

**Improving Resiliency Among Inpatient Nursing Teams During  
the SARS-CoV-2 Pandemic**

Diane R. Merrill

College of Nursing, East Carolina University

Doctor of Nursing Practice

Dr. Dianne Marshburn

July 19, 2021

**Dedication**

This paper is dedicated to my brother, David, who left us early in life; you are the reason that I am the nurse I am today.

### **Acknowledgements**

I extend a heartfelt thank you to my husband, Jerry, for his love and support and my son, Andrew, who was always there to help Mom when she had difficulties with Word or PowerPoint. To my parents, Douglas and Carol, who taught me the greatest gifts that parents could give their children are love and their education. To my sister, Ellen and her family, David, D.J., and Hannah who provided long distance words of encouragement. My friend, L. B. Sossoman, DNP, who finished only two months ahead of me; we made it through! I want to recognize my MSN-cohort which I traveled this journey with LaShonda Barnette, Gwen Hampton, Pamela Balogh, Kelly Osborne, and Chelsea Passwater. I hope you will always cherish your “ECU dammit dolls.” My site champion, Patricia Traylor West, DNP, who would remind me that quitting was not an option. Lastly, I share much appreciation and gratitude to the professors that influenced my doctoral education, Dr. Bonnie Benetato, Dr. Charlene McNeill, Dr. Jan Tillman, and Dr. Dianne Marshburn. Each of you have given me insight into what can be achieved, how to stay the course, and ask the question “So what?”

### **Abstract**

Resiliency and grit are two words that describe today's nursing team members amid the SARS-CoV-2 pandemic. Registered Nurses (RNs) and Certified Nursing Assistants (CNAs) have been on the frontline battling a pandemic that knows no bounds, takes no prisoners, and does not discriminate. Through the battle, nursing teams are pushed to work in unprecedented environments caring for the sickest patients of their careers. Over time, the nursing team may exhibit signs of compassion fatigue, burnout and a decrease in their overall well-being; ultimately, leading to turnover in healthcare organizations. The purpose of the project was to improve resiliency and grit among nurses and nursing assistants on an inpatient Internal Medicine Pulmonary unit (IPU) during the SARS-CoV-2 pandemic by employing daily huddle activities, interactions with pastoral care liaisons in-person or virtually, and smartphone apps to promote self-care and mindfulness training. The goal of the project was to increase the mean resiliency scores by 5% with the utilization strategies described above. The Connor-Davidson Resilience (CD-RISC-10©) 10-item scale was sent to the nursing team members to complete pre- and post-project implementation. A resiliency activity was introduced weekly at huddle meetings during the 12 week period. The nursing team members were encouraged to interact with pastoral care liaisons either in-person or virtually and to select a smartphone app to promote self-care and mindfulness. There was an overall increase in the total CD-RISC-10© score to 6.7%, which met the project goal. Nursing team members demonstrated an increase in utilizing the daily huddle activities.

*Keywords:* resiliency, resilient, grit, nursing, nurses, nurse, nursing assistant, nursing teams, SARS-CoV-2, pandemic, COVID-19, burnout, well-being, daily huddles, smartphone apps, self-care, mindfulness training, Connor-Davidson Resilience scale

**Table of Contents**

Dedication.....	2
Acknowledgements.....	3
Abstract.....	4
Section I: Introduction.....	8
Background.....	8
Organizational Needs Statement.....	9
Problem Statement.....	11
Purpose Statement.....	11
Section II: Evidence.....	12
Literature Review.....	12
Evidence-Based Practice Framework.....	15
Ethical Consideration and Protection of Human Subjects.....	17
Section III: Project Design.....	19
Project Site and Population.....	19
Project Team.....	20
Project Goals and Outcomes Measures.....	21
Implementation Plan.....	23
Timeline.....	24
Section IV: Results and Findings.....	25
Results.....	25
Discussion of Major Findings.....	28
Section V: Interpretation and Implications.....	30

Costs and Resource Management.....	30
Implications of the Findings.....	30
Sustainability.....	32
Dissemination Plan.....	32
Section VI: Conclusion.....	34
Limitations.....	34
Facilitators.....	35
Recommendations for Others.....	35
Recommendations for Further Study.....	36
Final Thoughts.....	37
References.....	38
Appendices.....	43
Appendix A: Literature Matrix.....	43
Appendix B: Permission for Connor-Davidson Resilience Scale 10©.....	47
Appendix C: Team Member Information.....	49
Appendix D: Demographic Questions.....	50
Appendix E: Baseline Connor-Davidson Resilience Scale 10©.....	51
Appendix F: Mid-Point Utilization Strategies.....	52
Appendix G: Post-Survey Connor-Davidson Resilience Scale 10©.....	53
Appendix H: Final Utilization Strategies.....	54
Appendix I: Huddle Activities.....	55
Appendix J: Self-Care Quick Reference Guide.....	58
Appendix K: Teammate Resilience Committee.....	59

Appendix L: Project Timeline.....	60
Appendix M: Participant Demographics (Pre and Post).....	61
Appendix N: Participant Support Systems (Pre and Post).....	62
Appendix O: Connor-Davidson Resilience Scale 10© Results (Pre and Post).....	63
Appendix P: Utilization Strategies (Mid-point and Post-survey) .....	64
Appendix Q: Project Budget.....	65
Appendix R: Doctor of Nursing Practice Essentials.....	66

## **Section I. Introduction**

### **Background**

The profession of nursing ranks the most honest and ethical per 2019 Gallup poll results; this honor has been held for the last 18 years, with "85% of Americans say nurses' honesty and ethical standards are very high or high" (Reinhart, 2020, para. 1). Dating back to Florence Nightingale, nurses have been known as confidants who care for their patients and are loyal to physicians (Thompson, 2018). Two hundred years later, the nursing profession celebrates "the year of the nurse," and no one would have imagined we would be battling a pandemic that knows no bounds, takes no prisoners, and does not discriminate. The nursing role has evolved to unwavering on the frontlines, advocates for those who do not have a voice, problem solvers in critical situations, and working collaboratively with the healthcare team to provide care to those in need. Nurses are called upon to care for patients regardless of the risk to their own lives, much like Florence Nightingale and her nurse volunteers who traveled to Scutari to care for British soldiers in the Crimean war. This generation of nurses faces challenges as a result of new disease outbreaks and natural disasters.

In healthcare organizations, leadership needs to build resiliency and grit among nursing teams while addressing burnout issues that result in turnover. Resiliency is defined as a person's ability to bounce back and adapt when faced with adversity (Gao et al., 2017; Hou et al., 2020). Resiliency should be a core component for leaders to assist nursing teams through negative outcomes, stressful conditions, organizational demands, and unforeseen events (Smith & Wolf, 2018; Bogue & Carter, 2019). Nurses can develop resiliency by overcoming challenges and having guidance to promote health and well-being (Smith & Wolf, 2018; Turale et al., 2020).

Higher levels of resiliency and general well-being have been shown to lower mental health risks in nurses (Gao et al., 2017; Bogue & Carter, 2019).

Burn-out is defined as mental, physical, and emotional exhaustion, which impacts the overall health of the individual nurse, the nursing team, and patient care and satisfaction (Rushton et al., 2015; Albott et al., 2020). Shanafelt and Noseworthy (2017) describe the loss of fulfillment at work as an indicator of burnout. Nurse burnout consequences include a decrease in job satisfaction, nursing team morale, patient outcomes, and quality of care, ultimately leading to turnover (Albott et al., 2020). Nurse turnover can occur due to relationships, staffing, and personal reasons (Kerfoot, 2020). Good working relationships promote a happy place to work. Nurses on the unit, managers, and physicians all play a role in the hospital environment. Nurses may not support each other or argue among themselves, causing tension in the unit. Turnover can also be caused by inadequate staffing or when individual nurses feel they are assigned more difficult patients than their teammates. Lastly, personal reasons can be attributed to compassion fatigue or wanting to advance their clinical skills or careers. Nurse turnover can be costly to hospital systems. According to the 2020 Nursing Solutions Incorporated (NSI) National Health Care Retention and RN staffing report, the cost of turnover is between \$33,300 to \$56,000 per RN, which results in a \$3.6 to \$6.1 million loss for hospitals (p. 1).

### **Organizational Needs Statement**

The organization setting is a 457-bed urban hospital located in south central North Carolina. This organization has identified the need to improve resiliency and grit within inpatient nursing teams, which will enable them to provide safe and effective patient care during the SARS-CoV-2 pandemic ([Management name], personal communication, July 3, 2020). A need was identified for a program that promotes resiliency and grit during this time to prevent nursing

team burnout and turnover. The primary goal would be to improve the nursing team's mental well-being, decreasing compassion fatigue, and burnout. Another goal would be to strengthen the resiliency of individual nurses. A study of 900 nurses conducted by a travel nurse staffing agency showed that nurses surveyed have issues with work-life balance and mental health (Gooch, 2018). The study showed a correlation between mental health, burnout, and work performance. Thirty-five percent of nurses felt mental health had a negative impact on their work responsibilities, 62% felt work burnout, and 43% felt their work performance was influenced by burnout.

Healthcare has changed over the years with different benchmarks focusing on the health and well-being of populations. The Institute for Healthcare Improvement (IHI, n. d.) Triple Aim framework emphasizes patient care, satisfaction, safety, effective outcomes, lower healthcare costs, and how they relate to meet benchmarks. Feeley (2017) describes the need for organizations to engage team members in attaining joy at work; hence, the Quadruple Aim is a priority. Feeley further emphasizes that staff burnout can still negatively impact the patient care experience even at high-performing healthcare organizations. When the healthcare teams feel valued, acknowledged, and respected, they tend to be more engaged in their work; therefore, patient care outcomes can be achieved at a higher level.

The brief for Healthy People 2030 framework defines the relationship between health and well-being. Health pertains to a person's physical and mental health, which encompasses maintaining strength in the changing environment and protecting against sickness, harm, and loss of life (Pronk et al., 2018). Well-being incorporates physical and mental health and reflects other areas of life, including "emotional, social, financial, occupational, intellectual, and spiritual elements" (Pronk et al., 2018, p. 1). The brief also notes health and well-being function together;

however, well-being may take precedence over health in some persons. How a person "thinks, feels, and functions at a personal and social level" determines their mindset on the meaning of life, happiness, and the ability to embrace body, mind, and spirit (Pronk et al., 2018, p. 2). Lastly, the Healthy People 2030 framework will measure the population's health and well-being for the next ten years.

### **Problem Statement**

During natural disasters or disease outbreaks, nurses are relied upon to care for and fulfill the needs of their patients, even though they themselves are strained or facing adversity (Tyer-Viola, 2019). When nurses experience sustained pressure, they are known to have an inner strength or drive to overcome these obstacles, referred to as resiliency or grit.

The inpatient Internal Medicine Pulmonary unit (IPU) was designated as a SARS-CoV-2 rule-out unit at the beginning of the pandemic in March 2020. Patients were admitted to the unit and stayed until their results returned either positive or negative for the virus. If the patient's results were positive, they stayed in the unit; if not, they were transferred to another unit. With the ongoing pandemic, the nursing team was informed that the unit would remain a SARS-CoV-2 unit within the hospital going forward. This posed challenges for the nursing team to continue working in this environment and a change in their daily responsibilities.

### **Purpose Statement**

The purpose of the DNP project was to improve resiliency and grit among nurses and nursing assistants on the IPU unit during the SARS-CoV-2 pandemic by employing daily huddle activities, interactions with pastoral care liaisons in-person or virtually, and smartphone apps to promote self-care and mindfulness training.

## **Section II. Evidence**

### **Literature Review**

A literature search was conducted in the following electronic databases: Psyc INFO, Cumulative Index in Nursing and Allied Health Literature (CINAHL), SCOPUS, and PubMed. Search terms were resiliency, resilience, nursing, nurses, disease outbreaks, natural disasters, COVID-19, coronavirus, mindfulness, self-care, burnout, and turnover. The initial search identified 1,499 articles. The inclusion criteria for the articles were English language, peer-reviewed, and published between 2016 to 2020. Exclusion criteria included non-English, resiliency studies outside of the nursing population, and studies that pertained to children. Each article's abstracts and discussion sections were reviewed to see if they were appropriate to incorporate into the paper. Levels of evidence by Dennert and Stewart's were utilized in the initial search. Systematic reviews, meta-analysis, and meta-synthesis were included; expert opinions, editorials, and clinical practice guidelines were excluded (Benetato, 2019a). Twenty-five full-text articles were reviewed for eligibility with ten retained (Appendix A).

### ***Current State of Knowledge***

Frontline nurses in the SARS-CoV-2 pandemic are faced with mental and physical challenges every day. Mental health challenges include burnout, anxiety, depression, lack of social support, and fear (De Pablo et al., 2020; Hu et al., 2020; Zerbini et al., 2020). Physical challenges encompass increased patient load and acuity, working longer shifts, and poor sleep quality (Hou et al., 2020). There are limited studies on nurses' mental well-being during the SARS-CoV-2 pandemic; however, there is a correlation between mental health and previous outbreaks of severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and Ebola. Kang et al. (2018) discovered that nurses were mentally exhausted from

monitoring high-risk patients, fearful for their safety and becoming infected, and received negative or little social support from their families and colleagues after the MERS outbreak. A comment in the *Lancet Psychiatry*, Xiang et al. (2020) described SARS-CoV-2 as being similar to the severe acute respiratory syndrome (SARS) outbreak in 2003 triggered by a different coronavirus. Both infectious diseases have similar "infectious cause, epidemiological features, fast transmission pattern, and insufficient preparedness of health authorities to address the outbreaks" (p. 228). The comment further noted that healthcare workers who had worked in quarantine for SARS suffered more post-traumatic symptoms; there were feelings of depression, anxiety, frustration, and fear. De Pablo et al. (2020) evaluated the impact of the three coronavirus syndromes (SARS, MERS, and SARS-CoV-2) on healthcare workers' mental health. The authors found that general health concerns, fear of contracting the disease, and burnout were among the most significant reported mental health concerns.

### ***Current Approaches to Solving Population Problem(s)***

Bakhamis et al. (2019) noted four contributors to the nursing burnout syndrome: individual, management, organizational, and work. Organizations need to be responsible for reviewing a lack of clinical supervision, excessive workloads, staffing shortages, work environment, team relationships, and mental health and well-being programs available to nursing teams. The literature shows that building resiliency and grit among frontline nurses prepares them to face challenges and adversity with courage and strength to persevere during that period (Turale et al., 2020).

There are several approaches to build resiliency and well-being within nursing teams. Organizational resiliency needs to have foresight, coping, and mental health recovery for frontline nurses (Rangachari & Woods, 2020). This process allows for concerns or fears to be

expressed, active listening, and responding in a meaningful way to the teams. By adopting a more holistic approach, the nurse's emotional and mental well-being are safeguarded during and after the SARS-CoV-2 pandemic. Another option is to have daily 15-minute huddles to assess nursing teams' mental health, communicate any events within the unit or hospital system, and identify any patient or family concerns (Children's Hospital Association, 2019). Finally, utilizing technology with a smartphone app can promote well-being and self-care for the nursing teams. Linardon (2020) conducted a systematic review and meta-analysis to evaluate whether smartphone apps can promote acceptance, mindfulness, and self-compassion. A review of 27 randomized control trials revealed that smartphone apps show small increases in acceptance and mindfulness. There also was a significant improvement noted in self-compassion when utilizing these apps. This could be a practical option for nurses who cannot have face-to-face interactions with a counselor or therapist. The smartphone activities can be completed on the way to and from work or during a break in the workday.

### ***Evidence to Support the Intervention***

Further discussions with the organization have determined that a multi-modal approach would promote resiliency and grit within the Internal Medicine Pulmonary unit (IPU) nursing team. The multi-modal approach allowed the nursing team members to participate in the activities that meet their individual needs. The IPU nurse manager also participated in the resiliency program with the nursing team to provide insight, emotional support, and collaboration on which activities may benefit IPU in the future. Interventions encompassed incorporating daily huddle activities, pastoral care liaisons, and smartphone apps to promote self-care and mindfulness training. Bogue and Carter (2019) conducted a survey of 1126 nurses at an academic medical center regarding well-being and burnout. The authors found that the religion-

spiritual domain was the most neglected component for the nursing teams regarding well-being. There was a consideration of having a pastoral care liaison round with the nursing leadership team to identify well-being concerns among the nursing team. Chen et al. (2020) described how healthcare workers were hesitant to seek personal or group counseling. As a result, a counselor was intermittently present in the areas where healthcare workers rested. This provided an outlet to express their struggles with work or family and to receive support and guidance.

### **Evidence-Based Practice Framework**

The conceptual framework that guided the Quality Improvement (QI) project was Lewin's Theory of Change. Lewin's Theory of Change comprises three stages: unfreezing, moving, and freezing or refreezing (Lewin, 1947). This theory rejects and replaces prior learning and knowledge. The three concepts of change include driving forces, restraining forces, and equilibrium. Driving forces propel the changes that need to occur toward equilibrium. Restraining forces are the opposite of driving forces, causing a shift in equilibrium. Equilibrium is where driving forces equal those of restraining forces where no change occurs.

The first stage of change is unfreezing in which the individual nurse or nursing assistant rejected their previous skills and practices of resiliency. The nurse leadership and management team assisted in guiding, supporting the new activities, as well as the transition into the second stage of moving. The moving stage was the actual process where the new resiliency activities were set into motion of utilizing the daily huddles, smartphone apps, and interactions with the pastoral care liaisons. The final stage was freezing or refreezing; the resiliency activities became a part of the nursing team's accepted practice on the unit.

This project was implemented utilizing the Plan, Do, Study, Act (PDSA) cycle and model for improvement. This framework was designed as a problem-solving process to provide continuous learning in four logical steps for a process or product (Deming, 1993; Moen, 2010). Langley et al. (1994) supplemented the PDSA cycle with three leading questions for improvement. These questions reviewed what goals need to be achieved, whether there be an improvement from the change, and what modifications can be implemented to result in an improvement. Cleghorn and Headrick (1996) describe how the PDSA cycle relates to a scientific model by defining “a hypothesis to improve work (plan), test the hypothesis (do), collect and analyze relevant data (study), and drawn conclusions for action regarding the test hypothesis (act)” (pp. 206 – 207). The PDSA framework has also been referred to as the Learning Theory by which individuals and organizations can learn concepts of change, how to reflect and act on those changes. The PDSA framework was considered the logical approach for working with resiliency and nursing teams during the SARS-CoV-2 pandemic ([Management name], personal communication, July 3, 2020).

The Plan, Do, Study, Act (PDSA) framework guided the project in improving resiliency and grit with the inpatient nursing team. Staff was asked to complete a baseline Connor-Davidson Resilience (CD-RISC-10©) 10-item scale via Qualtrics. The resiliency activities were planned and introduced weekly in daily huddles to the nursing team members. Reminders about the resiliency interventions were sent by GroupMe app, posted throughout the unit and in the employee breakroom. There was weekly check-in with the project lead, and annotated notes were kept on comments and suggestions. A review of team member's comments assisted with planning the next activities on the unit. This was a continuous process of learning and promoting

resiliency for the team members. Resiliency scores were reassessed by the Connor-Davidson Resilience (CD-RISC-10©) 10-item scale with the goal of showing growth in resiliency.

### **Ethical Consideration & Protection of Human Subjects**

Collaborative Institutional Training Initiative (CITI) module training was completed regarding ethics, social and behavioral research, data management, integrity, and security. The project followed the three ethical principles of respect for persons, beneficence, and justice to protect the participants. There were no vulnerable populations included in the project. The data were collected by online surveys. No sensitive questions were asked of participants, and no identifying information was collected. There were no physical or psychological risks of harm to the nursing team population. The project did not include patients or families. The huddle interventions transpired in the IPU, and the project lead provided all the materials and supplies.

The project was open to all registered nurses and nursing assistants who worked in IPU. The project lead hosted nursing staff meetings to discuss the project and shared that participation would be voluntary. Anonymously completing the survey and participating in daily huddles indicated a willingness to participate in the project. No identifying information was collected from the nursing team members who participated in the project. Participants were informed of the option to withdraw from the project at any time for any reason. The data from the survey and annotated notes from the excel spreadsheet were stored electronically on a password protected computer in a locked office only accessible by the project lead for two years. After the two-year period, the data will be deleted according to the organization's policy. Data findings were shared with the faculty of record. Only aggregate data were reported.

The organization required an online module on quality improvement and research. The organization's formal process included a project summary reviewed by the Doctor of Nursing Practice (DNP) Council prior to submitting it to the Institutional Review Board (IRB). The organization determined that the project had components of research. An application was submitted to the Nursing Scientific Advisory Committee (NSAC) for approval. Once the approval letter was granted from NSAC, the project was submitted to the organization's IRB for expedited review. A formal letter of approval for the project was obtained from the IRB, then submitted through the university's IRB process for final approval.

### **Section III. Project Design**

#### **Project Site and Population**

The project site was a 457-bed urban hospital located in south central North Carolina. The inpatient Internal Medicine Pulmonary unit (IPU) for the project was designated as a SARS-CoV-2 unit for both rule-out and positive patients until they are stable for discharge. The project goal was to improve resiliency in the nursing team dedicated to caring for SARS-CoV-2 patients. By improving resiliency, there would be a decrease in compassion fatigue and burnout within the nursing team. This would have a direct effect on patient care, satisfaction, and outcomes.

#### ***Description of the Setting***

The hospital is part of a large non-profit healthcare organization that expands over the states of North Carolina, South Carolina, and Georgia. Seven counties border the county where the organization is located. There is one nurse executive for the entire healthcare organization. The project site has multiple division vice-presidents who are master's prepared in nursing.

The IPU unit has 28 private patient rooms. The age of the patients treated in the unit range from 18 to 100 years. Patients' diagnosis on the unit includes but is not limited to asthma exacerbations, chronic obstructive pulmonary disease, congestive heart failure, and patient transfers from the intensive care unit. The nursing team members work three 12-hour shifts per week; there are no part-time team members on the unit. There are six charge nurses on the day shift and two charge nurses on the night shift. The daily census of patients on the unit averages 25 to 26 patients per day. The average patient load is five to six patients per Registered Nurse (RN) and seven patients for the Clinical Nursing Assistants (CNA). If the unit is short-staffed, each RN will take up to seven patients, and the charge nurse could have a four patient assignment.

### ***Description of the Population***

The nursing team was comprised of 41 team members that included 24 Registered Nurses (RN) and 17 Clinical Nursing Assistants (CNA). There were two male team members and 39 female team members. The clinical experience of the nursing team ranges from 1 to 20 plus years. During the SARS-CoV-2 pandemic, resource RNs and CNAs from the organization rotate through the unit to provide additional coverage. The organization also secured contracts for travel nurses who assisted on the unit with the increased patient load during the pandemic. The nursing team members were required to wear a surgical mask and eye protection during their shift. If they entered a patient's room, they were to utilize a protective gown, a 95-N mask with a surgical mask over the top, gloves, eye protection, and hair covering.

### **Project Team**

The project team consisted of the project lead, site champion, faculty advisor, charge nurses, and pastoral care liaisons. The project lead was a master's prepared nurse practitioner with 22 years of clinical experience with four years in inpatient pulmonary medicine. The project lead's role entailed planning and executing the daily huddle activities, as well as communicating and collecting feedback from the team members. The IPU nurse manager was doctorally prepared and was the site champion for the project. As the site champion, she introduced the project to her team, assisted in the improvement process, and provided coaching and support to the project lead. There was a faculty advisor from the College of Nursing who provided oversight and guidance for the project. The charge nurses from the day and night shift worked together, presenting daily huddle activities each morning. There were two pastoral care liaisons available in-person or virtually to provide spiritual support for the nursing team members.

### **Project Goals and Outcome Measures**

The project aimed to improve resiliency among nurses and nursing assistants on an Internal Medicine Pulmonary (IPU) unit during the SARS-CoV-2 pandemic by employing daily huddle activities, interactions with pastoral care liaisons in-person or virtually and smartphone apps to promote self-care and mindfulness training. The concept of resiliency was vital to the project to support process and outcome measures. The key measurement was comparing pre and post resiliency scores utilizing the Connor-Davidson Resilience (CD-RISC-10©) 10-item scale. The goal was to increase the mean resiliency scores of the nursing team members by 5%. Process goals included participation in daily huddles twice a week, utilizing smartphone apps three times a week for self-care and mindfulness training, and interacting with pastoral care liaisons in-person or virtually at least weekly. The final goal was to have 50% of the 41 nursing team members participate in the pre-survey and 50% in the post-survey.

### ***Description of the Methods and Measurement***

The Connor-Davidson Resilience (CD-RISC-10©) 10-item scale assesses hardiness on a five-point scale (Connor & Davidson, 2003). Permission was received to utilize the Connor-Davidson Resilience (CD-RISC-10©) 10-item scale (Appendix B). The items measured are flexibility (one and five), sense of self-efficacy (two, four, and nine), ability to regulate emotion (10), optimism (three, six, and eight), and cognitive focus/maintaining attention under stress (seven). The resiliency survey is a Likert scale ranging from zero to four. A score of zero represents the resilience statement is not true at all, and four indicates the resilience statement is true nearly all the time (Connor & Davidson, 2003). The items are added up for a total score. The total score of the CD-RISC-10© can range from 0 to 40. Higher scores signify advanced levels of resiliency, whereas; lower scores reveal a decrease in the ability to bounce back when faced

with hardship. In 2003, Davidson found a mean score of 32.1 (SD = 5.8) for the CD-RISC-10© item score in a random sample of 458 adults from the United States' general population.

The CD-RISC-10© is a valid and reliable scale to measure resiliency and improvement after interventions. Cronbach's alpha is utilized as a common measure of internal consistency or reliability with questionnaires (Benetato, 2019b). A score of 0.80 and above is better, and 0.90 and above is best. The Cronbach's alpha for the CD-RISC-10© ranges from 0.81 to 0.93 listed on the studies in the CD-RISC-10© manual (Davidson, 2020).

All nursing team members (RNs and CNAs) were invited to participate in the projects' surveys. A demographic survey consisting of four items was administered pre- and post-implementation to describe the target group. The CD-RISC-10© item scale was administered with the pre- and post-demographic surveys. The post-survey also included three additional questions related to the utilization of activities and two open-ended questions. The results of the pre- and post- demographic surveys and CD-RISC-10© item scale were compared to determine if there was an improvement in resiliency.

### ***Discussion of the Data Collection Process***

The project took place over 12 weeks, starting in January 2021. There was information shared with nursing team members in December 2019 explaining the project and providing a one-page summary (Appendix C). Pre-implementation demographic survey and the Connor-Davidson Resilience (CD-RISC-10©) 10-items scale were sent to the nursing team via email with a Qualtrics link to complete. A copy of the demographic survey and the baseline CD-RISC-10© provided in Appendices D and E. There was a three-question survey at six weeks to determine the utilization of pastoral care liaisons, smartphone apps, and participation in daily huddle activities (Appendix F). At the conclusion of the project, the participants were sent a

Qualtrics link to complete the demographic survey, CD-RISC-10© item scale with three additional questions related to the utilization of activities, and two open-ended questions (Appendices D, G, and H). The responses were reviewed, scored, and entered on an excel spreadsheet. The open-ended questions were reviewed to identify themes among the nursing team. The data from the survey and the excel spreadsheet were stored electronically on a password protected computer in a locked office only accessible by the project lead.

The nursing team provided feedback during the implementation period on which huddle activities were successful in improving their resiliency. The project lead kept annotated notes in an excel spreadsheet to record comments, identify themes, and tracked the implementation of the new activities introduced at daily huddles (Appendix I). The annotated notes were stored electronically on a password protected computer in a locked office only accessible by the project lead.

### **Implementation Plan**

The nursing leadership team presented the project information in team meetings approximately two weeks before the start date. The education for the nursing team members was conducted in December 2020. Staff education consisted of introductions to the pastoral care liaisons for in-person or virtual communication (Appendix J). The nursing team members selected a smartphone app from a list provided by the organization's teammate resiliency committee to promote self-care and mindfulness (Appendix K).

The target date for implementation was January 2021 for 12 weeks ending in April 2021. The pre-survey demographics and the CD-RISC-10© via Qualtrics were posted by leadership for the nursing team members to complete via computer access. A new activity was implemented at daily huddles on week 1, week 2, and week 3; then, a PDSA review was conducted to determine

week four activities. The nursing team provided feedback on which huddle activities were successful in improving their resiliency and grit. Additional PDSA cycles occurred at nine and 12 weeks during the implementation.

There was a three-question survey at six weeks via Qualtrics to determine the utilization of pastoral care liaisons, smartphone apps, and participation in daily huddle activities. At the end of 12 weeks, a post-survey was sent to the nursing team via Qualtrics to evaluate improvement in resiliency scores and utilization of huddle activities.

### **Timeline**

There were introductory meetings with the nursing team members in December 2020. The project began in January 2021, with a 12 week implementation phase concluding in April 2021. A presentation with the nursing team to discuss the findings was held June 7, 2020. Timeline details are provided in Appendix L.

## Section IV. Results and Findings

### Results

The purpose of the DNP project was to improve resiliency and grit among nurses and nursing assistants on the IPU unit during the SARS-CoV-2 pandemic by employing daily huddle activities, interactions with pastoral care liaisons in-person or virtually, and smartphone apps to promote self-care and mindfulness training. Descriptive statistics were employed for all pre- and post- resiliency survey data. Continuous data were reported as average, standard deviation, median, and range. Categorical data were reported as frequencies and percentages. For the pre- and post-analysis, t-tests for unmatched, unequal numbers of continuous parametric data were performed on each individual question, for each aggregated domain, as well as for the overall total score. All analyses were performed using Stata statistical software version 16.

The domains of flexibility, sense of self-efficacy, ability to regulate emotion, optimism, and maintaining attention under stress were generated by combining individual question items. Flexibility was comprised of questions one and five; sense of self-efficacy from questions two, four, and nine; ability to regulate emotion from question ten; optimism from questions three, six, and eight; and maintaining attention under stress from question seven. Each domain was then divided by the number of questions it was comprised of to calculate an average. Scores were calculated for all individual question items, for the domains, as well as for an overall total score.

A project goal was to have 50% of the 41 nursing team members participate in the pre-survey and 50% in the post-survey. The number of nursing team members on the unit during the project's implementation was 37. The pre-survey was distributed to 37 nursing team members; the total responses for the pre-survey received was 26 (70%). The majority of the participants were registered nurses (65.4%) with an associate degree (50.0%) and having worked in

healthcare for 0-5 years (38.5%) (Appendix M). Several support systems were identified from the participants with most reporting combination of support systems as fellow nursing team + spouse/significant other + family (26.9%) (Appendix N). The overall average total pre-intervention survey score for the individual CD-RISC-10© was 29.7 (SD: 5.1) with a median of 29 (Range: 19-38). The highest average score was reported for question one: *I am able to adapt when changes occur* (3.3; SD: 0.74), and the lowest score was for question four: *Having to cope with stress can make me stronger* (2.5; SD: 0.86). Flexibility was the highest scored domain (3.2; SD: 0.67), and ability to regulate emotion was the lowest (2.8; SD: 0.75) (Appendix O).

Post-survey was distributed to 37 nursing team members; the total responses for the post-survey received was 13 (35%). The majority of the participants were registered nurses (69.2%) with an associate degree (38.5%) and having worked in healthcare for both 0-5 years (46.2%), and 20+ years (46.2%) (Appendix M). Several support systems were identified from the participants with most reporting combination of support systems as fellow nursing team members + nurse managers + spouse/significant other + family (15.4%) (Appendix N). The overall average total post-intervention survey score for the individual CD-RISC-10© was 31.7 (SD: 5.9) with a median of 31 (Range: 21-40). The highest average scores were reported for three questions: question one: *I am able to adapt when changes occur* (3.5; SD: 0.66), question five: *I tend to bounce back after illness, injury, or other hardships* (3.5; SD 0.66), and question six: *I believe I can achieve my goals, even if there are obstacles* (3.5; SD 0.78). The lowest score was for question four: *Having to cope with stress can make me stronger* (2.6; SD: 0.87). Flexibility was the highest scored domain (3.5; SD: 0.61). The lowest scored domains were self-efficacy (2.9; SD: 0.69) and maintaining attention under stress (2.9; SD: 0.76) (Appendix O). There were 26 (70%) of nursing team members who completed the pre-survey compared to only

13 (35%) that completed the post-survey. There was one Registered Nurse (RN) who transferred off the unit during the project implementation compared to the nine RNs who left prior to implementation.

Process goals included participation in daily huddles twice a week, utilizing smartphone apps three times a week for self-care and mindfulness training, and interacting with pastoral care liaisons in-person or virtually at least weekly. The sixth week mid-point utilization survey revealed that 60% of the nursing team members participated in daily huddles two or more days each week compared to an increase of 66.6% on the post-survey (Appendix P). The utilization of smartphone apps at sixth week was 30% for no utilization and 70% for one or more days compared to post-survey for smartphone apps, revealing an increase in no utilization (50%) and a decrease for one or more days for utilization (50%). The interaction with nursing team members and pastoral care liaisons virtually or in-person was 15% at six weeks compared to 16.7% at 12 weeks.

There were two open-ended questions for the nursing team members to complete on the final survey. The first one was sharing their thoughts or feelings about the SARS-CoV-2 (COVID-19) pandemic. The common themes reported by the nursing team members were "ready for it to be over" and "tragic." The second question pertained to how the resiliency activities impacted you during the project implementation. The comments included staying focused on self-care, positive thinking, and impact on other nursing team members. There were three comments that staff reported no changes with the resiliency activities.

### Discussion of Major Findings

Participants that responded to the pre- and post-survey were primarily registered nurses with either a high school or associate degree and reported having been in healthcare for 0-5 years. The survey demographic characteristics were not significantly different between the pre- and post-participants (Appendix M).

The overall CD-RISC-10© total score increased to 6.7% and was numerically higher in the post-survey respondents, though the difference were not significant (Pre: 29.7, Post: 31.7). This met the project goal of increasing resiliency scores by 5%. There were numerical, though not statistically significant, differences seen between the pre- and post-participants responses in all individual questions except questions two: *I can deal with whatever comes my way*, question seven: *Under pressure, I stay focused and think clearly*, and question nine: *I think of myself as a strong person when dealing with life's challenges and difficulties*. There was a statistically significant increase in response related to question five: *I tend to bounce back after illness, injury, or other hardships* (Pre: 3.0, Post: 3.5;  $p=.037$ ). The largest percentage increases reported were seen in question five: *I tend to bounce back after illness, injury, or other hardships* (16.7%), and question ten: *I am able to handle unpleasant or painful feelings like sadness, fear, and anger* (14.3%).

The resiliency activities for the project included smartphone apps, daily huddles, and interactions with spiritual care liaisons virtually or in-person. The project findings related to the utilization of smartphone apps for self-care and mindfulness training did not align with the findings in the literature showing only a small increase in resiliency (Linardon, 2020). The post-survey showed a decrease of 20%. On the other hand, the literature supported the findings associated with the spiritual care domain being the most neglected by nursing team members as a

part of their self-care and well-being (Bogue & Carter, 2019). The project's post survey was 16.7%. The participation in daily huddle activities reported an increased to 66.6% in the post-survey compared to the mid-point six week survey, which supports the literature findings that receiving unit communications assist in increasing resiliency among nursing team members (Children's Hospital Association, 2019). This also contributes to the cohesiveness of the team as well as sustainable resiliency activity for the nursing unit.

## **Section V. Interpretation and Implications**

### **Costs and Resource Management**

The estimated cost of implementing the DNP project was approximately \$2,610 (Appendix Q). Out-of-pocket expense for the project was \$264.67 for two breakfasts, art supplies, and four VISA gift cards for incentives. The hours to implement the project was 62.5, with an hourly rate for an experienced RN at \$37.50 with an estimated cost of \$2,343.75. Non-financial resources for the DNP project included support from the unit's charge nurses, site champion, and the spiritual care liaisons.

As noted earlier from the Nursing Solutions Incorporated (NSI) National Health Care Retention and RN staffing report, the cost of turnover is between \$33,300 to \$56,000 per RN. During the first year of the SARS-CoV-2 pandemic, nine RNs and two nursing assistants resigned or transferred from the Internal Pulmonary unit (IPU). There was one RN who left the unit during the implementation phase of the DNP project. The cost of a resiliency program for the organization would be less than the cost of hiring and training a new RN.

### **Implications of the Findings**

#### ***Implications for Patients***

Happy, productive nursing team members impact patient care and satisfaction. This reflects back to the Institute for Healthcare Improvement (IHI, n. d.) Triple Aim framework which emphasizes patient care, satisfaction, safety, effective outcomes, and lower healthcare costs. The Quadruple Aim framework further suggests that organizations need to connect with team members to assist them in attaining enjoyment at work. Nursing team members will provide empathic care to their patients and exhibit less compassion fatigue. This leads to staff satisfaction which impacts patient satisfaction regarding their care. As a result, the patient

outcomes for the organization's goals, quality metrics, and benchmarks can be achieved at a higher level.

### ***Implications for Nursing Practice***

Nursing programs and organizations need to emphasize the importance of developing self-care and mindfulness training to assist nursing team members in recognizing the signs of burnout, fatigue, and learning boundaries with work-life balance. By doing so, the Registered Nurses (RNs) and Certified Nursing Assistants (CNAs) can integrate these into their daily routines at home and work. Changes in well-being lead to changes in mindset about happiness and life day to day.

Good working relationships promote a better work environment, as well as an increase in staff satisfaction. This leads to a reduction in nursing team member burnout and turnover. This aligns with the goals of Healthy People 2030 and the relationship between health and well-being which function together.

### ***Impact for Healthcare System(s)***

Nursing team members want to be heard and recognized for their workday in and day out with patient care. It is important for healthcare systems to recognize and reward the work that has taken place during the ongoing SARS-CoV-2 pandemic. As Feeley (2017) noted, when the healthcare teams feel valued, acknowledged, and respected, they tend to be more engaged in their work. Therefore, patient care outcomes can be achieved at a higher level leading to higher reimbursement rates and quality outcomes. The rate of burnout and turnover of nursing team members would decrease and can save the organization additional costs.

**Sustainability**

The integration of resiliency activities among inpatient nursing team members is vital to the health and well-being of the individual team members as well as the patients they care for. The utilization of relaxation room, humorous memes, and gratefulness sayings can be shared among the team members to ensure the ongoing sustainability of the resiliency activities. Daily huddles can also be utilized as a platform for sharing further ideas of health, well-being and serve as a reminder to review the smartphone apps for mindfulness training.

A formal decision has not been made as to which resiliency activities will be continued going forward on the unit. The organization has a resiliency team that started introducing self-reflection, team building, and stress relief activities. One of the hospital-wide nursing 2021 goals include each nursing unit participating in resiliency activities. Resiliency activities from the project could be continued, including maintaining the relaxation room and posting humorous memes and gratefulness reminders.

**Dissemination Plan**

The DNP project results were presented to the site champion and the nursing team members on the Internal Pulmonary unit (IPU) during their bi-weekly staff meeting in June 2021. A poster presentation of the project was presented to the College of Nursing faculty on July 13, 2021. The project was posted to the university's Scholarship repository for public access. Lastly, the results were shared with Dr. Jonathan Davidson, who provided permission for the use of the CD-RISC-10© item scale.

A manuscript with project results will be submitted for consideration for publication to *MedSurg Nursing Journal*, with the target audience being medical-surgical nursing team members. Additional venues for presentation include the Metrolina Coalition of Nurse

Practitioners and the North Carolina Nurses Association (NCNA) DNP symposium. Advanced Practice Nurses (APRNs) are in a leadership role to support Quality Improvement (QI) projects which can impact patient goals and outcomes. The APRN can also collaborate and assist nursing team members through challenging situations on the unit.

## Section VI. Conclusion

### Limitations

There were many limitations that could have played a role in the project that included: survey fatigue, staff burnout from working in a designated SARS-CoV-2 unit, timing and number of new resiliency activities, and the duration of the 12 week project's implementation period. Staff participation waxed and waned throughout the implementation period. There was a pre-survey, a six week utilization survey, and a post-survey that the team members were asked to complete, which could have led to survey fatigue. The response rate to the final survey was only 35%, as opposed to 70% in the pre-survey. The introduction of a new resiliency activity each week was too much. Once the nursing team members were participating or utilizing the activities, then a new one was introduced. It was often difficult to introduce activities at shift change as team members either wanted to go home or get their day started. An observation was made by the project lead that many team members perceived the resiliency activities as a chore or something else they had to fit into their day. When the patient census was high, the charge nurses would have to take a patient assignment each shift. This prevented additional support that could have been given to the nursing team members. The patient acuity was higher during the SARS-CoV-2 pandemic than previously. The lack of support from nursing leadership and higher patient acuity could have contributed to the lack of nursing team participation. The pre- and post-surveys for the utilization strategies were self-reported by the nursing team members. The last limitation was the time available for both the day and night shift team members to participate. The day shift team was often too busy to take part or enjoy the offered resiliency activities. The night shift or weekend nursing team members were inadvertently missed or left out due to the shift they worked. The majority of the activities occurred during the weekday.

**Facilitators**

There were many facilitators that contributed to the success of the DNP project. The nurse manager of the Internal Medicine Pulmonary Unit (IPU) was the site champion for the resiliency project. There were multiple in-person meetings and ongoing communication with the site champion regarding the nursing team's participation in the surveys and daily huddle activities. The use of the GroupMe app, the organization's email, and postings in designated areas of the unit were reminders to the team to participate in the resiliency activities. The project lead participated in staff nurse meetings as well as daily huddles two to three times weekly. When rounding on the unit throughout the week, the project lead found that asking the individual team members to complete activities and surveys was helpful in receiving responses.

There was an interprofessional collaboration with the senior pastoral care liaison for the hospital during the 12 week implementation period. The discussions led to additional on-site resiliency activities and the placement of a Code Lavender station on the unit for the nursing team members to utilize at their leisure. Further resources were provided that could be taken home. The existing relaxation room was redesigned to invite the nursing team members to stop by throughout the day for meditation and self-care.

**Recommendations for Others**

An important recommendation for consideration is to establish a council of both Registered Nurses (RNs) and Certified Nursing Assistants (CNAs) to initiate the resiliency activities for the unit. There could be several shift champions who support and understand the value of resiliency activities and ensures all nursing team members have an opportunity to participate. A shift champion could introduce new resiliency topics quarterly to remind nursing team members to take time for self-care and reflection. This would promote integration and sustainability of the resiliency activities on the unit. Another option would be to ask the nursing

team members to provide input on different options, ideas, or activities that they would be willing to participate in that would meet their needs and interests. Further resiliency programs could be shorter in duration, not 12 weeks in length with a new activity each week. The CD-RISC-10© scale could be administered annually to evaluate if resiliency activities are impacting the growth of the team members. Lastly, the organizations need to create strategies to support the Healthy 2030 framework of health and well-being of their nursing team members. A short presentation on resiliency, self-care and mindfulness training could be presented as a part of new employee orientation. Once the nursing team member orients to their unit, the shift champion can share the current resiliency activities and location of the relaxation room.

### **Recommendations for Further Study**

There are many options for further study regarding the resiliency project. The first idea would be to administer the CD-RISC-10© survey during the second year of the SARS-CoV-2 pandemic to evaluate if the resiliency scores changed and examine if the original nursing team members remained on the unit. A repeat utilization survey could be given to ascertain if the team members integrated any of the project's resiliency activities for self-care and well-being. The perception of the nursing team members could be assessed regarding the utilization of smartphone apps for self-care and mindfulness training. Further study may identify barriers that prevented the nursing team members from accessing the spiritual care liaisons. Lastly, further review is necessary based on the project's results demonstrating the lowest scoring domains as self-efficacy and maintaining attention under stress. The nurse manager and healthcare organization can investigate and arrange additional support and resources for the nursing team members.

**Final Thoughts**

This project was designed to promote resiliency and grit among an inpatient nursing team during the SARS-CoV-2 pandemic by utilizing different resiliency strategies. The results of the CD-RISC-10© survey showed an overall improvement in resiliency scores by 6.7% in utilizing different resiliency activities with daily huddles, use of smartphone apps, and interactions with spiritual care liaisons virtually or in-person. There was a statistical significance in participants' responses regarding the ability to "bounce back after illness, injury, or other hardships."

The role of nurses is ever-evolving with the changes in healthcare, new disease outbreaks, and natural disasters. As the most respected and trusted profession, nurses have large shoes to fill every day for their patients, families, and other nursing team members. The inner strength of resiliency and grit assists nurses in maintaining their focus. However, there are times when compassion fatigue and burnout occur, as with the SARS-CoV-2 pandemic. Nursing team members need to take time to practice resiliency activities for self-care, mindfulness training, and reflection. These activities can encompass humor, gratefulness, spiritual care, and meditation. The health and well-being of nurses are paramount to providing quality and safe care to patients. The ongoing practice of resiliency within healthcare organizations will sustain nurses throughout their careers as they care for their patients.

### References

- Albott, C. S., Wozniak, J. R., McGlinch, B. P., Wall, M. H., Gold, B. S., & Vinogradov, S. (2020). Battle buddies: Rapid deployment of a psychological resilience intervention for health care workers during the COVID-19 pandemic. *Anesthesia and Analgesia*, *131*(1), 43–54. <https://doi.org/10.1213/ANE.00000000000004912>
- Bakhamis, L., Paul, D. P., Smith, H., & Coustasse, A. (2019). Still an epidemic: The burn-out syndrome in hospital registered nurses. *Health Care Manager*, *38*(1), 3-10. <https://doi.org/10.1097/HCM.0000000000000243>
- Benetato, B. (2019a). *DNP Roles, Levels of Research Evidence, and More* [PowerPoint slides]. Blackboard@ECU.
- Benetato, B. (2019b). *NURS8267: WebEx class 3* [PowerPoint slides]. Blackboard@ECU.
- Bogue, R. J., & Carter, K. F. (2019). A model for advancing nurse well-being: Future directions for nurse leaders. *Nurse Leader*, *17*(6), 526-530. <https://doi:10.1016/j.mnl.2019.09.011>
- Chen, Q., Liang, M., Li, Y., Guo, J., Fei, D., Wang, L., He, L., Sheng, C., Cai, Y., Li, X., Wang, J., & Zhang, Z. (2020). Mental health care for medical staff in China during the COVID-19 outbreak. *The Lancet Psychiatry*, *7*(4), e15 – e16. [https://doi.org/10.1016/S2215-0366\(20\)30078-X](https://doi.org/10.1016/S2215-0366(20)30078-X)
- Children’s Hospital Association. (2019). *How you can improve your hospital's effectiveness in 2019: Huddle up*. <https://www.childrenshospitals.org/Newsroom/Childrens-Hospitals-Today/Articles/2019/01/How-You-Can-Improve-Your-Hospitals-Effectiveness-in-2019-Huddle-Up>

- Cleghorn, G. D., & Headrick, L. A. (1996). The PDSA cycle at the core of learning in health professions education. *The Joint Commission Journal on Quality and Patient Safety*, 22(3), 206 – 212. [https://doi.org/10.1016/S1070-3241\(16\)30223-1](https://doi.org/10.1016/S1070-3241(16)30223-1)
- Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76-82. <https://doi.org/10.1002/da.10113>
- Davidson, J. R. T. (2020, January 01). *Connor-Davidson Resilience Scale (CD-RISC) Manual*. Unpublished. <https://www.cd-risc.com>
- De Pablo, G. S., Vaquerizo-Serrano, J., Catalan, A., Arango, C., Moreno, C., Ferre, F., Shin, I. J., Sullivan, S., Brondino, C., Solmi, M., & Fusar-Poli, P. (2020). Impact of coronavirus syndromes on physical and mental health of health care workers: Systematic review and meta-analysis. *Journal of Affective Disorders*, 275, 48 – 57.
- Deming, W. E. (1993). *The new economics: For industry, government, education*. (2nd ed) Massachusetts Institute of Technology, Center for Advanced Engineering Study.
- Feeley, D. (2017, November 28). *The triple aim or the quadruple aim? Four points to help set your strategy*. <http://www.ihl.org/communities/blogs/the-triple-aim-or-the-quadruple-aim-four-points-to-help-set-your-strategy>
- Gao, T., Ding, X., Chai, J., Zhao, Z., Zhang, H., Kong, Y., & Mei, S. (2017). The influence of resilience on mental health: The role of general well-being. *International Journal of Nursing Practice*, 23, Article e12535. <https://doi.org/10.1111/ijn.12535>
- Gooch, K. (2018, December). *49% of nurses have considered leaving the profession in the last 2 years, study finds*. <https://www.beckershospitalreview.com/workforce/49-of-nurses-have-considered-leaving-the-profession-in-the-last-2-years-study-finds.html>

- Hou, T., Zhang, T., Cai, W., Song, X., Chen, A., Deng, G., & Ni, C. (2020). Social support and mental health among health care workers during coronavirus disease 2019 outbreak: A moderated mediation model. *PLoS One*, *15*(5), Article e0233831.  
<https://doi.org/10.1371/journal.pone.0233831>
- Hu, D., Kong, Y., Li, W., Han, Q., Zhang, X., Zhu, L. X., Wan, S. W., Liu, Z., Shen, Q., Yang, J., He, H. G., & Zhu, J. (2020). Frontline nurses' burn-out, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study. *Eclinical-Medicine*, *24*, Article e100424.  
<https://doi.org/10.1016/j.eclinm.2020.100424>
- Institute of Healthcare Improvement. (n. d.). *Triple Aim for Population*.  
<http://www.ihl.org/Topics/TripleAim/Pages/Overview.aspx>
- Kang, H. S., Son, Y. D., Chae, S. M., & Corte, C. (2018). Working experiences of nurses during the Middle East respiratory syndrome outbreak (MERS-CoV). *International Journal of Nursing Practice*, *24*(5), Article e12664. <https://doi.org/10.1111/ijn.12664>
- Kerfoot, K. (2020). *3 biggest causes of nurse turnover*.  
<https://www.beckershospitalreview.com/hr/3-biggest-causes-of-nurse-turnover.html>
- Langley, G. J., Nolan, K. M., & Nolan, T. W. (1994). The foundation of improvement. *Quality Progress*, *27*(6), 81-86.
- Lewin, K. (1947). Frontiers in group dynamics: Concept, method and reality in social science, social equilibria and social change. *Human Relations*, *1*(1), 5-41.  
<https://doi.org/10.1177/001872674700100103>

- Linardon, J. (2020). Can acceptance, mindfulness, and self-compassion be learned by smartphone apps? A systematic and meta-analytic review of randomized controlled trials. *Behavior Therapy, 51*(4), 646-658. <https://doi.org/10.1016/j.beth.2019.10.002>
- Moen, R. (2010). *Foundation and history of the PDSA cycle*.  
<https://www.praxisframework.org/files/pdsa-history-ron-moen.pdf>
- NSI Nursing Solutions. (2020). *2020 NSI national health care retention & RN staffing report*.  
[https://www.nsinursingsolutions.com/Documents/Library/NSI\\_National\\_Health\\_Care\\_Retention\\_Report.pdf](https://www.nsinursingsolutions.com/Documents/Library/NSI_National_Health_Care_Retention_Report.pdf)
- Pronk, N., Kottke, T., Milstein, B., Rossom, R., & Stiefel, M. (2018, November). *Health and well-being*. In issue briefs to inform development and implementation of healthy people 2030. [https://www.healthypeople.gov/sites/default/files/HP2030\\_Committee-Combined-Issue%20Briefs\\_2019-508c.pdf](https://www.healthypeople.gov/sites/default/files/HP2030_Committee-Combined-Issue%20Briefs_2019-508c.pdf)
- Rangachari, P., & Woods, J. L. (2020). Preserving organizational resilience, patient safety, and staff retention during COVID-19 requires a holistic consideration of the psychological safety of healthcare workers. *International Journal of Environmental Research and Public Health, 17*(12), Article e4267. <https://doi.org/10.3390/ijerph17124267>
- Rienhart, R. J. (2020, January 6). *Nurses continue to rate the highest in honesty, ethics*.  
<https://news.gallup.com/poll/274673/nurses-continue-rate-highest-honesty-ethics.aspx>
- Rushton, C. H., Batcheller, J., Schroeder, K., & Donohue, P. (2015). Burn-out and resilience among nurses practicing in high-intensity settings. *American Journal of Critical Care, 24*(5), 412–420. <https://doi-org.eu1.proxy.openathens.net/10.4037/ajcc2015291>

- Shanafelt, T. D., & Noseworthy, J. H. (2017). Executive leadership and physician well-being: Nine organizational strategies to promote engagement and reduce burn-out. *Mayo Clinic Proceedings*, 92(1), 129-146. <https://link.gale.com/apps/doc/A479714623/HRCA?u=ncliveecu&sid=HRCA&xid=5086f466>
- Smith, R. J., & Wolf, M. (2018). Resiliency: A core competency in today's NICU nurse leader. *Journal of Perinatal & Neonatal Nursing*, 32(4), 295-296. <https://doi.org/10.1097/JPN.0000000000000370>
- Thompson, R. (2018, January 23). *How to revamp the nightingale pledge for today's nurse*. <https://healthyworkforceinstitute.com/how-to-revamp-the-nightingale-pledge-for-todays-nurse>
- Turale, S., Meechamnan, C., & Kunaviktikul, W. (2020). Challenging times: Ethics, nursing, and the COVID-19 pandemic. *International Nursing Review*, 67(2), 164-167. <https://doi.org/10.1111/inr.12598>
- Tyer-Viola, L. A. (2019). Grit: The essential trait of nurses during a disaster. *The Journal of Perinatal and Neonatal Nursing*, 33(3), 201-204. <https://doi.10.1097/JPN.0000000000000416>
- Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry*, 7(3), 228-229. [https://doi.org/10.1016/S2215-0366\(20\)30046-8](https://doi.org/10.1016/S2215-0366(20)30046-8)
- Zerbini, G., Ebigbo, A., Reicherts, P., Kunz, M., & Messman, H. (2020). Psychosocial burden of healthcare professionals in times of COVID-19: A survey conducted at the University Hospital Augsburg. *German Medical Science: GMS e-journal*, 18(5), 1-9. <https://doi.org/10.3205/000281>

## Appendix A Literature Matrix

Authors	Year Published	Article Title	Journal	Purpose and take home message	Design/Analysis/ Level of Evidence	IV DV or Themes concepts and categories	Instruments Used	Sample method	Subject Characteristics
Albott, C. S., Wozniak, J. R., McGlinch, B. P., Wall, M. H., Gold, B. S., & Vinogradov, S.	2020	Battle buddies: Rapid deployment of a psychological resilience intervention for health care workers during the COVID-19 pandemic.	<i>Anesthesia and Analgesia</i> , 131(1), 43–54.	The Army's "Battle Buddies" peer support system was introduced to the healthcare workers to aid in resiliency and support during the COVID-19 pandemic.	RCT with adaptive design. Psychological resilience intervention and the utilization of Anticipate-Plan-Deter model. This was in conjunction with an observational study. Level of Evidence 2.	Mental Health Healthcare workers COVID-19 SARS and MERS Post traumatic stress disorder psychological stress responses	A stratified delayed start design was utilized to allow for comparison.	N/A	Healthcare workers in the ICU and ER
Bakhamis, L., Paul, D. P., Smith, H., & Coustasse, A.	2019	Still an Epidemic: The burnout syndrome in hospital registered nurses	<i>Health Care Manager</i> , 38(1), 3-10.	The purpose was to examine the causes and consequences of burnout syndrome among RNs in US hospitals and its role in the RN shortage in hospitals. There are 4 levels (individual, management, organization, and work) that influence the incidence of burnout.	There was a review of the literature and 2 semi structured interviews with nurses. This was a qualitative study. Level of Evidence is 4A.	Burnout syndrome Emotional exhaustion Turnover Depersonalization Inefficacy	No instrument was utilized.	Sample method was not discussed.	One of the RNs was a clinical informatics nurse specialist, and the second RN worked in the intensive care unit. Nursing experience equaled 32 years.
Bogue, R. J., & Carter, K. F.	2019	A model for advancing nurse well-being: Future directions for nurse leaders.	<i>Nurse Leader</i> , 17(6), 526-530	Nurses leaders approach to increase well-being among nursing teams and lower stressors that increase burnout and turnover.	Survey	Well-being Nurse burnout Nursing Leadership	Survey using the Socio-Relational Well-Being (RELA) scale of the NWSAT Depersonalization scale of Maslach Burnout Inventory (MBI)	Survey on burnout and well being	Nurses at an academic institution

De Pablo, G. S., Vaquerizo-Serrano, J., Catalan, A., Arango, C., Moreno, C., Ferre, F., Shin, I. J., Sullivan, S., Brondino, C., Solmi, M., & Fusar-Poli, P	2020	Impact of coronavirus syndromes on physical and mental health of health care workers: Systematic review and meta-analysis	<i>Journal of Affective Disorders</i> , 275, 48 – 57.	There is high impact on healthcare workers mental and physical well-being when treating patients with any type of coronavirus syndrome (SARS, MERS, COVID-19).	Systematic review and meta-analysis Level of Evidence 1	Healthcare workers COVID-19 SARS MERS Mental health	No instrument was utilized.	N/A	N/A
Gao, T., Ding, X., Chai, J., Zhao, Z., Zhang, H., Kong, Y., & Mei, S.	2017	The influence of resilience on mental health: The role of general well-being.	<i>International Journal of Nursing Practice</i> , 23, Article e12535.	General well-being correlates with resiliency in lowering mental health issues / concerns in nurses.	Cross - Sectional survey Level of Evidence is 3B.	Resilience General well-being Mental health	Connor Davidson Resiliency scale System check-list-90 revised. General well-being schedule	Random cluster sampling	Nurse from 48 clinical units in Jilin Province, China
Hou, T., Zhang, T., Cai, W., Song, X., Chen, A., Deng, G., & Ni, C	2020	Social support and mental health among health care workers during Coronavirus Disease 2019 outbreak: A moderated mediation model	<i>PLoS One</i> , 15(5), e0233831.	Study presented the protective role of social support in mental health among health care workers. Resilience could provide a pathway through which social support contributes to mental health. The effect of social support on mental health by resilience was seen middle-aged health care worker compared with the younger ones	Cross - Sectional Level of Evidence is 3B.	Mental Health Social Support Resiliency	Social Support Rating Scale (SSRS), Connor-Davidson Resilience scale (CD-RISC) and Symptom Checklist 90 (SCL-90)	Convenient sampling and all data were collected through self-report	N/A

Hu, D., Kong Y., Li, W., Han, Q., Zhang, X., Zhu L.X., Wan, S.W., Liu, Z., Shen Q., Yang, J., He, H. G., & Zhu, J.	2020	Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large scale cross sectional study	<i>Eclinical-Medicine</i> , e100424. Advance online publication.	Frontline nurses face mental health challenges; this study examined these as well as the factors that may associate with these challenges.	Large scale, cross sectional, descriptive, correlational study. Level of Evidence is 3B.	Mental health Burnout Anxiety Fear Depression	Multiple instruments used Chinese version: Maslach Burnout Inventory: Human Services Survey (MBI-HSS) for Medical Personnel (MP); the Connor-Davidson Resilience Scale-10 (CD-RISC-10), the Multidimensional Scale of Perceived Social Support (MSPSS), Zung's Self-Rating Depression Scale (SDS), Fear Scale for Healthcare Professionals (FS-HPs), Zung's Self-Rating Anxiety Scale (SAS), and General Self-efficacy Scale (GSS).	All frontline nurses who were caring for COVID-19 patients in the participating hospitals were invited to participate in this study.	Frontline nurses from 2 hospitals in Wuhan.
Kang, H.S., Son, Y.D., Chae, S.-M., & Corte, C.	2018	Working experiences of nurses during the Middle East respiratory syndrome outbreak (MERS-CoV).	<i>International Journal of Nursing Practice</i> , 24(5), e12664	The purpose was to examine working experiences of nurses during Middle East respiratory syndrome outbreak (MERS-CoV). A supportive and safe work environment is essential to ensure adequate nurse staffing, supplying best-quality PPE, and improving communication to decrease confusion around changing treatment protocols, and provide the quality of care during infection outbreak.	Seven focus groups and 3 individual in-depth interviews. This was a qualitative descriptive study. The interview responses from the participants were completed by qualitative content analysis. Level of Evidence was 4B.	Nurse burnout Fear of infection Concern of safety PPE Heavy patient workload	No instrument was utilized.	A sample of nurses was recruited using variation sampling based on experience of working with MERS-CoV.	Staff nurses working in hospitals that had confirmed or suspected cases of MERS-CoV. The nursing units were infection control units, ICUs, emergency rooms, labor and delivery units, and medical units, respiratory care units.

Linardon, J.	2020	Can acceptance, mindfulness, and self-compassion be learned by smartphone apps? A systematic and meta-analytic review of randomized controlled trials.	<i>Behavior Therapy</i> , 51(4), 646-658	Smartphone apps show small increases in acceptance and mindfulness. There also was a significant improvement noted in self-compassion when utilizing these apps.	A systematic and meta-analytic review of randomized controlled trials. Levels of Evidence 1.	Acceptance Mindfulness Self-compassion Mental health Well-being	No instrument was utilized.	N/A	N/A
Zerbini, G., Ebigbo, A., Reichert, P., Kunz, M., & Messman, H.	2020	Psychosocial burden of healthcare professionals in times of COVID-19 – a survey conducted at the University Hospital Augsburg	<i>German Medical Science: e-journal</i> , 18, Doc05, 1-9.	Nurses working in COVID-19 wards suffer more psychological consequences of the pandemic. This could be caused by a higher workload and longer time in direct contact with COVID-19 patients, compared to physicians.	Survey	Mental health, psychological burnout, psychological strain, psychological burden	Two questionnaires (the Patient Health Questionnaire, PHQ; and the Maslach Burnout Inventory, MBI), and reported their fear of a COVID-19 infection and stress at work on a 10-point Likert scale, and three open-ended questions about causes of burden, supportive resources and needs during the crisis.	Sample method was not discussed.	75 nurses (45 COVID-19 wards vs. 30 regular wards) and 35 physicians (17 COVID-19 wards vs. 18 regular wards)

**Appendix B**  
**Permission for Connor-Davidson Resilience Scale 10 (CD-RISC 10) ©**

Dear Diane:

Thank you for your interest in the Connor-Davidson Resilience Scale (CD-RISC). We are pleased to grant permission for 150 uses of the CD-RISC-25 in the COVID-19-related project you have described under the following terms of agreement:

- 1 . You agree (i) not to use the CD-RISC for any commercial purpose unless permission has been granted. or (ii) in research or other work performed for a third party, or (iii) provide the scale to a third party without permission. If other colleagues or off-site collaborators are involved with your project, their use of the scale is restricted to the project described. and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.
2. You may use the CD-RISC in written form, by telephone, or in secure electronic format whereby the scale is protected from unauthorized distribution or the possibility of modification. In all presentations of the CD-RISC, including electronic versions, the full copyright and terms of use statement must appear with the scale. The scale should not appear in any form where it is accessible to the public and should be removed from electronic and other sites once the project has been completed.
3. Further information on the CD-RISC can be found at the [wv.cd-risc.com](http://wv.cd-risc.com) website. The scale's content may not be modified. although in some circumstances the formatting may be adapted with permission of either Dr. Connor or Dr. Davidson. If you wish to create a non-English language translation or culturally modified version of the CD-RISC, please let us know and we will provide details of the standard procedures.
4. Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items, respectively. When using the CD-RISC 25, CD-RISC 10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale.
5. The scale is provided at no cost for this project.
6. Complete and return this form via email to [mail@cd-risc.com](mailto:mail@cd-risc.com).
7. In any publication or report resulting from use of the CD-RISC, you do not publish or partially reproduce items from the CD-RISC without first securing permission from the authors.

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

For questions regarding use of the CD-RISC, please contact Jonathan Davidson at [mail@cd-risc.com](mailto:mail@cd-risc.com).

Sincerely yours,

Jonathan R. T. Davidson, M.D.

Agreed to by:

Signature (printed)

## Appendix C Team Member Information

### Improving resiliency among inpatient nursing teams during the SARS-CoV-2 pandemic.

*Thank you for your participation in this project. The following is a brief description and important information related to your participation.*

During natural disasters or disease outbreaks, nursing teams are relied upon to care and fulfill the needs of their patients, even though, they themselves are strained or facing adversity (Tyer-Viola, 2019). When nursing teams experience sustained pressure, they are known to have an inner strength or drive to overcome these obstacles referred to as resiliency or grit.

The aim of this project is to improve resiliency among nurses and nursing assistants during the SARS-CoV-2 pandemic by employing daily huddle activities, interactions with pastoral care liaisons in-person or virtually, and free smartphone apps to promote self-care and mindfulness training.

- ✚ There will be a 4-question demographic survey and the Connor-Davidson Resilience (CD-RISC-10©)10-item scale sent by email with a Qualtrics link to complete. This should take 10 minutes or less to complete.
- ✚ The nursing team will be invited to participate in: daily huddle activities, interactions with pastoral care liaisons in-person or virtually, and smartphone apps to promote self-care and mindfulness training. A list of free apps will be provided to choose from based on your interests.
- ✚ There will be a 3-question survey at mid-point (6 weeks) to assess utilization of resiliency activities. This should take 5 minutes or less to complete.
- ✚ The post survey will be conducted at 12 weeks sent by email with a Qualtrics link to include a 4-question demographic survey, CD-RISC-10© scale with three additional questions related to utilization of resiliency activities, and two open ended questions. This should take 15 minutes or less to complete.

*Your participation in this project is completely voluntary and anonymous. No personal identifying information will be collected or recorded from those who participate.*

**Appendix D**  
**Demographic Questions**

1. What is your professional role?
  - a) Registered Nurse
  - b) CNA / Care Partner
  - c) Nurse Manager
  
2. How many years have you worked in healthcare?
  - a) 0 to 5 years
  - b) 6 to 10 years
  - c) 11 to 15 years
  - d) 16 to 20 years
  - e) 20+ years
  
3. What is your highest education level?
  - a) High School Diploma
  - b) Associate Degree
  - c) Bachelor's Degree
  - d) Master's Degree
  - e) Doctorate Degree
  
4. Define your support system(s):
  - a) Fellow nursing team members
  - b) Nurse Managers
  - c) Spouse / significant other
  - d) Family
  - e) Parents

**Appendix E**  
**Baseline Connor-Davidson Resilience Scale 10 (CD-RISC-10 ©)**

For each item, please pick the letter below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

- a) Not true at all
- b) Rarely true
- c) Sometimes true
- d) Often true
- e) True nearly all the time

1. I am able to adapt when changes occur.
2. I can deal with whatever comes my way.
3. I try to see the humorous side of things when I am faced with problems.
4. Having to cope with stress can make me stronger.
5. I tend to bounce back after illness, injury, or other hardships.
6. I believe I can achieve my goals, even if there are obstacles.
7. Under pressure, I stay focused and think clearly.
8. I am not easily discouraged by failure.
9. I think of myself as a strong person when dealing with life's challenges and difficulties.
10. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

All rights reserved. No part of this document may be reproduced or transmitted in any form without permission in writing from Dr. Davidson at mail@cd-risc.com. Copyright © 2001, 2018 by Kathryn M. Connor, M.D., and Jonathan R. T. Davidson, M.D.

**Appendix F**  
**Mid-Point Utilization Strategies**

1. How many times a week did you participate in the daily huddle activities?
  - a) None
  - b) 1 day
  - c) 2 days
  - d) 3 days
  
2. How many times a week did you utilize a smartphone app to promote self-care and mindfulness training?
  - a) None
  - b) 1-2 days
  - c) 3-4 days
  - d) 5-6 days
  - e) 7 days
  
3. How many times a week did you interact in-person or virtually with the pastoral care liaisons?
  - a) None
  - b) 1 day
  - c) 2 days
  - d) 3 days

**Appendix G**  
**Post Survey Connor-Davidson Resilience Scale 10 (CD-RISC-10 ©)**

For each item, please pick the letter below that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

- a) Not true at all
- b) Rarely true
- c) Sometimes true
- d) Often true
- e) True nearly all the time

1. I am able to adapt when changes occur.
2. I can deal with whatever comes my way.
3. I try to see the humorous side of things when I am faced with problems.
4. Having to cope with stress can make me stronger.
5. I tend to bounce back after illness, injury, or other hardships.
6. I believe I can achieve my goals, even if there are obstacles.
7. Under pressure, I stay focused and think clearly.
8. I am not easily discouraged by failure.
9. I think of myself as a strong person when dealing with life's challenges and difficulties.
10. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

All rights reserved. No part of this document may be reproduced or transmitted in any form without permission in writing from Dr. Davidson at mail@cd-risc.com. Copyright © 2001, 2018 by Kathryn M. Connor, M.D., and Jonathan R. T. Davidson, M.D.

**Appendix H**  
**Final Utilization Strategies**

1. How many times a week did you participate in the daily huddle activities?
  - a) None
  - b) 1 day
  - c) 2 days
  - d) 3 days
  
2. How many times a week did you utilize a smartphone app to promote self-care and mindfulness training?
  - a) None
  - b) 1-2 days
  - c) 3-4 days
  - d) 5-6 days
  - e) 7 days
  
3. How many times a week did you interact in-person or virtually with the pastoral care liaisons?
  - a) None
  - b) 1 day
  - c) 2 days
  - d) 3 days

Open-ended questions

What are your thoughts or feelings about the SARS-CoV-2 (COVID-19) pandemic?

How have the resiliency activities impacted you?

**Appendix I**  
**Huddle Activities**

<b>Week</b>	<b>Date</b>	<b>Huddle Activity</b>	<b>Feedback from Nursing Team Members</b>
1	January 5 - January 11, 2021	Humor with Memes - Share new memes each day and post on unit for viewing	What time are you posting today's meme? They make me smile. Experienced nurses relay that new, younger nurses are focused on themselves. They do not see the big picture or the seriousness of the pandemic. The number of patients each day varies depending on how many nurses are working. The charge nurse always has an assignment. Concerns and uncertainty about the future of the United States after the riots at the Nation's Capital. Reflection of what it means to live in America.
2	January 12 - January 18, 2021	Thankfulness, Gratefulness - Share thoughts, positive phrases, poems	Thankfulness snowflakes listed fellow team members, Trish, frontline workers, vaccines, animals (dogs / cats), family, loved ones, health and having a job. Having something to read in the bathroom. The phrases make think how lucky I am. Pray every day before I come to work. Received both of my vaccinations. Waiting a little longer before taking the vaccine, do not know what the long-term effects are going to be. Bulletin board was selected by nursing team to post for the month.
3	January 19 - January 25, 2021	Orchid vs. Onion - Select a picture of an orchid or onion to describe team members day	The onions make me laugh. The reminder of the orchid makes me smile. Always an onion at work. Usually an orchid unless a team member upsets me. The pandemic needs to go away, so tired of everything. Patients are much sicker than before. Too many patients to take care of on the unit.
4	January 26 - February 1, 2021	Loading APPs smartphone for self-care and mindfulness	Receive reminders on my phone, but just swiped them away. Have not used the APP in a long time. Listen to gospel music on my church's website. Not enough room on my phone for another APP. Listen to mediation music on my way home from work. Not interested in placing an APP on my phone.
5	February 2 - February 8, 2021	Break Away activity - Take a popsicle stick write down your worries	Not much participation this week with this activity. Found the materials and instructions in the lunch break room unused and stuffed in a box with granola bars and apples. I will move the activity to the relaxation room.

		or stresses on it and break it to be released from it	
6	February 9 - February 15, 2021	Combination of humorous memes and thankfulness quotes with ongoing utilization of self-care APPs	The three-question utilization survey will be given this week to determine additional activities for team members. Discussions with nursing team about reopening the unit's relaxation room were done during rounds. I would like to use the relaxation room, but I never have time on day shift. I like taking naps in there on night shift. Maybe Trish can get a diffuser again. I found it very calming when I used it in the past.
7	February 16 - February 22, 2021	Relaxation room open on the unit with ongoing posting of memes and quotes	When are you posting the memes today? I like sitting in the relaxation room. It is peaceful. Night shift team members enjoy having the lounge in addition to the pullout chair in the relaxation room. The magazines are nice to read. I enjoyed the chocolate Valentine's Day candy. The blanket is a nice touch.
8	February 23 - March 1, 2021	Positive affirmation week and Code Lavender station by pastoral care liaisons	I completed the "I am" form, will these be posted on the unit? Common themes: thankful, grateful, beautiful, willingness, excited, and adaptable. I like the candles at the Code Lavender station. The colored sand is pretty. The aromatherapy tubes are nice to have. I used one when I went to the relaxation room.
9	March 2 - March 8, 2021	How are you feeling: cotton- ball, wood or brick? Picture sent via GroupMe	The nursing team decided not to have the comments go through GroupMe, so 3 charts were made to post at the time clock and the restrooms for team members to place a tally mark to correspond to how they were feeling the day they worked. Responses included: nine cotton balls, seven trees and six bricks for a week period.
10	March 9 - March 15 , 2021	Reflection on Resiliency: 3 colored beads (red, green and blue) with a chart describing the meaning of each color. Each team	Baseline number of colored beads placed in a bag: 84 green, 83 red and 83 blue. The total beads placed in the jar includes: 44 red, 57 green and 52 blue.  Red: warmth, love, boldness, excitement, strength, energy, determination, passion, courage Green: reliability, growth, healing, well-being, calm, relaxation, safety, honesty, optimism, harmony Blue: peace, loyalty, reliability, honor, trust, depth, stability, professionalism

		members picks bead(s) and places in a jar to reflect over the past year.	Nursing team members share comments about changing over to an intermediate care unit. I have to take additional classes in EKG and ACLS. It has been a while since I had to study. What happens if I do not pass?
11	March 16 - March 22 , 2021	Positive self-affirmations	<p>When you look in the mirror, what do you see? A chart was given with a list of self-affirmation qualities for the nursing team members to circle the ones that describe them. The total charts returned 8/37.</p> <p>Self-affirmation qualities listed: amazing, creative, happy, beautiful, strong, brave, kind, sporty, caring, funny, smart, loyal, brilliant, adventurous, careful, loved, calm, positive, understanding and unique.</p> <p>There were 2 blanks that the nursing team members could write in additional qualities; these included empathetic, considerate, protective and perseverant.</p>
12	March 23 - March 30, 2021	Celebration for the 1- year anniversary COVID-19 Pandemic	No resiliency activities planned. Post resiliency surveys sent via the unit's GroupMe and via email to the nursing team members to complete. The survey opened on 3/22 and will close on 4/1. Check in Qualtrics on the evening of 3/25 showed 8 completed thus far. The total surveys completed were 13.

## **Appendix J** **Self-Care Quick Reference Guide**

**Chaplains:** HALO “Organization’s Chaplain Spiritual Care Pastoral”

We are ***here for you!*** If you need someone to talk to, please message us.

**Daily Morning Inspiration and Prayer:** Skype

Mon-Fri at 0730 with prayers emailed daily. To join, email organization

**Prayer line:** [www.PrayerLineMailbox@organization.org](mailto:www.PrayerLineMailbox@organization.org)

Send a *confidential* prayer request and receive a response and/or request to be added to the weekly reflection

**Code Lavender HopeLine:** 800-212-XXXX

**SharePoint Site:** Emotional/Spiritual Support for Teammates During COVID-19

<http://sharepoint.com/sites/EmotionalSpiritualSupportforTeammatesDuringCOVID-19>

**Employee Assistance Program:** 800-384-XXXX

Call: 24/7 or email [BHC@organization](mailto:BHC@organization)

Provides immediate help for providers and family members

**Behavioral Health Line:** 800-418-XXXX

Support line available 24/7; staffed by licensed professionals

Open to anyone, not just teammates

**LiveWELL:** Resilience and Well-Being page

<http://teammates> at organization

**Appendix K  
Teammate Resilience Committee**

When presented with life’s challenges, we need a combination of **resilience role models, tools, strategies and protected time** to help us bounce back.

**Did you know?**

We have so many resources to help us during these challenging times, and for any personal or professional challenges.

**Download a Free App to your Smart Device!**

<p><b>Guided Imagery/Meditation Apps</b></p>	<p>The Mindfulness App Headspace Calm Mindbody Insight Timer Smiling Mind Stop, Breathe, Think 10% Happier</p>
<p><b>Deep Breathing Apps</b></p>	<p>Headspace Breathe Deep Breathe + Paced Breathing Breathe2Relax</p>
<p><b>Meditation Music Apps</b></p>	<p>Calm Headspace Meditation Sounds-Meditation Music Meditation Music Relax Melodies Relax Yoga Music</p>

### **Appendix L Project Timeline**

- November 2020: Complete the Expedited IRB approval process for the organization and College of Nursing review process
- December 2020:
  - Meetings with inpatient nursing team about quality improvement project
  - Introduction of pastoral care liaisons
  - Assist nursing team in loading smartphone apps
  - Nursing team will complete demographic questions and Connor-Davidson Resilience (CD-RISC-10©) 10-item scale
- January 2021-March 2021:
  - Implement one new activity for daily huddles on week 1, week 2, and week 3, complete PDSA cycle review to determine week 4 activity
  - The PDSA cycle review will occur every 3-4 weeks during the implementation period
  - There will be one 3-question survey for utilization strategies at mid-point (6-weeks)
  - Reminders to utilize smartphone apps and provide availability of pastoral care liaisons
- April 2021: Nursing team will complete demographic questions, Connor-Davidson Resilience (CD-RISC-10©)10-item scale, questions on which resiliency activities were utilized and the frequency, and two open-ended questions
- April 2021: Data will be analyzed
- July 2021: Plan for a presentation of findings to the organization's site and the College of Nursing

**Appendix M**  
**Participant Demographics (Pre and Post)**

	Pre Survey (n=26)		Post Survey (n=13)	
	n	%	n	%
<b>Professional role</b>				
CNA / Care partner	8	30.8	4	30.8
Nurse manager	1	3.9	0	0.00
Registered nurse	17	65.4	9	69.2
<b>Education level</b>				
Associates	13	50.0	5	34.5
Bachelors	4	15.4	3	23.1
Doctorate	1	3.9	0	0.00
High School	7	26.9	3	23.1
Masters	1	3.9	2	15.4
<b>Number of years in healthcare</b>				
0-5	10	38.5	6	46.2
6-10	5	19.2	0	0.00
11-15	3	11.5	0	0.00
16-20	2	7.7	1	7.7
20+	6	23.1	6	46.2

**Appendix N**  
**Participant Support Systems (Pre and Post)**

	<b>Pre Survey (n=26)</b>		<b>Post Survey (n=13)</b>	
	n	%	n	%
Spouse / significant other	19	28.4	7	24.1
Nurse managers	7	10.5	4	13.8
Fellow nursing team members	18	26.9	8	27.6
Family	23	34.3	10	34.5

**Appendix O**  
**Connor-Davidson Resiliency Results (Pre and Post)**

Connor-Davidson Resilience Scale	Pre n=26		Post n=13		p- value
	average	%	average	%	
1. I am able to adapt when changes occur.	3.3	(0.74)	3.5	(0.66)	.515
2. I can deal with whatever comes my way.	3.2	(0.67)	3.1	(0.76)	.760
3. I try to see the humorous side of things when I am faced with problems.	2.9	(0.74)	3.2	(0.83)	.272
4. Having to cope with stress can make me stronger.	2.5	(0.86)	2.6	(0.87)	.698
5. I tend to bounce back after illness, injury, or other hardships.	3.0	(0.85)	3.5	(0.66)	.037*
6. I believe I can achieve my goals, even if there are obstacles.	3.1	(0.59)	3.5	(0.78)	.172
7. Under pressure, I stay focused and think clearly.	2.9	(0.56)	2.9	(0.76)	1.0
8. I am not easily discouraged by failure.	2.8	(0.78)	3.0	(0.91)	.609
9. I think of myself as a strong person when dealing with life's challenges and difficulties.	3.1	(0.71)	3.1	(0.80)	.885
10. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	2.8	(0.75)	3.2	(0.83)	.136
<b>Total Score</b>	29.7	(5.1)	31.7	(5.9)	.308
<b>Domains Scores</b>					
Flexibility (1 and 5)	3.2	(0.67)	3.5	(0.61)	.120
Self-efficacy (2, 4, and 9)	2.9	(0.63)	2.9	(0.69)	.912
Ability to regulate emotion (10)	2.8	(0.75)	3.2	(0.83)	.136
Optimism (3, 6, and 8)	3.0	(0.58)	3.2	(0.64)	.216
Maintain attention under stress (7)	2.9	(0.56)	2.9	(0.76)	1.0

**Appendix P**  
**Utilization Strategies (Mid-point and Post-survey)**

	<b>Mid-point Survey (n=20)</b>		<b>Post-survey (n=12)</b>	
Daily Huddle Activities	n	%	n	%
None	1	0.05	0	0.00
1 day	7	35.0	4	33.3
2 days	5	25.0	2	16.7
3 days	7	35.0	6	50.0
<b>Smartphone APPs</b>				
None	6	30.0	6	50.0
1-2 days	11	55.0	5	41.7
3-4 days	1	0.05	0	0.00
5-6 days	2	10.0	1	8.30
7 days	0	0.00	0	0.00
<b>Pastoral Care Liaisons</b>				
None	17	85.0	10	33.3
1 day	3	15.0	2	16.7
2 days	0	0.00	0	0.00
3 days	0	0.00	0	0.00

**Appendix Q  
Project Budget**

Item	Cost
Breakfast for project kick-off	\$56.26
Art supplies, candy for huddle activities	\$21.85
Printing of materials (supplied by unit)	\$0.00
VISA gift cards x 2 for drawing with activation fees	\$65.15
VISA gift cards x 2 for drawing with activation fees	\$65.15
Breakfast for final week of celebrations	\$56.26
Hours to implement project 62.5 at an hourly rate of \$37.50 for an experienced RN	\$2,343.75
<b>Total expense for project</b>	<b>\$2,608.42</b>

**Appendix R**  
**Doctor of Nursing Practice Essentials**

	<b>Description</b>	<b>Demonstration of Knowledge</b>
<p>Essential I <i>Scientific Underpinning for Practice</i></p>	<p><b>Competency</b> – Analyzes and uses information to develop practice  <b>Competency</b> -Integrates knowledge from humanities and science into context of nursing  <b>Competency</b> -Translates research to improve practice  <b>Competency</b> -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes</p>	<ul style="list-style-type: none"> <li>• A literature search was conducted in multiple nursing databases to aid in understanding the topic.</li>   <li>• The results were translated into a literature matrix for the paper utilizing levels of evidence by Dennert and Stewart.</li>   <li>• The knowledge gained assisted with the development of the project design, goals, and nursing practice outcomes.</li> </ul>
<p>Essential II <i>Organizational &amp; Systems Leadership for Quality Improvement &amp; Systems Thinking</i></p>	<p><b>Competency</b> –Develops and evaluates practice based on science and integrates policy and humanities  <b>Competency</b> –Assumes and ensures accountability for quality care and patient safety  <b>Competency</b> -Demonstrates critical and reflective thinking  <b>Competency</b> -Advocates for improved quality, access, and cost of health care; monitors costs and budgets  <b>Competency</b> -Develops and implements innovations incorporating principles of change  <b>Competency</b> - Effectively communicates practice knowledge in writing and orally to improve quality</p>	<ul style="list-style-type: none"> <li>• The project was designed to integrate resiliency activities with the nursing team members to assist with self-care and well-being.</li>   <li>• The PDSA cycle was utilized to gather data regarding daily huddle activities that were completed during the project. The results were evaluated to</li> </ul>

	<p><b>Competency</b> - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems</p>	<p>identify the next resiliency activities.</p> <ul style="list-style-type: none"> <li>• A meeting was held with the nursing team to introduce the resiliency project. A summary was provided to explain the importance of health and well-being based on the guidelines from Healthy People 2030.</li> <li>• Burnout and turnover of the nursing team members affect the healthcare system. By implementing a resiliency program, the overall cost can be reduced.</li> </ul>
<p>Essential III <i>Clinical Scholarship &amp; Analytical Methods for Evidence-Based Practice</i></p>	<p><b>Competency</b> - Critically analyzes literature to determine best practices  <b>Competency</b> - Implements evaluation processes to measure process and patient outcomes  <b>Competency</b> - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients  <b>Competency</b> - Applies knowledge to develop practice guidelines  <b>Competency</b> - Uses informatics to identify, analyze, and predict best practice and patient outcomes  <b>Competency</b> - Collaborate in research and disseminate findings</p>	<ul style="list-style-type: none"> <li>• A detailed literature search was completed to review best practices for resiliency activities with nursing team members in pandemic or natural disasters situations.</li> <li>• The different activities were reviewed to identify which ones would be utilized in the project to promote resiliency among nursing team members. This would contribute to improved patient care and safety.</li> </ul>

		<ul style="list-style-type: none"> <li>• There were multiple interactions with the DNP student, fellow peers, site champion, and faculty advisor throughout the project.</li> <li>• There were also interactions with the organization's IRB board as well as the NSAC committee.</li> <li>• The results of the DNP project were presented to the College of Nursing and the IPU nursing team.</li> </ul>
Essential IV <i>Information Systems – Technology &amp; Patient Care Technology for the Improvement &amp; Transformation of Health Care</i>	<p><b>Competency</b> - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery &amp; quality of care</p> <p><b>Competency</b> - Analyze and operationalize patient care technologies</p> <p><b>Competency</b> - Evaluate technology regarding ethics, efficiency and accuracy</p> <p><b>Competency</b> - Evaluates systems of care using health information technologies</p>	<ul style="list-style-type: none"> <li>• The DNP project utilized numerous technology applications such as Zoom meetings, Excel for tracking and analyzing data collection, Microsoft teams within the organization, Qualtrics for pre and post CD-RISC-10© surveys, and GroupMe to send reminders to nursing team members throughout the 12 week implementation period.</li> </ul>
	<b>Description</b>	<b>Demonstration of Knowledge</b>
Essential V <i>Health Care Policy of Advocacy in Health Care</i>	<p><b>Competency</b>- Analyzes health policy from the perspective of patients, nursing and other stakeholders</p> <p><b>Competency</b> – Provides leadership in developing and implementing health policy</p>	<ul style="list-style-type: none"> <li>• The project's goal was to improve resiliency among nursing team members to prevent burnout and turnover.</li> </ul>

	<p><b>Competency</b> –Influences policymakers, formally and informally, in local and global settings</p> <p><b>Competency</b> – Educates stakeholders regarding policy</p> <p><b>Competency</b> – Advocates for nursing within the policy arena</p> <p><b>Competency</b>- Participates in policy agendas that assist with finance, regulation and health care delivery</p> <p><b>Competency</b> – Advocates for equitable and ethical health care</p>	<p>This in return will decrease the cost burden to the organization to hire and train new nursing team members.</p> <ul style="list-style-type: none"> <li>• The project aligns with the Healthy People 2030 framework and IHI’s quadruple aim which defines the relationship between health and well-being and engaging team members in attaining joy at work.</li> <li>• The project educated the nursing team members about self-care and well-being. The results support the findings in the literature that the organization need to apply more resiliency activities and programs.</li> </ul>
<p>Essential VI <i>Interprofessional Collaboration for Improving Patient &amp; Population Health Outcomes</i></p>	<p><b>Competency</b>- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship</p> <p><b>Competency</b> – Provide leadership to interprofessional care teams</p> <p><b>Competency</b> – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings</p>	<ul style="list-style-type: none"> <li>• The project lead attended daily huddles throughout the implementation period to communicate the different resiliency activities open to the nursing team members.</li> <li>• Communications were also sent via the organization’s email and the unit’s GroupMe</li> </ul>

		<p>for the surveys as well as reminders for participation.</p> <ul style="list-style-type: none"> <li>• During the project’s implementation, the project lead was able to build and support interprofessional relationships with the site champion and the nursing team members.</li> <li>• Interprofessional collaboration with the pastoral care liaisons to arrange a Code Lavender station on the unit.</li> </ul>
<p>Essential VII <i>Clinical Prevention &amp; Population Health for Improving the Nation’s Health</i></p>	<p><b>Competency-</b> Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery  <b>Competency</b> – Synthesizes information &amp; cultural competency to develop &amp; use health promotion/disease prevention strategies to address gaps in care  <b>Competency</b> – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity</p>	<ul style="list-style-type: none"> <li>• The project was open to all nursing team members regardless of culture or background. Each team member had an opportunity to pursue which resiliency activities interested them in promoting their well-being.</li> <li>• The project’s goal was to increase resiliency amid the SARS-CoV-2 pandemic for nursing team members to take the time for self-care and mindfulness training through smart phone Apps, daily huddle activities, and interacting in person or</li> </ul>

		<p>virtually with pastoral care liaisons.</p> <ul style="list-style-type: none"> <li>• The daily huddle activities were modified based on the findings through the PDSA cycle evaluation.</li> <li>• Improvement in resiliency skills impacted patient care and quality in a positive manner; therefore, decreasing nursing team members burnout and turnover. This strategy decreases the financial burden on the healthcare system.</li> </ul>
<p>Essential VIII <i>Advanced Nursing Practice</i></p>	<p><b>Competency</b>- Melds diversity &amp; cultural sensitivity to conduct systematic assessment of health parameters in varied settings  <b>Competency</b> – Design, implement &amp; evaluate nursing interventions to promote quality  <b>Competency</b> – Develop &amp; maintain patient relationships  <b>Competency</b> –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes  <b>Competency</b> – Mentor and support fellow nurses  <b>Competency</b>- Provide support for individuals and systems experiencing change and transitions  <b>Competency</b> –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures</p>	<ul style="list-style-type: none"> <li>• The project lead forged interpersonal relationships with the nursing team members and the site champion. When the individual team members were approached by the project lead, they were willing to participate in the resiliency activities.</li> <li>• The transition from a designated SARS-CoV-2 unit to an intermediate care unit was a change for the nursing team members. Select resiliency activities were selected to aid the team during</li> </ul>

		<p>this time in hope for sustaining the resiliency gained throughout the project's implementation period.</p> <ul style="list-style-type: none"><li>• The project lead helped the nursing team members to recognize the signs of burnout, fatigue, and learn work-life boundaries.</li></ul>
--	--	--