Sleep Medicine Reviews 15 (2011) 335–337

Contents lists available at ScienceDirect

Sleep Medicine Reviews

journal homepage: www.elsevier.com/locate/smrv

COMMENTARY

Why care about sleep of infants and their parents?

Avi Sadeh [a,*], Jodi A. Mindell [b], Judith Owens [c]

[a] The Adler Center for Research in Child Development and Psychopathology, Department of Psychology, Tel Aviv University, 69978 Tel Aviv, Israel
[b] Department of Psychology, Saint Joseph's University and Sleep Center, The Children's Hospital of Philadelphia, Philadelphia, PA, United States
[c] Children's National Medical Center, Washington DC, United States

ARTICLE INFO

Article history:
Received 2 March 2011
Accepted 3 March 2011
Available online 25 May 2011

Introduction

As the "guards" of the "status quo" we would like to challenge some basic assertions presented by Blunden et al.[1] We have each been involved in working with parents, infants and children in clinical settings for many years and our views are clearly colored by the distress of families who are seeking our help in their struggles with sleepless nights on the one hand, and by their great relief and gratitude following brief interventions, on the other hand. However, because many of the important issues raised by Blunden et al. tend to trigger highly charged emotional responses, it is particularly important that we approach them from a rational evidence-based perspective. While we welcome and encourage healthy debate and divergent views, our ultimate responsibility as mental health and healthcare professionals is to assist parents and families in making appropriate choices by providing them with the best and most scientifically-sound information possible.

Why care about infant sleep?

Sleep problems are indeed highly prevalent in infants and young children,[2–6] as well as very persistent and if not treated can last for years.[7,8] From the review of Blunden et al. the reader may get the impression that having a good consolidated sleep at night is only important for the parents from their egocentric perspective (and of course to clinicians who profit from this parental distress). As scientists and clinicians we are accused of pathologizing frequent night-wakings and excessive nighttime crying. However, the scientific literature suggests that disrupted sleep patterns have direct negative impact on infants and young children. Although more research is needed to better understand the immediate and long-term consequences of early sleep problems, the existing knowledge has demonstrated that sleep problems in infancy are associated with perceived difficult infant temperament, increased likelihood of later behavior problems, compromised cognitive abilities and increased body weight.[9–15] Furthermore, we have good reasons to believe that having exhausted, distressed or especially depressed parents also compromises infant development. Therefore, the implied assumption of Blunden et al. that fragmented nighttime sleep is only a problem for the parents is unjustified and essentially dismissive of the very real consequences it has on children and families.

Why care about parents' sleep?

Infant sleep problems are indeed a major source of stress to parents. Early childhood sleep problems have been repeatedly associated with parental stress, maternal depression, reduced sense of competence, poor physical health and reduced quality of life.[3,4,6,16,17] Furthermore, it has been shown that interventions for infant sleep problems lead to a significant improvement in these domains of parental well-being.[8,18–22] Even if we consider the scientific literature from the "egocentric" perspective of the infant, it is certainly in the best interests of the infant to have healthy, well-rested and ultimately more responsive parents.

Is "solo sleep" such a bad invention?

Blunden et al. imply that the root of the problem is in the cultural transformation in "Westernized" societies to "solo sleep." They describe historical processes that led to this modern invention.

Before we address this argument, it is important to emphasize that most professionals in the pediatric sleep field in fact do not make wholesale recommendations against co-sleeping or room-sharing, and support the practice if that is the life style choice of the

* Corresponding author. Fax: +972 3 6408074.
E-mail address: sadeh@post.tau.ac.il (A. Sadeh).

1087-0792/$ – see front matter
doi:10.1016/j.smrv.2011.03.001

parents and if proper measures are taken to secure the safety of the infant. By the same token, it would be equally irresponsible and "paternalistic" to advocate for co-sleeping as the only "right" way for infants to sleep. Indeed cross-cultural studies show that this practice is largely determined by cultural and social norms and expectations.[2,23] In a study on sleep and sleep ecology during the first 3 years in 18 countries it was found that most infants (more than 80%) from predominantly Asian countries shared a room with their parents throughout the first three years whereas in predominantly Caucasian countries about 50% of the infants shared a room with their parents during the first few months and these figures dropped sharply during the first year to around 10% at the beginning of the second year of life.[2]

While the practice of co-sleeping was probably very adaptive in times when basic sleep conditions (e.g., appropriate temperature, safety from predators) could not be taken for granted and infant mortality rates were extremely high, there is very little empirical evidence to support co-sleeping as the only "correct" approach to sleep in infants in modern society. Moreover, some evidence suggests that it may be detrimental. Although sharing a room with the child was the tradition and norm in the predominantly Asian countries in the study quoted above, the parents in these countries reported later bedtimes, shorter nighttime sleep and more night-wakings, and were more likely to consider their child's sleep as a problem in comparison to parents in predominantly Caucasian countries.[2] These findings are in line with other studies (including experimental studies) indicating that co-sleeping is usually associated with more fragmented sleep and less deep sleep for both infant and parents.[23–25] Furthermore, some evidence suggested that co-sleeping is more stressful and associated with more intense responses to stress in infants than solitary sleep.[23,26,27]

Are we teaching parents to ignore their crying babies?

One of the main claims raised by Blunden et al. is that clinical interventions for infant sleep problems encourage parents to ignore their crying infants during the night and that this may seriously compromise infant-parent attachment security. Indeed it is unfortunate that behavioral labels such as "extinction" or "controlled crying" provide unnecessary disturbing connotations to these interventions. However, it should be emphasized that the vast majority of modern behavioral interventions are based on some degree of continued caregiver response to the infant throughout the sleep initiation or resumption process. Some methods recommend continuous presence of the parents next to the infant crib during the process or throughout the night.[28–30] The main issues then become how quickly parents are requested to respond to their infant and what constitutes the most appropriate response.

Furthermore, it should be emphasized that these behavioral interventions were developed in the first place to fill a clear clinical need. Rather than a case of sleep clinicians "imposing" their parenting values on unsuspecting families, as the authors imply, dedicated professionals over the years have responded to the real world concerns and distress of families by using sound behavioral principles to create successful solutions. The interventions they have developed have consistently and repetitively been found to be highly effective, and well-accepted by most parents.[29] They are brief and lead to significant improvement in infant sleep and behavior as well as parental sleep and well-being.[29] The authors also imply these behavioral interventions simply teach a child to "give up" rather than develop self-soothing skills, however there are absolutely no data supporting such a statement More importantly, beyond the short-term distress, protest and crying associated with these interventions in the first few days, research has yet to demonstrate any adverse effects of these interventions.

An alternative perspective is that parental practices that assist an infant in learning to self-soothe during the sleep initiation process is actually the first step in the development of self-regulation. Donald Winnicott, the famous pediatrician and child psychoanalyst coined the term "good enough mother' to describe how sensitive mothers over the course of development stop responding to every one of their infant's demands and how important this process is in enabling the infant to develop self-regulatory abilities.[31] In his own words: "*The good enough 'mother' (not necessarily the infant's own mother) is one who makes active adaptation to the infant's needs, an active adaptation that gradually lessens, according to the infant's growing ability to account for failure of adaptation and to tolerate the results of frustration*." Indeed, developmental research has shown that in typically-developing children, parental bedtime behaviors and soothing strategies are the most reliable predictors of later infant sleep patterns.[32–34] For instance, longer response times to night-wakings at 3 months predict self-soothing at 12-months of age.[33] Early maternal cognitions about infant sleep (during pregnancy and at 6 months of age), predict parental soothing intervention and objective sleep patterns of the infant at 6 and 12-months of age.[32] These findings and those of many other studies indicate that infants who develop total reliance on parental soothing behaviors are more likely to wake-up more often and require extensive parental interventions.

Conclusions

Although we have outlined our reservations regarding the main issues raised by Blunden et al. we believe that the following topics should be addressed in future research and clinical practice:

1) Which infants and parents are most likely to benefit from these evidence-based interventions and are there any vulnerable populations of infants or parents that may suffer negative consequences?
2) To what extent is there a need to tailor clinical interventions to the age and the developmental stage of the infant or to other characteristics of the infant and the parents?
3) What is the relationship between sleep self-regulation and the acquisition of other self-regulatory (e.g., feeding, toileting) skills?

In addressing these and related questions, ultimately, our goal, and that of our colleagues in pediatric sleep medicine, is decidedly not to encourage responsive and caring parents to become dismissive or neglectful of their infants, but rather to assist them in becoming "good enough parents" with well-rested babies.

Conflict of interests

The authors serve parents of sleep-disturbed infants and children in their clinical work.

References

1. Blunden SL, Thompson KR, Dawson D. Behavioural sleep treatments and night time crying in infants: challenging the status quo. Sleep Med Rev, in press.
2. Mindell JA, Sadeh A, Wiegand B, How TH, Goh DY. Cross-cultural differences in infant and toddler sleep. *Sleep Med* 2010;**11**:274–80.
3. Wake M, Morton-Allen E, Poulakis Z, Hiscock H, Gallagher S, Oberklaid F. Prevalence, stability, and outcomes of cry-fuss and sleep problems in the first 2 years of life: prospective community-based study. *Pediatrics* 2006;**117**:836–42.
4. Hiscock H, Wake M. Infant sleep problems and postnatal depression: a community- based study. *Pediatrics* 2001;**107**:1317–22.
5. Thunstrom M. Severe sleep problems among infants in a normal population in Sweden: prevalence, severity and correlates. *Acta Paediatr* 1999;**88**:1356–63.
6. Bayer JK, Hiscock H, Hampton A, Wake M. Sleep problems in young infants and maternal mental and physical health. *J Paediatr Child Health* 2007;**43**:66–73.

7. Zuckerman B, Stevenson J, Bailey V. Sleep problems in early childhood: continuities, predictive factors, and behavioral correlates. *Pediatrics* 1987;**80**: 664–71.
8. Lam P, Hiscock H, Wake M. Outcomes of infant sleep problems: a longitudinal study of sleep, behavior, and maternal well-being. *Pediatrics* 2003;**111**:e203–7.
9. Ednick M, Cohen AP, McPhail GL, Beebe D, Simakajornboon N, Amin RS. A review of the effects of sleep during the first year of life on cognitive, psychomotor, and temperament development. *Sleep* 2009;**32**:1449–58.
10. Tikotzky L, de Marcas G, Har-Toov J, Dollberg S, Bar-Haim Y, Sadeh A. Sleep and physical growth in infants during the first 6 months. *J Sleep Res* 2010;**14**: 89–96.
11. Taveras EM, Rifas-Shiman SL, Oken E, Gunderson EP, Gillman MW. Short sleep duration in infancy and risk of childhood overweight. *Arch Pediatr Adolesc Med* 2008;**162**:305–11.
12. Thunstrom M. Severe sleep problems in infancy associated with subsequent development of attention-deficit/hyperactivity disorder at 5.5 years of age. *Acta Paediatr* 2002;**91**:584–92.
13. Bernier A, Carlson SM, Bordeleau S, Carrier J. Relations between physiological and cognitive regulatory systems: infant sleep regulation and subsequent executive functioning. *Child Dev* 2010;**81**:1739–52.
14. Scher A. Infant sleep at 10 months of age as a window to cognitive development. *Early Hum Dev* 2005;**81**:289–92.
15. Dearing E, McCartney K, Marshall NL, Warner RM. Parental reports of children's sleep and wakefulness: longitudinal associations with cognitive and language outcomes. *Infant Behav Dev* 2001;**24**:151–70.
16. Martin J, Hiscock H, Hardy P, Davey B, Wake M. Adverse associations of infant and child sleep problems and parent health: an Australian population study. *Pediatrics* 2007;**119**:947–55.
17. Smart J, Hiscock H. Early infant crying and sleeping problems: a pilot study of impact on parental well-being and parent-endorsed strategies for management. *J Paediatr Child Health* 2007;**43**:284–90.
18. Hiscock H, Bayer J, Gold L, Hampton A, Ukoumunne OC, Wake M. Improving infant sleep and maternal mental health: a cluster randomised trial. *Arch Dis Child* 2007;**92**:952–8.
19. Hiscock H, Bayer JK, Hampton A, Ukoumunne OC, Wake M. Long-term mother and child mental health effects of a population-based infant sleep intervention: cluster-randomized, controlled trial. *Pediatrics* 2008;**122**:E621–7.
20. Hiscock H, Wake M. Randomised controlled trial of behavioural infant sleep intervention to improve infant sleep and maternal mood. *Br Med J* 2002;**324**: 1062–5.
21. Mindell J, Johnson CE, Sadeh A, Telofski LS, Kulkarni N, Gunn E. Efficacy of an Internet-based intervention for infant and toddler sleep disturbances. Sleep in press.
22. Mindell JA, Telofski LS, Wiegand B, Kurtz ES. A nightly bedtime routine: impact on sleep in young children and maternal mood. *Sleep* 2009;**32**:599–606.
23. Thoman EB. Co-sleeping, an ancient practice: issues of the past and present, and possibilities for the future. *Sleep Med Rev* 2006;**10**:407–17.
24. Mosko S, Richard C, McKenna J. Infant arousals during mother-infant bed sharing: implications for infant sleep and sudden infant death syndrome research. *Pediatrics* 1997;**100**:841–9.
25. Mosko S, Richard C, McKenna J, Drummond S. Infant sleep architecture during bedsharing and possible implications for SIDS. *Sleep* 1996;**19**:677–84.
26. Lucas-Thompson RG, Goldberg WA, Germo GR, Keller MA, Davis EP, Sandman CA. Sleep arrangements and night waking at 6 and 12 months in relation to infants' stress-induced cortisol responses. *Infant Child Dev* 2009;**18**:521–44.
27. Hunsley M, Thoman EB. The sleep of co-sleeping infants when they are not co-sleeping: evidence that co-sleeping is stressful. *Dev Psychobiol* 2002;**40**:14–22.
28. Sadeh A. Assessment of intervention for infant night waking: parental reports and activity-based home monitoring. *J Consult Clin Psychol* 1994;**62**:63–8.
29. Mindell JA, Kuhn B, Lewin DS, Meltzer LJ, Sadeh A. Behavioral treatment of bedtime problems and night wakings in infants and young children - an American Academy of Sleep Medicine review. *Sleep* 2006;**29**:1263–76.
30. Tikotzky L, Sadeh A. The role of cognitive-behavioral therapy in behavioral childhood insomnia. *Sleep Med* 2010;**11**:686–91.
31. Winnicott DW. Transitional objects and transitional phenomena; a study of the first not-me possession. *Int J Psychoanalysis* 1953;**34**:89–97.
32. Tikotzky L, Sadeh A. Maternal sleep-related cognitions and infant sleep: a longitudinal study from pregnancy through the first year. *Child Dev* 2009;**80**:860–74.
33. Burnham MM, Goodlin-Jones BL, Gaylor EE, Anders TF. Nighttime sleep-wake patterns and self-soothing from birth to one year of age: a longitudinal intervention study. *J Child Psychol Psychiatry* 2002;**43**:713–25.
34. Mindell JA, Sadeh A, Kohyama J, How TH. Parental behaviors and sleep outcomes in infants and toddlers: a cross-cultural comparison. *Sleep Med* 2010;**11**:393–9.