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Mothers' Reported Knowledge of, Practices, and Barriers to Engaging in Infant Safe Sleep



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Background

Infant mortality is a serious public health problem in the U.S. (MacDorman et al., 2014). Moreover, there is a significant racial disparity in infant mortality in the U.S. Nationally, African American children are two times as likely to die during infancy than are white children (MacDorman et al., 2014). This disparity is even greater in some regions throughout the United States. For instance, the disparity in infant mortality in Kalamazoo County Michigan is approximately 3:1 (Michigan Department of Health & Human Services, 2019). Sleep-related deaths are one of the most common causes of death during infancy, and infants of color are more likely than are white infants to die as a result of such deaths. Moreover, children with publicly funded insurance account for 94% of sleep-related deaths in Kalamazoo County (Sleep-Related Infant Deaths in Kalamazoo County Fact Sheet, 2017). Although the American Academy of Pediatrics has published guidelines for safe sleep practices to reduce sleep-related deaths, families may experience barriers to following these guidelines.

Purpose and Goals: The present study examined community mothers' knowledge of, reported practices, and barriers to following safe sleep guidelines in Kalamazoo County, Michigan. A second goal was to examine whether safe sleep practices varied by demographic characteristics (e.g., maternal race and insurance status).

Methods

Procedures. Women ($n = 345$) who: gave birth in two local hospitals, were a Kalamazoo County resident, spoke English, had medical clearance to participate by hospital staff, and were not significantly cognitively impaired were recruited during their post-partum hospital stay by research personnel.

Demographic data as well as infant prematurity status (yes/no) and enrollment in home visiting services (yes/no) were abstracted from electronic medical records. At 2-3 months postpartum, mothers ($n = 272$) participated in a 30-minute telephone survey about a variety of variables including social determinants of health, psychosocial risk variables, and health behaviors. The present study focused specifically on mothers' safe sleep knowledge and practices as well as barriers to engaging in safe sleep.

Data on safe sleep practices were collected by asking mothers to respond to five yes/no questions. Data on knowledge and barriers to engaging in safe sleep were collected via open ended interview questions that were transcribed verbatim (see Table 1). Open ended responses were coded by the study personnel.

Participants. Participants were primarily White (63%), Black (27%) or other (10%). A small percentage (5%) of participants were Hispanic. Half of participants (50%) had private insurance and half (50%) had Medicaid. A total of 17% of participants had infants who were born prematurely. The largest portion of women (29%) earned less than \$20,000 annually; 22% earned between \$20-40,000, 25% earned \$40-80,000, and 25% earned more than \$80,000.

Methods (cont'd)

Table 1. Survey questions about mothers' safe sleep practices.

Yes/No Questions
My baby sleeps in a crib or portable crib.
My baby sleeps on a firm or hard mattress.
My baby sleeps with pillows, a bumper pad, a thick blanket or stuffed toys.
My baby sleeps with an infant positioner.
My baby sleeps with me or another person.
Open-Ended Questions
"There is a lot of advice these days about how babies should be put to sleep. Who has directly talked to you about this?"
"What do you remember them telling you?"
"The safest way to put your baby to sleep is Alone, On Their Back, In A Crib Or Pack N Play. There are a lot of things that can get in the way of following these recommendations. What is the hardest part for you?"

Results

Source of safe sleep information. The majority of women (98%) reported that someone talked to them about infant safe sleep. Mothers were able to report more than one source of information about safe sleep. The most commonly reported source of information was hospital staff (71%), followed by pediatricians (53%), home visitors (12%), obstetricians (11%), and family (10%).

Safe sleep knowledge. The most common safe sleep guidelines recalled were placing a child on their back and putting nothing in the sleeping space with the baby. Fewer mothers noted the importance of placing a baby in a crib or pack-and-play or sleeping alone (See Table 2).

Safe sleep practices. Most (95%) women reported following 4 out of the 5 safe sleep practices in Table 1 (infant sleeps in a crib or portable crib, on a firm or hard mattress, and does not sleep with pillows, a bumper pad, a thick blanket, stuffed toys, or an infant positioner). However, 14% of mothers reported that their infant sleeps with them or another person.

Safe sleep practices were not associated with insurance status (private vs Medicaid, χ^2 ranged from 0.40-2.6), infant prematurity (χ^2 ranged from 0.00-2.5), or receipt of home visiting services (χ^2 ranged from 0.00-1.7). Regarding ethnicity, there was a trend for Hispanic mothers to be less likely to place their infants on a firm or hard mattress ($\chi^2 = 3.3, p = .07$). There was also a trend for mothers of color to be more likely to co-sleep with their infants than white mothers ($\chi^2 = 3.1, p = .08$).

Results (cont'd)

Table 2. Mothers' reported knowledge about infant safe sleep guidelines

Safe Sleep Guideline Recalled	Percent of mothers who recalled the guideline
Placing the infant on their back to sleep	90%
No objects in the baby's sleeping space	74%
Placing infant in a crib or pack-n-play	48%
Baby sleeping alone (without another person in sleep space)	39%
Baby sleeping on firm/flat surface	32%

Barriers to engaging in safe sleep. Many mothers (42%) reported no barriers to following the safe sleep guidelines. Among those who did report barriers, the most common reported barrier to engaging in safe sleep was placing the baby to sleep alone. The top 3 difficulties associated with putting the baby to sleep alone included difficulty getting the baby to fall asleep (36%), barriers related to breastfeeding (19%), and exhaustion (14%).



Discussion

Overall, refraining from co-sleeping is the most common safe sleep guideline that mothers have difficulty following in this local community. Findings suggest that interventions should help mothers problem solve barriers to placing babies to sleep alone, such as ways to get infants to fall asleep. Despite differences in rates of sleep-related deaths by race and income, income was not associated with safe sleep practices. Moreover, there were no differences by race, with the exception that there was a trend for mothers of color to be more likely to co-sleep. Racial disparities in sleep-related deaths may be related to higher rates of prematurity among African American infants; it is possible that prematurity may make them more susceptible to suffocation, particularly in the context of co-sleeping.