Towards A More Inclusive and Realistic View of Normal Infant and Toddler Sleep. A critical response to Sleep Tight! Bulletin Volume 7, No 1-March 2008 of The Centre of Excellence for Early Childhood Development

By John Hoffman

Any discussion of advice for parents dealing with night waking should take into account not only knowledge about the nature of infant sleep and research about the efficacy of specific night-waking interventions, but also the contextual factors which will affect the way parents make sense of expert advice and try to put it into practice. Indeed, this point was made in the March 2008 edition of the Bulletin of the Centre for Excellence for Children's Well-Being, which was devoted entirely to sleep and night-waking issues. One article noted that "sleep management interventions should take into account parental, environmental and cultural practices." It is perplexing and troubling, then, that this Bulletin ignored several salient factors which are part of the experience of today's parents including:

- breastfeeding
- co-sleeping
- advice for parents about forming healthy attachments with their babies and responding to infants' distress
- the diversity of night waking advice for parents in popular media

Influence of breastfeeding and co-sleeping

Health Canada recommends exclusive breastfeeding for the first six months of life with continued breastfeeding up to age two and beyond. Recent surveys in Manitoba and Toronto indicate that the majority (86% - 94%) of Canadian mothers initiate breastfeeding (McKinnon 2000, Ng 2005). At age six months the respective rates of continued breastfeeding were 50% and 58%.

Co-sleeping, in the form of bedsharing or roomsharing is often associated with breastfeeding. The act of breastfeeding causes the release of hormones such as prolactin and oxytocin which have the biological effect of making both mother and baby drowsy, so when mothers breastfeed their babies at night in bed for convenience sake, both mother and baby will often fall asleep with the mother falling into light (stage 1) sleep while the baby goes right into REM or active sleep (Mosko et al 1996). Empirical evidence shows that breastfeeding can increase the likelihood of bedsharing (Ball 2003, McCoy et al. 2004), and that co-sleeping facilitates breastfeeding (McKenna & Volpe 1997). In sum, breastfeeding and co-sleeping are linked and interdependent. Thus, when breastfeeding is encouraged and common, as it is in Canada, one would expect to see an increase in co-sleeping.

Co-sleeping and bedsharing are common and accepted as normal in many cultures (McKenna, Ball & Gettler 2007), and even though bedsharing is

discouraged by most medical authorities in Western countries, evidence suggests that the practice is increasing among North American parents. The exact prevalence is hard to measure since co-sleeping is practised in various forms which include regular bedsharing, bedsharing for part of the night, or occasional bedsharing. The U.S. National Infant Sleep Position Study (Willinger et al. 2003) found that the percentage of parents who reported that they usually slept with their babies doubled between 1993 and 2000. One study, (Lahr, Rosenberg & Lapidus 2005) of a representative sample of 1867 Oregon mothers with babies under four months of age, found that only 23% said they *never* slept with their babies. Just over one-third reported that they slept with their babies always (20.5%) or almost always (14.7%). Similarly, in an online survey of 1484 Canadian middle-class parents (*Today's Parent* 1999 in Reichert 2001), only 17% said they never slept with their babies.

Breastfeeding and co-sleeping influence both parents' nighttime interactions with their children and baby sleep patterns. Breastfed babies are less likely to go back to sleep on their own in the middle of the night at age 12 months (Burnham et al. 2002) and, partly due to the quicker digestion of breast milk, they have different waking patterns than formula-fed babies (Ball 2003, Elias, Nicholson & Konner 1986). Other research (McKenna, Mosko, Dungy & McAnich 1990, McKenna, Mosko & Richard 1994, Mosko, Richard and McKenna 1996, Mosko Richard & McKenna 1997a & b) shows that co-sleeping mothers and babies have sleep and arousal patterns that are measurably different from solitary sleeping, breastfeeding mothers and babies.

Yet, in spite of this evidence that breastfeeding and co-sleeping are key factors affecting the sleeping patterns of infants and nighttime parenting practices of Canadian parents, the CEECD's Bulletin totally ignored both breastfeeding and co-sleeping.

Many parents who co-sleep do so as a lifestyle or culturally-based parenting choice; some adopt the practice in response to sleep problems they cannot solve by other methods (Madansky & Edelbrock 1990). Many parents who co-sleep and/or bedshare are very comfortable with the arrangement (Ball 2003, McKenna & Volpe 2007) and find it to be a convenient nighttime caregiving strategy (Ball et al. 1999). Some report that bedsharing allows both them and their babies get more sleep (Ball 2003, McKenna & Volpe 2007).

Compared to parents who formula feed and do not co-sleep, parents who bedshare, particularly in the context of breastfeeding, are likely to have very different concepts of normal as regards baby sleep and parents' nighttime involvement with babies. They would also differ significantly in their response to the viewpoint espoused in the CEECD's Bulletin, which regards parental presence when the child goes to sleep as a problem.

The CEECD's Bulletin also ignored the reality that advice for parents about baby and toddler sleep issues has become complex and controversial in recent years. Not only are parents given complex instructions for reducing the risk of Sudden Infant Death Syndrome (Canadian Paediatric Society 2004), those searching for solutions to night waking are faced with a proliferation of sleep advice in books, magazines and newspaper articles which may offer conflicting advice. For example, three of the more popular sleep advice books propose substantially different approaches to night waking: *Solve Your Child's Sleep Problems* by Dr. Richard Ferber favours sleep training/extinction; *The Baby Sleep Book* by William and Martha Sears favours co-sleeping; *The No-Cry Sleep Solution* by Elizabeth Pantley is somewhere in between. Parents may respond to conventional medical advice about night waking in different ways depending on which books or philosophies about infant sleep they have been exposed to.

Another contextual factor crucial to these discussions is the messaging that today's parents receive about the importance of learning to interpret and respond to their babies' signals. While sleep experts often advise parents not to respond to their baby's cries at night as part of a strategy to teach babies to sleep through the night, parents also get very strong and consistent messages from other experts that, in general, they should respond quickly to a baby's cries. For example, in an article on attachment posted on About Kids Health, a website sponsored by Toronto's Hospital for Sick Children, Dr. Susan Goldberg writes: "Learn to recognize your infant's signs of distress. Be responsive. Let your child know that you are aware of his or her distress and respond to it appropriately. Be consistent. Consistent responding to your child's need for comfort creates a sense of security in the child." These messages are consistent with the growing body of empirical evidence showing that mutually responsive parent/infant relationships are foundational to the kinds of nurturing interaction babies and preschoolers need for optimal brain development and that insufficient comforting in response to infant stress can lead to heightened levels of cortisol with possible life-long impacts on the way the child will handle stress (McCain, Mustard & Shanker 2007).

Parents who internalize these responsive parenting messages and put them into practice may feel conflicted about sleep experts' advice to ignore their baby's cries at night. That is not to say that techniques that include forms of extinction or controlled crying should never be recommended when dealing with parents who seek help with night waking problems. However, messages that such techniques "have no reported long-term adverse effects on children's well-being or development" may confuse or be less than convincing to parents who feel drawn to respond promptly and consistently to their baby's emotional/developmental needs and cries and at any time of day or night. They might wonder why one response to a baby's distress would make sense before 9:00 pm and a different one would make sense afterwards.

Underlying assumptions about infant development and sleep practices
Central to these disconnects between sleep advice and parental realities are two assumptions which seem to be at the core of much of the medical thinking about sleep issues and which are both reflected in CEECD's Bulletin. One is that a baby who wakes up and cannot go back to sleep on his own without parental attention is disordered. The other is that it is developmentally appropriate for all, or at least most, infants to be "self-soothers," that is, able to put themselves to back to sleep without parental involvement when they wake at night. The evidence base for both of these assumptions is highly questionable.

France and Blampied (1999) define a sleep-disturbed infant as "one who is unable to settle back to sleep without the parents being aware of the awakening." However, data from numerous studies (Eaton-Evans & Dugdale 1988, Burnham & Goodlin-Jones 2002, Scher 1991, Sadler 1994) establish that night waking, often including parental intervention to help the child return to sleep (Goodlin-Jones et al. 2001) is so common in the first year of life that it is clearly a variation of normal, rather than a disorder.

Likewise, the idea that infants have the ability to self-soothe does not stand up to scrutiny. The CEECD's Bulletin states that infant sleep patterns consolidate at around the age of three to four months, noting also that, "At around the same time, infants become capable of learning to 'self-soothe,' that is, to fall asleep without parental assistance." This statement, which is based on cultural assumptions rather than empirical research, proposes that "self-soothing" is a normal milestone in infant development before the middle of the first year. Thus, it could be construed that a baby being soothed back to sleep by a caregiver is a sign of sub-optimal infant development or a parenting problem. Indeed, the five behavioural interventions outlined by Dr. Jodi Mindell in the CEECD's bulletin are described as "based on the infant's ability to self-soothe and giving the infant the opportunity to use this ability." This implies that the reason a child did not learn to self-soothe is that the parent interfered or did not allow the child to use this ability. Try to imagine how that statement sounds to a parent who struggles in the middle of the night to comfort a baby who seems highly upset and shows no apparent ability to calm herself down.

However, before one can decide whether or not self-soothing is a normal infant behaviour, one has to first decide what it means. The term self-soothe suggests that the baby wakes up fully, and then employs a soothing behaviour such as thumb or finger sucking to get herself back to sleep. There is good evidence that some infants wake up and go back to sleep on their own (Anders 1978, 1979). The question is, do they soothe themselves or do they simply fall back to sleep, either because they weren't very wide awake to begin with, were not highly upset or agitated upon waking, or because they have abandoned hope that someone will come? In tracing back various academic references to self-soothing, it was not possible to find a study that actually proved, or even examined, whether or

not infants engage in specific behaviour that could be defined as self-soothing. In fact, long-term paediatric sleep researcher, Dr. Thomas Anders, whose work is cited above, says he knows of no study of this type, noting that self-soothing was a term coined for research purposes. “Self soothing is a label we coined to contrast it with signaling (crying) upon awakening. I would bet that most non-signaling awakenings occur without active self soothing” (e-mail correspondence with author).

Yet this concept of self-soothing, as defined by medical sleep researchers, is pervasive in paediatric sleep advice for parents, with the implicit assumption that lack of the ability to self-soothe is a deficit that parents must address for the sake of the child’s optimal development. For example, a recent Canadian study referred to the presence of a parent at sleep onset as a “maladaptive” parent behaviour (Simard et al. 2008). It may well make life easier for parents if babies “self soothe.” But whether or not “self-soothing” is necessarily a positive trait for a baby is far from clear. One study reported that parents who placed lower value on the parenting role, had higher levels of depression and stress and lower levels of parental self-efficacy were more likely to have a self-soothing baby (Burham & Goodlin-Jones 2002). A recent German study of sleeping problems and attachment quality in toddlers found that 30-month-olds whose attachment was assessed as insecure-avoidant were actually less likely to have sleep problems than those assessed as securely attached. Further, all of the toddlers who displayed self-soothing behaviours such as thumb or pacifier sucking were from the insecure-avoidant group (Nolte, Pott & Pauli-Pott 2006).

Conclusions and recommendations

There is no question that night waking can be very stressful for families and that parents sometimes turn to professionals for advice about getting children to sleep through the night. However, it *is* questionable to assume that waking up and needing comfort from a parent during the night or parental presence when a baby falls asleep are, by definition, problematic. In fact, as we have argued, there is evidence that night waking is normal, that self-soothing behaviour cannot be expected of all babies in the first year of life, and even that self-soothing behaviour may indicate less than optimal circumstances.

Clinicians should not underestimate the potential harm that may come from telling parents that a child’s behaviour or attributes are abnormal when in fact they may fall within the range of challenging but normal development. When parents see a child’s issues as a normal parenting challenge, they see their task as finding ways to cope and adapt while working in concert with the child’s natural development to shape behaviour in the desired direction. In contrast, when they see a child or his behaviour as abnormal, they become alarmed, anxious and think in terms of an immediate correction. If that correction is not easily accomplished, they are likely to see themselves and/or their child as deficient, to the possible detriment of parenting capacity and parent/child

relationships. Thus, clinicians should consider very carefully what they describe to parents as abnormal or disordered in terms of infant sleep.

Clinicians should also take into account the ways that breastfeeding and co-sleeping, both of which are common, affect both infant sleep patterns and parent/child nighttime interaction patterns. Finally, it is important to recognize that the evidence-based parenting advice to respond promptly to babies' distress is in conflict with the advice to ignore babies' distress in order to teach them to sleep through the night. Add to this the fact that most parents are exposed to conflicting (and often very prescriptive) advice about dealing with night waking, and the result can be a confusing overload of information for parents which may not only be unhelpful, but also undermine their confidence.

These realities call for a more flexible and varied approach to sleep and night waking advice for parents. Different parents dealing with different circumstances need physicians and other sleep advice-givers to understand and take into account all of these contextual factors and to be prepared to offer sleep advice accordingly.

This does not preclude the possibility that sleep-training methods such as extinction and controlled crying may be appropriate and helpful in some situations. However, if physicians and other health practitioners perceive only one set of conditions as normal for infant sleep, their advice to parents may be inappropriate because it is out of sync with some parents' biological and social realities or incompatible with their parenting goals. Such advice may increase parents' stress rather than alleviate it.

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NEVER use infant sleep positioners. Using this type of product to hold an infant on his or her side or back is dangerous. NEVER put pillows, blankets, loose sheets, comforters, or quilts under a baby or in a crib. These products also can be dangerous.Â ALWAYS keep cribs and sleeping areas bare. That means you should also never put soft objects or toys in sleeping areas. ALWAYS place a baby on his or her back at night and during nap time.Â In most of these cases, the babies suffocated after rolling from their sides to their stomachs. In addition to reports about deaths, the federal government also has received reports about babies who were placed on their backs or sides in positionersâ€”but were later found in other, dangerous positions within or next to these products. the first phase of John Bowlby's developmental attachment sequence, during the first three months, when infant show no visible sings of attachment. social smile. the first real smile, occurring at about 2 months of age.Â a type of attachment that is marked by an infant's inconsistent reactions to the caregiver's departure and return. synchrony. the reciprocal aspect of the attachment relationship with a caregiver and infant responding emotionally to each other in a sensitive attuned way. Oxytocin. hormone whose production is centrally involved in bonding, nurturing, and caregiving behaviors. dose-response effect. term referring to the fact that the amount (dose) of a substance (in this case the length of deprivation) determines its probable effect or impact on the person. Infant sleep training refers to a number of different regimens parents employ to adjust their child's sleep behaviors. During the first year of life, infants spend most of their time in the sleeping state. Assessment of sleep during infancy presents an opportunity to study the impact of sleep on the maturation of the central nervous system (CNS), overall functioning, and future cognitive, psychomotor, and temperament development. Sleep is essential to human life and involves both physiologic and Sleep measures included parent-reported sleep diaries and infant actigraphy. Infant stress was measured via morning and afternoon salivary cortisol sampling, and mothersâ€™ self-reported mood and stress.Â Parents contacted researchers in response to advertisements at pediatric outpatient clinics, child care centers, health professional private practices, newspapers, and word-of-mouth. Parents completed a questionnaires and a 90-minute interview (conducted by K.J.) assessing the infantâ€™s medical and sleep history. Eligible families were randomly assigned via a predetermined computerized block randomization held by K.J. (random allocation was not concealed from K.J.). Due to ethics committee requirements, parents were allowed to swap conditions. Infants with a sleep problem were more likely to sleep in the parent's bed, be nursed to sleep, take longer to fall asleep, and wake more often and for longer periods overnight. Mothers who were exclusively breast feeding were more likely to report a sleep problem than those who were not breast feeding or those who gave their infant both formula and breast milk (56% versus 40%). Mothers from lower socioeconomic groups were more likely to report sleep problems but other infant and sociodemographic factors did not differ. The presence of an infant sleep problem remained a strong predictor of hig