IMPLEMENTING INTERVENTIONS IN A HEALTH DEPARTMENT FOR SAFE SLEEP PRACTICES FOR INFANTS

by

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ABSTRACT

STEPHANIE YVONNE FISHER: Implementing Interventions in a Health Department for Safe Sleep Practices for Infants. (Under the direction of DR. KATHLEEN JORDAN)

Safe infant sleep is a national public health concern accounting for approximately 350 deaths from Sudden Unexpected Infant Deaths (SUID) in the United States annually. SUID is a term used to describe the sudden unexpected death of an infant up to 12 months of age (Moon, 2016). The American Academy of Pediatrics (AAP) recommends a safe sleep environment to eliminate all sleep-related infant deaths. Interventions implemented by health care providers can promote behavior change of caregivers to achieve the goals of improving sleep safety for infants. Evidence indicates that many nurses report a lack of knowledge, time, and confidence when providing safe sleep guidance. A public health focus on safe sleep interventions in a population health-based program could directly improve health outcomes, while enhancing staff education. The purpose of this project was to implement interventions to increase the knowledge, confidence, and skills of public health case management staff regarding safe-sleep practices for infants. The interventions included (a) implementation and examination of a didactic educational intervention and (b) focus groups using case studies for role-play to enhance skills. A pre- and post-test design was used to measure a change in knowledge, confidence, and skills. Focus group analysis was used to measure acquisition of confidence and skills through measuring role-play and discussion at the end of the program. This project demonstrated that education and role-playing led to an increase in knowledge, confidence, and skills among public health providers regarding safe sleep.

DEDICATION

I am thankful to God for providing me with the perseverance, knowledge, and opportunity to complete this Doctoral Scholarly project in fulfillment of this degree. To my parents, thank you for always encouraging me in all my endeavors. To my daughter Anika, you are my most successful project and I am thankful for your support encouragement, and inspiration. My parents, sister, brothers-in-law, and additional family and friends provided constant support and encouragement that was pivotal to the successful completion of this journey. To Isaac, you have been a solid foundation, helpful, and patient. Your love has not gone unnoticed. Thank you! I love you all for your encouragement throughout this process.

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LIST OF ABBREVIATIONS

ADN	Associate Degree in Nursing
ANA	American Nurses Association
AAP	American Academy of Pediatrics
BSN	Bachelor of Science Degree in Nursing
BSW	Bachelor of Social Work
CC4C	Care Coordination for Children
CDC	Centers for Disease Control
MSN	Master of Science in Nursing
MSW	Master of Social Work
NICU	Neonatal Intensive Care Nurses Unit
NASW	National Association of Social Workers
NC	North Carolina
SIDS	Sudden Infant Death Syndrome
SDOH	Social Determinants of Health
SUID	Sudden Unexpected Infant Death
SWOT	Strengths, Weakness, Opportunities, and Threats
MD	Doctor of Medicine
IRB	Institutional Review Board
LPN	License Practical Nurse
PA	Physician Assistant
RN	Registered Nurse
SPSS	Statistical Package for the Social Sciences

Chapter 1: Introduction

Safe infant sleep is a national concern in the United States. Unsafe sleep practices have been attributed as a precipitating factor leading to approximately 3,500 children who die from Sudden Unexpected Infant Deaths (SUID) annually (Moon, 2016). SUID is a term used to describe the explained or unexplained unexpected death of an infant up to 12 months of age (Moon, 2016). In North Carolina (NC), SUID is a problem that needs to be addressed at multiple levels and by multiple disciplines within the health care system. The American Academy of Pediatrics (AAP) recommends a safe sleep environment to eliminate all sleep-related infant deaths (Moon, 2016). Multiple health care organizations and interventions can affect behavior change in hopes of improving sleep safety for infants. Public health campaigns have been launched to address this problem; however, public health staff working directly with parents and their at-risk infants could have an even more influential positive effect on their outcomes.

1.1 Background

In NC health departments, every county provides case management services to children from zero to five years of age. This voluntary program is called Care Coordination for Children (CC4C). A significant portion of the program can be provided in the home or another location deemed appropriate by the parent. Children are referred from pediatric offices, neonatal intensive care units, and upon discharge from the newborn nursery. They can also be self-referred or sent by another community agency that works with children. Included in this group are children with special health care needs (chronic physical, developmental, behavioral or emotional conditions) that require

additional services beyond basic care, adverse childhood experiences, children in foster care, and the care management staff work with parents to improve health care outcomes for children (Care Coordination for Children, n.d.; North Carolina Department, 2020).

1.2 Problem Statement

The North Carolina data on fatality reviews shows that unsafe sleep is the largest cause of death, accounting for about 30% of child deaths. Data also indicates that 53% of infants and 60% of low birth weight babies bedshare in NC (NC Office of the Chief Medical Examiner, 2020). Media campaigns to fight this issue are critical aspects of a marketing plan to battle infant deaths. Public health social media campaigns have been plentiful concerning this issue; however, the application of evidence-based interventions with public health staff working directly with the target population is insufficient (Peacock, Altfeld, Rosenthal, Garland, Massino, Smith, Rowe, & Wagener, 2018). Resources and support for maternal and child related home visiting services in public health departments within the states have decreased according to the National Institute for Children's Health Quality (2017).

Studying case managers that make home visits in relation to infant mortality is challenging and may be available only on larger programs implemented in community settings; however, infants that do not receive home visiting were 2.5 times more likely to die in infancy compared to those that did not (Donovan, Ammerman, Besl, Atherton, Khoury, & Altaye,… Van Ginkel, 2007). Most studies focus on clinical and hospital settings. An essential evidenced-based public health approach that aligns with public health practice is reinforced by five activities (a) evaluation the need for improvement;

(b) identifying the best evidence to meet the need; (c) use of the best information available for programming; (d) selecting programs applicable for the community and population; and (e) evaluation of the impact related to health and well-being from programming Along with media and marketing campaigns, addressing the problem from the public health perspective in a population health-based program could improve health outcomes (Duncan & Byrd, 2018).

1.3 Purpose of the Project

Nurses and health care providers should have an active role in ensuring education about the risk for SUID and Sudden Infant Death Syndrome (SIDS) at every opportunity (Cogo, Pai, Aliti, Hoefel, Azzolin, Busin, and Kruse, 2016). The purpose of this project was to determine if educational interventions with case management staff in a public health setting improve patient health education concerning safe infant sleep. Through this project, the health department case management staff were provided with essential patient-centered, evidence-based education on safe sleep interventions for use with their clients. Education and training empower staff with the appropriate knowledge and skills to appropriately provide anticipatory guidance. Education, role-play and return demonstration are measures that have been documented to be used to assure appropriate instruction.

1.4 Significance of the Project

Public health settings provide a valuable opportunity to provide education to professionals working with the target population during home-visiting and case management services. Staff working in the CC4C program are in an optimal position to

provide educational interventions that address safe sleep practices because of their access to children in this high-risk group. This project is especially significant because it targets children who are at risk of exposure to adverse childhood experiences. Because some of the AAP recommendations are based on risk, compliance is especially important with safe sleep practice in this target group. Concerning tobacco use, on a molecular level, an association has been noted with the receptors in the brain during the development of the brainstem according to Moon (2016) related to prenatal tobacco exposure. Prenatal tobacco exposure changes cardiovascular reflexes and increases the infant's susceptibility to SIDS. Additional findings suggest that when a pregnant mother experiences an increase in heart rate, blood pressure and a change in the nervous system during pregnancy and its process could be related to SIDS (Moon et al., 2016).

1.5 Clinical Question

High-risk populations have a high rate of sleep-associated death rates (Hwang & Corwin, 2017). The PICOT question that was addressed in this proposal is as follows: Do public health case management staff (P) who participate in a focused education program on infant safe sleep (I) demonstrate an increase in knowledge, confidence, and skills to promote improved patient outcomes (O)?

Objectives. An educational intervention that targets behavior change specific to safe sleep was be provided to the staff. The objectives of this DNP project were completed in a two-step process: (a) implementation and evaluation of a didactic educational intervention and (b) provision of a focus group with role-play modeling and return

demonstration. The goal of the proposal was to increase knowledge, confidence, and skills in safe sleep practices for public health case management staff.

With our aging population rapidly increasing, healthcare providers are spending more time managing multiple complex chronic diseases. Multiple comorbidity often leads to non-adherence to medications, increased hospitalization and acute exacerbations of chronic diseases. The World Health Organization (2003) defines adherence as the extent to which a person's behavior taking medications, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare professional. Medication non-adherence causes 30-50% of treatment failures and results in approximately 125,000 preventable deaths per year (American Health Association, 2013).

Medication non-adherence not only affects patient outcomes, it impacts direct healthcare costs. Non-adherence to medication ns has cost the United States approximately $100-$300 billion dollars annually (Neiman et al., 2017). Medication adherence screening tools are reliable, valid instruments for identifying patients at risk for non-adherence. However, many providers are unaware of these readily available screening tools for adherence. Educating providers of these screening tools is an important aspect of improving utilization of screening tools in primary care to address adherence to antihypertensive medications.

CHAPTER 2: LITERATURE REVIEW

2.1 Healthcare Professionals

Interventions for safe sleep must be implemented by parents and taught by healthcare professionals. Hodges, Anderson, McKenzie, & Katz (2018) completed a cross-sectional survey of obstetric physicians, noting that a minimal number of study participants received formal training on SIDS and infant safe sleep; however, most were aware of the AAP recommendations regarding safe sleep interventions. They also noted that 37% of these physicians reported that they do not make recommendations or provide comprehensive education to their obstetric patients regarding general safe sleep interventions. In one study of Neonatal Intensive Care Nurses Unit (NICU) nurses providing education to parents, 20% reported not providing education, 16% reported they provided written information, and 33% reported always providing verbal information. The causes of lack of education were related to decreased patient time, lack of confidence concerning sensitive conversations, and staff education (Naugler and DiCarlo, 2018).

When providers inadequately educate caregivers, knowledge retention and maintenance of a safe sleep environment are suboptimal. Discrepancies in knowledge and practice have been documented in reviews and questionnaires aimed at pediatric nursing practice (Ahlers-Schmidt, Kuhlmann, Kuhlmann & Engel, 2017). Healthcare providers must have an honest dialogue with parents about risks and preemptive interventions in

alignment with the National Institute for Health and Care Excellence, which recommends that parents are given comprehensive information to make informed decisions about sleep spaces for their infants (Horne, Hauck, & Moon, 2015; Jones, 2017).

Protocols and policies guide nursing interventions in health care agencies. Standards are implemented that direct nursing practice. In a study conducted by Miller et al. (2018), the Department of Public Health reviewed 79 hospitals. The results of this study indicated that approximately 50% of the hospitals provided documentation of a safe sleep policy and crib data analysis during a SIDS audit. In another study, 50% of nurses reported compliance with hospital policies regardless of their own perspective and history concerning SIDS prevention (Naugler & DiCarlo, 2018). For researchers and professionals that advocate for safe infant sleep-related work, there are four AAP recommendations specifically directed at policymakers with the goal of moving this work forward (Naugler & DiCarlo, 2018; Miller et al., 2018; Moon, 2016). The literature review revealed that policy implementation and compliance has been addressed in hospital settings but not comprehensively in public health agencies. Documentation of such policies in this discipline is vital for assessment and implementation for health care providers, management, and leadership. When policies are reviewed and implemented, nursing compliance is increased. Improvement is needed in this area because the literature comprehensively documents that all interventions should be based on the 2016 AAP recommendations for a safe sleeping environment. See Appendix C for the table of recommendations.

2.2 Patient Interventions

Targeting high-risk populations with evidence-based interventions could increase safe sleep practices and decrease infant mortality (Bombard et al., 2018). Healthcare providers should provide anticipatory guidance about safe infant sleep at various stages before, during, and after pregnancy. Messages during this time should be standardized and consistent. Hwang and Cowin (2017) provided information in their qualitative study that describes the need for public health interventions to target women prior to their pregnancy and continue through the child's first birthday. The 1990s Back to Sleep campaign is an example of a public health media campaign that helped to decrease the infant mortality rate by 50%, yet SUID has not improved in the last 15 years (Hwang & Cowin, 2017). Public health social media campaigns are one venue to reach the target population. This study highlights that interventions should be implemented during the first six months when the risk of SUID is at its highest.

Compliance is a barrier; many parents who have been trained on safe sleep practice report knowledge on the correct implementation of interventions, yet they may not use the strategies when in the company of family members due to cultural concerns (Moon, Hauck, & Colson, 2017). The interventions and processes must address barriers that prevent compliance with evidence-based safe sleep practice. Jones (2017) provided information about parent co-sleeping, explaining that health professionals must provide specific education to parents based on their cultural concerns and associated risks, noting that some parents will continue to co-sleep.

Cultural competence is a key factor when providing education. American Indian and African American families have the same level of concern about safety and comfort for their infants as any other cultural group. For example, co-sleeping is a sensitive topic; it is viewed as comforting and protective in the African American and American Indian communities (Zoucha et al., 2015). Sensitivity plays a role because co-sleeping has been a part of the culture for generations, and change can be challenging when traditional norms are questioned. This is important because this race/ethnic group represents the highest SUID rate. The Asian and Latin cultures prefer not to leave their babies alone, keeping bed-sharing as an option (McKenna, 2019). This is important information for a provider when educating parents on safe infant sleep practices. Whether working with new or experienced parents, assessment of norms and values in the prenatal and postpartum period is intrinsic to the care of the child. Assessment for traditional and cultural values could guide the provider interaction and discussion (Bombard, et al., 2018; Newberry, 2016). Compliance would be increased if health care professionals provided a rationale in addition to sharing the recommendations (Herman, Atkins & Moon, 2015).

It is integral to ensure that socioeconomic means are in place for the maintenance of a safe sleep environment. Moon (2016) reported that one program provided a portable crib and additional safe infant equipment to high-risk parents. This is a growing trend in communities and programs that target high-risk infants. In a study by Zoucha et al. (2015), providers reported having a discussion on bed-sharing; however, it was discussed that African-Americans did not convey receiving information about co-sleeping from their providers. The study also found that participants felt disenfranchised by their health

care providers due to the negative effects of their socioeconomic status and lack of social capital. Social determinants of health play a large role in the overall health of an individual and community; however, it is imperative that patient care and outcomes are addressed. Also, assessment of providers' cultural beliefs and biases is important as they could indirectly play a role in patient interaction (Zoucha et al., 2015; Newberry, 2016).

Role-play is an intervention that assists with the application of knowledge and skills in nursing education. This intervention provides an environment for immediate feedback and simulated communication with peers for use in clinical and community settings (Rholdton, Lemoine, & Tempett, 2018). Naugler and DiCarlo (2018) reported that using role-play as a safe sleep education strategy increased nursing confidence and compliance. Using role-play allows for a deeper understanding while enhancing the development of skills. Rholdon, Lemoine & Tempet (2018) found simulation education addressed knowledge gaps and helped prepare nursing students for active nursing practice.

Nurses experience conversational barriers when providing education and guidance. They are aware of the AAP recommendations; however, nurses believe extra blankets and positioning aids are safe and, particularly after feedings, a side-lying position may be best for an infant (Naugler & DiCarlo, 2018). Compliance among caregivers, parents, and providers could be increased if role-modeling, comprehensive training, and implementation were provided. Simulated interventions about safe infant sleep enhance knowledge and performance (Newberry, 2018; Andreotta, Hill, Eley, Vincent, & Moore, 2016).

Some providers report a lack of confidence concerning interaction, specifically when communicating with family members. Topics of concern for providers that decrease confidence are aspiration risks, sleep position, and crib maintenance. Education and role modeling enhance nursing communication with parents and family members when the content addresses information that may cause familial disagreements among parents and between generations (Moon, 2016; Hirsch, Mullins, Miller, & Aitken, 2017).

Public health nurses are valued in the community and clinical setting. There is a lack of information in the literature bridging public health nursing and safe infant sleep. While role-play is supported in the promotion and development of required skills for nursing practice, the gap in the literature exists due to a significant deficiency in nurses modeling role-play in educational opportunities and training. (Cogo et al., 2016; Newberry, 2018).

This project meets an existing literature gap and a gap in safe and effective practice (Hodges et al. (2017) reported that physicians are not providing the appropriate education. Jones (2017) noted that health care providers must respect parental autonomy while providing education. A research gap exists between the safe sleep recommendations and public health officials and professionals (Ward & Balfour, 2016). The literature supports a comprehensive educational intervention with role-play interaction and discussion that will improve provider education based on the AAP guidelines at the local public health level. This would be effective for providers to improve care while addressing a research gap.

2.3 Framework

Kurt Lewin's Change theory proposed that individuals or groups were influenced by restraining forces that countered driving forces aimed to maintain the status quo (Shirey, 2013). As applicable, nonadherence in safe sleep interventions equates to the success of the restraining forces. Driving forces impacted providers positively, causing change to be initiated and maintained. Another component of Lewin's theory is the three-step process of unfreezing, change, and refreezing. Unfreezing the current state, changing, and refreezing to a state where the staff is using the correct interventions and strategies makes this model applicable (Shirey, 2013). The knowledge of public health staff was assessed before and after the educational intervention and focus group, using role-play so that new policies, conversation strategies, and habits were developed by the staff that will indirectly affect parents. Lewin's theory was applied to the project in three steps.

1. Unfreezing was applied to the project as current sleep habits, beliefs, knowledge, and values about co-sleeping were assessed, discussed and acknowledged with staff in the didactic session.
2. Implementation began, and the change process started. A pre- and posttest were provided while the staff was informed of a need to change. Education and training were provided. Focus groups with role-playing were provided with a return demonstration for discussion.
3. Refreezing for safe sleep interventions was a constant step as providers will have new education and conversation techniques as a part of their education program (Shirey, 2013).

2.4 SWOT Analysis

Figure 1 describes the strengths, weaknesses, opportunities, and threats (SWOT) for this proposal. Plans for implementation and processes are assessed to assist with meeting the objectives and application of the interventions.

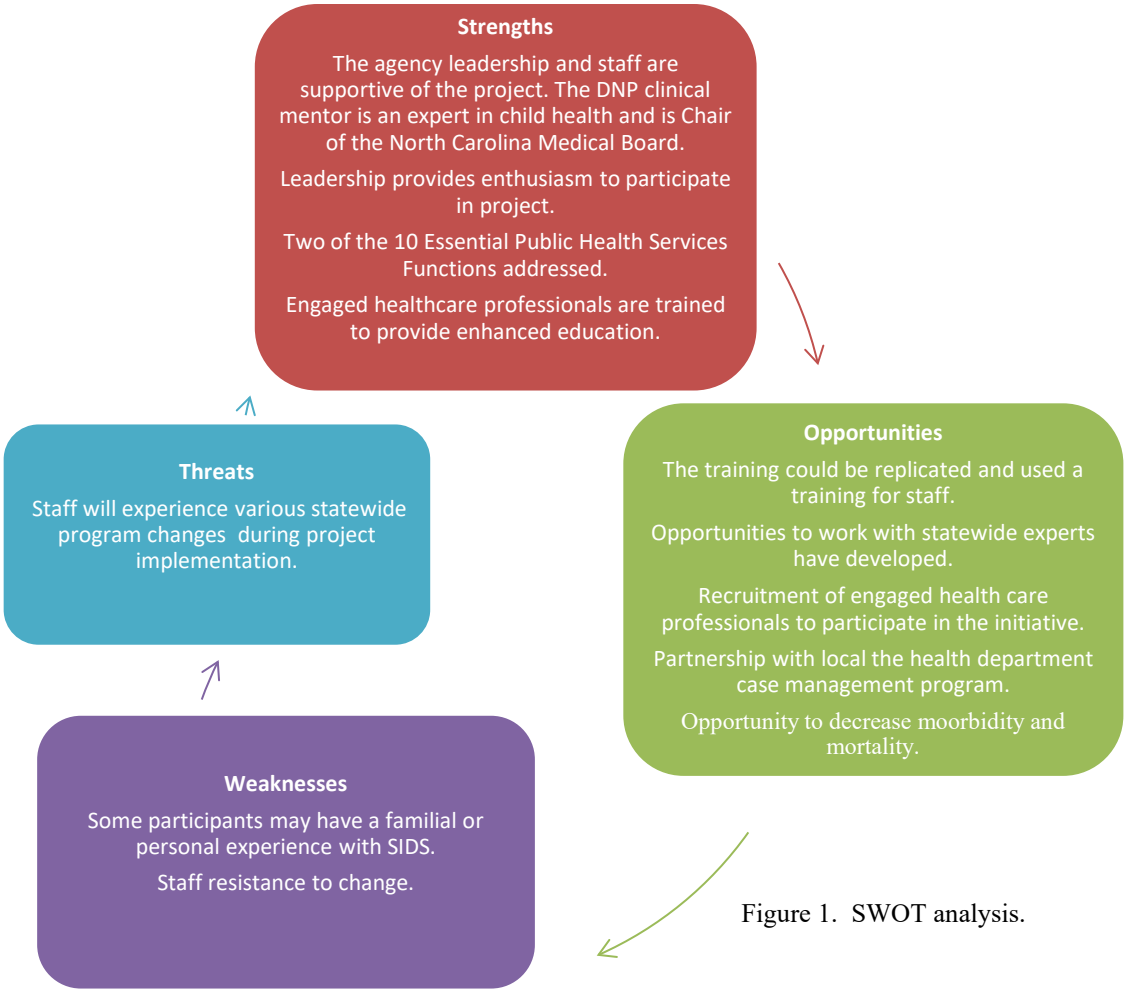

Figure 1. SWOT analysis.

CHAPTER 3: METHODS

3.1 Project Design

For this study project, a one group pre- and post-test, non-experimental, exploratory design was used to determine the impact of the education module on the care managers. A qualitative assessment was completed using focus group analysis to obtain information about conversation techniques and strategies that enhance education with parents.

3.2 Setting

The site for this project was the Cumberland County Department of Public Health, located in Fayetteville, North Carolina. The target population was the staff in the case management department, specifically the CC4C Case Management Program at the agency. The agency provides well and sick care to adults and children, in addition to assuring the 10 essential functions of public health for the county at large. This project addressed the following two essential functions of public health: (a) to provide education and empowerment to people about health concerns and issues and (b) to maintain a competent public and personal health care workforce by providing updates, education, and empowerment (CDC, 2018). Approximately 15-20 social workers and RNs that are employed as care managers participated.

The Health Department has a strong history of working with safe sleep initiatives. The Health Director, CC4C Supervisor, and Director of Nursing were supportive of this proposal. The DNP project lead serves as the Regional Child Health Nurse Consultant from The NC Division of Public Health providing consultation for the child health

clinical program and the CC4C program. The CC4C Supervisor hosted an expert speaker from South Carolina and closed clinics for an in-service training session specifically on safe sleep in 2018. In addition, they applied for multiple grants to address safe sleep initiatives in the community to provide education. This proposal enhanced the performance of case management staff when educating parents and families.

3.3 Population

The target group of participants for this project was the case managers in the CC4C program and the Pregnancy Medical Home program. At-risk children 0-5 years old are the CC4C case management program's target population. The Pregnancy Medical Home case management staff work with pregnant mothers and their medical prenatal providers to ensure the patients receive the best possible care during and after the pregnancy (North Carolina Department, 2019).

3.4 Intervention

An educational intervention that targeted behavior change and knowledge enhancement was provided to the staff. The literature search did not yield an assessment tool targeting providers for knowledge, confidence, and skills. An evidence-informed safe sleep knowledge pretest and posttest tool for knowledge and skills assessment was adapted from Jordan et al. (2019). The tool targeted the five evidence-based areas of sleep interventions: (a) health messages, (b) educating professionals, (c) elimination of barriers, (d) culture and tradition, and (e) regulation and policy and the 2016 AAP recommendations for a safe sleep environment (Barsman, Dowling, Damato, & Czeck, 2015; Miller et al., 2018; Moon et al., 2016). Information was gathered from staff after they interacted with clients to assess for improvement.

To measure the change in knowledge, confidence, and skills, the program was designed to administer a pretest to be taken before participation, and a posttest at the end of the program. The intervention included two steps. The training was held onsite at the agency in the conference room/classroom each day. Focus groups were used as a method to obtain qualitative information. Role-play was used as a tool to enhance education and communication skills when interacting with patients and families because it encouraged learning and could be incorporated into real-life situations (Cogo et al., 2016).

All the participants arrived and completed a consent form with demographics and pretest with confidence assessments. For the first session, following the pretest, the training module was presented. The first step was an onsite educational training that reviewed the AAP recommendations, information from the NC statewide safe sleep committee and the National Center for Education in Maternal and Child Health. The second step included a training module with role-playing and a focus group. Upon conclusion of the focus group sessions. Participants completed the posttest with confidence assessments. Using role-play as a strategy increases the development of the nurse's skill to perform procedures (Cogo et al., 2016). Role-play targeted conversations that the participants will view and demonstrate concerning safe sleep implementation. Five sample scenarios are listed in Appendix B. They were developed and adapted from the Safe Sleep NC's online provider training, and National Action Partnership to Promote Safe Sleep Interview Scripts (NAPPSS), with additional contributions by the project coordinator. The training and focus group was provided by the lead researcher and the Clinical expert. To model role-play scenarios and an additional regional child health nurse consultant was used as a parent/care manager for the training audience. Upon

conclusion of the role-play activity, the following three questions were discussed with each group:

- How comfortable are you providing advice?
- What information would you provide?
- What is your understanding of the AAP recommendations related to the activity?

Many providers may be aware of safe sleep information but are not sure how to start and maintain a conversation with parents or family members. Providers are aware of the education required, but they also lack the appropriate time to provide education (Hodges, Anderson, McKenzie & Katz, 2018). These interventions permitted feedback in small groups, increased interaction, and enhanced the application of knowledge and skills while increasing confidence through practice.

3.5 Data Collection

Demographics. Basic demographic factors were collected from the sample of participants. The information collected was coded using the last four digits of each participant's phone number. These factors include education level, professional title and public health employment tenure. Additional assessment factors on the tool relate to adequate time for patient education, participant scholarly education, and agency policy implementation.

Timeline. The application to the University of North Carolina at Charlotte (UNCC) Internal Review Board was submitted in July of 2019. The project began in

September 2019 and implementation ended in November 2019. Data were analyzed, and the project was summarized in February 2020.

Sessions were held during lunch. A $25.00 and $50.00 Target gift card was raffled off at the end of each training session, respectively, upon completion of the posttest.

3.6 Inclusion/Exclusion Criteria of Sample Population.

Participants were included if they were employees at the health department and worked in the case management program. Exclusion criteria included participants that have not completed the consent form or that are not public health nurses or social workers. Participants were required to speak and write in English.

3.7 Ethical Considerations

No identifying information or demographic information was collected as a part of the project. The UNCC Institutional Review Board approval was obtained prior to project initiation and data collection. Participation is voluntary. The project lead informed the participants of the goals, risks, benefits, and conflict of interests at agency and staff meetings at each interaction. The project lead collected and stored the informed consent forms and was available during and after the study for questions and further discussion. Participants were made aware that if they have questions one month after the project end date, the project coordinator would be available for contact or follow-up.

3.8 Data Analysis and Confidentiality.

Confidentiality was maintained as informed consent was requested from all participants at the beginning of implementation. All participants provided consent to participate. The project lead provided two consent forms (see Appendix B): one consent

form for the didactic educational session, and the additional form for the focus group. Participants were asked to respect the confidentiality of participants in the room by not sharing discussion from the focus groups upon the conclusion of the activity. Forms and audio recordings are locked in the project coordinator's home office until the conclusion of the study. For maintenance of confidentiality, participants were informed about the location of the audiotape and how long it will be in existence (Doria, Condran, Boulos, Maillet, Dowling, & Levy 2018). Audio recordings will be destroyed after the transcription and cleaning of the data/transcripts.

Participants were provided an evidence-informed safe sleep pre- and posttest assessment at the beginning and end of the educational training. The pretest and posttest were completed using paper and pencils. The interventions were provided in a two-step method with the training session first (1.5 hours) followed by the focus groups with role-playing (1.5 hours). The posttest was provided upon completion of the focus groups. Literature and handouts, as well as training sessions and focus groups, were made available for the agency to use with patients.

IBM SPSS was used for data analysis. Focus group information was transcribed verbatim and the data was analyzed immediately. The participants in the project were providers; therefore, patient information was not used. The participant information was coded in a de-identified manner as another layer of maintaining confidentiality. Upon the conclusion of the data collection, paper surveys were recorded in the password-protected file and destroyed.

3.9 Project Analysis

This project yielded information that demonstrates that public health nurses and social workers have an impact on safe sleep interventions when provided appropriate education with role-play strategies. There are not many studies on home-visiting public health staff that work with high-risk populations specific to safe infant sleep. The training and techniques could be replicated in public health and other healthcare settings to assist health care workers to build confidence, knowledge, and skills concerning conversational strategies related to safe infant sleep interventions. As far as fiscal impacts, the project did not incur any costs other than the gift cards that were raffled off during the educational sessions. Additional comprehensive fiscal impacts are related to decreasing infant deaths, decreasing infant mortality, improving maternal health care, and providing comprehensive child health care and education to all regardless of ability to pay.

CHAPTER 4: RESULTS

4.1 Sample Size and Demographic Information

The educational intervention module with role-playing and focus groups was conducted between October and November 2019. Each lesson lasted about 1.5 to 2 hours. All participants were nurses or social workers. Most of the participants were RNs (n=13) and the other participants were social workers (n=7). Professional attributes of the sample were that the majority either had a Bachelor of Science Degree in Nursing (BSN) (n=7) or a Bachelor of Social Work degree (BSW) (n= 5). Years of public health experience varied as most participants reported less than 5 years of service as a Registered Nurse or Social Worker. In this sample, 65% had less than 5 years of experience in public health (n=13) and only 2 participants had 16-20 years of public health experience. Table 1 provides demographic information and additional safe sleep questions that were assessed.

Table 1. Demographic Information (N=20)	**N (%)**
Professional Title	
Registered Nurse	13 (65)
Social Worker	7 (35)
Educational Level	
ADN	2(10)
BSN	7(35)
MSN	3(15)
BSW	5(25)
MSW	3(15)
Years of work in Public Health	

0-5 years	13 (65)
6-10 years	2(10)
11-15 years	3(15)
16-20 years	2(10)
20 years or more	0(0)

Concerning additional baseline questions about safe sleep information from the participants 95% (n= 19) believed that safe sleep education would be beneficial and that they did have enough time to provide safe sleep education to their parents; however, only 75% (n=15) felt that they received appropriate education in their academic program. Table 2 displays additional information specific to participant beliefs about safe sleep practice. These questions were assessed to obtain general baseline information about safe sleep beliefs from the participants.

Table 2 **Safe Sleep Participant Baseline Questions (N=20)**	**N (%)**
Do you believe that you have adequate time to provide safe infant sleep education to parents?	
Yes	19 (95%)
No	1 (5%)
Does your agency have a policy or procedure related to safe sleep education?	
Yes	14 (70%)
No	5 (25%)
Undecided	1 (5%)
Do you believe that safe infant sleep education would be a benefit to you?	
Yes	19 (95%)

No	1 (5%)
Do you believe that it is wrong for parents/families to co-sleep?	
Yes	19 (95%)
No	1 (5%)
Do you believe that you received adequate education in your academic program to provide safe sleep education?	
Yes	15 (75%)
No	5 (25%)

4.2 Project Findings

Knowledge, confidence, and skills, specific to safe sleep interventions for public health case managers in a local health department were assessed in the DNP scholarly project. The participants were asked questions in the pretest about preexposure and work history related to safe sleep interventions. After the intervention, a posttest was provided. SPSS was used to perform statistical and descriptive analysis of the quantitative and qualitative results. Scores on the pretest/posttest ranged from 0-11 with all questions weighted individually. A paired t-test was conducted to look at the difference in pre-and post-test scores. The results indicate that there was an increase in mean scores from pretest to posttest (N=20, pretest mean score = 0.75), posttest mean score was 0.83). The participant's knowledge increased from pretest to posttest. The paired t-test was performed to evaluate the influence that the factors had on the module. There was a

statistically significant difference in the knowledge of care managers after participating in the education module, t=6.439, p=0.0004. The question most frequently answered correctly on the pretest (n=20) and post-test (n=20) was related to safe sleep practices. The question most frequently answered incorrectly on the pretest (n=20) and post-test (n=20) was related to demographics of people who are at the highest risk for SUID and SIDS. Table 3 presents the mean and median scores for the pretest and posttest.

Table 3 Pretest / Posttest Question Information	**Pre-test Mean Mode**	**Post-test Mean Mode**
Percent of infants in NC that bedshare	.75 1	.83 1
Bedsharing example question	.65 1	1 1
Safe sleep space question	.9 1	1 1
Safe sleep practices question	1 1	.95 1
Safe sleep barriers	.88 1	.91 1
Safe sleep interventions to decrease risks of SIDS and SUID	.83 1	.86 1
Health disparities, ethnic background related to SIDS and SUID	.49 .4	.58 .4
Safe sleep space items and environment	.95 1	.98 1
Infant age and risk for SIDS and SUID	.3 .27	.34 .27
Smoking and SUID/SIDS	.7 1	.95 1
Back to sleep	.8 1	.95 1

A one-way ANOVA was calculated to compare the variance between groups specific to education level, years of service, and professional title related to the education module. The ANOVA test did not show significance with these factors. There was no significance for the professional title, [F(1, 18)=.950, p=.343]. Significance was not

noted for the level of education [F(4,15) = .1.087, p=.398)], or for the year of service in public health, [F(3,16)=.506, p=.683)]. There was not a significant change in the module because of these factors; however, the initial paired two-tailed test is of strong significance with a p-value of < 0.0004. This result indicates that the factors assessed in the education module were significant regardless of the descriptive factors assessed in the study.

Confidence assessment scores were obtained using a five-point Likert scale that ranged from 1 (strongly agree) to 5 (strongly disagree). Each survey contained a seven-item measure of pre and post-confidence assessment. Confidence scores for each question were averaged to provide a single score for pre and post confidence for individual participants. A paired t-test was calculated, p= .0008 noting statistical significance. An increase in knowledge, confidence, and skills are supported by the statistically significant improvements found on the items on the confidence assessment. Also, descriptively, the mean post-confidence scores were lower than the mean pre-confidence scores indicating that the participants documented higher confidence at the end of the assessment. See Table 4 below with mean pre and post- confidence scores and statistically significant p-values.

Table 4. Confidence Assessment Mean	**Pre-Confidence Assessment Mean**	**Post-Confidence Assessment Mean**	**Statistical Significance p-values**
Legend for assessment: *1-strongly agree, 2- agree, 3- uncertain, 4- disagree, 5- strongly disagree*			
I am confident I have adequate knowledge, confidence, and skills about infant safe sleep interventions to provide best-practice care in public health.	3	1.75	.007
I am confident about my ability to implement safe sleep interventions in my practice.	3.0	1.8	.007

I am confident about providing safe sleep education to family members in the home.	3	1.75	.036
I am confident in having conversations with parents and families about safe infant sleep interventions in the home.	3	1.7	.031
I am confident about initiating a conversation about safe infant sleep interventions in my practice in the home.	3	1.7	.007
I am confident about my ability to assess and define a safe sleep environment.	2.9	1.75	.013
I am confident about discussing perceived barriers to safe sleep interventions.	2.9	1.75	.014

An additional goal was to incorporate role-play into the focus groups with role play as an intervention using case study discussions. There were four groups averaging 60-70 minutes with approximately four to six participants. Multiple themes emerged from the focus group. A main theme from the focus group discussion noted the communication approach required by the care managers and the use of evidenced-based materials when providing education. Another important fundamental theme reported by the care managers was the need to establish rapport and respect before providing education specific to culture and tradition. Thematic analysis is noted in Table 5. Nurses and social workers reported the following statements from the focus groups:

Table 5. Thematic Analysis	**Participant Comments**
Communication	I often say "You may be extremely tired, and you may not feel your baby underneath you. Something could happen, and you

	don't want to have to live with that for the rest of your life. It could only take one second to put your baby in right next to you where you could pick her up to take care of her.
	" I have concerns using the word "die" because after they hear that word some patients don't hear anything else after that, so I try not to use the word. "
	The use of our computers in the home helps with interactive games focused on safe sleep …Some parents do not have access to technology. "
Education	"I feel comfortable giving people knowledge. Information from the March of Dimes and Health and Human Services marks me feel confident."
	" It is best to be simple when educating families and assess education and handouts. I sometimes know if they can read and adjust accordingly."
	"From Healthwise, (an education website) I also go to the CC4C toolkit to use diagrams and pictures of cribs for educational purposes."
	" This knowledge helps me to be more passionate to deliver services."
	"Coming into the knowledge from the 70s and knowing the consequence… it helps me to be more passionate and relate to how to deliver services properly."

	“Begin education on the phone with the initial phone call.”
Information	“Statistics that are given from our community help.”
	“Personal experience and evidenced-based information help my confidence. We have constantly used the material.”
	" I feel pretty confident because the stuff (information) we give is evidence-based."
	“I feel proud that we have access to Health-Wise, AAP information, and other evidenced-based required information.”
Communication	"You have to build a rapport from the beginning to let them know you are there for them. Once the rapport is built, they will be more respectful and receptive of what you are trying to tell them, then you can provide evidenced-based papers they can understand."
	It makes it easier when you kind of meet them where they are. We know that people are going to co-sleep regardless of the recommendations, so maybe figuring go to make things as safe as possible kind of work for where they are. Especially when working with the Hispanic community and other traditions.
Culture & Tradition	“ You must acknowledge their culture.”
	" At times when things are uncomfortable due to cultural or religious differences, I make myself aware of the differences

	ahead of time because I want to provide an appropriate education.”
	" I find out what the patient believes, what they are doing, then I discuss what is safe and what is not. I use research when a "Grandmother says something against the guidelines. I like handouts that support research."
	As uncomfortable as it is for me to say this, it is more uncomfortable if something should happen and I did not say these things to you. It is best that you are informed. “
	“I have concerns using the word “die” because after they hear that word some patients don’t hear anything else after that, so I try not to use the word. “
	If you know that culture and tradition may be a concern, be prepared. Do not start demanding things to ruffle feathers. Acknowledge culture and be prepared to educate.

CHAPTER 5: DISCUSSION

5.1 Summary

In summary, statistical significance was found for an increase in knowledge, confidence, and skills after participation in the educational module with role-playing. After participants (n=20) completed the tool, the mean total scores on the pretest and posttest increased from .75 to .95. Based on the one-way ANOVA test, statistical significance was not found for the descriptive factors between the groups individually. This indicates that participants' professional title, educational level, and years of service in public health did not play a significant role in the module statistically. This could be due to small sample size. Because the initial paired t-test was strongly significant at $p < 0.0004$, the module remains strongly significant without the factors.

5.2 Discussion

As of 2020, infant mortality decreased in North Carolina; however, it increased for post-neonatal deaths (sleep-associated deaths) by four percent (State Center, 2017). In addition, SUID is still the third leading cause of infant deaths in NC (State Center, 2017). Public health case management staff play a significant role in providing education and prevention which directly relates to patient outcomes. An education intervention delivered to small groups with role-playing was provided to public health case management staff. The evidence-informed tool adapted from Jordan et.al (2019)

addressed items that targeted the care managers' knowledge about items that would address educational gaps specific to patient outcomes.

The study demonstrated positive benefits for public health case management staff receiving safe infant sleep education. Confidence pre- and post-assessment scores decreased from 3.05 to 1.7, indicating that the participants were more confident after the intervention. This finding is imperative because previous research notes that many nurses are not confident providing safe infant sleep education; yet, provider advice can modify factors that impact safe sleep practices (Hirai,
Kortsmit, Kaplan, Reiney, Warner, Parks, and Hirai, 2019; Naugler and DiCarlo, 2018). Public health care managers are positioned to make a substantial contribution to the gaps in this area because of their role with the target population. There is a need for this to be documented for practice between disciplines specific to nursing and social work for safe sleep interventions.

Targeting nurses and social workers, and engaging them in role-play and a focus group, was a significant part of the educational module. Many of the participants were able to share experiences of their own while providing significant feedback to assist and engage other care managers in preparation for engagement with parents and families concerning the topic. Stakeholder input from this perspective is invaluable as examples of how to educate with AAP recommendations appropriately is critical to patient interaction. Public health staff uses sound evidence-based practice with their actions and decisions as they work with other disciplines to ensure that outcomes are met. Based on the feedback from the focus group, it was evident that evidence-based practice is a hallmark standard for the participants. Because the evidence-based practice was frequently discussed in the

focus group, the incorporation and application of the AAP recommendations fit well with the educational module for the participants. This assisted in addressing gaps in education specific to the learning needs of the participants. The participants were motivated to participate in the study on this topic. In recent years, they have hosted an internal service on the topic, and some participants have a personal and or professional history related to the subject.

Evidenced-based interventions, particularly in high-risk groups, can play a significant role in improving safe sleep practices (Bombard, et al., 2018). The study provided a demonstration of the importance of culturally sensitive care during conversations. Improved conversation strategies and approaches to difficult conversations were demonstrated.

5.3 Strengths and Limitations

One strength of the study is that the data confirms that the module assisted to increase participant knowledge, confidence, and skills to provide safe infant sleep education. A standardized module was developed that can be used for group settings to provide training, role-playing and focus group discussions with nursing and social work public health staff. The project was developed to ensure interprofessional connectivity and to include all levels of each discipline. Another strength is that the tool was adapted from one used in a similar previous study by Jordan et.al (2019). After searching for a tool and contacting a safe infant sleep expert, no evidence-based tool was found (R.Y. Moon, personal communication, September 19, 2019); therefore, a tool was developed that was evidence-informed based on the AAP recommendations.

Acknowledging the interprofessional public health team of nurses and social workers, it is important to note that professional the code of ethics from each discipline is similar. The American Nurses Association (ANA) Code of Ethics, which establishes that nurses are committed to promoting, welfare, and safety of all people (ANA, 2001) and the National Association of Social Workers (NASW) code of ethics includes the following principles guiding practice to include: service, social justice, dignity, and personal worth, relationships, integrity, and competence (NASW, 2018). All people should include the smallest and most vulnerable newborn infant patients and the participants play a significant role in their community to comply (Patton et al., 2015).

The use of nurses and social workers provides a dynamic alliance of disciplines that provide case management services to a diverse community. In addition, this collaboration is a hallmark requirement of the CC4C program. As the ANA and NASW code of ethics provides a platform for the implementation of diligent case management, the participating staff were able to focus on learning from the module while following the AAP guidelines. It is apparent that the intervention increased the knowledge of safe sleep education regardless of the level of education, discipline and years of service.

One limitation of the study is that it was conducted in one public health department. The factors may have had a significant result from the one-way ANOVA test if there were more participants. Moreover, including an additional health department in a smaller geographic area may have yielded additional focus group responses and input from a different perspective.

5.4 Implications and Recommendations

The implications of the results are strong and clear. Public health nurses and social workers can make a significant contribution to increasing education concerning the AAP recommendations. The module provides for communication, an increase in stakeholder input, and examples to be discussed. Interprofessional communication increased, making these improvements significant to the provider practice. The use of nurses and social workers in public health translating evidence-based AAP recommendations from the module, statistically and specifically, is important for public health.

One recommendation is to include race into the demographic section of the tool. Another recommendation specific to the tool would be to ensure that the care managers are assessing for social determinates of health (SDOH) during their interaction with parents. This is important, as 70% of health outcomes are related to SDOH (Magnan, 2017). If these needs are not addressed, safe infant sleep may not be a priority. It is important to note that the care managers in the program do assess for SDOH; however, the question should be added to the tool for future use.

A safe sleep program gives the community an opportunity to improve its health and well-being (Zahritz, 2016). This training module successfully educated public health nurses and social workers to teach parents, families, and caretakers how to appropriately maintain a safe sleep space and follow the AAP recommendations. All the participants came to each session of the training module. Overall, this program established the need for public health care managers to be included as important members of the health care team that interacts with families through case management using motivational conversation techniques to improve health outcomes and improve education. Each

participant provided rich qualitative information for use in future training when educating families. This module improved the clinical skills, conversational strategies, and confidence needed to improve the implementation of difficult interactions and discussions regarding safe sleep for public health case management nurses and social workers.

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Appendix A: Data Collection Tools

Demographic Information

Implementing interventions in a health department for safe sleep practices for infants.

(Code Number___)

1. Professional Title:

   ___RN
   ___Social Worker
   ___MD
   ___PA
   ___Other Please List_____

2. Education level:

   ___High School
   ___Associate Degree
   ___Bachelor's Degree
   ___Master's Degree
   ___Doctorate Degree
   ___PhD
   ___Other Please list _____

3. Number of years working in Public Health/Community Health

   __0-5
   __6-10
   __11-15
   __16-20
   __20

4. Do you believe that you have adequate time to provide safe infant sleep education to parents?

   __ Yes
   __ No
   __ Undecided

5. Do you believe that you received adequate education in your academic program to provide safe sleep education?

__ Yes
__ No
__ Undecided

6. Does your agency have a policy or procedure related to safe sleep education?

__ Yes
__ No
__ Undecided

7. Do you believe that safe infant sleep education would be a benefit to you?

_____ Yes
_____ No
_____ Undecided

8. Do you believe that it is wrong for parents/families to co-sleep?

_____ Yes
_____ No
_____Undecided

Pretest - Posttest

Implementing interventions in a health department for safe sleep practices for infants.

(Code Number___)

Circle the correct answer

1. Approximately what percent of infants in NC bedshare?
    A. 10%
    B. 20%
    C. 50%
    D. 80%

2. Select the answer below that is the most dangerous bedsharing example.
    A. Viewing an 18-month-old taking a nap on a sleep surface with a small stuffed animal.
    B. Not saying anything about the mother's concerns who reports that she sleeps with her baby in a baby box on the floor beside the bed.
    C. An aunt reporting that she keeps her 2-month-old niece during the day. Naps are taken in the recliner together.
    D. A new mom asking for help to find a crib before discharge.

3. A 25-year-old mom reports to you that she is concerned about being busy at home with her newborn. She has a three and five-year-old at home. The newborn often sleeps in the swing for convenience instead of the crib as she is too busy with the other children. Select the best option:

A. Provide education and explain that the child needs to be moved to a safe sleep space.

B. Explain that this is an acceptable sleep space.

C. No action is needed. The swing is fine for small amounts of time.

D. None of the above.

4. Safe sleep practices do not include:

A. Sleep position

B. Sleep space

C. Sleep music

D. Sleep temperature

5. Select barriers that hinder parents and caregivers from practicing safe infant practices.

A. Parental/Caregiver sleep deprivation

B. Tummy time during naps and on the side after feedings

C. Use of pacifier during naps and at bedtime

D. A & B

6. Select the intervention that will decrease the risk of SIDS and SUID.

A. A fitted sheet with no soft materials or object in the sleep space.

B. Breast feeding.

C. Monitor use.

D. A & B

7. Due to health disparities, which ethnic background dies at a higher rate from SIDS and SUID. Select all that apply.

A. American Indian/Alaskan Native

B. Non-Hispanic Black

C. Asian/Pacific Islander

D. Non- Hispanic White

8. All the following items are not appropriate for a sleep space: a comforter, stuffed animal, blankets, and a boppy pillow.

__True

__False

9. When are babies most at risk for SIDS and SUID?

A. 1-4 months
B. 0-6 months
C. 0-12 months
D. 0-24 months

10. Smoking is a concern in relation to SIDS and SUID because of the following reasons. Select the statement that is not true.

A. Secondhand smoke doubles the chance of a child dying from SIDS.

B. Children exposed to second-hand smoke are at risk for asthma and other respiratory-related viruses.

C. Third-hand smoke makes children vulnerable and exposes infants to smoke.

D. Third-hand smoke should only be a concern outside of the home.

11. Babies who sleep on their backs may develop a temporary bald spot.

A. True B. False

Confidence Assessment

Please circle your response to the following statements using a 5-point Likert Scale:

1 - Strongly Agree
2 - Agree
3 - Uncertain
4 – Disagree
5 – Strongly Disagree

I am confident I have adequate knowledge, confidence, and skills about infant safe sleep interventions to provide best-practice care in public health.

1 2 3 4 5

I am confident about my ability to implement safe sleep interventions in my practice.

1 2 3 4 5

I am confident about providing safe sleep education to family members in the home.

1 2 3 4 5

I am confident in having conversations with parents and families about safe infant sleep interventions in the home.

1 2 3 4 5

I am confident about initiating a conversation about safe infant sleep interventions in my practice in the home.

1 2 3 4 5

I am confident about my ability to assess and define a safe sleep environment.

1 2 3 4 5

I am confident about discussing perceived barriers about safe sleep interventions.

1 2 3 4 5

Appendix B: Role-Play Scenarios

Role-Play Scenario Samples
Example 1 Scenario: A follow-up visit with Mrs. Johnson who is 7 days post-partum with baby girl Jackie. This is Mr. & Mrs. Johnson's first child. They have no immediate family near them but have a supportive church family. This is your 1st home visit with mom to complete your assessment. When you entered the home, you noticed a pack-n-play set up in the corner of the room filled with blankets, toys and other baby items. During the visit mom shares that she and dad sleep with the baby in the bed with them. Role-play: Mom: We are more comfortable with Jackie sleeping in the bed with us. It makes it easier for me to breastfeed her during the night, we feel we can keep a closer eye on her during the night to be sure she is ok. CM: While I understand you might want to check on her during the night, do you have another space where she can sleep? If you sleep with her you are putting her at risk for Sudden Infant Death Syndrome or SUID Mom: What is that? CM: It is the leading cause of death of infants less than 12 months with an unknown cause. It is sometimes known as crib death. Mom: I have friends and family who have slept with their babies when they were younger and now their kids are toddlers and school age. CM: I understand that they may have slept with their babies. Now the recommendations have changed because we have more science and know about what is safer for the baby than we did back then. Mom: Ok we'll talk about and maybe try it. We have the playpen we could try setting it up next to our bed. She has a lot of blankets and baby things our family and friends gave us. We can set up the playpen nicely and make her comfortable with one or two of her stuffed animals. CM: the baby should sleep in the playpen or separate sleep space alone and without a blanket or stuffed animals and baby things I see you have in the pen. You should have the baby flat on her back to sleep. That is the best environment for her to sleep safely. Mom: Ok we'll try it and consider this information. **Example 2** Role-play: Parent: My baby sleeps in a pack and play. It's junky and has a lot of stuff on one side, but he does not need that much space. Provider: Let's talk about this some more… How can we make the most use of the space we have? Did you know that it is recommended that babies lay flat on their backs on a hard surface with nothing extra in their own sleep space?

Parent: No. What do you mean? He is just sleeping. Should I be concerned?
Provider: I am glad that you want to discuss this concern. Your baby will be sleeping a lot. Let's talk about recommendations. The baby should sleep on a firm flat sleep surface such as a mattress in a crib that has been safety approved. Cribs or portable play areas are also good. The crib only needs a fitted sheet without extra blankets. The sleeping space should be empty, meaning the baby should only occupy the space. Stuffed animals, pillows, blankets, baby/boppy pillows, or bumpers should not be in the crib. Soft things put babies at risk for breathing concerns because they may get in the way and as parents, you may not know they are causing a problem breathing. Babies can get their faces pushed into them and have their breathing blocked since they can't move like we can, causing them to suffocate. This is very important.
Parent: I guess it is not safe to use all the gifts from the baby shower in the crib.
Provider: Yes, I know these were nice gifts, but they are unsafe for the baby in the crib. You want to make sure your baby is sleeping safely.
Parent: I did not realize that, and I want my baby to be safe. I like the gifts, but safety is first, so I will remove all the items from the crib.

Example 3

Parent: I am concerned about choking. If my baby is sleeping and I lay him on his back he might choke. I'm scared he might also throw up. I know when I left the hospital they told me to put him "back to sleep", but this seems crazy to me. My mom thinks so as well.
Provider: It is important to make sure that your baby sleeps on his back when he is sleeping. Is your baby on his back when he sleeps?
Parent: Sometimes… but I also think he looks more comfortable on his stomach. I often think he may choke, especially after he eats if I lay him on his back.
Provider: I understand why you may think that. A lot of people have thought the same thing; however, that is not the case. You are putting your baby at risk because if your baby is on his stomach, he is at risk to choke than if he were on his back. Let's look at this picture so I can show you a diagram of why choking is a risk. This may help you understand.
Parent: Oh. I see how that makes more sense now. I will share this with my aunt and sister because they keep the baby while I am work. I hope they believe me.

Example 4

Parent: I layer and bundle the baby a lot because I think she will be cold. When I change her diaper, she is always sweating. She must be hot-natured like her dad.
Provider: I know that it seems like the baby is cold, but she can be comfortable in a room with the same temperature as an adult. The baby does not need to be overheated because it will also increase a baby's risk.
Parent: Will the baby be cold? We want to make sure her body temperature is normal, so she will not get sick and we want to keep her comfortable.

Provider: Babies can tolerate the same room temperature as an adult. If the room is cold, consider using a sleep sack or adding an extra layer. It is best to layer clothing and not bedding when appropriate.
Parent: I did not realize that. I will begin using the sleep sacks I received at the baby shower.

Example 5

Role-play:
Father: My wife says that we should not sleep with the baby in the bed. My mom used to do that all the time and everything was fine. We all came out OK.
Provider: I understand that this a concern for you. The baby should be in the room with you in his own sleep space rather than with you in the bed. Co-sleeping is one of the main reasons for infant deaths.
Father: My wife said that she feels better if the baby sleeps with her sometimes because she is tired. It works best for her and the baby to get better rest if they sleep together.
Provider: I understand that your wife may be tired and that is normal. Sleeping with the baby puts the baby at risk to be suffocated in the best of situations. This could be a terrible accentual death that I would hate for you to experience. Babies may fall back to sleep but the baby must sleep in their own sleep space for safety. The baby should sleep in the room but not in the bed with you or your wife. You should put the baby's bed near your bed so you will have easy access to the baby. Let's look at some examples of safe sleep environments. These promote monitoring, calming, and touching your baby.
Parent: Well this is good information. I will make some adjustments when I talk with my wife.
Provider: Ok. You can take this picture and handout with you. Now at least you know about the risks and how to decrease and eliminate them. Also, you have been drinking or taken any drugs, medication or even cough syrup that make you sleepy, please be sure that you do not sleep with the baby. Put her in the crib for safety because you may fall asleep and not realize you have the baby with you.

Example 6:

Role-play:
Parent: My baby is getting a flat head and I don't want to keep putting her on her back.
Provider: Back sleeping can indeed cause a flat head; however, the flattening of the head is temporary. As babies get more active, their heads will round out.
Parent: Really. My brother still has a flat head and I'm concerned.
Provider: That may seem like the case, but you can help by making sure that your baby has supervised tummy time while she is awake.
Parent: You mean when we are playing, and she is on her stomach?
Provider: That is a great example. You can also limit the time she is in her swing and

bouncy chair, so she is not in one place too long.
Parent: She likes to change positions.
Provider: That's a good plan because I do encourage you to change positions often when the baby is awake.
Parent: She also has a bald spot. What should I do about that?
Provider: A bald spot on the back of the head can be a sign of a healthy baby.
Parent: Really?
Provider: Yes, because this indicates she is sleeping on her back. This will also be evaluated when she has her well-child checks at your doctor appointments.
Parent: OK good, so I won't worry about her hair.
Additional conversation starters:
What have you heard about ways to keep your baby safe while they sleep?
Do you have plans on where and how your baby will sleep?
Tell me about your plan regarding educating your family and your baby's sleep space? (Bronheim, 2017; Canady, 2019).

Appendix C

2016 Safe Sleep Recommendations
Firm sleep surface Supine sleep position Recommend breastfeeding Separate infant sleep surface in room with parents Soft object or extra blankets not allowed in crib Avoid overheating Consider a pacifier at night and nap time All vaccines recommended Regular prenatal care No alcohol or drug use Avoid smoke exposure during pregnancy and after birth Avoid alcohol and illicit drug use during pregnancy and after birth Do not use home monitors Do not use home cardiorespiratory monitors to reduce the risk of SIDS Providers should support and model risk-reduction recommendations Media messaging and advertising should follow safe sleep guidelines Do not use monitors Awake supervised tummy time Continue research and monitoring of SIDS and SUID to eliminate deaths The “Safe to Sleep” campaign, to continue for reduction of sleep-related deaths (AAP, 2016).

Appendix D: Consent Forms

Implementing interventions in a health department for safe sleep practices for infants

Purpose: The purpose of this project is to increase knowledge, confidence, and skills in safe sleep practices for public health case management staff. This project proposal will be completed in a two-step process to meet the objectives of the research. The two steps include (a) implementation and examination of a didactic educational intervention reviewing the American Academy of Pediatric recommendations, information from the NC statewide safe sleep committee and the National Center for Education in Maternal and Child Health and, (b) provision of a focus group with role-play modeling and return demonstration strategies will be the concluding step. The design will measure the change in knowledge, confidence, and skills by providing a pretest to be taken before participation and a posttest at the end of the program. This educational program will be 1.5 hours in length.

Investigator: This study is being conducted by Stephanie Fisher RN, MSN who is a Nurse Consultant at the North Carolina Division of Public Health in Raleigh, NC. I am also a DNP student at the University of North Carolina at Charlotte.

Risks and Benefits: This education program is conducted in the hope of increasing the knowledge, confidence, and skills for the public health case management staff specific to safe infant sleep interventions. This includes the discussion of sensitive subject matter.

Voluntary Participation: Your participation in this project in completely voluntary. You may withdraw at any time without any negative consequences.

Conflict of Interest: The investigator has no conflict of interest to report.

Confidentiality: To protect your privacy, numerical coding will be used to match the pre- and post-tests, and the data obtained will be non-identifiable. Results from this project will be recorded as aggregate data.

Informed Consent: I, _____,
(Please print)

have read the information in this consent form. I have had a chance to ask questions about this study, and those questions have been answered to my satisfaction. Each of these items have been explained to me by the nurse researcher. My signature below indicates that I freely agree to participate in this project.

_____ _____
(Signature) (Date)

_____ _____

(Principle Investigator) (Date)

School of Nursing

Implementing interventions in a health department for safe sleep practices for infants.

Purpose: The purpose of this project is to increase knowledge, confidence, and skills in safe sleep practices for public health case management staff. You are being asked to participate in a focus group for the application and discussion of topics related to safe infant sleep. This format will involve a dialogue of topics including Sudden Infant Death Syndrome, Sudden and Unexpected Infant Death, child care recommendations, and effectively communicating with the parents and families. Role-Play with return demonstration will be a strategy used in the activity. Time will be allocated for practice and discussion for all participants to bring up areas of concern. This educational program will be 3.0 hours in length.

Investigator: This study is being conducted by Stephanie Fisher RN, MSN who is a Nurse Consultant at the North Carolina Division of Public Health in Raleigh, NC. I am also a DNP student at the University of North Carolina at Charlotte.

Risks and Benefits: This education program is conducted with the goal to increase the knowledge, confidence, and skills of the public health case management staff specific to safe infant sleep interventions. This includes the discussion of sensitive subject matter.

Voluntary Participation: Your participation in this project in completely voluntary. You may withdraw at any time without any negative consequences.

Conflict of Interest: The investigator has no conflict of interest to report.
Confidentiality: This focus group will be audio recorded and transcribed verbatim. Results from this project will be recorded as aggregate data.

Informed Consent: I, _____,
have read the information in this consent form. I have had a chance to ask questions about this study, and those questions have been answered to my satisfaction. Each of these items have been explained to me by the nurse researcher. My signature below indicates that I freely agree to participate in this project.

_____ _____
(Signature) (Date)

_____ _____
(Principle Investigator) (Date)

Appendix E: RECRUITMENT SCRIPT

Hi everyone!

My name is Stephanie Fisher, and I am a doctoral student in the School of Nursing at The University of North Carolina at Charlotte. I am conducting a study examining safe sleep interventions in infants and you are invited to participate in the study. If you agree, you are invited to participate in an educational training session and focus group session with role-play activities about safe sleep where you will be asked to participate.
The training session will take about 1.5 hours and the focus group will take about 1.5 hours or less. The focus group will be audiotaped, and the text will be transcribed. Participation in this study is voluntary. Your identity as a participant will remain confidential during and after the study. You will be identified by the last four digits of your phone number. To respect your privacy and maintain confidentiality, we will record the focus group; however, if you want a section omitted or do not want a section recorded before you speak, we will not stop the recording.

A $25.00 Target gift card will be raffled off at the end of the educational training session (session one). A $50.00 Target gift card will be raffled off at the end of the focus group, (session two) upon completion of the post-test.
Incentive payments are considered taxable income. Therefore, we are required to give the University's Financial Services division a log/tracking sheet with the names of all individuals who received a gift card. This sheet is for tax purposes only and is separate from the research data, which means the names will not be linked to (survey or interview) responses.

For follow-up, if you have questions about your participation after the study, you can contact Stephanie Fisher at 252-671-0189, Kathleen Jordan at 704-687-7963, or the IRB Compliance Office at 704-687-8622. The total study duration is approximately three months.
If you have additional questions, please let me know.
Thank you for your participation.

Stephanie Fisher, MSN, RN
The University of North Carolina at Charlotte Doctoral Student
252-671-0189

Appendix F: IRB APPROVAL DOCUMENT

Stephanie Fisher <sfishe34@uncc.edu>

IRB Notice - 19-0213

6 messages

IRB <uncc-irb@uncc.edu> Mon, Sep 16, 2019 at 4:44 PM
To: sfishe34@uncc.edu, ksjorda1@uncc.edu Cc: uncc-irbis@uncc.edu, ltkenny@uncc.edu

To: Stephanie Fisher

From: Office of Research Compliance

Date: 9/16/2019
RE: Notice of Approval of Exemption with No End Date
Exemption Category: 1. Educational setting
Study #: 19-0213

Study Title: Implementing Interventions in a Health Department for Safe Sleep Practices for Infants

This submission has been reviewed by the Office of Research Compliance and was determined to meet the Exempt category cited above under 45 CFR 46.101(b). This determination has no expiration or end date and is not subject to an annual continuing review. **However, you are required to obtain IRB approval for all changes to any aspect of this study before they can be implemented.**

The Investigator Responsibilities listed below applies to this study only. Carefully review the Investigator Responsibilities.

Study Description:

The study aims to increase knowledge, confidence, and skills in safe sleep practices for public health case management staff. This project proposal will be completed in a two-step process to meet the objectives of the research. The two steps include (a) implementation and examination of a didactic educational intervention reviewing the American Academy of Pediatric recommendations, information from the NC statewide safe sleep committee and the National Center for Education in Maternal and Child Health and, (b) provision of a focus group with role-play modeling and return demonstration strategies will be the concluding step. The design will measure the change in knowledge, confidence, and skills by providing a pretest to be taken before participation and a post-test at the end of the program.

Your approved consent forms (if applicable) and other documents are available online at http://uncc.myresearchonline.org/irb/index.cfm?event=home.dashboard.irbStudyManagement&irb_id=19-0213.

Investigator's Responsibilities:

The above-cited determination has no expiration or end date and is not subject to annual

continuing review. However, the Principal Investigator needs to comply with the following

responsibilities:

1. Modifications **must** be submitted for review and approval before implementing the modification. This includes
   changes to study procedures, study materials, personnel, etc.
2. Data security procedures must follow procedures as approved in the protocol and in