

A behavioural infant sleep intervention resolved sleep problems

Hiscock H, Wake M. Randomised controlled trial of behavioural infant sleep intervention to improve infant sleep and maternal mood. BMJ 2002;324:1062-5.

QUESTION: How effective is a behavioural intervention (controlled crying) in reducing infant sleep problems and maternal depression?

Design

Randomised (allocation concealed), blinded (healthcare providers, data collectors, outcome assessors, and data analysts), controlled trial with 4 months of follow up.

Setting

Maternal and child health centres in Melbourne, Victoria, Australia.

Patients

Mothers of infants aged 6-12 months who participated in a survey about their infant's sleep and their own wellbeing. Eligible mothers reported a problem with their infant's sleep and ≥ 1 of waking > 5 nights per week, waking > 3 times per night, taking > 30 minutes to fall asleep, or requiring parental presence to fall asleep during the past 2 weeks. Exclusion criteria included postnatal depression treatment, reported thoughts of self harm, and infants with a major medical or development problem. Follow up was 97% at 2 months and 94% at 4 months.

Intervention

Mothers were stratified by presence of depression (Edinburgh Postnatal Depression Scale [EPDS] score ≥ 12) and allocated to a behavioural infant sleep intervention ($n=78$) or a control group ($n=78$). The intervention comprised 3 private consultations with the study investigator, which involved discussion of infant sleep problems with the parents, instruction in management of sleep problems (including camping out and controlled crying), and the development of a sleep management plan tailored to individual families. Parents responded to their infant's cry in increasing time intervals. Other sleep management tactics included gradually removing parental presence while the infant fell asleep and reducing the volume of milk or time taken to feed during night time feeds. Control group mothers received (by post) a single fact sheet describing normal sleep patterns in infants 6-12 months of age.

Main outcome measures

Maternal report of resolution of infant sleep problems and depressive symptoms at 2 and 4 months.

Main results

Analysis was by intention to treat. At 2 months, more infant sleep problems had resolved in the intervention group than in the control group ($p=0.005$) (table). This difference was greater among depressed mothers ($p=0.001$) (table). The group differences in resolution of sleep problems were not maintained at 4 months. At 2 months, depression scores fell more among intervention group mothers than control group mothers after controlling for additional professional services, EPDS score, and allocated group (difference in decrease in score from baseline 1.4, 95% CI 0.2 to 2.5). Among

mothers who were depressed at baseline, greater decreases were seen in the intervention group at 2 and 4 months (decrease in EPDS score at 2 mo 6.0 *v* 3.7, $p=0.01$; at 4 mo 6.5 *v* 4.2, $p=0.04$).

Conclusions

A behavioural infant sleep intervention reduced infant sleep problems at 2 months and reduced maternal depression, particularly among mothers with high depression scores. Sustained differences in reduction of sleep problems and depression scores were not evident at 4 months.

COMMENTARY

Few infant skills are more important to their caregivers in the early months of life than the infant's ability to fall asleep easily and remain asleep at appropriate times. The study by Hiscock and Wake attempts to add to our knowledge in this area by testing the benefits of an infant sleep intervention. It also aims to further our understanding of the role that infant sleep problems play in maternal postpartum depression, a critical problem that is often overlooked.

Unfortunately, the study's contributions are limited. A failure exists to distinguish between the infants' actual sleep patterns and the mothers' perceptions of infant sleep problems. Mothers were asked if their infants had a sleep problem and if they showed 1 of 5 described sleep behaviours. However, clinicians who work with new mothers know that mothers often differ in how they interpret and describe similar behaviours. Another limitation is the possibility of a Hawthorne effect—that reported improvement in sleep problems and maternal depression seen at 2 months in the intervention group resulted from the opportunity to meet with the researcher in a counselling session 3 times, rather than the result of a controlled crying intervention. Furthering this suspicion is the fact that these differences in improvement between the intervention and control groups were not evident at 4 months, after cessation of the visits.

Despite these limitations, the authors show the importance of addressing infant sleep patterns with mothers and especially those who may be depressed. It is notable that 67% of eligible mothers agreed to participate, but primiparous women and those who reported more infant sleep problems were more likely to participate. Strikingly, mothers who were allocated to the control group and who did not receive the counselling visits were more likely to seek outside help with sleep issues from professionals or peers.

Primary care providers have a unique opportunity to assist mothers in teaching infants how to sleep. Such an important task may prove even more beneficial to mothers with depression. Even a short term gain for these women may be an invaluable contribution to infant and maternal wellbeing.

Elizabeth Hawkins-Walsh, RN, CPNP, DNSc
 Director, Pediatric Nurse Practitioner Program
 The Catholic University of America School of Nursing
 Washington, DC, USA

Author response

Regarding the statement that the improvement in depression scores at 2 months in intervention group mothers might be the result of meeting with the researcher rather than the effect of the intervention, separate analyses were run and showed that depression scores fell when infant sleep problems improved, and seeing the researcher had no additional effect.

Source of funding:
 National Health and
 Medical Research
 Council.

For correspondence:
 Dr H Hiscock, Royal
 Children's Hospital,
 Melbourne, Victoria,
 Australia.
hiscockh@cryptic.rch.unimelb.edu.au

*Behavioural infant sleep intervention v control for resolution of infant sleep problems at 2 months**

Patient groups	Intervention	Control	RBI (95% CI)	NNT (CI)
All mothers	70%	47%	47% (12 to 97)	5 (3 to 15)
Depressed mothers (Edinburgh Postnatal Depression Scale score ≥ 10)	79%	39%	100% (31 to 227)	3 (2 to 7)

*Abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article.