

## Infant Sleep Problems: Origins, Assessment, Interventions

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**ABSTRACT:** Infant sleep problems have become prevalent as complaints of parents to clinicians during the first 2 years of the child's life. This paper reviews (1) identification of multiple etiological sources for infant sleep problems from a systems perspective, (2) the assessment of sleep disturbances, and (3) the application of intervention methods to the appropriate component of system dysfunction. These areas are reviewed by integrating research findings with clinical vignettes from our practice as pediatric sleep clinicians.

**RÉSUMÉ:** Les problèmes du sommeil infantile sont parmi des problèmes répandus dont les parents font part aux cliniciens durant les deux premières années de la vie de l'enfant. Cet article passe en revue (1) l'identification de multiples sources étiologiques pour les problèmes du sommeil infantile dans une perspective de système; (2) l'évaluation des troubles du sommeil; et (3) l'application de méthodes d'intervention au composant approprié de disfonction du système. Ces domaines sont passés en revue en intégrant des résultats de recherches avec des vignettes cliniques de notre cabinet de cliniciens pédiatres spécialisés dans les troubles du sommeil.

**RESUMEN:** Los problemas que los infantes tienen al dormir se han convertido en las quejas predominantes que los padres les presentan a los clínicos durante los primeros dos años de la vida del niño. Este estudio revisa (1) la identificación de fuentes etiológicas múltiples para los problemas que los infantes tienen al dormir, desde una perspectiva de sistemas; (2) la evaluación de las perturbaciones del sueño; y (3) la aplicación de métodos de intervención al componente apropiado de la no funcionalidad del sistema. Estas áreas son revisadas a través de hallazgos de investigación integrada con viñetas clínicas de nuestra práctica como clínicos de la pediatría en materia del sueño.

抄録：最近、睡眠の問題を主訴として、1-2才の乳幼児を臨床医のもとへ連れて来る親が多くなっている。この論文は、小児睡眠外来での臨床経験に基づく症例を研究所見に統合する形で、(1) 乳幼児の睡眠の問題に関するシステム理論の立場からの多重病因の同定、(2) 睡眠障害の評価、(3) システムのうち機能不全を起こしている部分への介入法の適用の3つについて述べる。

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Disturbed sleep affects millions of Americans annually, yet relatively little is known about the early manifestations of problem sleep in infants and young children. During the first 2 years of life, sleep problems are the most frequent complaint of parents at the time of pediatric visits (Ferber, 1985, 1986). Sleep consolidation (settling or sleeping through the night) is an early developmental milestone which precedes the acquisition of good sleep habits by toddlers. Failures in these milestones are significant causes of parental concern and may precede the emergence of more significant and persistent disturbances in sleep-wake state regulation.

The regulation and consolidation of sleep and wakefulness can be differentiated from maturation of sleep states (Anders, Halpern, & Hua, in press; Anders & Keener, 1985). Regulation refers to the ability of infants to transition smoothly from wakefulness to sleep and consolidation refers to the infant's ability to sustain sleep in a continuous fashion for an age-appropriate period of time before fully awakening. Struggles at bedtime and frequent nighttime awakenings represent disruptions of regulation and consolidation.

The first year of life is a time of major changes in physiological adaptation and in the functioning of primary, regulating social relationships. Progressively, internal biological "clocks" that regulate sleep-wake cycles are synchronized with recurring *internal* signals such as hunger, anxiety, and pain and with periodic *environmental* cues such as the light-dark cycle, ambient temperature/noise changes and regularly scheduled periods of social interaction. At the same time, cognitive stimulation and social interaction with significant family members lay the foundation for such developmental milestones as trust, self-regulation, mastery motivation, attachment, and autonomy. These neurobehavioral and social achievements inextricably link sleep-wake state development to biopsychosocial adaptation.

This paper examines factors associated with early sleep-wake regulation from a developmental perspective; it reviews common sleep problems of infants and young children; and, it presents a model to diagnose and treat problems from the perspective of relationships and family systems. Both research data and clinical vignettes are used to illustrate the issues.

### *SLEEP PROBLEMS IN INFANTS AND YOUNG CHILDREN*

Moore and Ucko (1957), in a large-scale epidemiologic survey in England, reported that by 6 months of age 50% of infants had "settled"; by 12 months, 90%. That is, they had slept uninterruptedly from midnight to 5:00 a.m. each night. Curiously, 50% of the infants who had settled began to exhibit night waking by 12 months of age. They defined night waking as a "problem" when the child awakened and *cried* one or more times, between midnight and 5 a.m., on at least 4 of 7 nights, for at least 4 consecutive weeks. During the second year of life, they reported a further transient increase in problem nighttime awakenings. These shifts suggest a continuing process between settling and waking.

A number of studies have documented the prevalence of infant sleep problems (Beltramini & Hertzog, 1983; Jacklin, Snow, Gahart, & Maccoby, 1980; Klackenberg, 1982; Ragins & Schacter, 1971). Richman (1981) has defined problem sleep in 1-year-old infants as either sleep onset periods associated with fussing that last longer than

30 minutes on a regular basis, or night waking episodes that occur at least 4 nights a week and require parental intervention. During the first year of life, 20%–30% of infants manifest disrupted sleep serious enough to cause parents to seek professional assistance. During the toddler period, the rates of disturbance increase. Sleep problems are often associated with daytime behavior disorders (Jenkins, Bax, & Hart, 1980; Richman, 1984; Richman, Stevenson, & Graham, 1982; Simonds & Parraga, 1984).

Sleep problems continue during the preschool years. Zukerman, Stevenson, and Baily (1987) followed up 8-month-old infants with sleep problems prospectively and found that 41% of them still had problems when they were 3 years old. Retrospectively, only 26% of the children with sleep problems at 3 did not manifest them when they were 8-month-olds. In another 3-year follow-up study of 2-year-olds, Kataria, Swanson, and Trevarthin (1987) found that 84% of the children still suffered from their sleep problems. Similarly, Richman et al. (1982) found that almost half of the 3-year-old night wakers had had their problems from birth, and that 40% of the children who had sleep problems at 8 years had had problems at least from the time they were 3 years old. These reports emphasize that sleep problems in infancy are often persistent and may lead to chronic sleep problems. They confirm some retrospective studies of adults with sleep problems who recall disrupted sleep during childhood (Hauri & Olmstead, 1980; Monroe, 1967; Salzarulo & Chevalier, 1983).

#### *A Transactional (Systems) Model of Sleep-Wake Regulation*

Transactional models have been proposed to describe the ongoing dynamic interactions and bidirectional influences between the child and his or her social environment during development.

Figure 1 illustrates a systems model of infant development, mediated largely through the parent–infant dyad. Although it may be viewed as a general developmental model, the focus here is on sleep–wake regulation.

The model is transactional (Sameroff, 1989; Sameroff & Emde, 1989). It assumes that symptoms are dynamic and involve participants and contexts bidirectionally; interventions, likewise, are dynamic and affect the entire system. The components can be viewed as parts of the relationship context, either distal and proximal, or extrinsic and intrinsic.

It can be speculated that sleep–wake regulation is mediated by parent–infant relationships and interactions but influenced mostly by the infant intrinsic context (temperament and biomedical factors) in interaction with the proximal extrinsic parental context. The more distal environmental, family, and cultural contexts have their influence on the parent context and affect the infant's sleep only secondarily. However, once present, the effects of a sleep problem are circular, affecting the relationship–interaction context, parental well-being, the harmony of the family and even, perhaps, the temperament of the infant. In some circumstances, as described below, environmental, familial, and cultural contexts assume greater proximity in their effect on sleep–wake regulation.

In terms of outcome, sleep–wake problems are defined in terms of sleep onset difficulties, sleep continuity problems, or mixed onset and continuity. These categories constitute the majority of sleep complaints in infancy.

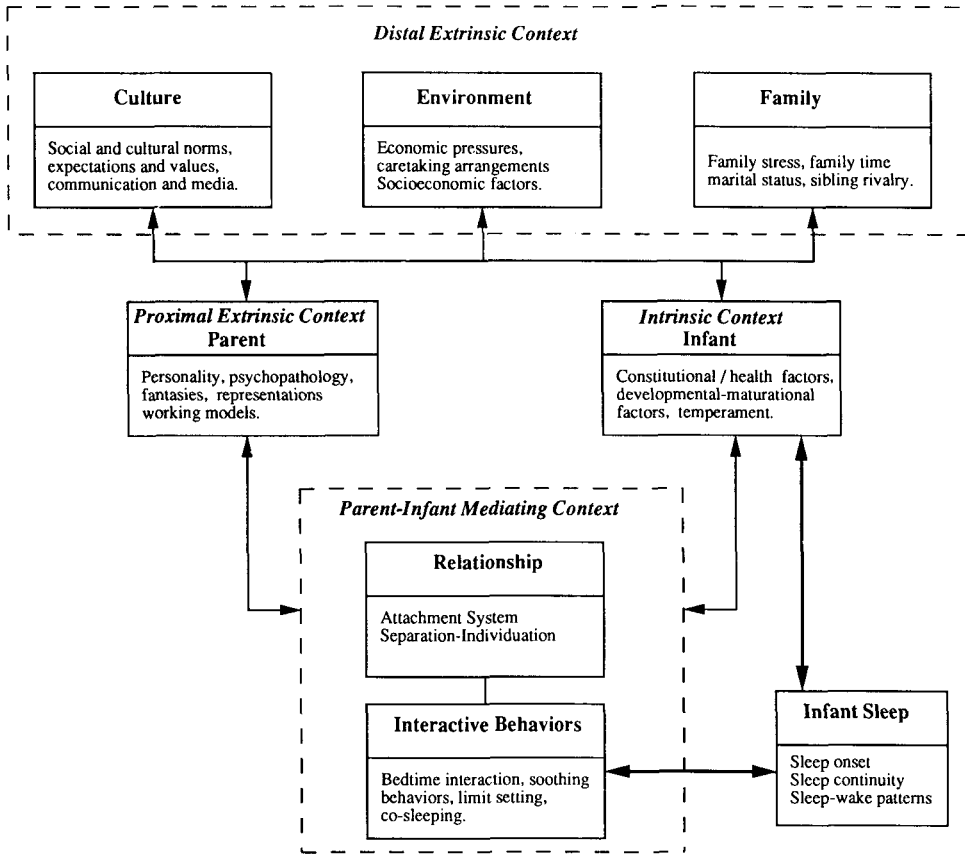


FIG. 1. Infant Sleep from a Systems Perspective: Proximal and Distal Effects on the Development of Sleep-Wake Patterns and Sleep Problems.

### *Sleep Onset Problems*

Problems at bedtime include problems of both going to bed and falling asleep. Presleep interactions such as feeding, rocking, and being held commonly co-occur with sleep onset in young infants, even though infants are able to fall asleep on their own (Anders, 1979). Later, older infants and toddlers often resist going to bed if parents attempt to change earlier interaction patterns, especially when changes are attempted after 9 months of age. Also at older ages, falling asleep problems often include going-to-bed problems. Problem sleepers protest vigorously or cry and refuse to remain recumbent. The child may demand to lie next to a parent while falling asleep. Sometimes problem sleep arises anew at this age.

Sleep onset problems may also result from inconsistent or inappropriate bedtimes set by parents leading to a phase delay or schedule disorder in the child's sleep-wake cycle (Ferber, 1986).

### *Sleep Continuity Problems*

Descriptive studies of night waking in infants have relied mostly on data derived from parental reports. Videosomnography (a monitoring method based on time-lapse

video recording) and actigraphy (a method based on activity monitoring with a wristwatch-like device) strongly suggest that nighttime awakenings in infancy are more prevalent than reported by parents (Anders, 1979; Paret, 1983; Sadeh, Lavie, Scher, Tirosh, & Epstein, 1991). These methods indicate that most infants wake up one or more times briefly every night. Parents are unaware of these awakenings because the child does not cry. "Problematic" nighttime awakenings may be differentiated from "nonproblematic" awakenings by the infant's inability to return to sleep after an awakening. In other words, it is a response of "signaling" rather than of "self-soothing" that defines the problem. During the first few months of life, 95% of infants cry (signal) after a nighttime awakening and require a parental response before returning to sleep. By 1 year of age, 60%-70% of infants are able to self-soothe and return to sleep on their own (Anders et al., in press).

In other studies using parental reports, nearly 20% of toddlers have been described as night wakers (Bernal, 1973; Jenkins et al., 1980). The prevalence decreases to 1%-5% in school-age children (Gass & Strauch, 1984; Richman et al., 1982). As with infants, this may be an underestimation because school-age children do not necessarily report sleep problems to their parents (Anders, 1979).

### ASSESSMENT AND INTERVENTION

The model provides the opportunity for multiple levels of assessment and intervention: (1) the biological status of the infant; (2) the physical and mental health of the parents; (3) the parents' knowledge about childrearing in general and sleep in particular; (4) the external environment that shapes and constrains parenting; (5) the harmony of the parental dyad; (6) the internal representations of parental expectations, fantasies, and feelings about the infant; and (7) the status of parent-infant interaction. The sleep problem must be assessed in the context of the family's entire functioning as a system.

A transactional model also suggests a range of interventions (Sameroff & Fiese, 1990). (See Table 1.) *Remediation* is a level of intervention in which a specific factor can easily be corrected so that the problem resolves. For example, night waking that is

Table 1  
*Levels of Intervention in Infant Sleep Problems (After Sameroff & Fiese, 1990)*

Intervention	Level of intervention	Clinical example
Remediation	Identification of a specific factor that can be directly treated.	Milk-free diet for an infant suffering from milk allergy. Recommending more appropriate bedtime or sleep regime.
Reeducation	Identification/change of parental misperceptions or problematic interactive behaviors.	Behavioral intervention aimed at reducing parental involvement around bedtime.
Redefinition	Assessment/change of parental internal attributions and psychodynamics that affect their relationship with their infant.	Working with a mother on her own separation anxiety projected onto her infant who refuses to go to sleep.

associated with an ear infection should quickly resolve when the infant has been treated. *Reeducation* refers to interventions that focus on parent education. They teach parents how to deal more effectively with a sleep problem or how to reduce stress. Some parents get information from other parents, relatives, or other clinicians. The popularity of magazine articles, TV shows, and books that provide “how to” advice attests to the magnitude of the problem and the perceived need for help (Cuthbertson & Scheville, 1985; Douglas & Richman, 1984; Ferber, 1985). *Redefinition* addresses internalized attributions that are the result of family and cultural codes and past experiences stemming, in part, from the parents’ own childhoods. Redefinition requires more in-depth assessment and treatment including observation of parent-child and family interaction. It is critical to elicit information from both parents regarding their shared values, attitudes, and beliefs about sleep and about the repertoire of techniques that they have tried or are reluctant to try.

Behavioral programs reported to be effective in the prevention and treatment of some infant sleep problems (Adair, Zuckerman, Bauchner, Philipp, & Levenson, 1992; Richman, 1984; Wolfson, Lacks, & Futterman, 1992) are not always successful when underlying internalized issues sustain some of the more resistant sleep disorders. In such cases, lasting effects can only be achieved when the changes in parental management methods are integrated with resolution of other underlying key issues in family life. It is possible that cases finally referred to sleep disorder clinics may overrepresent parents who, for some reason, cannot implement or benefit from more directive interventions. The irony of a distinction between behavioral treatments that employ more active strategies and psychodynamic treatments that emphasize the importance of nondirective interventions is that both methods use remediation, reeducation, and redefinition.

In the sections that follow, current research data and clinical experiences will be integrated with respect to the contextual components and levels of intervention derived from the transactional model.

### *DISTAL EXTRINSIC CONTEXTS*

#### *The Cultural Context: The Issue of Co-Sleeping*

The cultural context shapes the way in which sleep is perceived by the family. The cultural context also influences scientific data gathering. In our Western industrialized culture co-sleeping is not sanctioned. Most of our current knowledge about sleep-wake state maturation and regulation has been obtained from infants sleeping alone. From an historical perspective, this practice is only 200 years old, a relatively short time in human evolution. Moreover, from a cross-cultural, sociological perspective, infants sleeping alone represent only a small proportion of sleeping infants in today’s world (McKenna, Mosko, Dungy, & McAninch, 1990). In the laboratory, co-sleeping mother-infant pairs have more frequent, brief arousals when sleeping together than when sleeping apart (McKenna et al., 1990). These arousals may be adaptive in immature organisms. Yet our normative data are based on solitary sleep.

The age of the child in any particular culture may influence the perceived appropriateness of co-sleeping. Lozoff, Wolf, and Davis (1984, 1985) found a fourfold increase in sleep “problems” in older children who were co-sleeping with their parents

compared with older children who were not. Zuckerman et al. (1987) found an even greater increase with respect to the co-sleeping partner's sleep problems. Madansky and Edelbrock (1990) reported that frequent co-sleeping was associated with sleep problems in a community sample of 2- and 3-year-old children. In their study, 55% of the parents reported at least occasional co-sleeping, particularly in periods of stress. Interestingly, co-sleeping was not significantly related to other child behavior problems. Other studies in Western cultures also suggest relationships between co-sleeping and sleep problems (Keffe, 1987; Schacter, Fuchs, Bijur, & Stone, 1989). Such problems usually are not reported in non-Western cultures. Families with co-sleeping infants may view this behavior as problematic in a given cultural context.

A middle-class couple contacted the sleep clinic because their 8-month-old male infant refused to sleep alone. The infant was the fifth child in this family. His parents reported that they had never experienced sleep problems with any of the older siblings. They stated that they had allowed the older children to co-sleep with them and, indeed, at one point had three children sharing their bed. When their fourth child was born, the first-born moved to his own bed; similarly, their fifth son replaced the second in co-sleeping with his parents. Recently, however, associated with a move to a new area, the parents had decided to change this practice and end a family tradition. They were concerned that co-sleeping might not be appropriate. They felt also that they needed more autonomy and space for themselves. The youngest child refused to accept this new arrangement.

In this example, it is clear that the family tradition of co-sleeping with children (not culturally shared in their community) had resulted in no sleep complaints in the older children. However, a cultural shift had negatively affected the youngest. The intervention focused on redefinition of parental needs with respect to privacy and space. The change was encouraged without condemning the family tradition that had been satisfying and successful for more than 12 years. It was supported in spite of the infant son who, in his protest, challenged his parents' decision. Only after the parents, as a couple, had discussed their reasons for the decision, their ambivalence, and accepted their rights could the change be successfully sustained.

#### *Family Context: Time Sharing and Sharing Time*

Family factors, distinct from personality characteristics and psychopathology of individuals, may play a role in perpetuating infant sleep problems. Parenting a sleepless child often leads to significant fatigue. In certain family contexts, such exhaustion may provide secondary gains by providing a "cause" for being tired, dysfunctional, or not meeting specific expectations. The child's problem may serve as a symptom for the family, providing parents with an issue around which to argue and avoid other conflictual issues. Sometimes the child's sleep problem or co-sleep solutions avoid tension resulting from difficulties in the parent's sexual relationship.

In families in which parents work all day, the evening may be the primary time for family relaxation and socialization. For such children, going to bed means missing out on opportunities for being with their parents. Likewise, parents may be ambivalent about ending such opportunities. Insufficient family time may serve as the source of a sleep problem when the young child resists going to sleep or establishes a pattern of prolonged middle-of-the-night awakenings to maintain contact. Both parent and child need this time together.

Sibling rivalry may serve as another source of insufficient family time. Some families believe that all siblings should be treated equally, especially at bedtime. Such a belief

undermines a child's individual needs. The conflict between satisfying one child's individual needs and treating all children equally is apparent in the following case example.

A set of parents reported that their 10-month-old infant had a significant sleep problem consisting of multiple awakenings every night. A 3-year-old brother was reported to be a good sleeper. The infant had no difficulty at bedtime and went to bed around 8:00 p.m. when tired. He slept quietly until 10 p.m. when he awakened for the first time. Awakenings were repeated approximately every hour. When he awoke, his mother usually rocked and cuddled him until he fell back to sleep. Because this routine was repeated 8–10 times each night, the parents felt exhausted. On further inquiry, the mother reported that the older brother was jealous of his younger sibling. Whenever she showed the infant any affection, the elder brother responded with temper tantrums that included head banging, kicking, throwing objects, and sticking his fingers into electric outlets. The mother sounded helpless when describing these outbursts and indicated, in a matter-of-fact tone, that to prevent them, she avoided picking up her infant in the presence of the 3-year-old.

In this example, family dynamics and mother–infant interaction patterns were combined to avoid daytime conflict by providing an opportunity for parent–infant contact at night. Mother and infant needed their intimate, affectionate moments with each other. Both parents felt unable to deal with their 3-year-old's attacks of jealousy. The only resolution was to “steal” precious moments during the night. Unfortunately, the infant's sleep problem had worsened and affected the well-being of both parents. To treat this “sleep problem,” reeducation was not sufficient. The mother was unable to follow any guidance that supported “weaning” at night. Treatment needed to provide redefinition of the family dynamics and an alternative approach to managing her relations with her older son based on an understanding of her own childhood experiences of sibling rivalry.

#### *Environmental Context: Stress and Life Events*

Environmental factors may affect parent–child relationships and lead to disturbed sleep. Socioeconomic concerns such as loss of employment, a move to a new location, conditions of overcrowding, lack of safety, and irregularity of day–night schedules all may lead to sleep disruption. Young children, in particular, are easily overstimulated and frightened by novel or incomprehensible daytime experiences. Being separated from the parent in the dark may activate anxiety in these youngsters.

A 12-month-old girl was brought to the sleep clinic because of night terrors. Parents reported that their daughter slept through the night almost from birth. But suddenly, in the last few weeks, she started to wake up in “terror.” She needed a prolonged period of time to establish communication with her parents and calm down. The nature of the phenomenon of night terrors was explained to the parents including the fact that it often occurs in normal development and that it has been associated with stress. This led the parents to discuss their recent stressful period that included a period of unemployment and a move to a new city in search for a new job. The parents seemed very relieved to discuss their life stresses. It seemed that they had a strong bond between themselves and with their daughter. No intervention was recommended, except for a scheduled follow-up phone call. The mother called and reported that the night terror problem never recurred after the intake interview “as if she [her daughter] understood what we were talking about.”

Reeducation and support provided adequate treatment in this case. A follow-up phone call is always recommended to convey to parents a sense of being cared for by the professional and for learning about the outcome, particularly in cases of “no intervention.”

## PROXIMAL EXTRINSIC CONTEXT

### *The Parent Context: Personality and Attributions*

Maternal personality and maternal psychopathology have been identified as contributing factors to infant sleep problems (Coutrona & Troutman, 1986; Field, Healy, Goldstein, Perry, & Bendell, 1988; Field, Healy, & LeBlanc, 1989; Keener, Zeanah, & Anders, 1988; Scott & Richards, 1990; Zeanah, Keener, Anders, & Levine, 1986). Richman (1981) reported that mothers of 1- to 2-year-old sleep-disturbed infants exhibited more psychopathology than mothers of control infants. These mothers tended to be nervous, lose control more often, and have less trusting, supporting, relationships with their husbands. Zuckerman et al. (1987) reported that maternal depression was the only measure of maternal psychopathology that was significantly more common in children with persistent sleep problems from the age of 8 months to 3 years. Guedeney and Kreisler (1987) reported a relationship between sleep problems in the first 18 months of life and traumatic events, maternal depression, and maternal anxiety during the pregnancy. Because all of these studies were correlational and cross-sectional in design, it is difficult to ascribe causality to maternal factors with any certainty.

A 5-month-old female infant was referred to the clinic because of incessant crying and inability to sleep. Feeding was characterized by frequent regurgitation. In order to fall asleep, the infant needed to be rocked continuously in her mother's arms. When placed in the crib, she rarely sustained more than 30–60 minutes of sleep before awakening and crying. This was a highly desired first child in a well-functioning, young, new family.

Assessment of the mother revealed that she was somewhat unsure of her parenting skills. Her self-efficacy as a parent score and her parenting skills score were both 1 *SD* below the mean (Coutrona & Troutman, 1986). Her Beck Depression Inventory score was in the clinical range (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). She was concerned about her transition from independent work to being a homebound caregiver.

The infant's presenting symptoms resemble those described below as a temperament-related disorder: significant sleep-wake disruption and excessive crying. However, in this case, assessment uncovered maternal depression and intervention focused on reeducation rather than remediation. The role of postpartum depression was discussed. Treatment involved support for the mother's concerns and temporary involvement of the father in more of the caregiving activities, including some of the feedings and response to nighttime awakenings. Individual treatment for the mother was not clinically indicated, although it would have been recommended at follow-up had improvement in the mother-infant relationship not occurred.

A mother complained that her 14-month-old son's sleep problems were "driving her crazy." The infant woke every half-hour through the night and had great difficulty returning to sleep. Her husband was more successful by substituting her "soft" approach with his more "firm" and structured approach. Yet the mother always reverted to her own methods because she could not fully appreciate her infant's need for self-regulation. Instead she associated her infant's sleep problem with "organic developmental problems" resulting from her depressed mood during pregnancy. She interpreted her infant's night waking as suffering related to his condition and therefore tried her best to provide him comfort and relief. Treatment involved both reeducation regarding the importance of autonomy and redefinition directed at exploring the mother's guilt in believing that she had damaged her son during the course of her pregnancy.

The significant role of parental guilt in childhood psychopathology is well established. Very often parents seen in a sleep clinic are unwilling to explore family or

personal dynamics related to their child's problems because such exploration invokes self-accusation and guilt. Children with organic defects are especially vulnerable to parental guilt (Green & Solnit, 1964). Such parents come to the sleep clinic expecting to get a medical diagnosis, based on sleep laboratory polygraphic monitoring, to confirm a link between the child's sleep problem and a previously established organic diagnosis. They are reluctant to explore their personal feelings and methods of interacting as possible contributing sources of the problem.

### INTRINSIC CONTEXT

#### *The Infant Context: Individual Differences and Illness*

Biomedical factors can interfere with infant sleep and, if persistent, lead to a sleep disturbance. Consolidation has been linked to gestational age (maturity) (Bernal, 1973), nursing status (Blurton-Jones, Rosetti-Ferreira, Farquar-Brown, & McDonald, 1978), and infant health status (Ferber, 1986). Ear infections, airway congestion, and teething cause temporary discomfort and anecdotally disrupt sleep in some infants. If these conditions recur frequently or if the parental response is inappropriate, disruption may lead to a more fixed pattern of nightly awakenings. Although prematurity, nursing, and illness per se are typically associated with shorter, more aroused sleep periods, some parents may respond to these "normal" patterns as problematic. Kahn, Mozin, Rebuffat, Sottiaux, and Muller (1989) identified cow's milk allergy in a group of infants with persistent sleep problems who did not benefit from behavioral interventions.

Obstructive Sleep Apnea is a condition in which multiple awakenings are associated with airway obstruction during sleep. Typically such infants and toddlers snore and parents are able to hear the stopped breathing episodes. Most often the source of obstruction in children is hypertrophied tonsils and adenoids. Tonsillectomy usually corrects the problem (Guilleminault & Ariagno, 1989). In adults, Obstructive Sleep Apnea is associated with daytime sleepiness. Daytime hypersomnia is not common in young children, but clinical reports have suggested that hypersomnia might be reflected in hyperactive behavior instead (Navelet, Anders, & Guilleminault, 1976).

Infant temperament, as a constitutional characteristic, has been associated with problems in sleep-wake regulation. Carey (1974) found in a pediatric clinic sample that infants with sleep problems had lower sensory thresholds than infants without sleep problems. This specific finding has been replicated by Sadeh, Lavie, and Scher (1992) who found lower sensory thresholds and adaptability in young children with severe night waking problems, compared to normal controls. In further support of these findings, Weissbluth, Davis, and Poucher (1984) found that children with "difficult" temperaments slept less than children with "easy" temperaments, and Schaefer (1990) found a higher than expected incidence of "difficult" temperament in young children referred for night awakenings. In contrast, Keener et al. (1988), in a sample of nonreferred normal infants, did not find temperament differences, as judged by mothers, between infants who cried when they woke up during the night and those who did not, scored independently from time-lapse videotapes. The following case illustrates the role of temperament:

A 5-month-old boy, the third of three sons, presented with incessant crying during the day and night. Periods of sleep averaged 1–2 hours with the longest sustained sleep period never longer than 3 hours. Maternal competence was high and depression was not evident. The infant's temperament was rated as difficult by observers in a structured behavioral assessment (Garcia-Coll, Halpern, Vohr, Seifer, & Oh, in press). Infant irritability and hypersensitivity were obvious. In addition, each of this infant's older siblings had had colic at the same age.

In this case, it was determined that the difficulty in sleep–wake regulation was related more to temperament and predisposition than to family stress or difficulties in interaction. Remediation was attempted. Methods of swaddling and reducing external stimulation for this “hypersensitive” infant were recommended. The parents were advised that the problem would be short-lived and self-limited. The child responded well within 2 weeks. Follow-up 3 months later revealed that all of the symptoms of irritability had disappeared; however, the infant still slept for only 3- to 4-hour stretches at night and napped irregularly.

### *MEDIATING CONTEXT: PARENT-INFANT INTERACTION AND THE RELATIONSHIP*

In infants, significant relationship disorders may be associated with multiple symptoms including problems in sleep, feeding, social interaction, and physical development. Less severe relationship disturbances may be limited to one domain of function, such as struggles around feeding or night waking, and may be more self-limited in terms of their influence on general development (Anders, 1989).

Sometimes it is difficult to untangle individual infant or parental context factors from relationship and interaction factors. A distinction between interaction and relationship is made to differentiate the more directly observable interactive behaviors from the more persistent, underlying attributions that render interactions resistant to change. In other words, interactions represent externally observed behaviors; relationships represent interactions plus the subjective experiences that guide and influence the interactions. Relationship behaviors reflect long-standing, consistent, routinized *patterns* of interaction that have become “second nature.” For example, responding to a crying toddler in the middle of the night may be considered interactive when the behavior occurs on occasion in response to acute stress. It is part of the relationship when it is routinized and does not serve the context-specific needs of either the parent or the child.

#### *The Attachment Relationship*

One psychological process in the developing child during the first 3 years of life is that of separation-individuation (Mahler, Pine, & Bergman, 1975). It involves the cognitive realization of separateness, the affective mastery of separation anxiety, and the emergence of an autonomous self. These developmental tasks are largely facilitated by means of the attachment relationship. The attachment relationship begins with a process of bonding facilitated by consistent, sensitive, comforting, and regulating parent–infant interactions leading to secure, empathic, dyadic regulation, and progressing to a sense of separated self and psychological autonomy. When problems arise in the attachment relationship, they may appear as symptoms of the infant,

but actually reflect problems of the parent. The infant's separation-individuation issues echo and reactivate dormant conflictual problems in the parent.

An enormous body of research has elucidated the durability and the psychosocial significance of the infant's attachment relationship (Ainsworth, Blehar, Waters, & Wall, 1978). In this regard, the infant's falling asleep each night is a separation, and waking up a reunion, both occurring regularly and naturally across developmental stages. Because one of the major functions of the attachment relationship is to provide security and comfort at times of distress, sleep serves as a relevant trigger of the attachment system. Going to bed is a time of heightened anxiety and uncertainty. Only two studies have examined the relationship between attachment and sleep directly. Moore (1989) highlighted the relationship between insecure attachment, and sleep disturbance; and, Benoit, Zeanah, Boucher, and Minde (1992) have reported an association between insecure adult attachment classifications in mothers and sleep disorders in toddlers.

In our clinical experience, separation problems in both parent and infant are the most common relationship issues underlying persistent dyadic difficulty in resolving sleep problems. Overidentification with the child and/or guilt over neglect and abandonment triggers parental separation anxiety. The following example illustrates how separation anxiety becomes generalized and pervasive and how a focused intervention can be effective.

A 20-month-old boy developed a severe night waking problem and refused to go to bed. Initial assessment revealed that the child was exhibiting emerging signs of separation anxiety, including clinging, temper tantrums, and prolonged crying in response to separation from the mother and refusal to take naps at day care. The child's anxiety increased to the point where his parents were asked to remove him from the program. The parents felt anxious and helpless. The mother, in addition to her concerns about her son, was worried that she might lose her job. At the initial visit the parents reported that they had found an alternative day care program, but felt that the sleep problem and anxiety at separation should be treated first to prevent another failure. The intervention included a brief educational description of separation anxiety that served to explain the child's behaviors in the different domains. The discussion elicited maternal concerns about going to work and neglecting her child. The mother admitted feeling fearful and guilty when she left her son at the day care center. The parents were advised that during the following week, one of them should sleep in the child's room on a separate mattress. They should not interact with the child beyond just being there and verbalizing reassurance. The emphasis was on reassurance rather than physical comfort.

This approach has been reported to be effective in treating night waking problems in early childhood (Sadeh, 1990). The parents accepted the prescription with apparent relief and the father volunteered to begin initially. After 1 week, they reported significant improvement in their child's sleep. They indicated that the child repeatedly checked on the father's presence during the first night to make sure that he was still there. His resistance to going to bed and difficulty in falling asleep and sleeping through the night virtually disappeared by the second night. During the week, at home with his parents, his daytime anxiety diminished. His tantrums disappeared and his parents could leave him playing for brief periods while they went to an adjacent room. By the third week, the parents were ready to begin the new day care program. During the next two weekly clinic visits, the parents reported that their son had responded reasonably well to the new day care center while maintaining other achievements at home. They felt that after the first week of intervention the child was no longer interested in his father's presence in his room during the whole night, so they established

a ritual of the father (or mother) spending a few minutes lying down in his room until he settled, then leaving.

More serious attachment relationship disorders can involve several areas of behavioral regulation as in the following case:

A 6-month-old, first-born male infant was admitted to the hospital with failure to thrive. An extensive medical work-up revealed no organic basis for the severe cachexia. The infant made little eye contact and did not smile. He was fussy and irritable and awakened every 2 hours during the night. There was little diurnal regulation or consolidation of sleep and waking periods. A diagnosis of Attachment Disorder was made. During the hospital stay he was assigned a primary nurse to interact with him. He responded rapidly in both social and physical development. His sleep-wake patterns became more normal.

His mother, a single parent, had tried to take care of him. A videotape of her feeding and play demonstrated "mechanical" interactions with inadequate social interaction and a paucity of infant-elicited maternal response (Stern, 1977). A more detailed history of her own childhood revealed significant deprivation and chaos. Intervention was intensive and focused on both reeducation and redefinition. A psychodynamically oriented parent-infant nursery program was prescribed for 2 hours, 3 days a week, over a 1-year period. A 2-year follow-up revealed general improvement in all areas of relationship functions including sleep-wake regulation.

#### *Parent-Infant Interactions: Bedtime and Limit Setting*

Perhaps the most consistent research finding regarding the origins of sleep problems in infancy is related to the association of sleep problems with parent-infant *bedtime interaction*. Van Tassel (1985) studied the relative influence of environmental factors on sleep disturbances in the first and second year of life and found that bedtime interactions such as nighttime feeding were the best predictors of sleep problems in both early and late infancy. Adair, Bauchner, Philipp, Levenson, and Zuckerman (1991) found that 9-month-old infants whose parents were present while the infant was falling asleep were significantly more likely to wake at night than infants whose parents were not present. Johnson (1991), in a telephone survey on 12- to 35-month-old children, found highly significant differences between night wakers and good sleepers in bedtime routines. Infants who were actively soothed by their parents (nursed, rocked, or comforted) were more likely to be night wakers. Eighty percent of infants who fell asleep on their own were sleeping through the night compared to less than one third of the infants who were soothed to sleep by their parents.

Wright, Macleod, and Cooper (1983) and Eaton-Evans and Dugdale (1988) reported a relationship between breast feeding and delay in settling. Other research has failed to find such a relationship (Beal, 1969; Blurton-Jones et al., 1978). Sleep patterns of 4-week-old and 4-month-old infants who were fed an enriched diet did not differ from those of infants on a regular diet (Macknin, Medendorp, & Maier, 1989). Feeding styles (demand vs. schedule) also were not found to be related to nighttime awakenings (Moore & Ucko, 1957). Inconsistent and unsatisfying feedings, however, are associated with more sleep problems. It is possible that inconsistent feedings may reflect difficulties in parent-infant interactions, which, in turn, may influence the consolidation of sleep-wake patterns.

Paret (1983) has reported that infants who use a sleep aid (pacifier or thumb) at bedtime and during the night are less likely to exhibit night waking at 9 months of age. After 6-9 months of age, a sleep aid may be transformed into a transitional or "representational" object (Winnicott, 1958). Winnicott has described the use of

the representational object by the infant as serving to comfort and provide security in the absence of the mother. This idea was supported by research findings that children who fall asleep in the absence of their parent are more likely to use transitional objects than those who tend to fall asleep in the presence of a parent (Wolf & Lozoff, 1989).

During the second and third years of life when toddlers begin to appreciate a sense of self, the interactions around limit setting become an issue of special relevance for sleep. Settling down at the beginning of the night and self-soothing after a nighttime awakening require a balanced appraisal of appropriate limits by parents. When bedtime and middle-of-the-night interaction patterns are difficult to change or the symptoms of the sleep disturbances do not rapidly improve, the presence of parental attributions or other context disturbances resulting in relationship dysfunction must be assessed. Bedtime and the middle of the night may become battlefields over control as the next example illustrates:

A 26-month-old girl was brought to the clinic by her parents for severe problems related to going to bed. She was described as a stubborn child, willing to settle down only on her own terms. While the parents described the problem, the child explored the room in a cheerful and confident manner. When the mother raised the subject of control, she suddenly approached the mother, and by facial gesture, indicated to the mother that she wished to sit in her chair. The mother, without interrupting her conversation, switched chairs to comply with her daughter's demand. As the interview progressed, the office became a battlefield between parents and child. As the child spread food and toys, offered by mother to quiet her, father demanded that mother set limits and forbade the child from making a mess. The mother, on the other hand, continued to indulge her daughter so that she could listen to the examiner. This little girl usually "won" all of the battles with her parents. Her parents experienced growing anger and progressive frustration because of their daughter's control over them. When these issues were addressed in treatment, the mother revealed her own sense of incompetence and inability to assert herself. This understanding was used in processing and changing her interactive behaviors that had been previously sustaining the child's demandingness and sense of omnipotence.

Other parents report feelings of helplessness or report that their baby is acting willfully, deliberately trying to frustrate them when the struggle to put their baby to bed is unsuccessful. Parents may acknowledge an urge to hit the baby; some actually do. A link between severe childhood sleep problems and child abuse is therefore suggested. It is easy to imagine such a possibility when parents are exhausted and made to feel out-of-control by a "stubborn" child. In still another example:

A 12-month-old infant presented with serious night waking. His mother used to nurse him and rock him and his father used to take him for car rides in order to help him fall asleep. These rituals often lasted from 1 to 3 hours. In an attempt at reeducation, his parents were provided with behavioral guidelines to put him into his bed awake in a prone position. They were to remain briefly in the room with him and then leave. At regular intervals they were to return, assist him in reassuming his sleeping position, and reassure him of their presence. The parents seemed to fully understand the rationale and agreed with the procedure.

At the next visit they reported helplessly that the baby struggled at bedtime and refused to settle down, crying and protesting for extended periods that lasted from 1 to 3 hours each night. Father reported that he could not put his infant in a prone position because the child resisted. Father was concerned that he might "break his child's back" if he persisted. Further evaluation revealed that father, a large and athletic person, was preoccupied with aggression and competition. In his mind, limit setting was perceived as aggressive; thus, he refrained from asserting himself with his child. The child gradually developed an exaggerated sense of control and omnipotence. Redefinition attempted to link the father's own feelings of vulnerability to his view of his son as fragile.

## CONCLUSIONS

In this paper, it has been shown that sleep problems in infants and young children, especially those that persist after simple guidance or behavioral programs have failed, need to be understood in terms of issues related to the infant's development and assessed in the context of the parent-child relationship. Associated cultural contexts, underlying family dynamics, environmental stresses, and individual factors need to be evaluated. Although a sleep problem most often presents as an infant problem, it usually comprises psychodynamic family issues and parent-infant interaction difficulties. Regardless of origin, infant sleep problems soon become family problems. When parents suffer, infants respond in turn. Disruptive family patterns of interaction quickly emerge in the presence of chronic sleep deprivation.

Three major areas of assessment should be part of a sleep disorders evaluation: (1) infant factors, (2) parent factors, and (3) relationship/interaction factors. Assessment of parent factors should include parental knowledge, expectations, beliefs, and attitudes toward infants' sleep, and parents' own personal issues and needs, their models of care giving, and family conflicts that might underlie and serve as a driving force for their attitudes and behaviors. Assessment of relationship/interaction factors should include a detailed history of interactions at bedtime, especially about soothing techniques, and observations of daytime interaction, especially in the areas of separation and limit setting. Objective nighttime recording methods, such as actigraphy or videosomnography, may be useful to clarify discrepancies or elucidate specific behaviors and interactions.

We apply a transactional model to understanding sleep problems in order to more fully understand the process related to early sleep-wake regulation and disruption. More developmentally oriented research projects that use longitudinal designs with an interaction-systems framework are needed. The infant needs to be viewed as part of a system, and sleep-wake regulation as a mode of transaction. It is still not clear what infants should be doing and when, and what is the normal range of individual variation. The lack of empirical data is highlighted by the significantly high incidence of sleep "problems." How many are real problems and how many are normal variations remains to be discovered.

## REFERENCES

- Adair, R., Bauchner, H., Philipp, B., Levenson, S., & Zuckerman, B. (1991). Night waking during infancy: Role of parental presence at bedtime. *Pediatrics, 84*, 500-504.
- Adair, R., Zuckerman, B., Bauchner, H., Philipp, B., & Levenson, S. (1992). Reducing night waking in infancy: A primary care intervention. *Pediatrics, 89*(4), 585-588.
- Ainsworth, M., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Anders, T. (1979). Night waking in infants during the first year of life. *Pediatrics, 63*, 860-864.
- Anders, T. (1989). Clinical syndromes, relationship disturbances and their assessment. In A. Sameroff & R. Emde (Eds.), *Relationship disturbances in early childhood: A developmental approach* (pp. 145-165). New York: Basic Books.
- Anders, T., Halpern, L., & Hau, J. (in press). Sleeping through the night: A developmental perspective. *Pediatrics*.

- Anders, T., & Keener, M. (1985). Developmental course of nighttime sleep-wake patterns in full-term and pre-term infants during the first year of life. *Sleep*, 8, 173-192.
- Beal, V. (1969). Termination of night feeding in infancy. *Journal of Pediatrics*, 75, 690-692.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J. E., & Erbaugh, J. K. (1961). An inventory for measuring depression. *Archives of General Psychology*, 4, 561-571.
- Beltramini, A., & Hertzog, M. (1983). Sleep and bedtime behavior in preschool-aged children. *Pediatrics*, 71, 153-158.
- Benoit, D., Zeanah, C., Boucher, C., & Minde, K. (1992). Sleep disorders in early childhood: Association with insecure maternal attachment. *Journal of the American Academy of Child & Adolescent Psychiatry*, 31, 86-93.
- Bernal, J. (1973). Night waking in infants during the first fourteen months. *Developmental Medicine and Child Neurology*, 15, 760-769.
- Blurton-Jones, N., Rosetti-Ferreira, M., Farquar-Brown, M., & McDonald, I. (1978). The association between perinatal factors and later night waking. *Developmental Medicine and Child Neurology*, 20, 427-434.
- Carey, W. (1974). Night waking and temperament in infancy. *Journal of Pediatrics*, 84, 756-758.
- Coutrona, C., & Troutman, B. (1986). Social support, infant temperament and parenting self-efficacy: A mediational model of post-partum depression. *Child Development*, 57, 1507-1518.
- Cuthbertson, J., & Scheville, S. (1985). *Helping your child sleep through the night*. New York: Doubleday.
- Douglas, J., & Richman, N. (1984). *My child won't sleep*. Harmondsworth: Penguin Books.
- Eaton-Evans, J., & Dugdale, A. (1988). Sleep patterns of infants in the first year of life. *Archives of Disease in Childhood*, 63, 647-649.
- Ferber, R. (1985). *Solve your child's sleep problem*. New York: Simon & Schuster.
- Ferber, R. (1986). Sleepless child. In C. Guilleminault (Ed.), *Sleep and its disorders in children* (pp. 141-163). New York: Raven Press.
- Field, T., Healy, B., Goldstein, S., Perry, S., & Bendell, D. (1988). Infants of depressed mothers show "depressed" behavior even with non-depressed adults. *Child Development*, 59, 1569-1579.
- Field, T., Healy, B., & LeBlanc, W. (1989). Sharing and synchrony of behavior states and heart rate in nondepressed versus depressed mother-infant interactions. *Infant Behavior and Development*, 12, 357-376.
- Garcia-Coll, C., Halpern, L., Vohr, B., Seifer, R., & Oh, W. (in press). Stability and correlates of change of early temperament in preterm and full term infants. *Infant Behavior and Development*.
- Gass, E., & Strauch, I. (1984). The development of sleep behavior between 3 and 11 years. In *Proceedings of the 7th European Sleep Congress*. Munich.
- Green, M., & Solnit, A. (1964). Reactions to the threatened loss of a child: A vulnerable child syndrome. Part III. *Pediatrics*, 34, 58-66.
- Guedeny, A., & Kreisler, L. (1987). Sleep disorders in the first 18 months of life: Hypothesis on the role of mother-child emotional exchanges. *Infant Mental Health Journal*, 8, 307-318.
- Guilleminault, C., & Ariagno, R. (1989). Apnea during sleep in infants and children. In M. Kryger, T. Roth, & W. Dement (Eds.), *Principles and practice of sleep medicine* (pp. 655-664). Philadelphia: Saunders.
- Hauri, P., & Olmstead, E. (1980). Childhood-onset insomnia. *Sleep*, 3, 59-65.
- Jacklin, C., Snow, M., Gahart, M., & Maccoby, E. (1980). Sleep pattern development from 6 through 33 months. *Journal of Pediatric Psychology*, 5, 295-303.
- Jenkins, S., Bax, M., & Hart, H. (1980). Behavior problems in preschool children. *Journal of Child Psychology and Psychiatry*, 21, 5-17.
- Johnson, M. (1991). Infant and toddler sleep: A telephone survey of parents in one community. *Journal of Developmental and Behavioral Pediatrics*, 12, 108-114.
- Kahn, A., Mozin, M., Rebuffat, E., Sottiaux, M., & Muller, M. F. (1989). Milk intolerance in children with persistent sleeplessness: A prospective double-blind crossover evaluation. *Pediatrics*, 84, 595-603.
- Kateria, S., Swanson, M., & Trevarthin, G. (1987). Persistence of sleep disturbances in preschool children. *Journal of Pediatrics*, 110, 642-646.
- Keener, M., Zeanah, C., & Anders, T. (1988). Infant temperament, sleep organization and nighttime parental intervention. *Pediatrics*, 81, 762-771.

- Keffe, M. (1987). Comparison of neonatal nighttime sleep-wake patterns in nursery versus rooming-in environments. *Nursery Research*, 36, 140-144.
- Klackenberg, G. (1982). Sleep behavior studied longitudinally: Data from 4-16 years in duration, night awakening and bedtime. *Acta Paediatrica Scandinavica*, 71, 501-506.
- Lozoff, B., Wolf, A. W., & Davis, N. S. (1984). Cosleeping in urban families with young children in the United States. *Pediatrics*, 74, 171-182.
- Lozoff, B., Wolf, A., & Davis, N. S. (1985). Sleep problems seen in pediatric practice. *Pediatrics*, 75, 477-483.
- Macknin, M., Medendorp, S., & Maier, M. (1989). Infant sleep and bedtime cereal. *American Journal of Disease of Children*, 143, 1066-1068.
- Madansky, D., & Edelbrock, C. (1990). Cosleeping in a community sample of 2- and 3-year-old children. *Pediatrics*, 86, 197-203.
- Mahler, M. S., Pine, F., & Bergman, A. (1975). *The psychological birth of the human infant*. New York: Basic Books.
- McKenna, J. J., Mosko, S., Dungy, C., & McAninch, J. (1990). Sleep and arousal patterns of co-sleeping human mother/infant pairs: A preliminary physiological study with implication for the study of Sudden Infant Death Syndrome (SIDS). *American Journal of Physical Anthropology*, 83, 331-347.
- Monroe, L., (1967). Psychological and physiological differences between good and poor sleepers. *Journal of Abnormal Psychology*, 72, 255-264.
- Moore, M. (1989). Disturbed attachment in children: A factor in sleep disturbance, altered dream production and immune dysfunction. *Journal of Child Psychotherapy*, 15, 99-111.
- Moore, T., & Ucko, L. (1957). Night waking in early infancy, Part 1. *Archives of Disease in Childhood*, 32, 333-342.
- Navelet, Y., Anders, T. F., & Guilleminault, C. (1976). Narcolepsy in children. In C. Guilleminault, W. Dement, & P. Passouant (Eds.), *Narcolepsy* (pp. 171-177). New York: Spectrum.
- Paret, I. (1983). Night waking and its relationship to mother-infant interaction in nine-month-old infants. In J. Call, E. Galenson, & R. Tyson (Eds.), *Frontiers of infant psychiatry* (pp. 171-177). New York: Basic Books.
- Ragins, N., & Schachter, S. (1971). A study of sleep behavior in two-year old children. *Journal of the American Academy of Child Psychiatry*, 10, 464-480.
- Richman, N. (1981). A community survey of characteristics of one- to two-year-olds with sleep disruptions. *Journal of the American Academy of Child Psychiatry*, 20, 281-291.
- Richman, N. (1984). Sleep problems in young children. *Archives of Disease in Childhood*, 56, 491-493.
- Richman, N., Stevenson, J., & Graham, P. (1982). *Preschool to school: A behavioral study*. London: Academic Press.
- Sadeh, A. (1990). Actigraphic home monitoring of sleep disturbed infants: Comparison to controls and assessment of intervention. In J. Horne (Ed.), *Sleep '90* (pp. 469-470). Bochum: Pontenagel Press.
- Sadeh, A., Lavie, P., & Scher, A. (1992). Temperament and night waking in early childhood, revisited. *Sleep Research*, 21, 93.
- Sadeh, A., Lavie, P., Scher, A., Tirosh, E., & Epstein, R. (1991). Actigraphic home monitoring of sleep-disturbed and control infants and young children: A new method for pediatric assessment of sleep-wake patterns. *Pediatrics*, 87, 494-499.
- Salzarulo, P., & Chevalier, A. (1983). Sleep problems in children and their relationships with early disturbances of the waking-sleeping rhythms. *Sleep*, 6, 47-51.
- Sameroff, A. (1989). General systems and the regulation of development. In M. Gunnar & E. Thelan (Eds.), *Systems and development* (pp. 219-235). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Sameroff, A., & Emde, R. (1989). *Relationship disturbances in early childhood: A developmental approach*. New York: Basic Books.
- Sameroff, A., & Fiese, B. (1990). Transactional regulation and early intervention. In S. Meisels & J. Shonkoff (Eds.), *Early intervention: A handbook of theory, practice and analysis* (pp. 119-149). New York: Cambridge University Press.
- Schacter, F., Fuchs, M., Bijur, P., & Stone, R. (1989). Cosleeping and sleep problems in Hispanic American urban young children. *Pediatrics*, 84, 522-530.
- Schaefer, C. (1990). Night waking and temperament in early childhood. *Psychological Reports*, 67, 192-194.

- Scott, G., & Richards, M. (1990). Night waking in infants: Effects of providing advice and support for parents. *Journal of Child Psychology and Psychiatry*, *31*, 551-567.
- Simonds, J., & Parraga, H. (1984). Sleep behaviors and disorders in children and adolescents evaluated at psychiatric clinics. *Developmental and Behavioral Pediatrics*, *5*, 6-10.
- Stern, D. (1977). *The first relationship: Infant and mother*. Cambridge: Harvard University Press.
- Van Tassel, E. B. (1985). The relative influence of child and environmental characteristics on sleep disturbances in the first and second years of life. *Developmental and Behavioral Pediatrics*, *6*, 81-86.
- Weissbluth, M., Davis, A., & Poucher, J. (1984). Night waking in 4- to 8-month-old infants. *Journal of Pediatrics*, *104*, 477-480.
- Winnicott, D. (1958). Transitional objects and transitional phenomena. In *Collected Papers of D. W. Winnicott* (pp. 220-223). New York: Basic Books.
- Wolf, A. W., & Lozoff, B. (1989). Object attachment, thumbsucking, and the passage to sleep. *Journal of the American Academy of Child and Adolescent Psychiatry*, *28*, 287-292.
- Wolfson, A., Lacks, P., & Futterman, A. (1992). Effects of parent training on infant sleeping patterns, parents' stress, and perceived parental competence. *Journal of Consulting and Clinical Psychology*, *60*(1), 41-48.
- Wright, P., Macleod, H., & Cooper, M. (1983). Waking at night: The effect of early feeding. *Child: Care, Health, and Development*, *9*, 309-319.
- Zeanah, C., Keener, M., Anders, T., & Levine, R. (1986). Measuring difficult temperament in infancy. *Journal of Developmental and Behavioral Pediatrics*, *7*, 114-119.
- Zeanah, C., Keener, M., Stewart, L., & Anders, T. (1985). Prenatal perception of infant personality: A preliminary investigation. *Journal of the American Academy of Child Psychiatry*, *24*, 204-210.
- Zuckerman, B., Stevenson, J., & Baily, V. (1987). Sleep problems in early childhood: Predictive factors and behavioral correlates. *Pediatrics*, *80*, 664-671.