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Collaborating with obstetrical providers to promote infant safe sleep guidelines

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ABSTRACT

Objectives: To partner with obstetrical providers to increase promotion of the American Academy of Pediatrics guidelines for infant safe sleep. Specifically, this study evaluates the effectiveness of the Safe Sleep Toolkit during obstetrical visits. Secondary objectives include improving provider and maternal knowledge of safe sleep.
Methods: Obstetrical providers (n = 11) and staff at an outpatient clinic were trained using the Safe Sleep Toolkit and encouraged to discuss infant safe sleep with pregnant women at their 28- or 36-week gestation appointment (n = 111, 56 pre- and 55 post-intervention). Provider-reported time spent counseling women on safe sleep recommendations and safe sleep knowledge was measured before and after the intervention. Surveys were conducted with women assessing safe sleep knowledge, intention to follow guidelines, and whether safe sleep was discussed at the appointment.
Results: Significantly more post-intervention women reported their provider had discussed safe sleep (78% vs 32%) ($P < .001$). Similarly, provider-reported discussion with women increased significantly for all safe sleep guidelines (82%-90% vs 8%-12%) (all $P < .001$). Maternal knowledge, especially surrounding unsafe sleep practices, improved significantly post-intervention.
Conclusion: Training obstetricians to use a toolkit to promote infant safe sleep guidelines increases the prenatal delivery of this information, and improves pregnant women's knowledge and intentions regarding safe infant sleep.

Introduction

The American Academy of Pediatrics (AAP) has issued guidelines defining infant safe sleep as supine position, in a caregiver's room, placed in a dedicated crib, bassinet, or portable crib, with a firm mattress, fitted sheet, and no other items present.[1] Implementation of these recommendations has been shown to reduce the risk of Sudden Infant Death Syndrome (SIDS).[1] Each year, there are more than 3500 cases of Sudden Unexpected Infant Death (SUID) reported in the United States, including SIDS and accidental suffocation or strangulation in bed.[2]

The timing of safe sleep education is critical, as decisions regarding infant care and nursery setup often begin before the child is born. Cultural influences and media may guide parent decisions; however, these sources often do not portray safe sleep environments.[3,4] Therefore, it is unsurprising that many parents report plans for unsafe location, position, and items within the sleep environment before postpartum discharge.[5] While pediatricians discuss safe sleep with caregivers,[6] maternal knowledge and compliance with many safe sleep recommendations remain low.[6–10] Indeed, caregivers endorse unsafe sleep practices despite knowledge of safe sleep recommendations.[11] Especially following delivery, infant comfort is a competing concern for parents and may impact safe sleep adoption.[12] Earlier, more frequent and consistent messaging across the continuum of perinatal care may be essential in reducing infant mortality.

Pediatricians and obstetricians align in a common goal of promoting health for infants. In support of this, obstetricians are a key educational resource for pregnancy health, though infant safety education is potentially lacking.[13] While physicians feel such education is important, research has shown that discussions

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about infant safe sleep rarely occur in the obstetrician's office[14] and obstetricians may not have adequate knowledge of current safe sleep recommendations.[13,15]

We hypothesize that engaging obstetricians will address barriers to safe sleep discussion and increase promotion of the AAP's guidelines prenatally. Specifically, training obstetrical providers to use the Safe Sleep Toolkit (available at www.kidsks.org) will give them the knowledge and resources they need to share messages consistent with those promoted by their pediatric partners.

Participants and methods

Our primary outcome for this study was increased discussion of the AAP's safe sleep guidelines reported by women as measured by repeated cross-sectional evaluation. Sample size was based on a prior local study wherein obstetricians reported discussing safe sleep guidelines with 30% of pregnant women (unpublished data, Thornhill-Scott, 2013). Assuming the intervention would at least double the rate of discussion, with 90% power and $\alpha = .05$, an estimated 56 women per group would be needed.

This study was conducted between April and August 2014 at a private obstetrical group practice in an urban area of the Midwestern United States. This practice consisted of nine obstetricians, one advanced practice registered nurse and one nurse midwife (collectively, "providers"). A convenience sample of consecutive adult English-speaking patients attending their 28- or 36-week gestation appointment was recruited.

This project was approved by the Wichita Medical Research and Education Foundation Institutional Review Board and University of Kansas School of Medicine – Wichita Human Subjects Committee.

Baseline data collection

Surveys were administered by a research assistant to participants following their appointment (See Supplement). A cover page described the research and asked for women's consent to participate. The survey included 14 questions regarding: (1) knowledge of the AAP's safe sleep guidelines. (2) intention to follow guidelines, (3) sources of safe sleep knowledge/education, (4) whether safe sleep recommendations were discussed at the visit. and (5) sources of inconsistent infant sleep messages.

Following collection of 56 patient surveys (pre-intervention cohort), providers were consented and administered a survey with seven questions regarding: (1) knowledge of the AAP's safe sleep guidelines, (2) frequency of safe sleep discussion with pregnant patients, and (3) perceived barriers to providing safe sleep education (See Supplement).

Face validity for all surveys was established by local safe sleep researchers. Provider surveys were coded so responses could be matched.

Intervention

The Safe Sleep Toolkit was developed by community pediatricians and researchers to encourage consistent messaging around infant safe sleep and to enhance quality of discussion by prompting feedback on sleep location and items in the sleep environment, two aspects of safe sleep often unrecognized by parents. The Toolkit was introduced to providers and staff during a one-hour meeting facilitated by the KIDS Network, Inc. and a university researcher in June 2014. Data were shared on infant death, including SUID, and on AAP safe sleep guidelines. The Safe Sleep Toolkit was presented, which contained the following items:

- Prenatal Safe Sleep Quiz (referred to in previous articles as a "checklist"[6,16]). This 4-item quiz for caregivers included questions regarding infant safe sleep and plans to share safe sleep information with other caregivers.
- Brief Provider Script for Addressing Parent Concerns. This one-page script specifically addresses unsafe responses on the 4-item quiz.
- Local and national resources on safe sleep including: "NICHD Infant Sleep Position and SIDS: Questions and Answers for Health Care Providers", the "ABCs of Safe Sleep" DVD, "Safe to Sleep" handouts for parents, and a "Child Care Checklist".

Providers unable to attend the training were introduced to the Safe Sleep Toolkit one-on-one by an investigator.

Post-intervention data collection

One month following implementation of the Safe Sleep Toolkit, consent was obtained and surveys were administered by research personnel to consecutive women after their 28- or 36-week appointment. Post-intervention participants also consented to abstraction of responses to the 4-item Prenatal Safe Sleep Quiz from their medical records. No baseline participants completed post-intervention assessments.

Following collection of the patient surveys, providers were again administered surveys. An additional seven questions (four open-ended) regarding provider experience with the Safe Sleep Toolkit and two demographic questions (sex, years in practice) were included. Providers each received a $15 incentive for their time commitment.

Statistical analysis

Provider pre- and post-intervention surveys were matched for analysis. Knowledge and intentions were summarized into whether they aligned with AAP recommendations for position, location, and items in the sleep environment. Women's pre/post responses were analyzed using chi-square analysis or Fisher's exact test when appropriate. Summaries of items endorsed were compared using Mann-Whitney *U* test. Matched responses were analyzed using McNemar's test and Wilcoxon signed-rank test. Open-ended responses were reviewed independently by two investigators for themes. Quantitative analysis was conducted using SPSS (SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).

Results

Women

A total of 111 pregnant women participated. During pre-intervention, 73 women were approached, 56 (77%) consented. Post-intervention, 64 women were approached, 55 (86%) consented.

Women in the pre-intervention group were older than women in the post-intervention group (Table 1). Women in both groups were predominantly non-Hispanic white, with at least some college education, and most had children prior to this pregnancy.

Prior to the intervention, a majority of women recognized supine as a safe position, a crib, bassinet or portable crib as a safe locations and both a firm mattress and fitted sheet as recommended for safe sleep (Table 2). However, many women also identified unsafe positions, locations or items as "safe". For example, 41% endorsed blankets as safe. Only six women (11%) were able to correctly identify all 19 unsafe elements presented.

Initially, 18 women (32%) reported their providers discussed safe sleep at that day's appointment. Other sources of safe sleep knowledge included print media (55%), family or friends (45%), hospital staff (34%), online sources (30%), local programs (23%), television (20%),