Help them make it through the night
The behavioural treatment of infant sleep disturbance

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Sleep disturbances such as bed refusal and resistance, sleep-onset delay, night waking with crying, and unwanted co-sleeping with parents affect 15% to 25% of families during their infant's first two years. A program is described that involves structured pre-bedtime activities, putting the child into his or her own bed awake at a regular time, and responding to subsequent waking and crying with planned ignoring and minimally-arousing checks when necessary. This programme was demonstrated in four families and shown to resolve infant sleep disturbances to a clinically significant degree and to the satisfaction of the parents.

By about 6 months of age, most babies are developmentally capable of sleeping through the night without parents regularly providing food, comfort or other care (Moore & Ucko, 1957). However, 15% to 35% of families experience difficulties with their infant's sleep during the first and second year, the child either never consistently sleeping through the night, or resuming regular waking and crying after a period of settled sleep (Fergusson, Shannon & Horwood, 1981; Johnson, 1991; Moore & Ucko, 1957; Richman, 1981).

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While parents expect to have broken sleep when their baby is young, regular night waking which is prolonged through the first and second year of a child's life is experienced by many parents, especially mothers, as stressful and debilitating, and may lead to family stress, maternal depression and malaise, and possible adverse effects on both the child and other siblings (Durand & Mindell, 1990; Pritchard & Appleton, 1988). The great majority (93%) of mothers with a sleep-disturbed child described it as one of the three most significant problems they faced (Fergusson, et al., 1981).

Unfortunately, once established, infant sleep disturbance (ISD) can persist for most of infancy and early childhood (Kataria, Swanson & Trevarthen, 1987; Zuckerman, Stevenson & Bailey, 1987). Parents try many strategies to deal with the problem, including periodically leaving their child to cry, and frequently resort to prescription and non-prescription medication (Chavin & Tinson, 1980; Johnson, 1991) but these are often ineffective. Having effective ways of helping parents deal with this problem is clearly important to the well-being of the child and its family.

Persistent night waking and crying is the predominant ISD, but other forms of disturbance may occur concomitantly or independently. These include:

sleep-onset delay - delay in first going to sleep, often accompanied by demands and tantrums for parent attention;

bed-refusal - resistance to going to bed and refusals to stay in bed, which may be measured by the delay between ideal bedtime and actual settling time. Parents frequently deal with these problems by allowing their baby to fall asleep before putting them to bed, engaging in elaborate and prolonged bed-time rituals, or taking the child into their own bed (co-sleeping) even when they would prefer the child to sleep alone (see Blampied & France, 1993 for a review).

Long ago, Williams (1959) recognised that sleep delay might be maintained by the positively reinforcing effect of parental attention, and recommended treating it by having the parents withdraw their attention (planned ignoring, Sanders & Dadds, 1983). Recent research has confirmed that planned ignoring is an effective way to treat night waking also (France & Hudson, 1990; Seymour, Bayfield, Brock & During, 1983; Seymour, 1987). Variants of planned ignoring have also been developed to meet particular family circumstances (France, Blampied & Wilkinson, 1991; Lawton, France & Blampied, 1991).

On theoretical grounds, it is possible to suggest that the different sorts of ISD have different precipitating and maintaining factors (Blampied & France, 1993; France & Blampied, in preparation) and a variety of treatments, in addition to planned ignoring, have been developed (see France & Hudson, 1993). These include positive routines for bed-refusal (Adams & Rickert, 1989) and scheduled awakenings for night waking (Rickert

& Johnson, 1988). This poses problems, however, when counselling a family which is experiencing multiple forms of ISD. Is it realistic to expect parents to master and successfully employ a variety of intervention techniques? The Canterbury Sleep Programme (CSP) has developed a general approach to helping parents deal with ISD which is based on planned ignoring for night waking but incorporates other elements such as structured pre-bedtime activities. This programme seems to be effective in dealing with the range of ISD, including instances where night-waking is not the principal problem. Data from four families who were consecutively referred to the CSP, and who met criteria for inclusion in the research program, illustrates the outcomes achieved.

Method

Participating Families

Details of the 4 male babies, aged 9 to 17 months old, and their families are shown in Table 1. (The subjects are designated Child 9-12 for purposes of a larger study). On referral by community health nurses, all were experiencing regular night waking. Child 9 woke typically once per night, but only briefly, because the parents then took him into their bed (co-sleeping), although they preferred him to sleep in his own cot. Child 10 woke once each night for a long time, but his wakings ceased during the period when baseline measures were being taken. Children 11 and 12 were regularly waking between 2 and 6 times per night, with total durations of wakefulness sometimes exceeding 100 minutes per night. Children 9, 10 and 12 showed prolonged bed delay, averaging 80 to 86 minutes/ evening, and Child 10 and Child 11 had problems with delayed sleep onset, the other families waiting until their child was asleep before putting him into the cot. Two families (9 and 10) had previously tried drug treatments and one (Family 11) had tried leaving their baby to cry. Between the four families then, the four forms of ISD - bed refusal (delay), sleep-onset delay, night waking and co-sleeping - were all represented and all families experienced at least two problems.

Measures

These are described in detail in France and Hudson (1989).

1. Daily Sleep Diary - a booklet of record sheets on which parents recorded day sleeps, actual bedtime, reasons for deviation from ideal bedtime, duration and nature of pre-sleep activities once baby was in bed, number, duration and responses to any night wakings, and getting up time in the morning.

2. Social Validation Measures - these were obtained from the Sleep Programme Evaluation Questionnaire (Lawton, France & Blampied, 1991). On this measure, a score above 30 indicates high satisfaction. Parents also completed the State-Trait Anxiety Inventory (Speilberger, 1983) at three points during the study to monitor stress levels.

Procedure

When parents first contacted the CSP, they were shown how to use the Sleep Diary and asked to make baseline recordings for between 2 and 5 weeks, while continuing to manage their child the same way as before. When baseline data was available, both parents attended a counselling session where the data was reviewed and an extensive rationale for the programme was given. They were also given oral and written explanations of the intervention, and informed consent was obtained.

The parents were told to establish a regular (ideal) bedtime and wake-up time, to use a consistent set of pre-bedtime activities, including quiet play, and to give clear indications to their child at each step. At bedtime, the child was to be put to his own bed awake, bade goodnight, and left on his own. Parents were to ignore subsequent calling out or crying, unless they were genuinely concerned with the child's safety or well-being, in which case they were to use a minimal-contact check procedure, where light was kept dim and just sufficient contact with made with the baby to check his wellbeing and rectify any problems. When baby woke and cried in the night, the same rule applied - ignore unless the minimal-contact check was needed. Toddlers who got out of bed were quietly but firmly put back.

For a minimum of six weeks, parents received regular telephone contact, daily at first, and then 3-4 days apart, and then once per week. Parents were given a telephone number they could call 24 hours a day for help if needed. Once they reported 5 to 7 nights of unbroken sleep, they stopped keeping the sleep diary and were given maintenance instructions - to continue to use the pre-bed and bedtime routines and practices, to check when their child cried or called but to leave immediately if there was no acceptable reason (eg, illness) for the call. Two months later they were contacted for a further week of follow-up data, and the social validation measures were collected then also.

Results

Parents complied well with the sleep programme. During the baseline measuring period, children received, on average, 38 night-time contacts per week; 60% were to feed the baby, and 18% involved taking the baby into the parents' bed. However, during the first six weeks of treatment there were only 10 contacts in total for all four children. Results are presented for each sleep problem for each case (except Child 9), using a non-concurrent multiple baseline experimental design (Watson & Workman, 1981). This shows the impact of the treatment in each case by comparing data obtained during the baseline period with data from the treatment period. It also shows if the effect has been replicated in the other cases.

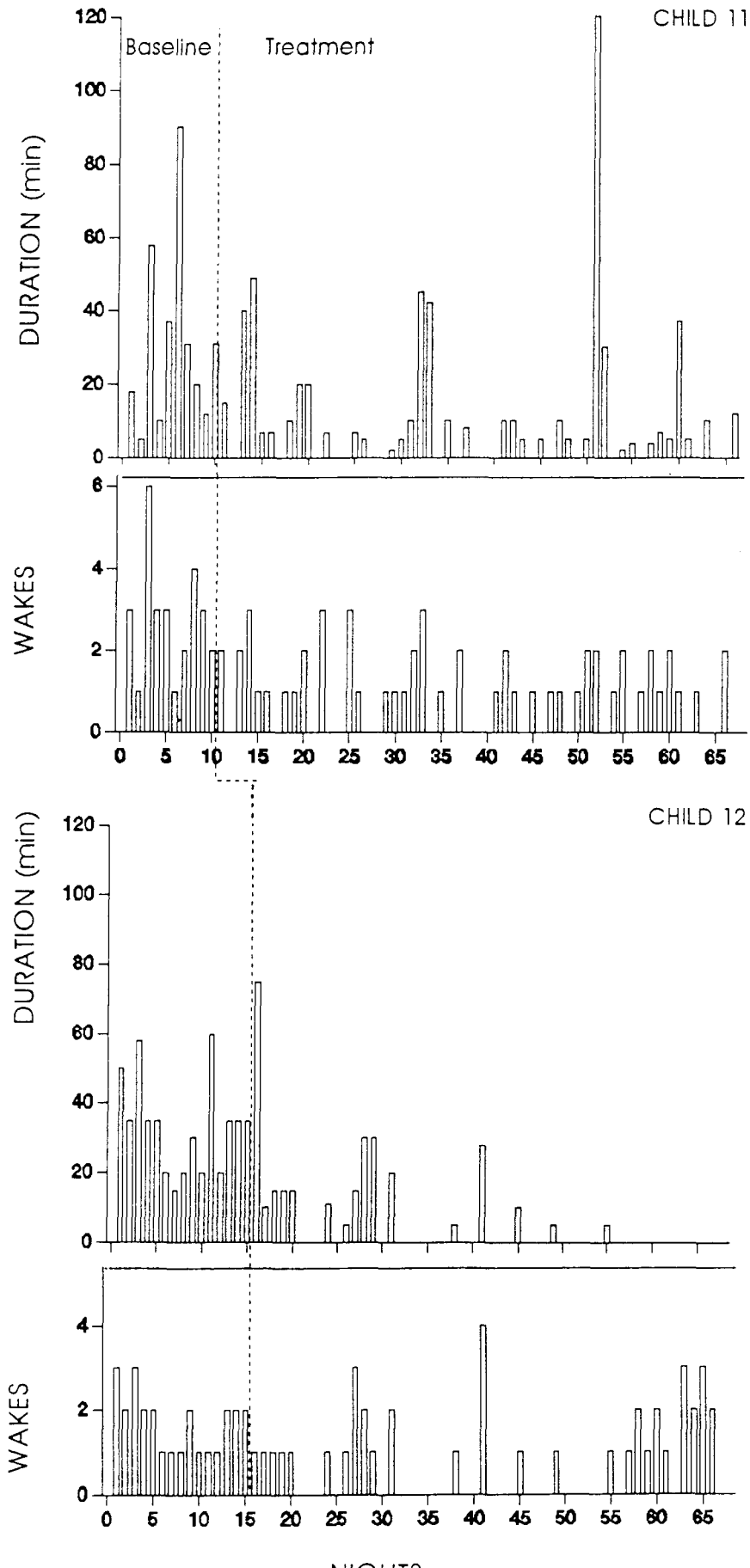
Figure 1A shows the results of the programme for Child 11 and Child 12 for whom night waking was a problem. Except for the first few nights of the programme, both showed

Table 1 Characteristics of subjects and their families

Subject	Age (months)	Birth order	Age at onset (months)	Parents' ages (years) M	F	Prior medication treatment	Previously left to cry
Child 9	14	1	6	21	34	Y	N
Child 10	9	1	6	26	26	Y	N
Child 11	17	1	B	28	30	N	Y
Child 12	9	2	B	31	31	N	N

B = from birth; Y = yes, N = no

Figure 1A The number of night wakings and the duration of each waking during baseline and treatment for Child 11 and Child 12



reductions in the frequency and duration of waking, although Child 11 continued to have one brief waking on most nights. Occasional long-duration wakings tended to be associated with illness.

Families 9, 10 and 12 all had problems with long delays between their sons' ideal bedtimes and the actual times the parents managed to get them into bed. As soon as the programme was implemented, both Child 9 and Child 12 showed dramatic reductions in bed delay (Figure 2), suggesting that the initial problem had been as much a parent organisation problem as a child behaviour problem. Child 10's bed delay problem did not change as dramatically, but, on average, the delay during the treatment period was only half that during the baseline period, and by follow-up he was getting to bed on average only 6 minutes later than his ideal bedtime.

When put to bed, Child 10 and Child 11 had consistent delays in going to sleep, ranging from about 10 to 20 minutes. The most immediate effect of the programme was to increase the number of nights on which they went to sleep without delay. Comparing the last 10 days of baseline with the first and last 10 days of treatment, the number of nights without sleep-onset delay was 2, 7, and 4 for Child 10, and 0, 6 and 3 for Child 11. By the final 10 days of treatment, Child 10 was going to sleep with a delay of only 5 minutes (compared with an average of 17.5 minutes in baseline), and Child 11's delay had been reduced from an average of 21.5 minutes in baseline to 9.3 minutes.

The parents of Child 9 had to change their practice of taking him into their own bed when he woke (typically once each night) by leaving him in his own cot to go back to sleep. His initial response to this was to wake more often, but, with a few exceptions noted in Figure 1B, his total time awake each night remained brief (less than 10 minutes). Clusters of nights on which he did not wake grew more frequent over 20 nights, until he met the criterion of seven unbroken nights after 28 days. Follow-up data was not available from this family.

When followed up two months after the treatment programme ended, only Child 11 continued to wake at night, waking once briefly on some but not all nights, and he also continued to take on average 16 minutes to settle to sleep. Child 10 and Child 12 had showed no sleep problems.

Figure 1B Frequency of waking by Child 9. Except where noted, duration of waking was less than 10 mins.

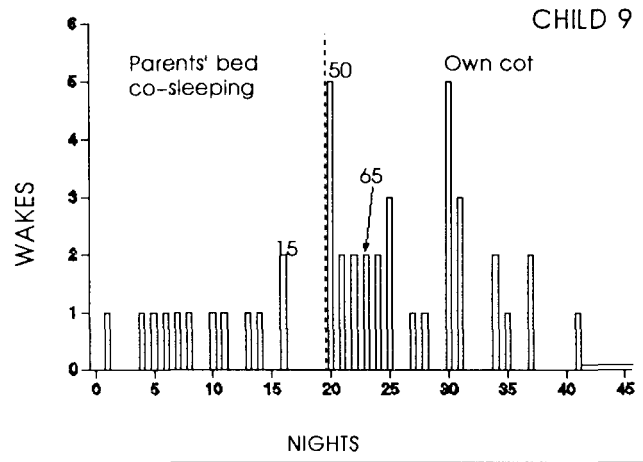
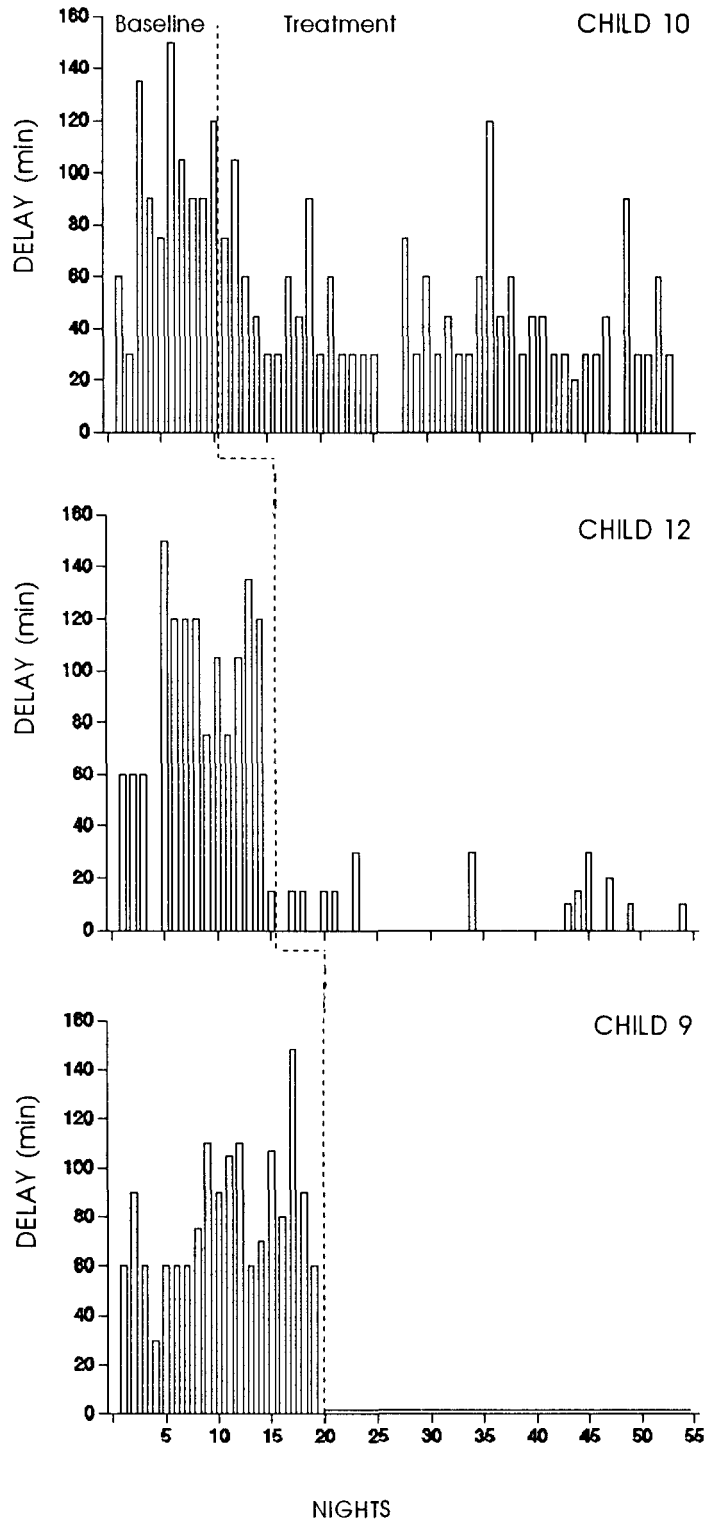


Figure 2 Bed resistance and refusal measured as delay between ideal and actual bedtime



Social validation findings

In the Sleep Programme Evaluation Questionnaire, all families reported medium to high levels of satisfaction with the programme (mean 32, range 28–35). Six parents rated the programme as non-stressful and two that it was somewhat stressful. Anxiety levels (which were generally within age and gender norms) typically showed small declines from baseline to intervention and from intervention to follow-up.

Discussion

The overall impact of the treatment can be assessed by rating each night to give a score of 0 on each of five aspects of sleep if they met criteria for good sleep, and a score of 1 if they did not, giving a 'deviation from ideal' score each night of between 0 and 5. Comparing the last 5 days of baseline with the last 5 days of treatment, this way shows that Child 9 reduced his deviation score (possible maximum = 25) from 17 to 0, Child 10 from 10 to 2, Child 11 from 17 to 4 and Child 12 from 19 to 2.

That planned ignoring reduced the frequency and duration of night waking was not unexpected, since planned ignoring has been shown to be an effective treatment in a number of previous studies (see France & Hudson, 1993 for a review). When researchers have been concerned with bed delay or sleep-onset delay, they have tended to develop and evaluate specific treatments, but the data shows that the general intervention programme developed by the CSP will help reduce these other sleep difficulties as well. However, the results show that sleep-onset delay and bed refusal and delay could be quite persistent in some children, and it is possible that, for such cases, the treatment programme needs to be strengthened by more specifically focussing on these problems, enhancing and emphasising the positive routines and stimulus control elements already incorporated.

Parents, and some counsellors and therapists, often fear that planned ignoring will be harmful to the child, stressful for the family, and damaging to the parent-infant bond (France, 1994). Our data shows that, at worst, parents found it only slightly stressful, and it did not increase anxiety levels. In other studies, it has been shown that with behavioural interventions: there have been generally small, positive impacts on babies' security and attachment (France, 1992); mother's anxiety and distress improves (Lawton, et al., 1991; Durand & Mindell, 1990); and parents do not generally find the procedures stressful (Lawton, et al., 1991). We need to emphasise, however, that these positive outcomes have been reported from studies which have provided good levels of parental information and support before and during the treatment. Where parents find planned ignoring unacceptable, effective modifications, such as graduated extinction, are available (Lawton et al., 1991), and combinations of the planned ignoring programme plus sedative medication (which is faded out over 10 days) are also effective (France, Blampied & Wilkinson, 1991).

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We believe that, given appropriate parent education, much ISD is preventable (Adair, Zuckerman, Bauchner, Philipp & Levenson, 1992; Blampied & France, 1993). As yet, however, prevention has received little research. In the meantime, effective behavioural treatment is available for those sleep disturbances many families experience during their children's infancy. ♦

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