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**Use of a Mindfulness-Based Resiliency Intervention to Reduce Nurse Intention to Quit the
Organization**

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This Manuscript Partially Fulfills the Requirements for the
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Abstract

Practice Problem: Nurse turnover is a rapidly growing problem that affects the healthcare industry worldwide. Nursing shortages created by increased turnover have a negative effect on patients and staff and create a financial strain on healthcare organizations.

PICOT: For registered nurses within a select pilot group, does implementation of a mindfulness-based resiliency (MBR) intervention, compared to no intervention, reduce nurse intent to quit over an eight-week period?

Evidence: The positive impact of resiliency on turnover was best described in eight articles and two doctoral papers. Studies using MBR interventions have been shown to improve the coping skills of nurses, and to decrease stress and reduce intention to quit.

Intervention: The implementation of a MBR intervention was the selected intervention completed over an eight-week period. Participants completed a Personal and Organizational Quality Assessment-(POQA-R4) designed to measure personal and job-related constructs pre and post intervention.

Outcome: “Intent to quit” did not show a statistically significant change post-implementation of the MBR intervention. The result of the two-tailed paired samples t-test” was not significant ($p=.179$, $\alpha=0.05$). However, clinical significance was achieved with reduction of stress for the 10 project participants.

Conclusion: Reducing the intention to quit achieved clinical significance by promoting nurse well-being. Consideration should be given for implementation of the MBR intervention with a larger group of nurses.

Use of Mindfulness-Based Resiliency Interventions to Reduce Nurse Intention to Quit

Nurse turnover has become a rapidly growing work force issue that has a far-reaching effect within the healthcare industry. Turnover statistics for bedside registered nurses (RNs) in the United States in 2019 was 15.9% percent (NSI, 2020). The turnover rate for RNs in California as reported in 2018 was 10.4% (Chu & Spetz, 2020). The annual RN turnover rate at the project site in FY19 was 12.8%.

The purpose of this evidence-based practice project was to reduce nurse turnover as measured by “intent to quit”, by providing a mindfulness-based resiliency (MBR) intervention. The scope of the project was to help determine if a work environment where employees use positive and effective coping skills would reverse the effects of perceived stress and reduce nurse intent to quit the organization.

Significance of the Practice Problem

The area of concern at the project site related to new nurse turnover. The turnover rate for 1st year RN employees in FY19 was 33%. This is consistent with findings from a study in 2020 that stated that novice nurses are at risk for dropout from the nursing profession. It was described as most noticeable when these nurses experience a period of stress and anxiety with the role adjustment and when faced with the reality of beginning practice as an RN (Kox et al., 2020)

The average cost of turnover for an RN working within the United States ranges from \$37,700 to \$58,400 per nurse. Hospitals can lose \$5.2 million to \$8.1 million annually in on-boarding and orientation costs (NSI Nursing Solutions, 2016). On the local level at the practice site, nurse turnover rates within the organization were estimated based on job vacancy rates to cost the organization approximately \$3.5 million dollars annually for RN training and

replacement costs. Staffing shortages created by nurse turnover affect staff morale, diminish the ability of nurses to meet patient care needs, and can lead to negative patient outcomes (Mosadeghrad, 2013). In addition, RN turnover creates staffing problems such as the loss of experienced and competent nurses, RN schedule vacancies, and scheduling imbalances of new and experienced nurses (Dewanto & Wardhani, 2018).

Intent to quit an organization appears to be associated with multiple steps and has been identified as a predictor of actual turnover behavior (Lu et al., 2017). According to one study, the majority of nurses leaving an organization began the cognitive process within the year preceding their final decision (Hasselhorn et al., 2015). Another study demonstrated that nurse's intention to quit an organization had significantly predicted their actual decision to resign from the profession. The study also suggests that interventions should take place to reverse a nurse's intent to leave an organization while in the formative phase prior to the last step in the turnover process, demonstrating the importance of implementing an intervention at the "intention" state. (Krausz et al., 1995).

PICOT Question

For registered nurses within a select pilot group (P), does implementation of a mindfulness-based resiliency (MBR) intervention (I), compared to no intervention (C), reduce nurse intent to quit (O) over an eight-week period (T)?

The aim of this project intervention is to determine if evidenced-based practices (EBPs) as compared to standard practices can reduce nurse "intent to quit" the organization by reducing perceived stress through the use of a MBR intervention at a medical center in northern California. The PICOT for this EBP project provides interest for specific evidence-based

interventions that are reproducible and effective for reducing nurse intent to leave the organization, decreasing perceived stress, and increasing nurse coping skills.

Evidence-Based Practice Framework & Change Theory

The EBP formal framework that was incorporated into this project is the Johns Hopkins nursing evidence-based practice (JHNEBP) model. It provides a comprehensive problem-solving guide to clinical decision-making and is tailored to the needs of nurses practicing in clinical settings. The model incorporates a three-step process called PET: practice question, evidence, and translation (Johns Hopkins Medicine, 2017).

The change theory used for this EBP project is the Kotter's change model. This model was selected for its basic step-by-step format that focuses on preparing and accepting change (Aziz, 2017). The phases of change are described as steps that must all be completed to ensure success (Kotter, 2007). There are a total of eight steps associated with Kotter's change model that blend with this EBP project.

Evidence Search Strategy

The three data bases utilized for the evidence search included PubMed, ProQuest and CINAHL. Key words for a combination of searches included "mindfulness", "turnover", "resiliency", "resiliency training", "nurses", "HeartMath™" and "perceived stress". The keyword search process was facilitated by using the mesh term *AND* between words or phrases.

In the ProQuest database, an initial search using the keywords "mindfulness", "resiliency training", "perceived stress" "nurse" and "turnover," as well as filters for English, and within the last five years, resulted in seven citations. By excluding the keyword word "resiliency" and adding "nursing" and filters for scholarly journal and peer reviewed, the search provided 422 citations. Adding the filter for studies and evidenced-based healthcare, provided a final list of 8

studies. A second ProQuest search with the keywords “HeartMath™” and “turnover” within the last five years in English and a scholarly journal and peer review filter resulted in a final seven citations. A third search in ProQuest with the keywords, “perceived stress”, “mindfulness” “turnover”, “nurses” and “resiliency training” and filters for English and last five years, resulted in 70 citations. A final review relevant to the PICOT question narrowed the list to 47 citations.

An initial search in PubMed and CINAHL with the keywords, “mindfulness”, “resiliency”, “nurses” and “turnover” and filters for academic journals, last five years and English resulted in 25 citations. An advanced search in PubMed with MeSH topics “HeartMath™” with filters for: the last 10 years, English, and journal articles, resulted 26 citations. A third search in CINAHL with keywords “HeartMath™” and “resiliency” provided three articles.

A final search was conducted through the HeartMath Institute Research Library through permission of the HeartMath Institute (HMI). The search included the keywords “nurses”, “resiliency” and “turnover” and provided seven citations. A scarcity of available evidence specific to mindfulness, resiliency training and turnover for nurses led to the expansion of search criteria to include relevant studies involving physicians and other professionals and expansion of the time frames for studies to 2010-2020. In addition, reference lists from articles were reviewed for the inclusion of additional relevant studies and it was important to include grey literature from the data base searches and books pertaining to the PICOT.

Evidence Search Results

The search results described previously in four data bases, PubMed, ProQuest, CINAHL and the HeartMath Institute (HMI) research data base resulted in a total of 121 citations. In addition, reference lists from foundational articles including studies involving resiliency training

were reviewed along with meta-analysis articles resulting in 15 additional records. The list of 136 records were narrowed to 110 based on duplicate titles. This list was further reduced to 35 based on exclusion criteria (Figure 1). Examples included studies focused on resiliency as a trait, and interventions designed to foster resilience. In addition, records were excluded where studies comparing resiliency with mental wellbeing, or correlated job retention with specific leadership traits and organizational culture. Articles and citations addressing burnout were included in the primary evidence list to demonstrate the association between burnout, resiliency, and nurse turnover.

The next step included reviewing records that included a project paper for a Doctorate of Nursing practice (DNP) and a Doctorate of Philosophy with the topic of “resiliency training”, “HeartMath™” and “turnover intention”. This provided studies conducted with physician and auditor participants that were included in the primary evidence table. This evidence table (Appendix A) lists a total of 10 articles and the doctoral papers that were considered relevant, peer reviewed studies representing experimental and evidence-based practice projects.

The primary research evidence citations were critically evaluated using the JHNEPB model (Johns Hopkins Medicine, 2017). Articles and grey literature were scored for quality by the JHNEPB rating scale for either A for high, B for good, or C for low. Qualitative studies were scored as A/B high quality/ good quality or C low quality (Appendix C). The level of evidence was scored ranging from level 1 as the highest level of evidence, experimental study/randomized controlled trial (RCT), to level V as the lowest level, based on non-research evidence (Appendix A). The final 10 articles and two papers listed in the Prisma (Figure 1) included one level IA, one level IB, one level IIB two level IIA/B, three level IIB, one level IIIA, two level IIIA/B and one level VA (Appendix D).

Two articles were included in summary of systematic reviews. The first article was an integrative review scored as a level V-A. It provided a comprehensive review of research conducted on nurses and resiliency. The second article, a meta-analysis was scored as level IIIA. It included a matrix that outlined studies associated with resiliency interventions focused on nurses and assessed the rigor of each study (Appendix B).

Practice Recommendation Themes in the Literature

Various themes were located within the literature that relate to stress, nurse burnout, turnover, and MBR interventions. The themes throughout the literature included the mediating effects of resiliency on turnover, intent to leave, and the importance of resiliency in reducing turnover. MBR interventions have also been documented in the literature to improve the coping skills of nurses (Craigie et al., 2016) and have been shown to improve self-confidence, self-mindfulness, communication, and problem-solving skills (McDonald et al., 2012).

The positive impact of resiliency on turnover was described in five articles and two doctoral papers with various terms used for turnover that included intent to quit, intent to leave and intent to stay (Yu & Lee, 2018; Pipe et al., 2012; Larrabee et al., 2009; Smith et al., 2020; D'Alfonso, 2017; Hudgins, 2016; Lackey, 2014). The themes located in one Level IIA study, two Level IIB studies and one Level VA dissertation, employed survey techniques, and validated tools to measure resilience and intent to leave quit both pre and post mindfulness-based resiliency (MBR) interventions (Pipe et al., 2012; Buchanan & Reilly, 2019; D'Alfonso, 2017; Lackey, 2014). Each demonstrated that MBR workplace interventions, were effective in promoting positive strategies for coping and enhancing well-being, both personally and organizationally. This was evidenced in the studies through data demonstrating a decrease in "intent to quit".

A study by Smith et al (2020) was graded as a level IIB, which indicated that resilience exerts a positive effect on reducing turnover intentions. This theme is repeated in four additional quantitative studies describing the effects of burnout, negative coping skills and stress on clinicians, and the role resiliency plays in reducing the effects of each emotional state (Yu & Lee, 2018; Larrabee et al., 2009; Hudgins, 2016, Gensimore et al., 2020). The role that resiliency plays in reducing stress, burnout, and turnover intention is evident. There are negative effects of stress and the potential for resiliency enhancement activities, and training for non-clinical professionals can be adapted to health care settings.

Studies demonstrating the effects of MBR on populations were included in the literature review. Two studies graded as a level IA and level IB looked at MBI resiliency training interventions for radiologists and for the department of medicine faculty and reported the benefits of the intervention on stress reduction and improvements in resiliency (Sood et al., 2014; Sood et al., 2011). Abbreviated training sessions including a single session were shown to have a significant impact on participants well-being and improved resiliency (Sood et al., 2014). These studies along with a third by Magtibay et al. (2017) provide practice recommendations related to the benefit of the low intensity interventions with a shorter duration.

Interventions utilizing HeartMath™ provide a focus on the heart-brain connection, which can be measured by heart rate variability (HRV) as the beat-to-beat interval of the heart rhythm. HeartMath™ self-regulation techniques generate self-induced positive emotions, which increase coherence and reduce the effects of stress (D'Alfonso, 2017). The HeartMath Institute (HMI) provides a description of a coherent state in several studies, as the association of positive emotions and heart coherence measured by HRV (McCarty, 2015). The emotional self-regulation strategies to achieve heart coherence are designed to enable individuals to intervene in the

moment they start to experience stress to facilitate a shift in feelings and obtain physiological coherence as described in the MBR protocol intervention (Figure 2).

Practice Recommendations

Recommendations from the literature review were incorporated into this EBP project including the use of an intervention that provides immediate positive outcomes and the use of EBPs that promote resilience and coherence. Program tools and modules were easily adaptable to health care settings as recommended in the literature. The project intervention also provided an evidence-based approach that adds credibility to the practice change to reduce nurse “intent to quit”. Each of these recommendations correlates with the PICOT question along with the selection of an eight-week timeframe for the EBP project.

Project Site

Project Setting

The project setting was a 355-bed acute care medical center located in central, California. The organization reported 22,000 patient admissions in 2019 and employs 2,700 staff members. The facility is one of the largest private employers in the county with over \$370 million in salary and benefits for FY-2019. The medical center scored an ‘A’ for the Fall 2019 and Spring 2020 Leapfrog hospital safety grade report. It has an intense focus on patient safety as exemplified by their commitment to train all staff and physicians to use best practices, each and every time, to reduce the risk of harm and create a high reliability organization (HRO) and safe patient environment.

Organizational Structure

The facility is one of seven hospitals in the central California division of a larger entity that was involved in a merger with another healthcare system in 2019. This combined

corporation became the second-largest nonprofit hospital chain in the United States, with more than 700 care sites and 142 hospitals in 21 states. The organizational structure includes a facility based executive team that reports to a division president. The nurse executive has accountabilities and oversight for all areas where nursing care takes place in the medical center.

Organizational Need

In discussion with the corporate director for clinical education and professional development, a gap was identified within the organization related to the lack of EBPs that support resiliency within the nursing teams. It was also determined that the COVID-19 pandemic had created a gap in nurses' self-care activities, and the timing was right for an EBP intervention that supports reducing turnover and enhancing the coping skills of nurses. New RNs at the facility listed as 1st year employees had a turnover rate of >20% for the last two fiscal years. This generated additional support for the MBR project intervention from the chief nurse executive (CNE) who saw it as a potential method to reduce new nurse turnover at her medical center and improve the well-being of her staff.

Key Stakeholders

The primary stakeholders for this project include the nursing staff, and the patients, and the families they care for at the medical center. Additional stakeholders included the CNE, the nursing director for operations, the chief medical officer (CMO), the quality director, and a physician champion. It was also important to have an identified front line staff nurse champion stakeholder who served as an advisor and provided the staff nurse perspective for implementation of the MBR intervention.

The SWOT Analysis

The SWOT analysis presented challenges associated with facility level and system level change within the organization and barriers related to the COVID-19 pandemic. A major barrier included a surge in COVID cases at the facility, creating issues for the intervention team and participants due to scheduling conflicts. A blended virtual and live program for nurses participating in the intervention's skill-building activities was required as a back-up plan during the DNP project intervention phase. The weaknesses included limited administrative support and project funding. Both areas were addressed with the CNE project sponsor including opportunities for grant funding and administrative support from the facility education department (Appendix D). The SWOT analysis identified the interprofessional collaboration required for the success of the project. Support from both the CMO and the physician project champion were evident. This support also included a commitment from the current HeartMath™ certified trainers (HMCTs) at the facility to recruit project participants. (Appendix D).

Plan for Organizational Spread

When evaluating possibilities for an intervention's spread within an organization, it is imperative to define the opportunities at various sociological levels. These levels have been classified as *micro*, *meso* and *macro* levels (Cerderbom et al., 2020). An example of a *micro*, or facility level change included the plan for the use of the MBR intervention at unit huddles. A *meso* level change occurred at the organizational level, including the spread of the MBR protocol intervention for use at meetings throughout the division. The *macro* level change would be the organization's commitment to spread the MBR protocol intervention within a variety of sites and medical centers in multiple divisions.

Plans for Sustainability

The preceptor for the project is positioned within the parent corporation, to drive change at the *macro* level and expand the intervention system-wide for clinicians. The intervention also provides an opportunity beyond the DNP project for future use by clinicians with patients and by evaluating the EBP practice intervention measuring the Hospital Consumer Assessment of HealthCare Providers and Systems (HCAHPS) nursing communication scores. Currently four other facilities within the organizations central and northern California regions have launched HeartMath™ MBR interventions. Each of the facilities CNEs support expanding the program in their healthcare settings and within their division.

Implementation

Project Objectives

The project intervention included four mindfulness-based resiliency intervention sessions provided over an eight-week period. The intervention also included modules and tools focused on the domains of resilience and psychological coherence. The project included the implementation a MBR intervention with the objective of reducing nurses' "intent to the quit" scores by five percent. The MBR intervention was developed based on the HeartMath™ domains of resiliency which have been shown to successfully manage stress in high-pressure groups such as RNs.

A sample size of 27 participants was referenced in a foundational HeartMath™ study documenting a resiliency intervention for oncology nurses (Pipe et al., 2012). Another study provided results using the HeartMath™ POQA-R4 tool with 26 healthcare providers in a pretest/posttest model (Buchanan & Reilly, 2019). The intent was to recruit a total of 32 RNs for participation in the HeartMath resiliency intervention sessions. This would have allowed for attrition with a goal of maintaining a size of 30 participants in the EBP intervention.

Participants were provided a series of informational and skill building sessions focusing on a resiliency intervention based on tools from Heart Math's Resiliency Advantage™ program. The MBR intervention was provided to nurses over an eight-week period. A resiliency tool utilizing HeartMath™ techniques for quick coherence was introduced at huddles by the nurse participants (Figure 2).

Pre-intervention surveys with the pilot cohort of participants were completed along with a post-intervention survey. Intended outcomes and objectives included: improving nurse coping skills and reducing perceived stress to improve nurse well-being, and reduce intentions to quit the organization. The following outcome, process measures and objectives were evaluated throughout the project implementation phases and at the conclusion of the intervention. Specific details and times are listed for each item (Table 1).

1. "Intention to quit" high score on the POQA assessment tool will decrease by five percent in eight-weeks.
2. 80 Percent of the MBR intervention homework assignments will be completed by project participants by week four of the project, March 30, 2021.
3. The MBR protocol intervention will be initiated by intervention participants at four huddles a week over a four-week period ending April 24, 2021.

EBP and Change Model

The Johns Hopkins Nursing EBP model was adopted for the implementation of a practice change to support RN resiliency and reduce intent to quit among nursing staff. The evidence from the literature indicates that resiliency interventions such as those found in the HeartMath™ quick-coherence resiliency intervention tool can improve coping skills and promote self-care (Yilmaz, 2017). This translated into a practice change for nurse participants who were presented

and informed on the implementation of this protocol intervention along with additional tools by HeartMath™ certified trainers (HMCTs) at each of the intervention skill building sessions.

(Figure 2).

The steps of Kotter's change model were incorporated into the project at various phases of the intervention. Kotter's first step is to create a sense of urgency as was demonstrated to the facility CNE with the data on the nurse turnover rate within her organization (Mindtools, nd).

The second step included building a powerful coalition with the nurse leaders for the implementation of a MBR intervention at the project site which occurred as they witnessed the stressful effects of the Covid-19 pandemic on their staff (Mindtools, nd).

The third step included creating a vision for change by implementing the MBR intervention with a pilot group who could then articulate the MBR practice change. Step four included communicating the vision as was done through multiple emails and in-person stakeholder meetings conducted by the project coordinator (PC) (Mindtools, n.d.). Removing barriers as described in step five, was accomplished by the PC who continued to remove obstacles to the change process by securing funding for the project and addressing questions and concerns (Mindtools, n.d.).

Step six of Kotter's theory emphasizes short terms wins which was achieved by improving nurse coping skills within an 8 week-period (Mindtools, n.d.). Step seven and eight builds on the change and anchors the change within the corporate culture (Mindtools, n.d.). The latter two steps were achieved by working with the preceptor who was a part of the national leadership team for the organization. Ultimately, this change project has the potential to spread through-out the organization, with a corporate leader who will advocate for the MBR intervention as a model for use at other facilities.

Interprofessional Collaboration for Implementation

The PC provided direct oversight for the implement of the MBR intervention and assisted with data collection for the outcome measures in the EBP project. The PC also oversaw the work of the project interventionist who informed the nursing staff about the MBR intervention. The EBP project team also included nurse leaders and a quality specialist. This provided an interprofessional perspective for the project and intervention. Additional team members included: a contracted statistician, a nursing director, a physician champion, a staff nurse champion, and an executive sponsor. The physician champion supported dissemination of the MBR intervention and project outcomes with the medical staff within the medical center.

Intervention Schedule of Activities and Timeline

Beginning on March 1, 2021, participants took part in initial 2-hour information and intervention review sessions. Additional one-hour skill building, and refresher sessions were timed at two-weeks, four-weeks, and eight-weeks. Participants were encouraged to complete MBR homework assignments between the sessions. This was designed as an outcome measure to determine if additional reinforcement of the intervention tools was required during the project implementation phase (Appendix E & F).

Resources and Budget

The MBR intervention budget had funding from a variety of sources, though primarily costs were funded by the practice site. The majority of expenses included in the budget were the labor costs for the nurse participants during the intervention component of the project. Grant funding and support for intervention materials from a partner facility supported the project cost structure (Appendix G).

Project Coordinator Role

The PC guided and monitored successful completion all of the activities described in the timeline (Appendix E) and project milestones (Appendix F). The PC demonstrated basic financial competencies in keeping the project on budget (Appendix G). Excellent time management skills were evident by completing the project within the stated eight-week implementation time frame. The PC first met with the project steering committee to communicate the project scope and project metrics. Weekly stakeholder meetings included key communication talking points, project progress, and additions or changes to the project plan. It was imperative that the PC lead by example in demonstrating resiliency when challenges or unexpected issues developed during the implementation phase, as well as to exhibit delegation skills for specific activities.

Evaluation Tool

The POQA-R4 known as the personal and organizational quality assessment scale is a validated assessment tool designed to provide an overview of personal and job-related constructs (Pipe et al., 2012). The POQA-R4 was developed by the HIM and has been used in a variety of health care settings to evaluate the impact of HeartMath™ interventions (D'Alfonso, 2017). As a set of validated scales, the POQA-R4 is used to assess factors at baseline (pre-intervention) and again after practicing coherence techniques for two to four weeks (Larkey & Hector, 2014). Standardized scores enable comparisons of individual or aggregate scores with those of pertinent reference groups (Pipe et al., 2012).

The Results

Project Participants

Nurse participants were recruited for the project intervention and skill building sessions by members of the nursing leadership team from the project facility site. The PC met with

interested participants and discussed the interventions, time frames and participant's commitment. Flyers and huddle messages were provided that described the project and were shared at huddles on nursing units. Nurses not in active employment status were excluded from the criteria for participants. The actual number of participants recruited for the project included 13 RNs due to multiple competing priorities with COVID-19 vaccination clinics and significant staffing shortages at the project site.

The PC provided a weekly communication email that was distributed to key stakeholders which included reminders for the skill building and MBR intervention refresher sessions. A set agenda and objectives were provided at each session along with a knowledge assessment and evaluation (Appendix I) The baseline pre-intervention POQA R-4 was administered just prior to the start of the initial 2-hour skill building and MBR intervention review session, and was repeated after the last session (Appendix L)

Statistical Data Analysis

Data were analyzed using Intellectus software, and the Shapiro-Wilk test was not significant based on an alpha value of 0.05, $W = 0.89$, $p = .179$ (Razali & Wah, 2011). This result suggests the differences in "intention to quit" pre-intervention and "intention to quit" post-intervention was produced by a normal distribution (Figure 3). Therefore, a two-tailed paired samples t -test was conducted to examine whether the mean difference of "intention to quit" pre-intervention and "intention to quit" post-intervention were significantly different from zero. The result of the two-tailed paired samples t -test were not significant based on an alpha value of 0.05, $p = .179$, indicating the null hypothesis cannot be rejected.

Demographic Results

Socio-demographic information describes the participants characteristics: gender, age, marital status, employment status, level of education, hours worked per week, number of years in the organization, and number of years in the current job. The demographics results for the 10 matched pairs included seven (70%) who were married or partnered. The majority of participants were ages of 41 to 70 (70%), with a diverse distribution: 30% were 31 to 40, 10 were 41 to 50, 50% were 51 to 60, 10% were 61 to 70. The majority of participants 70% (n=7) had a bachelor's degree or higher; 50% (n=5) reporting a masters and 10% (n=1) a DNP as the highest degree (Appendix H).

Process Measures

Hours worked by participants ranged from 36 to 60 hours per work. Of note was the decrease in weekly hours worked between the pre-intervention and post intervention timeframe by 20% of participants (n=2) who went from between 51hr to >60 hours, down to at or below 50 hours a week. A possible explanation might be that these two participants found benefit in the MBR intervention which supports self-care by finding a balance between work and life activities. Years working within the organization ranged from 1-20 years and time at current position from 1-10+ years. The employment status was split with 50% (n=5) of the participants working in management positions and 50% (n=5) listing their employment status as professional (Appendix H).

POQA-R4 Outcome Measures

The POQA-R4 instrument included 52 questions using 7-point Likert scales “not at all to always” for items 1-40; “strongly disagree to strongly agree” for items 41-52 (Appendix L). Cronbach's coefficient alpha was used to determine internal consistency with all primary scales demonstrating reliability (> 0.75). Across the other eight subscales, the coefficient ranged from

0.76, for “health symptoms” to 0.90 for “emotional buoyancy” “intention to quit” and “anxiety/depression” thus measuring unidimensionality (Pipe et al., 2012) (Table 4). This indicates that the instrument is highly reliable in measuring the constructs of interest for this project.

The results of the POQA-R4 survey administered pre-intervention and repeated post intervention at eight-weeks are presented as mean raw scores for the four primary scales and the nine subscales. The scales and subscales have been grouped into positive and negative factors. The direction of change is indicated by a positive or negative number, demonstrating if the scale score increased or decreased from the initial point of measurement. Interpretation of the scores includes noting the change in the direction after the intervention. An important example includes the positive directional movement downward for relational tension and stress. Conversely, an upward directional movement is noted for emotional buoyancy and emotional commitment. Observed differences in mean scores that are statistically significant are flagged in the table by one or more asterisk, signaling the level of significance (Table 3).

The final 10 participants surveys were matched by a unique ID number and represent the subset of respondents who had usable data from both time points. Primary scales for these participants reported positive shifts in organizational stress (-15%) emotional vitality (+16%), emotional stress (-24%), and physical stress (-26%). Of significance is the POQA-R4 sub-scale for stress, demonstrating a significant reduction from pre-intervention of (-48%).

Process Measures

A data file was set up in a spread sheet to record the number of completed homework assignments. Descriptive analysis results showed that 70% (7) of the homework logs were received at week 2, 50% (5) of the logs at week 4 and 10% (1) log at week eight. More

assignments were received in the beginning of the intervention contributing to a 60% completion rate by week four, 20% below the stated goal of 80%. Results from the huddle logs indicated that a total of eight huddles were conducted by project participants using the MBR intervention during the first four weeks of the project implementation, which exceeded the goal of four huddles by week four.

The written comments received from participants on the evaluations and knowledge assessments were all positive. Some of the statements included: “The tools and the knowledge shared is applicable to my job and my personal life”, “Learning so many tools and techniques to help me bring a sense of peace and balance to my life and the lives of others”, and “I am more capable of dealing with stressful moments”.

Data Integrity

When the data analyses process was completed, the contracted statistician and project coordinator (PC) evaluated the degree of missing data. In consultation with the HeartMath Institute (HMI), specific instructions were provided that when the POQA-R4 questionnaires were evaluated pre and post intervention, only matched pairs were to be included for final analysis. The homework and the MBR intervention logs were also evaluated for missing data. Participants were asked to evaluate accuracy and completeness by validating that correct data was entered into their logs prior to submission. There were no penalties for not completing logs or homework assignments, which was clearly conveyed by the HeartMath certified Trainers (HMCTs) to the nurse participants.

Protection of Human Rights and Confidentiality

The project was approved through the University of St. Augustine for Health Sciences (USAHS) Nursing Evidence-Based Practice Review Council (EPRC) ensuring the proposal met

the elements of a DNP project including the identification of an organizational need for an EBP project (USAHS, 2020). The approval process required through the organization at the project site as a DNP sponsored translation project, required Institutional Review Board (IRB) approval at the facility level. This included a thorough review of the project plan and compliance with human-subject protection. It was an expedited review, as minimal risk had been identified for participants and the project did not include the use of protected health information (PHI).

The data was collected and stored in a lock location in the PC's office. The project data files stored on the PC's computer were password protected for security purposes. When surveys were collected at the completion of the intervention, they were immediately placed in an envelope, sealed, and taken to the HeartMath Institute (HMI) by the PC for evaluation and analysis. Pre-intervention scores were compared to norms from a large (HMI) convenience sample of 5,971 health care workers.

Clinical Significance

The clinical significance or usefulness of this project demonstrates that the intervention improves both the well-being of the nurse and the well-being of the organization. The "organizational stress" scale from the POQA-R4 measured the degree to which employees felt negatively pressured by stressors and conflicts at work and in their personal lives. It is comprised of three components including "pressures of life", "relational tension" and "stress" (Appendix J). High scores on this scale correlates to the stressors and tensions employees feel. These stressors can interfere with work performance and also signal an intention to quit. The scores demonstrated a positive trend post-intervention with a percentage drop of -15% indicating scores moved in a positive downward trend on the Likert scale for this particular group of questions. The average of the groups mean scores pre- and post-intervention were compared to derive the

percentage change (Table 3). The POQA–R4 question regarding stress saw a significant reduction down to 10 at the end of the eight-week intervention from a pre-questionnaire average of 50 on a scale ranging 0–100. (Appendix K). This is clinically significant as poor scores on this stress subscale suggest that employees may be feeling overwhelmed by various sources of stress in their lives as a whole.

The built-in sustainability with this project is related to the spread of the mindfulness-based resiliency (MBR) project to other organizations within the hospital system. The intent is that a cycle will occur in which nurse's experience reduced perceived stress and improve their coping skills that would be reflected in the project site's HCAHPS nurse communication scores.

Impact

The project's aim was to determine if implementation of a MBR intervention within a pilot group of nurses would decrease nurse's intent to quit the organization. An MBR intervention was implemented utilizing evidence-based emotional regulation tools to effectively manage perceived stress and reduce negative emotions as a means to reduce nurse turnover. The project change was impacted by the COVID-19 pandemic in terms of the need for a resilience program for nurses. Altered practices within the project site included implementation of MBR tools utilizing quick coherence techniques at huddles. It also included a forum for nurses to discuss the emotional tool created by the pandemic at both a personal and professional level and to learn new techniques for managing such stressful events. It provided an opportunity for self-care that came at an important time for both the facility and the project participants.

The benefits of this eight-week intervention implementation program, that is both useful and cost effective, makes it appropriate for spread within the project facility site and within the larger healthcare organization. The MBR intervention could provide some cost savings

associated with reduction in nurse turnover predicted to occur following the Covid-19 pandemic (Said & El-Shafei, 2020).

Of the 10 participants in the pilot group of nurses, five have committed to becoming HeartMath™ certified trainers (HMCTs). Continuation of the change will be managed by this group of HMCTs and will be expanded to include more nurses at the facility. The project preceptor as a national leader within the health care organization (HCO), has committed to sharing the effectiveness of the MBR intervention at the system level with the data that supports expansion of the pilot throughout the HCO. Improvements associated with the intervention implementation include developing additional staff nurse champions to support MBR intervention skill-building for all clinical nurses, as well as those in management positions.

Limitations of the intervention included the small number of the project participants, thus, limiting statistical significance. A larger sample size may have achieved statistical significance. Time was also a limiting factor as the project implementation coincided with the COVID-19 vaccine clinics that were staffed by some of the project participants.

Dissemination

Results from the EBP project were initially shared virtually as a slide presentation with the Chief Nurse Executive (CNE) and the physician champion. An emphasis was placed on the clinically significant results during discussions with the executive team on expanding implementation within the project site. The results were also shared as an interactive slide presentation to the project participants and recorded so participants could view at a later date if unable to attend the virtual presentation.

Results and project outcomes have been shared with the project preceptor who serves in the role as national director for clinical education and professional development. Results will

also be shared with system level stakeholders within the organization. The audience will include representation from assorted healthcare disciplines dedicated to decreasing nurse turnover by promoting the MBR intervention.

The project will be archived at the University of Saint Augustine for Health Sciences Library, Scholarship and Open Access Repository (SOAR). This allows for access to scholarly projects throughout the academic and professional nursing community. The project will also be submitted to the HeartMath Institute for inclusion in their on-line research and dissertation database.

A goal will be to submit the DNP project manuscript for publishing considerations to the Journal of Nursing Administration (JONA) and as an abstract for a poster board presentation at the American Organization for Nursing Leadership™ (AONL) annual conference. JONA is committed to presenting practicable content informed by data (JONA, n.d.) and AONL is interested in projects that can be replicated and support the well-being of nurses. The DNP project manuscript will also be developed into a professional publication for submission to the Journal of Nursing Management (JONM) and the Journal for Nurses in Professional Development (JNPD). Both publications focus on promoting and reporting evidenced-based best practices in leadership and education. The project preceptor and academic colleagues will assist with the peer review process prior to submission. This will follow a thorough review and implementation of manuscript guidelines from each publication.

Conclusion

The intent of this project was to determine if the implementation of an MBR intervention would improve nurse coping skills and reduce nurse perceived stress and intention to quit the organization. Nurse participants were informed on the MBR intervention at four sessions over an

eight-week period. Measurements included statistical outcomes from baseline and eight-week post-intervention implementation. The project was based on the Johns Hopkins Nursing EBP framework (JHNEBP) and the Kotter change model. The project participants and project team members were presented in the context of a willingness at the project site for a MBR intervention. The literature review provided practice recommendations that were incorporated into the project including data collection and intervention timelines. Clinical and statistical significance for all measures from the validated POQA- R4 tool were presented and included in a table and appendices format.

Though “intention to quit” did not show a statistically significant change after implementation of the MBR intervention, clinical significance was achieved with reduction of stress for the 10 project participants. In the future, using a larger group may provide statistical significance. The project helped determine that a work environment where employees use positive and effective coping skills can reverse the effects of perceived stress and reduce nurses' intention to quit the organization. Given the negative impact of stress and burnout in nurses, particularly during the COVID-19 pandemic and the cost of nurse turnover for an organization, it was important to provide evidence-based tools found in the MBR intervention that builds resilience.

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Table 1*Project Steps - Objectives*

Project Objective	Description	Data source	Time frame for collection
“Intention to quit” high score on the POQA assessment tool will decrease by five percent in eight-weeks	Nurses completed the POQA assessment questionnaire as denominator and nurses demonstrating high score >43% on the intention to quit domain as the numerator.	Participants completed the Personal and Organizational Quality Assessment (POQA-R4) survey questionnaire pre and post intervention.	March 1, 2021, and April 26, 2021
Use of Mindfulness - based Resiliency Intervention at four huddles a week over a four-week period	Number of times MB (HeartMath) resiliency intervention used once per day at a facility huddle (between a minimum of 0 to a maximum of 7) divided by 7 days a week	Recorded on a log by intervention participants.	March 30-April 26, 2021
Completion of 80% of homework assignments by EBP project participants	Participants recorded completion of homework assignments between skill building sessions	Recorded on a log by participants as a process measure.	March 2nd to March 30, 2021

Table 2*Data Collection and Statistical Test*

Measure	Statistical Test	Timeline
POQA scores for coping skills domain-% - Outcome measure	Paired t-test	Baseline- March 1, 2021 8-weeks- April 26, 2021
POQA scores intention to quit domain-% - Outcome Measure	Paired t-test	Baseline- March 1, 2021 8-weeks- April 26, 2021
Completed intervention skill building homework assignments-% -Process Measure	Univariate- Quantitative	2 weeks- March 15, 2021 4 weeks- March 29, 2021 5 weeks- April 5, 2020 8 weeks at completion of intervention- April 26, 2021
# of times MB Resiliency (HeartMath) intervention used per week as % reported - Process Measure	Univariate- Quantitative	2nd week March- 15,2021 4th week March- 29,2021

Table 3*Mean Scores for POQA-R4 Pre-Post Intervention**March 1, 2021-April 23, 2021*

Domain	Pre	Post	% Change	Significance	P
ORGANIZATION STRESS	4.10	3.47	-15%	NS	0.162
Pressures of Life	4.10	4.04	-1%	NS	0.877
Relational Tension	4.07	3.03	-26%	NS	0.185
Stress	9.40	4.89	-48%	0.05	0.011*
EMOTIONAL VITALITY	4.97	5.75	16%	0.01	0.003*
Emotional Buoyancy	5.10	5.91	16%	0.01	0.004*
Emotional Contentment	4.83	5.56	15%	NS	0.052
EMOTIONAL STRESS	2.50	1.90	-24%	0.01	0.004
Anxiety & Depression	2.53	2.00	-21%	0.05	0.036*
Anger & Resentment	2.46	1.81	-26%	0.01	0.007*
PHYSICAL STRESS	3.35	3.35	-26%	0.05	0.010
Fatigue	4.00	2.64	-34%	0.01	0.001*
Health Symptoms	2.92	2.36	-19%	NS	0.078
INTENTION to QUIT	2.85	1.75	-39%	NS	0.179

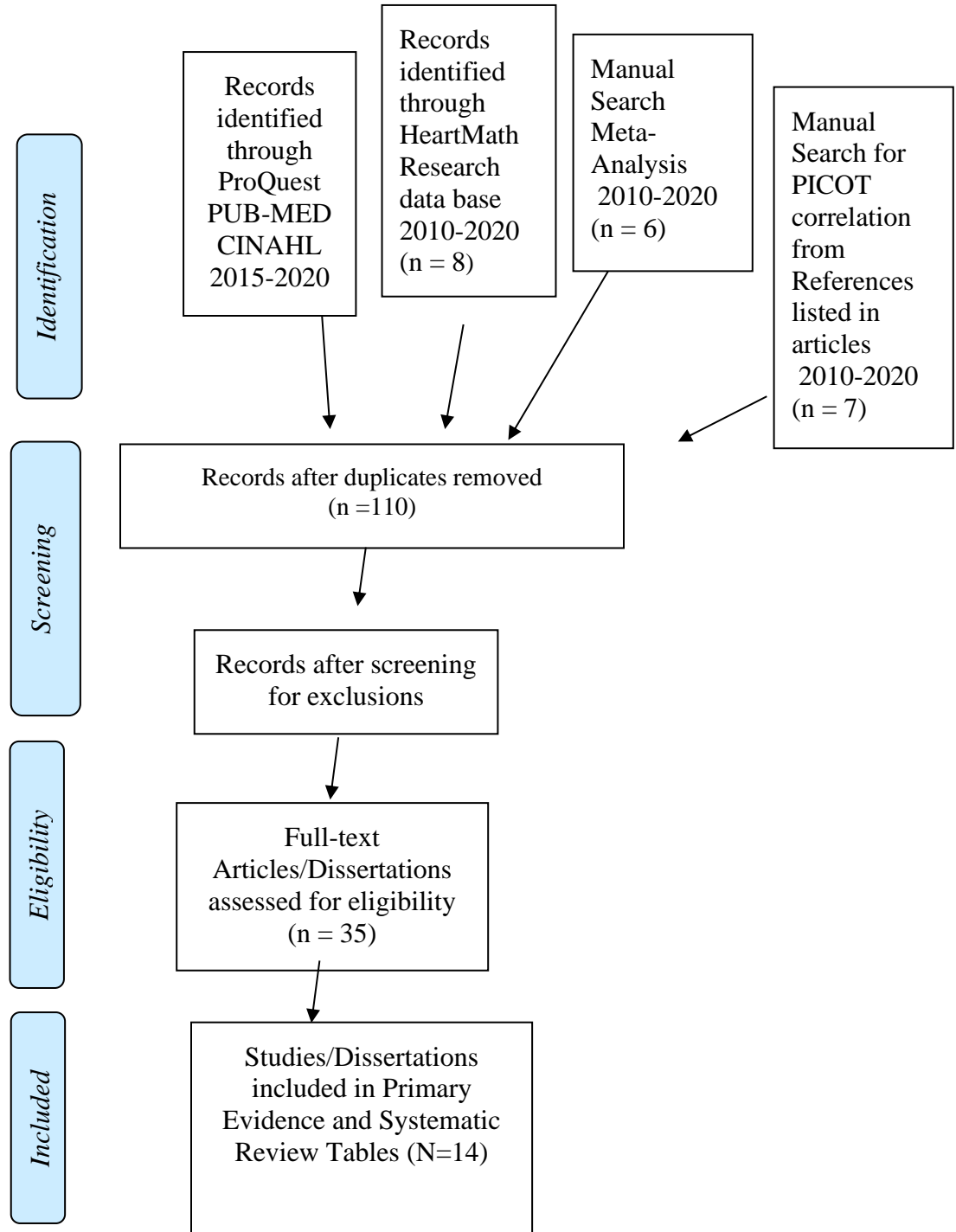
Paired t test significance; * $p < 0.05$,

Table 4*Results from Analysis of Internal Consistency of Measurement*

	Number of Items	Internal Consistency α
EMOTIONAL VITALITY	14	0.92
Emotional Buoyancy	8	0.90
Emotional Contentment	6	0.86
ORGANIZATIONAL STRESS	9	0.76
Pressures of Life	5	0.78
Relational Tension	3	0.69
Stress	1	-
EMOTIONAL STRESS	15	0.92
Anxiety & Depression	7	0.90
Anger & Resentment	8	0.85
PHYSICAL STRESS	10	0.87
Fatigue	4	0.87
Health Symptoms	6	0.76
INTENTION to QUIT	2	0.90

Figure 1

PRISMA Model

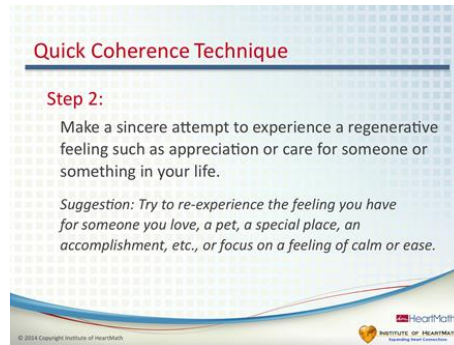
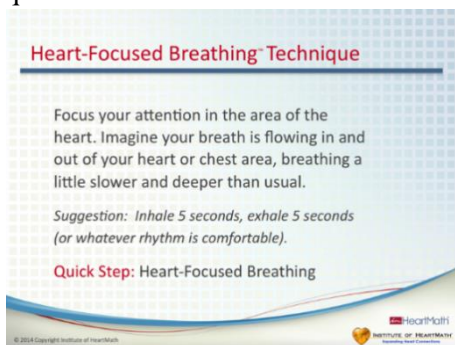


Note. Adapted from Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLOS Medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>

Figure 2

Intervention - Mindfulness-Based Resiliency

1. Use of Quick Coherence Technique at department and unit huddles. Explain the evidence-based practice and mindfulness-based resiliency (MBR) intervention. Review the steps and provide a quick coherence card:



2. Review 2 key features at huddle:
 - a. Use Quick Coherence especially when you begin feeling a draining emotion such as frustration, irritation, anxiety, or anger.
 - b. Renewing emotions or regenerative feelings include: Appreciation, Kindness, Care, Love, Tolerance, Courage, Honor, Confidence, Enthusiasm, Joy
3. The first huddle session will be supported by a HeartMath™ Certified Trainer (HMCT) or HeartMath™ Interventionists.
4. Record the number of times quick coherence interventions competed at each huddle per week over 2 weeks.
5. Describe Heart Rate Variability (HRV) and Emotional Coherence at huddles in-- week 3.
6. **Script:** This image is a picture of Heart Rate Variability (HRV), It measures the beat-to-beat variations and plots it on a graph. It is a great window in the Autonomic Nervous System (ANS) and shows how the sympathetic and parasympathetic branches are activating, and if they are in sync (coherence) or out of sync (in coherence). This is one data set for an individual who was asked to simply recall (experience the feeling) of something that was frustrating shown on the top graph that created a stress response, and the heart rhythms become very erratic. Any depleting emotion (such as anger, fear, frustration, etc.) will trigger this response. The second graph shows when we recall (and re-experience) renewing feelings, such as appreciation, care, love, kindness as the heart rhythms instantly shift into a coherent state (harmonious, effective use of energy) reflected in our HRV as the foundation of **self-care**, inner balance and efficient energy use which facilitates health, healing, and mental clarity.

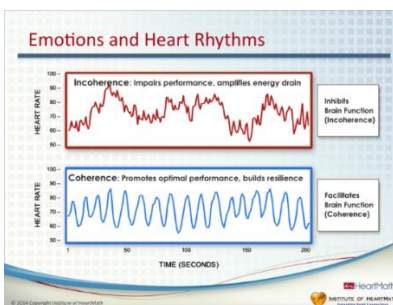
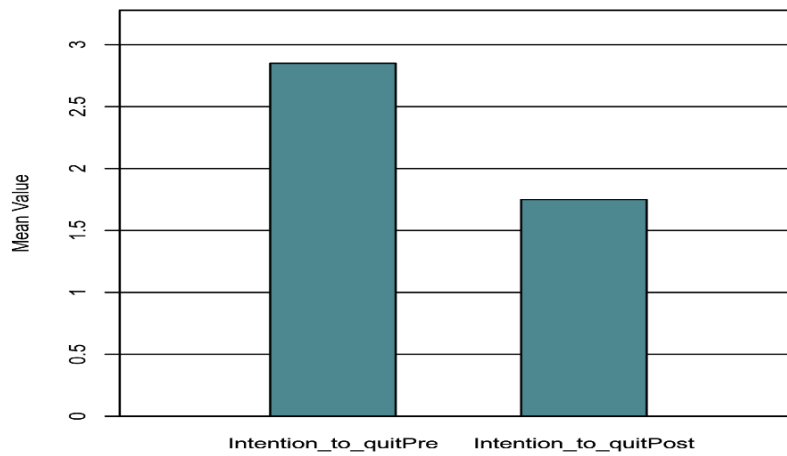


Figure 3

Two-Tailed Paired Samples t-Test

Difference Between Intention to Quit Pre and Intention to Quit Post-Intervention

Intention to quit Pre-Intervention		Intention to quit Post-Intervention		<i>t</i>	<i>p</i>	<i>d</i>
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
2.85	1.80	1.75	1.55	1.46	.179	0.46



Appendix A

Summary of Primary Research Evidence

Citation	Design, Level Quality Grade	Sample Size	Intervention Comparison Tools	Theoretical Foundation	Outcome Measures & Definition	Usefulness Results Key Findings
<p>Yu, M., & Lee, H. (2018). Impact of resilience and job involvement on turnover intention of new graduate nurses using structural equation modeling. <i>Japan Journal of Nursing Science</i>, 15(4), 351–362. https://doi.org/</p>	<p>Level-III A/B</p>	<p>371 new nurses participated in a nationwide survey who were working in hospitals for [less than or equal to]18 months between July and October, 2014</p>	<p>A cross-sectional study and a structural equation modelling approach to measure resilience, the 10 item Connor–Davidson Resilience. Turnover intention measured by using a tool that consists of four items (e.g., “I am thinking about leaving but I cannot because the conditions are not right”) each are scored on a five-point Likert scale. Higher scores indicate higher levels of turnover intention. The Cronbach’s alpha was 0.84 in this study.</p>	<p>The conceptual framework of this study consisted of the WES and emotional labor and burnout as stress factors as exogenous variables, and turnover intention as an endogenous variable. Resilience and job involvement were endogenous factors that were affected by the WES & stress factors role as mediators that affected the turnover intention</p>	<p>Evaluation of the correlations among the observed variables revealed that turnover intention was negatively correlated with the WES score ($r = -0.26, P < 0.001$), while it was positively correlated with emotional labor ($r = 0.40, P < 0.001$) and burnout ($r = 0.61, P < 0.001$), but it was negatively correlated with resilience ($r = -0.27, P < 0.001$) and job involvement ($r = -0.48, P < 0.001$).</p>	<p>Resilience mediated the effect of emotional labor and burnout which directly affect turnover intention. The improvement of resilience and job involvement is an important strategy to help new graduate nurses to adjust and to reduce turnover</p>

10.1111/jjns.12210						
<p>Pipe, T. B., Buchda, V. L., Launder, S., Hudak, B., Hulvey, L., Karns, K. E., & Pendergast, D. (2012). Building personal and professional resources of resilience and agility in the healthcare workplace. <i>Stress & Health: Journal of the International Society for the</i></p>	<p>Level II-A</p>	<p>Sample Size: 29 oncology staff and 15 health care leaders</p>	<p>The intervention consists of two HeartMath workshop sessions, the 5hr ‘Transforming Stress’ session that focuses on the impact of stress on the body–mind–spirit and several techniques for learning how to better self- regulate stress responses by shifting into a more coherent physiological state. Participants utilized an emWave heart rate variability technology (HeartMath LLC, Boulder Creek, CA, USA) Research Tools Used: POQA-R scores at baseline and 7 months using paired t-tests as a validated tool</p>	<p>The conceptual model that guided the implementation was Jean Watson’s Theory of Human Caring (Watson, 2009) that emphasizes the importance of caring for self, colleagues, and others as a means to bringing about a more healing. The study used concepts of positive coping and resiliency, as a structured educational program designed to teach individuals to recognize their stress symptoms and to use learned skills to counteract the negative effects of stress</p>	<p>Employee satisfaction, Turnover, Incremental Overtime and patient satisfaction improved during the 7-month program demonstrated Statistically significant differences ($p < 0.001$) were found for each of the personal indicators (positive outlook, gratitude, motivation, calmness, fatigue, anxiety, depression, anger management, resentmentfulness and stress symptoms) Specifically scores for “intention to quit” showed a slight reduction at the 7-month period as measured by Paired t-test scores</p>	<p>Stress and its symptoms are problematic for health care workers as evidenced by baseline data. Interventions were more effective when taught to groups who normally work in close proximity and the person-to-person interaction strengthens much of the learning opportunities</p>

<p><i>Investigation of Stress</i>, 28 (1), 11–22</p>						
<p>Sood, A., Sharma, V., Schroeder, D., & Gorman, B. (2014, November). Stress management and resiliency training (SMART) program among department of radiology faculty: A pilot randomized clinical trial. <i>EXPLOR E</i>, 10(6), 358-362. Retrieved from http://dx.doi.org/1</p>	<p>Level I-B</p>	<p>22 physicians completed the study</p>	<p>Physicians were randomized to a single blind trial to the SMART program as a single 90-minute group session or a wait list for 12 weeks Validated Research Tools Used: The Perceived Stress Scale, Linear Analog Self-Assessment Scale, Mindful Attention Awareness Scale and Connor-Davidson Resilience Scale. Outcomes measured at 2 weeks and week 12. The program teaches learners to focus their attention in the external world, to defer unrefined judgments and are taught to cultivate and guide their interpretations by five higher-order principles: gratitude, compassion, acceptance, meaning, and forgiveness.</p>	<p>The authors reference pilot studies that have investigated interventions to reduce physician distress, citing several of the interventions are intense and entail long training times and commitment for daily practice. This study was designed to test the efficacy of a program to decrease stress and anxiety and enhance resilience and quality of life among Department of Radiology faculty Given physicians' time constraints, the authors developed an abbreviated program that can be learned in one or two brief sessions</p>	<p>Measures of stress (PSS) decreased from 25.0 5.9 at baseline to 19.6 & 5.6 at the end of the 12-week period Resilience (CD-RISC) increased from 70.0 ±12.8 at baseline to 73.0 ± 11.5 in the active arm with no statistically significant change between the two groups</p>	<p>A single session to decrease stress among radiologists is feasible. The intervention demonstrated significant clinical improvements in anxiety stress, quality of life and meaningful attention. The low intensity of the intervention argues favorably for its scalability and broader dissemination</p>

<p>0.1016/j.explore.2014.08.002</p>						
<p>Larrabee et al., (2009), J. H., Wu, Y., Persily, C. A., Simoni, P. S., Johnston, P. A., Marcischak, T. L., Mott, C. L., & Gladden, S. D. (2009). Influence of stress resiliency on RN job satisfaction and intent to stay. <i>Western Journal of Nursing Research</i>, 32(1), 81–102. https://doi.org/10.1</p>	<p>Level III A/B</p>	<p>464 RNs returned completed questionnaires</p>	<p>This predictive nonexperimental study used an anonymous survey of RNs employed in four rural and one urban acute care hospitals in West Virginia. Intent to stay was measured using Price and Mueller’s two intent-to-stay items (1981), with a 5-point Likert-type response scale (0 = Will definitely leave in the near future; 4 = Definitely will not leave in the near future). Scores are summed. Higher scores indicate intent to stay. This instrument was used to allow comparison with Price and Mueller’s classic study on nurse turnover & Job satisfaction.</p>	<p>The development of the proposed causal model for this study was based on theory, logic, and prior empirical evidence. The model proposes that stress resiliency predicts psychological empowerment and job stress (Situational Stress and Personal Stress), that psychological empowerment predicts job stress and job satisfaction and that job stress, psychological empowerment, and nurse characteristics (age, years in current job, years since graduation, and RN education level) predict RN job satisfaction. The model also proposes that job satisfaction and nurse characteristics (age, years in current job, years since graduation, and RN education level) predict intent to stay</p>	<p>Job satisfaction was the primary predictor of intent to stay. The five predictors of intent to stay were job satisfaction, low situational stress, age, more years since RN graduation, and lower level of education. Together, these five predictors explained 20% of the variance in intent to stay. Of those five predictors, job satisfaction had the highest standardized path coefficient.</p>	<p>Enhancing stress resiliency has the potential to directly increase persons’ psychological empowerment, reduce their situational stress, and increase job satisfaction, leading to increased intent to stay.</p>

<p>177/0193 94590934 3293</p>						
<p>Smith, K.J., Emerson, D. J., Boster, C. R., & Everly, Jr, G. S. (2020). Resilience as a coping strategy for reducing auditor turnover intentions . <i>Accounting Research Journal</i>, Vol. 33 No. 3, pp. 483-498. http://doi.org/10.1108/ARJ-09-2019-0177</p>	<p>Level II-B</p>	<p>Study with 322 auditors/N</p>	<p>The structural equations modeling procedures examine an expanded role stress model to assess the nature and extent that resilience plays in reducing stress, burnout, job dissatisfaction and turnover intentions. Several validated and reliable tools were used including: the Maslach burnout inventory, Turnover intentions: three items drawn from Donnelly and Ivancevich (1975) and Resilience: 10-item CD-RISC10 scale</p>	<p>This study assesses an expanded role stress model that incorporates established role stressor and resilience measures as exogenous antecedents, stress arousal and burnout as mediators, and job satisfaction and turnover intentions as the outcomes. In so doing, it provides evidence for the potential of resilience enhancement interventions to reduce the negative effects of role stress, stress arousal, and burnout on the proclivities for public accounting staff to voluntarily leave their employers.</p>	<p>Results indicated that resilience exerts a significant indirect negative influence on turnover intentions (0.180) [13] via its associations with stress arousal, burnout and job satisfaction. The indirect effects of the role stressors and stress arousal on job satisfaction and turnover intentions can be interpreted in the same manner</p>	<p>This study’s findings suggest that the key to enhancing job satisfaction and decreasing turnover intentions might lie not only on role theory factors but also in strategies to reduce burnout through interventions such as resilience training</p>
<p>D’Alfonso, J. (2017).</p>	<p>Level V-A</p>	<p>12 CNEs</p>	<p>This DNP EBP Project intervention provided instruction and</p>	<p>The conceptual and theoretical framework for this project was Jean</p>	<p>A pre-intervention and 6-month post-intervention assessment (n=12) was conducted, and the</p>	<p>Findings validated concerns regarding the prevalence of stress</p>

<p>Aligning theory and evidence-based practices to enhance human flourishing in nurse executives (DNP Project). Retrieved from https://repository.usfca.edu/do/search/?q=heartmath&start=0&context=10109737&facet=</p>	<p>Grey literature</p>		<p>interactive learning on the core concepts of caring science and evidence-based self-care best practices based upon the science and EBP stress management techniques developed by HeartMath.</p>	<p>Watson’s theory of human caring, a continuously evolving theory that can be interpreted as both a grand theory and a middle-range theory This project’s primary program goal was to promote resilience and support NELs working in highly stressful environments</p>	<p>results for 12 matched pairs were statistically significant for improved personal and organizational indicators of stress over time, indicating improved vitality, engagement, and sustainability. Findings validated concerns regarding the prevalence of stress in the nurse executive group and demonstrated positive outcomes for key performance indicators that support personal wellbeing, resilience, retention, and success.</p>	<p>in the nurse executive group and demonstrated positive outcomes for key performance indicators that support personal wellbeing, resilience, retention, and success. One nurse executive identified she no longer felt like leaving the organization and nurse executive leader turnover have decreased measurably following the intervention. The relative low costs, positive outcomes, and flexible format of this program makes it feasible to support spread</p>
<p>Sood, A., Prasad, K., Schroeder, D., & Varkey, P. (2011). Stress management and resilience training</p>	<p>Level I A</p>	<p>32 physicians</p>	<p>Physicians were randomized in a wait-list controlled clinical trial to either the SMART intervention or a wait-list control group for 8 weeks. The intervention involved a single 90 min one-on-one training in the SMART program. Primary outcome</p>	<p>The present study was designed to test the efficacy of a similar program to decrease stress and anxiety and enhance resilience and quality of life among Department of Radiology faculty, practicing at a tertiary care center. At date of publication no previous</p>	<p>For the active arm, a significant increase was observed in the Connor Davis Resilience Scale [paired t-test, $t(19)=4.54$, $p<0.001$], and significant decreases were observed in the Perceived Stress Scale [paired t-test, $t(19)=-2.95$, $p=0.008$] and Smith Anxiety Scale [paired t-test, $t(19)=-4.31$, p A statistically significant improvement in resiliency,</p>	<p>This pilot study demonstrates that a brief intervention of resilience training among physicians is feasible. The study also suggests that the intervention has a potential to improve resiliency, stress, anxiety, and quality of life among physicians and the low intensity of the intervention makes this less likely and argues favorably</p>

<p>among Department of Medicine faculty: a pilot randomized clinical trial. <i>Journal of General Internal Medicine</i>, 26(8), 858–861. https://doi.org/10.1007/s11606-011-1640-x</p>			<p>measures assessed at baseline and week 8 included the Connor Davidson Resilience Scale (CDRS), Perceived Stress Scale (PSS), Smith Anxiety Scale (SAS) and Linear Analog Self-Assessment Scale (LASA).</p>	<p>study has tested the efficacy of stress management intervention among radiologists.</p>	<p>perceived stress, anxiety, and overall quality of life at 8 weeks was observed in the study arm compared to the wait-list control arm</p>	<p>for its scalability and broader dissemination</p>
<p>Hudgins, T. A. (2016) Resilience, job satisfaction and anticipated turnover in nurse leaders. <i>Journal of Nursing Management</i>, 1, 62. https://doi.org/10.1</p>	<p>Level III-A</p>	<p>89 Nurse Leaders</p>	<p>This quantitative study investigated the relationship between the variables of resilience, job satisfaction and anticipated turnover. It included a survey of nurse leaders using a demographic data sheet, validated and reliable Connor Davidson resilience scale (CD-RISC), a single-item job satisfaction (JS) scale, and the anticipated turnover scale (ATS).</p>	<p>The framework and concept analysis includes the resilience model developed by Polk and a mid-range nursing theory that is multi-dimensional and described by four patterns found in the resilience literature.</p>	<p>CD-RISC correlated 0.53 with ITR, indicating that resilience has a significant relationship with a nurse leader’s intent to remain in a leadership position.</p>	<p>A stable nursing team has a positive impact on improving patient outcomes. To mitigate the impact of a nursing shortage, nurse leaders can enhance their own resilience and then recruit, hire and retain resilient staff nurses in an effort to improve nurses’ intention to remain. With higher resilience, nurse leaders are more likely to intend to remain in their leadership positions.</p>

<p>111/jonm.12289.</p>						
<p>Buchanan , T.M., & Reilly, P.M., (2019). The impact of heartmath resiliency training on health care providers. <i>Dimensions of Critical Care Nursing</i>, 38(6), 328–336. http://doi.org/10.1097/dcc.0000000000000384</p>	<p>Level II-B</p>	<p>26</p>	<p>The intervention utilized a pretest/posttest model. Participants were asked to complete the validated Personal and Organizational Quality Assessment–Revised 4 Scale (POQA-r4 2016). prior to the start of class and again 4 to 6 weeks after HeartMath Resiliency training. The intervention included providing the HeartMath Resiliency training curriculum in a 1day, 8hour session.</p>	<p>The theoretical framework includes the Jean Watson's Theory of Human Caring - the need for self-care of health care providers as well as the necessity of heart-connected caring relationships. The HeartMath Institute collaboration provides caregivers knowledge of and a foundation in Caring Science along with instruction in HeartMath's research and heart-focused practices</p>	<p>The organizational stress scale on the POQA-r4 provided an overall indication of the tension, pressure, and obstacles experienced by employees and the resultant influence these have on performance, relationships, and the desire to stay in the job. It is composed of 3 subscales: pressures of life, relational tension, and stress. Overall, there was an 11% improvement in preintervention and postintervention scores in this primary scale (4.27 to 3.82, P = .001). Specific scores reported pre and post for ‘Intention to Quit’ were reported as decreasing by 6% though NS.</p>	<p>HeartMath techniques employ the use of positive emotions, which assist employees in managing stress encountered both in the workplace and their personal lives. Practicing these strategies reduce stress and leads to a state of coherence in which there is emotional, psychological, and physiological alignment. This supports employee well-being and health, enhances job satisfaction, and improves resilience</p>
<p>Magtibay, D.L., Chesak, S. S., Coughlin, K., & Sood, A. (2017). Decreasing stress</p>	<p>Level II-B</p>	<p>50 Nurses Participated as a convenience sample</p>	<p>This study is a quasi-experimental, 1-group baseline to post intervention conducted at Mayo Clinic campus as the Smart program taught in a blended virtual and classroom model at various sessions over A</p>	<p>This study framework utilizes previous research and evidence which supports that healthcare organizations that implement burnout interventions such as mindfulness and resilience training may have increased employee</p>	<p>The final surveys at week 24 showed significant improvement in all categories. The largest decrease was in anxiety, with a reduction of 45.2% (P G .001). The other measures also were encouraging: reduction in stress of 29.8% (P G.001); personal burnout, 33.6% (P G .001); work-related burnout, 32.6% (P</p>	<p>An intervention to reduce stress, anxiety, and burnout can improve happiness, mindfulness, and resilience in nurses. The study suggests that the flexibility of blended learning allows a viable option in teaching SMART with nurses. The strengths of this study were the results in all</p>

<p>and burnout in nurses: Efficacy of blended learning with stress management and resilience training Program. <i>Journal of Nursing Administration</i>, 47(7/8), 391–395. https://doi.org/10.1097/NNA.0000000000000501</p>			<p>24-week period. Tools included: Subjective Happiness Scale, Perceived Stress Scale, Generalized Anxiety Scale, Mindful Attention Awareness Scale, Connor-Davidson Resilience Scale, and Copenhagen Burnout Inventory</p>	<p>retention, reduced turnover and performance problems, and increased patient satisfaction.</p>	<p>G .001); and client-related burnout, 38.5% (P G .001). In addition, increased measures were noted for happiness (P G .001) and mindful attention (P G .001).</p>	<p>categories provided for the short-term (8 weeks) and long-term (24 weeks) outcomes.</p>
<p>E. Denise Lackey. (2014). Self-Regulation and heart rate variability coherence : Promoting</p>	<p>Level II-B Grey literature</p>	<p>25 Healthcare leaders</p>	<p>Participants in this research study were educated in the physiological implication of stress and wellbeing in preparation for training in self-regulatory, resilience building techniques (emotional self-regulation). This</p>	<p>The study framework includes research in the field of positive psychology confirming that individuals focusing on positive emotions during times of increased stress demonstrate the ability to rebound from negative emotional experiences, providing significant evidence that</p>	<p>As reported from the POQA post intervention data, “Intention to Quit” reduced by 11% though not statistically significant, it did demonstrate a decrease post resiliency training intervention</p>	<p>The HeartMath-supported self-regulatory and resilience building training intervention offered as a four-day Resiliency Advantage program for nursing leadership, also demonstrated improvements in turnover of oncology staff and improved employee and patient satisfaction scores relating to nursing care, confirming the</p>

<p>psychological resilience in healthcare leaders [Dissertation]. https://doi.org/https://www.heartmath.org/assets/uploads/2015/01/self-regulation-and-hrv-coherence.pdf</p>			<p>research study utilized the Inner Balance technology to answer; Does the introduction of HeartMath tools and emphasis on positivity affect self-regulation of leaders? 2. Does improved self-regulation lead to improved psychological resilience?</p>	<p>individuals have the capability to embrace positive emotions to promote health and well-being.</p>		<p>impact on personal and organizational well-being.</p>
<p>Gensimo, M.M., Maduro, R. S., Morgan, M. K., McGee, G. W., & Zimbardo, K. S. (2020). The effect of nurse practice environment on retention and quality of</p>	<p>507 RNs</p>	<p>Level IIIA/B.</p>	<p>Study used a descriptive design with prospective data collection to explore the influence of nurse work characteristics, resiliency, and burnout on retention, and patient quality and safety, collected via an anonymous online survey. Theorized relationships were explored via path analysis and invariance testing.</p>	<p>The study utilizes the work of Van Bogaert et al., (2017) providing a sophisticated model showing that components of burnout and nurse work characteristics as significant mediators of the relationship between nurse practice environment and nurse outcomes. This study aims to expand the sequential mediation models by adding resilience as a moderator of the relationships</p>	<p>A modified version of the Revised Nurse Work Index scale was used to measure the nurse practice environment and results indicated that positive practice environment and favorable work characteristics lowered burnout and improved outcomes. The indirect effects of work characteristics and burnout were dependent upon individual level of resilience. Social capital minimized the effects of burnout for participants reporting below-average resilience.</p>	<p>The study demonstrated that resilience moderated the direct effects of nurse practice environment on retention</p>

care via burnout, work characte- ristics, and resilience JONA: The Journal of Nursing Administra- tion, 50(10), 546– 553.https: //doi.org/ 10.1097/n na.00000 00000000 932						
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Legend:

- HRV: Heart Rate Variability as the pace between each heartbeat
- CD-RISC: Connor-Davidson Resilience Scale
- CNE: Chief Nurse Executives
- ITR: Intent to Remain
- LASA: Linear Analog Self-Assessment Scale
- NELs: Nurse Executive Leaders
- NS: not significant
- POQA-R: Personal and Organizational Quality Assessment
- PSS: Perceived Stress Scale
- SMART: Stress Management and Resiliency Training
- SAS: Smith Anxiety Scale
- WES: Work Environment Satisfaction

Appendix B

Summary of Systematic Reviews (SR)

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/Implications
Hart, P. L., Brannan, J. D., & De Chesnay, M. (2012). Resilience in nurses: An integrative review. <i>Journal of Nursing Management</i> , 22(6), 720–734. https://doi.org/10.1111/j.1365-2834.2012.01485.x	Level V Grade A	What nursing populations have been studied regarding resilience and are they representative of diverse populations of nurses? What factors contribute to the need for resilience in the nursing profession? What intrapersonal characteristics are associated with resilience behavior in nurses? What strategies do nurses participate in to build personal resilience in the nursing profession?	A comprehensive search was undertaken for nursing research conducted between 1990 and 2011. Search terms were nurse, resilience, resiliency and resilient. Whittemore and Knaff's integrative approach was used to conduct the methodological review; included studies using various research designs searches used electronic databases: (i) CINAHL, Medline, EBSCO, and Proquest.	Publications were included if (i) the topic addressed resilience in nursing, (ii) participants were nurses, (iii) design was either qualitative or quantitative, (iv) language was English, and (v) publication was between January 1990 and December 2011. Publications were excluded if (i) they were non-published dissertations and theses), (ii) written in other languages, (iii) participants were non-nurses	In this review, a matrix was developed that outlined (i) the population being studied, (ii) contributing factors for the need of resilience, (iii) characteristics of nurses that promote resilience and (iv) strategies that help to build resilience in nurses. Content from the articles were then extracted populating the matrix. The results were then integrated and analyzed using a constant comparative method to organize and categorize the data	Provides information about the concept of resilience. Becoming aware of contributing factors to the need for resilience and successful strategies to build resilience that can help in recruiting and retaining nurses.	Becoming aware of the need for resilience and successful strategies to build resilience can help in recruiting and retaining nurses. Nursing Administration should implement professional development programs that target resiliency building behaviors in employees which are beneficial in enhancing and providing employees with tools and skills to deal with the daily stresses and frustrations of the work environment.

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/Implications
Joyce , S., Shand, F., Tighe, J., Laurent, S. J., Bryant, R. A., & Harvey, S. B. (2018). Road to resilience: A systematic review and meta-analysis of resilience training programmes and interventions. <i>BMJ Open</i> , 8(6), e017858. https://doi.org/10.1136/bmjopen-2017-017858	Level III A	The main aim of the present systematic review and meta-analysis is to synthesize the available research evidence on the effectiveness of interventions designed to promote or enhance individual resilience.	In June 2016, the following electronic databases were searched: Ovid Medline, Ovid EMBASE, PsycINFO and Ovid Cochrane L A Systematic strategy was carried out in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines to search for the best quality evidence of effectiveness in resilience interventions and assessed the methodological rigor of each included study.	There was not a prospectively published protocol for the systematic search and non-English articles were excluded. Pooled effects sizes were calculated using the random-effects model of metanalysis. There were relatively small sample sizes across many of the randomized controlled trials and over a third of the included studies did not provide adequate data for inclusion in the main meta-analysis.	The meta-analyses were performed using the statistical software package STATA, V.12.1. The main outcomes of interest in each study was the measure of psychological resilience. As studies used various measures of resilience, the effect size was represented by the standardized mean difference (SMD). Methodological quality of each included study was assessed using the Downs and Black Checklist	Five included studies were mindfulness based; however, only two of these studies provided adequate data to permit a subgroup analysis. The SMD between mindfulness-based resiliency interventions and the control groups was 0.46 (95% CI 0.10 to0.82), indicating a positive moderate effect.	Given the results of this review, which suggest that certain types of resilience training can modify predictor variables, it is reasonable to consider whether those entering careers such as medicine, nursing, policing, paramedicine or firefighting should be provided with resilience training.

Legend:

SMD: Standardized Mean difference

Appendix C

Johns Hopkins Level and Quality Guide

Level	Description	Grade	Description (Quantitative Studies)
1	Can include either randomized control trials (RCT), Systematic reviews of RCTs or Explanatory mixed method design.	A	High-quality study criteria: <ul style="list-style-type: none"> • Generalizable results with definitive conclusions • Reference to scientific evidence • Sufficient samples • Recommendations are based on of the literature reviews
2	Level II quantitative mixed-method design. Systematic reviews of combinations of quasi-experimental and/or quasi-experiments and RCTs and/or meta-analyses. Quasi-experimental study	B	Good quality: <ul style="list-style-type: none"> • Fairly comprehensive literature review • Adequate sample size to support the study design • Conclusions that are reasonably definitive
3	Explanatory mixed-method and Exploratory multiphasic mixed method studies, level III quantitative Qualitative studies and Meta-analysis	C	Low quality/major flaws: <ul style="list-style-type: none"> • Limited evidence with inconsistent results • Insufficient sample size • Unable to draw conclusions
4.	Evaluation of Qualitative studies and Meta-synthesis	A/B	High/good quality <ul style="list-style-type: none"> • Diligence, multiple sources • Verification; process checking and validating methodological coherence
5.	Evaluation of Qualitative studies and Meta-synthesis	C	Low quality <ul style="list-style-type: none"> • No contribution to overall findings • No or little features associated with high/good quality studies

(John's Hopkins Medicine, 2017)

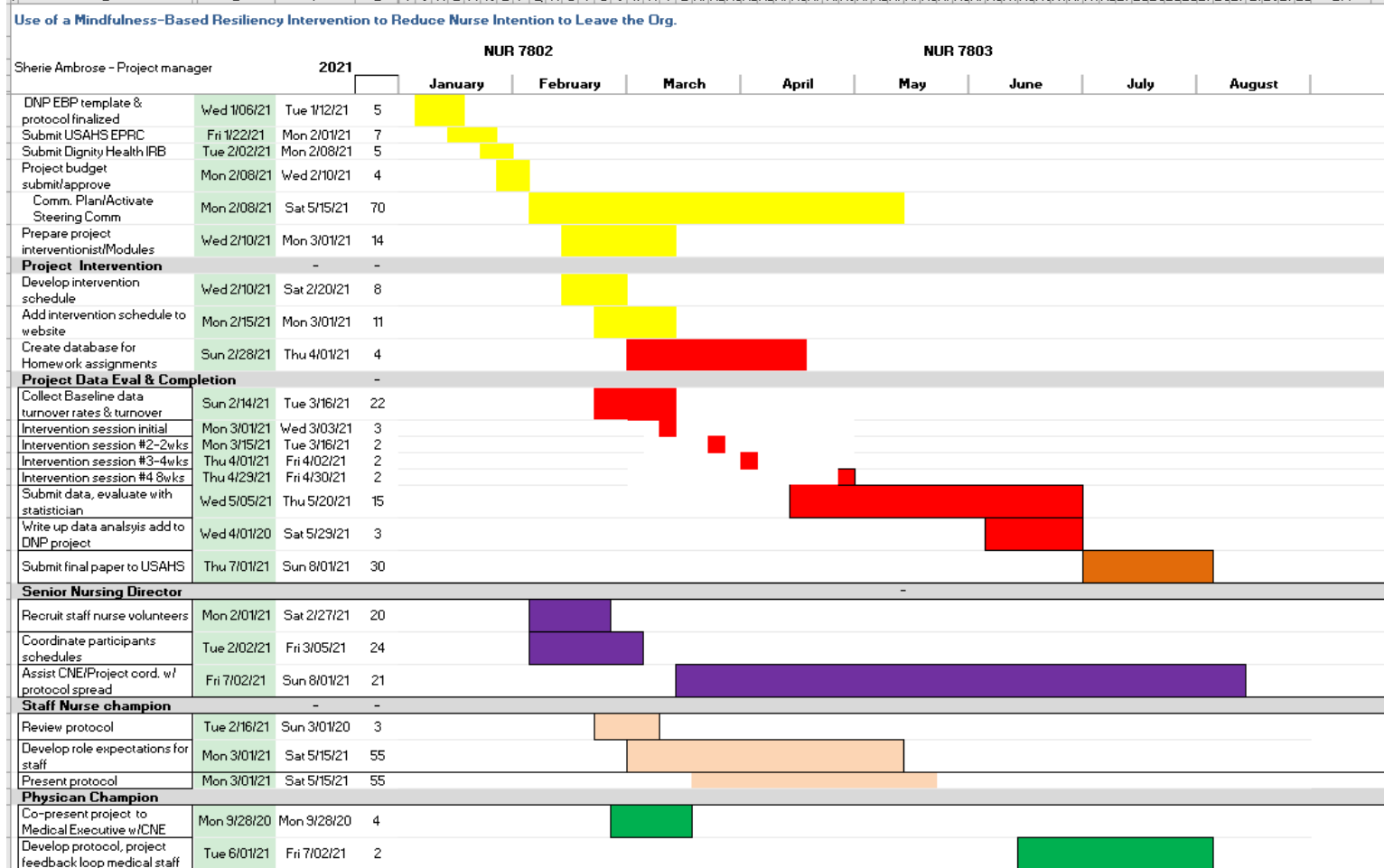
Appendix D

SWOT Analysis

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Facility supports certification in HeartMath. • Graduate Medical Education program interest in Resiliency intervention • Hospital leaders committed to resiliency interventions • Physician champion identified and involved with the MBI resiliency training intervention • Project preceptor positioned within the corporate organizational structure to support spread of the EBP intervention at the meso level 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • FY-20 budget not inclusive of HeartMath training program. • Challenges with in-person training and COVID-19 precautions as virtual training less effective • Technological challenges with intervention skill building materials and firewalls • Challenges with union environment and subsidizing nurses to attend training/intervention • Limited analytical and administrative assistant support
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Internal interest to spread intervention throughout the hospital division • Timing optimal for a resiliency intervention for care givers based on the emotional effects of the pandemic • Interest in including the intervention in the nurse residency training program and as a part of the facilities HRO activities • Ability to spread the intervention to include clinicians, and to use with patients 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • A COVID-19 surge could lead significant increases in hospital census and difficulties with intervention schedule • Challenges with time commitments as many involved in hospital operations • Competing organizational changes could threaten executive sponsorship

Appendix E

GANTT Project Timeline



Appendix F

Project Steps

Item	Date	Course
Develop the intervention format with the HMCTs, Plan and create a collection process for outcome measures. Plan and create a process to identify and track participants. Create demographic data sheet. Plan and create intervention informational sessions. Develop intervention for huddle with intervention tools	January 2021	NUR7802
Submit to USAHS EPRC and organizational IRB. Complete any IRB revisions. Finalize budget and obtain funding.	January 2021	
Print project materials, enroll 32 participants, obtain consents. Create data base for tracking intervention objectives	February 2020	
Participants begin and complete intervention. Collect process data	March 2021- April 2021	
Collect outcomes data. Complete data collection and analysis with contract statistician.	May 2021	NUR7803
Prepare all components of the project manuscript	June, July 2021	
Disseminate findings to the stakeholders and the organization.	July 2021	
Submit to System Level Resiliency committee	August 2021	
Make needed adjustments to intervention and process for organizational-wide clinical implementation.	August 2021	

Appendix G

Project Budget

Facility Expenses	Project Coordinator Expenses	Grant Funding or Partner Facility (PF) Support	Final Cost
HMCT training costs (2): Project interventions \$5,000 per instructor		\$2,000 grant SJMC	\$10,000.00
RN HMCT Interventionists (4): 85.00 per hour average. Total hours per session: 24 hours initial education, 12 hours for three 1-hr interventions			\$3,060.00
Supplies and Tools; 32 inner balance HRV tools (\$40x28= \$1,120), 35 pocket guides (\$10.00), 65 instruction cards (\$25)		4 HRV tool (PF) \$120 20 cards (PF)-10\$ No charge	\$1,120.00 \$10.00 <u>\$25.00</u> \$1,155
	Statistician: consultant \$50hr projected 10hrs SPSS calculations and data analysis		\$500.00
Office supplies Flip charts, pens copy costs for handouts \$50			\$50.00
	HeartMath report: Setup costs, 30 surveys times 2		\$400.00
RN Intervention Participants \$85 x 6 hrs. x 3			\$15,300.00
	PSS Tool Usage No charge		
Sub-total \$27,435.00	\$900	\$2,130.00	
Final Total			\$30,465.00

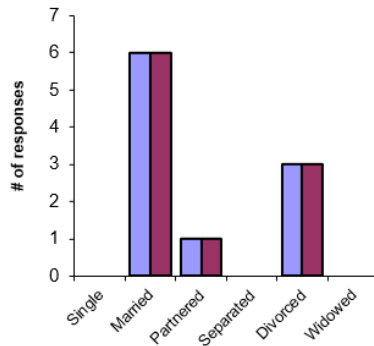
Appendix H

Personal and Organizational Quality Assessment - Revised 4 Scale

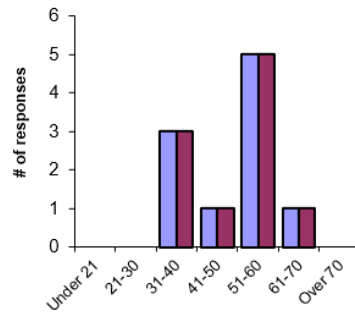
March 1 through April 23, 2021

		Total Responses		
PRE	10	Gender: 2 Males, 8 Females and 0 NA		
POST	10	Gender: 2 Males, 8 Females and 0 NA		

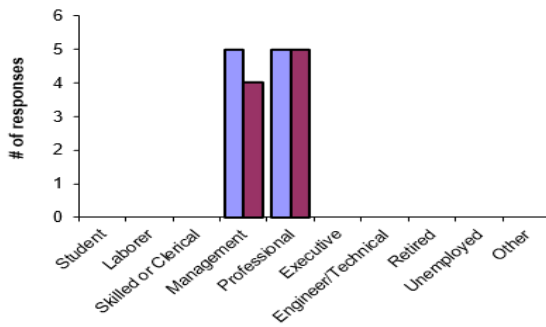
Marital Status



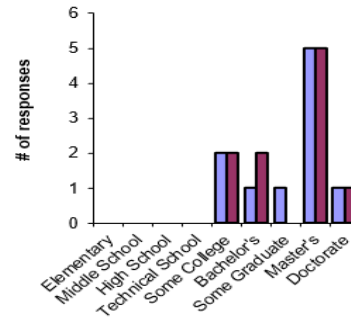
Age Range



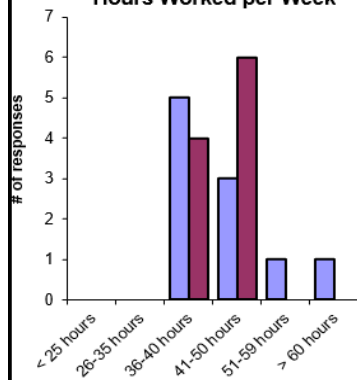
Employment Status



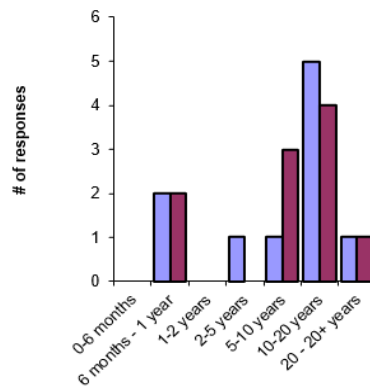
Education



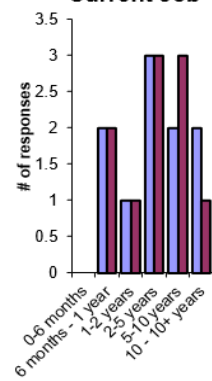
Hours Worked per Week



Years at Organization



Years at Current Job



Appendix I

Mindfulness-Based Resiliency (MBR) Intervention Skill Building Session Sample Agenda

Refresher #3

1. Welcome, Review Objective-(2 mins)
2. Review HRV Intervention logs/ Heart Lock-in (5 mins)
3. Domains of Resilience (30mins)
4. Inner Ease-A choice point
5. Power of Intuition- Freeze Frame
6. The Power of the Resilient Heart in Healing Trauma -Video
7. POQA, Wrap-up, Acknowledge assessment. Evaluation– (15 mins)

HeartMath™ TOOLS You have Learned (Pocket guide):

- Quick coherence: Prep, Shift &Reset, Sustain
- Coherent Communication technique- (listen for and confirm the essence of what is being said)
- Heart lock-in (radiate care to yourself and others)
- Coherence coach HRV-Inner Balance
- Inner Ease- (a choice point)
- Freeze Frame (activate intuition)

Program Objectives

Learn to strengthen resilience through research-based tools that help you:

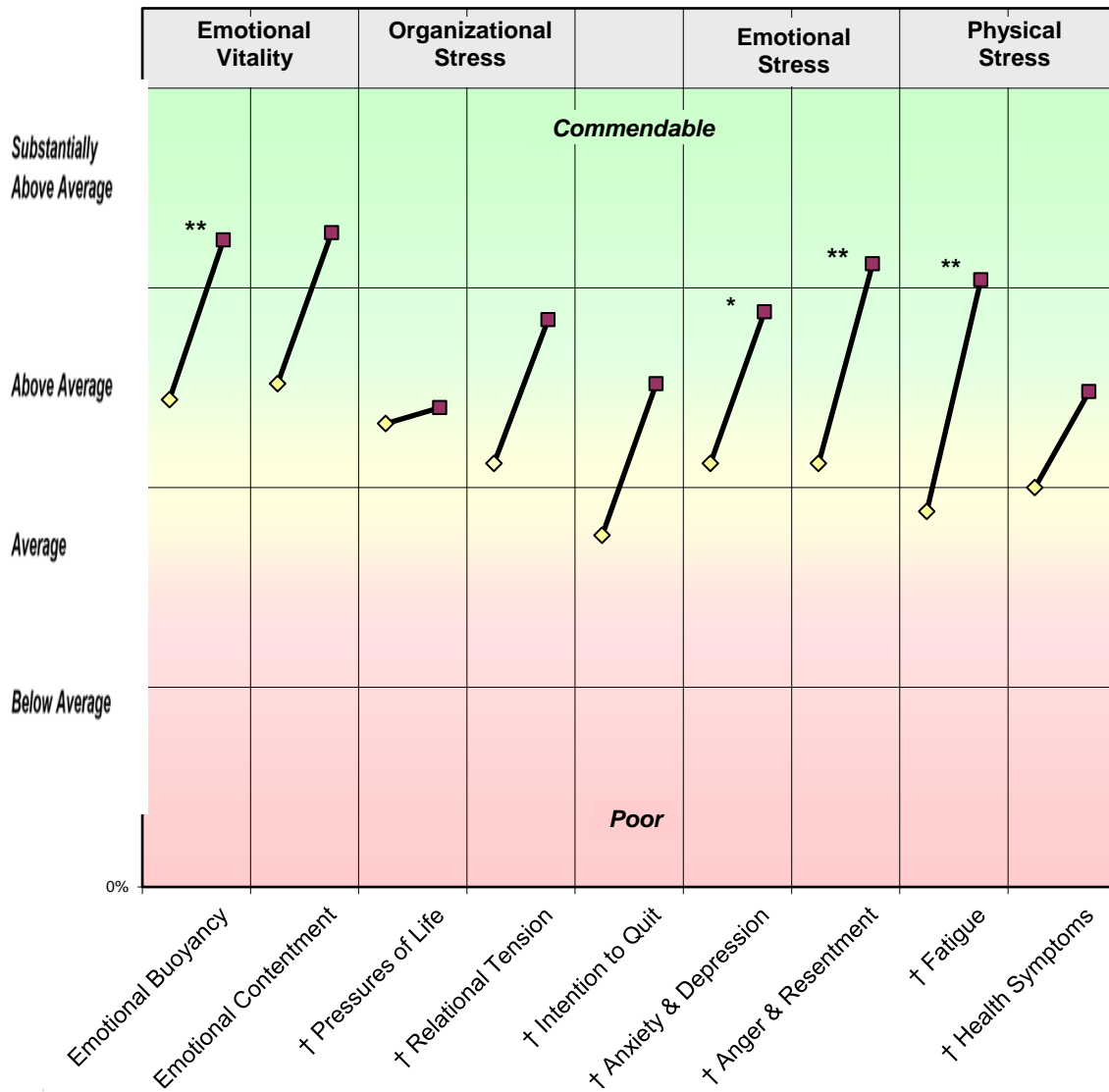
- ✓ Increase personal resilience and energy levels.
- ✓ Leverage your ability to think clearly under pressure and discern appropriate solutions to problems.
- ✓ Increase your ability to maintain situational awareness.
- ✓ Diminish symptoms of personal and professional stress such as confusion, fatigue and sleep disturbance.
- ✓ Improve reaction times and coordination.

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Empowering Heart Connections

Appendix J

POQA-R4 Subscales



† Reverse coded to show the degree of improvement over time

Paired t test significance;

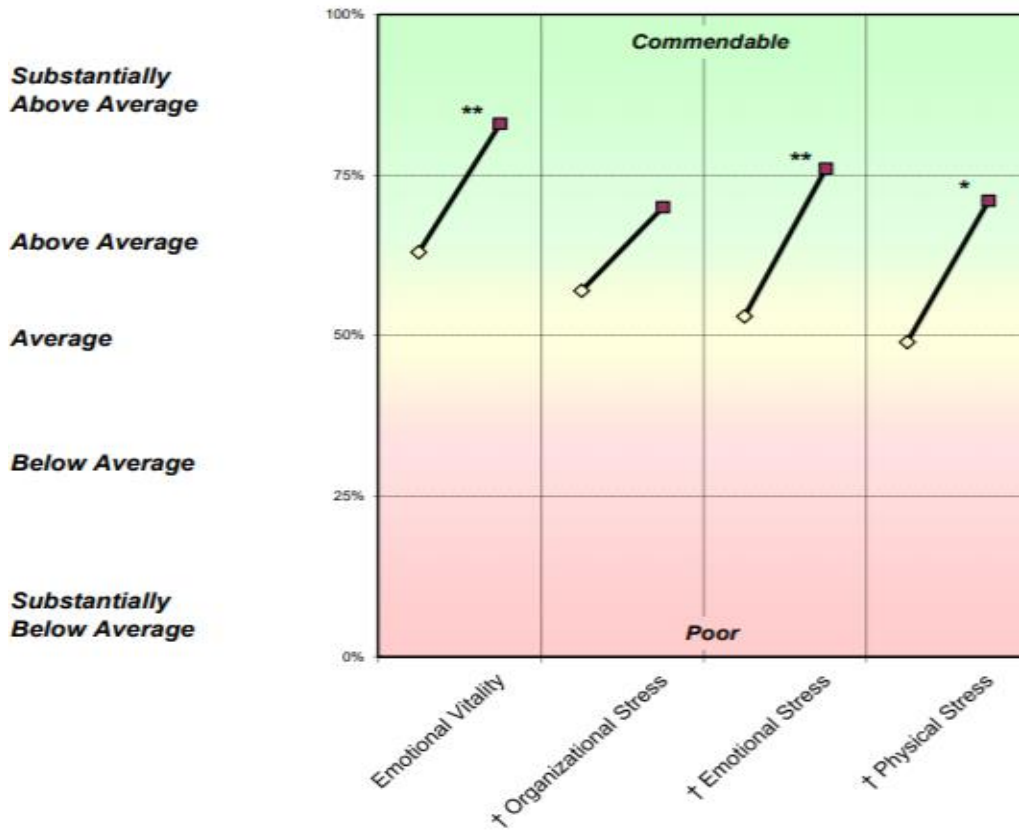
* p < 0.05, ** p < 0.01, *** p < 0.001

◆ Pre
■ Post

- Emotional Buoyancy:** emotional energy available for work and personal life.
- Emotional Contentment:** feeling of contentment and inner peace.
- Pressures of Life:** feeling overwhelmed by work pressures and the demands of life.
- Relational Tension:** stressed by relational disaffection and coworker conflict.
- Intention to Quit:** thinking about leaving the organization.
- Anxiety/Depression:** feelings of anxiety, unhappiness, sadness, and/or depression.
- Anger/Resentment:** feelings of anger and resentment and difficulty in emotional control.
- Fatigue:** feelings of tiredness, fatigue, and physical exhaustion.
- Health Symptoms:** physical tension, aches, and pain, stomach upset, rapid heartbeats, and headaches.

Appendix K

PRIMARY SCALES



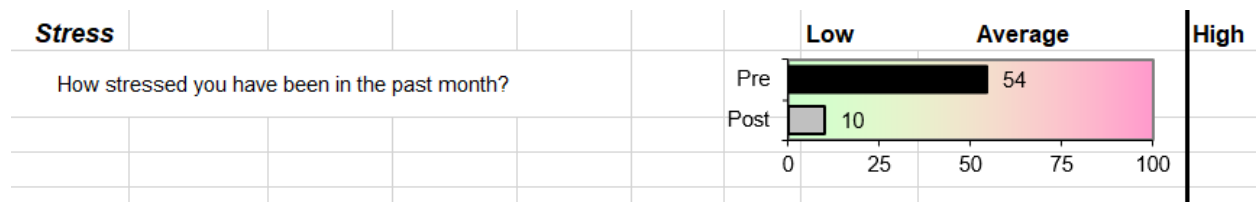
† Reverse coded to show the degree of improvement over time

Paired t test significance;

* p < 0.05, ** p < 0.01, *** p < 0.001

◇ Pre
■ Post

Emotional Vitality scale: wholehearted positive emotional energy that enriches life experience and enhances health and well-being.
Organizational Stress scale: organizational impediments and relational discord that impair work performance, reduce job satisfaction, and increase employee turnover.
Emotional Stress scale: emotional discord that reduces the quality of life experience and jeopardizes health and well-being.
Physical Stress scale: physical symptoms of fatigue and poor health that reflect the overall stress an employee is experiencing.



Appendix L

3 of 3 Data Collection Tool: Personal and Organizational Quality Assessment Revised – 4 (Sample with permission from HeartMath.org)

Following is a list of statements that describe the way people sometimes feel or think about themselves. Please FILL IN THE NUMBER which reflects how frequently you have felt or thought the following during the LAST MONTH.

	NOT AT ALL	ONCE IN A WHILE	SOMETIMES	FAIRLY OFTEN	OFTEN	VERY OFTEN	ALWAYS
29. My life is deeply fulfilling	1	2	3	4	5	6	7
30. Dynamic	1	2	3	4	5	6	7
31. I get upset easily	1	2	3	4	5	6	7
32. I find it difficult to calm down after I've been upset	1	2	3	4	5	6	7
33. I feel loved by my spouse/partner	1	2	3	4	5	6	7
34. I feel optimistic about the future	1	2	3	4	5	6	7
35. I wake up and look forward to each day	1	2	3	4	5	6	7
36. Motivated	1	2	3	4	5	6	7
37. I am pleased with my life	1	2	3	4	5	6	7
38. I sometimes have urges to break, throw or smash things	1	2	3	4	5	6	7
39. I sometimes have a short fuse	1	2	3	4	5	6	7
40. Enthusiastic	1	2	3	4	5	6	7

We are asking about your feelings and experiences over the LAST MONTH. Please FILL IN THE NUMBER which reflects how much you AGREE or DISAGREE with the following statements as they apply to you, your job and place of employment during the LAST MONTH.

	STRONGLY DISAGREE	DISAGREE	SLIGHTLY DISAGREE	NEUTRAL	SLIGHTLY AGREE	AGREE	STRONGLY AGREE
41. I am satisfied with my life	1	2	3	4	5	6	7
42. I am satisfied with my job	1	2	3	4	5	6	7
43. There is tension between management and staff	1	2	3	4	5	6	7
44. I feel there is never enough time	1	2	3	4	5	6	7
45. I feel pressed for time	1	2	3	4	5	6	7
46. The pace of life is too fast and I can't keep up	1	2	3	4	5	6	7
47. I feel like leaving this organization	1	2	3	4	5	6	7
48. I feel conflict between work and personal priorities	1	2	3	4	5	6	7
49. It takes a lot of effort to sustain my performance level	1	2	3	4	5	6	7
50. I feel like quitting my job	1	2	3	4	5	6	7
51. I work with people who don't get along with each other	1	2	3	4	5	6	7
52. I'm aware of power struggles between co-workers that damage morale	1	2	3	4	5	6	7

Thank You Very Much For Your Participation!

Appendix M

HeartMath.org Permission Letter



14700 West Park Ave.
Boulder Creek, CA 95006

To: The University of St. Augustine for Health Sciences

Date: January 29, 2021

Re: Permission for use of the Personal and Organizational Assessment-Revised (POQA-R)

This letter serves as permission for the use of the HeartMath™ POQA tool by Sherie Ambrose for her EBP project, “Use of a Mindfulness-Based Resiliency Intervention to Reduce Nurse Intention to Leave the Organization”.

This tool is not authorized for use for any compensated activities. We are requesting that a final approved project paper be sent to the HeartMath Institute.

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