

Infant Safe Sleep Interventions in African American Communities

Malliga Jambulingam*, Ariel Hunt, Margaret Alston, David Thomas, Yvonne Bronner

Nursing Program, School of Community Health and Policy, Morgan State University, Baltimore, MD, USA

*Corresponding author: malliga.jambulingam@morgan.edu

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Abstract Background: Despite recommendations from the American Academy of Pediatrics (AAP) regarding infant safe sleep practices, 39% of sleep-related infant deaths (SRID) occur among African American (AA) families each year. Effective interventions that promote AA parents/caregivers' safe sleep practices for infants could help reduce SRID. **Objective:** To identify appropriate safe sleep interventions that increased compliance of AAP recommendations to reduce the risk of SRID among AA mothers/caregivers, a literature review was conducted. **Methods:** PubMed, EBSCOhost, and Google Scholar search engines were utilized to identify evidence-based research studies, published in English from 2000-2019 in the U.S that demonstrated the effectiveness of safe sleep interventions for AA parents/caregivers based on the AAP recommendations. **Findings:** The literature review revealed that multiple-element interventions such as free cribs and related materials, and safe sleep education increased adherence to AAP recommendations as evidenced by the majority mothers using the crib and adopting safe sleep recommendations. **Conclusion and Recommendations:** Although multiple interventions including education are valuable, culturally appropriate research is needed to better understand what specific intervention(s) will work to increase adherence to the AAP safe sleep recommendations among the remaining 39% of AA parents/caregivers who contribute disproportionately to the SRID disparity. Behavioral and environmental barriers preventing the adoption of safe sleep interventions also need to be studied in this target group of AA parents/caregivers. It is recommended that findings from these highly targeted evidence-based culturally appropriate studies be used to focus on funding, prevention programming, and policies toward the causes of SRID to close the disparity gap.

Keywords: African American, sleep-related infant deaths, room sharing, supine sleep position, firm bedding

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1. Introduction

Sudden infant death syndrome (SIDS) and other sleep-related infant deaths (SRID), including accidental suffocation and strangulation in bed, as well as ill-defined deaths, are collectively called sudden unexpected infant death (SUID) [1]. In 2017, SUID deaths among infants (1-year-old) accounted for about 3,600 deaths annually in the United States (1,400 deaths were due to SIDS, 1,300 deaths were due to unknown cause, and 900 deaths due to accidental suffocation and strangulation in bed) [1]. Although the exact causes of SIDS remain unclear, effective preventative safe sleep measures are generally known to be associated with reduced risk of SIDS. Since the Back to Sleep Campaign was first launched in 1994, the rate of SIDS deaths has decreased dramatically [2]. However, SIDS remains a major cause of infant mortality in Western countries, contributing to half of all post-neonatal deaths [3]. SUID rates per 100,000 live births for non-Hispanic black (NHB) infants (186.5)

were more than twice those of non-Hispanic White (NHW) Infants (85.4), accounting for the second-largest proportion of SUIDs (39%) [1].

In the state of Maryland (MD), a 2018 Annual Legislative Report showed that SUID was the leading cause of infant death each year from 2013 to 2017 except 2016 when injury became the leading cause. In 2017, sixty-one infants died out of 208 from sleep-related causes. Almost one-quarter of all infant deaths occurred among Baltimore City residents [4]. African American (AA) infants were about two times more likely to die than White infants in Baltimore city. Baltimore City's infant mortality rate (IMR) was 1.6 times greater than Maryland's rate [4]. According to the CDC (2018), unsafe sleep practices (e.g. bedsharing, prone positioning of the infant, and use of soft bedding) have been associated with sleep-related infant deaths (SRID) [4].

Child Fatality Review (CFR) revealed the data from 2013 - 2017 that 251 (90%) of the 279 cases occurred due to SUID. In 81% of cases, soft objects were present in the infant's sleep environment. When 61% had a crib/bassinet available in the home, 60% of infants were bedsharing with an adult, child, or pet, 42% of infants were found in

the prone position, or on their side [5]. It was also reported that at least 65% of families lived in high poverty areas; and 46% of infants who died received Medical Assistance. Forty-six percent of primary caregivers were under age 25, 46% were receiving social services, 42% had at the most a high school, 38% had low income, and 24% were unemployed [5]. For simplicity, the remainder of this paper SUID/SIDS will be referred to as Sleep-Related Infant Deaths (SRID).

Research data shows that if the safe sleep practices recommended by the American Academy of Pediatrics (AAP) are followed, SRID can be reduced. However, although approximately 60% of AA parents/caregivers report that they follow the AAP safe sleep practice recommendations [6,7,8], there remains a disparity in SRID with AA contributing disproportionately. Effective intervention strategies from evidence-based research studies that could be used to close this gap due to AA SRID that promote AA parents/caregivers' safe sleep practices for infants could help reduce SRID. Hence, to better understand those appropriate intervention strategies that increased compliance of AAP recommendations among AA parents/caregivers, a literature review was conducted. This literature review aimed to identify safe-sleep intervention(s) that are effective among AA parents/caregivers. The findings from evidence-based studies could be useful to notify public policymakers to focus funding on AA mothers' safe sleep practices, especially those in low-income communities.

2. Methods

A literature search was conducted using PubMed, EBSCOhost, Google Scholar search engines, and Web sites of relevant organizations using the search terms, 'SIDS, Sudden infant death syndrome, sleep-related infant deaths, sudden unexpected death syndrome, interventions, and SIDS, prevention of SIDS, education, and SIDS, Infant supine sleep positioning and SIDS, room-sharing and SIDS, bedsharing and SIDS, as well as firm bedding and SIDS. The words, 'African American/Black parents' was added to each search term. Initial screening of titles and abstracts of articles was completed by the research team to determine eligibility. The most relevant articles were read and those that did not meet the criteria were excluded. Of the 75 articles assessed, five were included as they met the following criteria: Published in English between 2000 and 2019, quantitative studies that demonstrated interventions applied in the United States, and interventions that promoted AA mothers/caregivers' infant safe sleep practices. Studies that demonstrated the effectiveness of interventions were summarized using a data extraction table and the manuscript was written. A draft of the manuscript was submitted to the research team and other reviewers for their comments and suggestions. Figure 1 shows the progression from the initial search strategy to the final selection of articles for inclusion in this review.

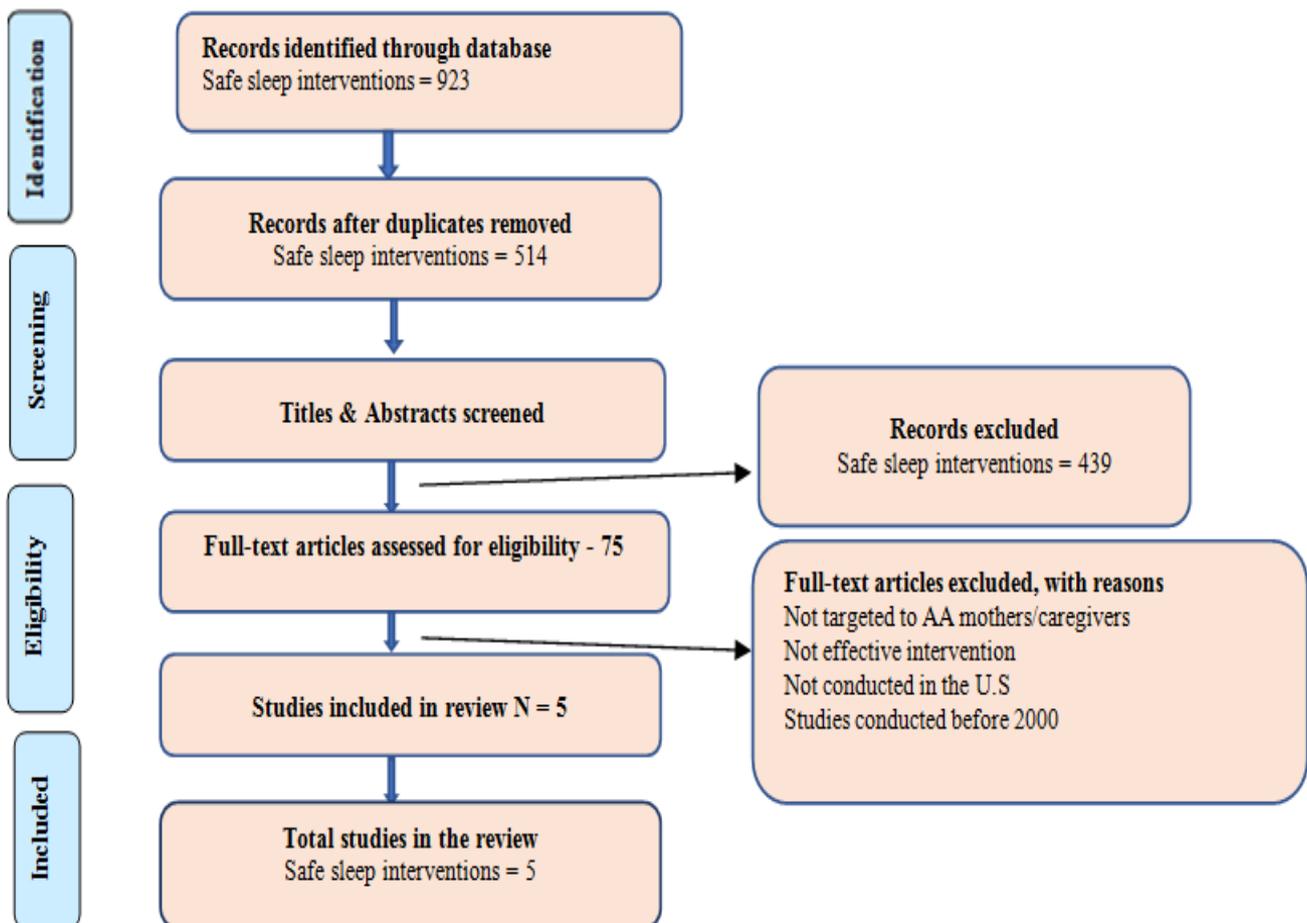


Figure 1. Summary of Literature Search and Review Process on Infant Safe Sleep Interventions in AA communities

Table 1. Infant Safe Sleep Interventions in African American Communities

References Place	Study Variable	Study Sample	Interventions Evaluation	Outcomes
Moon et al., 2017 [9] Washington D.C.	Sleep location - Bedsharing and Room sharing Crib usage Avoid soft bedding in the crib	N=1194 AA mothers N=625 -control N=569 - intervention	Standard messages on 1). AAP safe sleep recommendations for SIDS reduction only and 2). NICHD Safe Sleep for Your Baby brochure -Control group Enhanced messages on 1). AAP safe sleep recommendations for both SIDS risk reduction and suffocation prevention and 2). NICHD brochure - Intervention group Survey with a questionnaire: baseline self-efficacy, knowledge of and attitudes towards safe sleep recommendations, current intent with regards to safe sleep recommendations Mothers participated in the follow-up telephone interview after the infant's birth 2-3 weeks-958 (80%) 2-3 months-716 (60%) 5-6 months-637 (53.4%)	Standard message group Compared to bed-sharing mothers who room shared were more likely to -place the infant in crib/playpen -15.8% vs 73.0% (p<0.0001), -avoid soft bedding in crib -21.1% vs 57.7% (p<0.0001), Enhanced message group Compared to bed sharing mothers who room shared were more likely to -place the infant supine -57.9% vs 82.7%, (p<0.0001), -place infant in crib/playpen -17.5% vs.69.4% p<0.0001), -keep soft bedding out -26.3% vs. 71.6%, (p<0.0001).
Mathews et al., 2016 [10] Washington DC	Avoidance of soft bedding	N=1194 AA mothers N=625 -control N=569 - intervention	Standard messages on 1). AAP safe sleep recommendations for SIDS reduction only and 2). NICHD Safe Sleep for Your Baby brochure - Control group Enhanced messages on 1). AAP safe sleep recommendations for both SIDS risk reduction and suffocation prevention and 2). NICHD brochure - Intervention group Survey with a questionnaire: baseline self-efficacy, knowledge of and attitudes towards safe sleep recommendations, current intent with regards to safe sleep recommendations Mothers participated in the follow-up telephone interview after the infant's birth 2-3 weeks-958 (80%) 2-3 months-716 (60%) 5-6 months-637 (53.4%)	Standard vs. Enhanced Use of Soft bedding last night (p=.013) 2-3 weeks- 72.5% vs. 64.5% 2-3 months- 48.0% vs 48.1% 5-6 months- 52.4% vs. 43.0% Use of Soft bedding past week (p=.006) 2-3 weeks- 73.9% vs. 66.9% 2-3 months- 56.4% vs 53.6% 5-6 months- 59.6% vs. 49.2% Protect from SIDS: Keep soft bedding out of the crib (p=.09) 2-3 weeks - 57% vs. 54.1% 2-3 months - 53.9% vs 50.8% 5-6 months - 56.3% vs 59.3% Protect from Suffocation: Keep soft bedding out of the crib (p=.013) 2-3 weeks - 68.3% vs 69.1% 2-3 months- 61.8% vs 65.1% 5-6 months- 60.5% vs 63.6%
Hauck et al., 2015 [13] Bedtime Basics for Babies (BBB) in Washington, D.C., Indiana, Washington State	Bed-sharing Sleep position Crib Use	4,789 mothers in all races Prenatal- N=3,167 (42% AA mothers, 49% fathers) Postnatal- N=1311 (37% AA mothers, 44% fathers)	Before crib and kit distribution, and education Pretest N=4,789 Post-test N=1729 The qualifying family received a crib, a Safe Sleep Kit (crib sheet, wearable blanket, and pacifier), and educational materials about reducing the risk of SIDS and sleep-related infant death Follow up survey After crib distribution: 1-3 months (No race data)	Data for AA mothers Supine position (p < 0.001) 81 % prenatal - Planned 77% postnatally placed No data for follow up survey Bedsharing (p = .001) 8% - prenatally - Planned 41% postnatally bedshared No data for follow up survey Data for overall mothers Prenatal vs. Postnatal vs. Follow up Supine sleep position (p < 0.001) Bedsharing (p < 0.001) Crib use (p < 0.01) -91% - prenatal, -51% - postnatally used cribs After crib receipt-follow-up 90 % used crib (p < 0.01)
Carlin and Collin (2007) [12] Cribs for Kids - Pennsylvania	Sleep position Sleep location Crib Use	150 families 105/150 (70%) 51% of AA mothers	500 new full-size cribs and firm mattresses, along with NICHD education material outlining SIDS risk reduction strategies and crib safety to low-income families - One-on-one education on safe sleep A quantitative—quantitative questionnaire with 18 items - 10-15 minutes to Complete.	Mothers reported 100% used the crib 2/3 placed their infant in the supine position for sleep If no crib received, they stated that the infant would have slept 38% - in an adult bed with parents, 25% in a bassinet 37% on the floor or in portable cribs or playpens
Moon et al., 2004 [11] WIC clinic in Washington D.C.	Sleep position Bedsharing/co-sleeping	310 parents/caregivers	Pretest survey - (before education) with written Questionnaire - 310 parents/caregivers 15-minute group educational sessions on safe sleep practices: sleep position, bedsharing/co-sleeping Posttest survey (immediately after education) - 310 parents/caregivers 6 months follow up telephone survey - 63 AA mothers (82.9%)/76 - Intervention group and 94 AA mothers (83.2%)/113 - control group	Pretest Vs. post test 57.7% Vs 85.3% - supine (p = 0.0001) After 6 months, the control group vs. intervention group Usually co-sleep (less likely to sleep in the same room with the parents) (p= 0.0006) Usual sleep position (p= 0.0005) - 45% Vs.75% placed in a supine - 44.2% Vs. 16% (less likely bedshared with the parent the night before the interview (P .0001) bedshared last night (p = 0.0001)

3. Results

Five articles were found that met inclusion criteria. Results of eligible studies were summarized using a data extraction table that was comprised of the author(s), year of the study, study location, study variables, sample size, intervention descriptions, means of evaluation, and study outcomes. The studies are arranged in chronological order from present to past (Table 1).

3.1. Study Characteristics

3.1.1. Study Location

All studies reviewed were conducted in the U.S. Among five studies, three were based in Washington D. C [9,10,11], one was a statewide initiative, Crib for Kids in Pennsylvania [12], and another study addressed a national crib distribution program that involved three states, Washington, D.C., Indiana, and Washington State [13].

3.1.2. Demographics of the Sample

Of the five studies, two had a sample of 100% AA mothers [9,10] while three had included a racially and ethnically diverse sample including AA mothers [11,12,13]. One study had a majority sample of AA mothers/caregivers, 63/76 (82.9%) in the intervention group, and 94/113 (83.2%) in the control group [11]. In the other two studies, 53.45% and 42% were included AA mothers respectively [12,13]. All five studies reported that the age of the participants was younger than 29 and all were females [9,10,11,12,13]. Four studies reported more than 90% of mothers had a high school diploma or equivalency [9,10,11,12]. In three studies, the majority of participants were in the low-income category [11,12,13]. In three studies, more than 75% of mothers were unmarried and approximately 56% received WIC and Medicaid benefits [9,10,12].

Three studies reported that mothers who completed all follow up interviews were ≥ 30 years of age and had attended a technical/vocational school or had 4-year college, as well as had private medical insurance [9,10,11]. One study included mothers who met all of the study criteria that is: no crib at home, low-income status (Medicaid or State Children's Health Insurance Program (SCHIP) eligibility, Women, infants, and Children (WIC) program eligibility; or low family income, lower than 150 % of the federal poverty level, at least one risk factor for SIDS and sleep-related death (e.g. African American, American Indian or Alaska Native, maternal smoker, pre-term or low birth weight, or sibling of a SIDS infant [13].

3.1.3. AA Mothers/Caregivers' Participation

Of all studies, two focused solely on AA mothers [9,10] in which out of 1194 mothers, 673 (53.4%) participated in all three follow-up interviews at 2-3 weeks, 2-3 months, and 5-6 months of infant's age [9,10]. In one study, 310 of parents/caregivers [mothers (84.5%), fathers (6.5%), and other relatives (9%)] participated in which all mothers/caregivers participated in pre-and posttest surveys irrespective of race/ethnicity. In which, 63 AA mothers (82.9%) in the intervention group and 94 AA mothers

(83.2%) in the control group participated in the 6-month follow-up survey (11). In the remaining two studies, 51% of AA mothers [12], and 42% AA mothers, and 49% AA fathers participated in prenatal surveys, while 37% AA mothers and 44% AA fathers in the postnatal survey. Unfortunately, no data was given on the number of mothers who participated in a follow-up survey (1-3 months after receiving a crib) [13].

3.1.4. Type of Research Studies

Of the five studies, two studies were randomized controlled trial studies (RCT) [9,10], two were pre-and post-test designs [11,13], and one was a post-test only design [12].

3.2. Interventions and Outcomes

Research studies showed the effectiveness of safe sleep interventions on how parents/caregivers adhered to infant safe sleep practices including room sharing, and no bed-sharing [9,11,13], supine positioning [11,12,13], avoidance of soft bedding [9,10], and increased use of crib [9,12,13]. Interventions such as education on safe sleep practices [11], specific safe sleep health messages [9,10], and multiple elements along with education on safe sleep [12,13] were found in the research studies. Specific safe sleep health messages were delivered to the intervention group (enhanced message) to prevent SIDS and suffocation and to the control group (standard message) to prevent SIDS only [9,10]. Education on safe sleep recommendations was delivered to small groups (3-10 people in each group) [11] and one-on-one [12]. Multiple elements such as a crib and related materials and education were delivered on a large scale (national and state levels) [12,13]. Interventions were provided by the researchers [9,10], trained health educator [11], research practitioners [12], and a trained staff [13].

3.2.1. Educational Intervention and Outcomes

Of three studies described educational interventions, one provided 15-minute small group educational sessions on safe sleep practices to the mothers in an intervention group: sleep position and bedsharing/co-sleeping [11]. Their intention of adopting safe sleep practices shortly after the educational session and actual practices of infant safe sleep in 6 months were measured. Immediately after education, 85.3% of mothers intended to place the infants supine, whereas 75% of mothers (intervention group) placed them supine ($p = 0.0005$) in 6 months, compared to the control group (45.1%) [11]. This study concluded that 15-minute safe sleep education for low-income AA parents/caregivers was effective in changing their behavior.

Two studies determined the influence of specific health messages on African American parental decisions regarding sleep location [9], and avoidance of soft bedding [10]. Both studies evaluated mothers' responses for protecting the infant against SIDS and suffocation at 2-3 weeks, 2-3 months, and 5-6 months after infant's birth [9,10]. The results showed that mothers in the enhanced messaging group who room-shared demonstrated the compliance in adopting safe sleep recommendations in placing the infant in supine ($p,0.0001$) and in crib/playpen ($p<0.0001$),

avoiding soft bedding in the crib ($p < 0.0001$), and keeping soft bedding out of the crib ($p < 0.0001$) than bedsharing mothers [9]. This study revealed that mothers were less likely to bedshare at all three (2-3 weeks, 2-3 months, and 5-6 months) time points because they believed bedsharing increases the risk of SIDS ($p < 0.0001$) or suffocation ($p < 0.0001$) [9]. However, they bedshared after 6 months of infants' age [9]. Similarly, another study demonstrated follow-up soft bedding decreased in the mothers receiving enhanced messages. By the follow up interview, 43% of mothers used soft bedding last night and 49.2% in the past week in the enhanced messaging group, compared to 52.4% and 59.6% respectively in the standard messaging group [10]. Additionally, this study found that mothers' belief of using soft bedding affected their behavior, as evidenced by the use of soft bedding decreased in the past week ($p = .0001$) and last night ($p = .0007$) of an interview. This study determined that mothers in the enhanced group who believed soft bedding increased SIDS ($P < .0001$) or suffocation ($P < .0001$) risk, were less likely to use soft bedding at 2-3 weeks, 2-3 months, and 5-6 months. Some mothers who believed there was no way to protect their infant from SIDS ($p = .02$), were more likely to use soft bedding. This study also noticed that mothers used soft bedding as they bedshared with their infants as a strategy to protect their infants from SIDS and suffocation [10].

3.2.2. Multiple Elements Interventions and Outcomes

Providing multiple elements related to infant safe sleep increased mothers' adherence to safe sleep recommendations. Two studies provided free portable cribs, fitted sheets with an embossed safe sleep message, wearable blankets, pacifiers, educational safe sleep materials, a magnet to promote mothers who adopt safe sleep practices [12,13], National Institute of Child Health and Human Development (NICHD) safe sleep DVD, and a copy of the baby book 'Sleep Baby Safe and Snug' [12].

Among these two studies, one assessed mothers' practices of safe sleep after providing a free crib and safe sleep education. The results showed 100% of mothers used cribs and two-thirds placed their infants in supine for sleep [12]. In another study, mothers' intentions regarding infant sleep position and bedsharing before (prenatal and postnatal), and practices of infant safe sleep 1-3 months after (follow-up) providing bedtime basics [(BBB) - a crib, kit, and education on safe sleep] were assessed. The survey results revealed that there was a statistically significant difference between the prenatal and postnatal survey responses. Before providing BBB, 81% of AA mothers planned to place their infants supine prenatally, whereas 77% placed infants supine ($p < 0.001$) postnatally. Similarly, 8% and 41% responded with "bedsharing" respectively. After providing BBB, overall mothers placed infant in supine ($p < 0.001$), bedshared ($p < 0.001$), and used cribs ($p < 0.01$) [13]. Ninety percent reported that they used a crib after the intervention, compared with 51% postnatally ($p < 0.01$) [13]. Both studies stated that free crib intervention had positive effects on mothers' practices of infant safe sleep [12,13]. Also, mothers stated that if they had not received the crib, they would have placed the infant in an adult bed, an old crib [12,13], a bassinet, on the floor or in a portable crib or playpen [12], along with

siblings, in a car or infant seat [13]. As 90% of mothers reported that their infant slept in a crib, bedsharing rates also decreased to 16% post-intervention compared to 38% postnatally [13]. Hence, it is affirmed that free crib with safe sleep education is effective in changing the intentions and practices of mothers about placing their infants in a supine sleeping position in a crib.

4. Discussion

This review focused on identifying interventions that could be used to increase adherence to AAP safe sleep practices among AA parents/caregivers. Our review confirmed that small group education on safe sleep was successful among AA mothers in informing them about the importance of safe sleep position and in changing their behavior as evidenced by increased the practice of mothers' placing their infants supine throughout the first 6 months of infant's age [8]. To continue the safe sleep practice, strategies such as a consistent and repetitive safe sleep education [14] are needed for up to one year of infant's age [15,17]. Innovative strategies that educate not only the mothers but also caregivers about safe sleep to improve infant care practices, need to be developed [5].

This review found that more than one-quarter of AA mothers are less likely to use soft bedding as they have received health messages about the importance of safe sleep recommendations to reduce the risk of SIDS and suffocation [10]. Besides, parental values and beliefs play an important role in adhering to safe sleep practices. Some mothers who believed that there is no way to prevent SIDS and suffocation, used soft bedding as they bedshared with their infants [10]. Mothers who believed room sharing [9] and firm bedding without any clutter on the bed [10] prevent SIDS and suffocation, were more likely to place their infants in the crib and kept soft bedding out of the crib [9] and avoided using soft bedding in their infants' sleep environment [10]. In contrast, some AA mothers who believed bedsharing is a safety strategy, that doing so protects the infant from harm, bedshared with their infants [10]. This result is consistent with the survey report that 37.6% of AA mothers always or often shared a bed with their infant [16]. Bedsharing may be due to beliefs and convenience of mothers such as ease of nighttime feeding, comforting crying babies, having better and more sleep for mother and infant, following family tradition, lacking knowledge of the danger of bedsharing [16], monitoring the infant around the clock [16,17], following safe sleep guidelines is unnecessary if one maintains vigilance over infant [17], or previous successful experience of bedsharing with other siblings without any harmful effects [16]. It has been suggested that health care professionals would be able to discuss the risks associated with bedsharing and recommend ways to reduce the risk of SRID while bedsharing [18]. Mothers need to be empowered to follow health professional advice more than the influence of family members and friends [9].

It is noted that AA mothers' intentions of adhering to AAP recommendations before and actual practicing safe sleep recommendations after the infant was born were different. With the national and state-level programs, AA

mothers' actual practices of safe sleep had been improved from their intentions. Distribution of cribs and related materials along with safe sleep education promoted mothers to adopt safe sleep practices, especially increased placing infants in supine and decreased bedsharing practices. After receiving cribs, 90 - 100% of mothers used cribs for their infants as safe sleep environments. It is interesting to note mothers' viewpoint that if they had not received a crib, infants would have slept in their parents' bed or bed with other caregivers. It is affirmed that providing a crib and safe sleep education for AA parents with low-income families was effective in changing mothers' safe sleep practices.

Despite the high prevalence of SIDS rate among AA infants, the literature search identified very little peer-reviewed literature outlining safe sleep practices readily used by AA mothers. Therefore, there was little to no strong relationships drawn between demographic regions of the US and effective safe sleep methods or practices used by AA mothers/caregivers. Only 47% of AA mothers participated in all three interviews despite efforts that had been made to contact them for a follow-up interview [9,10]. Therefore, respondents may have been self-selected which might have caused respondent bias [9,10,12]. The absence of a control group limited the reliability of the study results as many other factors may have contributed to the findings [12,13]. All studies used self-report survey questionnaires where study results depended on parental reporting, not on direct observation of sleep practices [9,10,11,12,13]. As no race data was given for the follow-up interview, it was not possible to determine exactly how many AA mothers followed safe sleep practices [13].

We limited our search to three databases. Based on the inclusion criteria, we could obtain only five articles with varied interventions such as education only, multiple element interventions, and specific health messages that demonstrated the effectiveness of interventions among AA parents/caregivers.

5. Conclusion and Recommendations

Despite efforts that have been made, there is still a high prevalence of SRID among AA families even though the majority of AA parents/caregivers adhere to safe sleep recommendations. This suggests that the subset of AA parents/caregivers who are not adhering to the AAP safe sleep practices need to be identified and studied their specific barrier(s) that prevent them to adopt safe sleep practices. From this review, a multitude of barriers/obstacles that hinder parents/caregivers from adopting AAP recommended safe sleep practices were found. To bridge the gap between the AA adoption of AAP safe sleep recommendations and their consistent practice requires an in-depth understanding of these obstacles and appropriate incentives that can inspire a positive change. Hence, the family-centered and evidence-based culturally sensitive study is needed to identify the reasons for their strong beliefs and attitudes related to their sleep habits with infants and intervene with effective strategies that emphasize the risks associated with unsafe sleep practices and the benefits associated with safe sleep

practices. Although multiple interventions including education are valuable, culturally appropriate research is needed to better understand what specific intervention(s) will work to increase adherence to the AAP safe sleep recommendations among the remaining 39% of AA parents/caregivers who are contributing disproportionately to the SRID disparity.

Besides, there are limitations to the adoption of the AAP safe sleep recommendations in this subset of the AA community that is likely due to environmental barriers resulting from a legacy of disparities in the basic social determinants of health (SDOH) such as; education, employment, income, housing, food security, social integration, and health care coverage. This complexity of the multiplied in segments of the AA community where the disparities in SDOH factors are disadvantage of such a long period is only most pronounced. Therefore, future research needs to focus on the SDOH needs of these high-risk families if we are to continue to lower SRID in this target population. The findings from evidence-based studies could be useful to notify public policymakers to focus funding on AA mothers' safe sleep practices, especially those in low-income communities.

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Statement of Competing Interests

The authors have no competing interests.

List of Abbreviations

AA - African American
 AAP - American Academy of Pediatrics
 BBB - Bedtime Basics
 NHB - Non-Hispanic Black
 NHW - Non-Hispanic White
 NICHD - National Institute of Child Health and Human Development
 RCT - Randomized Control Trials
 SCHIP - State Children's Health Insurance Program
 SDOH - Social Determinants of Health
 SIDS - Sudden infant death syndrome
 SRID - Sleep-Related Infant Deaths
 SUID - Sudden Unexpected Infant Death
 WIC - Women, infants, and Children

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