

# Clinician Opinions and Approaches to Manage Risk Related to Safe Sleep During Skin-to-Skin Care

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## Keywords

implementation  
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## ABSTRACT

**Objective:** To understand the opinions of clinicians about the risks, benefits, barriers, and facilitators to the practice of parent sleep during skin-to-skin care in hospital settings.

**Design:** Cross-sectional survey.

**Setting:** Online survey.

**Participants:** Clinicians who self-identified as infant care providers, that is, neonatal clinicians ( $N = 158$ ).

**Methods:** We sent an online survey invitation to neonatal clinicians through neonatal websites, conferences, and social media sites in the United States and used snowball recruitment. We used a risk management framework to analyze qualitative data. We used descriptive statistics and the chi-square and Fisher's exact tests to determine if opinions differed based on clinician and organizational characteristics.

**Results:** Respondents' support of parent sleep during skin-to-skin care (*yes/no*) did not differ on the basis of whether the clinician had taken a formal course on skin-to-skin care, facilitated skin-to-skin care more than 100 times, or frequently promoted skin-to-skin care in current practice. Respondents who supported parent sleep ( $n = 93$ , 59% of respondents) reported greater implementation of risk control strategies than nonsupporters ( $n = 53$  [57%] vs.  $n = 3$  [5%];  $p < .001$ ), such as frequent monitoring of vital signs ( $n = 33$  [35%] vs.  $n = 2$  [3%];  $p < .001$ ), use of devices to support skin-to-skin care ( $n = 49$  [53%] vs.  $n = 19$  [29%];  $p = .003$ ), and proper positioning ( $n = 20$  [22%] vs.  $n = 0$  [0%];  $p < .001$ ). Nonsupporters more frequently reported that parent sleep during skin-to-skin care violates safe sleep recommendations, is habit forming for home, poses a fall risk, and jeopardizes the infant's airway.

**Conclusion:** Most respondents supported parent sleep during skin-to-skin care, but concerns regarding safety for the infant remained a barrier. The use of a risk management framework may help facilitate a systematic approach to improve the implementation of safe skin-to-skin practices.

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Continuous skin-to-skin care (SSC), as early as possible, for as long as possible, is recommended as a standard practice in NICU settings by numerous organizations, including the World Health Organization (2015), the National Perinatal Association (2015), the National Association of Neonatal Nurses (Milette et al., 2017), and the American Academy of Pediatrics (Baley & Committee on Fetus and Newborn, 2015). However, short, interrupted durations of SSC are common in NICUs in the United States (Gonya & Nelin, 2013; Stikes & Barbier, 2013). Frequently cited barriers to the implementation of continuous SSC include lack of knowledge, training, and clear implementation guidelines and legitimate

concern about patient safety (Blomqvist et al., 2013; Chan et al., 2016; Smith et al., 2017). These barriers are also quite relevant to another major controversial barrier to the implementation of SSC: not allowing parents to sleep during SSC sessions.

Researchers have shown that in the NICU, parents are extremely sleep deprived (Lee & Kimble, 2009). During relaxing SSC sessions, it becomes difficult for parents to stay awake, and parent sleep may become a potential risk of harm for the infant. Researchers previously associated major safety concerns with parent sleep during SSC, including infant airway compromise (Andres

et al., 2011; Davanzo et al., 2015; Feldman-Winter et al., 2016), unplanned extubation (Crezeé et al., 2017; da Silva et al., 2013; Hu et al., 2017; Merkel et al., 2014; Powell et al., 2016), and falls (Ainsworth et al., 2016; Matteson et al., 2013). However, Angelhoff et al. (2018) recognized that parent sleep during SSC can be an important restorative intervention for parents. Instead of treating parent sleep as a major safety risk that should be avoided, risks should be managed to provide a safe and healing SSC session (Browne et al., 2020; European Foundation for the Care of Newborn Infants, 2020; Phillips & Smith, 2020). Furthermore, preventing parents from sleeping during SSC denies the family opportunities to provide neuroprotective care that promotes better infant and parent outcomes (Conde-Agudelo & Díaz-Rossello, 2016; Feldman et al., 2014). Outcomes improved with SSC include breastfeeding initiation and maintenance (Conde-Agudelo & Díaz-Rossello, 2016); parent mental health, bonding, and attachment (Feldman et al., 2014); infant cardiorespiratory stability (Conde-Agudelo & Díaz-Rossello, 2016), brain maturation and development (Charpak et al., 2017; Feldman et al., 2014); and coregulatory parent–infant sleep (Feldman et al., 2014). As with any evidence-based intervention, SSC has risks that must be carefully managed during implementation.

Limited research exists surrounding the controversial practice of parent sleep during SSC, including the potential risks, benefits, barriers, and facilitators. We conducted a survey to understand the opinions of clinicians regarding risks, benefits, barriers, and facilitators to the practice of parent sleep during SSC in hospital settings.

## Methods

### Design

This secondary data analysis was part of a larger national survey of neonatal clinicians' opinions and preferences on the features of SSC devices. An SSC device is a wrap, fabric, or garment that helps a caregiver properly position and hold an infant during SSC. This larger survey included questions about individual and organizational demographics; clinician experiences with SSC in practice; and the needs of parents, infants, health care workers, and administrators related to SSC devices. The larger survey study, including the questions used for this secondary data analysis, met the criteria for the exempt category for federal regulations regarding human subjects

### Prohibiting parents from sleeping during skin-to-skin care denies the family opportunities to provide neuroprotective care that promotes better infant and parent outcomes.

research and received an exempt determination from the Nationwide Children's Hospital institutional review board (FWA#00002860).

### Settings and Sample

A cross-sectional, anonymous Research Electronic Data Capture (REDCap) survey was distributed to neonatal clinicians (i.e., nurses, physicians, respiratory/occupational/physical therapists, etc.) at professional conferences (e.g., the International Gravens Conference, National Association of Neonatal Nurses, and National Perinatal Association), through online neonatal community groups and organization websites, and in NICUs across the United States. Snowball recruitment was encouraged, with viewers of online survey posts asked to share the post with other eligible participants. The survey was developed by the authors (A.W. and Y.C.J.) and was tested for face validity and clarity with 40 neonatal clinicians from three NICUs.

Potential respondents were eligible to complete the survey if they provided clinical care for infants in the United States and self-identified as currently having a significant role in infant care. Questions about inclusion criteria were included in the survey to block responses from potential respondents who were not eligible to participate in the study. A post hoc power analysis showed that a two-proportion test would have at least 80% power to detect a medium effect size of  $h = 0.40$  ( $p_1 = .6$  and  $p_2 = .4$ ) when the total sample size was 156 and the alpha level was set to .05 in a one-sided test. Thus, our final sample of 158 respondents was appropriate to detect a 20% group difference for an independent categorical variable between *yes/no* responses to the question, "In your opinion, if the baby is safe and secure, should parents be allowed to sleep during skin-to-skin care?"

### Measures

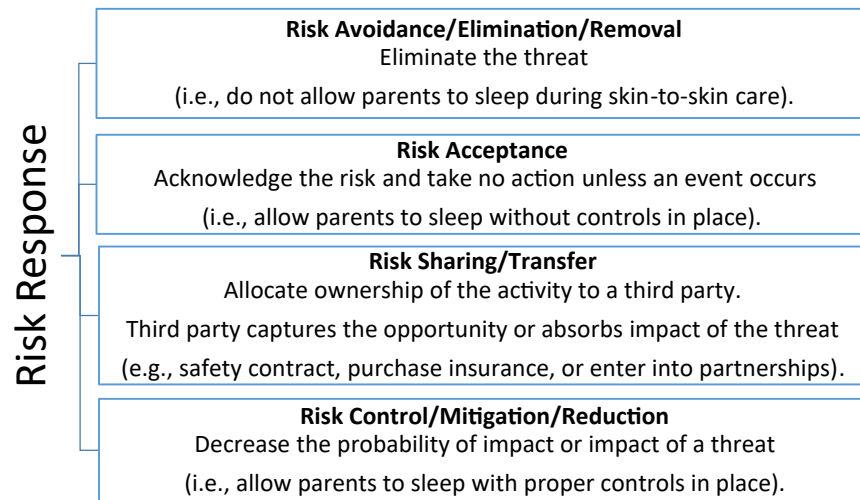
Two authors (A.W. and Y.C.J.) created an online REDCap survey with questions designed to learn about individual and organizational demographics; clinician experiences with SSC in practice; and the needs of parents, infants, health care workers, and administrators related to SSC devices. Survey questions did not require any

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**Figure 1.** The four categories of risk response. There are four mutually exclusive categories of response when addressing risk during risk management. Various terms have been used to describe each type of risk response, and terms are often used interchangeably (Becker, 2004; Lavanya & Malarvizhi, 2008; Project Management Institute, 2019). In this article, we use the terms *avoid*, *accept*, *share*, and *control* to describe the four responses.

identifiable information, and all responses were anonymous. The entire survey was tested for face validity and clarity with critical feedback from more than 40 neonatal clinicians who practiced in three NICUs across the state of Ohio. Formal psychometric testing was not performed on this evaluation survey because the different sections of the evaluation survey are not meant to represent a single concept or construct. For the purposes of this secondary data analysis, we used survey questions related to a respondent's individual and organizational demographics, SSC experiences in practice, and a detailed response to the question, "In your opinion, if the baby is safe and secure, should parents be allowed to sleep during skin-to-skin care? Why or why not?"

### Procedures

Clinicians who viewed the online survey posts through online neonatal community groups and organization websites clicked on a link that routed them to a description of the REDCap survey. A consent form described the survey, informed potential respondents that all data would be kept anonymous, and indicated that completing the survey indicated consent. If respondents agreed, they were routed directly to the survey.

### Analysis

Respondents' free text rationales (i.e., qualitative data) were analyzed using content analysis

procedures (Doody et al., 2013) rooted in a risk management framework (Becker, 2004; Lavanya & Malarvizhi, 2008; Project Management Institute, 2019). Risk management is a specialized field defined as a dynamic process of identifying, analyzing, and eliminating or mitigating risks that threaten an organization and the achievement of its objectives (Modernisation Group on Developing Organisational Resilience, 2017). In the risk management framework (see Figure 1), risks are addressed with treatment responses based on four mutually exclusive categories (Becker, 2004; Lavanya & Malarvizhi, 2008; Project Management Institute, 2019). Various terms have been used interchangeably to describe the four categories of risk response, but in this article, we refer to the four categories as avoid, accept, share, and control. By definition, risks can always be placed into one of these mutually exclusive categories (Modernisation Group on Developing Organisational Resilience, 2017). Two team members independently reviewed open text responses and inserted direct quotes from the respondents into a matrix template based on the four categories. Two team members then independently reviewed and confirmed the initial coding process.

We exported quantitative data from REDCap into Stata software (Release 15; StataCorp, 2017). We used descriptive and summary statistics to quantify the data. We used chi-square, Fisher's

**Table 1: Clinician and Organizational Characteristics Based on Clinicians' Opinions of Parent Sleep During Skin-to-Skin Care**

"In Your Opinion, If the Baby Is Safe and Secure, Should Parents Be Allowed to Sleep?"	Total (N = 158)	Supporter (Yes, n = 93)	Nonsupporter (No, n = 65)	p Value
Clinician has taken a formal SCC course, n (%)	62 (39)	40 (65)	22 (35)	p = .25
Performed SCC transfers more than 100 times, n (%)	77 (49)	46 (60)	31 (40)	p = .83
Facilitates skin-to-skin care every time a parent is present at the bedside, n (%)	25 (16)	14 (56)	11 (44)	p = .35
Used SSC device to facilitate SSC, n (%)	68 (43)	49 (72)	19 (28)	p = .003
Hospital has Magnet status, n (%)	103 (65)	65 (63)	38 (37)	p = .14
Hospital is an academic medical center, n (%)	70 (44)	43 (61)	27 (39)	p = .28
Hospital is in urban area (50,000+ people), n (%)	130 (82)	83 (64)	47 (36)	p = .006
Hospital has Baby-Friendly status, n (%)	93 (59)	56 (60)	37 (40)	p = .68
Unit is a Level IV/III NICU, n (%)	135 (85)	80 (59)	55 (41)	p = .39
Years of practice, mean (SD)	df = 156	15 (1)	19 (2)	p = .19
Clinician has 4-year degree or greater, n (%)	131 (83)	79 (60)	52 (40)	p = .47
Clinician certification in neonatal care, n (%)	105 (66)	59 (56)	46 (44)	p = .34

Note. The *p* values reflect results of chi-square tests testing categoric differences between supporters and nonsupporters of parent sleep during SSC. In instances for which cells had fewer than five observations, *p* values represent the results of Fisher's exact tests. Continuous dependent variables were analyzed by using independent two-sample *t* tests. *SD* = standard deviation; SSC = skin-to-skin care.

exact, and independent two-sample *t* tests to determine if respondents' opinions on whether clinicians should support parent sleep during SSC (*yes/no*) differed based on their training, experience, attitudes, and current practice with SSC. We used an overall alpha level of .05 for quantitative analyses.

## Results

We previously reported the demographics of our survey population in detail elsewhere (Weber & Jackson, in press). There were 158 respondents for this analysis. Briefly, most respondents were staff nurses (*n* = 103, 64%) whose main roles were clinical (*n* = 136, 86%). Respondents held bachelor's degrees or greater (*n* = 131, 87%) and worked full time (*n* = 116, 74%) in Level III/IV NICUs (*n* = 135, 85%), at Magnet-designated (*n* = 103, 65%) and/or Baby-Friendly hospitals (*n* = 65, 41%), and in Academic Medical Centers (*n* = 70, 44%). Respondents had varying levels of experience in facilitating SSC with infants (see Table 1).

Most respondents (*n* = 93, 59%) stated that parents should be supported to sleep during SSC (see Table 1). When characteristics of supporters and nonsupporters of parent sleep were compared,

individual and organizational demographics were similar (see Table 1). However, urban institutions (i.e., institutions located in areas with a population of 50,000 or more) had significantly more respondents who supported parent sleep during SSC than nonurban institutions (*n* = 83 [64%] vs. *n* = 47 [36%];  $\chi^2 = 4.98$ ; *p* = .03). We found that support for parent sleep did not differ based on education level, years of experience, or certification. Support of parent sleep also did not differ based on whether respondents had taken a formal SSC course, had facilitated SSC more than 100 times in their practice, or attempted to facilitate SSC every time a parent is present at the bedside (see Table 1).

## Risk Avoidance

A risk avoidance response eliminates the threat or removes exposure to the threat (i.e., not performing an activity that carries risk). Forty-one percent (*n* = 65) of respondents believed that parents should not be allowed to sleep during SSC (see Table 1). Compared to supporters, respondents who were against parent sleep during SSC were significantly more likely to state that parent sleep violates safe sleep guidelines (*n* = 0 [0%] of supporters vs. *n* = 10 [15%] of nonsupporters; *p* < .001), is habit forming after going home (*n* = 3 [3%] vs. *n* = 14 [22%]; *p* < .001), is a

### Respondents who supported parent sleep during skin-to-skin care were more likely to use risk mitigation practices, including the use of support devices.

significant fall risk ( $n = 0$  [0%] vs.  $n = 7$  [11%];  $p < .001$ ), and even a small amount of movement during SSC could compromise the infant's airway ( $n = 1$  [1%] vs.  $n = 14$  [22%];  $p < .001$ ), especially if the infant was intubated. Nonsupporters were more likely to state that parents could dislodge critical equipment, including endotracheal tubes, if they fell asleep ( $n = 1$  [1%] vs.  $n = 14$  [22%];  $p < .001$ ). Several respondents also divulged that allowing parents to sleep during SSC was strictly against their hospital's policy ( $n = 3$ ).

#### Risk Acceptance

A risk acceptance response acknowledges the risk but takes no action until the occurrence of an event. Overall, respondents who supported parent sleep during SSC were significantly more likely to report benefits for the dyad than nonsupporters ( $n = 37$  [40%] vs.  $n = 1$  [2%];  $p < .001$ ). Several respondents supported parent sleep in SSC because of documented benefits but did not mention the use of risk control strategies, such as an SSC device, frequent clinician checks, electrocardiography (ECG) monitoring, or proper positioning of the dyad ( $n = 15$ , 10%). Supporters who did not report use of any risk control strategies during parent sleep in SSC were significantly more likely to cite SSC benefits than supporters who used risk control strategies ( $n = 11$  [73%] vs.  $n = 27$  [19%];  $p < .001$ ). A small number of respondents believed that parent sleep was unavoidable during SSC ( $n = 6$ , 4%) and did not mention the use of any control strategies to ensure patient safety. These respondents believed that parents were going to fall asleep regardless of verbal instructions from the clinician to not fall asleep, and there was no difference in this risk acceptance between supporters and nonsupporters of sleep in SSC.

#### Risk Control

A risk-controlled response decreases the probability of the impact of a threat. The percentage of respondents who had experience facilitating SSC with a device was significantly greater among supporters than nonsupporters ( $n = 49$  [72%] among supporters vs.  $n = 19$  [28%] among nonsupporters;  $\chi^2 = 8.59$ ,  $p = .003$ ). Supporters of parent sleep during SSC were significantly more likely to use a variety of risk control

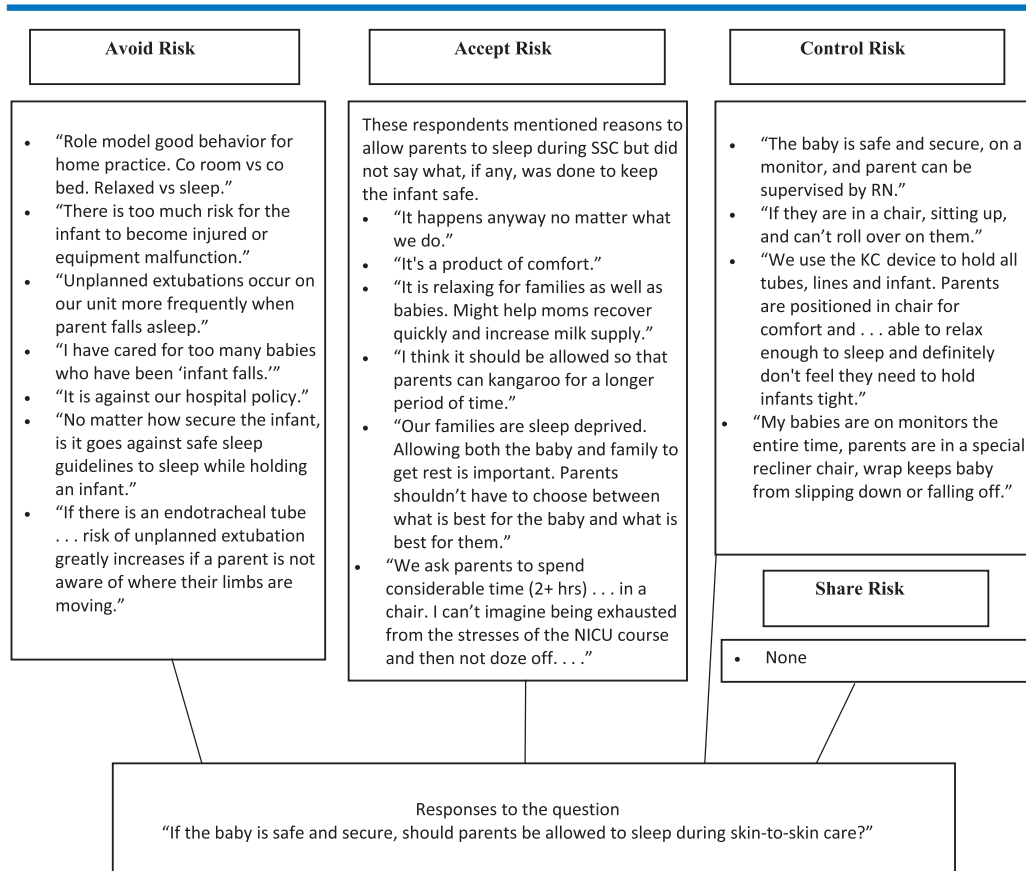
strategies than respondents who did not support parent sleep ( $n = 53$  [57%] vs.  $n = 3$  [5%];  $p < .001$ ). Supporters cited specific risk control strategies, such as frequent clinician checks and ECG monitoring of the infant ( $n = 33$  [35%] among supporters vs.  $n = 2$  [3%] among nonsupporters;  $p < .001$ ), use of an SSC device ( $n = 49$  [72%] among supporters vs.  $n = 19$  [28%] among nonsupporters;  $\chi^2 = 8.59$ ,  $p = .003$ ), and ensuring proper parent–infant position during SSC ( $n = 20$  [22%] among supporters vs.  $n = 0$  [0%] among nonsupporters;  $p < .001$ ), more frequently than nonsupporters. Of respondents who supported parent sleep ( $n = 93$  [59%]), SSC device users were as likely as nonusers to mention use of specific risk control strategies, such as frequent clinician checks, ECG monitoring, or proper positioning of the dyad ( $n = 28$  [57%] vs.  $n = 25$  [57%];  $\chi^2 = 0.001$ ;  $p = .975$ ).

Based on the risk management framework (see Figure 2), the domains of risk control and risk acceptance captured respondents' rationales for encouraging parent sleep during SSC. On the other hand, the domain of risk avoidance captured the rationale for forbidding parent sleep during SSC. No responses represented risk sharing strategies.

## Discussion

We examined the opinions of neonatal clinicians with regard to the controversial practice of parent sleep during SSC. Unlike previous researchers who associated organizational, resource, and training barriers with lack of SSC implementation (Blomqvist et al., 2013; Chan et al., 2016; Smith et al., 2017), we found a previously unidentified barrier to SSC implementation: the risk tolerance of neonatal clinicians at the bedside. Hospitals need to support clinicians, infants, and their families with the provision of detailed risk management policies and procedures to address the protocol of parent sleep during SSC so that clinicians do not spontaneously make decisions at the bedside. Patient safety should never depend on the personal decision of the nurse or the parent to accept, avoid, control, or share risks associated with SSC. Rather, evidence-based risk management practices and principles (Phillips & Smith, 2020) should guide the decision to support parent sleep during SSC. Hospitals should support clinicians through comprehensive training in multipronged, tailored risk management interventions enacted





**Figure 2.** Respondents' opinions about parent sleep during SSC based on the risk response categories of control, accept, and avoid. Risk sharing was not represented in the respondents' answers. hrs = hours; KC = kangaroo care; RN = registered nurse; SSC = skin-to-skin care.

for every infant and for every SSC session (Browne et al., 2020).

Our findings confirm that many providers still have concerns around parent sleep during SSC (Bartick et al., 2019; Bartick & Smith, 2014; Bass et al., 2020; Feldman-Winter et al., 2016), and this serves as a significant barrier to long durations of SSC. In our study, nonsupporters of parent sleep during SSC frequently cited infant safety concerns, including violation of safe sleep practices, risk of falls, and airway compromise, as their main rationales. Conversely, our results also show an association between supportive clinician attitudes toward parent sleep and controlled risk responses that leverage multipronged mitigation strategies, such as frequent clinician monitoring, secure parent–infant positioning, and the use of an SSC device. By using a risk management framework to contrast nonsupporters versus supporters of parent sleep in SSC, we identified

practical approaches for risk response that can enable more widespread use of long durations of SSC.

Our results support previously identified SSC barriers. Respondents who oppose parent sleep in SSC were more likely to report these concerns. We also identified a new barrier that contributed to respondents' risk avoidant behavior. Respondents reported the belief that parent sleep during SSC is in conflict with the American Academy of Pediatrics (AAP) Safe Sleep Recommendations. The AAP recommends that parents place infants on a firm, separate surface when the parent is ready for sleep and in supine cribs to avoid bed-sharing (Moon & Task Force on Sudden Infant Death Syndrome, 2016). Thus, we were not surprised that some respondents avoided a response. However, the AAP recommendations do not apply to many infants in the NICU for whom long durations of SSC would be most

beneficial, such as preterm infants at younger than 32 weeks postmenstrual age (Moon & Task Force on Sudden Infant Death Syndrome, 2016).

In line with our findings about the importance of combating risk avoidance with risk control strategies, the AAP supported risk avoidance but also recommended controlled risk responses to SSC in “Safe Sleep and Skin-to-Skin Care in the Neonatal Period for Healthy Term Newborns” (Feldman-Winter et al., 2016). In that report, the AAP concluded that SSC providers should move healthy term newborns to a separate sleep surface if they are fatigued or sleepy and avoid bed-sharing (Feldman-Winter et al., 2016). The report also recommended risk control strategies: hospitals should develop standardized procedures and training programs for the safe facilitation of SSC during the immediate postpartum period and beyond; clinicians should complete continuous and/or regular assessments and direct observations of the dyad during SSC; and clinicians should educate parents on the proper SSC position, the risks of bed-sharing, and how to prevent falls in the hospital (Feldman-Winter et al., 2016). The AAP has not yet issued a clinical report for safe sleep and SSC during NICU hospitalization. However, current standards for infants hospitalized in intensive care support parent sleep for these infants with the use of risk control strategies (Hall et al., 2017; Phillips & Smith, 2020).

### Risk Avoidance

Respondents who did not support parent sleep during SSC were significantly more likely to cite the well documented risks of SSC as a rationale for avoiding parent sleep. Respondents reported previously identified safety concerns, including the risks of infant airway compromise (Andres et al., 2011; Davanzo et al., 2015; Feldman-Winter et al., 2016), accidental infant falls (Ainsworth et al., 2016; Matteson et al., 2013), equipment dislodgement, and unplanned extubations (Crezéé et al., 2017; da Silva et al., 2013; Hu et al., 2017; Merkel et al., 2014; Powell et al., 2016). Authors of case reports and retrospective surveillance studies have linked SSC with infant airway compromise (Andres et al., 2011) and falls on healthy mother–baby units (Ainsworth et al., 2016; Matteson et al., 2013). Most events occurred when an exhausted parent fell asleep while holding the infant in a reclining chair or hospital bed (Ainsworth et al., 2016) without specific risk control strategies in place. Hospitals must have specific risk control strategies in place to keep infants safe in case parents fall asleep

instead of avoiding SSC in the NICU or relying on verbal commands to keep the parent awake (Phillips & Smith, 2020). If a risk-controlled response is not possible, avoiding the well-documented risks of SSC is appropriate, given the seriousness of the consequences.

Respondents who avoided parent sleep were also significantly more likely to believe that allowing parents to sleep during SSC sets a dangerous precedent for the transition to home, with an increased risk for sudden infant death syndrome (Feldman-Winter et al., 2016). Neonatal researchers need to fully analyze and evaluate this risk for the NICU population. Respondents emphasized that allowing parents to sleep would be habit forming, especially when holding the infant in a reclining chair at home. Multiple researchers have shown that safe sleep knowledge, beliefs, attitudes, and practices imparted by hospital staff influence parent decisions to follow safe sleep recommendations in the home (Patton et al., 2015). To address this risk, safe sleep education should start at NICU admission (Feldman-Winter et al., 2016) and can include information about why earlier in gestation, parents are allowed to sleep under supervision during SSC for medical and developmental purposes.

### Risk Acceptance

Researchers have previously shown that SSC improves a variety of outcomes, including breastfeeding initiation and maintenance; parent mental health, bonding, and attachment; infant cardiorespiratory stability, brain maturation, and development; and coregulatory parent–infant sleep (Conde-Agudelo & Díaz-Rossello, 2016; Feldman et al., 2014). Skin-to-skin care is incredibly relaxing for the parent; lowers blood pressure, heart rate, and cortisol levels and feelings of depression and anxiety; and increases oxytocin levels. This is particularly important because parents of infants in the NICU experience high levels of stress and sleep deprivation during the postpartum period (Lee & Kimble, 2009). Respondents who supported parent sleep during SSC in our study were significantly more likely to cite SSC benefits as the rationale for their support, including better parent sleep and lower stress, depression, and anxiety. Furthermore, supporters who did not report the use of any risk control strategies during parent sleep were more likely to cite SSC benefits than supporters who used risk control strategies. These respondents emphasized the numerous benefits of SSC and highlighted the risks associated with not

implementing an evidence-based intervention that could have direct benefits for infants, families, and organizations. Thus, although there is some evidence of our respondents weighing the risks and benefits of parent sleep during SSC, it is critical to note that we did not ask respondents directly about their actual practice or hospital policy, although many respondents shared information about their practices and policies. Rather, we asked about their personal opinions and rationales to support their opinions. Furthermore, our current work shows that not all clinicians have the same tools to control risks during SSC because many hospitals do not provide SSC devices (Weber & Jackson, *in press*).

Some respondents supported parent sleep during SSC because it was “futile” and “pointless” to try to prevent an “unavoidable” and “inevitable” event. These respondents did not say what steps they took to ensure safety but emphasized that instead of trying to avoid the “inevitable,” they merely accepted the fact that parents were going to fall asleep during SSC. Of concern is the small percentage of respondents who supported parent sleep in SSC but did not mention the use of risk control strategies, such as an SSC device, frequent clinician checks, ECG monitoring, or proper positioning of the dyad. Skin-to-skin care has extensive benefits, but risk acceptance is the most dangerous response to a potentially hazardous event, especially given the potential consequences. Although our findings indicate that there is some component of risk acceptance among some supporters of parent sleep during SSC, those who supported parent sleep were significantly more likely to put control strategies in place to counteract SSC risks. Risk acceptance should not be considered an appropriate response to the risks of parent sleep during SSC. Rather, a multipronged risk control approach can be used to address the safety concerns of SSC while allowing infants, families, and health care organizations to fully realize the numerous benefits of SSC.

### Risk Control: A Developmental Approach to Parent Sleep

One of our most important findings is that respondents who supported parent sleep during SSC were significantly more likely to implement risk control responses that included multipronged interventions, such as frequent clinician monitoring, secure parent–infant positioning, and the use of an SSC device. It is important to note that not all SSC devices are designed to support

medically fragile infants or to fully support infants without the hands of the parents to allow for safe sleep during SSC. Clinicians should carefully evaluate each device before use, especially if the intended use is to take the onus off the parent's hands to ensure safety of the infant. Our respondents who used SSC devices were more likely to support parent sleep. The use of SSC devices has only recently been reported in the literature as a useful risk reduction strategy (Coughlin, 2015; Hardin et al., 2020; Harrison et al., 2019; Phillips & Smith, 2020). This is especially true since current developmental care standards recommend that for infants in a NICU,

Parents should be allowed to fall asleep during Kangaroo Care (KC) when safety measures are in place that include: a) parent and baby are in a non-rocking, reclining chair or bed; b) baby is well secured by an appropriate wrap to parent's chest; c) baby is electronically monitored, if indicated; and d) an appropriate healthcare provider is immediately available. (Phillips & Smith, 2020, Standard 1, Skin-to-Skin Contact: Competency 1.10, para. 10)

Several of our respondents referred to detailed risk management policies surrounding parent sleep during SSC. Clinicians who supported parent sleep in SSC and used risk-control strategies specifically addressed the safety concerns that risk-avoidant respondents detailed in their rationales: airway compromise, unplanned extubations, and infant falls. Authors of several published quality improvement projects show that intervention bundles to prevent airway compromise (Feldman-Winter et al., 2016), unplanned extubations (Crezéé et al., 2017; da Silva et al., 2013; Hu et al., 2017; Merkel et al., 2014; Powell et al., 2016), and infant falls (Ainsworth et al., 2016; Matteson et al., 2013) are very effective to control risks and reduce the incidence of adverse events associated with SSC. These bundles are already a standard of care in many NICUs (e.g., cardiorespiratory monitoring, pulse oximetry, positioning checklists, frequent vital sign documentation, direct visual assessment of the infant during hourly rounding). Exemplar risk control responses include parent and staff education; targeted risk assessments; signage in patients' rooms; increased frequency of rounding; creation of hospital policies, procedures, and guidelines; ongoing training through simulation; regular environment, safety, and equipment checks; and



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**Adoption of a risk-controlled and systematic approach to skin-to-skin care can create a safe environment for parents to experience restorative sleep.**

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application of risk assessment tools (Crezéé et al., 2017; Hu et al., 2017; Merkel et al., 2014; Powell et al., 2016). These risk control strategies can support safe parent sleep during SSC for infants in the NICU.

Respondents' support for parent sleep was not related to their clinical training and experience in facilitating SSC. This finding seems contradictory with several studies and systematic reviews in which researchers cite training, knowledge, and experience as a significant barrier to the implementation of SSC in clinical settings (Chan et al., 2016; Smith et al., 2017). However, SSC education typically does not include content on the coregulatory benefits of parent–infant sleep. There is a general lack of knowledge among NICU professionals surrounding the developmental and coregulatory relationships between parent and infant sleep. Parent–infant sleep provides better-quality, coregulated sleep that enhances short and long term infant growth, development, and infant–parent socioemotional health (van den Hoogen et al., 2017). Moreover, training might not include enough resources to help clinicians design and implement an effective risk control response to parent sleep during SSC. Another explanation may be that formal training is only one component of the skill set necessary to facilitate SSC. Critical components toward helping clinicians view SSC not as a task but as an essential element in the provision of evidence-based, developmentally supportive care include positive attitudes toward SSC, emotional competence, and resourcefulness.

### Limitations

Several limitations to our study warrant further discussion. First, we could not collect data on the survey response rate because we collected our anonymous survey data electronically through snowball recruiting and multiple online postings. Our sampling strategy made it impossible to know how many clinicians viewed the survey invitation and decided not to complete it. Second, a large portion of respondents were from the Midwest region of the United States. Thus, the opinions of respondents may not be completely

representative of those of neonatal clinicians from every region in the United States. However, our team made significant efforts to post the survey invitation at multiple organizations and websites that were available to a variety of disciplines and in different parts of the United States, which is a significant strength of our methods. Finally, we asked clinicians about their personal opinions about parent sleep during SSC rather than about hospital policy because many NICUs may not have policies surrounding this issue, hospital policies often default to risk avoidance, policies can be interpreted differently, and practice exceptions to hospital policy can often occur in NICUs that serve a diverse range of infants who require individualized, patient-tailored care.

Hospital or unit policies that support parent sleep during SSC should include detailed guidelines for strategies to mitigate the risks associated with SSC. If there is no specific plan in place, the decision to implement SSC, and to implement it safely, will likely be made by the nurse's personal preference and the amount of risk she/he would be responsible for during SSC sessions. This responsibility includes the risks associated with the duration of the SSC session and whether or not the parent is allowed to sleep. In the future, researchers should include survey questions about personal opinions, actual practice, and hospital policy so that they can differentiate between individual clinician and organizational-level barriers to parent sleep during SSC.

### Conclusion

Our findings support the existence of significant barriers to long durations of SSC rooted in the serious, well-documented risks associated with SSC. Adoption of a risk-controlled and systematic approach to SSC can create a safe environment for parents to experience restorative sleep during SSC while not compromising the safety of the infant. As with any intervention, SSC has risks, which clinicians must carefully manage during implementation. However, examination of the attitudes of those who support parent sleep during SSC and the application of a risk management framework suggest that these risks can be controlled or mitigated to keep infants safe. Most importantly, a risk management framework may help organizations to overcome safety barriers that limit full implementation of SSC, an evidence-based practice shown to improve the health outcomes of infants and their families.

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