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Infant health

Infants bed-sharing with mothers

M Wailoo, H Ball, P Fleming, M W Platt

Helpful, harmful, or don't we know? (see pages 1106 and 1111)

The publication in the *Lancet* of the European Concerted Action on sudden infant death syndrome (SIDS) (ECAS study)¹ resulted in front page headlines such as “Don't sleep with your baby” (*Daily Telegraph*: D Derbyshire, Science Correspondent, 16 January 2004). Yet the ECAS study said nothing new about bed-sharing and cot death: both the CESDI study (Confidential Enquiry into Stillbirth and Death in Infancy),² data from New Zealand,³ and work from Ireland⁴ have superficially come to similar conclusions. Is the quality of evidence such that paediatricians, midwives, and health visitors should reasonably dissuade mothers from bed-sharing or co-sleeping, or is there more to it than that?

First, we must question the validity of extrapolating health messages from case controlled data sets. Bradford-Hill suggested robust criteria (temporal relationship, specificity, biological plausibility, coherence; others would add dose response) for inferring causality from associative data when prospective randomised trials are impossible.⁵ It took some time before these criteria were satisfied to such an extent that the successful “back to sleep” campaign could be accepted as public policy. That success should not seduce us into accepting a lower standard of evidence of causality for some “new” hypothetical risk factor. Arguably, now that we have good reason to promote supine sleeping, an appropriate thermal environment, and the avoidance of cigarette smoke, the benefit of any further message on reducing the risk of SIDS is likely to be marginal at best.

Second, there is a general lack of understanding about the heterogeneity of bed-sharing in particular, and infant sleep environments in general, in the data collection and analyses of case control studies. These can seriously undermine results such as that from ECAS. The

definitions of infant sleep conditions used in the majority of these studies do not necessarily reflect the reality of infant sleep environments as experienced by the parents and infants. Not all studies have allowed for the use of alcohol or other drugs, nor have they all distinguished manifestly unsafe sleeping environments such as co-sleeping on sofas. It is important to separate sleeping with mother alone, with mother and father, with father alone, in a bed with another child (either with or without an adult), or an unrelated adult sleeping with the infant. It is also important that studies distinguish bed-sharing to facilitate breast feeding; and bed-sharing that is habitual as opposed to occasional; because these states have major physiological differences.

Third, in some of the studies (not the CESDI one) the definition of bed-sharing included babies who spent part of the night in the bed but were put back elsewhere before being found dead, and some who bed-shared for part of the sleep, but were found in the adult bed alone—either before the adult came to bed, or after the adult got up. In these circumstances the death cannot reasonably be attributed to the presence of an adult. Intermittent bed-sharing may only occur when infants are brought into the bed when “mardy” or “twisty”, and these infant behaviours may be a marker for an infection or other illness.⁶ When this illness is fatal on the only night of bed-sharing it creates a coincidence which in large case control studies marks the bed-sharing as a “risk factor”, if no differentiation is made between habitual and intermittent bed-sharing, or the reasons for the bed-sharing are not adequately ascertained. It also raises important questions about the vulnerability of individual infants which may make them succumb to an apparently minor infection from which other normal infants will emerge unscathed.

The only analysis to date that has attempted this level of sophistication was that derived from the CESDI/SUDI study,⁷ which found that for non-smokers the apparent association with bed-sharing was explained by other factors than the practice of bed-sharing itself. Unfortunately, its conclusions are being overshadowed by more recent studies with less robust data sets.

In contrast to the generally negative stance of these epidemiological investigations, all of which focus on infant death rather than infant health, we argue that there is much to be said for bringing a baby into the adult bed in certain circumstances. We suggest that bed-sharing has been a soft target for SIDS campaigners because it seems to involve a straightforward parental choice in that there is no apparent harm from the alternative arrangement of solitary sleeping. But no parent-child behaviour is free of cost and benefit, and unqualified advice against bed-sharing might well result in an increase in other, more hazardous behaviours. For instance, faced with official disapproval of bed-sharing, mothers might choose to feed at night on a sofa, and fall asleep there with their baby; yet this environment appears to be by far the most unsafe for co-sleeping. We therefore challenge on several grounds the assumption that solitary infant sleeping is somehow optimal, when in worldwide and evolutionary terms it has not been the norm.

First, non-human primate mothers generally maintain intimate contact with their infants in the immediate postpartum period and for the first few weeks, both waking and sleeping, and so do human mothers in many cultures today.⁸ Even in the developed world, mother-infant bed-sharing is a common strategy for night-time care giving in the early months of an infant's life, particularly for breast fed babies.^{6,9} It is common among new parents following discharge from hospital, and is more prevalent among neonates than older infants.¹⁰

Second, there is now an increasing body of evidence relating to the behaviour and physiology of bed-sharing that has been obtained both in sleep laboratories and the home environment.^{11,12} These studies have shown that bed-sharing is associated with longer and more restful maternal and infant sleep,¹³ and with successful breast feeding.¹⁴ Babies who sleep with their

mothers feed more frequently (thus stimulating the milk supply), and are more likely to breast feed for longer than those babies who breast feed without bed-sharing.⁹ Babies sleeping habitually with parents are more rousable and may be more easily recognised as being unwell because of their proximity to mother.¹² Likewise, breast feeding mothers bed-sharing with their babies tend to sleep more lightly and are more rousable in the presence of their infant than are mothers who rarely or never bed-share.¹⁵ This emphasises the importance of breast feeding in relation to bed-sharing, and highlights the difference between habitual and occasional bed-sharing, which holds whether or not there is breast feeding.

Third, we have observed that mothers instinctively take up a protective posture when sharing a bed with their infants, lying in a fetal position with their lower arm above the infant's head and the infant lying within around 20–30 cm from the mother's chest. The position of the mother's thighs prevents the baby from sliding down the bed. An extraordinary range of dyadic behaviours can be observed: the infant and mother start to synchronise their sleep states; move towards each other or away from each other as dictated by temperature (and babies demonstrably do not overheat in this situation); breast feeding can take place without either party being technically awake; and both parties touch each other, particularly the mother touching the baby. It is clear from the work so far that we are only just beginning to unravel the complexities of bed-sharing behaviour, and that without such an understanding, simplistic descriptions such as "safe" or "hazardous" are meaningless.

The story of the role of health professionals in prone and supine sleeping was a classical contrast of hubris and nemesis: the well intentioned promotion of a behaviour based on extrapolation from the physiology of preterm babies, but an outcome that, with hindsight, caused unknown numbers of unnecessary infant deaths across the developed world. We cannot afford not to learn from our recent history. We must also be careful about using the "risk" of an intrinsically highly unlikely event, that of unexplained sudden infant death, as a lever for modifying maternal behaviour: in any case, just saying "don't do it" is ineffective in changing anyone's behaviour. Since the advantages of breast feeding have an evidence base that does not feature the risk of cot death at all, and our understanding of the interrelationship between bed-sharing and breast feeding is still quite primitive, we should be very reticent about taking a view on the safety or otherwise of bed-sharing until we understand a great deal more about it.

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IMAGES IN PAEDIATRICS

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Perception of death

The drawings (figs 1 and 2) were made by Lisa, a 9 year old girl with terminal cystic fibrosis. The pictures were made during her hospital admissions, three months apart, with the last one (fig 2) a few days before her death. It is very interesting how this child perceived the deterioration of her condition through these drawings, although she was always cheerful, hardy ever complained, and had a remarkable courage during the course of the disease.



Figure 1



Figure 2

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