

Co-Sleeping: Benefits for Mothers and Infants

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Abstract

Bed sharing is gaining popularity, although the sleeping positions of mothers and infants have been questioned because of reported worries regarding the possibility of infant death. This study aimed to investigate infant sleeping location and the association between co-sleeping and parameters such as breastfeeding, infant-mother attachment, and infant death. A systematic search of five electronic databases (Medline, Cochrane, CINAHL, EMBASE, and Scopus) was undertaken to identify related studies. Additional searches conducted were based on the references of the selected studies. Initially, 147 articles were located. Titles and abstracts were examined for relevance to the review objective. Studies that met the inclusion criteria were then evaluated for methodological quality. Our study investigated the existence of a correlation between co-sleeping and breastfeeding, infant-mother attachment, maternal depression, infant sleep patterns, and infant death, as well as the possibility of other associated factors.

Keywords: Co-Sleeping; Bed Sharing; Sleep, Place; Breastfeeding; Location; Infant

Introduction

An increasing percentage of parents are choosing to share their bed with their infants [1]. In the United Kingdom, nearly half of parents share, at some time, their bed with their newborns; a fifth of parents bring their infants to bed frequently during the first year of life [2,3]. In the US, co-sleeping peaks in early childhood and decreases with age [3-6]. Lately, it was reported that 21% of mothers in the US and, in particular, 25% of mothers of Hispanic origin, bed share with their infants [7]. The physiology of infant sleep depends on biological and sociocultural variables [8]. The terms "co-sleeping" and "bed sharing" are often used interchangeably in the medical literature. It is important, however, to understand the differences between the two terms, as they relate to the risks and benefits of infant sleep environments. Co-sleeping is a broad term, encompassing the sharing of any sleep surface (e.g., mats, floors, futons, beds, couches, and sofas) with an infant and another person. Bed sharing, in contrast, is one form of co-sleeping that usually refers to the sharing of beds such as those commonly used in most Western European countries, New Zealand, Australia, and the US.

Worldwide, in many non-western societies, bed sharing is viewed as the culturally acceptable practice for ensuring infant safety and comfortable sleep for both mother and baby [9,10].

Similar to other mammals, human mothers used to sleep closely to their infants throughout human evolution [11]. In western or industrialized societies, there has been an increasing emphasis on individuality and independence, which has resulted to recent practices of solitary sleeping areas for babies, and the use of human milk substitutes [12-14]. There is neurological basis for infants seeking parental contact; moreover, parents are biologically designed to react to their infants' needs [10,15]. Humans create defenseless babies who need extended maternal care and breastfeeding. This is, in particular, a human infant trait, since they are born with the least neurological maturity and are completely dependent on their caregiver for a longer period compared to other mammals [2]. Bed sharing may assist in calming an upset baby, improving sleep for mothers and babies, and contribute to nighttime breastfeeding [9].

Sudden Infant Death Syndrome (SIDS)

The place of sleep for the mother and the infant has been ambivalent due to reported worries regarding infant deaths [2,16]. Epidemiological studies have observed a strong association with infant sleep position and stressed the need to inform parents about

the safety of the supine position [2,17]. Other practices related to infant care, such as the use of a dummy, soft mattress and infant head protective coverings were examined [2]. In a recent study, it was exhibited that SIDS occurred in poor communities [18]; they exhibited increased risk factors as prematurity, low prenatal care, smoking and alcohol use, sleeping position, low likelihood to exclusively breastfeed, and co-sleeping. In this study, medium to high co-sleeping rates were observed in more wealthy groups, but high percentages of infant-mother bed sharing were not related to SIDS [9]. The best manner of resolving safety worries is to provide parents, especially mothers, with excellent knowledge about safe bed sharing [10]. These recommendations include not sleeping on a sofa and sleeping on a flat surface, abstaining from alcohol, drugs or smoking [19]. The risk among infants sharing a bed with a smoker-mother was more than 4-fold (OR = 4.55; 95% CI [2.63–7.88]), compared to nonsmoking mothers, whom exhibited no risk (OR = 0.98; 95% CI [0.44–2.18]) [20]. Significant correlations have been found between bed sharing and use of alcohol or drugs before sleeping, or co-sleeping in a sofa [21]. Recently, observational case-control studies showed that half of SIDS cases took place when infants slept next to parent [22]. This increase of deaths outside the crib, has led some countries to discourage bed sharing, including the American Academy of Pediatrics (AAP) since 2015 [23,24]. In particular, the only instance when SIDS deaths took place, during the last 20 years, was co-sleeping on a sofa [2]. Breastfeeding has been linked with decreased risk of SIDS and is also highly correlated with co-sleeping, as it facilitates lactation [25,26]. Studies showed that infants sleeping solitarily, were more likely to sleep in prone position, compared with co-sleeping infants. This may partly elucidate the protective properties of breastfeeding against SIDS, during which infants are more probable to be placed in the supine position. An 18-fold raise in SIDS deaths while sleeping alongside an adult who consumed more than two units of alcohol or co-sleeping on a sofa was observed [27]. The AAP, in order to advocate for their 2016 guidelines [28], assumed that the data from the analyses do not lead to a reliable inference that bed sharing is safe, even under less dangerous conditions. In contrast, a review of the National Institute for Health and Care Excellence (NICE) [29] concluded that bed sharing itself, is not causal for SIDS and that there is a necessity of providing guidance to parents regarding specific dangerous circumstances of co-sleeping.

Breastfeeding

Researchers have proposed that breastfeeding has a strong correlation with bed sharing [11], showing that “Never Bed-Share” may impede breastfeeding [30,31]. Breastfeeding occurring throughout the night while co-sleeping has been recently coined as “breast sleeping” [32]. Dedication to breastfeeding may also affect infant sleep place decision-making [10]. Many studies assumed

breastfeeding as the key reason for co-sleeping [15]. Co-sleeping makes night breastfeeding easier and is related to more regular night feeds (which boosts milk production) and more months of breastfeeding [33]. Breastfeeding mothers reportedly use bed sharing in order to mitigate the toll of extended breastfeeding, such as sleep disturbance [34]. Many studies have shown that breastfeeding co-sleeping mothers wake often to feed, but wake for a shorter time, resume sleep faster [35], and accomplish longer sleep duration [36], in comparison to non-bed sharing mothers [37,38].

Sleep quality

There is a small number of studies dealing with co-sleeping and maternal sleep quality. A recent study [39] showed that breastfeeding women had circadian differences in sleep-wake pattern. They tended to wake up earlier and showed decreased daytime physical activity compared to non-breastfeeding participants, but breastfeeding was not reported to affect sleep duration. An important percentage of non-breastfeeding co-sleepers exhibited a decrease in sleep quality [32]. Many studies showed that co-sleepers demonstrated a reduction in total sleep duration and sleep effectiveness [40]. On the contrary, other studies showed that bed sharing makes night pass easier, contributes to baby monitoring, promotes convenience, and helps gaining sleep [30,38,41]. It is interesting that in several studies, co-sleepers do not exhibit an increase in number or duration of daytime naps, in order to compensate for sleep deprivation [32,42-44]. In another study, it was found that breastfeeding co-sleeping participants slept more compared to bottle feeding participants [36]. Cross-cultural studies support that in traditional societies, infants having physical closeness with their mother day and night, have regular awakenings during sleep, and breastfeed on request, during their first year [45].

Search strategy

A systematic search of five electronic databases (Medline, Cochrane, CINAHL, EMBASE, and Scopus) was undertaken to identify related studies, using the terms “co-sleeping”, “bed sharing”, “sleep”, “place”, “breastfeeding”, “location”, “infant death”, “infant”. Additional searches that were conducted were based on the references of the selected studies. Initially, 147 articles were found. Titles and abstracts were examined for relevance to the review objective. Studies that met the inclusion criteria were then evaluated for methodological quality. Inclusion criteria were: 1) English language, 2) Quantitative studies, and 3) Studies conducted between 2015-2020. Table 1 presents the methodological characteristics of the included studies. Questionnaires were used as tools for collecting demographic information and data regarding sleeping environment, breastfeeding status, sleeping place, attachment quality and other factors Figure 1.

Table 1: Methodological characteristics of included studies.

Author information and year	Title	Country	Sample Size	Sampling (kind)	Follow up
Bailey et al. [9]	Breastfeeding Duration and Infant Sleep Location in a Cohort of Volunteer Breastfeeding Counselors	Australia	174 women	Not mentioned	No
Gholamzadeh Baeis et al. [45]	Prevalence and the Relationship between Characteristics and Parental Conditions with Risk Factors for Sudden Infant Death Syndrome (SIDS)	Iran	1,021 infants	random sampling	No
Peters et al. [46]	Relationships between breast-feeding, co-sleeping, and somatic complaints in early childhood	UK, London	98 parents	Participants were recruited through either snowballing methods or convenience sampling where materials were distributed by the researcher in communal areas (e.g., parks and play areas)	No
Mileva Seitz et al. [1]	Association between infant nighttime-sleep location and attachment security: No easy verdict	Netherlands	683 infants and their mothers	Not random	No
Randomization	Research	Intervention	Inclusion criteria	Response rate	
Not random	Cross-sectional one-group survey	Questionnaire completion	Having applied to train as an Australian Breast-feeding Association volunteer.	90%	
Yes	Descriptive-analytical study.	Questionnaire completion	All mothers of infants 1-12 months who visited the health centers.	Not mentioned	
No	Not mentioned	Questionnaire completions	Parents of children between 18 and 60 months participated in the study.	Not mentioned	
No	Not mentioned	Questionnaire completions	Parents of children between 18 and 60 months participated in the study.	Not mentioned	
Ethical Approval	Statistical Analysis	Sample size per group	Tools		
Ethics approval for the project (ASEHAPP 41-14) was obtained from RMIT University, Melbourne, Australia.	All analyses were conducted in SPSS Version 22, using frequencies, chi-square analysis, one-way ANOVAs, and linear regression analysis	No group	The questionnaire was an abridged version of a series of questionnaires for a study of breastfeeding practices among women from Victoria, Australia.		

<p>Research Deputy of Qom Branch of the Islamic Azad University (ID Code of Project =34200)</p>	<p>Data were analyzed by SPSS-18 using descriptive statistics (t-test, ANOVA and Chi-square).</p>	<p>No group</p>	<p>A literature-based researcher-made questionnaire designed in three parts including demographic information of parents, demographic information of infants and infant sleeping environment.</p>
<p>Ethical approval was granted by the London Metropolitan University's Psychology Research Ethics Panel</p>	<p>Analysis of variance (ANOVA), t-test, post- hoc, Chi-square.</p>	<p>Participants were divided into four similar-size groups based on their co-sleeping and breast-feeding statuses. Groups 1 and 3 was a separate bed in the parents' bedroom, and for a child in Groups 2 and 4, this was his or her own bedroom.</p>	<p>The Co-sleeping and Breastfeeding Questionnaire (CSBQ), the Child Behavior Checklist (CBCL) to measure somatic complaints and the abbreviated Children's Sleep Habits Questionnaire, to measure sleep problems.</p>
<p>Approved by the Erasmus University Medical Center, Rotterdam. All parents signed written consent.</p>	<p>Chi-square tests. Dichotomous and trichotomous analyses . Also used linear regression. For analysis with categorical measures of attachment, was used logistic and multinomial regression and entered covariates, parental-care components, and sleep-location variables in the models.</p>	<p>No group</p>	<p>A parental questionnaire relating to the place of sleep of the child. The SSP to measure Attachment Quality.</p>
Results		Conclusions	
<p>Co-sleeping (bed and room sharing) was the norm for this sample. A significant difference in mean breastfeeding duration scores for infant sleeping location groups: $F(3, 80) = 4.71, p = 0.004$. Planned contrasts were calculated between the separate room group versus the three co-sleeping groups; combined co-sleeping groups (bed sharing, moved to bed sharing, and room sharing) had significantly higher breastfeeding duration than the group where the infant slept in a separate room from the mother: $t(62.61) = 3.81, p < 0.001$. Infants who were co-sleeping at 6-12 months were more likely to breastfeed exclusively at 6 months, compared with infants who sleep in a separate room. (51.4%, $n = 60$): $\chi^2(2, n = 116) = 4.83, p = 0.03, \% \text{ difference} = 20.8\%$.</p>		<p>Bed sharing rates were much higher than estimates of bed sharing in the general Australian population. Mean breastfeeding duration outcomes for the sleeping location groups were consistent with the existence of an association between length of breastfeeding and infant sleeping arrangement.</p> <p>In the current study, only co-sleeping and normal birth significantly predicted breastfeeding duration in the multivariate model. As a result of our finding that normal births (compared to births with forceps, elective or emergency caesareans, or vacuum extractions) were also predictive of breastfeeding duration, we suggest that birth complications are associated with longer-term infant-related outcomes, for example with breastfeeding duration.</p>	

<p>Regarding the place and conditions of infant sleep, 942 infants (92.3%) had shared a bedroom (Co-Sleeping) and 346 (35.7%) had shared a bed (Bed-Sharing). According to the results, there was no significant relationship between mother's age and shared bedroom ($p = 0.052$), but a significant association existed between parents' education and shared bedroom ($p = 0.025$), in that shared bedroom was less common among working parents ($p = 0.025$). No significant association was reported between smoking parents and shared bedrooms ($p > 0.05$). Infant sleeping in prone position and lateral positions (side lying position), which are considered common risk factors, were seen in 154 (15.1%) and 402(39/4%) infants, respectively. There was a significant association between mother's age and infant sleep position in this study ($p = 0.042$). It is noteworthy that a significant association existed between mothers' occupation and infant sleep position ($p = 0.001$), in that prone or lateral sleep position was more common in infants of working mothers. In 89 (8.7%) infants, the head was covered by a sheet or blanket which may choke infants and was a risk factor for SIDS. A significant association existed in this study between mother's age and the use of a very soft pillow ($p = 0.005$); the soft pillow use was more common among mothers < 21 years of age.</p>	<p>Maternal cigarette smoke during pregnancy increases the risk for sudden infant death syndrome (SIDS).</p>
<p>The mean score of somatic complaints for co-sleepers was higher than that for non-co-sleepers, and post hoc testing demonstrated a significant mean difference between co-sleepers and non-co-sleepers on somatic complaints, $t(df = 93) = -2.30$, $p < 0.05$, two-tailed. Furthermore, a significant negative relationship was found between months of breastfeeding and somatic complaints, $r = -0.206$, $n = 95$, $p < 0.05$. A significant difference emerged between co-sleepers [co-sleeping only and breast-feeding and co-sleeping; 50.69 ± 6.47 (M \pm SD)] and non-co-sleepers [breast-fed and neither breast-fed or co-sleeping; 42.1 ± 10.3 (M \pm SD)] on sleep problems, $t(df = 93) = -4.80$; $p < 0.05$, two-tailed. T-test revealed that significantly higher sleep problems existed for boys, 48.58 ± 8.24 (M \pm SD) versus girls, 43.7 ± 10.46 (M \pm SD), $t(df = 93) = 2.53$, $p < 0.05$, two-tailed. Chi-square analysis showed no significant relationship between breastfeeding and the way a child falls to sleep, $\chi^2 = 0.151$, $df = 3$, $p > 0.05$, nor was there a relationship between method of falling to sleep and group status, $\chi^2 = 0.186$, $df = 3$, $p > 0.05$.</p>	<p>Further analysis showed that co-sleeping was associated with a higher score on somatic complaints and that higher breast-feeding rates correlated with a lower score on somatic complaints. Co-sleeping would lead to sleep problems, which would then lead to an increase in somatic complaints. Gender of the child did exhibit a significant effect on sleep problems. Boys scored higher on sleep problems than did girls.</p>

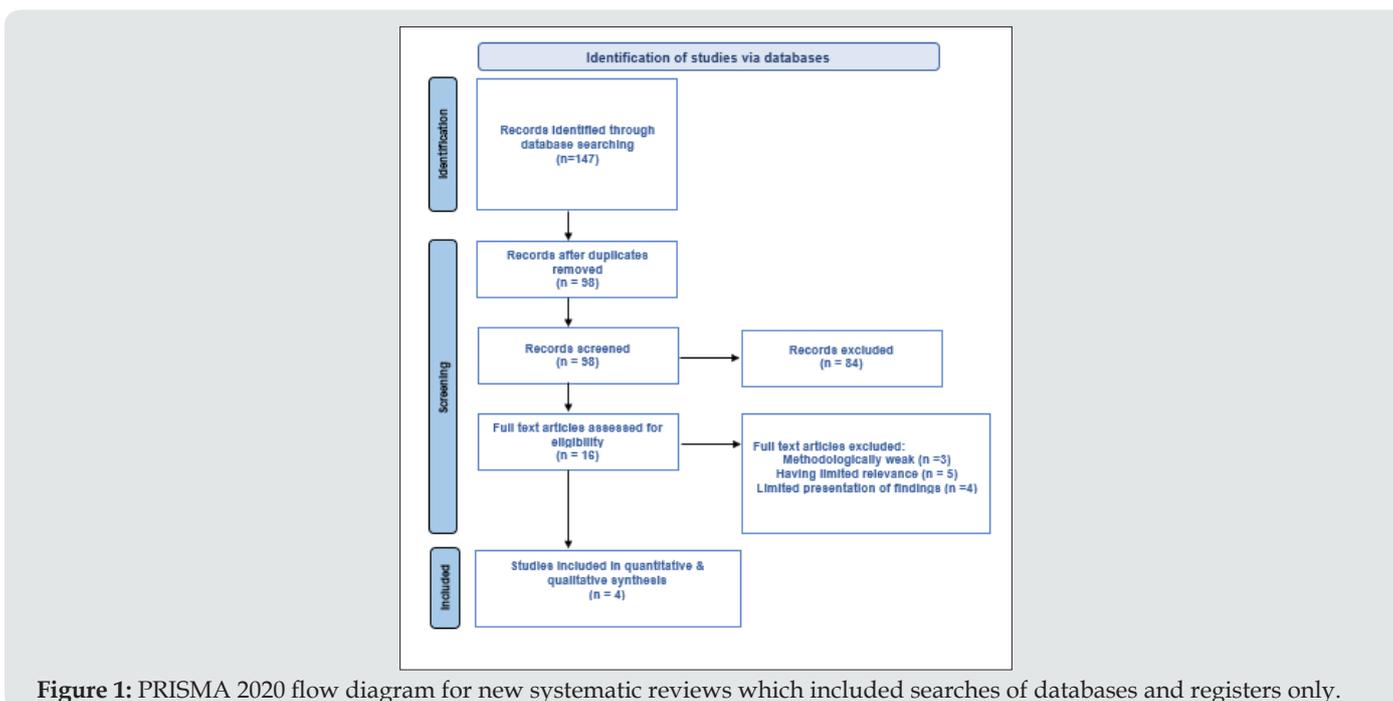


Figure 1: PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only.

Discussion

This review investigated the safety of co-sleeping and highlighted how cautious parents should be. Moreover, the factors that led to room or bed sharing with an infant and the benefits for infant-parent and their relationship were analyzed. Infants are seemingly social beings; they seek parental contact, while parents are biologically designed to respond and there is a neurological basis that explains it [10,15]. Co-sleeping is based on various grounds, such as making breastfeeding easier and more comfortable, relieving child's anxiety or sickness, parental willfulness and belief, sleep experiences of parents, fear, infant safety, parental and infant emotional needs, improved infant sleep, the rest of the beds at home are occupied, and improved care [41,46-50]. Co-sleeping affects breastfeeding highly. It was found that breastfeeding duration increases with co-sleeping compared to sleeping in a separate room [9]. This finding confirms those of [33]. Another issue that was investigated, was the risk of SIDS, while co-sleeping with an infant. It was found that the risk of SIDS was more common in infants of mothers < 21 years, due to young age and lack of experience in infant care [51]. Moreover, boys were more susceptible to SIDS; families with male neonates should be more careful regarding other risk factors. Parental smoking is the main cause of SIDS. Maternal smoking during pregnancy raises the risk for SIDS [20,51]. It was observed that the third or following neonate in the family has increased risk of SIDS. The lack of breastfeeding is also one more important risk factor for SIDS [25,26,51]. Conclusively, the best way to reduce worries of co-sleeping is to assert that parents are aware of SIDS's risk factors and learn how to alleviate them during infant care.10 The main risk factors are smoking, alcohol and drug use, sleep position and sleeping on a sofa and lack of breastfeeding [19].

Moreover, an association between infant sleep location and secure attachment was reported. The relative risk of developing insecure attachment (combining resistant and avoidant groups) in solitary sleepers was 1.21, 95% CI = 1.05-1.40; they exhibit a lower continuous attachment security in contrast to co-sleepers [t (553) = -3.14, p = 0.002] [1]. More specifically, solitary sleeping in the first 2 months was associated with significantly lower attachment security (insecure attachment) at 14 months ($\beta = -0.12$, t (495) = -2.61, p = 0.009), and presented greater odds of developing resistant attachment at 14 months. In conclusion, being in contact with a parent during the night is a protective factor and leads to a secure attachment with the parent. Another link was found between bed sharing and somatic complaints. Bed sharing increases the mean score of somatic complaints compared to non-co-sleeping, [t (df = 93) = -2.30, p < 0.05, two-tailed] which is consistent with the study of [32] reporting, that co-sleeping decreases sleep quality. Furthermore, a significant negative correlation between months of breastfeeding and somatic complaints was observed (r = -0.206, n = 95, p < 0.05). The results of this study showed that co-sleeping is a very common part of child nurturing, as many parents choose to share their bed with their infant during its first months of life. Children are social beings and seek contact with an adult on a neurodevelopmental basis [10,15] and need to be cared for in a

way that promotes their ability to thrive. Health-care professionals should advise and educate parents on how to bed-share with safety, inform them about SIDS and how to protect their infants.

Conclusion

Parenting is multidimensional. To respond to the varied needs of their children, parents must develop both depth and breadth of knowledge, ranging from being aware of developmental milestones and norms that help in keeping children safe and healthy to understanding the role and advice of professionals that interact with families and support parenting. Given the small number of chosen studies analyzed in the present study, conclusions for the general public cannot be drawn. However, this review provides a basis for future studies and potentially can stimulate similar studies by other researchers which will help health-care professionals as well as parents. Evidence based data on infant sleep will eventually lead to infant sleep scientists, pediatricians, midwives and parents becoming more informed about the consequences of caring for human infants in ways that are not congruent with their evolutionary biology.

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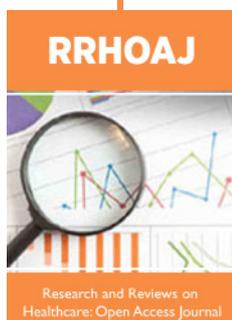
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