

## Behavioural management of sleep problems

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**SUMMARY** The outcome of 19 consecutive children referred with sleep disorders and managed by behavioural methods is described. An 84% success rate is reported, which was maintained at 6 months' follow up. Successful outcome was associated with absence of marital discord and attendance of both parents at treatment sessions.

A sleep problem is one of the most common disorders reported by parents of preschool children. Difficulty may be experienced settling a child to sleep or in frequent night waking, or both. This may seriously disrupt family life leading to fatigue, irritability, limitations on the parents' activities, and marital strain. Bax has drawn attention to the association of sleep problems with child abuse and maternal depression.<sup>1</sup>

Most epidemiological studies have investigated the prevalence of night waking rather than settling problems. One study reported night waking in 23% of infants at 1 year, 24% at 18 months, and 14% at age 3 years.<sup>2</sup> Other studies report similar data.<sup>3-5</sup> Richman *et al.*<sup>6</sup> found that 13% of 3 year olds were having difficulty settling to sleep and 14% were waking at night. The longitudinal studies<sup>1, 4, 5</sup> substantiate the clinical impression that in many children night waking persists through the preschool years.

Solutions are offered in both clinical reports and lay childcare handbooks. Methods of management include attention to night time rituals,<sup>1, 7, 8</sup> advice about firm handling and letting the child 'cry it out',<sup>9-11</sup> the use of sedatives,<sup>7, 9, 11</sup> and general support and sympathy.<sup>12</sup> Several authors have recommended combinations of these approaches in relation to particular patterns of disorder,<sup>1, 11, 13</sup> and under specific circumstances<sup>1</sup> in-patient admission is recommended. There has been controversy and contradictory advice about optimal management and from the reports (often anecdotal and dogmatic) it appears that none of these methods has been shown to be effective.

Behavioural methods are recognised increasingly as effective tools in the management of childhood psychological problems.<sup>14, 15</sup> The approach requires careful analysis of the individual problem, establishment of goals of treatment, and gradual steps to their attainment. Emphasis is placed on identifying

the factors that reinforce the problem and planning the withdrawal or substitution of these. This study reports the outcome of such an approach in a small group of children with sleep problems.

### Method

The study group comprised 19 children with sleep disorders consecutively referred by general practitioners to a child psychiatric out-patient service in Oxford. All the children fulfilled the following criteria for inclusion in this study: (a) age up to 5 years; (b) difficulty in going to bed (requiring parents' presence until going to sleep in bedroom, or falling asleep downstairs before going to bed); or (c) night waking (waking at least 3 times a night, or for more than an hour during the night, or waking and continuing sleeping in parents' bed); or both.

There were 14 boys (mean age 31.0 months, range 8-58 months) and 5 girls (mean age 31 months, range 4-59 months). Social class distribution was representative of the population of Oxfordshire. There was no significant bias in the child's position in the family. Further details of the group are in Table 1. Ten patients were managed by a clinical psychologist and 9 by a child psychiatrist.

At the first interview a medical and psychiatric history was taken, which included development, general behaviour, and family context. A full history of the problem was taken, which included

Table 1 Characteristics of group (n = 19)

	No of patients
Perinatal or birth complications	2
Mental retardation	2
Previous separation from parents	5
Past use of hypnotic drugs	14
Multiproblem families	4
Child on 'at risk' register	3
Complaints from neighbours about night crying	5
Current maternal psychiatric problems	10

details of onset, present frequency of difficulties in settling and night waking and past variations, night time rituals, parenting roles at night, frequency of daytime sleep, and previous methods of management of the disorder.

Parents were asked to keep a diary for a week recording time and duration of daytime sleep; time the child went to bed and to sleep; time, duration, and parental behaviour on each occasion of night waking; parents' bedtime; and time the child woke in the mornings. Diary keeping continued throughout treatment. Both parents, if available, were asked to attend future sessions.

At the first treatment session the diary was reviewed, a behavioural formulation of the problem given, and goals of treatment were established jointly with the parents. In all cases the goals were that the child would: (a) settle to sleep in his or her own bed; (b) remain in his or her own bed throughout the night; and (c) not rouse parents during the night, except under exceptional circumstances.

Parents varied according to whether they preferred to tackle first the problem of night waking or settling. A series of stages by which each goal could be attained was agreed with the parents, with the emphasis on small steps that could be achieved fairly quickly. The method relied on identifying the factors which reinforced the child's sleep problem. These were then gradually withdrawn or temporarily substituted with less potent 'rewards'. Clear guidelines on the parents' response to the child were given. The importance of sticking to the rules was emphasised, together with consistency and agreement of both parents. In this way, occasions when the child's behaviour might provoke tired parents to relax the rules and inadvertently reinforce the problem behaviour were avoided. Leaving the child to 'cry it out' (immediate total withdrawal of reinforcement) was never suggested as, although theoretically effective, few parents are able to consign their child to such distress and a late response may exacerbate the problem, teaching the child that crying eventually provokes a parental response.

Parents were warned to expect problems to worsen for a few days at each stage before improvement began. An explanation of the programme was given to children old enough to understand. Use of night lights, drinks by the bed, an open door, and so on were allowed if the parents felt strongly that these were important.

**Case 1.** A 2½ year old boy refused to go to bed in his own room at bedtime. He insisted on watching television with his parents, dropping off to sleep on the settee and being put to bed at his parents'

bedtime. If he woke later in the night he came into bed with his parents. The hypothesis was that parental attention maintained his behavioural problem. Stage 1 was that he should go to sleep in his own bed, and the following rules were established: (a) bath immediately before bedtime; (b) father to read story to child in bed for about 15 minutes; (c) father to read newspaper in child's bedroom until child falls asleep and to have as little interaction as possible with him; and (d) in the event of the child getting up before the parents' bedtime he should be put back with minimal interaction. The next stage was the gradual withdrawal of the father from the bedroom before the child was asleep—sitting outside the room and then downstairs. Later the night waking problem was managed in a similar way, with the gradual decrease of parental intervention.

**Case 2.** A 10 month old boy woke regularly throughout the night, screamed, and was given a drink to help settle him to sleep. Eventually his parents took him into their bed, where he settled and slept till morning. Stage 1 was that he should stay in his own room all night and rules were established as follows: (a) if child wakes and cries one parent to go to the child as soon as it is clear that he is not going to settle back to sleep immediately; (b) parents to alternate in attending to the child; (c) no drinks to be given, but the child can be held and comforted until he stops crying and is put back to bed; and (d) parent to sit by the bed in child's room until he is asleep. Later stages were to reduce the physical contact given to the child to settle him, and then to shorten the time that the parent stayed in the child's room until he stopped waking or settled back to sleep unattended.

Depending on each child's progress, some steps may be unnecessary. Treatment sessions took place at weekly intervals until there was clear evidence of progress and then fortnightly until the child was settling without difficulty or sleeping through the night at least 5 nights a week, or both. Follow up was at 1 and 6 months, and parents kept a diary during the week preceding this. The mean number of treatment sessions per child was 5.5 (range 2–15).

Progress was rated jointly by the therapists at 1 month after the first session, at the conclusion of treatment, and at 6 months' follow up. Ratings were: problems resolved (goals achieved), problems partially resolved (parents satisfied with improvement made, although goals not actually achieved), no change, worse (Table 2). Outcome data were analysed according to several child and family variables to investigate possible relations between these.

Table 2 Outcome of treatment

	Problem resolved	Problem partially resolved	No change	Worse
	% (No)	% (No)	% (No)	(No)
After 1 month	37 (7)	37 (7)	26 (5)	0
At end of treatment	53 (10)	37 (7)	10 (2)	0
At 6 months' follow up	47 (9)	37 (7)	16 (3)	0

## Results

At the end of the treatment 53% of the children's sleep problems were resolved. A further 37% showed partial resolution, 10% were unchanged, and no children were made worse. At 6 months follow up improvement was maintained (see Table 2).

All children had problems in both settling to sleep and night waking. There were no children with symptoms of night terrors, nightmares, sleep walking, or talking. There were often other problems in the child or family. These were managed after the sleep problem. Data were examined to establish whether any of these associated difficulties were related to outcome.

Maternal psychiatric history was not significantly related to outcome. The problem was less likely to be resolved fully when there was marital discord ( $n = 8$ ,  $P < .05$  Fisher exact). When both parents had been persuaded to attend treatment sessions ( $n = 5$ ), outcome was significantly better (comparing resolved to other groups  $P < .05$ ; Fisher exact). Most of the children had been treated unsuccessfully with sedatives (see Table 1) but this did not affect outcome.

## Discussion

This small scale study of children with sleep disorders shows the potential success of a simple behavioural management programme tailored to each child. In 84% of patients the problem was either fully resolved or resolved to a point where parents considered that no further intervention was required (defined as partially resolved). This was maintained at 6 months' follow up and in no case was the problem worse after intervention.

Because no control group was included, it was possible that reported improvements could have occurred naturally over time. Longitudinal studies<sup>1 4 5</sup> suggest, however, that spontaneous resolution within a short period of beginning treatment is unlikely in over 80% of cases.

Although comprised of consecutive referrals, the sample was biased towards more difficult families: for instance, 3 children were on the 'at risk' register and half the mothers had psychiatric disorders— anxiety states or depressive neuroses—requiring treatment (see Table 1).

The sleep problems were usually difficulties in settling and night waking. This pattern was similar to that observed in community based studies.<sup>1 6 16</sup> More unusual problems such as night terrors and sleepwalking<sup>17</sup> may require a different approach.

The importance of participation in the programme by both parents was underlined. The children did not always respond immediately but often success with one facet of the problem generalised to others: in many cases resolution of the settling to sleep difficulty was soon followed by resolution of night waking. Although a brief training for health workers would be required, behavioural management of the common problem of sleep disorders could be appropriately carried out by the community health service.

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