

Resilience: An Essential Skill in Critical Care Nursing

Jayne Nelson, BSN, RN

Nebraska Methodist College

Mentor: Jillian Krumbach

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## Abstract

*Background and Review of Literature:* Burnout syndrome has been a struggle for critical care nurses for decades. Burnout syndrome causes significant mental stress, job dissatisfaction, depersonalization, and reduced personal accomplishment. Resiliency is the process of returning back to a normal state of functioning after an adverse or stressful event occurs. Higher levels of resiliency have been found to combat burnout syndrome and reduce critical care nurses levels of anxiety, depression, stress, and job dissatisfaction.

*Purpose:* The purpose of this project is to develop an evidence-based education module that will teach critical care nurses resiliency skills, increase implementation of resilience interventions by the critical care nurse, and increase awareness of burnout syndrome enhancing their ability to cope with adverse events in the critical care setting.

*Methods:* This quality improvement project collected quantitative data in a 423 bed Midwest acute care facility. The inclusion criteria included core staff RN of a cardiac care unit and a progressive care unit and nurses licensed as a registered nurse. Nurses were excluded if they were not licensed as an RN, they floated to other units and were not core unit staff, and staff that were not bedside nursing staff were excluded.

*Implementation Plan/Procedure:* A twenty minute educational slide show module covering resilience, resilience characteristics, burnout syndrome, burnout syndrome characteristics, resilience interventions, the Neumann Systems Model, and interventions available to critical care nurses at a Midwest acute care hospital was compiled and emailed to the core staff on both nursing units with four pre-educational surveys. Nurses were to fill out the surveys using a four digit pin they created then complete the education. They had day 1-15 to complete the surveys and education. On day 45 post-education surveys were sent to the core staff nurses for the two units again and nurses had from day 45-60 to complete the post-education surveys using the same pin numbers in the surveys as they did with the pre-education surveys.

*Implications/Conclusion:* The resilience education improved the critical care nurses knowledge of resilience and burnout syndrome and the Resilience Education in Critical Care Nursing: Outcome Measurement Tool was statistically significant for increasing the participants knowledge. This means the nurses retained the knowledge they learned over the thirty days. The surveys that measured the nurses resilience scores and the surveys measuring the implementation of resilience interventions were not statistically significant. If this quality improvement project were to be completed again more time and data collection points should be used with a larger sample size to more accurately measure the implementation of resilience interventions and the resilience scores of the nurses.

**Keywords:** Burnout Syndrome, Critical Care Nursing, Resilience, Resilience Education, Neuman Systems Model, Resilience Interventions



## Resilience: An Essential Skill in Critical Care Nursing

Critical care nurses work with high acuity patients and frequently experience traumatic and adverse events (Mealer, Hodapp, Conrad, Dimidjian, Rothbaum, & Moss, 2017). Traumatic and adverse events increase the incidence of burnout syndrome which can lead to anxiety, depression, post-traumatic stress disorder (PTSD), suicidal ideation, and unhealthy drug or alcohol problems (Moss, Good, Gozal, Kleinpell, and Sessler, 2016). Research studies assessing the relationship between burnout syndrome, psychological health, and resilience are minimal but essential to protect the health of critical care nurses (García-Izquierdo, Meseguer de Pedro, Ríos- Rísquez, & Sánchez, 2018). Resilience education is needed to equip critical care nurses with the skills needed to cope with traumatic and adverse events in the critical care setting preventing adverse mental health effects such as burnout syndrome.

### **Overview**

#### **Background**

Resilience has been defined in many ways. Hylton Rushton, Batcheller, Schroeder, and Donohue (2015) describe resilience as the ability to adapt to stressful environments, and employ problem solving skills to alter one's way of thinking, lessening the impact of a traumatic experience. Resiliency has also been described as the capability of a person to face adversity and bounce back with positive outcomes (García-Izquierdo et al., 2018; Mealer et al., 2017). Resilience is important in the process of returning to normal daily activities after traumatic experiences often seen or lived by critical care nurses. Resilience is an adaptive mechanism that can be learned or strengthened through activi-

ties such as cognitive behavior therapy, discussions with peers, and group activities with co-workers (Mealer et al., 2017; Mealer, Jones, and Meek, 2017). Nurses who possess the skills needed to be highly resilient are less likely to develop psychological distress, burnout syndrome, and problems functioning on a day to day basis because of workplace stress (Mealer et al., 2017). Burnout syndrome is one of many problems critical care nurses face leading to many issues on a work and personal level.

Burnout syndrome is a problem that has plagued nurses for decades. Burnout syndrome has been described as a response to prolonged chronic workplace stress that is characterized by exhaustion, reduced personal accomplishment, and depersonalization (Chuang, Tseng, Lin, Lin, & Chen, 2016; García-Izquierdo et al., 2018; Moss et al., 2016). Chuang, Tseng, Lin, Lin and Chen (2016) found that workload and time pressures are major causative factors of burnout syndrome. Burnout syndrome has been associated with negative working environments, negative work-related attitudes, patient related stressors, poor social support, sleep deprivation, negative coping strategies, and being younger in age (Chuang et al., 2016; Moss et al., 2016). Burnout syndrome can lead nurses to partake in risky and unhealthy coping behaviors, such as alcohol or drug abuse, to deal with the stress of working in a critical care unit.

With current nursing shortages burnout syndrome has become more of a problem due to higher levels of patient acuity, increasing patient caseloads, 12-hour work days, and high staff turnover rates. According to Moss, Good, Gozal, Kleinpell, and Sessler (2016) critical care nurses are affected by burnout syndrome more than most other subsets of nurses with more than 50% of critical care healthcare professionals developing

burnout syndrome at some point in their career. The prevalence of burnout syndrome in critical care nurses in the United States ranges from 44% to 61% (Chuang et al., 2016). Burnout syndrome not only affects critical care nurses, it also affects the critical care unit work flow.

Burnout syndrome increases the incidence of depression, anxiety, suicidal ideation and post-traumatic stress disorder among nurses increasing staff turnover rates costing organizations an average of \$65,000 per nurse lost (Moss et al., 2016). Hospitals do not tend to track the amount spent on RN turnover rates and the costs associated with it, so the costs associated with critical care RN turnover may be even higher than the \$65,000 per nurse. The effects of high turnover rates in critical care nursing can increase healthcare costs, lower staff morale, reduce the quality of care given to patients, decrease job satisfaction, and decrease productivity (Mealer & Moss, 2016; Mealer et al., 2017). The American Association of Critical Care Nurses (2014) reported that the average turnover rate for critical care nurses is at least 25% and may be as high as 60% in some areas.

Hospitals have begun to implement budget cuts which often pull money from nurse staffing first leading to high nurse to patient ratios, decreased safety, decreased patient and nurse satisfaction, and increased mental health stress to the nurse (Kroning, 2017). Locally, the nursing shortage is a problem and all hospitals in Lincoln have had staff working overtime with higher than usual patient to nurse ratios. Finding ways to combat burnout syndrome in local hospitals is imperative to the mental health of nurses

and safety of local patients requiring collaboration with nurses, management, and hospital administrators.

The target population for this project is critical care nurses. Stakeholders for the project include hospital administration, critical care nurses, hospital management (especially critical care managers), and all other unit personnel on critical care units. The administrators and management are needed as stakeholders because they could approve interventions to decrease burnout syndrome. Critical care unit staff, including nursing staff, aid staff, and unit secretary staff all need to be included as stakeholders because they experience burnout syndrome first hand and have knowledge of the problem.

### **Problem Statement**

Hospital budget cuts, high nurse to patient ratios, stressful work environments, and staff turnover rates all contribute to high levels of burnout syndrome in critical care nurses. Burnout syndrome causes critical care nurses to suffer from anxiety, depression, suicidal ideation, and may cause them to leave the profession all together. Implementing resilience education for nurses can help reduce workplace stress by increasing the critical care nurse's ability to cope with stressful and adverse events and their awareness of burnout syndrome. In critical care nurses, does resilience education increase the knowledge of burnout syndrome and utilization of resilience interventions?

### **Purpose Statement**

The purpose of this project is to develop an evidence-based education module that will teach critical care nurses resiliency skills, increase implementation of resilience interventions by the critical care nurse, and increase awareness of burnout syndrome en-

hancing their ability to cope with adverse events in the critical care setting.

### **Outcomes**

The education module was 20 minutes long. The module was composed to be viewed as an online slide show. The pre-education questionnaires were administered to the participants via an online survey system prior to the intervention. The post-education questionnaires were completed by participants via an online survey service within forty-five days of completing the intervention. The following outcomes were measured using the pre and post education questionnaires. The outcomes are:

1. At the end of the education module, nurses will be able to list three signs of burnout syndrome as detailed in the module.
2. At the end of the education module, nurses will be able to list three characteristics of resilience as detailed in the module.
3. At the end of the education module, nurses will be able to list three personal strategies to prevent burnout syndrome as detailed in the module.
4. At the end of the education module, nurses will be able to list three strategies nursing units could implement to increase staff resilience as detailed in the module.

### **Review of the Literature**

While searching for articles to include in this literature review it was noticeable how few articles fit into the inclusion criteria. Critical care units are some of the most intense nursing units one can work in and require more skills and specialized knowledge than most other nursing units. Throughout the review several themes emerged from the

findings and will be discussed after the literature search strategy and critique of articles are explained.

### **Search Strategy**

To gather articles for this literature review a literature search was conducted (See Appendix A). The search was completed through CINAHL Plus with full text database, ProQuest Nursing & Allied Health database, and the Cochrane Database of Systematic Reviews. The population search terms used included ‘ICU Nurs\*’ and ‘Critical Care Nurs\*’. By using the Asterix symbol instead of the ‘e’ at the end of Nurse it allowed the database to search for any terms related to nurse such as nursing, nurses, nurse, nursed, etc. The problem search terms included ‘Burnout Syndrome’ and ‘Resilience’. ‘Resilience Education’ and ‘Resilience Training’ were the intervention search terms used.

The following searches were completed in the CINAHL Plus with full text database and the ProQuest Nursing & Allied Health database. The number of articles retrieved with each search can be seen in Diagram 1: Literature Search Trail (See appendix A). Practical screens were put in place to help narrow down the list of articles during the search. The practical screens included articles that were dated between 2008 and 2018, full text articles, research articles, English language, and peer reviewed articles.

The population, problem, and intervention search terms were all individually searched first. Next, the problem search terms were combined using “or” then the same was completed with the problem and intervention search terms. After searching using “or”, the problem and population search terms were combined in a search using “and”

then the same was done using the problem and intervention search terms. In the Cochrane Database of Systematic Reviews, a search was completed using ‘resilience’ “and” ‘Critical Care Nurses’.

The articles found after the search using “and” were narrowed down using inclusion and exclusion criteria. The articles were included if they were about critical care nursing, resilience, burnout syndrome, and were in the critical care setting. The articles were excluded if they were not about critical care nursing, in the critical care setting, related to the PICOT question, or were not related to resilience. The number of acceptable articles for the literature review was narrowed down to nine articles. The articles were all analyzed then summarized into Table 1: Literature Review Reference Matrix (See appendix B).

### **Critique of Articles**

In the literature review reference matrix each article has the level of evidence listed. The levels of evidence are a way of grading the article based on the probability of bias. Out of the nine articles, one article was a Randomized Control Trial-Level II, three articles were Cross-Sectional Studies-Level IV, four articles were Qualitative & Descriptive Studies-Level V, and one article was an Expert Opinion-Level VI (Melnyk & Fineout-Overholt, 2015; Module 4: Integrating Evidence into Practice, 2018).

The research studies list any outside financial influences or bias that might have occurred. The research articles also list data on their sample sizes, demographics of the participants, maintained confidentiality, validity and reliability of the questionnaire or survey used, and ethical considerations. Most of the research studies have limitations

that could make them less useful for generalization purposes across critical care units, but the information obtained is still relevant for this project.

### **Synthesis of Evidence**

Resilience and personal beliefs.

Personal beliefs such as hope, optimism, and spiritual well-being influence burnout and resiliency among critical care nurses (Hylton Rushton et al., 2015; Mealer & Moss, 2016; Mealer, Jones, & Moss, 2012). Nurses with hope, spiritual wellbeing, and resilience were protected from burnout compared to nurses who lack these qualities (Hylton Rushton et al., 2015). Nurses who are chronically exposed to situations in which patient care decisions go against their moral beliefs are at higher risk for exhaustion, moral distress, spiritual exhaustion, emotional exhaustion and burnout syndrome (Mealer & Moss, 2016). Nurses with strong personal beliefs possess characteristics of resilience.

Characteristics of resilient individuals.

Characteristics of highly resilient individuals include self-discipline, resourcefulness, flexibility, having a resilient role model, developing active coping mechanisms, optimism, cognitive flexibility, strong moral beliefs, high levels of self-confidence, and self-competence (Hylton Rushton et al., 2015; Mealer et al., 2017; Mealer et al., 2012). These characteristics have been associated with high levels of emotional endurance and resilience. Nurses with strong resilience characteristics tend to have better perceived health, lower emotional exhaustion, lower rates of burnout syndrome, and lower cynicism scores (Arrogante & Aparicio-Zaldivar, 2017; Garcia-Izquierdo et al., 2018; Hylton Rushton et al., 2015).

There are several characteristics that have been found to affect resilience on both personal and group levels. Significant personal characteristics determined to affect resilience include having children, having perseverance, the type of college degree held, the number of years worked in an intensive care unit (ICU), leadership ability, social networking skills, and a positive social support network (Mealer et al., 2017; Mealer et al., 2012). Significant group characteristics found to affect resilience included the nursing assignments, the type of ICU, and levels of leadership (Mealer et al., 2017). Nurses with children and nurses with perseverance were less likely to develop post-traumatic stress disorder (PTSD) and have higher resilience (Mealer et al., 2017). Nurses with a graduate degree and nurses with higher levels of leadership were more likely to have PTSD (Mealer et al., 2017). Personal characteristics can increase one's ability to be resilient, decreasing burnout syndrome, and improve adaptability.

#### Moral Distress.

Highly resilient nurses have decreased moral distress and increased ability to adapt to stressful and adverse events at work (Garcia-Izquierdo et al., 2018). Moral distress has long term consequences for ICU nurses including withdrawal, depersonalization with patients, burnout syndrome, and emotional exhaustion (Mealer & Moss, 2016). Mealer and Moss (2016) also explain that moral distress can impair the ICU nurse's ability to provide proper patient care, impact job performance, and decrease the amount of time they spend with patients. The other articles did not touch on moral distress. Some articles did explain that burnout syndrome can affect the ICU nurse in a similar way as moral distress. Mealer and Moss (2016) found that interventions that help change the

ICU environment and teach nurses how to cope with their work decreased moral distress. Most of the articles found for this literature review discussed implementation of interventions aimed at decreasing moral distress, burnout syndrome, and PTSD while increasing resilience.

#### Resilience interventions.

Interventions that provide resilience training and education to nurses reduce burnout syndrome, moral distress, compassion fatigue, PTSD, and depression (Hylton Rushton et al., 2015; Lee et al., 2015; Mealer et al., 2014; Mealer et al., 2017; Mealer et al., 2012). Interventions may be available to critical care nurses, but some may not be accessible which is a problem. Interventions such as access to spiritual care staff, cognitive training, learning to face fears, developing healthy coping mechanisms, exercising, increasing humor, positive social support both at work and at home, resilience education programs, precepting and mentorship programs, Schwartz center rounds, and adequately staffing the critical care unit were all found to be helpful in increasing resilience and decreasing burnout but were underutilized (Lee et al., 2015; Mealer et al., 2014; Mealer et al., 2012).

With the nursing shortage, adequate staffing in critical care units can be difficult but is an effective intervention that makes patient care safer and helps decrease stress on nursing staff. Implementing monthly social gatherings outside of work is another intervention that is easily implemented to increase teamwork bonds and resilience among nurses while increasing social support networks (Lee et al., 2015). Activities do not have to be expensive or related to the nursing profession.

Resilience education programs were acceptable to critical care staff, according to the study by Mealer et al. (2014), and the interventions implemented in the study (2 day educational workshop, written exposure sessions, exercise, stress reduction exercises, and event triggered counseling sessions) were found to improve psychological outcomes in staff including increased resilience and decreased symptoms of anxiety, depression, and burnout syndrome. Mealer, Jones, and Moss (2012) also found that preventative resilience training is helpful. Mealer et al. (2017) found that while resilience training was well accepted there were several barriers and incentives for adherence to the education.

Barriers that prevent adherence to resilience educations or training include the length of nursing shifts (12 hours), availability of daycare, length of the intervention, and unwillingness to stay after or come before work (Mealer et al., 2017). Nurses were more likely to adhere to the educational training if they could complete them at work, were paid for attending the training or intervention, or could complete them online (Mealer et al., 2017). Institutions could be very instrumental in increasing resilience and decreasing burnout syndrome by supporting resilience trainings and providing compensation for completing these interventions. Institutions should also encourage the underutilized interventions such as Schwartz Rounds, access to spiritual care staff, and mentorship programs to increase resilience in staff and decrease turnover rates.

#### Summary.

All articles encouraged resilience as a means for decreasing burnout, and most listed interventions to increase resilience. Decreasing burnout could increase the psychological health of critical care nurses and decrease hospital costs associated with nursing

turnover. Nurses seem willing to attend resilience education training and adhere to interventions implemented within the critical care unit. While many of the interventions can be completed by the nursing staff on critical care units, hospital management could decrease burnout syndrome in nurses by supporting resilience education. Hospital management should encourage Schwartz Rounds, adequate staffing, access to spiritual care staff, and education on resources available along with how to access them.

### **Theoretical Framework**

The Neuman Systems Model (See Appendix C) has a holistic perspective that assesses stressors causing harm to one's health or well-being and what mechanisms could reduce the consequences of stress (Turner & Kaylor, 2015). Stressors can be intra-personal, inter-personal, or extra-personal (Neuman (2016) ppt., 2016). Neuman's perspective was that the goal of nursing care is to use primary, secondary, and tertiary prevention methods to reduce stressors and achieve then maintain optimal wellness for the patient (Turner & Kaylor, 2015). Neuman viewed the client (individual, family, group, or community) as a system completed with a set of responses that change with environmental stimulation (Neuman (2016) ppt., 2016; Turner & Kaylor, 2015). Neuman (2016) ppt. (2016) explains that the environment includes internal, external, and created environments.

In the Neuman Systems Model the client has defenses, when in contact with the environment, that protect itself against stressors that could have either positive or negative outcomes (Turner & Kaylor, 2015). The clients have a normal line of defense and a

flexible line of defense. The flexible line of defense is the outer boundary of the system acting as a protective buffer for the normal line of defense preventing stressor invasions of the system (Neuman (2016) ppt., 2016). The normal line of defense is described as the client's normal level of wellness and serves as a standard to determine any deviation from wellness (Neuman (2016) ppt., 2016). As the flexible line of defense protracts away from the normal line of defense there is greater protection for the client system with the opposite true the closer it draws to the normal line of defense (Turner & Kaylor, 2015). When either line of defense is infiltrated the client, system has an adverse reaction and deviation from their normal state of wellness occurs.

When deviation from the normal state of wellness occurs, lines of resistance are activated, and reconstitution ensues (Turner & Kaylor, 2015). Primary, secondary, and tertiary nursing interventions are used to halt or alter stages of the stress response. Neuman's perspective was that the goal of nursing care is to use primary, secondary, and tertiary prevention methods to reduce stressors and achieve then maintain optimal wellness for the patient (Turner & Kaylor, 2015). The Neuman Systems Model has five dimensions (physiological variables, psychological variables, sociocultural variables, developmental variables, and spiritual variables) that align well with patterns of resilience (Turner & Kaylor, 2015). This model is a good fit for this capstone project because it encourages resilience to maintain a holistic well-being for nurses and would especially benefit critical care nurses.

When applying the Neuman Systems Model to resilience in nursing the nurse is the client. When stressors begin to affect the nurse resilience acts as a barrier to the stres-

sors, or as a line of defense for the nurse. If the nurse is not highly resilient the stressor breaks through the 'line of defense' and begins to adversely affect the nurse. Resilience is a skill nurses can learn that enhances the nurse's ability to return to a normal state of functioning after an adverse event. The Neuman Systems Model, when applied to resilience in nursing, aims to use resilience to maintain a holistic state of well-being in the nurse. It can also be useful on nursing units with the goal of maintaining a smooth work flow reducing errors and disarray.

Critical care nurses need to be cognizant of their workplace environment and how stressors affect them (Turner & Kaylor, 2015). Primary interventions, such as having open communication, being cognizant of the environment, and building positive relationships help maintain resilience in individual nurses and the unit they work on. By providing resilience training to nurses before they encounter a traumatic or adverse event an organization may strengthen employees 'lines of defense' for when an actual event occurs (Turner & Kaylor, 2015).

Secondary prevention interventions such as encouraging a strong support system, journaling with self-reflection, building a positive professional network, and maintaining positivity are all ways nurses can aim to build personal resilience. Secondary prevention interventions help them maintain their state of wellbeing, or return to that state quickly, during or after an adverse event (Turner & Kaylor, 2015). This information can be built into resilience training for new critical care nurses. When providing resilience training methods to enhance resilience on a personal and organizational level should be shared with the goal of helping the critical care nurses enhance their own resilience.

Tertiary methods involve having nurses evaluate what went well during a stressful or adverse event, what coping mechanisms helped their resilience skills, and what did not go well. When evaluating the situations nurses and nursing management can see what policies or procedures may need changed, or adapted, to encourage resilience within the nursing unit. It also encourages organizations and nursing management to make changes that would help stressful situations run smoother.

Nurses need resilience to maintain their own well-being while working in a critical care unit. Critical care units have many adverse events that threaten to disrupt the state of well-being of nurses if they do not have the appropriate mechanisms, in this instance resilience, to rebound back to a normal state of functioning. The Neuman Systems Model serves as an appropriate framework to analyze resilience in nursing (Turner & Kaylor, 2015). By using the Neuman Systems Model to guide this capstone project, resilience education will be geared towards providing relevant interventions (primary, secondary, and tertiary) to help the nurse maintain a holistic state of well-being.

### **Organizational Assessment**

In a Midwest acute care facility critical care nurses would be the best facilitators for the proposed change. Nurses working in high acuity settings are directly affected by burnout syndrome and the consequences of work-related stress. If informed of the benefits of resilience education and interventions, critical care nurses would be the best advocates for a change to the training and unit policies within the critical care units. These same nurses could also be a barrier to change. Many nurses may oppose the thought of having to sit through more education or trainings due to time constraints and overtime

already being worked. Some nurses may be reluctant because they are not ready to admit they are suffering from burnout syndrome or a lack of resilience. Money may also be another barrier. Nurses may not be willing to attend the trainings if they are not being compensated for their time.

There are not any perceived risks or unintended consequences in relation to this project. Historically this facility has been receptive to evidence-based practice changes. The management is excellent about facilitating change to maintain employee safety, employee satisfaction, and patient satisfaction. The facility appears to be a place that would be receptive to resilience education and interventions.

### **Methodology**

The addition of resilience education to current training is a process improvement and practice intervention. The proposed training gave critical care nurses the education necessary to improve their reaction to adverse events and maintain patient safety while providing personable care. The project collected quantitative data on resilience education administered to critical care nurses to see if it increased their awareness of burnout syndrome and utilization of resilience skills. In the following paragraphs the setting, sampling, implementation procedures, measurement instruments, data collection procedures, and ethical considerations will be discussed.

### **Setting**

The setting of this project was a Midwest acute care hospital. The organization is a not for profit, locally owned, acute care facility with 423 beds. This project took place on a Progressive Care Unit (PCU) and a Cardiac Care Unit (CCU). The PCU was a thir-

ty-one-bed unit with sixty full time registered nurses (RN) and eight as needed (PRN) RN. The CCU has forty-five-beds split between two units. There were eighteen beds for cardio-thoracic surgery, twenty-three beds for medical cardiology, and four beds for chest pains. The CCU staffs approximately ninety RN. Overall there are approximately 150 core staff RN that meet the inclusion criteria for this study.

Between the two units there was one shared Advanced Practice RN (APRN) and each unit has a clinical nurse educator. The nurse to patient ratio on the CCU ranges depending on the type of patient. The nurse to patient ratio for cardio-thoracic surgery patients ranged from 1:1 to 1:4 depending on the acuity of the patient. Medical cardiology and chest pain patients were staffed one nurse to every four patients. The PCU nurse to patient ratio was 1:3-4 depending on the number of patients on the unit and the shift being worked.

In 2017 the PCU had an annualized turnover rate of 18.6% and the turnover rate for the first half of 2018 on CCU was 14.6%. The RN working on these two units were trained to take care of the most acutely ill patients in the hospital including patients who have had open heart surgery, ICU drugs/drips, continuous renal replacement therapy, cardiac rhythm abnormalities, and post-surgical patients just to name a few.

### **Sampling**

The sample population was composed of RN that work in the CCU and PCU of a midwestern acute care hospital. Staff who are not licensed as a RN, staff that are not core bedside nursing staff on CCU or PCU, and staff that float between different units were excluded. Number of years worked as an RN, age, and gender are characteristics

that may have an impact on the interpretation of the results but were not considered inclusion or exclusion criteria.

Critical care nurses were sent an email as a means of recruitment.

### **Implementation Procedures/Data Collection**

#### **Pre-Intervention.**

Implementation of this project required several steps. To proceed with this project the project proposal needed to be completed and tools to measure the intervention and outcomes needed to be developed. Tools for this project, and their development, are detailed under the measurement instruments section.

A Midwest acute care facility was identified as a location to complete this project. The facility needed to have a critical care unit with core bedside RN staff to meet the inclusion criteria. The facility was contacted, and the critical care units agreed to participate in the study. A letter of agreement to participate was obtained from the CCU and PCU directors. The agreement letters authorized staff to be invited to participate and explain that staff could withdraw from the study at any given time and participation was voluntary. The unit manager could suspend this study if deemed necessary. The unit manager needed to agree that the study could be conducted between January and April of 2019. Once the units voiced agreement a meeting was set up between the primary investigator and the unit managers to discuss the details of the implementation.

The unit managers had access to the email addresses for their staff through the hospital email system. In the email system the unit managers could access a group that

contains the email addresses of all direct core RN floor staff for their unit. These RN were the eligible participants for the study. The name of the email group for all eligible participants was given to the primary investigator by the unit managers.

To recruit participants an email detailing the project was sent out to the participants that met inclusion criteria as listed in the sampling section. The email included a copy of the informed consent statement (see Appendix D) and a timeline for the project implementation. It also explained that participation was completely voluntary. There was sixty-day window in the timeline of events (see Appendix E) to implement the intervention. The recruitment of participants took place in January of 2019.

In order to implement the pre-tests and post-tests an online questionnaire service was used to convert the questionnaires into a digital format that was easy for participants to access and complete. The online surveys included a spot to collect a four-digit pin number, selected by the participant, that they input with each survey. Using a pin number selected by the participant decreased the chance of the participant being identified based on the survey and allowed the pre and post-test to be linked for statistical analysis.

On the first day of the sixty-day window (February 7, 2019), a link to the pre-tests (Resilience Education in Critical Care: Demographics Measurement Tool, Resilience Education in Critical Care: Intervention Measurement Tool, Resilience Education in Critical Care: Outcome Measurement Tool, and the Connor-Davidson Resilience Scale) was sent with the education slide show intervention to participants via email.

Measurement Instruments.

In order to measure the outcomes of this DNP Project the following instruments were used: Resilience Education in Critical Care: Demographics Measurement Tool (see Appendix F), Resilience Education in Critical Care: Intervention Measurement Tool (see Appendix G), Resilience Education in Critical Care: Outcome Measurement Tool (see Appendix H), and the Connor-Davidson Resilience Scale (CD-RISC)(see Appendix I for terms of agreement and Appendix J for the scale). The Resilience Education in Critical Care instrumentation tools were developed specifically for this project therefore validity and reliability have not been established. Reliability and validity have been established for the CD-RISC and will be discussed further with discussion of the scale.

The Resilience Education in Critical Care: Demographics Measurement tool was administered to participants pre-intervention and post-intervention. This tool asked demographic questions including the age of the participant, gender, number of children, number of years working in a critical care unit, number of hours worked per week, highest level of education, and if resiliency training had previously been completed. These demographic questions were chosen because they are all factors that could impact the resilience level of an individual.

The Resilience Education in Critical Care: Intervention Measurement Tool asked questions that assessed the implementation of resilience interventions by the participant. This survey was administered immediately pre-intervention and between thirty- and forty-five-days post intervention via an online format. The survey used a quantitative Likert scale to measure the responses. The Likert scale used a zero through five scale with zero being least and five being most. The scale assessed the intervention frequency.

The Resilience Education in Critical Care: Outcome Measurement Tool used a multiple-choice format to assess the participants knowledge of resiliency, burnout syndrome, and resiliency interventions. It was administered immediately pre-intervention and between thirty- and forty-five-days post intervention via an online format. This survey showed whether the outcomes for this project were met or not met.

The last tool for this project was the CD-RISC 10 item survey. Permission to use this survey was obtained from the developers and the appropriate steps for use were completed. This tool has been used in numerous studies and has demonstrated strong validity, test-retest reliability, and internal consistency having a Cronbach alpha equal to 0.81. This tool was used in this study to measure the resiliency of participants pre-intervention and between thirty- and forty-five-days post intervention.

Intervention.

Once the participant completed the pre-intervention questionnaires, they could begin the education intervention. The education intervention was a twenty-minute interactive slide show that was emailed to participants to complete. It was emailed to participants with the pre-intervention questionnaires with instructions to complete the questionnaires first. The participants had 15 days to complete the pre-intervention surveys and education intervention. The pre-intervention questionnaires closed automatically on Day 15 (February 21, 2019).

The intervention began by detailing burnout syndrome. It explained what burnout syndrome is, characteristics of burnout syndrome, statistics related to burnout syndrome, and the effects of burnout syndrome on critical care nurses. Next the

education defined resilience, discussed resiliency characteristics, resiliency barriers, and resilience interventions. The resilience intervention section detailed the Neuman Systems Model as it applies to resilience and explained the primary, secondary, and tertiary methods of prevention as they apply to resilience interventions. The intervention section of the education also discussed resilience interventions and resources that are currently available to the staff at the facility.

#### Post-Intervention.

In total, the education module took no longer than twenty minutes to complete. On day forty-five (March 23, 2019), thirty days after the deadline to complete the pre-intervention surveys and intervention education, the post intervention surveys were emailed to the participants. They had days forty-five through sixty (April 7, 2019) to complete the post-intervention surveys. The Resilience Education in Critical Care: Intervention Measurement Tool, Resilience Education in Critical Care: Outcome Measurement Tool, the Resilience Education in Critical Care: Demographics Measurement tool and the Connor-Davidson Resilience 10-item scale were administered again as the post-intervention surveys. This allowed statistical analysis to be completed to assess if the educational intervention made a difference in the participants utilization of resilience interventions. It also allowed assessment of post-intervention resilience scores to see if the education intervention had an impact on the resiliency of participants.

#### **Ethical Considerations/Protection of Human Subjects**

The Nebraska Methodist College (NMC) Internal Review Board (IRB) approval was obtained prior to initiating the DNP project. The official IRB Determination

Form was submitted as soon as the proposal was approved. This project qualifies for an exempt IRB review. An application for waiver of documentation of informed consent was submitted because the project does not require any procedures that would otherwise require a signed informed consent and there is no more than minimal risk to the participants. The principal investigator has no conflict of interest with this project and does not work for the participating hospital. CITI training was completed.

Participants were not linked to any of the surveys by name or any other identifying information. A four-digit pin was selected by the participant and entered on each survey so the before and after surveys could be linked for data analysis purposes. An informed consent statement was placed at the beginning of each survey. Participation in the surveys implied that the participant had read the informed consent, understood the risks/benefits of participation, and still wished to participate.

The survey results were stored in a secured online data base to which only the principal investigator had access. The principal investigator cannot guarantee that the computer the survey was completed on is secure, so it was recommended that the participant complete the survey on a computer they trust to be secure. There was no more than minimal risk to the participants although some questions may have been personal.

The benefits to the participant include receiving education about resilience, burnout syndrome, and resilience interventions to reduce the impact of workplace stress and burnout syndrome. The resulting information from the study could potentially change workplace policies and unit flow to improve resilience of nurses. Nurses may also better understand how to utilize the benefits offered by their employer that can be used to promote resilience.

### **Data Analysis**

The data for this project was transferred from an online survey database to Excel software for data analysis. The data was organized by survey and only surveys with matching pin numbers could be used for statistical analysis. To determine the best methods for data analysis the primary investigator collaborated with a capstone statistician. Dependent samples t-tests were the best method to analyze the data obtained from all of the surveys except for the Resilience Education in Critical Care: Demographics Survey. Frequencies and descriptive statistics were run on the demographics information. The Resilience Education in Critical Care: Outcome Measurement Tool was used to measure the outcomes for this project. The questions were written to cover the outcomes specifically. This survey was statistically significant meaning the participants had an increase in knowledge after completing the resilience education module which means the outcomes for this project were at least partially met. There was only one of the four outcomes that was not fully met and that is the first outcome: At the end of the education module, nurses will be able to list three signs of burnout syndrome as detailed in the module. When it came to this question only one of the six participants got the question for this outcome correct.

### **Results**

Approximately 150 surveys were emailed out to participants who met the inclusion criteria for this QI project. There were 18 responses to the pre-education questionnaires and 13 responses to the post-education questionnaires but only six of the questionnaires had matching pin numbers. Without matching pin numbers the data could not be linked (pre and post-education) therefore could not be used for statistical analysis. The

data that could not be used was discarded. There were six usable sets of data for this QI project.

Table 1. Resilience Education in Critical Care: Demographics Measurement Tool

<b>Education</b>		
Associates Degree	1	16.7%
Bachelors Degree	4	66.6%
Masters Degree	1	16.7%
<b>Gender</b>		
Male	1	16.7%
Female	5	83.3%
<b>Age</b>		
18-27	1	16.7%
28-37	2	33.3%
38-47	2	33.3%
48-57	1	16.7%
<b>Hours Worked Per Week</b>		
25-36	3	50%
37-48	2	33.3%
49+	1	16.7%
<b>Years as a Nurse</b>		
0-1	0	0%
2-4	3	50%
5-10	0	0%
11+	3	50%
<b>Number of Children</b>		

0-1	4	66.7%
2-3	2	33.3%
<b>Previous Resiliency Training</b>		
Yes	1	16.7%
No	5	83.3%

The Resilience Education in Critical Care: Demographics Measurement Tool looked at the demographics of the participants. In total there were six participants who used the same pin number on the pre-education and post-education. The demographic information looked at the educational achievement of the participants, the gender of the participants, the age of the participants, the number of hours worked each week by participants, the number of years each participant has been a nurse, the number of children each participant has, and if the participant had participated in resiliency training previously.

In total one participant had an associates degree, four had bachelors degrees, and one had a masters degree so nurses from most educational backgrounds participated. One participant was a male (16.7%) and five were females (84.3%) so both genders were represented. Half of the participating nurses had been practicing for 2-4 years and the other half had been practicing for eleven or more years. The participating nurses ranged in age from 18-57 years old but 66.6% were between 28 and 47 years old. Half of the participants worked between 25 and 36 hours per week with only one participant working more than 49 hours per week. Two-thirds of the nurses had either no children or only one child

at home while the other one-third of participants had either two or three children at home. Lastly, one participant had received resiliency training previously.

Table 2. Resilience Education in Critical Care: Outcome Measurement Tool

<b>Pin</b>	<b>Pre-education</b>	<b>Post-education</b>
429	4	4
1699	4	5
7417	4	7
1988	3	5
5091	2	5
<b>Mean</b>	3.4	5.2
<b>SD</b>	0.894	1.095
<b>t</b>	-2.412	
<b>p-value</b>	0.037	

The outcomes of this QI project were measured using the Resilience Education in Critical Care: Outcome Measurement Tool. This tool was formatted with questions that specifically measured the outcomes. The pre-education questionnaire and post-education questionnaire only had five pin numbers match for this survey. One of the pin numbers did not show up on the post-education questionnaire. The statistician recommended running this test with the five matching pin numbers.

Dependent samples t-tests were ran on the data from the pre and post education questionnaires. The results were statistically significant with a pre-education mean score

of 3.4 and a post-education mean score of 5.2 (out of 10) and a pre-education standard deviation (SD) of 0.89 and a post-education SD of 1.09. The dependent samples t-test was statistically significant with  $t=-2.412$  ( $p= 0.037$ ).

Table 3. CD-RISC 10 Item Questionnaire

<b>Pin</b>	<b>Pre-education</b>	<b>Post-education</b>
429	35	31
1699	26	24
7417	22	22
1988	29	28
4644	40	30
5091	15	13
<b>Mean</b>	27.833	24.666
<b>SD</b>	8.976	6.683
<b>t</b>	2.154	
<b>p-value</b>	0.084	

The next survey was the Connor-Davidson Resilience Scale (CD-RISC) 10 item questionnaire. This survey was administered pre and post-education. The CD-RISC surveys were scored then a dependent samples t-test was run on the data. The highest score possible is 40. The mean resilience score pre-education was 27.83 and the mean resilience score post-education was 24.66. The pre-education SD was 8.98 and the post-ed-

education SD was 6.68. The dependent samples t-test just missed being statically significant with  $t=2.154$  ( $p=0.084$ ).

Table 4. Resilience Education in Critical Care: Intervention Measurement Tool

<b>Pin</b>	<b>Pre-education</b>	<b>Post-education</b>
429	60	57
1699	51	50
7417	44	41
1988	59	64
4644	60	60
5091	43	21
<b>Mean</b>	52.833	48.833
<b>SD</b>	7.985	15.867
<b>t</b>	1.054	
<b>p-value</b>	0.340	

The last survey was also administered pre and post-education. The Resilience Education in Critical Care: Intervention Measurement Tool was designed to assess the implementation of resilience interventions in the critical care nurses day to day life. The use of interventions was ranked on a likert scale then the scores were added together to give the participant an overall score. Then, a dependent samples t test was ran using the pre and post-education survey results. The highest score possible was 75. The mean score pre-education was 52.83 and the mean score post-education was 48.83. The pre-education

SD was 7.99 and the post-education SD was 15.87. A dependent samples t-test was ran and  $t=1.05$  ( $p=0.340$ ) which is not statistically significant for change.

### **Discussion**

The purpose of this project was to see if resilience education would increase critical care nurses knowledge of burnout syndrome/resilience and increase their utilization of resilience interventions. Resilience education was compiled using the most up to date EBP articles on resilience and its relationship to burnout syndrome. To begin the project nurses were sent surveys to test their overall resilience knowledge pre education, their resilience score (using the CD-RISC 10-item survey), and their use of resilience interventions. Thirty days after completing the resilience education and pre-education surveys they were sent the post-education surveys'.

The first survey, the Resilience Education in Critical Care: Outcome Measurement Tool, was statistically significant meaning the nurses improved their scores. The improvement in scores shows the nurses had an increase in their knowledge about burnout syndrome, resilience interventions, resilience characteristics, and statistics related to resilience. This survey was administered thirty days post-education so the nurses retained the resilience information for that thirty days. This indicates that resilience education could be used as an online training module during orientation to a critical care nursing job. The nurses would likely retain the information presented and have more information about resilience and burnout syndrome. Clinically, the education would give critical care nurses the tools needed to understand how to avoid burnout syndrome and maintain or improve their levels of resilience. The goal of this is to improve the overall

well being of critical care nurses, decrease nursing turnover, and decrease the overall costs to the facility.

The next survey, Connor-Davidson Resilience Scale (CD-RISC) 10 item questionnaire, just missed being statistically significant. This means that the resilience levels of the participants were not significantly effected by the resilience education. When looking at the data it appears the resilience scores decreased for most participants after the resilience education. There are many reasons this could be (adverse event on the nursing unit within the 30 day window between the education and post-education survey or they were having an off day) but the most common reason this occurs is the participants learn more about the subject they are surveyed on and are more accurately able to rate themselves therefore giving a more accurate score the second time around. The sample size for the surveys is also smaller so with even one more participant this survey may have been statistically significant.

If this QI project were continued over a longer period of time, and data were collected over more data points, this survey may be more useful and give a better idea of how resilience education impacts the resilience scores of critical care nurses. Thirty days was just not enough time to show a significant impact on the resilience scores of the critical care nurses participating.

The third survey was the Resilience Education in Critical Care: Intervention Measurement Tool. This survey asked about the frequency of interventions the critical care nurse implements in their personal and work life that could impact their resilience. The questions were worded in a way that gauged the frequency each nurse did certain tasks or

felt certain ways. This survey was not statistically significant for change in the frequency of resilience intervention use by the critical care nurse participants. It can take several weeks to change habits and the way we do things so this survey may not have been statistically significant for change due to the length of time the nurses had to implement changes. Thirty days may not have been a long enough period of time to change the frequency of resilience intervention implementation on a day to day basis.

If this QI project were to be implemented again there are a few things that could be done differently. Completing the project over a longer period of time with several data collection points could more accurately detect changes to the implementation of resilience interventions by the participants. It would also give the participants more time to actually implement change. This QI project did not implement any resilience interventions on the nursing units, it only provided the resilience education to the participants. If this QI project were to be completed again, or for future research purposes, it could be very beneficial to actually implement resilience interventions on the nursing units to see if it has an impact on the implementation of resilience intervention usage by critical care nurses on a day to day basis. Implementation of resilience interventions on critical care units, including team rounding on each shift, debriefings after adverse events, unit events outside of work, and attendance at Schwartz rounds, could also help increase staff resilience and impact the implementation of resilience interventions by critical care nurses in their day to day life.

The demographic information showed that most of the participants in the surveys were women. All of them had three children or less with the four having one or less chil-

dren and two having two to three children. Having children was one factor that could affect nurses resilience so the more children a nurse has the higher her resilience should be. The level of education a nurse has is another factor that could positively affect a nurses resilience levels. Five of the six participants had a bachelors degree or higher level of education completed. The length of time a participant had been a nurse could also positively affect the resilience scores and half of the participants had been a nurse for 11+ years and the other half had been a nurse for two to four years. Overall most of the nurses had factors that could positively affect their resilience levels.

### **Limitations**

There were a few limitations to this project. Using pin numbers that the participants made up themselves was a major limitation to this project. While it was a great idea when it came to maintaining confidentiality for participants we ran into problems with participants possibly forgetting their pin numbers, not using the same pin number for the second set of surveys, or not using the same pin number for each survey. This caused most of the data collected to have to be discarded and not used. Overall we started with 17 responses to the pre-education surveys and 13 responses to the post-education surveys but only six sets of pin numbers that matched. Using pin numbers as a way to track and match surveys is not recommend if this QI project was completed again. Another limitation to this QI project was the small sample size. Overall the surveys and education were sent out to roughly 158 nurses (in the email system there is not a way to see exactly how many nurses received the email). This makes it hard to generalize the information to other

critical care units or nursing populations. If completed again it would be better to use a bigger sample size.

### **Plan for Sustainability**

If the acute care units involved in this project found the intervention made an impact on the resilience of RN staff, they could decide to continue with the intervention. If they chose to continue the intervention as a means of increasing staff awareness of burnout syndrome and resilience the education would be provided to the unit managers, so they could integrate it into their staff training. Information on the CD-RISC 10 questionnaire, including how to obtain permission for use, would be provided to the unit managers in case they would choose to continue use of that questionnaire.

### **Implications for Practice**

This project found that the educational intervention increased staff knowledge of burnout syndrome. Resilience education and training could be used to increase staff awareness and knowledge of resilience and burnout syndrome which could in turn decrease turnover rates and staffing costs at the facility. Implementing resiliency and burnout education into critical care unit training could help RN staff understand healthy coping mechanisms and ways to increase resilience on the units they are employed. Decreased burnout syndrome and increased resiliency levels could contribute to better overall health, mental and physical, of critical care RN staff.

Implementing interventions that are aimed at increasing resiliency such as Schwartz rounds, team rounding, debriefing after adverse events, rounding by spiritual care staff, and encouraging unit events outside of work as well as encouraging nurses to

implement individual resiliency interventions such as spending time with their family, reading, relaxation and stress relief techniques, and working out could greatly benefit critical care nurses and their resiliency but more research would need done on the efficacy of interventions on the critical care units. Overall, something needs to be done to combat burnout syndrome and moral distress. Increasing access to resiliency education and interventions aimed at increasing resiliency for nurses who work in critical care units could be the solution.

### **Conclusion**

Burnout syndrome is a problem that has long plagued critical care nurses. Resilience training has been shown in the literature to be an acceptable intervention to critical care nurses that could help combat burnout syndrome and its effects. Resiliency interventions have been shown to increase overall mental health of participants, the perceived health of participants, job satisfaction, resiliency, safety of patient care, quality of patient care, patient satisfaction, and decrease turnover rates. At a Midwest acute care hospital, implementing a resiliency education intervention increased awareness and knowledge of burnout syndrome and resiliency.

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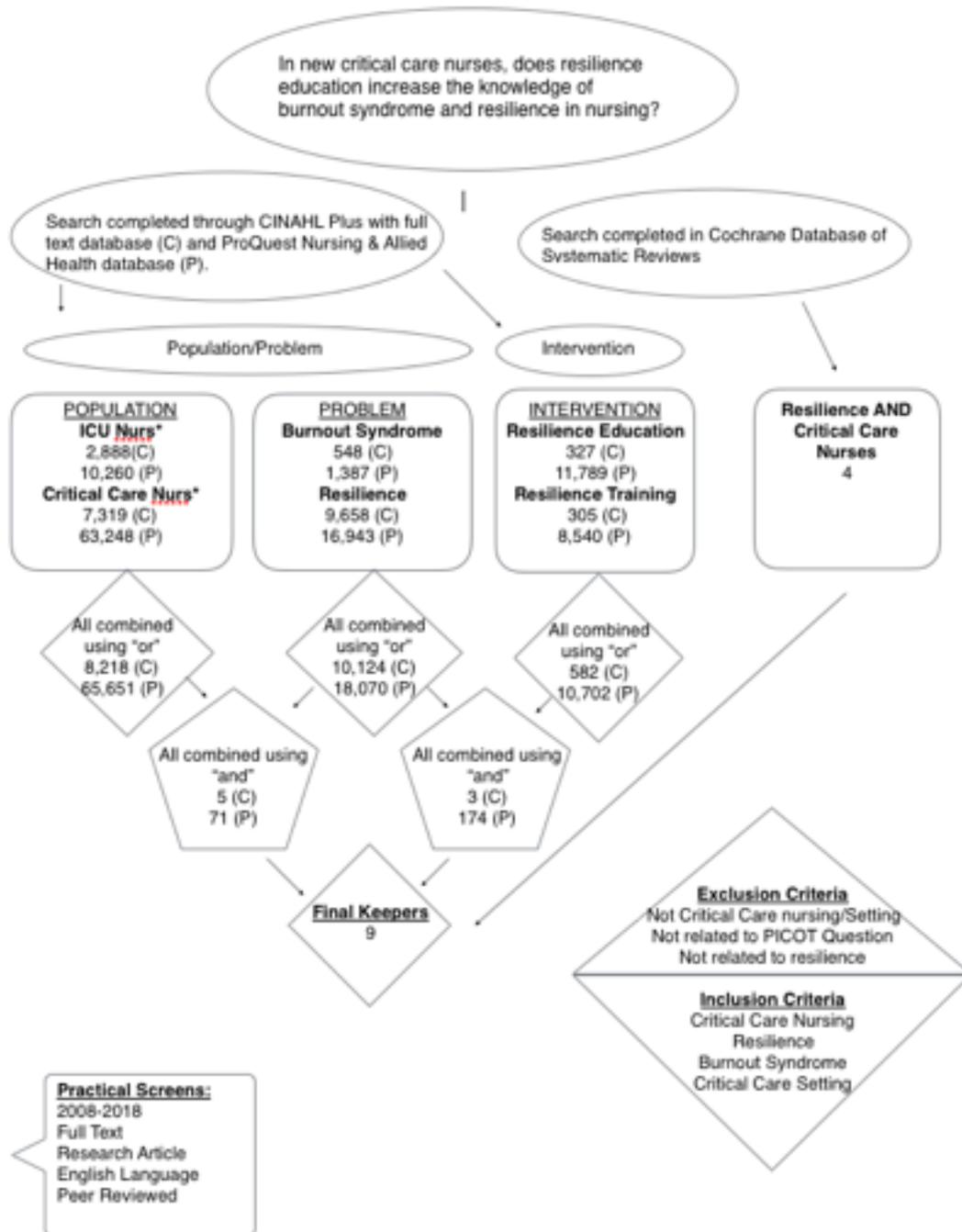
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Appendix

Appendix A

Figure 1: Literature Search Trail



**Appendix B**

Table 1: Literature Review Reference Matrix

<b>Citation/Level of Evidence</b>	<b>Parti- pants/ Setting/ Sample Size</b>	<b>Purpose</b>	<b>Methods/De- sign/Limita- tions</b>	<b>Findings/ Summa- ry</b>	<b>Applica- tion to own Research</b>
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<p>Arrogante, O., &amp; Aparicio-Zaldivar, E. (2017). Burnout and health among critical care professionals: The mediational role of resilience. <i>Intensive &amp; Critical Care Nursing</i>, 42(110-115). doi:10.1016/j.iccn.2017.04.010</p> <p><b>Level of Evidence:</b> A Cross-Sectional Study, Level IV (Module 4: Integrating Evidence into Practice, 2018)</p>	<p>The participants in this study were healthcare professionals working in a 12 bed ICU in Madrid, Spain. The health care professionals included physicians, nurses, and nursing assistants. The researchers estimated n=60 but only 52 surveys were usable so n=52 and the response rate was 87%.</p>	<p>The purpose of this study was to evaluate the mediational role of resilience when looking at the relationships between burnout and the health of critical care professionals. Another goal of the study is to assess if there is a relationship between resilience levels, the three burnout dimensions, and mental/physical health of critical care professionals.</p>	<p>The design of this study was a cross-sectional and correlational design. A booklet was given to each participant to fill out. The booklet included questions on demographic data as well as three questionnaires (10-item Connor-Davidson Resilience Scale, Maslach Burnout Inventory- Human Services Survey, and the Short Form-12 Health Survey). Participants were asked to fill out the booklets and place them in a box anonymously.</p> <p><b>Limitations:</b>                  *Small sample size                  *Self-reported measures lead to statistical bias.</p>	<p>*The results of the study show that resilience mediated the relationships between mental health and burnout.                  *There is a partial mediation of resilience when assessing the relationships between emotional exhaustion and depersonalization.                  *The research showed that resilience mediated the relationship between mental health and personal accomplishment.                  *Because of the non-significant relationship between resilience and physical health the medi-</p>	<p>This study will be helpful when showing the benefits of resilience in relation to health of critical care nurses including their mental health, physical health, and perceived level of health.</p>
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<p>García-Izquierdo, M., Meseguer de Pedro, M., Ríos-Risquez, M. I., &amp; Sánchez, M. S. (2018). Resilience as a Moderator of Psychological Health in Situations of Chronic Stress (Burnout) in a Sample of Hospital Nurses. <i>Journal Of Nursing Scholarship: An Official Publication Of Sigma Theta Tau International Honor Society Of Nursing</i>, 50(2), 228-236. doi: 10.1111/jnu.12367</p> <p><b>Level of Evidence:</b> A Cross-Sectional Study, Level IV (Module 4: Integrating Evidence into Practice, 2018)</p>	<p>There were 537 nurses who responded (response rate of 67.3%). The nurses were employed in public hospitals in Murica, Spain. The average age of participants was 41.3 years old and 451 of the 537 participants were women.</p>	<p>The purpose of this study is to assess the role of resilience in burnout syndrome and the mental health of nurses working in public hospitals in Murica, Spain.</p>	<p>This study was a cross-sectional design using questionnaires to collect data willingly from the participants. Verbal informed consent was obtained, and participants were notified of ethical considerations/confidentiality. The CD-RISC scale was used to assess resilience of participants, the MBI-GS scale was used to measure burnout in participants, and the GHQ-12 was used to assess the general health of participants.</p> <p><b>Limitations:</b> The questionnaires were self-reported by participants which could lead to bias in the answers and can also lead to an artificial increase in correlations between variables. By keeping the questionnaire results anonymous the bias may be reduced.</p>	<p>*Nurses with higher resilience scores had better perceived health. *Significant, negative, relationships were identified between emotional exhaustion, cynicism, and psychological health. *Nurses who were found to have greater levels of resilience also had higher efficacy scores and lower emotional exhaustion and cynicism scores. *resilience moderates the effects of cynicism and emotional exhaustion on perceived health. *Nurses with high resilience</p>	<p>This research shows that resilience is linked to a lower rate of burnout. This backs up my PICOT question and helps support my research to show that resilience decreases burnout syndrome.</p>
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<p>Hylton Rushton, C., Batcheller, J., Schroeder, K., &amp; Donohue, P. (2015). Burnout and Resilience Among Nurses Practicing in High-Intensity Settings. <i>American Journal Of Critical Care</i>, 24(5), 412-421. doi:10.4037/ajc-c2015291</p> <p><b>Level of Evidence:</b> A Cross-Sectional Study, Level IV (Module 4: Integrating Evidence into Practice, 2018)</p>	<p>The n=114 for this study. The participants were from four different hospitals within one health system. They worked on six different critical care units including pediatric/neonatal units, oncology units, and adult critical care units.</p>	<p>The purpose of this study is to encourage the creation of healthy work environments and to develop a 2-phase project to increase nurses' resilience and improve retention rates as well as decrease turnover. This study covers the first phase of the research project. The researchers hypothesize that by increasing resilience in the nurses on individual levels the organizational culture will be affected creating a healthier work environment with better retention rates.</p>	<p>A quantitative cross sectional survey design was used to collect data for this study. Participants completed a demographic data sheet and six different surveys online. The surveys used were the Maslach Burnout Inventory Human Services, a moral distress scale, a resilience scale, a perceived stress scale, the State Hope Scale, and a meaning scale.</p> <p><b>Limitations:</b> *All participants were from one health system. It is unknown if the results would be similar in other locations or health systems.</p>	<p>*Nurses with hope, resilience, spiritual well-being, and who scored higher scores on the meaning scale were protected from burnout compared to those lacking these qualities. *Resilient nurses' spirituality and optimism are used as skills they can draw upon when they need to cope with stressful work situations. *If institutions were to support resilience they may reduce burnout among nurses. *There is a strong association between burnout</p>	<p>The results of this study support the need for resilience training to decrease turnover and burnout in critical care nurses.</p>
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<p>Lee, K. J., Forbes, M. L., Lukaszewicz, G. J., Williams, T., Sheets, A., Fischer, K., &amp; Niedner, M. F. (2015). Promoting staff resilience in the pediatric intensive care unit. <i>American Journal Of Critical Care, 24</i>(5), 422-430. doi:10.4037/ajc-c2015720</p> <p><b>Level of Evidence:</b> Qualitative &amp; Descriptive Studies, Level V (Melnik &amp; Fineout-Overholt, 2015)</p>	<p>The n=1066 for this study. The survey was distributed to nurses, physicians, and advanced practice individuals (Physician Assistant or Nurse Practitioner). The leadership survey was completed by leadership teams in 20 different pediatric intensive care units that are members of the Children's Hospital Association.</p>	<p>The purpose of this study is to assess the availability and use of resilience increasing resources and how to implement resilience interventions across multiple pediatric intensive care units.</p>	<p>A quantitative, descriptive study that utilized a leadership survey, dispersed to nurse managers, and an individual staff survey, dispersed to PICU nurses, physicians, nurse practitioners, and physician assistants.</p> <p><b>Limitations:</b>                  *The survey used in this study was made for this specific study and had not been rigorously tested for validity or reliability.                  *Individual behaviors were not tracked                  *Participant perceptions were used.                  *Participants resilience levels were measured but levels or burnout syndrome or underlying stress were not tested.</p>	<p>*One on one discussions with peers and social interaction outside of work were most used and most effective resources.</p> <p>*Allowing staff to take breaks from stressful patients, palliative support for staff, being sent home after the death of a patient, Schwartz Center rounds, and social activities outside of the hospital were all very effective resilience promoting interventions but were underutilized.                  *Utilization of resources was different between the differ-</p>	<p>Increasing access to underused, but helpful, resources is a good goal for management teams and could help increase resilience. Managers should promote peer socialization at and away from work to increase resilience.</p>
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<p>Mealer, M., Jones, J., &amp; Meek, P. (2017). Factors Affecting Resilience and Development of Posttraumatic Stress Disorder in Critical Care Nurses. <i>American Journal Of Critical Care, 26</i>(3), 184-192. doi: 10.4037/ajcc2017798</p> <p><b>Level of Evidence:</b> Qualitative &amp; Descriptive Studies, Level V (Melnik &amp; Fineout-Overholt, 2015)</p>	<p>Surveys were mailed to 3500 members of the American Association of Critical Care Nurses and 744 participants responded so n=744. The 3500 members who received surveys were randomly selected to receive the surveys. The surveys were completed by the individual respondents after they received them in the mail so there is no specific setting.</p>	<p>The purpose of this study is to determine what factors may affect resilience and to assess if the factors have any direct or indirect effects on resilience and PTSD.</p>	<p>Surveys were completed to measure depression, anxiety, PTSD, burnout syndrome, and resilience. Secondary analysis of the data collected was completed with Mplus, a statistical modeling program. The surveys used included the post traumatic diagnostic scale and the Connor-Davidson Resilience Scale. The design of this study is a secondary analysis of data.</p> <p><b>Limitations:</b>                  *Secondary analysis does not allow for all potential variables that could affect resilience to be included.                  *Data may be skewed as there was not information on nurses who had left bedside nursing.                  *There was no unit or organization specific information available, so the results are hard to generalize.</p>	<p>*Significant individual characteristics determined to affect resilience include having children, the number of years working in an ICU, and the type of college degree held by the individual.                  *Significant group characteristics that affected resilience included the type of ICU the nurse worked in and the cohort assignments.                  *ICU nurses with high level of self-competence were 28% less likely to develop PTSD,                  *Nurses with higher levels of</p>	<p>This study helps to show that resilience also helps with PTSD and what factors, individual and group, affect resilience. This will be helpful to show what can affect resilience when working on my capstone project.</p>
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<p>Mealer, M., Conrad, D., Evans, J., Jooste, K., Solyntjes, J., Rothbaum, B., &amp; Moss, M. (2014). Feasibility and Acceptability of a Resilience Training Program for Intensive Care Unit Nurses. <i>American Journal Of Critical Care, 23</i>(6), e97-e105. doi:10.4037/ajcc2014747</p> <p><b>Level of Evidence:</b> Randomized Control Trial, Level II (Module 4: Integrating Evidence into Practice, 2018)</p>	<p>The sample size for this study was n=27 with the control arm n=14 and the intervention arm n=13. One hundred percent of the participants were positive for anxiety symptoms, seventy seven percent were positive for depression, and forty four percent of the participants met the criteria for PTSD. The participants were all ICU nurses who had to be currently working 20 hours per week as a bedside nurse in the ICU, have no medical conditions restraining the ability to exercise, and score an</p>	<p>The purpose of this study was to see if a multi-modal resilience training for ICU nurses would be feasible to complete and acceptable.</p>	<p>The study was a quantitative randomized controlled twelve-week intervention study. There was an intervention arm and a control arm. Both groups completed demographic data questions and measures of resilience, burnout syndrome, depression, anxiety, and PTSD before and after interventions. The interventions in the intervention arm included a two-day workshop, writing sessions, event triggered counseling, stress reduction exercises, and aerobic exercises. Nurses in the control arm did not complete interventions but were asked to log their exercise completed during the twelve weeks.</p> <p><b>Limitations:</b>                  *This is a pilot study                  *The sample size limits the generalizability of the inter-</p>	<p>*After intervention both groups showed significant reduction in PTSD symptoms.                  *The intervention arm participants had significant reduction in depression symptoms                  *The intervention arm participants had improved resilience skills following the interventions.                  *Many changes, such as condensing the two-day training into one day, were suggested for the resilience training sessions and should be considered if putting together a resilience</p>	<p>This research looks at the feasibility of a resilience training program. Although the interventions were complex it gives good suggestions on ways resilience training could be tailored to ICU nurses. It also shows that ICU nurses are interested in resilience training, so it would most likely be an acceptable training class.</p>
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<p>Mealer, M., Hodapp, R., Conrad, D., Dimidjian, S., Rothbaum, B. O., &amp; Moss, M. (2017). Designing a Resilience Program for Critical Care Nurses. <i>AACN Advanced Critical Care</i>, 28(4), 359-365. doi:10.4037/aacnac2017252</p> <p><b>Level of Evidence:</b> Qualitative &amp; Descriptive Studies, Level V (Melnik &amp; Fineout-Overholt, 2015)</p>	<p>The sample size was n=33. The participants were critical care nurses who were members of the American Association of Critical Care Nurses. They participated in 11 focus groups. The participants completed a 1-hour qualitative group phone interview (focus group) so there is no consistent setting.</p>	<p>The purpose of this study was to gather data on mindfulness cognitive based resilience interventions in critical care nurses to see if resilience training would be feasible and accepted.</p>	<p>This study is a qualitative study design using focus group interviews with 1-6 participants in each focus group. The questions were structured and asked in chronological order during each of the 11 focus groups. One moderator and one assistant conducted the focus groups. Focus groups were conducted until thematic saturation was reached.</p> <p><b>Limitations:</b>                  *Researchers failed to inquire if participants had prior experience with resilient coping skills. Prior experience could influence the responses.                  *Due to participants self-selecting to participate there is sample bias which limits the generalizability of the data.                  *Demographic data was not collected which could also limit the</p>	<p>*The data analysis revealed four themes: barriers to adherence, incentives for adherence, didactic content, and qualifications of instructors.                  *Barriers to adherence included: the length of the sessions, childcare issues, homework assignments, length of shifts (12 hours), unwillingness to come before or after work, and balance between work and home life.                  *Incentives for adherence included: mindfulness activities that can be completed at</p>	<p>This study is useful in my research because it has examples of what ICU nurses would like to see in a resilience training and how one could be completed with acceptance from ICU nurses.</p>
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<p>Mealer, M., Jones, J., &amp; Moss, M. (2012). A qualitative study of resilience and post-traumatic stress disorder in United States ICU nurses. <i>Intensive Care Medicine</i>, 38(9), 1445-1451. doi: 10.1007/s00134-012-2600-6</p> <p><b>Level of Evidence:</b> Qualitative &amp; Descriptive Studies, Level V (Melnik &amp; Fineout-Overholt, 2015)</p>	<p>The sample size was n=324 but was then cut down to n=27 after the-matic saturation was achieved during inter-views. The par-ticipants were sepa-rated into two cate-gories: highly resilience nurses with at least 5 years ICU experience and no PTSD di-agnosis and ICU nurses with a PTSD di-agnosis (had a positive score on the PDS) and were not highly resilient regardless of how long they had worked in the ICU. The inter-views were con-ducted by telephone</p>	<p>The purpose of the study was to iden-tify what mechanisms highly re-silient ICU nurses use and then to use those to develop therapies to reduce PTSD in ICU nurses.</p>	<p>This study was a qualitative study design using inter-views to col-lect data. The sample size was split into two cohorts of nurses. The interviews were conduct-ed by two dif-ferent inter-viewers and time was given for the ques-tions to be modified as themes emerged. Dur-ing interviews the n was de-creased to 27 once thematic saturation was reached and then interviews were stopped. The interviews lasted 45-90 minutes. Four major themes were identified throughout the interviews (social net-work, self-care, cognitive flexibility, and world view).</p> <p><b>Limitations:</b>          *The sample size used to gather data (n=27) is a small sample size and can be considered a limitation to this study.          *Convenience sampling can</p>	<p>*Resilient character-istics found in highly resilient ICU nurs-es includ-ed finding a resilient role mod-el, social network-ing, de-veloping active coping mecha-nisms, optimism, exercis-ing, hav-ing a strong set of moral beliefs, and cog-nitive flexibility.</p> <p>*The above-men-tioned skills and character-istics are ideal to use when develop-ing target therapies through cognitive behav-ioral ther-apy to prevent PTSD.          *Provid-ing pre-ventative resilience training is</p>	<p>This re-search dis-cusses char-acteristic of highly re-silient criti-cal care nurses. This article pro-vides great information on charac-teristics that should be reinforced in resilience training. This infor-mation would be beneficial to critical care nurses and may help them strengthen their own resilience.</p>
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<p>Mealer, M., &amp; Moss, M. (2016). Moral distress in ICU nurses. <i>Intensive Care Medicine</i>, 42(10), 1615-1617. doi: 10.1007/s00134-016-4441-1</p> <p><b>Level of Evidence:</b> Expert Opinion, Level VI (Melnik &amp; Fineout-Overholt, 2015)</p>	<p>There is not a specific sample size or setting in this article because it is not a research study. The population being discussed in this article is ICU nurses.</p>	<p>This article discusses risk factors for moral distress in ICU nurses. It also discusses consequences of moral distress and potential preventative/therapeutic interventions to prevent moral distress in ICU nurses.</p>	<p>This is not a research article so there is no defined methods, limitations, or design.</p>	<p>*Moral distress has long term consequences for the ICU nurse including withdrawal, depersonalization with patients, burnout syndrome, and emotional exhaustion. *Moral distress can impair ICU nurse's ability to provide proper patient care, impact their job performance, and decrease the time they spend with patients and their families. *Internal constraints, external constraints, and certain aspects of patient care increase the</p>	<p>This article is a good resource for the background information needed for my capstone project.</p>
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**PICOT Question:** In critical care nurses, does resilience education increase the knowledge of resilience and decrease burnout syndrome in nursing?

Appendix C

Figure 2: Neuman Systems Model

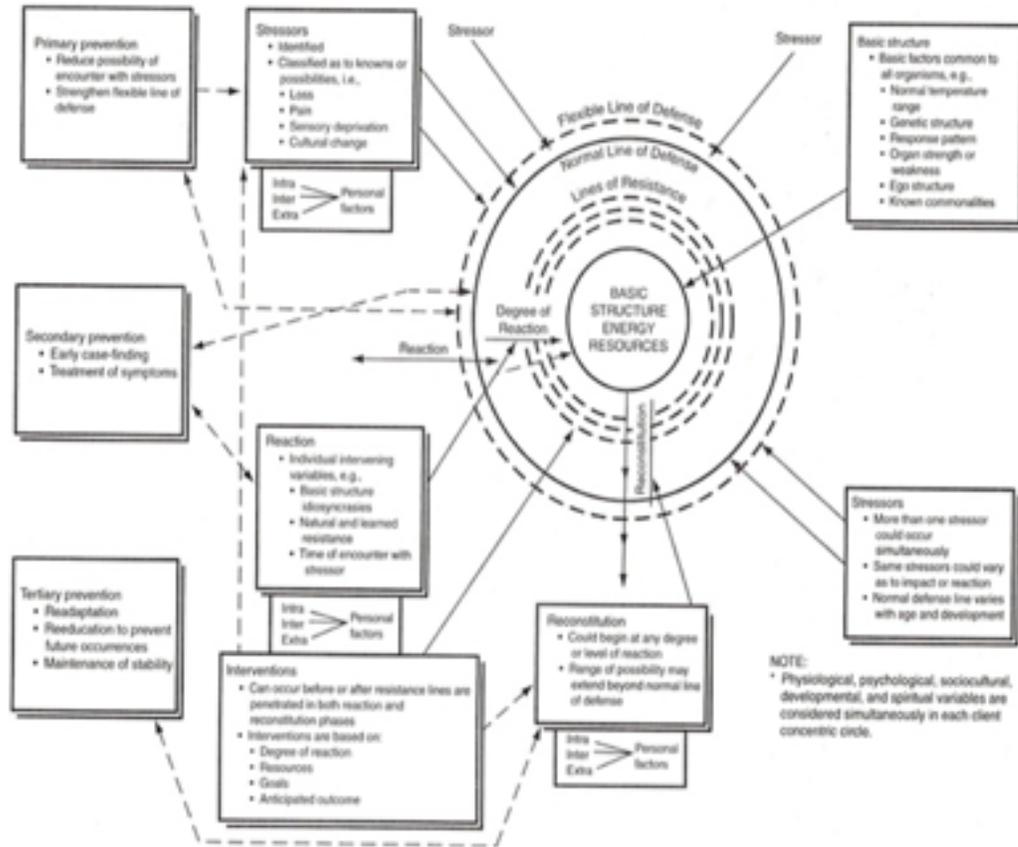


Figure 2. Neuman Systems Model. Reprinted from Neuman (2016) ppt. (2016). Retrieved September 6, 2018, from <https://www.neumansystemsmodel.org/nsm-powerpoint/>. Original image Copyright 1970 by Betty Neuman.

## **Appendix D Informed Consent Statement**

### **Informed Consent Statement**

Title of Project: Resilience: An Essential Skill in Critical Care Nursing

Principle Investigator: Jayne Nelson, BSN, RN, DNP-FNP Student

Other Investigators: Jillian Krumbach, DNP, RN

#### **Purpose of the Study:**

The purpose of this project is to develop an evidence-based education module that will teach critical care nurses resiliency skills and increase awareness of burnout syndrome enhancing their ability to cope with adverse events in the critical care setting.

#### **Procedures to be followed:**

You will be emailed four surveys and the educational slide show on day 1 of the study. You will be asked to complete the four surveys (36 questions total) first. Links to the surveys will be in the email. It is important that you make a four-digit pin and use the same pin for each survey throughout the whole study so the pre and post surveys can be linked. After completing the surveys please complete the educational slideshow. The surveys and slideshow need to be completed within 15 days of getting the email. On day 45 of the study an email with links to three surveys will be sent to you. The three surveys are the same as the first time minus the demographic survey. You have 15 days from the time you receive this email to complete the surveys again.

#### **Risks:**

There are no risks in participating in this research beyond those experienced in everyday life. Some of the questions are personal and might cause discomfort. If you would like to talk to someone about your feelings regarding this study, you are encouraged to contact the spiritual care office through your employer.

#### **Benefits**

- You might learn more about how to enhance your resilience skills preventing burnout syndrome. You might have a better understanding of how important resilience is while at work.
- This research might provide a better understanding of how increased resilience decreases burnout syndrome. This information could help plan programs, make support services better, and decrease turnover rates on your unit. This information might

assist nurses with increasing resilience which could decrease negative effects of workplace stress on their daily lives.

**Duration:**

It will take about 10 minutes to answer the surveys. It will take about 20 minutes to complete the resilience slide show education. Overall it should take no longer than 50 minutes total to complete the surveys (pre and post education slide show) and the educational slide show.

**Statement of Confidentiality:**

The survey does not ask for any information that would identify who the responses belong to. Therefore, your responses are recorded anonymously. The responses will be maintained in an online database. The principal investigator will be the only one with the password and access to the survey responses. If this research is published, no information that would identify you will be included since your name is in no way linked to your responses.

All survey responses that we receive will be treated confidentially and stored on a secure server. However, given that the surveys can be completed from any computer (e.g., personal, work, school), we are unable to guarantee the security of the computer on which you choose to enter your responses. As a participant in our study, we want you to be aware that certain "key logging" software programs exist that can be used to track or capture data that you enter and/or websites that you visit.

**Right to Ask Questions:**

The researchers conducting this study are Jayne Nelson, Jillian Krumbach, and Heather Rolling. You may ask any questions you have now. If you later have questions, concerns, or complaints about the research please contact Jillian Krumbach at 402-354-7129 during the day.

If you have questions regarding your rights as a research subject, you may contact a member of the NMC Institutional Research Board at (402) 354-7263 (ask to speak with the IRB Chair). You may also call this number with problems, complaints, or concerns about the research. Please call this number if you cannot reach research staff, or you wish to talk with someone who is an informed individual who is independent of the research team.

General information about being a research subject can be found on the Office of Human Research Protections (OHRP) website: <http://www.hhs.gov/ohrp/index.html>.

**Compensation:** You will not receive compensation for your participation. You may withdraw from the study at any time.

**Voluntary Participation:** You do not have to participate in this research. You can stop your participation at any time. You may refuse to participate or choose to discontinue participation at any time without losing any benefits to which you are otherwise entitled.

You do not have to answer any questions you do not want to answer.

For this study you must be 19 years of age or older to consent to participate in this research study.

Completion and return of the surveys imply that you have read the information in this form and consent to participate in the research.

Please keep this form for your records or future reference.

**Appendix E**

**Table 1: Resilience Education Timeline**

*Simplified Project Timeline*

Task	October	No- vember	Decem- ber	Jan- uary	Feb- ruary	March	April
Unit approval to proceed with project	X						
Submit IRB application		X					
Submit facility IRB application		X	X				
Develop Intervention; Evaluation; Toolkit	X	X	X				
Recruitment of participants				X			
Pre-intervention surveys and intervention					X		
Post-test and Analysis of outcomes						X	X
Results presented to local providers							X

**Appendix F**  
**Resilience Education in Critical Care: Demographics Measurement Tool**

1. What is the highest education level completed?
  - a. Associates Degree
  - b. Bachelor's Degree
  - c. Master's Degree
  - d. Doctoral Degree
2. What is your gender?
  - a. Male
  - b. Female
  - c. Intersex
3. What is your age?
  - a. 18-27
  - b. 28-37
  - c. 38-47
  - d. 48-57
  - e. 58-67
  - f. 68+
4. How many hours per week do you work?
  - a. 0-24
  - b. 25-36
  - c. 37-48
  - d. 49+
5. How many years have you been a nurse in a critical care unit?
  - a. 0-1
  - b. 2-4
  - c. 5-10
  - d. 11+
6. How many children do you have?
  - a. 0-1
  - b. 2-3
  - c. 4-6
  - d. 7+
7. I have had resiliency training previously?
  - a. Yes
  - b. No

**Appendix G**

**Resilience Education in Critical Care: Intervention Measurement Tool**

Answer the following:

1. In difficult situations...
 

	I am unable to respond in positive ways	I may be able to respond in positive ways		I am able to respond in positive ways
1	2	3	4	5
2. When sad things happen to me or other people...
 

	I cannot feel positive about life about life	I may feel positive about life		I continue to feel positive
1	2	3	4	5
3. I experience anxiety...
 

5+ days a week		3 days a week		0 days per week
1	2	3	4	5
4. When I am in a frightening situation...
 

I always panic		I panic at first but can calm myself		I remain calm
1	2	3	4	5
5. I exercise to relieve stress...
 

0 days a week		3 days a week		5+ days per week
1	2	3	4	5
6. I have a social support system at work....
 

No		Somewhat		Yes
1	2	3	4	5
7. I have a social support system at home....
 

No		Somewhat		Yes
1	2	3	4	5
8. I utilize my social support system....
 

0 days a week		3 days a week		5+ days per week
1	2	3	4	5
9. I attend non-work-related activities with coworkers...
 

0 days a month		Twice a month		4+ times per month
1	2	3	4	5
10. I feel optimistic...
 

0 days a week		3 days a week		5+ days per week
1	2	3	4	5
11. I ask co-workers for assistance with work related issues...
 

0 times per shift		3 times per shift		5+ times per shift
1	2	3	4	5
12. I feel comfortable expressing work concerns to management...
 

No		Somewhat		Yes
1	2	3	4	5
13. The amount of time I have to attend to my patients is adequate....
 

Never		At times		Always
1	2	3	4	5
14. While at work I have access to the resources I need to be resilient...
 

Never		At times		Always
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1	2	3	4	5
15. I question my future in the nursing profession...				
Weekly		Monthly		Never
1	2	3	4	5

## Appendix H

### Resilience Education in Critical Care: Outcome Measurement Tool

1. Characteristics of resilience include:
  - a. Optimism, Self-confidence, and Flexibility
  - b. Flexibility, Emotional Exhaustion, and Spirituality
  - c. Spirituality, Perseverance, and Moral Distress
  - d. Perseverance, Spirituality, and Emotional Exhaustion
2. Symptoms of burnout syndrome include:
  - a. Exhaustion, Reduced Personal Accomplishment, and Depersonalization
  - b. Anxiety, Moral Distress, Suicidal Ideation
  - c. Depression, Exhaustion, Post Traumatic Stress Disorder
  - d. Reduced Personal Accomplishment, Depression, Emotional Exhaustion
3. What interventions can nursing units implement to increase staff resilience? (Select all that Apply)
  - a. Schwartz Center Rounds
  - b. Access to Pastoral Care
  - c. Mentorship Programs
  - d. Gym Memberships
4. What are personal strategies one can implement to prevent burnout syndrome? (Select all that Apply)
  - a. Exercising
  - b. Utilizing social support networks
  - c. Utilizing healthy coping mechanisms
  - d. Getting adequate rest/sleep
5. Group characteristics that affect resilience include:
  - a. Nursing assignments, the type of ICU, and the level of leadership
  - b. Leadership ability, number of years worked in the ICU, and type of college degree
  - c. Social networking skills, the number of children you have, and the nursing assignments
  - d. Adaptability, social networking skills, and level of leadership
6. Which of the following is not a long-term consequence of Moral Distress?
  - a. Depersonalization with patients
  - b. Emotional exhaustion
  - c. Withdrawal
  - d. Decreased anxiety
7. What are Schwartz Center Rounds?
  - a. An inter-professional forum that allows caregivers to gather and support each other while discussing emotional and professional issues that arise in patient care.

- b. Nurse rounding in which patients are checked on and the 4-P's (Pain, Potty, Position, Prevention) are addressed to increase patient satisfaction and decrease excess call lights.
  - c. A structured process where nurses on wards in acute and community hospitals and carry out regular checks with individual patients at set intervals.
  - d. A forum for nurses to share clinical knowledge, clinical experiences, nursing best practices and other topics of interest that improve patient outcomes and the patient experience
8. Barriers to resilience education/training adherence include the following except:
- a. Length of nursing shift
  - b. Availability of daycare
  - c. Completing training online
  - d. Length of the intervention
9. What is the average cost to an organization for each nurse lost due to turnover?
- a. \$25,000
  - b. \$65,000
  - c. \$50,000
  - d. \$45,000
10. What is the average range of nurse turnover in critical care units?
- a. 25-60%
  - b. 25-50%
  - c. 35-65%
  - d. 40-60%

## Appendix I

### CD-RISC Terms of Agreement

Dear Jayne:

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

1. You agree (i) not to use the CD-RISC for any commercial purpose unless permission has been granted, or (ii) in research or other work performed for a third party, or (iii) provide the scale to a third party without permission. If other colleagues or off-site collaborators are involved with your project, their use of the scale is restricted to the project described, and the signatory of this agreement is responsible for ensuring that all other parties adhere to the terms of this agreement.
2. You may use the CD-RISC in written form, by telephone, or in secure electronic format whereby the scale is protected from 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 [www.cd-risc.com](http://www.cd-risc.com) website. The scale's content may not be modified, although in some circumstances the formatting may be adapted with permission of either Dr. Connor or Dr. Davidson. If you wish to create a non-English language translation or culturally modified version of the CD-RISC, please let us know and we will provide details of the standard procedures.
4. Three forms of the scale exist: the original 25 item version and two shorter versions of 10 and 2 items respectively. When using the CD-RISC 25, CD-RISC 10 or CD-RISC 2, whether in English or other language, please include the full copyright statement and use restrictions as it appears on the scale.
5. A student-rate fee of \$ 30 US is payable to Jonathan Davidson at 325 Carolina Meadows Villa, Chapel Hill, NC 27517, USA, either by PayPal ([www.paypal.com](http://www.paypal.com), account [mail@cd-risc.com](mailto:mail@cd-risc.com)), cheque, bank wire transfer (in US \$\$), international money order or Western Union.
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 and of payment, 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). We wish you well in pursuing your goals.  
Sincerely yours,

Jonathan R. T. Davidson, M.D.  
Kathryn M. Connor, M.D.

Agreed to by:  
*Jayne Nelson, RN, BSN, DNP-FNP Student*      10/06/2018

Signature (printed) Date \_\_\_\_\_

DNP-FNP Student

\_\_\_\_\_  
Title  
Nebraska Methodist College

\_\_\_\_\_  
Organization

CD-RISC 10 item questionnaire removed  
per author request due to copyright  
reasons.