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Considerations in Safe to Sleep® Messaging: Learning from African American Mothers

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Abstract

Purpose: The purpose of this study was to identify why African American mothers do not tend to follow the Safe to Sleep® recommendations and to begin to identify a way to frame the Safe to Sleep® message so that African American mothers might be more likely to follow these recommendations.

Design: We recruited African American mothers with infants over the age of 6 months to participate in two focus groups facilitated by a Community Engagement Manager experienced in focus group facilitation. We used ethnography in order to find shared patterns of behavior and beliefs in African American women related to safe sleep.

Results: We identified 14 concepts and formulated them into three categories: *It's Just Easier*, *Can't Fight Culture and Grandma*, and *Effectively Teaching Mother*. From these we were able to identify the shared value of *Multifaceted Learning*.

Practice Implications: African American Mothers say that they are generally aware of the Safe to Sleep® recommendations, even though the majority of mothers do not follow them. The reasons they give for not following them are that they are not comfortable doing so, they feel they are unable to do so, or find it unnecessary. Many of the mothers attempted to follow the Safe to Sleep® recommendations, but abandoned the effort due to the stress of their crying infant. Trying to follow the Safe to Sleep® recommendations were stressful for the mothers, even though there was concern expressed by some that their infant could indeed suffocate or die from SIDS. The mothers gave suggestions on how they would change the message or the delivery of the message.

Keywords

Safe to Sleep®; Safe Sleep; Infant Mortality; Infant Death; Sudden Unexpected Infant Death/ Sudden Infant Death Syndrome (SUID/SIDS); African American; Black; Bed-sharing; Co-sleeping

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Introduction

African American infants are dying at a rate of over twice that of White infants. The reasons are many and complex, but we know that Sudden Unexpected Infant Death (SUID) is the cause of many of the deaths. SUID is an umbrella term that includes Sudden Infant Death Syndrome (SIDS), Accidental Suffocation and Strangulation in bed (ASSB), and unknown causes (See Table 1.). Safe to Sleep® education (formerly Back to Sleep®) has led to a dramatic decrease in mortality among white infants. The most recent update on the Safe to Sleep® recommendations were published in 2017 (Carlin & Moon, 2017); however, over 60% of African American families do not follow the Safe to Sleep® recommendations (Mathews, Oden, Joyner, He, McCarter & Moon, 2016). Although pregnant women and new mothers receive education on the Safe to Sleep® recommendations, we need to understand how to share the message in a way that is meaningful to African American families. If we can develop a message about the safe sleep recommendations that considers the culture and experience of the African American woman and her family, there is the potential to decrease infant mortality related to unsafe sleep in this population.

Infant mortality is the death of a child less than one year of age, and it continues to be a problem in the United States of America. Despite efforts to educate women about safe sleep practices, a 2015 CDC report showed that 61.4% of parents reported that they shared their bed with their infants. Thirty-eight percent reported using soft bedding in their infant's crib (Morbidity and Mortality Weekly, 2015). This may explain why the US consistently ranks well below other countries in a list of industrialized nations with a rate of 5.9 infant deaths per 1000 live births (Center for Disease Control and Prevention [CDC], 2018). Japan has the best rate with 2.1 deaths per 1000 live births (Indiana State Department of Health [ISDH], 2017). Despite efforts to decrease infant mortality worldwide, racial and ethnic disparities in various countries still exist. In the US, African American and Native American infants are at increased risk of dying. In Australia, Maori infants have a six times higher rate and Aboriginal and Torres Strait Islander infants have up to three to four times higher rate than non-indigenous infants. These populations have in common the increased risk of having sub-optimal determinants of health. The families may be socially vulnerable and have other lifestyle risk factors, such as young maternal age, single, high parity, poor, delayed or no prenatal care, smoking, alcohol or substance use that can increase the chance of infant death (Shipstone, Young, & Kearney, 2017).

Indiana has continually ranked as one of the states with the worst infant mortality rate. In 2017, Indiana had 602 infant deaths for a rate of 7.3 per 1000 live births (ISDH, 2018). For non-Hispanic African Americans, there were 165 infant deaths for a rate of 15.3 deaths per 1000 live births, an increase from 14.4 deaths per 1000 live births in 2016 (ISDH, 2018). (See Table 2.)

There are four primary causes of infant mortality. Pregnancy complications cause approximately 50% of the deaths. These include complications such as preterm labor and delivery, multiple gestation, preeclampsia, umbilical cord problems, etc. Over 20% of the infant deaths are from congenital malformations. SUID accounts for approximately 15% of

all infant deaths. Five percent are due to assaults/accidents, and the rest are due to other causes.

Deaths from ASSB are completely preventable, and maternal-child healthcare providers, along with the public health community agree all efforts should be made to prevent the deaths from this cause. Pregnant women receive education about safe sleep recommendations during pregnancy and following birth, prior to hospital discharge (See Table 3.). Even with this education, mothers and other family members often find it challenging to follow the recommendations. In a qualitative review of 16 Fetal Infant Mortality Reviews (FIMR) maternal interviews, Stiffler and colleagues (2016) found that not one of the 16 infants that died were in a safe sleep environment. Most of the mothers said that they had brought the infant into bed with them. One infant was in a swing, while another was sleeping on an ottoman. In a separate review by Stiffler and colleagues (2018), African American infants were 2.4 times more likely to die of SUIDs than White infants. Fifty percent of deaths caused by ASSB happen while bed-sharing, and are more likely to happen to African American infants (Ward & Ngui, 2015)

According to a study by Mathews and colleagues (2016), approximately two-thirds of African American mothers reported that they did not use the Safe to Sleep® recommendations (Mathews, et al., 2016). While these mothers reported they intended to follow the recommendations, once home, parental change in attitude and behavior was common (Mathews et al, 2016). Co-sleeping was a frequent occurrence among African American mothers, and the rates of African American women bed-sharing is continuing to rise (Ward & Ngui, 2015). Fewer White mothers reported sleeping with their infants. African American mothers knew of women who had done “everything right” and still ended up with adverse outcomes, so they felt the perceived discomfort to the infant in following safe sleep guidelines did not make sense (Close, Suther, Foster, El-Amin & Battle, 2013). The African American mothers did not think that their infants were comfortable in the crib by themselves, so they either took the infant into the bed with them or put soft blankets and pillows into the crib. It was perceived that keeping the infant in bed with the mother increased ease and efficiency of caring for infant needs, such as feeding, comforting and diapering (Close et al., 2013).

African American women, as a group, tend to be family oriented, and grandmothers play a large role in the care of new infants. Women may trust the counsel of a female family member over the advice of healthcare providers (Zundo, Richards, Ahmed & Codington, 2017). Strong family relationships is an important aspect of African American culture and grandmothers have significant influence in the way mothers choose to raise their infants (Stiffler, et al., 2018).

The purpose of this study was to identify why African American mothers do not tend to follow the Safe to Sleep® recommendations and to begin to identify a way to frame the Safe to Sleep® message so that African American mothers might be more likely to follow these recommendations.

METHODS

Data Collection

For this study, the researcher collaborated with Nurse-Family Partnership© (NFP), implemented by Goodwill of Central and Southern Indiana. Nurse-Family Partnership (NFP) is a national, evidence-based model of care in which specially trained registered nurses meet with first-time, low income women early in their pregnancy and continue to visit them in their homes until the child's second birthday. This study met the ethical requirements for both Indiana University Institutional Review Board and Nurse-Family Partnership Research and Publication Committee.

We used a convenience sample of new mothers from among Goodwill NFP clients. The eligibility criteria were women who identified as African-American, were first time mothers, and had an infant over the age of 6 months (the risk of SUID drops dramatically after 6 months). The nurses provided flyers to eligible clients, and shared information, inviting them to participate in the study. If the new mother wished to participate, we asked her to text a google phone number, which was not affiliated with NFP. When a woman texted the number, a research student called the mother, discussed the study with her, and if interested, scheduled her for a focus group. When we had difficulty recruiting enough NFP women to participate, we received permission from Goodwill of Central and Southern Indiana to hang flyers at The Excel Center, a high school for adults, which is also affiliated with Goodwill. Between the two programs, we were able to recruit enough women to hold two focus groups with a total of 15 mothers. The mother self-selected the focus group she would like to attend depending on the date that worked best for her. All of the mothers were African American and their ages ranged from 20–31, and each met the target demographics of NFP for income and first-time mothers.

We held the focus groups in the early evening, and provided dinner as well as childcare. The Goodwill NFP Community Engagement Manager, who is African-American and has experience with focus group facilitation, conducted the focus groups. Questions for the focus groups were in four topic areas: What does safe sleep mean to you? What are your thoughts about safe sleep? Did you use any of the safe sleep recommendations? And Now I'm going to read the American Academy of Pediatrics' definition of safe sleep. It states... Did you hear anything that you did not expect? That you were certain that would be included? The facilitator had other questions she could use within each topic area, or she was free to let the conversation lead the topics. The focus groups were audio recorded, and the researcher and/or an assistant took extensive notes throughout the sessions. At the conclusion of the groups, each participant received a \$40 gift card to a local retail store.

Analysis of Data

Audio recordings were transcribed, and transcriptions were checked for accuracy using the original recordings and focus group notes. Following this check, the audio recordings were erased. The research team eliminated superfluous words and exclamations from the transcripts, after several reviews.

We used a modified ethnography design with this study. Although ethnography is usually thought of as the researcher spending a prolonged period of time observing the culture or social group, this study does listen and record the voices of African American women with the intent of understanding their culture (Creswell & Poth, 2018). We used the “Data Analysis Spiral” as described by Creswell & Poth, (2018) for data analysis. Initially, the data was organized so that the researcher was able to manage the data. Next, the researcher began memoing while reading the data as ideas began to emerge. The researcher began to identify concepts within the data that were then classified into categories. The researcher then developed and assessed interpretations and representations while visualizing the data as they were in these categories (Creswell & Poth, 2018).

RESULTS

The researchers identified 14 concepts that we were able to group into three categories before being able to identify the shared value of the culture. (See Figure 1.)

The first category is *It’s just easier*. This category consisted of five concepts: Sleeping with baby from early on; Comfort after cesarean section; Anxiety related to child safety; I am too tired to fight it; and The baby chooses where to sleep.

Mothers who made comments in this category talked about how it was easier to bring the infant into their bed than it was to deal with fussiness and crying of the infant that they experienced when they put the infant to sleep in the crib, alone, in a supine position. One mother stated, “You don’t get any sleep, when you put your baby on its back, I have to stay up with the baby, she’s crying, I’m crying. Where do you draw the line?” Another stated, “We do try, but we just can’t handle it because no one is sleeping.”

One mother spoke about having a cesarean section. Lifting the infant in and out of the crib was very difficult. “Because of my cesarean section, I couldn’t put her in the crib, so it [sleeping in the bed] started with convenience. After that, she was used to it. She wants to nurse all the time at night.”

Other mothers talked about being worried and wanting to check on the infant throughout the night. Mothers perceived it was easier to check on the infants when co-sleeping. “I would feel his chest to see if he was still breathing.” “Parents can’t sleep if they are worrying about if the baby is still breathing.”

Another concept brought up by the mothers is that the infant chooses where he/she wants to sleep. “The baby doesn’t like sleeping on the hard pack-n-play, so he sleeps with me.” “He won’t sleep without being in my bed.” “Baby loves her room, but doesn’t want to be in her bed.”

The second category is *Can’t fight Culture and Grandma*. This category includes three concepts: Grandmother’s role; Culture; and Educating other Family Members.

Participants’ discussions in this category focused on how mothers and family members encouraged the women to have their infants sleep with them. Some of the women came from

African cultures that had family beds, so they expect the infants to sleep with the family. One mother stated, “My culture has the baby sleep with us, my mom helped me a lot with my first daughter, but she insisted that the baby should sleep with me and on her tummy.” Another said, “My mother called it ‘New mommy stuff,’ (following safe sleep guidelines) that’s not for me.” Another new mother described how her mother kept trying to put decorative things into the crib because the crib “looks like a little baby prison.”

The new mothers found that it was not necessarily easy trying to educate their mothers or other family members about the safe sleep recommendations. One new mother said that she had tried to tell her mother how to put her baby in the crib; however, “grandma shuts me down and says she knows everything.” Another new mother said that she “cannot tell her mom anything when it comes to baby care, and if I tell her to put the baby on her back, she’ll put the baby on her tummy, every time!” One frustrated new mother put it this way, Every time I try to tell my mother about putting the baby to sleep on her back, she talks about what she did when I was little, or what her mother did, etc., etc. You need to be talking to the grandmothers! There are generational differences!

The final category was *Effectively Teaching Mother*. There were three themes in this category: Mother’s perceptions of safe sleep and educational deficits; Opinions on learning methods; and Telling providers what they want to hear.

Many cultures, including the African American community can hold a fatalistic view of infant mortality. They believe that if an infant dies, it is an act of God or God’s Will and cannot be prevented. During the focus groups, we discussed the statistics that African American infants are more than twice as likely to die as White infants. The mothers were very surprised to hear these numbers. One mother stated, “I heard the message (of the safe sleep recommendations), but I didn’t understand the why about it.” Another mother said that, “most women know about safe sleep, but they don’t listen. What keeps them from following? ‘This is my baby. I can do what I want.’ It’s about beliefs. I know what is best for my baby.”

For first time moms, you believe everything and try to follow everything, but with each subsequent child, you know it won’t work, so you don’t try. When she slept on her belly, she slept for hours, but on her back, she was fussy all night. The postpartum depression kicks in because of lack of sleep. If you don’t get any sleep, you are cranky to everyone else. You don’t get any sleep, when you put your baby on its back, I have to stay up with the baby. She’s crying, I’m crying. Where do you draw the line?

Finally, in this category, the mothers talked about telling healthcare providers what they want to hear when asked at each visit about where the infant sleeps. Some mothers reported feeling judged, and being fearful that the provider would report them to Child Protective Services (CPS) if the mothers revealed they were actually co-sleeping with their infant. Instead, the mothers told their provider that the infant was sleeping alone, on his back, in his crib, despite this not being true. “You say what the doctor wants to hear.”

During the focus groups, we asked the mothers where they had heard about the safe sleep recommendations. Most said that they had heard about them in their provider's office or at the hospital. One mother said she had to watch "a lot of videos of scary things that will happen if you don't follow it. I lost sleep watching the baby, looking to see if she was sleeping." Thus, instead of encouraging this mother to follow the safe sleep recommendations; these educational videos increased her concerns, which led her to bring the infant to her bed so she could check on her constantly. Another mother said that, "They drill it in the third day before we go home (from the hospital). You have to watch a video at the WIC office and the Women's Care Center. There is safe sleep info on the box with the mattress." "There are three different videos, but you don't have to pay attention to it."

These focus group participants heard the safe sleep recommendations, but had difficulty following them. We asked the mothers, "How would they change the message? How could the message be different so that they would hear it and receive it?" One new mother stated, "There cannot be one blanket class because of culture. Have young African American people in the message. Throughout the first year of the baby's life you should have them keep getting the message—not just in the hospital." Another said, "People are more comfortable with their own telling what happened to them." One mother said that she had had two different providers tell her two different things, so consistency in the message is very important. Other suggestions included:

- Have more details, not just a pamphlet
- Make sure you tell everyone: parents, mother, father, grandparents, everyone
- Stress the statistics about the higher incidence among African American infants
- Have a person give the message, not just a video
- Dads frequently watch infants, so they need to be educated
- People who look like me telling what happened to them
- They need to give examples—real people giving real life examples
- Throughout the first year of the infant's life, you should keep getting the message—not just in the hospital

In our study, we came up with the three categories of It's just easier; Can't fight Culture and Grandma; and Effectively Teaching Mother. These three categories and the suggestions listed above, show that, in our sample, African American women need

Multifaceted Learning.

Teaching African American mothers about the Safe to Sleep® recommendations is much more than just education. It is multifaceted and should be more than a "one and done" session. The Safe to Sleep® recommendations should be discussed at every appointment with every family member. Providers should explain why these recommendations are especially important for African American families due to the staggering infant mortality statistics among African Americans. Providers and nurses should provide anticipatory

guidance, providing strategies to assist mothers with common problems that they may face when trying to get their infants to learn to sleep alone on their backs.

DISCUSSION

In our study using focus groups of African American mothers, we found that all of the mothers were aware of the safe sleep recommendations. They had all heard about the recommendations. They had watched the videos about Safe to Sleep® while in the hospital, and had read the written instructions about safe sleep on the boxes of the cribs that local agencies provided to them. Even with this messaging, these African American mothers, for the most part, still found it difficult, if not impossible, to follow the Safe to Sleep® recommendations. This is not uncommon in the US. In a randomized controlled trial conducted by Moon and colleagues, (2017), mothers who received an enhanced message about SIDS and risk reduction and suffocation prevention did not change their behavior with regards to infant sleep location. Bed-sharing rates were not statistically different between the enhanced messaging and the standard messaging groups (Moon, Mathews, Joyner, Oden, He & McCarter, 2017).

Although our study was limited to one city in the United States, we would like to express that infant mortality is a global concern, and health professionals around the world are trying to determine best practice for new mothers in an attempt to decrease infant mortality. In Australia and New Zealand, the indigenous Maori populations have a greater risk of infants dying of sudden unexpected death. In studies done by Baddock and Tipene-Leach and colleagues (2017 & 2018), they evaluated the benefits of providing the Pepi-Pod or Wahakura versus a bassinet for the indigenous mothers to use. The Pepi-Pod and the Wahakura are types of small beds that can be used in the bed, and protects the infants from rolling out or the parent from rolling over onto the child. Use of these beds increased the number of infants who were breastfed, but there was no significant differences in the infant sleep position (Baddock, Tipene-Leach, Williams, Tangiora, Jones, Iosua, et al., 2017; Tipene-Leach, Baddock, Williams, Tangiora, Jones, McElnay & Taylor, 2018).

The mothers in our focus groups believed that they were better able to keep watch on their infants and assure their health and safety if the infant was in the bed with them. The mothers in the Moon and colleagues study (2017) also noted this. In their study, mothers had a strong belief that they could be vigilant during sleep and that no harm could come to their infant when they were sharing the bed (Moon et al., 2017). In our study, mothers said that the infants chose where to sleep. They stated that the infants did not want to sleep in their cribs. This was also consistent with the findings of Dr. Moon (personal communication, 2018). In a study by Pease and colleagues (2017), the mothers did not use the supine sleeping position for their infants, but used alternative strategies to reduce the risk of the infant dying of SUID. They continued to monitor the infant. They were not being negligent or willfully ignoring the safe sleep recommendations. Instead, they navigated the safe sleep recommendations in the best way that they could (Pease, Ingram, Blair, & Fleming, 2017). This study concluded that providing the mothers with a list of recommendations for the mothers to pick and choose which they felt that they could follow most of the time might be the better answer than being chastised for not doing all of them (Pease et al., 2017).

The mothers in our focus groups discussed difficulties in educating their mothers (infant's grandmothers) on the Safe to Sleep® recommendations. In a study by Cesar and colleagues (2019) and one by Aitken (2016), they found that grandparents were less likely to put the infant to sleep on its back because they believed that this placed the infant at increased risk of suffocation and discomfort (Aitken, Rose, Mullins, Miller, Nick, Rettiganti et al., 2016; Cesar, Marmitt, Carpena, Pereira, Neto, Neumann & Acevedo, 2019). The grandparents may feel that the infant is more comfortable and less likely to aspirate if they place the infant on its stomach (Lagon, Moon, & Colvin, 2018). Grandmothers are also likely to place the infant on an adult bed (Aitken et al., 2016). This can be true of mothers, as well (Maged & Rizzolo, 2018). Grandparents need to be educated to dispel the common myths related to sleeping in the supine position (Aitken et al., 2016).

Our study was performed to help us understand how African American mothers are most effectively educated about the Safe to Sleep® recommendations to increase understanding and adherence. The mothers provided several strategies that are included in the body of this paper. Maged & Rizzolo (2018) stated that the strongest predictors for mothers following the recommendations were older maternal age, college education, and race or ethnicity. Matoba and Collins (2017), in their paper on racial disparity in infant mortality, stated that decades or centuries of discrimination and chronic exposure to stress accumulates over time and leads to an inflammatory response, which compromises fetal development and causes adverse pregnancy and neonatal outcomes. In a qualitative study by Roman and colleagues (2017), African American women spoke of having to cope with confusion, lack of knowledge about their health, and having difficulty communicating with their providers. With these experiences, women were less like to follow directions that the provider might give (Roman, Raffo, Dertz, Agee, Evans, Penninga et al., 2017). McLemore and colleagues (2018) also found that a history of racism and disrespect for women of color affects their health and the health of their infants (McLemore, Altman, Cooper, Williams, Rand & Franck, 2018). McLemore supported the use of social support group prenatal care, and religious and/or spiritual connection saying they have an impact on maternal stress and improve healthcare experiences, and mothers felt more positive about their ability to care for their infants (McLemore et al., 2018). McLemore and colleagues (2018) also found that when the health system negatively affected the experiences of the women of color, the women had a lack of connection to their providers. An opinion piece written by Paul B. Cornely in 1968 reveals that very little has changed in the past 52 years. In this piece, Cornely states, "The unfavorable morbidity and mortality experiences of the (African American) population are not due to any genetic differences, but rather to the socioeconomic and environmental deficiencies, such as poverty, housing, unemployment, non-availability, and/or inaccessibility of health services facilities, discrimination and segregation, and inadequate family structure. Therefore, ... a massive, coordinated, and comprehensive attack on the nation's social, economic, and health problems sponsored by the federal government is critically and urgently needed... (Cornely, 1968, pg 647)."

It is our hope that improving education and messaging, and our approach to address this aspect of infant health can improve the odds faced by African American families.

CLINICAL IMPLICATIONS

African American mothers say that they are generally aware of the Safe to Sleep® recommendations, even though the majority of mothers do not follow them. The reasons they give for not following them are that they are not comfortable doing so, they feel they are unable to do so, or find it unnecessary; many of the mothers attempted to follow the Safe to Sleep® recommendations, but abandoned the effort due to the stress of their crying infant. Trying to follow the Safe to Sleep® recommendations was stressful for the mothers, even though there was also concern expressed by some that their infant could indeed suffocate or die from SIDS.

These mothers do not share difficulties in following safe sleep recommendations with their healthcare providers because they feel guilty or are afraid the doctor may turn them in to Child Protective Services. Especially among mothers living in poverty, there are other issues that take priority over assuring Safe to Sleep® recommendations are followed. Parents struggling with stressful life events may need assistance with their lives before they can even think about safe sleep, or they may bed-share in order to cope (Ward & Ngui, 2015).

LIMITATIONS

Our study was limited by the small size of our focus groups. The focus groups represented only a small area of a large Midwestern city, and the results cannot be generalizable to other areas of the country.

HOW MIGHT THIS INFORMATION AFFECT NURSING PRACTICE?

The Infant mortality rate in the African American population is unacceptable. Public health advocates recognize the urgent need to address this problem. To address unsafe sleeping deaths, our best strategy is to educate new families about the Safe to Sleep® recommendations as developed by the American Academy of Pediatrics. We have learned this message cannot be delivered the same for all cultures in the US. This paper has given some insight on why the traditional means of education do not work with African American families, and we have provided some suggestions from African American mothers, themselves, on ways that might speak to their culture and experience in a better way. We need to educate all the members of the family, as multiple generations may be caring for the new infant. It cannot be a “one and done” message at the hospital. The message is multifaceted, must be discussed repeatedly, and have people who look like them sharing this message.

Although the rules of Safe to Sleep® sound very easy: A-Alone in the Bed; B-on their Back; and C-in a Crib, these parameters are not as easy to follow as they sound—as these mothers have pointed out. We felt this is similar to Nike’s “Just do it!” and Nancy Reagan’s “Just Say No!” (to drugs) campaigns. All three are catchy phrases that are easy to remember and repeat, but which ignore the complexity and challenge of becoming an athlete, overcoming addiction, and following safe sleep recommendations.

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REFERENCES

- Aitken ME, Rose A, Mullins SH, Miller BK, Nick T, Rettiganti, Nabaweesi R & Whiteside-Manell L. (2016). Grandmothers' beliefs and practices in infant safe sleep. *Journal of Maternal Child Health*, 20(7), 1464–1471. doi: 10.1007/s10995-016-1945-9
- Baddock SA, Tipene-Leach D, Williams SM, Tangiora A, Jones R, Iosua E, Macleod EC, Taylor BJ (2017). Wahakura versus bassinet for safe infant Sleep: A randomized trial. *Pediatrics*, 139(2), e20160162, doi: 10.1542/peds.2016-0162
- Carlin RF & Moon RY (2017). Risk factors, protective factors, and current recommendations to reduce sudden infant death syndrome: A review. *Journal of the American Medical Association: Pediatrics*, 171(2), 175–180. doi: 10.1001/jamapediatrics.2016.3345 [PubMed: 27918760]
- Center for Disease Control and Prevention [CDCa]. (2018). Infant Mortality. Retrieved from: <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/infantmortality.htm>.
- Cesar JA, Marmitt LP, Carpena MX, Pereira FG, Neto JDM, Neumann N. & Acevedo JD (2019). Maternal knowledge and unsafe sleep position: A cross-sectional survey in Southern Brazil. *Maternal and Child Health Journal*, 23, 183–190. Doi: 10.1007/s10995-018-2613-z [PubMed: 30105515]
- Close FT, Suther S, Foster A, El-Amin S. & Battle AM (2013). Community perceptions of black infant mortality: A qualitative inquiry. *Journal of Health Care for the Poor and Underserved*, 24(3), 1089–1101. [PubMed: 23974383]
- Cornely PB (1968). The health status of the Negro today and in the future. *American American Journal of Public Health*, 58(4), 647–654.
- Creswell JW & Poth CN (2018). *Qualitative Inquiry & Research Design: Choosing Among Five Approaches* (4th ed.). Sage: Thousand Oaks, CA.
- Indiana State Department of Health [ISDH]. (2018). Infant Mortality. Retrieved from: <https://www.in.gov/isdh/27470.htm>
- Indiana State Department of Health [ISDH]. (2017). Statewide Child Fatality Review Report 2016. Retrieved from: <https://www.in.gov/isdh/26351.htm>
- Lagon E, Moon RY, & Colvin JD (2018). Characteristics of infant deaths during sleep while under nonparental supervision. *The Journal of Pediatrics*, 197, 57–62. Doi: 10.1016/j.jpeds.2018.01.051 [PubMed: 29622341]
- Maged M. & Rizzolo D. (2018). Preventing sudden infant death syndrome and other sleep-related infant deaths. *Journal of the American Academy of Physicians Assistants*, 31(11), 25–30.
- Mathews A, Oden R, Joyner B, He J, McCarter R. & Moon RY (2016). Differences in African-American Maternal Self-Efficacy Regarding Practices Impact in Risk for Sudden Infant Death. *Journal of Community Health*, 41, 244–249. DOI: 10.1007/s10900-015-0088-z [PubMed: 26342946]
- Matoba N. & Collins J. (2017). Racial disparity in infant mortality. *Seminars in Perinatology*, 41, 354–359. Doi: 10.1053/j.semperi.2017.07.003 [PubMed: 28864275]
- McLemore MR, Altman MR, Cooper N, Williams S, Rand L. & Franck L. (2018). Health care experiences of pregnant, birthing and postnatal women of color at risk for preterm birth. *Social Science & Medicine*, 201, 127–135. doi:10.1016/j.socscimed.2018.02.013 [PubMed: 29494846]
- Moon RY (2018). Personal Communication. Pediatric Grand Rounds, Indiana University School of Medicine. October 10, 2018.
- Moon RY, Mathews A, Joyner BL, Oden RP, He J. & McCarter R. (2017). Health messaging and African American infant sleep location: a randomized controlled trial. *Journal of Community Health*, 42, 1–9. Doi: 10.1007/s10900-016-02227-1 [PubMed: 27470122]
- Morbidity and Mortality Weekly Report. (2018). Vital signs: Trends and disparities in infant safe sleep practices—United States, 2009–2015. January 12, 2018 Vol. 67, No. 1. Retrieved from: www.cdc.gov/mmwr

- Pease A, Ingram J, Blair PS & Fleming PJ (2017). Factors influencing maternal decision-making for the infant sleep environment in families at higher risk of SIDS: A qualitative study. *BMJ Paediatrics Open*, 1: e000133. doi: 10.1136/bmjpo-2017-000133
- Roman LA, Raffo JE, Dertz K, Agee B, Evans D, Penninga K.VanderMeulen P. (2017). Understanding perspectives of African American Medicaid-insured women on the process of perinatal care: An opportunity For systems improvement. *Journal of Maternal Child Health*, 21, (Supplement 1), S81–S92. doi: 10.1007/s10995-017-2372-2
- Shipstone R, Young J. & Kearney L. (2017). New frameworks for understanding sudden unexpected deaths in infancy (SUDI) in socially vulnerable families. *Journal of Pediatric Nursing*, 37, 35–41. doi: 10.1016/j.pedn.2017.06.022 [PubMed: 28697921]
- Stiffler D, Ayers B, Fauvergue C. & Cullen D. (2018) Infant sleep practices in the African American community. *Journal for Specialists in Pediatric Nursing*, 23(2). doi: 10.1111/jspn.12213
- Stiffler D, Cullen D, Stephenson E, Luna G. & Hartman T. (2016). When baby stops breathing: Analysis of mothers' interviews. *Clinical Nursing Research*, 25(3), 310–324. DOI: 10.1177/1054773815619580 [PubMed: 26655564]
- Tipene-Leach D, Baddock SA, Williams SM, Tangiora A, Jones R, McElnay C. & Taylor BJ (2018). The Pepi-Pod study: Overnight video, oximetry and thermal environment while using an in-bed sleep device for sudden unexpected death in infancy prevention. *Journal of Paediatrics and Child Health*, 54, 638–646. doi: 10.1111/jpc.13845 [PubMed: 29357197]
- Ward TCS & Ngui EM (2015). Factors associated with bed-sharing for African American and White mothers in Wisconsin. *The Journal of Maternal and Child Health*, 19, 720–732. doi: 10.1007/s10995-014-1545-5
- Zundo K, Richards EA, Ahmed AH & Codington JA (2017). Factors associated With parental compliance with supine infant sleep: An integrative review. *Pediatric Nursing*, 43(2), 83–91. ISSN: 0097–9805. [PubMed: 29394482]

Figure 1.
Concepts, Categories and Shared Value

Table 1.

SUID Rates in Indiana

SUID Type	Per live births
SIDS	40.5/100,000
ASSB	48.8/100,000
Unknown	9.5/100,000
Overall	98.8/100,000

Statewide Child Fatality Review Report 2016, Indiana State Department of Health, Retrieved from: <https://www.in.gov/isdh/26351.htm>

Table 2.

Indiana SUID Rates by Race in 2017 per 1000 live births

All Races	7.3/1000
White	5.9/1000
Black	15.3/1000
Other	9.8/1000
Hispanic	7.6/1000

Infant Mortality, Indiana State Department of Health (2019). Retrieved from: <https://www.in.gov/isdh/27470.htm>

Table 3.**Recommendations to reduce the Risk of SIDS and Other Sleep-Related Deaths**

1.	Back to sleep for every sleep
2.	Use a firm sleep surface
3.	Breastfeeding is recommended
4.	It is recommended that infants sleep in the parents' room, close to the parents' bed, but on a separate surface designed for infants, ideally for the first year of life, but at least for the first 6 months
5.	Keep soft objects and loose bedding away from the infant's sleep area to reduce the risk of SIDS, suffocation, entrapment and strangulation
6.	Consider offering a pacifier at naptime and bedtime
7.	Avoid smoke exposure during pregnancy and after birth
8.	Avoid alcohol and illicit drug use during pregnancy and after birth
9.	Avoid overheating and head covering in infants
10.	Pregnant women should obtain regular prenatal care
11.	Infants should be immunized in accordance with recommendations of the AAP and Centers for Disease Control and Prevention
12.	Avoid the use of commercial devices that are inconsistent with safe sleep recommendations
13.	Do not use home cardiorespiratory monitors as a strategy to reduce the risk of SIDS
14.	Supervised, awake tummy time is recommended to facilitate development and to minimize development of positional plagiocephaly
15.	There is no evidence to recommend swaddling as a strategy to reduce the risk of SIDS
16.	Health care professionals, staff in newborn nurseries and NICUs, and child care providers should endorse and model the SIDS risk-reduction recommendations from birth
17.	Media and manufacturers should follow safe sleep guidelines in their messaging and advertising
18.	Continue the "Safe to Sleep" campaign, focusing on ways to reduce the risk of all sleep-related infant deaths, including SIDS, suffocation, and other unintentional deaths. Pediatricians and other primary care providers should actively participate in this campaign
19.	Continue research and surveillance on the risk factors, causes, and pathophysiologic mechanisms of SIDS and other sleep-related infant deaths, with the ultimate goal of eliminating these deaths altogether

AAP Task Force on Sudden Infant Death Syndrome. (2016). Recommendations for safe infant sleeping environment. *Pediatrics*, 138(5): e20162938