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This doctoral project, directed and approved by the candidate's committee, has been accepted by the School of Nursing and College of Graduate and Professional Studies of Abilene Christian University in partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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Abilene Christian University

School of Nursing

Reducing Parental Stress in Neonatal and Pediatric Intensive Care Units

A doctoral project submitted in partial satisfaction

of the requirements for the degree of

Doctor of Nursing Practice

by

Nancy M. Abbene

October 2021

Dedication

This work is dedicated to my husband, family, friends, colleagues, and students who have all been my cheerleaders throughout this amazing DNP journey. I want to thank you all for your indomitable support!

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Abstract

The neonatal intensive care unit (NICU) and pediatric intensive care unit (PICU) are highly operational and highly active environments. Health care workers must react quickly to care for patients and provide life-saving measures fundamental to favorable patient outcomes. Caregivers of this critical patient population are often overlooked as the healthcare team prioritizes patient's needs. In addition, medical equipment, machines, and monitors have multiple safety alarms sounding frequently and contributing to high levels of parental stress upon their child's admission to the NICU and PICU. Lack of giving adequate prominence to the value of caregiver support services in the hospital milieu has been identified as a professional concern in many healthcare settings. Furthermore, many of these programs were suspended in the wake of the COVID-19 pandemic and in some settings continue to be interrupted. This study aims to evaluate the insights of caregivers who received and did not receive caregiver wellness services and the impact of these services on their stress levels during their child's NICU or PICU stay. These stress levels were evaluated using a parent survey tool. These survey results did reveal that parents experienced a decrease in their stress level after receiving stress-reducing techniques provided by caregiver wellness programs in the hospital setting. These findings provide nurse leaders with implications for nursing regarding the importance of communicating the merits of structured caregiver support programs to policymakers and championing caregiver well-being.

Keywords: hospitalized child, neonatal intensive care unit, pediatric intensive care, parental stressor, parent stress in the NICU, parent stress in the PICU

Table of Contents

Abstract	iii
List of Figures	vi
Chapter 1: Introduction	1
Statement of the Problem	1
Background	3
Significance of the Problem	5
Nature of the Project	6
Research Question (PICOT Format)	7
Hypothesis (Restatement of the PICOT)	7
Theoretical Framework	7
Operational Definitions	8
Scope of the Project	9
Chapter Summary	9
Chapter 2: Literature Review	10
Literature Search	10
Synthesis of the Literature	12
Chapter Summary	13
Chapter 3: Methods	15
Problem	15
Purpose	16
Project Design	16
Methodology Appropriateness	17
Feasibility and Appropriateness	18
IRB Approval and Process	18
Interprofessional Collaboration	18
Practice Setting for the EBP	19
Target Population	19
Risks	19
Benefits	19
Instrument/Measurement Tools	19
Data Collection/Management	20
Chapter Summary	20
Chapter 4: Findings	22
Purpose of the Project	22
Discussion of the Demographics	22
Data Analysis	24

Chapter 5: Discussion, Conclusions, and Recommendations	28
Interpretation of the Findings	29
Inferences About the Findings	30
Implications for the Analysis for Leaders	31
EBP Findings and Relationships to DNP Essentials (I-VIII)	32
Recommendations for Future Research	33
Summary	34
References	35
Appendix A: Parent Stress Survey	39
Appendix B: Evidence-Based Table	42
Appendix C: DNP Project Timeline	44
Appendix D: IRB Approval Letter	47

List of Figures

Figure 1. Gender of the Participants	23
Figure 2. Age of Participants	23
Figure 3. Current Relationship Status	24
Figure 4. Stress Level Before Receiving Stress-Reducing Techniques	25
Figure 5. Stress Level After Receiving Stress-Reducing Techniques	27
Figure 6. Nature of Child’s Illness in NICU or PICU Units.....	29
Figure 7. Opportunity to Participate and Satisfaction Level.....	30

Chapter 1: Introduction

Statement of the Problem

Partnering with families during their child's hospitalization is central to the concept of family-centered care. In most instances, the family is the child's principal source of strength and comfort. For many families, hospitalization of a child leads to feelings of depression, anxiety, and tension. Interventions aimed at improving the emotional and mental health of the parents have been shown to have a direct correlation on the child's coping mechanisms related to their illness. If the parent is unable to comfort their child throughout their illness, related to their own inability to cope with the situation, the child's coping skills will also be ineffective. When interventions are initiated to support the parents and assist them in reducing their own stress and anxiety levels, they are better able to partner with the healthcare providers caring for their child and participate in the child's care. This also has a positive impact on the patient's and family's experience, leads to improved high-quality clinical decision making, and fosters better patient outcomes (Doupnik et al., 2017).

The purpose of the study was to evaluate the impact of caregiver wellness services on the parent stress levels in the NICU and PICU. Parents have reported that their stress levels in some cases were elevated to terrifying levels within a few days of admission. These stress levels have been reported to have deleterious effects on family coping, parent and child well-being, and delays in discharge planning. Cousino and Hazen (2013) studied the effects of parent stress on their ability to care for their child after discharge from the PICU. Parents reported a loss of confidence in their parenting skills, inadequacy, and powerlessness. Reducing parent stress levels during their child's hospitalization promoted a successful transition from hospital to home on the cases of parents in the PICU (Jarvis et al., 2019).

In the neonatal and pediatric healthcare arenas, care is focused on the child and the family as a unit. In most cases, parents are the chief participants and champions in their child's care. This provides nurses with a unique opportunity to not only care for their child, but also provide support to the parent. Keeping the parent updated on their child's condition and inviting them to engage in family-centered rounds are key elements that assist the parents in managing their stress and coping skills related to the situation. Parents often feel that being unable to care for their child during the child's hospitalization and the change in their parental role at this time are major sources of stress during the hospital experience. Parents will often convey appreciation to the healthcare providers when given the opportunity to participate in the child's care. Involving the parent or parents in the patient's care gives the parent a sense of significance as a team member caring for the child. In addition, having a role in the care of their child reduces their distress, apprehension, and uneasiness and increases the child's comfort in the situation (Dahav & Sjostrom-Strand, 2017).

Alterations in the caregiver role were also reported by parents studied by Mortensen et al. (2015). Parents identified these alterations as major sources of stress during their child's hospitalization. Mortensen et al. found that when the parents' interactions with nurses were supportive and they promoted the family as one entity, patient care was enhanced. Strengthening the bond between parent and child during this difficult time is essential to positive patient outcomes. When parents are informed and stress levels are lessened, the notion of family-centered care is accentuated (Mortensen et al., 2015).

Review of the literature did not yield an abundance of articles and studies with regard to structured caregiver programs and their relationship to lessening parental stress in both the NICU and PICU. The purpose of this retrospective quantitative study was to establish a correlation

between stress reduction and the perceived effect on parents' stress levels. The study identified that the well-being of caregivers is not often a priority in the high acuity, high activity environments of the NICU and PICU and is a concern for clinical practice. The study was designed to highlight the importance of caregiver wellness services in the hospital setting, especially since the interruption in these services because of the COVID-19 pandemic. The purpose of the study was to evaluate the perceptions of the caregivers who did receive and did not receive formalized caregiver support services during their child's hospitalization in the NICU or PICU.

Background

Parents are welcomed and encouraged to participate in their child's care during hospitalization of a critically ill child. The concept of family-centered care is supported by stakeholders and is a guiding premise on the majority of patient and family satisfaction surveys. Parents are asked to make important decisions, consent to numerous procedures, and comply with hospital protocols with regard to visitation, infection control, and institutional policies. Reducing parent stress levels related to their child's condition and the environment can help them make the best decisions for their child and be effective partners in their child's care during the hospitalization period (Vasli & Salsali, 2014).

The environment itself is often overwhelming with the amount of equipment, machinery, and monitoring devices. Parents report a sense of being overcome by the extraordinary amount of equipment, monitoring devices, noise, medical terminology, and activity (Dahav & Sjostrom-Strand, 2017). Caring for these critically ill children requires an exceptional amount of equipment, machinery, and monitoring devices. The nurse-patient ratio for these children is 1:1 or 1:2. In the case of a patient on extracorporeal membrane oxygenation (ECMO), there are two

nurses to one patient. The ECMO machine is similar to the heart-lung bypass machine used in open-heart surgery. Alarms are also a source of annoyance and anxiety for the parents in the PICU. Variations in their child's appearance, as well as emotional and behavioral changes in their child, have been reported by parents as significant stressors related to their child's hospitalization in the NICU and PICU (Dahav & Sjoström-Strand, 2017).

Parents can be reluctant to address changes in their child's emotions or behavior. They may not want to cause them any more trauma emotionally and feel responsible to protect their child. Experts in the field that deal with children and chronic illness have found children respond better to factual information and have a better adjustment period. Children may become fearful and not fully understand what is happening to them. Keeping the lines of communication is important during this time. Supporting their children helps to maintain a positive relationship between the caregiver and ill child. Studies advocate for caring relationships within the family unit and allow the child to recover mentally and physically more quickly for these adverse situations (American Academy of Pediatrics, 2015).

According to Weinberg and Richardson (1981), stress can be defined as "the response of an individual when the physical or psychological demands of a situation exceed the capacity for adaptation" (p. 687). It has been well-documented that having a child hospitalized in the NICU or PICU produces a high level of stress for the parents as well as the child. Stress levels can be attributed to changes in the child's physical appearance, numerous equipment and monitoring devices, and variations in their parenting role. In addition, alterations in family dynamics, work schedules, and time not spent with other family members often lead to feelings of guilt and or depression for the parent (Ramirez et al., 2018).

Children of parents with poor emotional health are less likely to prosper in environments pertaining to school and social situations. Interventions aimed at supporting parents' mental and emotional well-being can have a positive impact on parental coping skills. This fact does substantiate the notion and gives me an opening to disseminate the conclusions gleaned from the DNP scholarly project (Doupnik et al., 2017).

Significance of the Problem

The detection of a serious disease or disability in a child can have consequential stress responses for parents. As a result, the way in which a parent manages a stressful situation has a direct relationship with their own mental health, family dynamics, and how well the child becomes accustomed to the situation or illness. Parents must also deal with the possibility that their child may not survive the illness or may have a permanent disability related to the illness or injury (Muscara et al., 2015).

Muscara et al. (2015) studied the effects of post-traumatic stress reactions in parents of critically ill children over an 18-month period. In this study, the researchers found that it was important to provide support services for parents identified as high risk and who would glean the most benefit from these support services. In addition, the study did conclude that further knowledge and research in this area is an important step in preserving the family unit in these stressful situations. As parents are most often the chief support system for their child, it is imperative to focus on stress reducing interventions that address the needs of the child and family (Muscara et al., 2015).

The significance of the findings from this study for pediatric nursing are important. Family-centered care is the process of building relationships between the parental caregivers and the members of the healthcare team. These two groups form an alliance so the family unit can

make informed decisions about their child's care and be active participants in that care. This premise creates a vehicle for shared decision making and mutual respect among the members of the groups. The family's wishes, beliefs, and cultural values can also be a factor in the child's plan of care. Pediatric nursing holds these assertions as fundamental elements of pediatric nursing and supports the merits of family-centered care at its core. As pediatric nurses caring for critically ill children, nurses must respect family values, share information, and administer direct care to these patients in the spirit of family-centered care for optimal patient outcomes and partnerships (Yoo & Cho, 2020).

Nature of the Project

This quantitative correlational study was conducted via an online questionnaire conducted through the study site, a 501c (3) non-profit organization that fosters peer support to families in the NICU and PICU communities. This is a nationally based organization headquartered in a major city in Ohio. The organization provided a letter of support to me as permission to conduct the study with their members via an online format. The organization also accepted the IRB review and approval from Abilene Christian University (ACU).

I asked participants in the study to answer a short questionnaire that included parent demographics, nature of their child's illness, length of hospital stay, and if they used caregiver wellness services during their child's hospitalization (see Appendix A). I also asked parents to rate their stress level on a scale of one to ten before the wellness services and after the wellness services using the Parental Stress Survey. The parents who did not receive these services were asked about whether this would have helped them manage their stress during their child's hospital stay.

Research Question (PICOT Format)

What impact does participation in stress-reducing techniques have on the parents' stress level during their child's hospitalization in neonatal (NICU) or pediatric intensive care units (PICU)?

Population. Parents of children hospitalized in the NICU and PICU.

Intervention. Participation in stress-reducing techniques provided by the caregiver wellness services to reduce parental stress in the NICU and PICU.

Comparison. Parent stress level prior to participating in stress-reducing techniques provided by the caregiver wellness services for parents in the NICU and PICU, as compared to parent stress level after receiving caregiver wellness services in the NICU and PICU.

Outcome. Reduction of parental stress scores reported by parents of children hospitalized in the NICU and PICU when they participated in stress-reducing techniques as measured by the results of the Parent Stress Survey.

Hypothesis (Restatement of the PICOT)

Parental stress levels were reduced after receiving stress-reducing techniques from the caregiver wellness services.

Theoretical Framework

The theoretical framework I used was the Interaction Model of Client Health Behavior (IMCHB). This model was developed by Cheryl Cox in 1982. The design of this model has three major components; client singularity (individual characteristics), client-professional interaction, and health outcome (Robinson & Thomas, 2004).

Client singularity or individual characteristics of the health issue with regard to Cox's theoretical model includes traditional elements related to the client, such as characteristics of the

population being studied, social determinants, past exposure to the healthcare setting, and physical makeup of the healthcare setting. Another chief component in this area of the model is the element of basic initiative on the part of the client. The client's willingness to participate in the process leads to behaviors that guide the client's judgement in healthcare decisions and, ultimately, the way they perceive the healthcare they are receiving (Carter & Kulbok, 1995).

The client singularity phase is illustrated by the participants' particular background characteristics. In that regard, I collected demographic characteristics such as the parent's age, gender, marital status, and previous hospital experience. The second phase or the client-professional relationship focuses on the stress reducing interventions provided to the client by the health care professional. The third phase of the model is the health outcome. I measured this by the parent stress scores before and after the stress-reducing techniques were implemented (Tang et al., 2013).

The selection of the data collection tool for this project was in a questionnaire format. The advantages of using the tool were cost efficiency, participant anonymity, and that the results can be easily deciphered using a rating or Likert scale. Disadvantages to using the questionnaire format were that responders were more likely to ignore or not answer the questionnaire than with an in-person interview. In addition, some individuals may have been unable to fill out the questionnaire related to language barriers and or were feeling an overwhelming degree of stress at that time (Polit & Beck, 2018).

Operational Definitions

Parent Stress Survey. This survey instrument is found in Appendix A.

Stress-reducing measures. These actions include hand reflexology, reiki, coaching, meditation, chair massage, and chakra balancing.

Scope of the Project

The scope of this project is to evaluate the impact of stress-reducing techniques by the caregiver wellness services provided to the parents or primary caregivers of the patients in the NICU PICU.

Chapter Summary

Stress can be defined as “the response of an individual when the physical or psychological demands of a situation exceed the capacity for adaptation” (Weinberg & Richardson, 1981, p. 687). It has been well-documented that having a child hospitalized in the NICU or PICU produces a high level of stress for the parents, as well as, the child. Stress levels can be attributed to changes in the child’s appearance, numerous equipment and monitoring devices, and variations in their parenting role. In addition, alterations in family dynamics, work schedules, and time not spent with other family members often lead to feelings of guilt and or depression for the parent (Ramirez et al., 2018).

It has been demonstrated that children of parents with poor emotional health are less likely to prosper in their environments pertaining to school and or social situations. Interventions aimed at supporting parents’ mental and emotional well-being can have a positive impact on parents’ coping skills. This fact does substantiate the notion that balanced emotional health in the hospital setting can positively influence the child’s health outcomes. Researchers have concluded this is an area in need of further study and provides me with an opportunity to contribute to the dissemination of the findings gleaned from this DNP scholarly project (Doupnik et al., 2017).

Chapter 2: Literature Review

The search engines used in the literature search included the Cumulative Index of Nursing and Allied Health (CINAHL), Science Direct, Health Source: Nursing/Academic Edition, and MEDLINE from 2014 to 2019 for English-language articles. The search terms used were *hospitalized child*, *neonatal intensive care*, *pediatric intensive care*, *parent stress in the PICU*, *parent stress in the NICU* and *parental stress*. Only full text, peer reviewed articles were used.

Literature Search

The number of citations yielded from each of the four databases were as follows:

- CINAHL = 1220 results
- Science Direct = 478 results
- Health Source = 432 results
- MEDLINE = 12 results

This preliminary search produced a large amount of data to analyze. The search provided a good amount of material to work with related to the project topic. Articles involving parental stress in parents of infants in the neonatal intensive care unit, parents of children with specific illnesses or injury, and parental stress measuring tools were also obtained in the literature review.

NICUs and PICUs are high activity, high acuity environments. In these milieus, healthcare workers must move quickly to care for patients and provide life-saving measures critical to the success of optimal patient outcomes. In addition, medical equipment, machines, monitors, and alarms continuously sounding contribute to a high level of parental stress upon their child's admission to the NICU or PICU (Kumar & Avabratha, 2015).

The identification of a serious disease or impairment in a child can have serious stress responses for parents. The way in which parents cope with stressful situations has a direct correlation to their own mental health, family dynamics, and how well the child adjusts to the situation or illness. Parents must also actualize the possibility that their child may not survive the illness or may have a permanent injury related to the illness (Muscara et al., 2015).

Muscara et al. (2015) studied the effects of post-traumatic stress reactions in parents of critically ill children over an 18-month period. In this study, the researchers found that it was important to provide support services for parents identified as high-risk and who would glean the most benefit from these support services. In addition, the study did conclude that further knowledge and research in this area is an important step in preserving the family unit in these stressful situations. As parents are most often the chief support system for their child, it is imperative to focus on stress-reducing interventions that address the needs of the child and family (Muscara et al., 2015).

The importance of partnering with our families during a child's hospitalization is supported in the literature from this search (Doupnik et al., 2017). For many families, having a child in the hospital setting leads to feelings of depression, anxiety, and tension. Improving the emotional and mental well-being of the parents has been shown to have a direct effect on the child's coping mechanisms related to their illness. If the parent is unable to support their child through their illness, related to their own inability to cope with the situation, the child's coping skills will also be ineffective. When interventions are introduced to support the parents and assist them in reducing stress and anxiety, they are better able to partner with the healthcare providers caring for their child and participate in the child's care. This has a positive impact on the patient's and family's experience and fosters better patient outcomes (Doupnik et al., 2017).

Synthesis of the Literature

The background and area of practice for this DNP scholarly project are the neonatal (NICU) and pediatric intensive care units (PICU). These areas are very high activity, high acuity inpatient units. The children in the NICU or the PICU have many medical and or surgical conditions. The types of patients admitted to NICUs and PICUs often have respiratory illnesses, such as asthma, pneumonia, viral illnesses, chronic lung disease, and ventilator dependency. Other medical and or surgical conditions requiring hospitalization in the NICU or PICU are diabetic ketoacidosis (DKA), sepsis, congestive heart failure, tracheitis, status epilepticus, open heart surgery, extensive surgical procedures, anaphylaxis, trauma, and ECMO.

Family-centered care is a predominant theme in the literature related to this topic. In the pediatric domain, care is centered on the child and family as a unit. In most cases, parents are the chief participants in their child's care. This provides nurses with an opportunity to not only care for their child, but also provide support to the parent or parents. Keeping a parent updated on their child's condition and inviting them to engage in family-centered rounds is crucial in helping them to manage their stress levels and coping skills related to the situation. Parents often feel that their inability to care for their child and the change in their parental role at this time are major sources of stress during the hospital experience. Parents will often express appreciation to the healthcare providers caring for their child when given the opportunity to participate in their child's care. Involving a parent in the patient's care gives the parent a sense of significance as a team member caring for the child. In addition, having an active role in the care of their child reduces their distress, apprehension, and uneasiness (Dahav & Sjostrom-Strand, 2017).

In the literature, the majority of support groups focus on the NICU. Various elements of care models support the principles of family-centered care models in their approach to care for

patients in the NICU and PICU. Paradigms on family-centered care that have helped healthcare institutions successfully implement support strategies for parents of critically ill children include the strategies employed by organizations, such as the Institute for Patient- and Family-Centered Care, recommendations from the American Academy of Pediatrics, the Vermont Oxford Network collaborative, the Family-Centered Care Map, March of Dimes NICU Family Support, and Creating Opportunities for Family Empowerment (COPE) program. Yet, disparities in this research area also exist. There still remains limited information in the literature with regard to research related to the implementation of parent support groups, follow-up for families receiving support services, the impact of support services and family-centered care on the patients and parents health, and the financial impact support services have on healthcare institutions (Gooding et al., 2011).

The instrument applied to evaluate the theoretical framework used in this DNP scholarly project was the use of a questionnaire supported by the literature. The type of questionnaire that would be utilized is the Likert scale. This scale consists of statements and questions with regard to the parents' perceived level of stress in the NICU or PICU and the effectiveness of stress reduction interventions for the parents caring for children in the NICU or PICU. The participants indicated their stress level before and after the stress-reducing techniques on a rating scale of 0 to 10. Number zero signals they were experiencing a low degree of stress before or after the intervention, and number 10 signals they were experiencing a high degree of stress before or after the intervention (Polit & Beck, 2018).

Chapter Summary

The literature search performed did yield a large amount of information (Appendix B). The strength of the levels of evidence is referenced in the Appendix B table. Deciphering

through articles that were relevant to the proposed project topic continues to be challenging. Many of the articles were not specific to the PICU environment. The most useful study obtained from the search was from Liaw et al. (2019). This quality improvement study implemented a stress screening tool that was designed with input from many disciplines as well as family council members from the hospital in which the study was conducted.

Gaps in the evidence did demonstrate inconsistencies with follow-up when the effects of the stress-reducing interventions were studied after 3-three-month and 6-month intervals. Participants often chose not to continue in the study after discharge, making this aspect of the study limited. In addition, many studies were done on parents of children with one specific disease type, such as congenital heart disease or undergoing cardiac surgery. Although these parents are certainly undergoing a great deal of stress during their child's hospitalization, many NICUs and PICUs have children with a variety of different illnesses.

Communication was a recurrent theme in the literature for parents that can add to their stress during their child's hospitalization. Improving this aspect through family-centered care in the NICU and PICU supports the evolving evidence of its benefit leading to best patient and family outcomes (Meert et al., 2013).

Chapter 3: Methods

The principles of the client-professional relationship are successful promotion, obtaining health knowledge from the provider, and participation of the client in the decisions that are made about the client's course of treatment. The process between the client and healthcare provider is one in which there is an equal partnership. Lastly, the third item is actions that encompass healthcare services, the severity of the client's illness, client's compliance with their course of treatment, and overall client satisfaction with the care the client is receiving (Carter & Kulbok, 1995).

Problem

The problem with regard to parent stress levels in the NICU and PICU is that parents of these children are often neglected as the healthcare team prioritizes appropriate services for the patient's needs. In addition, medical equipment, machines, and monitors have multiple safety alarms sounding frequently and contributing to high levels of parental stress upon admission to the NICU and PICU. Lack of giving adequate significance to the value of caregiver support services in the hospital milieu has been identified as a professional concern in many healthcare settings. Furthermore, many of these programs were suspended in the wake of the COVID-19 pandemic and in some settings continue to be interrupted. This study aims to evaluate the insights of caregivers who received and did not receive caregiver wellness services and the impact of these services on their stress levels during their child's NICU or PICU stay. These stress levels were evaluated using a parent survey tool. These survey results did reveal that parents experienced a decrease in their stress level after receiving stress-reducing techniques provided by caregiver wellness programs in the hospital setting. These findings provide nurse leaders with implications for nursing regarding the importance of communicating the merits of

structured caregiver support programs to policymakers and championing for caregiver well-being.

Purpose

The purpose of this DNP scholarly project was to answer the research question proposed by the project. The research question was as follows: “What impact does participation in stress-reducing techniques have on the parents’ stress level during their child’s hospitalization in neonatal (NICU) and pediatric intensive care units (PICU)?”

Project Design

A targeted convenience sample of potential participants from the online parent group at the study site was notified via email by the director of peer support at the study site. Interested participants were provided with an overview of the purpose of the project, their rights to refuse or discontinue the study at any time, and the assurance of confidentiality. Parents who wished to participate moved onto the survey after providing consent at the outset. As project investigator, I had no direct physical contact with the participants in the study alleviating any COVID-19 concerns with the project. Email addresses were not collected in the actual online survey. I collected the survey results using the Survey Monkey service.

I collected no identifying data electronically. All data were collected via Survey Monkey online survey and only I had access to the online survey data. Access to the data obtained from the survey results will be owned by the university in case access is needed at a future date. This storage system is provided by the online graduate school for doctoral student research data and supported by the university’s IT department for security purposes and kept for the minimum required time according to IRB guidelines.

The type of questionnaire that was utilized has a Likert scale and multiple-choice question format. This scale consisted of statements with regard to the parents' perceived level of stress in the NICU and PICU and the effectiveness of stress reduction interventions for the parents and their likelihood to recommend the services. The participants indicated their level of stress before and after the interventions on a rating scale of 0 to 10. Number zero indicates a low stress level, number 10 indicates a high stress level (Polit & Beck, 2018).

The Parent Stress Survey (Appendix A) did reveal that 24 (70.59%) of the 35 participants answering the survey did not have an opportunity to participate in caregiver wellness services at their child's health institution. They were also asked if given the opportunity to participate in these services would they feel it would benefit them. Twenty-one (63.64%) of the 33 participants responded "yes" to this question: "They felt that caregiver wellness services would have benefitted them during their child's hospitalization".

Methodology Appropriateness

I sent potential participants (members of the study site online group) solicitation verbiage materials and a consent form that I created. An electronic survey link to the survey was provided to parents who are members of the study site support after they received the solicitation materials and completed the electronic consent form. I had no direct physical contact with the participants in the study alleviating any COVID-19 concerns with the project. The only direct contact with participants was via email when distributing the request for participation and the survey link for data collection. Email addresses were not collected in the actual online survey. I collected the survey results as part of the Survey Monkey service that I used to create the survey.

This DNP scholarly project was conducted over 7 weeks at an online parent support group. It is a nationally based organization that has their headquarters in Ohio. The project was

aimed at evaluating the impact of stress-reducing interventions on parent stress levels in the NICU and PICU. The questionnaire was emailed to parents in the online study site group. This type of data collection was useful to me because questionnaires are generally cost-effective and offer the participants the option to remain anonymous. This is important when trying to elicit honest answers to the questions in the questionnaire without fear of reprisal for the participant (Polit & Beck, 2018).

Participants in the study were not subjected to any harm by participating in the study. The project was in compliance with the treatment of the human subject's portion of the IRB approval process. The DNP student was in compliance with this aspect of the project through the completion of the Protecting Human Research Participants (PHRP) and Ethics training courses as part of the requirements for this DNP writing and research project.

Feasibility and Appropriateness

The project was conducted entirely online. The resources necessary for the project were adequate to support the implementation of the project.

IRB Approval and Process

The IRB Approval was sought after the preliminary proposal defense presentation in the course NURS 752. IRB approval for this project was granted on April 21, 2021 by ACU (Appendix D).

Interprofessional Collaboration

The DNP student collaborated with the director of peer support at the study site for the implementation of this DNP scholarly project.

Practice Setting for the EBP

The stress-reducing techniques were provided in various hospital settings nationally by inpatient caregiver wellness programs.

Target Population

The target population was parents older than 18 years with children undergoing care and treatment in the NICU and/or PICU. Inclusion criteria were not limited to biological parents if they were not the primary caregivers. Grandparents, siblings, and foster parents would be included, if necessary.

Risks

One potential risk to participants was the risk of further stress related to reliving this stressful time. No other risks were identified related to parent participation in the project.

Benefits

Family-centered care is at the core of the care provided in the children's hospitals and essential to the health and well-being of the child and family (Institute for Patient- and Family-Centered Care, 2017). The use of complementary and alternative therapies to reduce stress and anxiety has gained increased acceptance over the past decades. In a study conducted by Kurebayashi et al. (2016), the researchers concluded that the use of massage alone or in combination with Reiki sessions led to reduced stress levels and anxiety in the participants. Reducing stress for the parents has also been associated with positive effects on the family and coping patterns for the individual.

Instrument/Measurement Tools

The main tool was the Parent Stress Survey, which utilizes Likert scales discussed in the Methodology Appropriateness section (See Appendix A). Stress reducing techniques included

the following: hand reflexology, reiki, coaching, meditation, chair massage and chakra balancing.

Data Collection/Management

The participants' responses on the Parent Stress Survey were the data I collected electronically. Demographic data were also collected consisting of the participant's age, gender, and whether they had participated in using these stress reduction services at a prior date. The evolution of this DNP scholarly project is illustrated in the project timeline table (see Appendix C).

The data analysis used in this DNP scholarly project was an inferential quantitative data-analysis plan. The level of data analyzed was interval/ratio. I used these data to measure parents' stress level scores on the Parent Stress Survey. I report the means, averages, and standard deviations using descriptive statistics. Basic descriptive statistics were used to illustrate the responses the participants gave on the survey before and after receiving the stress-reducing techniques (Bonnell & Smith, 2018).

Chapter Summary

This chapter of the DNP scholarly project describes the procedures that I utilized in obtaining and evaluating the results of the data gleaned from the Parent Stress Survey. It was the intent of this project that the stress scores obtained after the stress-reducing techniques were received were less than the stress scores obtained prior to receiving the interventions. The project timeline for data collection was seven weeks, beginning in April, 2021.

Relieving stress for the parents when their child is in the PICU can lead to better coping mechanisms for the parents and the child. Treating families as partners, listening to their comments, questions and concerns fosters better relationships with the healthcare providers.

Parents are the child's greatest support during this difficult time and caring for the family as a whole is the essence of family-centered care (Institute for Patient- and Family-Centered Care, 2017).

Chapter 4: Findings

Purpose of the Project

Parent involvement in the care of a critically ill infant or child welcomed and encouraged during hospitalization. The commitment to family-centered care is supported by stakeholders and is a guiding premise on the majority of patient and family satisfaction surveys. Parents are expected to make life impacting decisions about their infant or child's health, consent to numerous procedures, and comply with hospital protocols with regard to visitation, infection control, and institutional policies. Reducing parent stress levels related to their child's condition and the environment can help caregivers make the best decisions for their child and be effective partners in their child's care during the hospitalization period (Vasli & Salsali, 2014). The purpose of this DNP project was to evaluate the impact of stress-reducing techniques on parent stress levels in the neonatal and pediatric intensive care units.

Discussion of the Demographics

Potential participants (members of the study site online group) were sent solicitation materials and a consent form. An electronic survey link to the survey was provided to parents who are members of the study site support after they have received the solicitation materials and completed the electronic consent form. One-hundred and sixty members of the study site online group received the solicitation. Thirty-five participants responded and completed the survey. Characteristics of the survey participants are illustrated in Figures 1, 2, and 3.

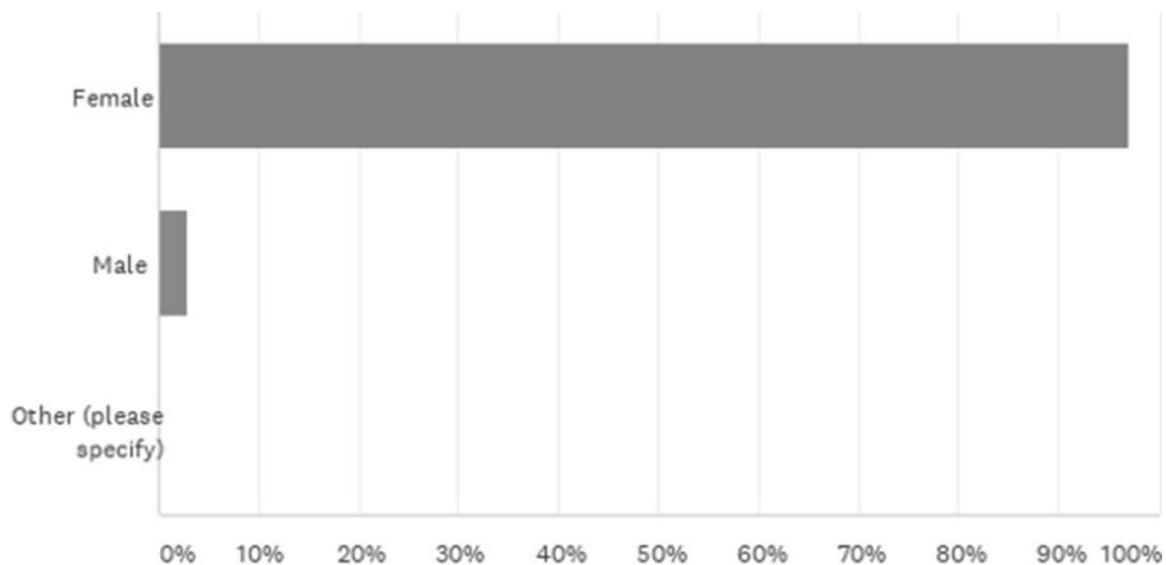
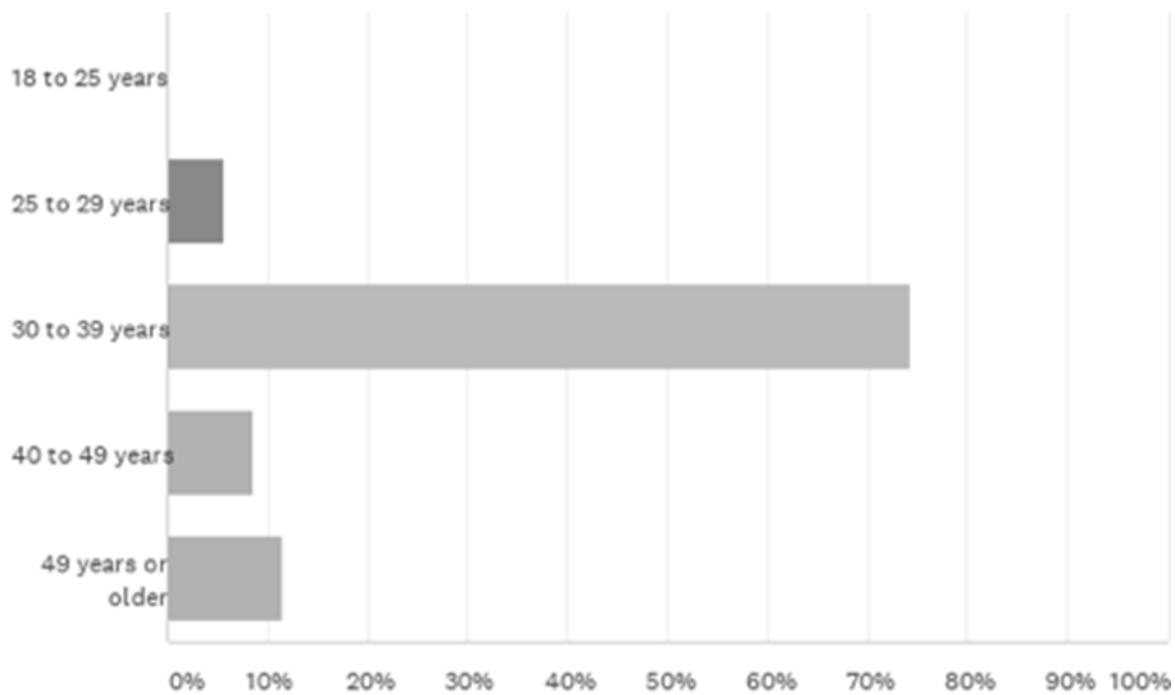
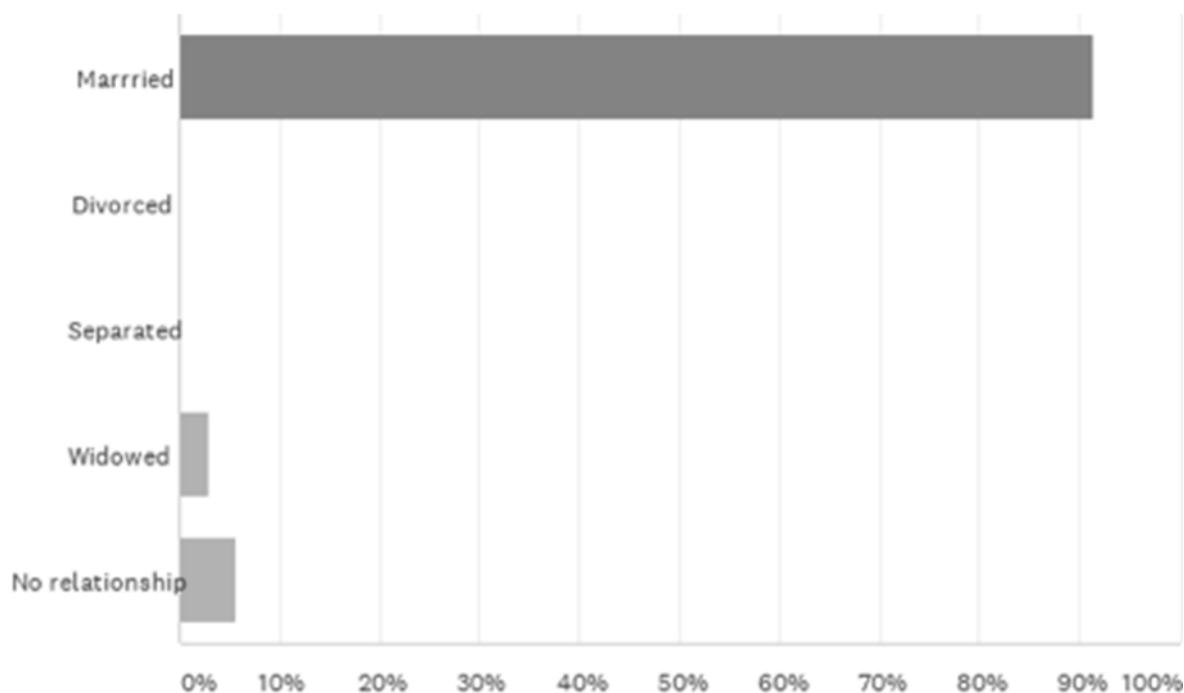
Figure 1*Gender of the Participants***Figure 2***Age of Participants*

Figure 3*Current Relationship Status*

Analysis of the demographic data revealed that of the 35 participants that responded to the survey, the majority of the participants were female (97.14%). The mean age range for the participants was 30-39 years. This represented 74.29% of the total 35 respondents. In the last category of the demographic, data collected were the participant's relationship status. The majority of the respondents were married, 32 out of 35 participants, representing 91.43% of the total sample.

Data Analysis

The data analysis method used for this capstone project was an inferential quantitative data-analysis plan. The level of data analyzed was interval/ratio. The data were used to measure parent stress level scores on the Parent Survey (Appendix A) before and after the stress-reducing techniques were implemented. The mean, averages, and standard deviations were reported using

descriptive statistics. I used basic descriptive statistics to illustrate the responses the participants gave on the survey before and after receiving the stress-reducing techniques (Figures 4 and 5; Bonnel & Smith, 2018).

The type of data collected by the survey used in this project are considered quantitative data. The information gleaned from the Parent Survey allowed me to collect data related to the variables stated in the PICO question (Polit & Beck, 2018).

The statistical procedures used for analysis of the data were as follows:

- Comparison of parent stress levels before and after the stress-reducing measures were implemented.
- Comparison made using the Parent Survey.
- The independent variable was stress-relieving techniques, the treatment factor.
- The dependent variable was parent stress scores on the survey, the result of relevance.

Figure 4

Stress Level Before Receiving Stress-Reducing Techniques

ANSWER CHOICES	RESPONSES	
1 (Low stress)	0.00%	0
2	0.00%	0
3	0.00%	0
4	0.00%	0
5	0.00%	0
6	0.00%	0
7	3.03%	1
8	15.15%	5
9	0.00%	0
10 (High stress)	21.21%	7
Not applicable	60.61%	20
TOTAL		33

In Figure 4, the count of participants responding was 13. The number of answerable items on the survey was 11. The mean score for the responses was 1.3. The standard deviation for this question was 2.54. The analysis of this data indicates that an average stress score of 9 was reported via survey responses by the participants before receiving stress-reducing techniques. The data were largely influenced by 60.61% ($n = 20$) of the respondents who did not receive stress-reducing techniques during their child's hospitalization. This was indicated by their response of *not applicable*. Interpretation of the standard deviation compared to the mean score indicates there was a large variation between those who received stress-reducing techniques and those who did not (Polit & Beck, 2018).

In Figure 5, the count of participants responding was 10. The number of answerable questions was also 11. The mean score for the parent stress level responses was 1.0. The standard deviation for this question was 1.41. The analysis of this data indicates that the average stress score of 5.6 reported by the participants after receiving stress-reducing techniques was improved from the parent stress scores of 9 prior to the stress-reducing techniques. The data were largely influenced by 69.70% ($n = 23$) of the respondents who did not receive stress reducing techniques during their child's hospitalization. This was indicated by their response of *not applicable*.

Figure 5*Stress Level After Receiving Stress-Reducing Techniques*

ANSWER CHOICES	RESPONSES	
1 (Low stress)	0.00%	0
2	0.00%	0
3	3.03%	1
4	3.03%	1
5	9.09%	3
6	3.03%	1
7	12.12%	4
8	0.00%	0
9	0.00%	0
10 (High stress)	0.00%	0
Not applicable	69.70%	23
TOTAL		33

Chapter 5: Discussion, Conclusions, and Recommendations

In today's complex and competitive healthcare arena, having a partnership with families during their child's hospitalization is critical to the successful implementation of a family-centered care milieu. In most instances, the family system is the essence of the child's strength and comfort. Stressful situations, such as the hospitalization of a child, leads to feelings of depression, anxiety, and tension for many families. Actions taken to improve the emotional and mental health of the parents have been shown to have a direct correlation on the child's coping mechanisms related to their illness. In circumstances when the parent is unable to comfort their child throughout their illness due to their own inability to cope with the situation, the child's coping skills will also be ineffective. When interventions are initiated to support the parents and assist them in reducing their own stress and anxiety levels, they are better able to partner with the healthcare providers caring for their child and participate in the child's care. This also has a positive impact on the patient's and family's experience, leads to improved high-quality clinical decision making and fosters better patient outcomes (Doupnik et al., 2017).

Parents often express feelings of inadequacy related to an inability to care for their child during the child's hospitalization and the change in their parental role at this time. These alterations in parenting have been identified by caregivers as major sources of stress during the hospital experience. Parents will often verbalize their appreciation to the healthcare providers when given the opportunity to participate in the child's care. Involving the parent or parents in the patient's care gives the parent a sense of purpose as a valued team member caring for their child. In addition, having a role in the care of their child reduces their distress, apprehension, and uneasiness and has been shown to increase the child's comfort in the situation (Dahav & Sjostrom-Strand, 2017).

Interpretation of the Findings

The online survey was submitted to 160 parents who were part of the online parent study site support group. Thirty-five parents responded to the survey. Review of the data based on the findings of the Parent Stress Survey submitted to the parents in the online support group at the study site showed that the majority of the parents responding to the survey were female (97.14%). The respondents had a current relationship status as a married (91.43%). The survey participants were asked if their child was hospitalized in the NICU or PICU. Of the children hospitalized, 85.21% of the respondents had children hospitalized in the NICU, whereas 14.29% of the survey participants had children in the PICU. The parents were also asked to report their child's length of stay in the hospital. The majority of the children had a length of stay greater than 7 days, comprising 88.57% of the respondents to the survey.

Survey participants were also asked to state the nature of their child's illness. Figure 6 illustrates these findings.

Figure 6

Nature of Child's Illness in NICU or PICU Units

ANSWER CHOICES	RESPONSES	
Heart	2.86%	1
Lungs	37.14%	13
Brain	5.71%	2
Spine	0.00%	0
Stomach	8.57%	3
Other (please specify)	45.71%	16
TOTAL		35

Participants were also asked if they had an opportunity to participate in caregiver wellness services during their child's hospitalization and to rate their satisfaction level with these services. The data are best illustrated in Figure 7. Twenty-six survey participants answered this question based on the availability of caregiver wellness services.

Figure 7

Opportunity to Participate and Satisfaction Level

	VERY SATISFIED	SATISFIED	NEUTRAL	FAIRLY SATISFIED	NOT SATISFIED	TOTAL	WEIGHTED AVERAGE
Message	50.00% 3	33.33% 2	0.00% 0	0.00% 0	16.67% 1	6	0.00
Reiki	40.00% 2	20.00% 1	40.00% 2	0.00% 0	0.00% 0	5	0.00
Meditation	25.00% 1	50.00% 2	0.00% 0	25.00% 1	0.00% 0	4	0.00
Coaching	0.00% 0	100.00% 1	0.00% 0	0.00% 0	0.00% 0	1	0.00
Hand Reflexology	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0	0.00
Not applicable	5.56% 1	5.56% 1	38.89% 7	0.00% 0	50.00% 9	18	0.00

Inferences About the Findings

Conclusions about the findings based on the survey results were as follows:

1. The majority of the survey participants were female in a married relationship (97.14%).
2. The majority of the survey participants were in the 30-39 years old (74.29%).
3. The majority of the children of survey participants were hospitalized in the NICU (85.71%).
4. The majority of the children of survey participants were hospitalized for greater than seven days (88.57%).

5. The majority of the children of survey participants were hospitalized for illnesses related to the lungs (37.14%); 45.71% stated their children were hospitalized for illnesses other than the illnesses listed (Appendix A), but did not specify when asked.
6. Most (70.59%) of the respondents were not offered caregiver wellness services during their child's hospitalization.
7. Half (50%) of respondents offered caregiver wellness services and were very satisfied with the massage services they received.
8. Less than half (40%) of respondents offered caregiver wellness services and were very satisfied with the reiki services they received.
9. All (100%) of respondents were satisfied with the coaching services they received.
10. Caregiver stress levels were 8 (15.15%) to 10 (21.21%) using a Likert scale format before receiving caregiver wellness services.
11. Caregiver stress levels decreased to below 7 using a Likert scale after caregiver wellness services were implemented.

Implications for the Analysis for Leaders

The detection of a serious disease or disability in a child can have consequential stress responses for parents. As a result, the way in which a parent manages a stressful situation has a direct relationship with their own mental health, family dynamics, and how well the child becomes accustomed to the situation or illness. Parents must also deal with the possibility that their child may not survive the illness or may have a permanent disability related to the illness or injury (Muscara et al., 2015).

Muscara et al. (2015) studied the effects of post-traumatic stress reactions in parents of critically ill children over an 18-month period. In this study, the researchers found that it was

important to provide support services for parents identified as high risk and who would glean the most benefit from these support services. In addition, the researchers concluded that further knowledge and research in this area would be an important step in helping preserve the family unit in these stressful situations. As parents are most often the chief support system for their child, it is imperative to focus on stress reducing interventions that address the needs of the child and family (Muscara et al., 2015).

It has been shown that children of parents with poor emotional health are less likely to prosper in their environments pertaining to school and or social situations. Interventions aimed at supporting parents' mental and emotional well-being can have a positive impact on parental coping skills. This fact does substantiate the notion that balanced emotional health in the hospital setting can positively influence the child's health outcomes. Researchers have concluded this is an area in need of further study and provides me with an opportunity to contribute to the dissemination of the findings gleaned from this DNP scholarly project (Doupnik et al., 2017).

EBP Findings and Relationships to DNP Essentials (I-VIII)

- **Scientific Underpinnings for Practice.** The project is consistent with focusing on the client and family's health and welfare.
- **Organizational and Systems Leadership for Quality.** The project is consistent with removing barriers to care evidenced by improving child and parental well-being and advancing health outcomes.
- **Clinical Scholarship and Analytical Methods.** The project aims to collect accurate data, analyze the data, and publicize the findings of this data to improve health outcomes of patients and families.

- **Information Systems/Technology and Patient Care Technology.** The project aims to examine and disseminate information from the project in a secure manner.
- **Health Care Policy for Advocacy in Health Care.** The project aims to educate providers on the results of the project and potential implications in improving health outcomes beyond the bedside.
- **Interprofessional Collaboration for Improving Patient and Population Health Outcomes.** The project aims to use the interdisciplinary skills of nursing teams to care for patients and families.
- **Clinical Prevention and Population Health for Improving the Nation's Health.** The project aims to improve population health by promoting healthy family dynamics during hospitalization and after discharge.
- **Advanced Nursing Practice.** This project aims to identify the intricate nature of the critical care environment and its impact on the family system (AACN, 2006).

Recommendations for Future Research

It has been shown that children of parents with poor emotional health are less likely to prosper in their environments pertaining to school and or social situations. Interventions aimed at supporting parents' mental and emotional well-being can have a positive impact on parent coping skills. This fact does substantiate the notion that balanced emotional health in the hospital setting can positively influence the child's health outcomes. Researchers have concluded this is an area in need of further study and provides the researcher with an opportunity to contribute to the dissemination of the findings gleaned from this DNP scholarly project (Doupnik et al., 2017).

Summary

As a nurse leader for many years in the pediatric intensive care unit, I have cared for many critical patients and families. I have always maintained strong clinical nursing skills, yet supporting the families in these most desperate times has always been a challenge for my coworkers and myself. The pandemic, coupled with visiting restrictions contributing to lack of support for patients and families, inspired the idea for this DNP scholarly project. Caregiver wellness services do have a positive impact on decreasing parent stress levels in the neonatal and pediatric intensive care environments. Data gleaned from this project will lend support to these necessary programs that continue to support emotional and physical well-being for our patients and families.

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Appendix A: Parent Stress Survey

Thank you for participating in this short survey. There are no known risks to participating in this survey. No identifying data will be collected. Your responses will be kept confidential and only aggregate data will be included in the report of this project. The benefits for completing this survey may include helping patients and families going through similar experiences in the PICU or NICU. You may stop the survey and exit at any time. Your agreement (consent) to participate will be indicated by your submission of the completed electronic survey.

If you have questions about the research project or survey, please contact Nancy Abbene, DNP student at Abilene Christian University (xxxxxx@acu.edu) or Dr. Lynx McClellan, faculty advisor at Abilene Christian University (xxxxxxx@acu.edu).

Thank you for your participation!

1. What is your gender?

- a. Female
- b. Male
- c. Other _____

2. What is your age?

- a. 18 to 25 years
- b. 25 to 29 years
- c. 30 to 39 years
- d. 40 to 49 years
- e. 49 years or older

3. What is your current relationship status?

- a. Married
- b. Divorced
- c. Separated
- d. Widowed
- e. No relationship

4. What department was your child hospitalized in most recently?

- a. Neonatal Intensive Care Unit (NICU)
- b. Pediatric Intensive Care Unit (PICU)

5. What was the duration of your child's hospitalization?

- a. 1-3 days
- b. 3-5 days
- c. 5-7 days
- d. Greater than 7 days

6. The nature of your child's illness was related to her/his;

- a. Heart
- b. Lungs
- c. Brain
- d. Spine
- e. Stomach
- f. Other _____

7. During your child's hospitalization, were any of the following caregiver wellness services offered to you? Select all that apply.

- a. Massage
- b. Reiki
- c. Meditation
- d. Coaching
- e. Hand Reflexology
- f. Caregiver wellness services were not offered.

8. If you had the opportunity to participate in any of the caregiver wellness services listed above, please rate your satisfaction level with each of the services on a scale of 1 to 5.

5-Very Satisfied 4-Satisfied 3-Neutral 2-Fairly Satisfied 1-Not Satisfied

- a. Massage _____
- b. Reiki _____
- c. Meditation _____
- d. Coaching _____
- e. Hand Reflexology _____
- f. Other, please list _____

9. On a scale of 1-10, please rate your stress level before using the caregiver wellness services:

- a. 1 (Low stress)
- b. 2
- c. 3

- d. 4
- e. 5
- f. 6
- g. 7
- h. 8
- i. 9
- j. 10 (High stress)
- k. Not applicable

10. On a scale of 1-10, please rate your stress level using the caregiver wellness services:

- a. 1 (Low stress)
- b. 2
- c. 3
- d. 4
- e. 5
- f. 6
- g. 7
- h. 8
- i. 9
- j. 10 (high stress)
- k. Not applicable

11. If caregiver wellness services were not available to you during your child's hospitalization, do you feel you would have benefitted from them and or your stress level would have been reduced?

- 1. Yes
- 2. No
- 3. Not sure

12. In hindsight, if caregiver wellness services were available to you at the time of your child's hospitalization, would you have been interested in participating in any of the following services. Select all that apply.

- a. Massage
- b. Reiki
- c. Meditation
- d. Coaching
- e. Hand Reflexology
- f. Other _____

Thank you for taking the time to participate in the survey!

Appendix B: Evidence-Based Table

Citation	Purpose and Question	Design	Sample Size	Independent Variables	Dependent Variables	Statistical Tests	Results	Strengths
Chertok et al. (2014).	Reduce stress of mothers in the NICU	12 RCTs 3 quasi-experimental studies 1 repeated measures study 1 pilot study	84 216 42 1	Education Parent/Infant interaction	Stress level of mothers with infants in the NICU	Parent Stress Index (PSI)	Participants had lower knowledge ($p < .0001$), behavior ($p < .05$) PSI ($p < .056$)	Address cultural needs of the mothers, found + parenting results
Dahav & Strand (2017)	Describe parent experiences of patients in the PICU	Qualitative study	12 parents	Parent involvement in care Information about child	Stress and anxiety level of parents in the PICU	Qualitative content analysis	Parents desire to be informed and involved in child's care	Homogeneous sample of 11 pts with CHD, 1 CDH
Doupnik et al. (2017).	Interventions to improve parent coping with child's hospitalization	Meta-Analysis	44 studies	Coping support interventions Education interventions	Parental Depression Anxiety Stress	Down and Black scores	Interventions reduced anxiety and stress, not depression	Demonstrated coping support can reduce parent stress and anxiety
Ramirez et al. (2018)	Identify main stressor of parents in the PICU	Quantitative, cross-sectional, correlational study	217	Parental Stressor Scale	Parent stress	Not listed	Parents identified noise, procedures, interventions and child affect most stressful	3 domains studied; clinical, emotional and communication with health care team.

Ron-Li Liaw et al. (2019)	Identify and address family stress in the PICU	Improvement initiative study	Parent in a 12 bed PICU over 18 months study	Individual stress interventions based on FST scores	Family Stress Thermometer (FST)	Not listed	Improved parent screening, satisfaction scores, reduced stress scores	Improved parent satisfaction
Kumar & Avabratha (2015).	Coping strategies for parents	Observational study	100 parents	Parent Stress scale	Parent stress	Mean and standard dev computed using SPSS software	1st time and younger parents of pts more stress than others	Age, gender, residence, socioeco status did not effect stress levels.
Rodriguez-Ray et al. (2018).	Predicting parental resilience during admit to PICU	Longitudinal cohort study	196 parents	Davidson Trauma scale Hospital Anxiety and depression scale	Parental post-traumatic stress	Descriptive statistics, ANOVAs, Pearson correlations	Resilience strong negative predictor of psychopathology.	Participants measured at 3 and 6 months after d/c.
Franck et al. (2015).	Identify predictors of post traumatic stress following hospitalization	Prospective cohort study	107 parents	Information on Stay Close study	Reduced incidence of parental post-traumatic stress	SPSS software conducted on all variables. Multiple regression analysis, $p < .05$	High post traumatic stress after d/c seen in parents with negative coping during hospitalization.	Sufficient sample size, significance level $p < .05$ Study conducted on broad range of patients.

Appendix C: DNP Project Timeline

	DNP Chair and Committee selection	Mini Proposal	DNP Project Chapters 1-3	IRB Approval Process	Data Collection Begin End	Data Synthesis Analysis	DNP Project Chapters 1-5
March 2020 April 2020	Phone conversations with Dr McClellan; Project Chair 3/20 3/25, 4/3, 4/8, 4/14, 5/18, 5/31, 6/4. 4 hours total to discuss committee selection and project implementation.	X. Approved 4/19/20.					
May 2020			X. Completed				
June 2020							
July 2020			Proposal defense to DNP Project Committee, 7/10/20. Approval form submitted to NURS 755				
August 2020							

September 2020				X. Initiated. Barriers included change of clinical site, COVID restrictions.			
October 2020					Anticipated project implementation, cancelled due to COVID restrictions and lack of affiliation agreement with ACU.		
November 2020							
December 2020					Clinical site secured. Unwilling to participate due to COVID restrictions and no affiliation agreement with ACU.		
March 2021				X. Ongoing	The study site contacted as potential clinical site pending IRB approval.		
April 2021				X. IRB approval for the study site as new clinical site	X. Begin data collection.		

May 2021					X. Ongoing		
June 2021					X Concluded 6/7/21. Data Inactivation Form submitted 6/8/21. Raw Data Storage submitted 6/19/21.	X	
July 2021						X	Submitted 7/6/21. Revisions pending DNP Project chair approval.
August 2021							Final defense proposal to DNP committee

Appendix D: IRB Approval Letter

ABILENE CHRISTIAN UNIVERSITY

Educating Students for Christian Service and Leadership Throughout the World

Office of Research and Sponsored Programs
320 Hardin Administration Building, ACU Box 29103, Abilene, Texas 79699-9103
325-674-2885



Dear Nancy,

On behalf of the Institutional Review Board, I am pleased to inform you that your project titled

(IRB# 21-048) is exempt from review under Federal Policy for the Protection of Human Subjects.

If at any time the details of this project change, please resubmit to the IRB so the committee can determine whether or not the exempt status is still applicable.

I wish you well with your work.

Sincerely,

Megan Roth

Megan Roth, Ph.D.
Director of Research and Sponsored Programs