Getting young children to sleep at night

Is there a best answer?

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Ramchandani P, Wiggs L, Webb V, Stores G. A systematic review of treatments for settling problems and night waking in young children. *BMJ* 2000;320:209-13.

Research question

What is the best way to deal with problems of night waking and settling young children to sleep?

Type of article and design

Systematic review of randomized trials.

Relevance to family physicians

It is 4:30 AM as I pull out an article that caught my eye at the clinic. Across from me sits the latest addition to my brood, a happy-go-lucky young man who is wide awake. He gives me a smile and I kind of smile back. Then I groan and mutter to myself that people who have done a residency should get a special pass from night waking. My patients are shocked when I complain. They just assume that these problems do not happen to physicians. They assume that there is some sensible secret you just need to know. Well, is there? Talk to me.

When I poll family doctors on how many of our day-to-day clinical problems are actually informed by good evidence, most say fewer than 50%. We seem to get training in exotic syndromes and diseases but not in matters that greatly affect our patients' lives, such as putting children to bed (and, for that matter, the whole parenting thing). We should consider the negative effects of this nocturnal challenge on the family unit, maternal health, and marital discord. We hoped this group of researchers from the Oxford Child and Adolescent Psychiatry Department could give us some answers.

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Overview of study and outcomes

The authors considered settling problems and night waking together because they often coexist; programs that target one tend to benefit the other. They reviewed evidence of the efficacy of interventions for healthy young children by systematically reviewing all randomized controlled trials in this area. MEDLINE and a variety of other databases (EMBASE, PsychLIT, CINAHL, Cochrane, etc) were searched from 1966 to September 1998. No language restrictions were applied. All references were collected from relevant papers, reviews, and books, and the *Journal of Child Psychology and Psychiatry* was searched by hand for the past 5 years. To identify additional unpublished and published studies, authors of identified studies were contacted where possible and the current manufacturers of trimeprazine were also contacted for available evidence.

Inclusion criteria selected children younger than 5 years who were "recognized as problematic by their parents or carers, either a settling problem (refusing or taking a long time to settle at night or tantrums at bedtime) or night waking (waking frequently or waking for long periods, or both)."[1] Trials were then assessed for methodology using the Jadad scale.[2]

Results

Forty-four trials were located; nine were of adequate methodologic quality. Four used drug therapy, four used behavioural interventions, and one used a booklet. Meta-analysis was impossible because the trials were too heterogeneous.

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The drug trials used the antihistamines trimeprazine and niaprazine (up to 60 to 90 mg). Both drugs had a statistically significant positive effect in the short term, but clinical significance was less clear because, in both trials, children receiving treatment continued to wake at night, and up to one third did not improve with drugs. Long-term success was questionable also because one third of subjects withdrew from the study. Number of wakings at night fell from 2.8 at baseline to 1.6 at 4 weeks' follow up.

The first two studies had a crossover design so there was no matched untreated group with which to compare rates. The third study compared niaprazine to a benzodiazepine and found the former slightly better. The final study used trimeprazine as an adjunct to an extinction program (see below) and reduced night waking during the first 10 days of the trial more than placebo (plus extinction), but no difference between the two groups was seen at the end of treatment or at 4 weeks' follow up.

Behavioural therapies were more interesting. The authors briefly described the techniques used.

Positive routines. A 20-minute winding-down bedtime routine was established, initially close to the time the child usually fell asleep. The time was brought forward by 5 to 10 minutes per week to an appropriate bedtime. After completing the routine, any resistance from the child was dealt with by parents saying, "It's time for sleep" and placing the child back in bed if necessary.

Graduated extinction. Parents ignored bedtime tantrums for preset periods, the duration of which increased each week. At the end of the preset period, parents entered the room, put the child back in bed if necessary, and told him or her it was time for sleep before leaving the room again after a maximum of 15 seconds.

Scheduled wakings. After collection of baseline data, parents were instructed to wake their children 15 to 60 minutes before they usually woke spontaneously and to resettle them to sleep in their usual manner. Number and timing of scheduled wakings were modified semiweekly, depending on children's sleep patterns during the previous few nights.

Extinction or systematic ignoring. Parents went to their children when they were first heard to cry, checked that they were not ill, and changed diapers in the crib if necessary, but did not pick children up or soothe, feed, or interact with them in any way. Once reassured children were not ill, parents left the room and did not return for the duration of that crying episode. Further crying episodes each night were dealt with similarly.

Modified extinction. Parents ignored their children for 20 minutes then checked that they were not ill, but parents did not pick up, soothe, interact with, or feed children. Having reassured themselves, parents left the room and returned only if children had settling problems or night waking for a further 20 minutes. The 20-minute checking interval was maintained throughout treatment. Therapists made "support visits" to parents using modified extinction every 2 or 3 days during the first 3 weeks of treatment.

Educational booklet. The booklet gave parents general information about children's sleep, described the advantages and disadvantages of treatments for children's sleep problems, and emphasized that there was no one solution. Supportive visits, used in conjunction with the booklet, consisted of non-directive discussion with an untrained counselor about children's sleep.

Sleep program. This consisted of individually tailored behavioural programs (using a variety of techniques described in the accompanying booklet) and a behavioural advice booklet, with daily support telephone calls at first, decreasing in frequency over time. The booklet gave advice about the importance of consistent bedtime routines, the need to reward appropriate nighttime behaviour, and specific advice about ways of removing parental attention at bedtime or during night wakings.

Modified extinction (referred to as the "Ferber method" in my local park[3]) led to fairly substantial reductions in night waking. Additional support for this method, in the form of visits to families, did not add any benefit. Unfortunately, there was no untreated control group with which to compare results.

Use of the educational booklet led to good results. In contrast, the study examining a non-directive educational booklet failed to show any benefit over a control procedure. As well, there was no added effect with addition of telephone support to parents in that trial.

Three of the trials provided follow-up data for either 6 weeks or 3 months after treatment. All three showed treatment effects had been maintained, although only two were able to compare a control procedure because the control group in the third study went on to receive the intervention. The effect of positive routines and graduated extinction on settling problems was maintained, with parents continuing treatments, where necessary, over time. The effect was maintained by both scheduled wakening and extinction for night waking.

Bottom line

- There was no one clear answer to the problem of settling and night waking in children, and many of the trials were weak methodologically.
- Drugs (antihistamines) seem to be somewhat effective in the short term, but are probably unacceptable to many parents of young children.
- Of the list of possible behavioural routines, extinction seems to have a slight advantage, but no long-term data were available.
- At the end of the day (literally), it is nice to see the routines described, and I, like many parents, am desperate and will probably use variations of all of them.

Points saillants

- Il n'existait pas de réponse précise au problème du coucher et du somnambulisme chez les enfants et plusieurs des essais comportaient des faiblesses sur le plan de la méthodologie.
- Les médicaments (agents antihistaminiques) semblent efficaces dans une certaine mesure et à court terme, mais sont probablement inacceptables pour plusieurs parents de jeunes enfants.
- Dans la liste des routines comportementales possibles, l'extinction semblait comporter un léger avantage comparatif, mais des données à long terme n'étaient pas disponibles.
- À la fin de la journée (littéralement), il est intéressant de voir la description des routines mais, comme bien d'autres parents, je suis au désespoir et j'utiliserai probablement plusieurs variations de tous ces thèmes.

Analysis of methodology

Trials selected were the best of the lot but, in general, they were low in numbers and had poor long-term follow up. This was especially true of the nondrug trials. For example, even though data suggest continuing clinically significant treatment effects for these particular behavioural interventions, no information was given about numbers dropping out of longer-term follow up. Given that this area is underresearched, publication bias (tendency to publish only trials with positive results) is a possibility, and this can can falsely sway the trend toward increased likelihood of positive effects for the interventions in question.

Application to clinical practice

Although results are not earth-shaking, it is nice to see science applied to the art of settling young children. Drugs seem to be somewhat effective in the short term for some children, but behavioural interventions are more likely to both be effective in the short term and have continuing benefit in the longer term. Frankly, I was unaware that drugs were an option, and my sense is that most parents would balk at the idea of medicating their children. Medicating ourselves seems to make more sense. I say this in jest, but perhaps there is some truth to the possibility that many treatments we offer to children are, in many ways, really treatments for parents.

Of the behavioural interventions, extinction had the most immediate effect, but over longer periods, no single behavioural treatment has yet been identified as more effective than others. As well, there is some overlap between the strategies. What is missing in the review was any collected wisdom regarding success rates and the optimal age to initiate interventions.

References

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3. Ferber R. *Solve your child's sleep problem*. New York, NY: Simon and Schuster; 1985.