Prevalence, Patterns, and Persistence of Sleep Problems in the First 3 Years of Life

WHAT'S KNOWN ON THIS SUBJECT: Sleep problems are common during childhood, but screening for sleep problems in the clinic setting is often cursory. Moreover, there are few longitudinal studies examining the prevalence and persistence of sleep problems in young children.

WHAT THIS STUDY ADDS: Patterns of sleep problems vary across early development, but sleep problems arising in infancy persist in 21% of children through 36 months of age. Parent response to a nonspecific query about sleep problems may overlook relevant sleep symptoms and behaviors.

abstract

OBJECTIVE: Examine the prevalence, patterns, and persistence of parent-reported sleep problems during the first 3 years of life.

METHODS: Three hundred fifty-nine mother/child pairs participated in a prospective birth cohort study. Sleep questionnaires were administered to mothers when children were 6, 12, 24, and 36 months old. Sleep variables included parent response to a nonspecific query about the presence/absence of a sleep problem and 8 specific sleep outcome domains: sleep onset latency, sleep maintenance, 24-hour sleep duration, daytime sleep/naps, sleep location, restlessness/vocalization, nightmares/night terrors, and snoring.

RESULTS: Prevalence of a parent-reported sleep problem was 10% at all assessment intervals. Night wakings and shorter sleep duration were associated with a parent-reported sleep problem during infancy and early toddlerhood (6–24 months), whereas nightmares and restless sleep emerged as associations with report of a sleep problem in later developmental periods (24–36 months). Prolonged sleep latency was associated with parent report of a sleep problem throughout the study period. In contrast, napping, sleep location, and snoring were not associated with parent-reported sleep problems. Twenty-one percent of children with sleep problems in infancy (compared with 6% of those without) had sleep problems in the third year of life.

CONCLUSIONS: Ten percent of children are reported to have a sleep problem at any given point during early childhood, and these problems persist in a significant minority of children throughout early development. Parent response to a single-item nonspecific sleep query may overlook relevant sleep behaviors and symptoms associated with clinical morbidity. *Pediatrics* 2012;129:e276–e284

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KEY WORDS

sleep problems, infants, toddlers, prevalence, persistence

ABBREVIATION

OSA—obstructive sleep apnea

Each author made a substantive intellectual contribution to the study. Dr Byars participated in early conceptualization and design of sleep measurement methodology and collaborated with coauthors on data interpretation; he took a lead role with drafting and revising the article. Dr Rausch provided critical contributions to formulating the data analytic plan and assisted with data interpretation as well as reviewing and revising the article for important intellectual content. Dr Yoltan was a primary investigator in the research laboratory that secured funding for this project. She had primary responsibility for the study design and oversight of its execution and participated in the conceptualization and design of the sleep measurement tools. Dr Yoltan also played a significant role with respect to data collection and interpretation as well as critically reviewing and revising the article. Dr Lanphear was the principal investigator who secured funding for this project. He had primary responsibility for the study design and oversight of its execution. Dr Lanphear also played a significant role with respect to data collection and interpretation as well as critically reviewing and revising the article. Dr Beebe also participated in early conceptualization and design of sleep measurement methodology, conducted data analysis and interpretation of study findings, and drafted and critically revised the article.

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Sleep problems are common in childhood and may persist if not adequately managed.^{1–5} The importance of detection and treatment of pediatric sleep disorders is underscored by a growing literature that links sleep problems with other morbidities.^{6–15} For example, cardiovascular morbidity and metabolic syndrome have been linked with obstructive sleep apnea (OSA).^{9,10} Sleep problems are also associated with impairments in daytime functioning and decreased quality of life in affected children^{6,7,11–15} as well as secondary effects on families (eg, disrupted parent sleep; marital discord; maternal stress).^{16–20}

Because sleep is essential to daily functioning, sleep is routinely addressed through anticipatory guidance in pediatric settings.²¹ However, research indicates that pediatric sleep problems may go undetected during routine clinical care.^{22–24} In a survey of pediatricians it was revealed that roughly half do not screen for sleep disturbance or use singular screening questions when talking with parents of infants and toddlers (eg, “Does your child have any sleep problems?”²³). Furthermore, little is known about how parents interpret and report sleep problems. Thus superficial inquiry and parent interpretation about what constitutes a sleep problem are factors that likely play a role in the underdiagnosis or misdiagnosis of pediatric sleep problems. For example, clinically important symptoms such as snoring, a hallmark symptom of OSA, might be missed if they are not encompassed within parents’ typical definitions of a “sleep problem.” Further, once a sleep problem is identified, the decision to intervene rests in part upon the physician’s belief about whether the problem will persist. The bulk of the literature supports the persistence of early-onset sleep problems^{2–5,25–35} but has relied on nonspecific dichotomous measures or focused on a narrowly

defined sleep behavior (eg, bedtime refusal). Few authors have serially measured a comprehensive measure of parent-reported sleep patterns during early childhood.

Clinical decision-making may be hampered by gaps in our knowledge of the utility of a nonspecific single sleep screening question and the prevalence and persistence of sleep problems during early childhood. The purpose of the current study was to fill these gaps by examining the prevalence, patterns, and persistence of broadly defined sleep problems and more specific domains of sleep behavior during the first 3 years of life.

METHODS

Sample

The study cohort comprised mother/child pairs participating in the Health Outcomes and Measures of the Environment Study, an ongoing prospective birth cohort in the Cincinnati, Ohio, metropolitan area.³⁶ Beginning in March 2003, women were identified from 7 prenatal clinics associated with 3 hospitals. Eligible mothers were identified at ≤ 19 weeks of gestation, were age ≥ 18 years, negative for HIV, and not taking medications for seizure or thyroid disorders. Letters were mailed to 5184 prospective subjects; 468 of the 1263 eligible respondents were consented and enrolled. Sixty-seven enrollees dropped out before delivery; 3 children were stillborn. Nine sets of twins were excluded because their sleep arrangements could fundamentally differ from those of singleton children. Thirty (8%) of the 389 women with singleton live births did not complete sleep questionnaires, resulting in a final sample of 359 subjects.

Procedures

The institutional review board of Cincinnati Children’s Hospital Medical Center provided oversight for the

study. All mothers provided written informed consent before enrollment. Enrollees received phone calls regularly to maintain contact and interest in the study. Study assessments were completed annually during clinic and home visits, and telephone surveys were conducted at the 6-month midpoint each year.

Sleep Questionnaire

Questionnaires were administered via structured interviews by trained research assistants by telephone when the children were 6 months of age. Face-to-face interviews were conducted during a home visit when the children were 12, 24, and 36 months of age. There is no gold standard for sleep assessment that spans infancy and early childhood, so 2 questionnaires were developed based upon previous validated sleep instruments. The questionnaire for 6- to 12-month-olds included 26 items adapted from several scales,^{26,37–41} whereas the questionnaire for 24- to 36-month-olds included 53 items adapted from the Child Sleep Habits Questionnaire.⁴² Both questionnaires included the nonspecific dichotomous item “Do you think _____ (child’s name) has problems sleeping?” Because this is similar to the single question that is often asked in pediatricians’ offices, the response comprised 1 of our key outcomes: “nonspecific sleep problem.”

The questionnaires were not directly parallel because developmental changes necessitated differences in item content (eg, sleepwalking items are not relevant for infants) and the range of response options. Consequently, we were not able to directly compare every sleep behavior across all time points. Instead, we first defined developmentally relevant sleep behavior domains based upon the previous sleep literature and subsequently identified specific questionnaire items

representative of these sleep domains. The sleep behavior domains and their composition were refined based upon an examination of item variability and factor analyses from each time point. The final item content for the 8 domains is presented in Table 1 (see Supplemental Information for response options and endorsement patterns at each time point). Items had differing response options, so we converted each item's response set to a common z score metric relative to the cohort mean and SD at each time point. For multi-item domains, individual item scores were averaged before further analyses. The result was a matrix of continuous domain scores for each subject at each time point that (a) was conceptually consistent over time, (b) was placed on a common statistical

metric, and (c) mirrored the distributions of the raw data.

Statistical Analysis

Preliminary χ^2 and Mann-Whitney *U* tests compared the demographic characteristics of subjects with available sleep data at each time point against those with missing data to assess for differential attrition over time. These tests and Spearman correlations also examined whether the sleep domain scores or rate of overall sleep problems differed reliably by child gender, family income, or race. Finally, using Fisher's *z* test, we examined whether the correlations described in our primary analyses varied significantly by race or gender. Finding no substantive difference in the pattern of correlations among the subgroups, we

subsequently used the full sample for primary analyses.

We calculated frequency data for parent report of a nonspecific sleep problem at the 6-, 12-, 24-, and 36-month assessments. We also examined which of the 8 sleep behavior domains were associated with parent report of a sleep problem at each time point. We calculated Spearman correlations to determine the association between continuous sleep behavior domain scores at each time point with analogous scores obtained later. Finally, to determine the risk for persistence of parent-reported sleep problems, we calculated odds ratios and associated Fisher's exact tests. A two-tailed significance threshold of $P < .05$ was adopted across all analyses.

TABLE 1 Sleep Domains, Interpretation, and Item Composition

Scale Name	Meaning of a High Score	Items Included in 6- to 12-Month Assessments (Timeframe: "On average, over the past month")	Items Included in 24- to 36-Month Assessments (Timeframe: "During a typical week")
Sleep onset latency	Falls asleep quickly and easily	After the bedtime routine (eg, bath), how long does it take to get ___ to sleep at night? How many times per week have you had problems getting ___ to sleep at night?	How often does ___fall asleep within 20 min after going to bed? ...resist going to bed at bedtime? ...struggle at bedtime (eg, cry, refuse to stay in bed)? How often is ___ ready to go at bedtime? How often does ___ wake up... ...once during the night? ...more than once during night? What is ___'s usual amount of sleep each day, combining nighttime sleep and naps?
Sleep maintenance	Few night wakings	How many... ...nights per week has ___ woken during sleep? ...times has ___ woken each night?	
24-h sleep duration	Longer sleep	How much time does ___ spend... ...sleeping each night? ...napping each day?	
Naps	More daytime naps	How many... ...days per week has ___ napped during the day? ...naps has ___ taken per day?	How often does ___ nap during the day?
Sleep location	Sleeping in own bed/crib	Where is ___ initially laid down to sleep? (data collapsed to parent bed versus not) Where has ___ slept most of the night? (data collapsed to own bed/crib versus not)	How often does ___ fall asleep... ...alone in his or her own bed? ...in a parent's or sibling's bed? How often...
Restlessness and vocalization	Calm, quiet sleep	How many nights per week have you seen or heard ___ ...talking or vocalizing during sleep? ...being restless or moving around during sleep?	...does ___ talk or vocalize during sleep? ...is ___ restless and moving a lot during sleep? How often does ___awaken during the night and is sweating, screaming, and inconsolable? ...awaken alarmed by a frightening dream?
Nightmares/night terrors	Few events	How many nights per week have you seen or heard ___ wake up sweating, screaming, and inconsolable?	How often does ___ snore loudly?
Snoring	Minimal snoring	How many nights per week have you seen or heard ___ snoring loudly during sleep?	

RESULTS

Demographics

Of the 359 eligible mother/child dyads, sleep data were available for 342 (95%) at 6 months, 335 (93%) at 12 months, 280 (78%) at 24 months, and 258 (72%) at 36 months. Demographic characteristics are summarized in Table 2. The sample, which was evenly divided by gender, was comprised primarily of first- and second-born children and covered broad socioeconomic strata. At the 6-month survey point, the sample was 64% white participants and 31% African American participants. There was differential attrition over time among African Americans and those in the lowest education and income groups ($P < .005$).

African American children and those from lower-income families were reported to have longer sleep onset latency, shorter overall sleep duration, less independent sleep, and more snoring than were white children and those from higher-income families at all time points ($P < .01$; Supplemental Tables 5 and 6). However, the overall rate of parent-reported nonspecific sleep problems and behaviors around sleep maintenance did not significantly differ by race or family income at any time point. Reported napping/daytime sleep, vocalization/restlessness, and nightmares/night terrors differed by

race or family income at only 1 time point each. Sleep variables differed by child gender in only 3 of 36 analyses, well within expectations based upon chance variation alone.

Prevalence and Patterns of Parent-Reported Sleep Problems

As shown in Fig 1, the presence of a nonspecific sleep problem was reported by roughly 10% of parents at each time point. Parent report of a sleep problem was significantly associated with longer sleep onset latency across all age ranges, as well as poorer sleep maintenance and shorter sleep duration at 6 to 24 months but less strongly at 36 months (Table 3). Nightmares/night terrors and restlessness/vocalization were significantly associated with parent report of a sleep problem from 12 to 36 months of age. Parent report of a sleep problem was significantly associated with snoring only at 12 months and with the location of a child's sleep only at 24 months. The frequency of naps or daytime sleep was never significantly associated with parental report of a sleep problem.

Stability of Sleep-Related Behaviors and Parent-Reported Sleep Problems

Table 4 presents correlations between sleep domain scores obtained at each

time point with the equivalent domain score collected at later time points. Medium ($r = 0.30$) to large ($r = 0.50$) effects⁴³ were observed for nearly all correlations from 1 time point to the next, and significant correlations were evident between our 2 most distant measurement points (6 and 36 months) in sleep onset latency, sleep duration, sleep location, restlessness/vocalization, and snoring.

Compared with those who were not reported to have an early sleep problem, infants and toddlers with a reported sleep problem had much higher rates of such problems at later time points (Figs 2, 3, and 4). Only 6% to 8% of children without a reported sleep problem at 1 time point developed such a problem later. In contrast, 21% to 35% of those who were reported to have a sleep problem during early childhood showed persistent sleep problems 1 to 2 1/2 years later.

DISCUSSION

Prevalence and Patterns of Sleep Problems

Our findings indicate that the overall prevalence of parent-reported sleep problems remains stable during early development. At each time point, 1 in 10 parents reported the presence of a sleep problem in response to a single, nonspecific screening question that

TABLE 2 Sample Demographics

	Total Sample	6 mo	12 mo	24 mo	36 mo
Sample size, <i>n</i>	359	342	335	280	258
Age, mean $\pm$ SD, mo	NA	6.4 $\pm$ 0.5	12.9 $\pm$ 1.2	25.1 $\pm$ 1.0	37.3 $\pm$ 1.5
Gender, % girls	55	55	55	54	54
Race, % white	64	65	66**	70***	71***
% African American	31	30	28	24	24
Parity (median [25th, 75th percentile])	1 (0, 1)	1 (0, 1)	1 (0, 1)	1 (0, 1)	1 (0, 1)
Maternal education at birth (median years [25th, 75th percentile])	16 (14, 16)	16 (14, 16)*	16 (14, 16)***	16 (14, 16)***	16 (14, 16)**
Family income at birth (median in \$1000s [25th, 75th percentile])	50 000–60 000 (25–30, 80–90)	50 000–60 000 (25–30, 80–90)	50 000–60 000 (25–30, 80–90)**	60 000–70 000 (30–40, 80–90)***	60 000–70 000 (30–40, 80–90)**

Demographic differences between retained and missing subjects via χ^2 or Mann-Whitney *U* test, * $P < .05$, ** $P < .01$, *** $P < .001$. NA, not available.

FIGURE 1

Prevalence of parent-reported sleep problems. Percent of children reported by their parent to have a sleep problem at 6, 12, 24, and 36 months of age.

TABLE 3 Associations between Parental Endorsement of an Overall Sleep Problem and Sleep Domain Scores

	6 mo	12 mo	24 mo	36 mo
Sleep onset latency	−0.23***	−0.22***	−0.20**	−0.31***
Sleep maintenance	−0.27***	−0.29***	−0.31***	−0.15*
24-h sleep duration	−0.16**	−0.17**	−0.23***	−0.13*
Naps/daytime sleep	−0.01	0.03	−0.04	−0.04
Sleep location	−0.06	−0.03	−0.18**	−0.11
Restlessness/vocalization	−0.07	−0.13*	−0.24***	−0.24***
Nightmares/night terrors	−0.07	−0.20***	−0.31***	−0.21**
Snoring	−0.09	−0.15**	−0.04	−0.08

Two-tailed point-biserial correlation significance: * $P < .05$, ** $P < .01$, *** $P < .001$.

TABLE 4 Correlations of Sleep Domain Data Collected at 6, 12, and 24 Months With the Same Domain at Later Time Point(s)

	Correlation of Data at 6 Mo With That Collected Later at...			Correlation of 12-Mo Data With Data Collected at...		Correlation of 24-Mo Data With Data From
	...12 mo	...24 mo	...36 mo	...24 mo	...36 mo	...36 mo
Sleep onset latency	0.35***	0.17**	0.19**	0.39***	0.24***	0.41***
Sleep maintenance	0.34***	0.13*	0.11	0.16**	0.17**	0.20**
24-h sleep duration	0.44***	0.30***	0.29***	0.35***	0.20**	0.37***
Naps	0.17**	−0.09	0.00	0.07	0.20**	0.33***
Sleep location	0.50***	0.33***	0.29***	0.55***	0.42***	0.66***
Restlessness and vocalization	0.34***	0.23***	0.19**	0.32***	0.27***	0.32***
Nightmares/night terrors	0.10	0.12	0.09	0.22***	0.03	0.18*
Snoring	0.37***	0.19**	0.23***	0.31***	0.23***	0.29***

Two-tailed significance values for Spearman rank-order correlations: * $P < .05$, ** $P < .01$, *** $P < .001$.

is similar to what many physicians use during routine clinic visits.^{22–24} This falls well within the broad range of reported prevalence rates (2%–33%) based on cross-sectional research.^{4,25–27,30,31}

There appear to be developmental shifts over the first 3 years of life in what parents mean when they report a non-specific sleep problem. Our data suggest that sleep onset difficulties are

considered problematic by parents throughout early childhood, consistent with previous studies documenting that this is a common complaint of parents with young children.^{5,25,29,33} Our findings also suggest that night wakings and shorter sleep duration were perceived as sleep problems by 6 months of age and then remained particular concerns for parents through 2 years of age. In contrast, parental

endorsement of a sleep problem was not linked to sleep behaviors characteristic of partial arousal parasomnias (ie, nightmares/terrors; vocalizations/restlessness during sleep) until 12 to 36 months of age.

Parents who reported that their child had a sleep problem did not report atypical snoring, sleep location, or napping/daytime sleeping behaviors during early childhood. It is noteworthy that the failure of a parent to recognize and report problems related to these domains could lead to errors in clinical decision making. For example, 12% to 20% of our sample snored multiple nights per week, placing them at high risk for OSA, a nocturnal breathing disorder associated with medical morbidity and neurobehavioral deficits in children.⁴⁴ However, parents did not seem to associate snoring with sleep problems, and previous research has shown that routine screening for snoring occurs in only 25% or less of well-child visits.⁴² As a result, snoring could be completely overlooked during well-child visits, despite its known risk for morbidity. The American Academy of Pediatrics recommends that all children be specifically screened for snoring and that children deemed at risk for OSA be referred for subspecialty evaluation.⁴⁴

Sleeping arrangements, particularly infant sleep location, has received considerable attention in the pediatric literature.^{45–49} Cosleeping is on the rise in North America and other industrialized countries and is an accepted and common practice in many ethnic groups.^{46–48} In our study, data for sleep location were collapsed to examine solitary sleeping versus sleeping in other contexts (eg, parent's/sibling's bed). Across all time points, the majority of children (62.5%–81.9%) were sleeping in their own bed; infants and toddlers 16.6% and 17.2%, respectively, were sleeping with a parent. Our

FIGURE 2

Persistence of parent-reported sleep problems. Percent of children with a sleep problem at 6 months of age (open bars) versus without a sleep problem at 6 months (black bars) who went on to have a sleep problem at later time points. OR, odds ratio. Significance values from Fisher's exact test: * $P < .05$, ** $P < .01$, *** $P < .001$.

FIGURE 3

Persistence of parent-reported sleep problems. Percent of children with a sleep problem at 12 months of age (open bars) versus without a sleep problem at 12 months (black bars) who went on to have a sleep problem at later time points. OR, odds ratio. Significance values from Fisher's exact test: * $P < .05$, ** $P < .01$, *** $P < .001$.

FIGURE 4

Persistence of parent-reported sleep problems. Percent of children with a sleep problem at 24 months of age (open bars) versus without a sleep problem at 24 months (black bars) who went on to have a sleep problem at 36 months of age. OR, odds ratio. Significance values from Fisher's exact test: * $P < .05$, ** $P < .01$, *** $P < .001$.

findings suggest that parents do not systematically consider the sleep location of their 6- to 36-month-old child to be, in and of itself, a problem. Sleep location may be more relevant in the

context of specific sleep symptoms/behaviors. For example, night wakings may be considered more problematic to parents if they cosleep with their child. Future research examining sleep

location in the context of prevalence and persistence of pediatric sleep problems should consider more refined analyses of specific sleep symptoms/behaviors (eg, breastfeeding; smoking exposure) that were not a focus of this study.

Finally, our study findings contrast with anecdotal evidence indicating that parents of young children struggle with nap issues (eg, irregular nap schedule).⁴⁵ Our data show that parents of infants and toddlers do not systematically relate napping behavior to the presence of a sleep problem; if a clinician is interested in learning about napping, specific queries are necessary.

Stability of Sleep Problems and Sleep Behaviors

Our findings provide guidance to pediatricians about the persistence of sleep problems in young children. When compared with nonproblem sleepers at the same age, children reported by their parents to have a sleep problem at any time point in early childhood had a three- to fivefold greater risk for later sleep problems. In our data, 23% to 35% of children who were reported to have a sleep problem at 6, 12, or 24 months of age went on to also have a similar problem at later measurement points. These observations are generally consistent with other longitudinal studies that have documented the persistence of infant onset sleep problems in 30% to 40% of children through 36 months of age.^{4,25,26} Thus, although the majority of infants and toddlers identified as having a sleep problem at any given time are not identified as having such a problem later, a significant minority continue to have problems over spans of months to years.

We also examined the stability of more specific domains of sleep behavior (eg, sleep duration, sleep location, snoring), allowing for 3 broad inferences. First, as might be expected, sleep domain scores measured closer in time correlated

more strongly than those collected over longer time spans, suggesting particular stability in sleep behaviors across 6- to 12-month time spans. Second, there was generally moderate stability in sleep behaviors over time, with the greatest stability in sleep behaviors tending to be in the domains of sleep onset latency, sleep duration, sleep location, restlessness/vocalization, and snoring. Thus, parent-report in these areas cannot be expected to change markedly across the infant and preschool years. In contrast, daytime sleep/naps, nightmares/terrors, and nocturnal arousals were less stable over time. Finally, significant correlations between our 2 most distant measurement points (6 and 36 months) in sleep onset latency, sleep duration, sleep location, restlessness/vocalization, and snoring suggest that these sleep behaviors, or at least parent-report of these behaviors, may establish themselves quite early in development.

Study Limitations

There are several study limitations that should be considered when interpreting our results. First, sampling error may have influenced prevalence estimates of sleep problems; approximately one third of eligible respondents completed baseline study procedures and approximately one fourth of the original sample was lost to attrition by the final follow-up interval. Additionally, in light of the sampling methodology involving recruitment from prenatal clinics in metropolitan Cincinnati, Ohio, results may not be applicable to the

general population of children across North America. Second, all sleep measures were based on parent-report, and although this is likely to be the primary source of information in the clinic, rater bias cannot be ruled out. Third, since there is no single validated instrument for assessing sleep problems in children aged 6 to 36 months, we were required to pool data from 2 independent sleep questionnaires. We took steps in our statistical analyses to ensure comparability of data, and it was reassuring that the correlations between behavior domain scores collected at 12 and 24 months (spanning the infant and preschool questionnaires) were similar to those between 6 and 12 months or between 24 and 36 months (within a given questionnaire). Nevertheless, measurement imprecision could have been introduced by the lack of parallel measures at all assessment points. Fourth, because the sleep problem and behavioral domains that were the focus of this study are culturally defined to varying degrees, the potential impact of cultural differences in defining sleep problems must be considered. Our analyses indicated there were differences between the majority and minority groups with respect to several domains of sleep behaviors. However, there were no differences in the prevalence and persistence of sleep problems between groups and thus the cultural differences did not appear to have materially influenced our study findings. Finally, this descriptive study did not propose nor examine potential mechanisms underlying sleep problems.

Consequently, we did not consider potential confounding variables during data analysis. Future investigations examining the persistence of sleep problems should consider underlying mechanisms and potential confounding variables.

CONCLUSIONS

Parent interpretation and report of a sleep problem during early childhood may be inconsistent with clinical criteria for diagnosing pediatric sleep disorders, especially when assessed via a nonspecific query. To clarify parental concerns about sleep during early development and ensure that clinically relevant sleep issues are not overlooked, we recommend that sleep problems be screened by using a flexible family-centered approach while addressing specific sleep behaviors and symptoms that have known clinical significance. Owens and Dalzell⁵⁰ have developed a tool that has proven utility in the clinic setting, facilitates brief sleep screening, is developmentally sensitive, and is behavior/symptom specific. Although we did not directly test the utility of that tool, the current study confirms the importance of focused screening for sleep problems during infancy and early childhood that goes further than merely asking if the child has problems sleeping.

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