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Health Messaging and African-American Infant Sleep Location: A Randomized Controlled Trial

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Abstract

Background—Infant-parent bedsharing increases the risk of SIDS and other sleep-related deaths. Despite AAP recommendations to avoid bedsharing, public health efforts have been unsuccessful in changing behaviors. African-American infants are more than twice as likely to die from SIDS and other sleep-related deaths, and are also twice as likely to bedshare with their parents. Further, African-American parents have a high degree of self-efficacy with regards to preventing infant suffocation, but low self-efficacy with regards to SIDS risk reduction. It is unclear whether messages emphasizing suffocation prevention will decrease bedsharing.

Objectives—To evaluate the impact of specific health messages on African-American parental decisions regarding infant sleep location.

Methods—We conducted a randomized, controlled trial of African-American mothers of infants. The control group received standard messaging emphasizing AAP-recommended safe sleep practices, including avoidance of bedsharing, for the purposes of SIDS risk reduction. The intervention group received enhanced messaging emphasizing safe sleep practices, including avoidance of bedsharing, for both SIDS risk reduction and suffocation prevention. Participants completed interviews at 2–3 weeks, 2–3 months, and 5–6 months after the infant's birth.

Results—1194 mothers were enrolled in the study, and 637 completed all interviews. Bedsharing, both usually (aOR 1.005 [95% CI 1.003, 1.006]) and last night (aOR 1.004 [95% CI 1.002, 1.007]) increased slightly but statistically significantly with infant age ($p < 0.001$). Receipt of the enhanced message did not impact on sleep location. Maternal belief that bedsharing increased the risk of SIDS or suffocation declined over 6 months ($p < 0.001$) and did not differ by group assignment.

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Conclusion—African-American mothers who received an enhanced message about SIDS risk reduction and suffocation prevention were no less likely to bedshare with their infants.

Keywords

bedsharing; sleep location; SIDS; infant mortality; suffocation; self-efficacy

More than 3500 U.S. deaths annually are attributed to SIDS (ICD-10 R95) and other sleep-related deaths, such as accidental suffocation and strangulation in bed (ICD-10 W75) and ill-defined causes of death (ICD-10 R99).[1] Although the incidence of SIDS has declined, infant deaths from accidental suffocation and strangulation in bed have quadrupled; most of this increase has occurred since 1996, and these deaths most commonly occur when the infant is sleeping with another person.[2] Furthermore, there are increasing disparities in these deaths. Infants born to African-American mothers die from SIDS at a rate of 0.73/1000 live births, almost double the rate in White, non-Hispanic infants (0.40/1000 live births) and more than 3 times the rate in Hispanic and Asian/Pacific Islander infants (0.22/1000 live births and 0.14/1000 live births, respectively),[3] and have similarly high rates of accidental suffocation and strangulation in bed (0.48/1000 live births, vs. 0.19/1000 live births for White, non-Hispanic infants, 0.11/1000 live births for Hispanic infants, and 0.05/1000 live births for Asian/Pacific islander infants).[3]

Parent-infant bedsharing is a common practice and twice as likely in African-Americans.[4, 5] While bedsharing promotes breastfeeding and mother-infant bonding, studies are generally consistent in demonstrating an increased risk of sleep-related deaths with this arrangement, particularly when one or more parents are smokers (OR range 2.3–17.7) or if the infant is less than 2–3 months of age (OR range 2.4–16.9), regardless of smoke exposure. [6–11] The risk of death with bedsharing also increases when the infant is placed on excessively soft surfaces, such as waterbeds, sofas, and armchairs (OR range 5.1–66.9),[6, 9, 10, 12, 13] when soft bedding accessories such as pillows or comforters are used (OR range 1.0–2.8),[13, 14] or when the parent has consumed alcohol (OR range 1.66–1.95).[7, 15] Furthermore, infant death while bedsharing occurs twice as often in African-Americans.[16–18] The American Academy of Pediatrics (AAP) recommends that infants sleep in the parents' room on a separate sleep surface and avoid bedsharing. However, many families do not follow these guidelines; 30–76% of parents report bedsharing routinely, [5, 19, 20] and these rates are higher in African-American families.[5, 19, 21]

While some parents bedshare because it's more convenient or to maximize comfort, the primary reason for bedsharing is the perception that it will keep the infant safe.[22] Our prior work has found that parents believe that their own vigilance is the only way that they can keep their infant safe,[23] and that the close proximity of bedsharing allows them to maintain vigilance, even while sleeping.[22] Further, we found that African-Americans have a low degree of self-efficacy with regards to SIDS risk reduction; as SIDS is the result of "fate" or "God's will," they do not believe that their actions can make a difference in whether SIDS occurs.[23, 24] Conversely, African-American parents have a high degree of self-efficacy with regards to infant suffocation, seeing this as a preventable cause of death. [23, 24] However, most health care professionals discuss safe sleep only as a SIDS risk

reduction strategy, and it is yet unclear whether messages emphasizing prevention of suffocation will be more effective in modifying behavior.

We therefore conducted a randomized controlled trial to evaluate the impact of specific health messages on parental decisions regarding parent-infant bedsharing. Specifically, we hypothesized that parents receiving messages about the prevention of suffocation would report less bedsharing than families who only received the standard message about SIDS risk reduction.

Methods

We conducted a randomized, controlled trial of English-speaking, self-identified African-American women with a newborn infant between June 2011 and November 2013. This was part of a larger randomized controlled trial evaluating the impact of specific health messages on infant care decisions. We focused on African-American mothers because this is the only group for whom there are data about parental self-efficacy with regards to SIDS and infant suffocation,[23, 24] and because the majority of sleep-related infant deaths occur in African-Americans.[3] Women were excluded if the infant had congenital anomalies (e.g., myelomeningocele) precluding use of supine positioning, was preterm (<36 weeks) at birth, was hospitalized for >1 week, or had ongoing medical problems requiring subspecialty care. To minimize study contamination if hospital roommates were in different groups, participants were randomized by hospital room number into 2 groups. The control group received standard messaging with AAP-recommended safe sleep practices for SIDS risk reduction only. The intervention group received enhanced messaging with AAP-recommended safe sleep practices for both SIDS risk reduction and suffocation prevention. After written informed consent was obtained, a brief survey was completed, with questions asked about baseline self-efficacy, knowledge of and attitudes towards safe sleep recommendations, current intent with regards to safe sleep recommendations, and demographics, including mother's age and education, marital status, infant gender, presence of other adults in the home, including the other parent and any senior caregivers (such as a grandmother) in the home, as these variables have been shown to impact on risk for SIDS/sleep-related death[25, 26] or on parental behaviors with regards to the infant sleep environment.[27, 28] Mothers then received written and verbal safe sleep information with the group-specific terminology. Mothers in the standard message group received the NICHD Safe Sleep for Your Baby brochure, and mothers in the enhanced message group were provided with a brochure discussing prevention of suffocation, strangulation, and SIDS. All mothers were recruited before discharge from the birth hospital.

Research staff blinded to the study group assignments contacted participants for follow-up telephone interviews at 3 time points: 1) within 2 weeks of the infant's birth (to assess effectiveness of education received), 2) when the infant was 2–3 months old (when infants are at highest risk for SIDS and sleep-related deaths[3, 29–31] and when parents are most likely to change infant sleep location,[25, 32, 33]), and 3) when the infant was 5–6 months old (to assess continued parental adherence with sleep location recommendations as the risk for sleep-related deaths begins to decline[34]). At each follow-up interview, mothers were asked about knowledge of and attitudes towards safe sleep recommendations, degree of self-

efficacy with regards to preventing sleep-related death, and current infant care practices. Mothers were informed at recruitment about incentives for participation, including a developmentally appropriate toy or book at the time of recruitment, \$10 gift card at the end of the first 2 followup interviews, and \$50 gift card at the end of the third interview. This study was approved by the institutional review boards of MedStar Washington Hospital Center and Children's National Medical Center.

The primary outcome variable was infant sleep location, which was categorized as bedsharing, roomsharing without bedsharing (referred to hereafter as roomsharing), and other room. We asked about sleep location in the past week and the night prior to each interview. Asking about both usual (in the past week) and last night practices is well established in SIDS research, as this encourages parents to be forthcoming about actual sleep practices when the practice is inconsistent with safe sleep recommendations.[5, 13] Responses about usual and last night practices were analyzed separately. Baseline characteristics between groups were expressed as means and frequencies to evaluate expected similarities and any differences that would need to be taken into account in multiple variable analyses. Repeated measures analyses of covariance were conducted to estimate the time-averaged and time-specific changes in knowledge, attitudes, and practice in the 2 groups, controlling for baseline levels of each outcome. Longitudinal logistic regression models were conducted to assess the post intervention groupwise differences in sleep location over time measured across 3 time points. Subsequent models also controlled for socioeconomic status and feeding mode, which have been associated with sleep location in prior studies.[35, 36] Measuring time-averaged groupwise differences allowed for full use of the repeated assessments to enhance study power and precision of estimates. Variance estimates were adjusted to account for correlation among measurements on the same person.

Our power calculation was based on current prevalence estimates of 60% for bedsharing.[20, 37] We further estimated a 10% decrease in bedsharing in the intervention group. We used a repeated measures design, with 3 repeated assessments per person over time, and assumed that the repeated measurements within a person would be correlated at 70%. Our sample size of n=637 at the final followup interview was adequate to achieve statistical power of 90% at a 2-tailed alpha level of 0.05 to detect a difference of 10%.[38–40]

Results

A total of 1194 mothers were recruited and received the assigned intervention, and 637 (53.4%) finished all 3 follow-up interviews (Figure 1). The mean infant ages at the time of enrollment and the final interview were 1.5 days and 6.1 months, respectively. Mean maternal age was 26.4 years (range, 18–43). Among the mothers, approximately three-quarters were unmarried, >90% had graduated from high school or had earned a GED, and more than half received WIC and Medicaid benefits. The infant's father and grandmother lived in the home of 52.9% and 28.7% of the participants, respectively. Mothers who completed all 3 follow-up interviews were more likely to be ≥30 years of age, to have attended technical/vocational school or a 4 year college, and to have private medical insurance. Mothers in the standard and enhanced messaging groups were similar in

demographic characteristics, both at enrollment and at completion of all 3 follow-up interviews (Table 1).

Assignment to receive standard *versus* enhanced messaging had virtually no impact on sleep location. At 2–3 weeks of age, 18.3% in the standard group and 17.1% in the enhanced group were reporting usual bedsharing; at the 6-month follow-up, 28.3% and 23.9% in the standard and enhanced groups, respectively, were reporting usual bedsharing, and 17.8% and 15.1%, respectively, reported bedsharing the past night. Infants spent 1–2 nights per week bedsharing at all 3 time points, and this did not change with group assignment.

In the univariate analyses, mothers were less likely to bedshare at all three time points if they had the definite belief that bedsharing increased the risk of SIDS ($p<0.0001$) or suffocation ($p<0.0001$). For example, at 2–3 weeks, 19.3% of bedsharing mothers definitely believed that bedsharing increased the risk of SIDS, compared with 58.2% of mothers who roomshared. Mothers were also less likely to bedshare if they were definitely confident in their ability to protect their infant from SIDS ($p<0.0001$) or suffocation ($p<0.0001$), but only at 2–3 weeks and 2–3 months. By 5–6 months, maternal self-efficacy to protect against SIDS or suffocation was similar for mothers who bedshared or roomshared. These beliefs did not change with group assignment.

When mothers were asked to describe strategies that they used to protect their infant against SIDS, mothers who roomshared were more likely to cite supine placement (85.9% vs 61.4%, $p<0.0001$), placement of the infant in crib/playpen (73.0% vs. 15.8%, $p<0.0001$), and avoidance of soft bedding in crib (57.7% vs. 21.1%, $p<0.0001$), while bedsharing mothers were more likely to cite placing the infant in their bed (35.1% vs. 1.2%, $p<0.0001$). Similarly, when mothers were asked to describe strategies that they used to protect their infant against suffocation, mothers who roomshared were more likely to place the infant supine (82.7% vs 57.9%, $p<0.0001$), place infant in crib/playpen (69.4% vs 17.5%, $p<0.0001$), and keep soft bedding out (71.6% vs 26.3%, $p<0.0001$). Bedsharing mothers were more likely to put the infant in their bed (29.8% vs. 0.8%, $p<0.0001$).

After controlling for the baseline sleep location status, feeding mode (breast, formula, or both), WIC status, and educational status, there was a slight but significant increase with infant age in both usual (aOR 1.005 [95% CI 1.003, 1.006]) and last night (aOR 1.004 [95% CI 1.002, 1.007]) bedsharing (Table 2). Group assignment did not impact on sleep location; almost 20% of infants in the standard group and enhanced group usually bedshared at 2–3 weeks of age; this increased to approximately one-third by 2–3 months. It remained at that level for the standard group but decreased to 23.9% in the last week and 15.1% last night for the enhanced group by 5–6 months of age ($p=0.24$ for usual bedsharing and $p=0.49$ for usual bedsharing) (Figure 2). Further, maternal belief that bedsharing increased the risk of SIDS or suffocation declined over 6 months ($p<0.001$); this was not affected by group assignment. Mothers were indeed more likely to bedshare to protect against SIDS or suffocation as the infant became older ($p<0.001$); again, this did not change with group assignment.

Discussion

In this randomized controlled trial of health messaging targeted towards African-American mothers, receiving an enhanced message about SIDS risk reduction and suffocation prevention did not impact parental behavior with regards to infant sleep location. Bedsharing rates were similar and not statistically different in the two messaging groups.

In our univariate analysis, mothers were more likely to roomshare if they definitely believed that bedsharing increased the risk of SIDS ($p<0.0001$) or suffocation ($p<0.0001$). However, providing an enhanced health message did not increase the likelihood that parents would believe that bedsharing increased the risk of SIDS.

Maternal belief that bedsharing increased the risk of SIDS or suffocation declined similarly in both groups over 6 months. In fact, mothers in both groups were more likely to bedshare to protect against SIDS or suffocation as the infant became older. Other studies have shown that mothers have a strong belief that their own vigilance will protect the infant from harm, [23] and bedsharing is often used as a strategy to maintain vigilance while sleeping.[22] This confidence in one's vigilance as a protective mechanism may alter a parent's perception of risk with regards to bedsharing and may increase the parent's belief that no harm can come to the infant while bedsharing.[41, 42] Indeed, mothers who bedshared were more likely to cite placement of the infant in their own bed as a strategy to protect the infant from SIDS and suffocation. In addition, it is possible that mothers become more comfortable with bedsharing if they have bedshared in the past without any adverse outcomes. This may also explain why there were parents who bedshared even when they believed that bedsharing could increase their infant's risk of SIDS or suffocation.

There did not seem to be any detrimental effects of delivering an enhanced safe sleep message. Staff did not feel that it took longer to provide the enhanced messaging, as compared to the standard messaging. We did not measure maternal stress or anxiety in our follow up interviews, but there was no difference in reported vigilance in the two groups.

Our study is limited by the characteristics of our study population; mothers were recruited from a single geographic area, were less likely to attend college, and more likely to be unmarried and to have Medicaid health insurance than the national norms of African-American women.[43] In addition, our attrition rate over 6 months was 47%, despite concerted efforts with different modalities (phone, email, text messaging) to contact mothers for follow-up interviews. Although we accounted for high attrition in our recruitment targets, the mothers who completed all interviews were demographically different than those who did not complete the interviews, in that they were older, better educated, and more likely to have private insurance. As these mothers are demographically less likely to bedshare,[36] this attrition rate may have skewed our results, somewhat affecting generalizability. However, the lack of difference in demographic characteristics of mothers in the standard or enhanced messaging groups at enrollment and the third follow-up interview suggests that our results are not the result of selection bias. During the data collection period, there were no highly publicized infant deaths. The NICHD Safe to Sleep campaign, which supersedes the Back to Sleep campaign and which includes strategies to

prevent other sleep-related causes of infant death, including accidental suffocation and strangulation, began in late 2012. However, we believe that this campaign had minimal effect on our results, as there were no widely publicized public service announcements or brochures distributed. Finally, this study has limitations inherent in parental reporting. There was no direct observation of sleep practices, and mothers may have been reluctant to admit to bedsharing, thus leading to an underestimate of the incidence of bedsharing. In addition, we acknowledge a potential social desirability bias, in that mothers receiving the enhanced message may have had a differential reporting tendency compared to the mothers receiving the standard message. Questions about self-efficacy may have also affected maternal willingness to be forthcoming about actual practices. However, if any of these factors had impacted on our results, we would have anticipated that mothers in the enhanced message group were less likely to report bedsharing. However, our rates of bedsharing were comparable to those seen in other surveys,[20, 21] and so we believe that these responses are fairly representative of the general African-American population.

In conclusion, we found that African-American mothers who received an enhanced message about SIDS risk reduction and suffocation prevention were no less likely to bedshare with their infants. As African-American families are less likely to adhere with recommendations to roomshare without bedsharing, efforts to find health messages that will resonate with families must continue. These health messages must take into account the strong impact of maternal beliefs in bedsharing as a strategy to maintain vigilance while asleep and protect the infant from harm. In addition, further work should focus on the interplay between parental self-efficacy, beliefs, and practices.

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Abbreviations

AAP	American Academy of Pediatrics
CI	Confidence interval
ICD-10	International Classification of Diseases, 10 th revision
SIDS	Sudden infant death syndrome
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children

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Figure 1.
Flow diagram of study

Figure 2.

Trend in sleep location in the past week and last night by infant age and by group assignment

Table 1
Demographic Characteristics of Standard Messaging and Enhanced Messaging Groups at Enrollment and Final Interview

Characteristic	Enrollment			Final interview		
	Standard (n=625)	Enhanced (n=569)	P-value	Standard (n=332)	Enhanced (n=305)	P- value
Maternal age			0.54			0.10
18–24 years	270 (43.2%)	251 (44.1%)		143 (43.1%)	150 (49.2%)	
25–29 years	164 (26.2%)	141 (24.8%)		75 (22.6%)	75 (24.6%)	
30–34 years	113 (18.1%)	98 (17.2%)		64 (19.3%)	38 (12.5%)	
35 years	63 (10.1%)	62 (10.9%)		39 (11.7%)	32 (10.5%)	
Did not answer	15 (2.4%)	17 (3.0%)		11 (3.3%)	10 (3.3%)	
Maternal marital status			0.36			0.75
Married	121 (19.4%)	119 (20.9%)		69 (20.2%)	64 (21.0%)	
Never married	498 (79.7%)	447 (78.6%)		260 (78.9%)	240 (78.7%)	
Divorced/separated	6 (1.0%)	2 (0.4%)		2 (0.6%)	1 (0.3%)	
Widowed	0 (0.0%)	1 (0.2%)		1 (0.3%)	0 (0.0%)	
Maternal Education			0.65			0.42
Did not graduate from high school	79 (12.6%)	70 (12.3%)		34 (10.2%)	42 (13.8%)	
Grade 12 (high school graduate)/GED	234 (37.4%)	232 (40.8%)		132 (39.8%)	122 (40.0%)	
Some college/technical/vocational school	200 (32.0%)	180 (31.6%)		107 (32.2%)	100 (32.8%)	
4 year college graduate	112 (17.9%)	87 (15.3%)		59 (17.8%)	41 (13.4%)	
Infant sex			0.62			0.28
Male	312 (49.9%)	276 (48.5%)		172 (51.8%)	145 (47.5%)	
Female	313 (51.1%)	293 (51.5%)		160 (48.2%)	160 (52.5%)	
Receive WIC benefits			0.50			0.48
No	270 (43.2%)	237 (41.7%)		140 (22.0%)	121 (19.0%)	
Yes	355 (56.8%)	331 (58.2%)		192 (30.1%)	183 (28.7%)	
Did not respond	0	1 (0.2%)		0 (0.0%)	1 (0.2%)	

Characteristic	Enrollment			Final interview		
	Standard (n=625)	Enhanced (n=569)	P-value	Standard (n=332)	Enhanced (n=305)	P-value
Medical Insurance status			0.64			0.52
Medicaid or no insurance	389 (32.6%)	357 (29.9%)		210 (63.3%)	188 (61.6%)	
Private insurance	236 (19.8%)	212 (17.7%)		122 (36.7%)	117 (38.4%)	
Infant's father lives in home	318 (50.8%)	270 (47.5%)	0.24	174 (52.4%)	163 (53.4%)	0.80
Infant's grandmother lives in home	176 (28.2%)	171 (30.1%)	0.47	98 (29.5%)	85 (27.9%)	0.64
Number of people in the household (including infant) (mean)	4.51	4.55	0.37	4.29	4.40	0.73
Sleep location in past week (usual)						
Roomsharing without bedsharing	563 (90.1%)	516 (90.7%)	0.88	254 (76.5%)	249 (81.6%)	0.20
Bedsharing	20 (3.2%)	15 (2.6%)		94 (28.3%)	73 (23.9%)	
Other room	15 (2.4%)	12 (2.1%)		27 (8.1%)	17 (5.6%)	
Did not respond	24 (3.8%)	21 (3.7%)		0 (0.0%)	0 (0.0%)	
Sleep location last night						
Roomsharing without bedsharing	n/a	n/a		233 (70.2%)	231 (75.7%)	0.36
Bedsharing				59 (17.8%)	46 (15.1%)	
Other room				26 (7.8%)	17 (5.6%)	
Did not respond				0 (0.0%)	0 (0.0%)	

Table 2

Longitudinal logistic regression model^{*}, with odds ratios for group assignment and infant age

	2-3 weeks of age (N=958)		2-3 months of age (N=716)		5-6 months of age (N=637)		Group (standard vs enhanced)		Infant age	
	Standard (N=502)	Enhanced (N=456)	Standard (N=369)	Enhanced (N=347)	Standard (N=332)	Enhanced (N=305)	OR	p-value	OR	p-value
Usual Bedsharing										
Yes	92 (18.3%)	78 (17.1%)	114 (30.9%)	98 (28.2%)	94 (28.3%)	73 (23.9%)	0.80 (0.56, 1.16)	0.24	1.005 (1.003, 1.006)	<0.001
Bedsharing last night										
Yes	59 (11.8%)	46 (10.1%)	56 (15.2%)	58 (16.7%)	59 (17.8%)	46 (15.1%)	0.84 (0.51, 1.37)	0.49	1.004 (1.002, 1.007)	<0.001
Belief that bedsharing increases SIDS risk										
Definitely no or doubtful	87 (17.5%)	75 (16.6%)	77 (20.8%)	63 (18.3%)	89 (26.9%)	52 (17.3%)	1.23 (0.91, 1.68)	0.18	0.99 (0.995, 0.997)	<0.001
Unsure	29 (5.8%)	19 (4.2%)	14 (3.8%)	8 (2.3%)	9 (2.7%)	6 (2.0%)				
Possibly or definitely yes	382 (76.7%)	358 (79.1%)	278 (75.4%)	273 (69.4%)	233 (70.4%)	243 (60.7%)				
Belief that bedsharing increases suffocation risk										
Definitely no or doubtful	39 (7.8%)	35 (7.7%)	40 (10.8%)	25 (7.2%)	44 (13.2%)	29 (9.5%)	1.13 (0.86, 1.49)	0.39	0.99 (0.993, 0.996)	<0.001
Unsure	11 (2.2%)	6 (1.3%)	2 (0.5%)	4 (1.1%)	4 (1.2%)	2 (0.7%)				
Possibly or definitely yes	447 (90.0%)	414 (90.9%)	327 (88.6%)	317 (91.7%)	284 (85.5%)	174 (89.8%)				
What things do you do to protect your baby from SIDS?										
Put baby in crib	344 (68.5%)	304 (66.7%)	244 (66.1%)	222 (64.0%)	215 (64.8%)	209 (68.5%)	0.93 (0.74, 1.17)	0.53	1.0 (0.99, 1.001)	0.98
Put baby in my bed	31 (6.2%)	25 (5.5%)	31 (8.4%)	27 (7.8%)	38 (11.4%)	27 (8.8%)	0.83 (0.52, 1.35)	0.46	1.01 (1.003, 1.008)	<0.001
Keep an eye on the baby	231 (46.0%)	206 (45.2%)	126 (34.2%)	145 (41.8%)	126 (37.9%)	107 (35.1%)	1.07 (0.87, 1.31)	0.51	0.99 (0.997, 0.999)	0.003

	2–3 weeks of age (N=958)		2–3 months of age (N=716)		5–6 months of age (N=637)		Group (standard vs enhanced)		Infant age	
	Standard (N=502)	Enhanced (N=456)	Standard (N=369)	Enhanced (N=347)	Standard (N=332)	Enhanced (N=305)	OR	p-value	OR	p-value
What things do you do to protect your baby from suffocation?										
Put baby in crib	323 (64.3%)	290 (63.6%)	233 (63.1%)	202 (58.2%)	206 (62.0%)	194 (63.6%)	0.93 (0.75, 1.17)	0.56	1.0 (0.999, 1.001)	0.98
Put baby in my bed	21 (4.2%)	20 (4.4%)	19 (5.2%)	19 (5.5%)	22 (6.6%)	24 (7.9%)	1.17 (0.72, 1.91)	0.52	1.01 (1.002, 1.008)	0.001
Keep an eye on the baby	258 (51.4%)	204 (44.7%)	137 (37.1%)	155 (44.7%)	124 (37.4%)	106 (34.8%)	0.94 (0.79, 1.12)	0.49	0.99 (0.996, 0.999)	<0.001

* Controlling for baseline sleep location status, feeding mode, WIC status, and educational status