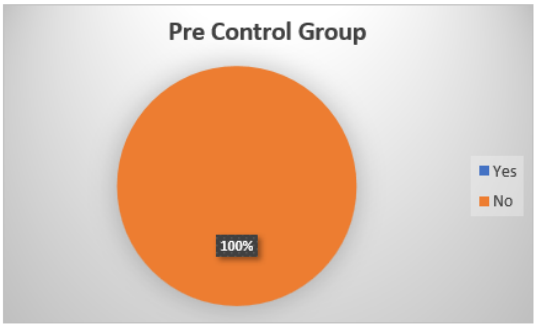
Appendix T

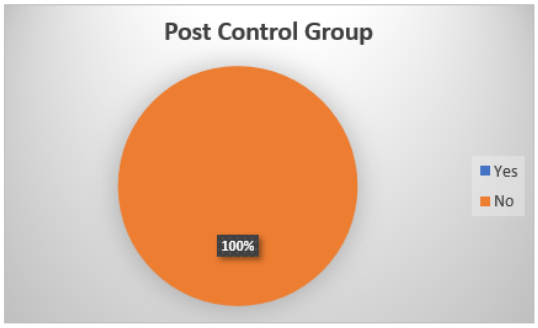


Response to the question: "Do you plan to leave nursing in the next 5 years?"





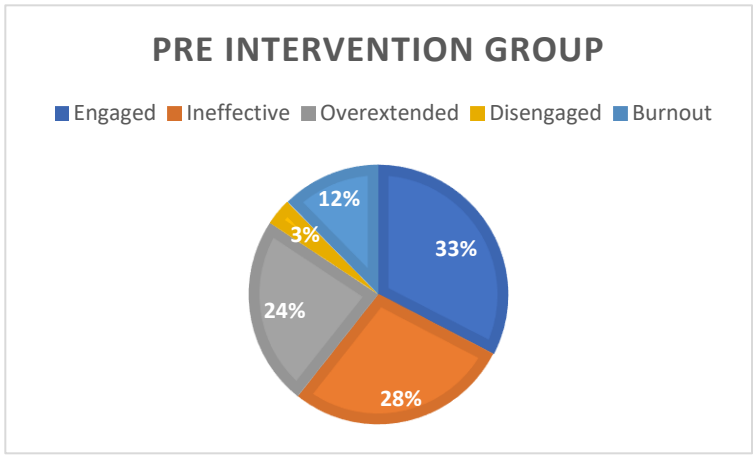


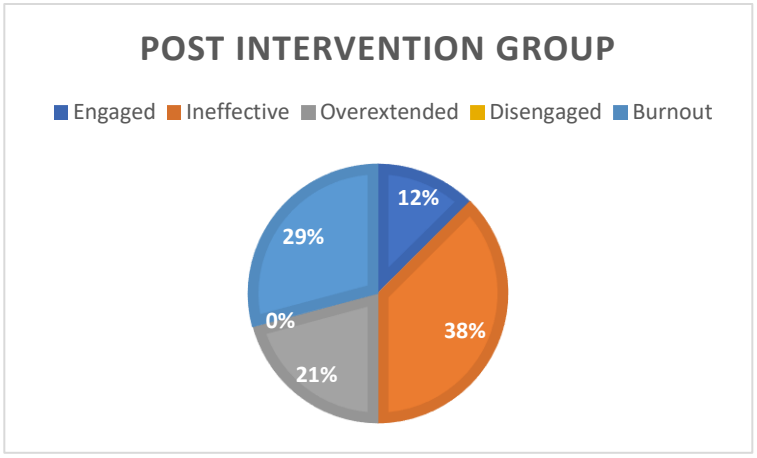


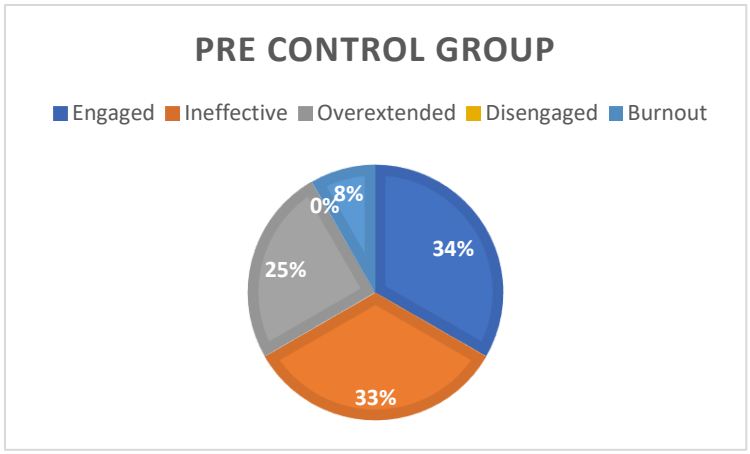
Appendix U

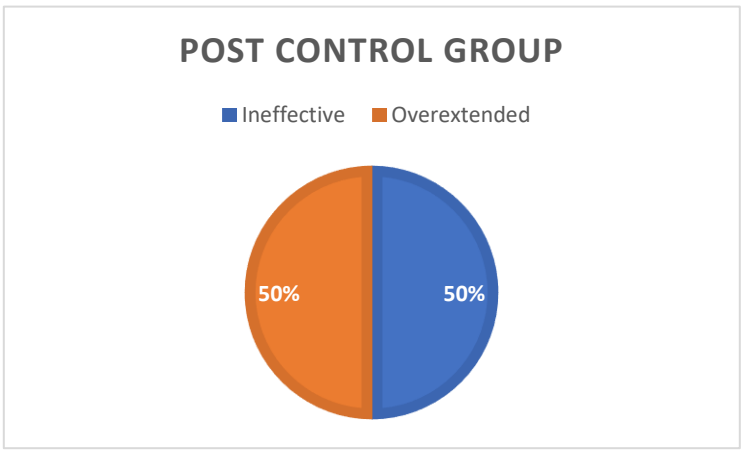
Profile	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Engaged	Low	Low	High
Ineffective			Low
Overextended	High		
Disengaged		High	
Burnout	High	High	

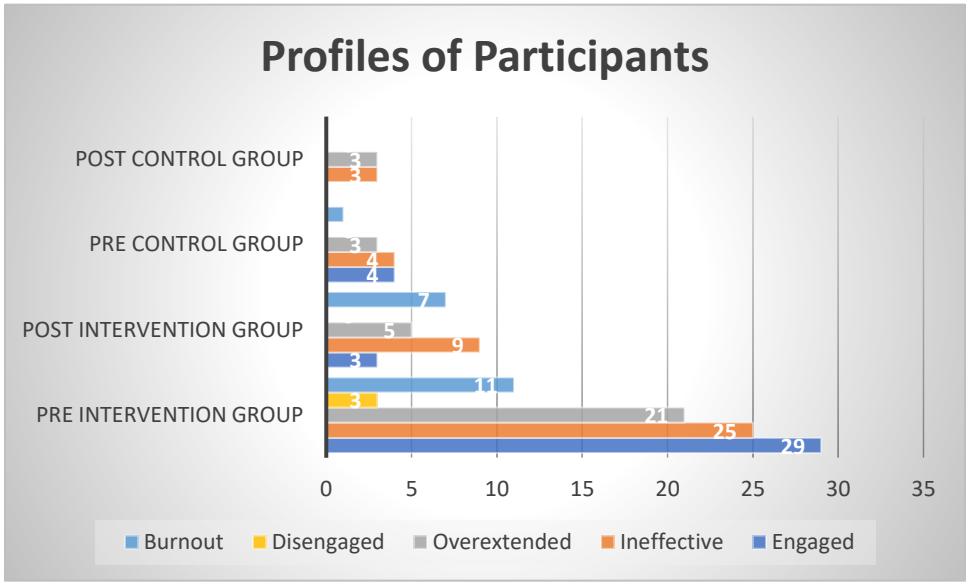
Appendix V


PRE INTERVENTION GROUP
Engaged
Ineffective
Overextended
Disengaged
Burnout
33%
28%
24%
3%
12%


POST INTERVENTION GROUP
Engaged
Ineffective
Overextended
Disengaged
Burnout
12%
38%
21%
0%
29%


PRE CONTROL GROUP
Engaged
Ineffective
Overextended
Disengaged
Burnout
34%
33%
25%
0%
8%


POST CONTROL GROUP
Ineffective
Overextended
50%
50%


Profiles of Participants
POST CONTROL GROUP
PRE CONTROL GROUP
POST INTERVENTION GROUP
PRE INTERVENTION GROUP
3
3
3
4
4
7
5
9
3
11
3
21
25
29
0
5
10
15
20
25
30
35
Burnout
Disengaged
Overextended
Ineffective
Engaged

Appendix W

	Pre Intervention	Post Intervention	Pre Control	Post Control
Highest Scored question in EE with score (indicates potential problem)	I feel used up at the end of the workday. (3.6)	I feel used up at the end of the workday. (4.0)	I feel used up at the end of the workday. (4.0)	I feel I'm working too hard on my job. (4.2)
Lowest Scored question in EE with score (indicates strength)	Working with people directly puts too much stress on me. (1.1)	Working with people directly puts too much stress on me. (1.5)	Working with people directly puts too much stress on me. (0.9)	I feel like I'm at the end of my rope. (1.5)
Highest Scored question in DP with score (indicates potential problem)	I worry that this job is hardening me emotionally. (2.1)	I worry that this job is hardening me emotionally. (3.1)	I feel patients blame me for some of their problems. (2.4)	I feel patients blame me for some of their problems. (2.8)
Lowest Scored question in DP with score (indicates strength)	I don't really care what happens to some patients. (0.3)	I don't really care what happens to some patients. (0.6)	I don't really care what happens to some patients. (0.3)	I feel I treat some patients as if they were impersonal objects. (0.2)
Lowest Scored question in PA with score (indicates potential problem)	I feel exhilarated after working closely with my patients. (3.5)	I feel exhilarated after working closely with my patients. (2.5)	I feel very energetic. (3.1)	I feel exhilarated after working closely with my patients. (2.7)
Highest Scored question in PA with score (indicates strength)	In my work, I deal with emotional problems very calmly. (4.7)	I deal very effectively with the problems of my patients. (5.3)	In my work, I deal with emotional problems very calmly. (4.9)	I can easily understand how my patients feel about things. (5)