

Chapter 6

Bed sharing and sudden infant death syndrome: Irish case-control study

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The present chapter provides a summarized report on data related to bed sharing from a case-control study conducted in Ireland between 1994 and 1998, along with preliminary results from additional data collected from 1999 to 2001. Using the extended data set, the authors conducted a more detailed examination of risk factors for sudden infant death syndrome and evaluated the distribution of these variables among both bed sharing and non-bed sharing infants. In this larger database, bed sharing and other forms of cosleeping are distinguished.

Key Words: *Bed sharing; Infant age; Infant birth weight; Maternal smoking*

In Ireland, the proportion of sudden infant death syndrome (SIDS) cases that are found dead while cosleeping with an adult(s) has increased gradually over the years and remains high, now averaging 53% (49% in beds, and 4% on sofas and armchairs). Similar increases in other countries highlight the need for further investigation and clarification as to whether it is safe for babies to cosleep with adults in adult beds. Although it is generally agreed that bed sharing should be avoided if parents are smokers, have consumed alcohol or drugs in the previous 24 h, or are ill or excessively tired (1-4), whether bed sharing per se poses a risk remains to be determined. Recent evidence has shown that even among nonsmokers, bed sharing increases the risk of SIDS in younger babies (5,6). Previous investigations from our group showed that the risk associated with cosleeping (including couches and armchairs, as well as beds) was influenced by maternal smoking status and was not significant for infants 20 weeks of age or older (4). In addition, we found that bed sharing infants who are placed back in their own cribs or beds to sleep are not at increased risk. A limitation of the study was that a distinction was not made between infants cosleeping on sofas, couches or armchairs and those cosleeping in beds. Therefore, the ORs for bed sharing, at different levels of maternal smoking, were not determined from our data. Additional data for the years 1999 to 2001 have enabled us to extend our previous work and conduct a more detailed examination of SIDS risk factors, and evaluate the distribution of these variables among both bed sharing and non-bed sharing infants.

METHODS

During the time frame of the study (January 1, 1994, to December 31, 2001), a total of 332 SIDS cases were reported to the register. Participation was undertaken by 287 SIDS families (86%) and 831 of 966 (86%) controls selected randomly from the birth register, who

Lit partagé et syndrome de mort subite du nourrisson : Étude cas-témoins irlandaise

Le présent chapitre propose un rapport sommaire des données sur le lit partagé tirées d'une étude cas-témoins réalisée en Irlande entre 1994 et 1998, en plus des résultats préliminaires sur des données additionnelles recueillies entre 1999 et 2001. En utilisant l'ensemble des données tirées de la prolongation de l'essai, les auteurs ont pu examiner plus en détail les facteurs de risque à l'égard du syndrome de mort subite du nourrisson et évaluer la distribution de ces variables selon que les nourrissons dormaient ou non avec d'autres personnes. Avec cette base de données plus volumineuse, il est possible de faire une distinction entre le lit partagé et d'autres formes de sommeil partagé.

were matched for date of birth, the same community care area as the index case and sleep period. Parents were interviewed by one of two researchers in their homes within six weeks of their baby's death. At the time of the interview, control infants were an average of 5.4 weeks older than cases; therefore, analysis of variables related to the infants' last sleep were adjusted for this age difference. The data were analyzed by multiple conditional logistic regression that allowed for matching using STATA version 8 (StataCorp, USA). A variable was created for z scores of weight by gestation by relating the birth weight of each baby to controls of similar gestation. Computer-generated norms compiled in the United Kingdom were used when norms for Ireland were not available. These scores were adjusted for the effects of sex and parity on birth weight (7). The prevalence of risk factors in both bed sharing and non-bed sharing situations in the control population was examined using χ^2 analysis.

RESULTS

Risk of bed sharing

During the last sleep period, 49% of SIDS cases were found cosleeping in an adult bed, compared with only 12% of control infants during a corresponding reference sleep.

The unadjusted OR (UOR) for bed sharing was 7.35 (95% CI 4.82 to 11.22) and, when adjusted for infant age, it was 5.30 (95% CI 2.29 to 12.24; $P < 0.001$). Multivariate analysis of these data estimated an adjusted OR of 3.53 (95% CI 1.39 to 8.94; $P < 0.001$). Bed sharing infants who were placed back in their own crib to sleep were not at increased risk (UOR=0.44, 95% CI 0.10 to 1.91).

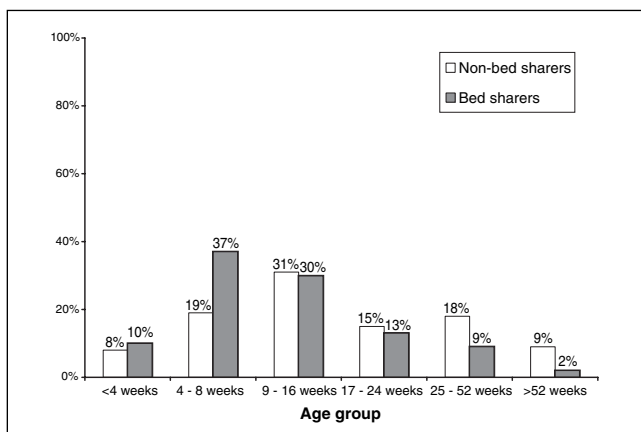
Fifty per cent of bed sharing cases were unaccustomed to this practice. All infants who were bed sharing during the last/reference sleep, regardless of whether they were accustomed to the practice, were at higher risk of SIDS than babies who had never bed shared at all

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TABLE 1
Distribution of risk factors among bed sharing and non-bed sharing infants (1994 to 2001)

Risk factor	Cases			Controls		
	Bed sharers (%)	Sleeping alone (%)	P	Bed sharers (%)	Sleeping alone (%)	P
Social deprivation index 3 to 5	54	45	0.20	9	12	0.45
Maternal age <25 years	32	26	0.29	17	11	<0.05
Lone parent	27	16	<0.05	20	18	0.63
≥3 previous live births	29	18	0.05	8	11	0.32
Mother smoking during pregnancy	87	58	<0.001	17	28	<0.05
Mother consuming alcohol during pregnancy (any quantity)	74	59	<0.05	53	48	0.39
Breastfeeding initiated	30	29	0.82	69	46	<0.001
Baby prone to sweating	29	32	0.53	24	15	<0.05
Ill in the previous 48 h (any illness)	38	38	0.10	37	23	<0.001
Tog count of covering ≥10	81	40	<0.001	57	40	<0.01
Use of duvets	80	23	<0.001	48	14	<0.001
Pillows used	82	32	<0.001	39	14	<0.001
Parental alcohol consumption in previous 24 h	67	32	<0.001	27	27	0.95
Placed in prone position	8	12	0.32	1	2	0.38

**Figure 1** Distribution of sudden infant death syndrome infants categorized by age and bed sharing status

(UOR=7.77 [95% CI 2.44 to 24.73] for accustomed bed sharers versus UOR=3.73 [95% CI 1.25 to 11.74] for infants unaccustomed to bed sharing). Twenty-nine per cent of cases were found bed sharing with one adult and 17% with two adults.

Distribution of risk factors

The distribution of risk factors among bed sharing and non-bed sharing infants is shown in Table 1. In the SIDS group, factors that were more prevalent among bed sharers than non-bed sharers included maternal smoking and alcohol consumption during pregnancy, parental alcohol consumption in the 24 h before the baby's death, the mother having at least three previous live births and being a lone parent.

The proportion of cases that began breastfeeding at birth was the same for both bed sharers and non-bed sharers (29% versus 30%). However, in the control population, breastfeeding was significantly more prevalent among bed sharers. Control infants who bed shared were also more likely to have some form of illness, symptoms or problems in the 48 h before their reference sleep, and were also more prone to sweating; however, in the SIDS group, the distribution of these two variables did not significantly differ between bed sharers and babies who slept on their own.

The use of duvets and pillows, and a high tog value of clothing and bedding (at least 10) during the last sleep period were more prevalent among bed sharers for both cases and controls.

Thirty-seven per cent of SIDS cases found bed sharing were four to eight weeks of age, compared with 19% of the cases that occurred in cribs

(Figure 1). In total, 77% of the bed sharing cases occurred by 16 weeks of age compared with 58% of the non-bed sharing cases. These data suggest that bed sharing cases died younger than cases occurring in cribs.

Risk factor interactions

A significant interaction was observed between bed sharing and maternal smoking, indicating that, as reported previously, the OR associated with bed sharing (and thus the increased SIDS risk) is influenced by maternal smoking status. Of all SIDS cases that were found bed sharing, 87% had mothers who smoked during pregnancy. These data are described in detail elsewhere (8).

Significant interactions were also found between bed sharing and variables for infant birth weight by gestation ($P<0.05$), as well as for the tog value of clothing and bedding ($P<0.01$).

Additional interactions with variables for breastfeeding initiated at birth, parental alcohol consumption before the last sleep and history of illness, which were observed in our initial study, proved nonsignificant in the multivariate analysis and when sofa sharers were removed from the analysis. No significant interaction was found between the variables for bed sharing and infant age at death.

CONCLUSIONS

The initial analysis of the Irish case-control data demonstrated that the risk associated with bed sharing is dependent on maternal smoking status; moreover, it showed that, regardless of smoking status, the risk associated with bed sharing is not significant for infants older than 20 weeks of age, or those bed sharing for a short duration and who were returned to their own crib to sleep. Subsequent analysis, excluding cases found cosleeping on sofas or armchairs, has indicated that the risk associated with bed sharing specifically (as opposed to other forms of cosleeping) is also dependent on maternal smoking status. This associated risk is also influenced by infant birth weight, as well as the tog value of infant clothing and bedding; however, parental alcohol consumption in the 24 h before death did not prove to be a significant factor in bed sharing deaths when sofa sharing deaths were excluded from the definition of bed sharing.

A number of studies have reported that infants found dead while bed sharing were younger than the total SIDS population or non-bed sharing SIDS cases (5,6,9). We found that the majority of bed sharing SIDS cases occurred by 16 weeks of age, whereas a large proportion of non-bed sharing cases occurred in babies older than 16 weeks.

Factors that may influence the choice of sleeping arrangement in the control population include young maternal age and whether the infant was being breastfed, or had problems or symptoms in the 48 h before death.

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