Journal of Pediatric Nursing 43 (2018) 16–22

Contents lists available at ScienceDirect

Journal of Pediatric Nursing

Response to a National Issue: Moving Beyond "Back to Sleep" at Three Hospitals

Martha Rider Sleutel, PhD, RN, CNS, C-EFM, Nurse Scientist [a,b,*],
Barbara True, MN, CNS, RNC-OB, C-EFM, Clinical Nurse Specialist [a],
Heidi Gustus, RN, BSN, C-EFM, Nurse Manager Labor and Delivery and Mother/Baby [a],
Kathy Baldwin, PhD, RN, FAAN, ACNS-BC, AGPCNP-BC, Nurse Scientist [c],
Brandi Early, RN, MSN, BSN, RNC-MNN Manager, Women and Infant Services [d]

[a] Texas Health Arlington Memorial Hospital, 800 W. Randol Mill Road, Arlington, TX 76012, United States of America
[b] Texas Health Presbyterian Hospital Denton, 3000 North I-35, Denton, TX 76012, United States of America
[c] Texas Health Harris Methodist Cleburne, 201 Walls Drive, Cleburne, TX 76033, United States of America
[d] Texas Health Presbyterian Hospital Denton, 1105 N Central Expressway, Allen, TX 75013, United States of America

ARTICLE INFO

Article history:
Received 19 April 2018
Revised 30 July 2018
Accepted 30 July 2018
Available online xxxx

Keywords:
SIDS
Suffocation
Sleep environment
Safe sleep
Sudden infant death
SIDS prevention

ABSTRACT

Purpose: To measure changes in registered nurse (RN) knowledge/beliefs and practices, parents' recall of infant safe sleep (ISS) teaching, and inpatient infant sleep environments and safety after implementing an ISS initiative.
Design and Methods: This longitudinal quasi-experimental study took place in three hospitals in the United States. An existing infant safe sleep tool was revised and updated to align with current recommendations on sleep environments. A bundled intervention included educating nurses, changing unit processes and implementing crib cards and room signs. Paired questionnaires surveyed 62 nurses before and 2 months after the intervention. Audits of 462 cribs/sleep environments with parent conversations assessed infant sleep conditions and parents' recall of RN teaching before and after the intervention.
Results: After Bonferroni correction, eight of 19 items for RN knowledge/beliefs and self-reported practice showed statistically significant improvements with moderate effect sizes. All 11 items for parents' recall of RN teaching showed statistically significant improvements, with odds ratios ranging from 7 to 76. Five of six real-time sleep safety conditions (from crib/sleep environment audits) had statistically significant improvements. Odds ratios ranged from eight to 83.
Conclusion: An updated educational tool improved nurses' and parents' knowledge and practices related to current and updated safety factors for infant sleep conditions. Inpatient adherence to infant sleep safety recommendations improved.
Practice Implications: A two-hour investment of nurses' time yielded statistically significant improvements. Factors critical to the success of the ISS project roll-out are reported. Improvements in parents' recall of teaching and actual sleep environments suggest potential for long-term changes in infant safety at home.

"Back to Sleep" is a widely-known phrase that successfully changed both parents' and health caregivers' infant care practices over the past twenty years. Less well-known are newer recommendations regarding very common, but hazardous sleep environments (Carlin & Moon, 2018). This project describes a hospital-based infant safe sleep (ISS) project in 2017 to change parent teaching and registered nurses (RN) practices by aligning them fully with newer infant safe sleep recommendations.

Background

Sudden Infant Death Syndrome (SIDS) is the sudden death of an infant that remains unexplained even after thorough investigation, including autopsy, death scene investigation and review of the infant's clinical history (National Institute of Child Health and Human Development [NICHD], n.d.). SIDS is the leading cause of infant death between one month and one year of age in the United States (Center

* Corresponding author at: Texas Health Arlington Memorial Hospital, 800 W. Randol Mill Road, Arlington, TX 76012, United States of America.
E-mail address: MarthaSleutel@TexasHealth.org (M.R. Sleutel).

https://doi.org/10.1016/j.pedn.2018.07.013
0882-5963/

for Disease Control [CDC], 2018). SIDS is a sub-category of the broader SUID, sudden unexpected infant death, explained or unexplained (Moon, 2016).

SUID incidence dropped dramatically in the 1990s in response to the "Back to Sleep" campaign from the American Academy of Pediatrics (AAP) and National Institute of Child Health and Human Development's (NICHD). There is significant variation by country and state, but since the late 1990s, the decrease in U.S. SUID rates has plateaued. One component of SUID considered preventable is the rate of accidental suffocation and strangulation in bed (ASSB). ASSB rates rose 184% from 1999 to 2015 (Erck Lambert, Parks, & Shapiro-Mendoza, 2018). The most recent data (CDC, 2018) indicate a slight drop in both ASSB rates and SIDS rates, partly related to a change in diagnostic criteria (Erck Lambert et al., 2018).

In 2011 and 2016, AAP expanded their initial "Back to Sleep" recommendations to encompass safety in the infant's sleep environment targeted specifically at preventing sleep-related suffocation, asphyxiation, and entrapment (APA, 2011; APA, 2016). These expanded recommendations emphasized the following:

- Room sharing but not bed-sharing
- Placing the infant on a firm surface for sleep
- No loose soft objects in the bed
- Ensuring the infant is not overly warm when put down to sleep.

Several additional publications further expanded the 2011 recommendations. New topical areas included (a) mortality risk of sofas (Rechtman, Colvin, Blair, & Moon, 2014) (b) sleep environment risks for younger and older infants (Colvin, Collie-Akers, Schunn, & Moon, 2014) and (c) recommendations for neonatal ICU practices (Gelfer, Cameron, Masters, & Kennedy, 2013). These newer recommendations are less well-known by parents and health care providers than the widely known and widely taught "back to sleep" concept (Carlin & Moon, 2018). For example, a well-known and commonly used ABC's teaching tool covers only three components: the infant sleeps alone, on the back, and in the crib. (No original source or citation for the ABC's tool could be found). Additionally, advertising images for infant cribs and other baby products continue to depict unsafe sleep environments (Kreth, Shikany, Lenker, & Troxler, 2017; Scheers, Woodard, & Bradley, 2016). With the current level of outdated information, a priority for preventing SIDS and SUIDs involves developing methods to better educate and influence families and infant caregivers on reducing risk in infants' sleep environments. In fact, this research project addressed # 3 of the top 10 research priorities identified by an international consensus of SUID researchers, to develop and evaluate new ways to make safe sleep campaigns more effective. (Carlin & Moon, 2016; Hauk et al., 2017).

Purpose

At three local hospitals, informal conversations and observations of mother-baby (MB) nursing staff, as well as sleep environment observations revealed misinformation and inconsistency in applying the newer AAP recommendations about safe sleep environment. Role-modeling by healthcare workers during the hospitalization influences parents to continue ISS practices at home (Bullock, Mickey, Green, & Heine, 2004; Fowler, Evans, Etchegaray, Ottenbacher, & Arnold, 2013; Hoogsteen, 2010; Mason, Ahlers-Schmidt, & Schunn, 2013; Thompson, 2005). Thus, one project goal was to improve RN teaching and role-modeling of updated ISS recommendations.

Research questions were:

1. What is the effect of an ISS initiative on RN infant sleep knowledge/beliefs and practices at three hospitals?
2. What is the effect of an ISS initiative on infant sleep environments and parents' knowledge/recall of safe sleep practices at three hospitals?

Conceptual Framework

Two theoretical models guided the development of this study: Adult Learning Theory (Knowles, 1984) and Transformative Learning Theory (Mezirow, 1997). Four key principles in Adult Learning Theory are: 1) adults need to be involved in planning and evaluating their learning, 2) experience is the basis for learning, 3) adults need to see that what they are learning has immediate relevance to their jobs or personal life, and 4) adult learning is problem-centered, not content centered (Merriam & Bierema, 2014). Transformative Learning Theory describes how a disorienting dilemma leads to recognizing discontent with the way things are, identifying options to resolve the prior assumptions, and developing a course of action. Acquiring new knowledge and skills leads to exploring and integrating a new role into one's life or practice. (Merriam & Bierema, 2014).

Methods

Setting, Sample and Design

This longitudinal quasi-experimental project assessed ISS practices and knowledge on MB units at three hospitals before and after implementing a bundled intervention at each hospital. The ISS initiative was first piloted at hospital # 1 after institutional review board (IRB) approval. Two additional hospitals were added as a separate project with a separate IRB review and approval. Both IRB proposals were considered minimal risk.

Hospital # 1 and # 2 are medium sized (250 and 425 beds respectively) with 2000 and 3000 annual births, respectively. Both hospitals are suburban hospitals, while hospital # 3 is a small rural hospital outside the same metropolitan area with 130 inpatient beds and about 300 births annually. The sample at hospital # 1 was MB nurses, and after this initial pilot, the sample was expanded to include all nurses providing care for infants. At hospital # 2, nurses included MB, labor and delivery (L&D), Neonatal Intensive Care Unit (NICU), and pediatrics). At hospital # 3, the sample included all maternity nurses, as they are cross-trained and work in all obstetrical areas. Analyses included descriptive statistics, chi-square, *t*-tests and coefficient alpha.

Measures and Procedures

Assessing RN Knowledge/beliefs and Practices

To collect baseline data on RN knowledge and practices, we created a Likert-type questionnaire with items derived directly from AAP recommendations for safe sleep, and focused on RN knowledge/beliefs and practices related to infant safe sleep. Three nursing experts reviewed items for consistency with current recommendations and for readability. The experts had certifications in MB care and/or expertise in item and questionnaire development and measurement. The RN questionnaire had two sections: (a) RN knowledge/beliefs regarding safe sleep practices (11 questions) and (b) RN self-reported practices and teaching of safe sleep actions (8 questions).

Questionnaires for nurses in L&D, NICU and pediatrics were adapted to reflect differences in settings. For instance, for NICU, the practice questions were specified to be only for infants eligible for safe sleep (32 weeks gestation or more, in an open crib and stable). Similarly, for pediatric nurses, practice questions pertained to their care of infants under one year of age. Since L&D nurses at hospital # 2 do not routinely provide care on the MB unit, the practice questions were omitted, leaving only the knowledge items.

Assessing Crib/sleep Environment (Parent Practices) and Parent Knowledge/recall of Teaching

To collect baseline data on infant crib and sleep environment, we developed a sleep environment audit tool derived from AAP recommendations (see Fig. 1). The tool was formatted as a simple checklist of safe