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# Mother's knowledge and attitudes to SIDS risk reduction messages: results from a UK survey

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# ABSTRACT

## OBJECTIVE:

To investigate mothers' knowledge of reducing the risks for Sudden Infant Death Syndrome (SIDS) and attitudes towards safer sleep practices.

## DESIGN AND SETTING

A cross-sectional survey was carried out in deprived areas of Bristol, UK. Recruitment took place in 2014 at local health-visitor led baby clinics.

## PARTICIPANTS

Of 432 mothers approached, 400 (93%) completed the face to face survey. Participants with infants at 'higher' risk of SIDS (using an algorithm based on a previous observational study) were compared to those at 'lower' risk.

## MAIN OUTCOME MEASURES

The survey asked participants to recall 3 SIDS risk reduction strategies (unprompted), and scored responses to 14 SIDS risk-related infant sleep scenarios (prompted).

## RESULTS

Overall, 48/400 (12%) mothers were classified as higher risk. Mothers in the higher risk group were less likely to breastfeed (multivariate OR=3.59 [95% CI: 1.46-8.86]), less likely to be able to cite two or more unprompted correct SIDS risk reduction strategies (multivariate OR=2.05 [95% CI: 1.02-4.13]) and scored lower on prompted safe sleep scenarios overall.

Notably, only 206/400 (52%) of all mothers surveyed, (33% in the higher risk group) from these deprived areas in Bristol identified infant sleep position as a risk reduction strategy for SIDS, despite 25 years of campaigns.

## CONCLUSIONS

Mothers in the higher risk group were disadvantaged when it came to some aspects of knowledge of SIDS risk reduction and attitudes to safer sleep. The initial 'Back-to sleep' message that dramatically reduced these deaths a generation ago needs more effective promotion for today's generation of mothers. (250 words)

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### **WHAT IS KNOWN ON THIS TOPIC:**

- Advice for reducing the risk of Sudden Infant Death Syndrome (SIDS) by modifying the infant sleep environment has led to significant reductions in the number of babies who die.
- The highest burden of SIDS now lies with the most deprived families in society, where rates remain higher than in the general population.
- Little is known about whether this group know more or less about the risks for SIDS or their attitudes towards SIDS risk reduction messages.

### **WHAT THIS STUDY ADDS:**

- A survey comparing mothers with babies at higher risk of SIDS gave insight into differences in knowledge of safe sleep for this group.
- Mothers with infants at higher risk of SIDS demonstrated reduced knowledge of SIDS risk factors.
- Regardless of risk status, just over half of the mothers in this survey identified infant sleep position as a strategy to reduce the risk of SIDS, despite 25 years of campaigning.

## **INTRODUCTION**

Sudden Infant Death Syndrome, or SIDS, is the unexpected death of a baby which remains unexplained after a thorough investigation.<sup>1</sup> SIDS is the second leading cause of death for babies aged 1 month to 1 year in England and Wales.<sup>2</sup> In 2014, there were 212 unexplained infant deaths in England and Wales, a rate of 0.3 deaths per 1,000 live births.<sup>3</sup> Much higher rates of SIDS in the 1970s and 1980s (2.3 deaths per 1000 live births, in 1988)<sup>4</sup> led to a concerted effort to identify modifiable risk factors and translate these into advice for parents. Associations between SIDS and the prone sleeping position, smoking during pregnancy and overheating led to educational campaigns for parents, the successful implementation of which led to a significant decline in the SIDS rates over the last 25 years. The only routine, national SIDS risk reduction intervention in the UK is currently placed within the role of the midwife and health visitor. This contact is usually in the form of a brief face to face discussion with mothers who have either recently given birth, or who are attending ante-natal classes where information on safe sleep is included.

It is argued that tailored interventions to improve adherence to safe sleep principles would protect infant lives, however little is known about the knowledge and attitudes towards SIDS risk reduction advice among families most at risk. It is imperative that we seek to understand how gaps in

knowledge and understanding can be bridged if we are to be effective in supporting families to make safe infant care decisions consistently.

In order to investigate current knowledge and attitudes of SIDS risk reduction advice, a face to face survey of mothers of young infants was carried out in deprived areas of Bristol, UK.

## METHODS

A cross sectional survey measuring knowledge of SIDS risk reduction strategies and attitudes to infant sleep statements was administered to mothers attending health visitor led baby clinics at the time of one of their baby's routine well-baby clinic visits in the first six months after birth. The study area comprised six deprived neighbourhoods of Bristol, as defined by the 2011 census data. The six areas were all in the most deprived 25% for England with several parts of each area in the lowest 1%. A favourable opinion was received for the study on the 2nd October 2013 (ref: 13/WM/0403) by the West Midlands NHS Research Ethics Committee.

A scoring system to identify families with infants at higher risk of SIDS was developed from the CESDI SUDI study<sup>5,6</sup> and has subsequently been used to recruit higher risk control families in a more recent study.<sup>7</sup> The significant predictive factors for higher risk families modelled from demographic characteristics around the time of birth included maternal age less than 26 years, smoking during pregnancy, third or subsequent live birth and social class IV (Lower supervisory and technical occupations), V (Semi-routine and routine occupations) or never employed. Higher risk families were defined as those having at least 3 of these four factors. The scoring system showed that 42% of the SIDS cases could be predicted to occur in this "higher risk" group which comprised 8% of the population.<sup>5</sup>

In the current survey, occupation was not used to determine social class, instead the full postcode was used to ascertain the Index of Multiple Deprivation (IMD) score. Social deprivation in this context was defined as mothers with postcodes in the most deprived quartile for England (lowest 25%).

A review of the literature led to the inclusion of a question on knowledge of SIDS risk reduction practices, the wording for which was taken directly from work carried out by Kemp and colleagues in Sydney, Australia.<sup>8,9</sup>:

“Can you tell me three things you can do to reduce the risk of cot death/SIDS (keep your baby safe)?”

This was the single question for our unprompted part of the survey and to avoid undue influence from the remaining survey questions was asked first. Responses were coded as accurate (in line with current safe sleep advice in the UK), inaccurate (not in line with current UK advice) but not unsafe, or inaccurate and potentially unsafe. In the UK, bed-sharing is only advised against in hazardous circumstances whilst other countries (particularly the US) have a blanket recommendation against bed-sharing. Given that social media has no national boundaries we have taken the conservative approach of mentioning bed-sharing in any circumstance as a risk factor to be an accurate response.

The prompted part of the survey asked mothers to respond to 14 statements about infant sleep. The statements were each linked to a message about safe sleep, found in the current advice from The Lullaby Trust, the main SIDS charity in England and Wales. Responses were made on a 5-item Likert scale ranging from ‘strongly agree’ to ‘strongly disagree’. Responses were coded as either correct or incorrect, based on the current advice. A list of the statements and their correct responses can be found in Table 1.

The cross-sectional design provided a snapshot of knowledge and attitudes from which it would be possible to compare groups of those with a higher or lower number of risk factors.

#### Statistical Methodology

Variables were dichotomised where appropriate and Odds Ratios with 95% Confidence Intervals were calculated with corresponding p values. The Chi squared test was used for categorical data and Fisher Exact test with expected cell counts less than five. Mann-Whitney U tests were used for continuous data where the assumption of normality was not observed, otherwise t-tests were used. Logistic regression was conducted to investigate factors associated with higher and lower risk groups. The backward stepwise procedure was used for variable selection, variables univariately significant at the 10% level were included and remained in the model if significant at the 5% level.

Assuming awareness of SIDS risk factors is around 80% in the population and a 6:1 ratio of lower risk to higher risk families, a survey of 308 families (44 higher risk and 264 lower risk) would give us 80% power at the 5% significance level to detect a difference of 20% or more in the higher risk group. A survey of 400 families would increase that power to 88%.

# RESULTS

## **Ascertainment and characteristics of the respondents**

In total, 432 mothers were approached. From those, 403 (93.1%) accepted and 400 (92.3%) completed the survey. Mothers' ages ranged from 16-49 years with a median of 28 years (Inter Quartile Range (IQR) 25-32 years). Babies' ages ranged from 6 days to 29 weeks, with a median of 13 weeks (IQR 8-18 weeks).

Two thirds of babies (263/400 65.8%) were formula fed, just over a quarter (105/400 26.2%) were exclusively breastfed and the remaining 32/400 (8%) were fed both breastmilk and formula.

About half of all mothers (209/400 52.3%) said they were worried about SIDS. Most mothers recalled a conversation about safe sleep in this pregnancy (93.3%) with either a health visitor (62.5%) or midwife (67.3%). Most mothers (78.5%) said this was a useful discussion.

The majority of mothers (60%) lived in the lowest quartile (most deprived 25%) for deprivation reflecting the study area chosen and having the intended effect of identifying a slightly larger proportion of mothers (48 mothers or 12%) with infants at 'higher risk' for SIDS.

## **Characteristics of the risk groups**

Characteristics of study respondents and their risk groups are shown in Table 2. As per definition, significantly more of the higher risk group mothers were younger, had larger families, smoked and lived in deprived areas. Breastfeeding was three times more likely in the lower risk group ( $p < 0.001$ ), despite little difference in babies' age distributions. There was little difference between the two groups regarding being worried about SIDS, recalling a conversation about safe sleep with a health professional or finding this discussion useful. There was no difference in infant age between the groups whilst the prevalence of infant prematurity and low birthweight were slightly higher in the higher risk group although this did not reach statistical significance.

## **Responses to the unprompted knowledge question**

Out of all 400 participants, 25 (6.3%) did not name any correct strategies for SIDS risk reduction, 42 (10.5%) named 1 correctly, 116 (29%) named 2 correctly and 217 (54.3%) could name 3 or more correct strategies. There were 13 responses that could be grouped and coded as accurate (Table 3), 29 inaccurate but not unsafe responses (Table 4) and none inaccurate and unsafe. Overall, the most common accurate response was mentioning sleep position (either to sleep baby on the back or not

on the front), with 52% of the sample naming this strategy. The proportion mentioning infant sleep position amongst the higher risk mothers (33%) was significantly ( $p=0.007$ ) lower than the lower risk group (54%). Placing the baby in the 'feet to foot' position (a strategy of placing the infant's feet at the foot of the cot to prevent infants wriggling under the covers) was the second most common strategy, with just under half (47%) of the whole sample mentioning this in their answer. Mothers in the higher risk group, which proportionally had more smokers were more likely to mention not smoking ( $p=0.04$ ) as a risk reduction strategy. About a quarter (26.3%) of the sample stated that not bed-sharing could reduce the risk of SIDS (including those who were specific about the circumstances which make bed-sharing more risky), with no significant differences between the two groups ( $p=0.6$ ).

Mothers in the lower risk group were able to list more correct strategies, with 85% in this group being able to mention 2 or more compared with 73% in the higher risk group ( $p=0.04$ ). A clear gradient was found (Table 5) for decreasing scores in the higher risk group compared with mothers in the lower risk group. While there was an overall effect of increasing age on increasing knowledge scores ( $p=0.002$ ) a sensitivity analysis found that the differences in age did not explain the differences we found between the high and low risk groups. The mean scores for younger and older mothers in each risk group (using the 50<sup>th</sup> percentile as a cut off in each group) were compared. Even the mean score for older mothers in the higher risk group (2.19) was still lower than the mean score for younger mothers in the lower risk group (2.32).

### **The prompted sleep statement scale**

Most mothers (91.5%) agreed that babies should always be put down for sleep on their backs, yet paradoxically almost half (49.8%) agreed that side sleeping was acceptable (Table 6). This was partly explained by the age of the infant at the time of the survey with 44% of mothers of babies under 4 months ( $N=191$ , 48%) agreeing that side sleeping was ok vs 56% of mothers with babies over 4 months ( $N=209$ , 52%), although this difference was not statistically significant ( $p=0.14$ ). There was almost unanimous (99.8%) agreement that smoking around babies was not acceptable, but fewer mothers were able to agree that quitting smoking during pregnancy was always best (82.2%).

Two statements had significantly different responses between higher and lower risk groups. Mothers in the higher risk group were more likely to agree that tummy sleeping was okay ( $p=0.04$ ) and more likely to agree that if a mother smokes during pregnancy, she should not quit until after the baby



was born ( $p < 0.001$ ). There was also weak evidence ( $p = 0.06$ ) that mothers in the higher risk group were less likely to agree that if a mother smokes, she should not bring the baby into bed with her.

### **The 'sleep statement score'**

Calculating the number of correct responses to the sleep statements given by each mother, produced a 'sleep statement score'. Figure 1 shows the distributions for the sample as a whole, and each distribution for the higher and lower risk groups.

A Mann Whitney-U test between the two distributions found a significant difference between higher and lower risk groups ( $p = 0.004$ ).

The highest quartile was used as a reference group to indicate 'higher knowledge', a cut off of 13 or 14 out of 14. Mothers in the higher risk group were less likely to score highly, with a clear dose response suggesting increasing differences the lower the score (Table 7). There was a significant difference between the scores in the first and last quartiles between the two risk groups ( $p = 0.01$ ).

### **Logistic regression**

The predictive model (Table 8) suggested higher risk mothers were less likely to breastfeed ( $p = 0.010$ ), had fewer sources to gather SIDS prevention information ( $p = 0.04$ ) and were less likely to identify 2 or more SIDS risk reduction practices correctly ( $p = 0.072$ ). Interestingly, the majority of the mothers (83%) in the higher risk group smoked and mothers in this group were more likely to identify smoking as a risk factor for SIDS ( $p = 0.007$ ) but paradoxically less likely to agree that quitting smoking during pregnancy was best ( $p < 0.001$ ).

## **DISCUSSION**

Mothers in the higher risk group had less knowledge of some of the main risk factors surrounding SIDS. They were less likely to cite back-sleeping as a risk reduction technique, more likely to agree that tummy sleeping was okay and less likely to be able to cite two or more correct risk reduction strategies. Regardless of risk status nearly half of the mothers in this survey did not cite sleep positioning as a risk reduction strategy for SIDS. The majority of mothers in the higher risk group were smokers and were more likely to cite not smoking as a risk reduction strategy. However, they were also less likely to concede that smoking should cease if continued into pregnancy.

In the survey most of the mothers could name two or more correct SIDS risk reduction strategies without prompting, but this was significantly more common for the lower risk group (over three

quarters) compared to the higher risk group (less than two thirds). While there was a clear effect of increasing age being related to increasing knowledge scores, we found that this did not explain the differences in knowledge seen between the lower and higher risk groups, suggesting that poor knowledge was observed in the older as well as the younger high risk mothers.

In terms of predictors of maternal SIDS knowledge overall, other studies have shown that fewer years of education as well as other socio economic factors predict lower SIDS knowledge.<sup>10,11</sup> This finding compares with studies that have used the same unprompted knowledge question previously. Kemp, Harris and Chavez<sup>8</sup> in 2006 found that 68.2% of Australian born women living in a disadvantaged community could correctly name two or more SIDS risk reduction strategies. Similarly, Knight et al<sup>9</sup> in a study from Australia in 2013, found that 66.2% of 148 mothers in an urban Aboriginal community could do the same.

Both 'sleep on back' and 'not too hot' are messages from the original 1991 campaign and have been consistently promoted by all major SIDS risk reduction interventions in the UK. It is worth noting that many of the mothers who took part in this research would have been infants during or just after the original UK 'Back to Sleep' campaign. The feet to foot message, on the other hand, was the second most commonly cited risk reduction strategy in this group. This message came about in response to findings that head covering<sup>12</sup> (infants found with bedclothes covering their head or face during sleep) was a significant risk for SIDS, and makes intuitive sense as a way to prevent babies wriggling under blankets. It is a simple strategy to adopt, which may explain why it has been so easily adopted.

The finding that more mothers in the higher risk group agreed with the statement that pregnant women who smoke should not quit until after the baby is born is of concern, especially as more mothers in this group were smoking when their babies were a few months old. At the time of the survey several mothers indicated that they had heard this advice from health professionals and that it had something to do with the stress of quitting having a more negative impact on the foetus than the benefits of becoming smoke-free.

### **Strengths and limitations**

The ascertainment rate for the survey was very high (92.3%) and mothers were keen to take part. Having one researcher meant that inter-rater reliability was not an issue. The enthusiasm of the mothers, the anonymity of the survey, the face- to- face approach and the single researcher all meant that missing data were kept to a minimum.

The focus on areas of high deprivation meant that mothers at higher risk and usually the most difficult group to include in this type of survey were over represented in the sample. Recent statistics on unexplained infant deaths in England and Wales provide the death rates for mothers aged 20-24 (0.57 per 1,000 live births), compared with a national rate of 0.30 per 1,000 live births and a Bristol regional rate of 0.33 per 1,000 live births.<sup>13</sup> Focussing on where the incidence is higher keeps the study findings relevant to that population.

As with any cross-sectional survey it is important to note the weaknesses in this type of study design.<sup>14</sup> Non-response bias is common in surveys but does not pose such a risk with the current study due to the face-to-face nature and high ascertainment rate. Exclusion of non-response by those mothers who do not attend baby clinics is a potential problem although health visiting statistics estimate that between 90% and 95% of all mothers attend clinic at least once in the first six months. The health clinic setting may generate responses that health professionals want to hear rather than responses that reflect what actually happens. The survey only included respondents who could speak English and given SIDS in the Bristol area occurs predominantly amongst those of white ethnicity, the study area chosen suggests generalisation of these results would be limited. We also acknowledge that although we reached our target of 400 responses a larger number would have allowed a more detailed analysis of the higher risk group. The inconsistencies in attitudes towards infant sleep position indicate that the way that safer sleep knowledge and attitudes are measured may have an impact on the results, and a recommendation would be for future studies to ask about all three possible sleep positions, rather than just focussing on mothers' awareness of back sleeping.

## **Conclusions**

Reducing the SIDS rate for this group will require an improvement in their understanding of SIDS risk reduction practices but knowledge alone will not be enough if we don't seek to understand more about their decision-making processes.<sup>15</sup> Although SIDS research and the subsequent intervention campaigns over the last 25 years have had tremendous impact we should not become complacent. We have a new generation of mothers many of whom do not seem to recognise the importance of placing infants supine to sleep. Both a wider campaign to remind all mothers of risk reduction strategies and a targeted campaign of higher risk mothers is warranted. Traditional models of health promotion via conversations with a midwife or health visitor may need rethinking in order to allow new innovations to engage families in practices that they feel confident about and that strengthen their ability to cope with the complex challenges of caring for a young baby.

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Table 1: Infant sleep statements and their correct responses

<i>Statement</i>	<i>Correct Response</i>
1. If a baby has a high temperature, they should be wrapped up in extra blankets to keep warm	Disagree
2. It's ok to occasionally sleep on a sofa or armchair with a baby	Disagree
3. If a mother has drunk alcohol she should never bring the baby into her bed for sleep	Agree
4. It's ok to put a baby on their tummy for sleep	Disagree
5. If a baby is born premature or low birthweight, a mother should not bring the baby into her bed for sleep	Agree
6. Babies should always be put down for sleep on their backs	Agree
7. Nobody should smoke near a baby	Agree
8. It's ok to put a baby on their side for sleep	Disagree
9. Babies need to sleep in a room on their own for the first 6 months	Disagree
10. Soft mattresses are safer for babies to sleep on than firm ones	Disagree
11. Breastfeeding is best for babies	Agree
12. If a mother smokes, she shouldn't bring the baby into her bed for sleep	Agree
13. It's a good idea to tuck baby's blankets in tightly for sleep	Agree
14. If a pregnant woman smokes, she shouldn't quit until the baby is born	Disagree

Table 2: Characteristics of study respondents

<i>Characteristic</i>	<i>Number (%) total</i>	<i>Higher Risk for SIDS (%)</i>	<i>Lower Risk for SIDS(%)</i>
Age 25 or under	114/400 (28.5%)	33/48 (68.8%)	81/352 (23.0%)
Three or more children	86/400 (21.5%)	26/48 (54.2%)	60/352 (17.0%)
Mother smokes	66/400 (16.5%)	40/48 (83.4%)	27/352 (7.7%)
Lives in a deprived area <sup>1</sup>	238/400 (59.5%)	47/48 (97.9%)	192/352 (54.5%)
Feel worried about SIDS	209/400 (52.3%)	22/48 (45.8%)	187/352 (53.1%)
Currently Breastfeeding	137/400 (34.3%)	6/48 (12.5%)	131/352 (37.2%)
Recall a discussion about SIDS with HP <sup>2</sup>	373/400 (93.3%)	43/48 (89.6%)	330/352 (93.8%)
Found above discussion useful	314/373 (84.2%)	37/43 (86.0%)	277/330 (84.0%)
Median Infant age (IQR) <sup>3</sup>	13 weeks (8-18 weeks)	14 (14-19)	13 (8-18)
Median Maternal Age (IQR)	28 (25-32)	24 (21-27)	29 (26-32)
Low birthweight (<2.5kg)	18/400 (4.5%)	3/48 (6.3%)	15/352 (4.3%)
Under 37 weeks gestation	31/400 (7.8%)	6/48 (12.5%)	25/352 (7.1%)

<sup>1</sup> Determined using full postcode to ascertain the Index of Multiple Deprivation score – deprived defined as within the most deprived score for 25% of English wards.

<sup>2</sup> HP: Health Professional

<sup>3</sup> IQR: Inter Quartile Range

Table 3: Accurate unprompted responses for SIDS risk reduction by higher and lower risk group

<i>Accurate Response</i>	<i>Total (%)</i>	<i>Higher Risk for SIDS (%)</i>	<i>Lower Risk for SIDS(%)</i>	<i>OR (95% CI)</i>	<i>P-value</i>
<i>Sleep position<sup>1</sup></i>	206/400 (51.5%)	16/48(33.3%)	190/352 (54%)	2.35 (1.24-4.43)	p=0.007
<i>Feet to foot</i>	187/400 (46.8%)	17/48 (35.4%)	170/352 (48.3%)	1.70 (0.91-3.19)	p=0.09
<i>Not too hot</i>	164/400 (41.0%)	17/48 (35.4%)	147/352 (41.8%)	1.31 (0.69-2.45)	p=0.40
<i>No smoking</i>	108/400 (27.0%)	19/48 (39.6%)	89/352 (25.3%)	1.52 (0.28-0.96)	p=0.04
<i>No loose blankets</i>	61/400 (15.3%)	9/48 (18.8%)	52/352 (14.8%)	0.75 (0.34-1.64)	p=0.47
<i>Same room</i>	48/400 (12.0%)	4/48 (8.3%)	44/352 (12.5%)	1.57 (0.54-4.59)	p=0.40
<i>No pillows</i>	21/400 (5.3%)	0/48 (0.0%)	21/352 (5.9%)	N/A	P=0.09*
<i>Do not bed-share</i>	105/400 (26.3%)	14/48(29.2%)	91/352 (25.9%)	1.18 (0.61-2.30)	p=0.62
<i>No sofa cosleeping</i>	15/400 (3.8%)	0/48 (0.0%)	15/352 (4.3%)	N/A	P=0.23*
<i>No alcohol/drugs</i>	12/400 (3.0%)	2/48 (4.2%)	10/352 (2.8%)	0.67 (0.14-3.17)	p=0.64*
<i>No toys in cot</i>	11/400 (2.8%)	3/48 (6.3%)	8/352 (2.3%)	0.35 (0.09-1.36)	p=0.13*
<i>Breastfeed</i>	10/400 (2.5%)	1/48 (2.1%)	9/352 (2.6%)	0.23 (0.15-9.95)	p=1.00*
<i>Use a dummy</i>	10/400 (2.5%)	3/48 (6.3%)	7/352 (2.0%)	0.30 (0.08-1.22)	0.11*

<sup>1</sup> "Sleep on back" and "Not prone for sleep" were combined as "mentioning sleeping position"

\* Fisher Exact p values are used for cells with expected count less than 5.

Table 4: Top 5 inaccurate (but not unsafe) unprompted responses for SIDS risk reduction by risk group

<i>Inaccurate**</i>	<i>Total (%)</i>	<i>Higher Risk for SIDS (%)</i>	<i>Lower Risk for SIDS(%)</i>	<i>OR (95% CI)</i>	<i>P-value</i>
<i>Do not bed-share</i>	87/400 (21.8%)	13/48 (27.1%)	74/352 (21.0%)	0.72 (0.36-1.42)	0.34
<i>Use sleeping bag</i>	14/400 (3.5%)	1/48 (2.1%)	13/352 (3.7%)	1.80 (0.23-14.09)	1.00*
<i>Blankets across chest</i>	11/400 (2.8%)	0/48 (0.0%)	11/352 (3.1%)	NA	0.37
<i>Use a monitor</i>	9/400 (2.3%)	1/48 (2.1%)	8/352 (2.3%)	1.09 (0.13-8.94)	1.00*
<i>Use cellular blankets</i>	7/400 (1.8%)	0/48 (0.0%)	7/352 (2.0%)	NA	1.00*

\* Fisher Exact p values are used for cells with expected count less than 5.

\*\* (but not unsafe)

<sup>1</sup> "Sleep on back" and "Not prone for sleep" were combined as "mentioning sleeping position" (52% in total)

Table 5: Number of accurate unprompted SIDS risk reduction responses by risk group

<i>Number accurate</i>	<i>Total (%)</i>	<i>Higher Risk for SIDS (%)</i>	<i>Lower Risk for SIDS (%)</i>	<i>OR (95% CI)</i>	<i>P-value</i>
0	25 (6.3%)	6 (12.5%)	19 (5.4%)	2.67 (0.97-7.35)	0.05
1	42 (10.5%)	7 (14.6%)	35 (9.9%)	1.69 (0.67-4.23)	0.26
2	116 (29.0%)	12 (25.0%)	104 (29.5%)	0.97 (0.46-2.03)	0.94
3 or more	217 (54.3%)	23 (47.9%)	194 (55.1%)	[Reference]	
<b>Total</b>	400 (100.0%)	48 (100.0%)	352 (100.0%)		

Table 6: Correct responses to prompted infant sleep statements, with risk group comparisons

<i>Statement<sup>1</sup></i>	<i>Total (%) N=400</i>	<i>Higher Risk for SIDS (%) N=48</i>	<i>Lower Risk for SIDS (%) N=352</i>	<i>OR (95% CI)</i>	<i>P-value</i>
1. High temperature	373 (93.3%)	44 (91.7%)	329 (93.5%)	1.30 (0.43-3.94)	0.55*
2. Sofa co-sleeping	342 (85.5%)	42 (87.5%)	300 (85.2%)	0.82 (0.33-2.04)	0.67
3. Alcohol and bed-sharing	383 (95.8%)	46 (95.8%)	337 (95.7%)	0.98 (0.22-4.41)	1.00*
4. Tummy sleeping	306 (76.5%)	31 (64.6%)	275 (78.1%)	1.96 (1.03-3.73)	0.038
5. Prem and bed-sharing	274 (68.5%)	29 (60.4%)	245 (69.6%)	1.50 (0.80-2.79)	0.19
6. Back sleeping	366 (91.5%)	42 (87.5%)	324 (92.0%)	1.65 (0.65-4.23)	0.27*
7. Smoke free baby	399 (99.8%)	48 (100.0%)	351 (99.7%)	N/A	1.000*
8. Side sleeping	198 (49.5%)	23 (47.9%)	175 (49.7%)	1.08 (0.59-1.97)	0.82
9. Own room first 6 months	376 (94.0%)	44 (91.7%)	332 (94.3%)	1.52 (0.49-4.62)	0.51*
10. Soft mattress safer	199 (49.8%)	18 (37.5%)	181 (51.4%)	1.76 (0.95-3.28)	0.07
11. Breastfeeding best	310 (77.5%)	38 (79.2%)	272 (77.3%)	0.89 (0.42-1.88)	0.77
12. Smoking and bed-sharing	371 (92.8%)	41 (85.4%)	330 (93.8%)	2.56 (1.03-6.37)	0.06*
13. Tuck blankets in	260 (65.0%)	27 (56.3%)	233 (66.2%)	1.52 (0.83-2.81)	0.18
14. Smoking during pregnancy	328 (82.2%)	31 (64.6%)	297 (84.6%)	2.96 (1.53-5.72)	<0.001

<sup>1</sup> For full statement wording see Table 1

\* Fisher Exact p values are used for cells with expected count less than 5.

Table 7: Prompted safer sleep knowledge scores by risk group

<i>Score</i>	<i>Total</i>	<i>Higher Risk for SIDS (%)</i>	<i>Lower Risk for SIDS (%)</i>	<i>OR (95% CI)</i>	<i>P-value</i>
0-9	69 (17.3%)	14 (29.2%)	55 (15.6%)	2.97 (1.21-7.29)	0.01
10	57 (14.3%)	8 (16.7%)	49 (13.9%)	1.90 (0.69-5.23)	0.21
11-12	160 (40.0%)	17 (35.4%)	143 (40.6%)	1.39 (0.59-3.23)	0.45
13-14	114 (28.5%)	9 (18.8%)	105 (29.8%)	[Reference]	
<b>Total</b>	400 (100.0%)	48 (100.0%)	352 (100.0%)		

Table 8: Variables associated with risk factor group, multivariate model

<i>Variable</i>	<i>Higher Risk for SIDS (%)</i>	<i>Lower Risk for SIDS (%)</i>	<i>OR (95% CI)</i>	<i>P-value</i>
<i>Breastfeeding</i>	6/48 (12.5%)	131/352 (37.2%)	3.32 (1.33-8.31)	0.010
<i>Mention smoking as a risk for SIDS</i>	19/48 (39.6%)	89/352 (25.3%)	0.37 (0.18-0.76)	0.007
<i>*Women should quit smoking during pregnancy</i>	31/48 (64.6%)	297/352 (84.6%)	1.85 (1.33-2.59)	0.000
<i>No other information sources used</i>	6/48 (12.5%)	12/352 (3.4%)	3.22 (1.02-10.16)	0.046
<i>**Cite &gt;1 correct strategy for risk reduction</i>	35/48 (72.9%)	298/352 (84.7%)	2.08 (0.94-4.61)	0.072

\*Agreed that pregnant smokers should quit

\*\*Cited 2 or more correct strategies for SIDS risk reduction