

Social Work Treatment of Sleep Disturbance in a 5-Year-Old Boy: A Single-Case Evaluation

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Objective: A social work intervention with sleep disturbance in a family comprising a mother and her 5-year-old son using a behavior-analytic approach. Sleep disturbance is a common childhood problem that can adversely affect family functioning, parental relationship, and child development, but in general, social workers do not deal with the problem. Method: Baseline assessment was conducted followed by a descriptive analysis. Intervention techniques included parent training, positive reinforcement, and a behavioral-collaborative approach. Results: The child learned to settle when sent to bed and to sleep through the night. The social work intervention was effective in empowering the mother to effect change with her child in the home setting. Conclusion: Behavior analysis can be effective in dealing with sleep problems and in providing a framework for antioppressive social work practice.

The effectiveness of behavioral techniques has been widely evidenced in the social work literature (Coulshed, 1991; Howe, 1987; Payne, 1991). However, the confines posed by the commonly held traditional psychodynamic orientation of social work in Ireland are difficult to penetrate. In the meantime, the effectiveness, value orientation, and accountability of behavioral interventions become increasingly attractive to progressive workers (Davies, 1994; Sheldon, 1982).

Behavior analysis offers a framework within which the social workers can plan and structure their intervention, involve the client in decision making, and scientifically evaluate their work. From an ethical viewpoint, the effectiveness of this approach along with its explicitly stated methods and goals provide a nonthreatening framework for antioppressive practice. Behavioral social work has been practiced with virtually all client groups in practically all social work contexts (Hudson & McDonald, 1991). This article describes the behavior-analytic treatment of sleep disturbance of a 5-year-old boy.

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Sleep

“Sleep is a behavioral state of perceptual disengagement from and unresponsiveness to the environment accompanied by characteristic electroencephalogram (EEG) changes, in which there is potentially a quick reversibility to the wakeful state” (Skuse, 1994, p. 467).

The two most common sleep problems in children are night waking and failing to settle at night, calling persistently for parental attention (Skuse, 1994). The true prevalence of sleep disorders in young people is not known, but studies indicate that it is about 25% for preschool-age children, 43% for 8- to 10-year-olds, and 33% for adolescents (Kahn et al., 1989; Mindell, 1993; Morrison, McGee, & Stanton, 1992). It is important to remember that the understanding and prevalence of sleep disturbance may be culturally influenced. Many Asian families, for example, expect young children to sleep in the parents’ or siblings’ bed and do not report any sleep disturbance (Douglas, 1990). More research is needed to clarify the links between sleep disorders, psychiatric and psychological disorders—including conduct disorder and learning disability—and cultural differences (Stores, 1996).

Although physical development and intellectual or educational achievements may not be compromised, Pollock (1994) found that for a cohort of British children who reported sleep difficulties at age 5, a greater propensity to general medical or behavioral problems, such as headaches, tantrums, and eating problems, existed when these children were 10 years old. Poor sleep in children has also been identified as a risk factor for nonaccidental injury (Kerr & Jowett, 1994). Although sleep problems are often thought to be transitory in nature, they can last for months, and it is not uncommon for sleep problems to persist for a year or more (Richman, Stevenson, & Graham, 1975). Clements, Wing, and Dunn (1986) provided indications that sleep difficulties occur with considerable frequency among children with learning difficulties and suggested caution in asserting that the children simply grow out of these problems.

Behavioral interventions have been used to treat sleeplessness with a varying degree of success. Success rates of 70% and 77% have been achieved at the conclusion of treatment, and rates of 62% and 83% were maintained at 6-month follow-up (Galbraith, Pritchard, & Hewitt, 1993; Minde et al., 1993; Richman, Douglas, Hunt, Lansdown, & Levere, 1985). Health visitors have found that they could effectively treat sleep problems using behavioral methods. Among the children treated were those who had failed to respond to medication and could be expected to be more difficult to treat (Sanger, Weir, & Churchill, 1981). Evaluation of a sleep clinic run by a health visitor

indicated that for 84% of parents the sleep problem had been resolved and that 58% of these problems were resolved within three contacts (Roberts, 1993).

Single-case studies have been conducted indicating the success of specific individual programs (Ashbaugh & Peck, 1998; Richman, 1983). The most important factors include the initial assessment, parental motivation and involvement, manageable changes, and the provision of useful behavioral techniques. From a behavior-analytic point of view, sleeping difficulties are viewed as the result of children not being able to settle themselves back to sleep rather than a problem of waking. The reason why some children fail to fall asleep on their own is that the parents inadvertently reinforce the children's demands for attention or provide inappropriate bedtime routines. It is believed that behavioral techniques can be used to modify this behavior because sleeping difficulties are the result of learning (Douglas & Richman, 1982). Medical factors or special needs of children with disabilities may also result in parents being overresponsive to their children (Kerr & Jowett, 1994; Pollock, 1994).

Consistent with these understandings, behavioral interventions have included parental removal of attention from bedtime or night disruption, consistent bedtime routines, and a systematic reward of bedtime behaviors such as settling into bed quickly and sleeping through the night (Seymour, Brock, During, & Poole, 1989). These techniques are based on behavioral concepts of positive reinforcement (chosen rewards for success), shaping of the child's behavior toward a longer term goal (gradually going to bed earlier), reinforcing incompatible behavior (settling as opposed to seeking attention), providing discriminative stimuli (cueing nighttime), and extinction (withdrawing attention).

METHOD

Family Background

The intervention reported here was conducted with a mother (Ms. Smith) and her son, David. David (age 5 years) was placed in a nursery while his brother (age 7 years) was in primary school. David's mother (age 25 years), a part-time cleaner, worked some evenings. The child's father was absent and was never involved with the children. David's grandmother, a part-time cleaner, and his grandfather, unemployed, were also part of the family.

The family was referred to a Family Resource Centre by a social worker. The mother had been referred to the same center previously with her older

child but had shown no commitment to the work involved, failed to attend appointments, and finally, the case was closed. David's mother was re-referred this time by a social worker from the Learning Difficulties Team who felt that she was in such a crisis situation that she would be motivated to participate. David's issues were addressed simultaneously with his brother's, but only David's issues are explored in this article. During treatment, issues that the boys shared in common such as positive play were addressed together.

Procedure

The intervention took place during 10 hourly sessions held in an interview room in the center. Because this family had failed to attend on the previous referral, a contract was drawn up that included the client's agreement to attend 10 sessions and the agreement that either party would notify the other if they could not attend an appointment. Sessions lasted approximately 1 hour and took place either with the whole family or the adults on their own. Agency records were kept of each session. These were reviewed by Ms. Smith, and her views could be recorded on file. To increase the acceptability of this intervention for David's mum, it was agreed that she could involve the child's maternal grandmother. Ms. Smith was enthusiastic about this development, but due to illness, the grandmother was unable to attend. However, she did assist in recording and implementing the program at home as well as offering emotional support for Ms. Smith.

The intervention took place in a multidisciplinary team involving a health visitor, a community pediatrician, social workers, and psychologists. This team was based in purpose-built offices that provided a wide range of services to the community. A single-subject design was used for this research.

Baseline Assessment

A wide range of problems was identified by Ms. Smith at the first interview. David's problem behaviors included shouting constantly, having a poor sleeping pattern, being demanding, and often having temper tantrums. It was decided that during baseline taking Ms. Smith would record the frequency of her child's shouting in the house, his refusal to stay in bed when sent to sleep, and his refusal to follow direct commands. Ms. Smith was asked to complete a behavior and time record sheet adapted from McAuley and McAuley (1977) to chart the number of instances of these behaviors at specific 10-minute intervals during the day. She also completed behavioral record forms describing incidents of behavior with their antecedents and consequences.

Assessment included reviewing the child's developmental history and his relationship with other significant adults. In school, the boy represented as being reasonably compliant and not behaviorally difficult in comparison with his class group. This suggested that some contingencies in the home environment may have been contributing to these problem behaviors. The educational psychologist confirmed that David had a degree of learning difficulty that would make it difficult for him to manage in a mainstream school.

A child developmental history revealed that pregnancy, birth, and early years were all difficult. David had been visiting the hospital weekly, but appointments were now reduced to bimonthly reviews. Ms. Smith thought that this child had arthritis and suffered associated pain. Consultation with the community pediatrician revealed that David did not have arthritis or suffer great pain but did have lax joints and global developmental delay. David was also on medication for asthma and epilepsy. Consultation with the speech therapist revealed that David's speech and language skills were very delayed but that recent appointments with the speech therapist had been missed.

Ms. Smith completed a standardized measure of assessment on the Eyberg Child Behavior Inventory (ECBI), which measures the number of problems presented and the intensity of these problems (Eyberg & Ross, 1978). This assessment revealed that David fell within the conduct disorder category of children meriting attention. David scored 24 on the Problem Scale, for which the norm is 11. On the Intensity Scale, where the norm is 127, David scored 183, indicating that Ms. Smith felt these behaviors had a high personal effect on her.

Along with recording behaviors at home, the family's interactions in the agency setting were analyzed. This analysis was combined with teaching Ms. Smith positive play skills. This helped build warm relationships between family members, creating a bank of positive feelings that could be drawn on at times when discipline became necessary (Webster-Stratton & Herbert, 1994).

With Ms. Smith's agreement, she was observed through a two-way mirror and videotaped for a 20-minute period playing with her sons. Mother-child interactions were noted for 19 categories including: parent smacks or shakes child; parent does not see instruction through; parent involved in self-oriented play; child smacks or hits parent; child shows affection toward parent; parent responds to child's request to play; parent praises child; and parent actively engaged in play with child. Analysis of the first session showed a high level of negative interactions and Ms. Smith's reluctance to become involved in play. For the following 2 weeks, the worker and Ms. Smith reviewed specific incidents of the video, encouraging her positive

interactions and discussing alternative possibilities for negative interactions. This enabled Ms. Smith and David to learn to play together. Ms. Smith was positively reinforced for actively playing with her son and praising him when he was constructive. David enjoyed his achievement and his mother's praise. His affection toward his mother also increased, building warmer relationships. Ms. Smith was encouraged to spend 10 minutes playing with David safely but positively each day. This provided a positive atmosphere for Ms. Smith to begin the implementation of the behavioral techniques.

Baseline recordings from the behavior and time record sheets showed that the target behaviors occurred at various times of the day but were particularly numerous at bedtime. This boy had never learned to sleep in his own room and would regularly refuse to stay in his mum's bed until she accompanied him. The behavioral record form showed that David had screamed at his mum from the bedroom door at the top of the stairs for 2 hours until he was allowed downstairs again. The recordings were reviewed each week. By the third week, Ms. Smith decided that settling her child in bed was the first area she would need to address.

From these baseline recordings, a descriptive analysis was undertaken (Martin & Pear, 1996). It appeared that Ms. Smith's concern for her child's health had made her feel that David needed extra attention and that he had discomfort in settling to sleep. It was suggested to her that from the doctor's information, David did not have any more discomfort than other children and that he had just never learned to settle on his own. It appeared that Ms. Smith was reinforcing David's refusal to go to bed by allowing him to come downstairs again and watch television. An intervention plan was devised based on this functional assessment.

INTERVENTION AND EVALUATION

Ms. Smith was trained to settle David in his own bed by adopting a new bedtime routine. Initially, she explained to him that he would be sleeping in his own room at 8 p.m. from now on "like a big boy." She helped him settle in bed by tidying away all the toys and talking to him quietly before tucking him into bed and leaving the room.

A star chart was designed to monitor progress and to reward the child for positive behaviors. David added a silver star each morning if he had slept in his own room. Ms. Smith and David discussed rewards and decided that if he slept in his room for a month, he could get his room wallpapered to his own desire (Rangers-Teddy-Bear paper). However, a month was a very distant target, and intermediary reinforcers were also needed. Discussing this with Ms.

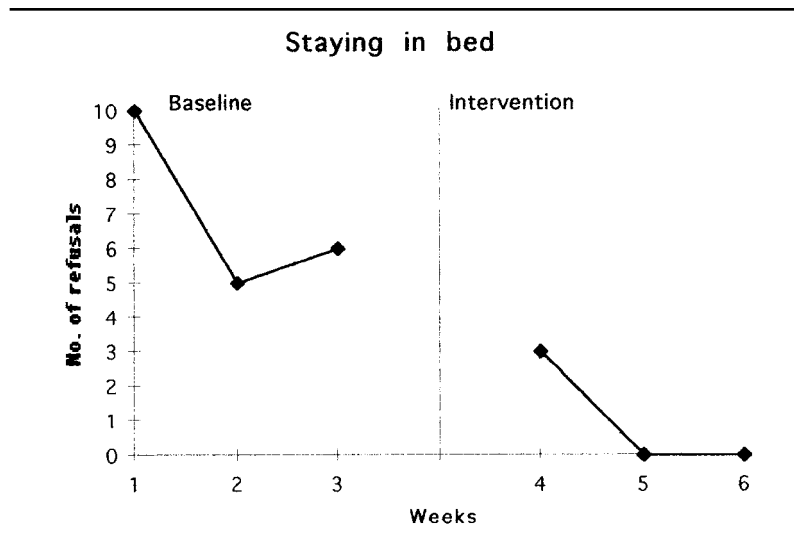


Figure 1: Average frequency of David's refusals to stay in his own bed at night.

Smith, it appeared that David was constantly demanding and receiving sweets and toys when he went to the shops with his mum or grandmother. Ms. Smith suspected that he would demand more expensive gifts if special treats were needed. However, David often requested to go to the park with his mum, and so she agreed to bring David to the park and play with him there. Ms. Smith could also buy him a small packet of his favorite sweets and give them to him before he got to the shops, thus avoiding the demand for treats. In this way, the child's behavior could be reinforced with positive social reinforcement or small inexpensive treats. Once the intervention started, Ms. Smith was asked to bring the behavior recordings along with star charts to provide weekly data guiding the intervention. She was also asked to complete sleep records, noting time slept during the day, time of falling asleep at night, disturbances during the night, time up next morning, and total hours slept at night.

The frequency of refusal to stay in bed is illustrated in Figure 1. During a 3-week baseline, refusals varied from an average of 10.2 per night during Week 1, 4.8 times per night during Week 2, and an average of 6.0 refusals per night during Week 3. The beginning of the intervention in Week 4 effected a

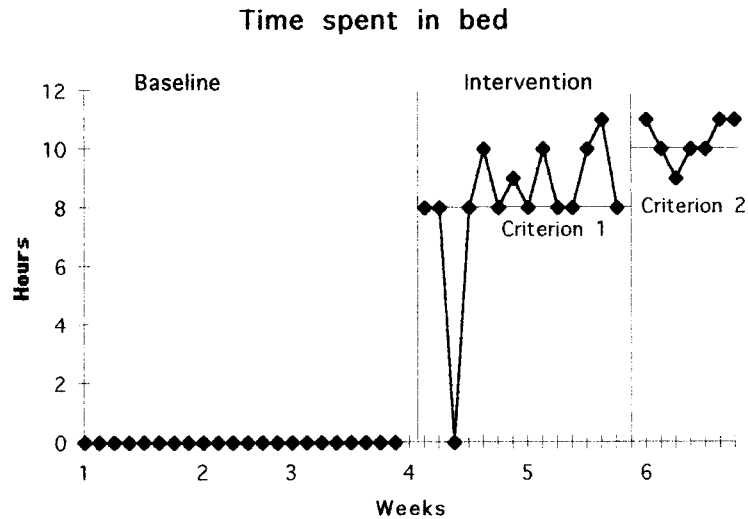


Figure 2: Number of hours David spent in his own bed per night.

dramatic drop in refusals to 3.0 times per night, although on one night during that week, David consistently refused to settle in his bed. On that occasion, Ms. Smith allowed him to sleep in her bed. For the following 2 weeks (Week 5 and Week 6), David stayed in his own bed every night without any refusals.

By Week 5, David was going to sleep in his own bed without protest; however, he was waking after 8 hours and going to his mother's bed. The next intervention targeted the length of time spent in his bed. The aim therefore for Week 6 was that he would remain in his own bed for 10 hours, specifically, until it was time to get up for school. This intervention involved Ms. Smith returning David to his bed if he came to her in the morning. The child got a star if he went back quietly to his own room. This was complemented by Ms. Smith ignoring David's movements during the night.

Figure 2 illustrates the improvement in David's sleeping pattern for Weeks 4 and 5 and that in Week 6 the child remained in bed until it was time to get up for school, except for one morning. David's sleep pattern had changed substantially since the beginning of intervention. He was now sleeping in his bed, in his own room, and staying in bed most nights for at least 10 hours. Ms. Smith reported that this advancement had "taken pressure off her." She could now iron clothes and do her washing at night rather than have to undertake

these tasks the next morning. Ms. Smith also reported that she was getting better sleep at night.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK PRACTICE

This intervention dealt with the two most common sleep problems in children: failing to settle at night and night waking (Skuse, 1994). David learned to settle when sent to bed and to sleep through the night. The intervention showed the effectiveness of a functional analysis of behavior and the application of behavioral techniques. The results achieved in this brief intervention supports rates of success reported by Richman (1983), Roberts (1993), and Sanger et al. (1981) in single-case studies and brief contacts. Success with David's sleep supports behavioral conceptualizations of this problem, namely, that parents either inadvertently reinforce the children's refusal to go to bed or provide inappropriate bedtime routines (Richman, 1983). The idea that overresponsiveness by parents may be caused by medical factors is also supported (Kerr & Jowett, 1994; Pollock, 1994). Adopting the collaborative approach of Webster-Stratton and Herbert (1994) by discussing and clarifying with Ms. Smith how the type of attention her child received reinforced his waking, helped to empower her to change her behaviors.

This study also supports the use of techniques such as positive reinforcement, cueing, and shaping, as reported in the research literature. These results support the implementation of treatment by a parent in a home setting (Ashbaugh & Peck, 1998). As Richman (1983) suggested, using a star chart served as positive reinforcement for David. The child in this study even brought the start chart to school to show his teacher and friends.

In other areas, however, questions remain unanswered. There was no follow-up study with this family. Once the author transferred this family to another worker, Ms. Smith seemed to engage with the new worker but telephoned to cancel her next two appointments. Follow-up ECBI score sheets were not returned to the agency. Ms. Smith's failure to continue with this intervention may indicate that the work involved by the parent was simply too demanding of time and energy. Ms. Smith was committed for the 10 weeks of her original contract. A behavioral-collaborative approach may have helped to maintain her in the program up to this point because she had failed to attend previous programs. Ms. Smith's subsequent nonattendance may indicate the importance of the worker-client relationship as a predictor of successful intervention.

However, Ms. Smith's implementation of the sleep program with her child provides an indication that she understood and practiced positive reinforcement in her home environment. Howe (1987) argued that to be effective, social workers should do two things: establish a warm responsive relationship and employ explicit and systematic procedures. Both of these elements are central to behavior analysis. Both were also present with Ms. Smith and may have enabled her to engage fully in the process. The time necessary to adopt this structured approach was the 10 hourly sessions with the family and another hour each week to record the session, convert the data to graphs, or review the videotapes in preparation for the next session. Most of the actual work was conducted in the sessions with the clients. Once the assessment phase was completed, Ms. Smith attended on her own so that each session involved reviewing the new data, discussing problems, taking an overview of progress, and planning for next week. Workers in statutory or community settings could plan more time with a family in the initial stages for assessment but could then reduce time as the intervention proceeded.

Behavior analysis offers a framework that can facilitate the process of empowerment. Herbert (1994) suggested that behavior therapy's emphasis on explicit objectives and self-direction as therapeutic goals, along with giving clients access to self-empowering knowledge of behavioral principles, makes for a liberating therapeutic philosophy. Indeed, Bandura (1969) argued that behavior therapy is among the most effective means of promoting personal freedom because it enhances freedom of choice. The process with Ms. Smith monitoring recordings each week and discussing plans for the coming week allowed her to become more familiar with the processes involved and more assertive about her own opinions. Mutually agreeing on the plans for each week and exploring fully the results from the previous week ensured that assumptions were not made that could devalue Ms. Smith's culture (e.g., Ms. Smith's explanation that her child was in bed late because he was collecting firewood for a bonfire on July 12, the most important holiday for the Unionist community in Northern Ireland).

These results provide an indication of the potential of behavioral analysis in two areas: first, in training parents to deal effectively with their child's sleep problems and second, for social workers to adopt explicit and anti-oppressive interventions that can be shown to be effective.

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