



Original Article

Caregiver perceptions of sleep problems and desired areas of change in young children



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ABSTRACT

Objective: To explore the prevalence of and relationship between caregiver-reported sleep problems and sleep-related desired areas of change in young children (0–36 months) in a multinational sample.

Methods: Caregivers (96.5% mothers) of 2219 young children (birth to 3 years; $M = 13.7$ mos; 49.8% male) completed an online survey including an abbreviated Brief Infant Sleep Questionnaire-Revised (BISQ-R) and questions about desired areas of change regarding their child's sleep. Data were collected in six countries (Indonesia, Japan, New Zealand, Singapore, Thailand, and United States).

Results: Overall, 35% of caregivers reported a sleep problem and nearly all (96%) indicated a desired area of change, with 76% endorsing changes in 3 or more categories (bedtime/falling asleep, overnight, morning, and naps). Desiring a change in their child's sleep was universal across age group and country, with those perceiving a sleep problem more likely to endorse an area of change than those without a sleep problem. Overall, the top change categories were bedtime (80%), naps (74%), and overnight (67%). Top specific areas of change related to sleeping for longer stretches, waking up later in the morning, and having an earlier bedtime.

Conclusions: Although one-third of caregivers perceived that their child had a sleep problem, nearly all caregivers identified desired areas of change related to their child's sleep, across the first three years of life and all countries. Sleep education, such as normalizing sleep challenges that are developmentally appropriate, is warranted for all families of young children, regardless of whether sleep problems are endorsed.

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1. Introduction

Sleep issues during early childhood are a primary concern of parents and caregivers, with approximately 20–30% of parents of those birth to three years reporting a sleep problem [1,2]. Caregiver perception of child sleep problems is typically what leads to identification and treatment of sleep problems [3], however there

may be differences in what caregivers perceive as problematic compared to aspects that they would like to change about their child's sleep. For example, caregivers may wish that their child had fewer nighttime awakenings, had a different sleep schedule (eg, earlier bedtime), or was less resistant at bedtime, but do not consider their child's sleep to be a problem.

Numerous studies have assessed the high prevalence of caregiver-reported sleep problems [3–5], and found that socio-demographic, cultural, and individual factors influence perception of sleep problems [6–10]. These findings align with the Attributional Bias Context Model, which postulates that numerous factors impact informant reports of child behavior problems, including

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informant attributions and perspectives [11]. For example, studies have found that caregiver factors, such as parental distress and perception of personal control, impact parent-identified problem behaviors [12,13].

Furthermore, identification of specific child behaviors that a parent may want to change may or may not meet the parental attribution as a problem per se. Thus, there may be a broader category of behaviors or concerns that may not rise to the level of being a designated problem. For example, one classic study of parental concerns reported across four primary care practices found that the majority of parents worried about their child across multiple domains, including such aspects as their child's physical health, future injuries, and cognitive/social problems [14]. In another study of 3482 parents of children ages 3–10 years, 95% of the participants reported concerns related to the broader category of eating, sleeping, and physical complaints, with 69% being highly or extremely concerned [15]. These concerns, unfortunately, may not often be addressed, as they may not be captured by assessment of problems.

In regards to sleep, there are very limited studies focusing on broader sleep concerns beyond parent perception of problems, although past studies have found that even the wording of the question impacts identification of existing sleep issues. For example, a recent study of parents of infants (5–19 months) in a primary care practice found that rates of problematic sleep ranged from 7.4%, when a single item was used to assess parental perception of an infant having a sleep problem, to 74.0%, when a single item assessed the existence of night wakings requiring adult intervention. These differences in prevalence rates and identification of a sleep problem versus a specific sleep-related concern may be similarly influenced by attributions. For example, past studies have noted that parental cognitions about sleep influence parent-perceived sleep problems [16,17].

Furthermore, there are limited studies focusing on the prevalence of specific sleep-related concerns of caregivers of young children beyond parent-reported responses to single item questions regarding the existence of a sleep problem. One indirect measure that has been used is identifying sleep issues for which help is sought. For example, a qualitative analysis of 1287 consecutive sleep-related questions submitted to an Ask the Expert section of a publicly available iPhone-based application for sleep in young children found that caregivers' primary concerns related to the general categories of night wakings, sleep schedules, and bedtime problems, accounting for almost 85% of all questions [18]. However, no studies known to date have assessed caregiver sleep-related desired areas of change. An understanding of the prevalence of these sleep-related areas of change, and which behaviors are most likely to be an issue can help with identification and development of interventions.

Thus, the purpose of this study was to explore the prevalence of caregiver-reported desired areas of change (DACs) to a child's sleep, focusing on issues related to bedtime/falling asleep (eg, earlier bedtime, fall asleep easier), overnight (eg, decreased night wakings), morning (eg, wake later in the morning), and naps (eg, nap longer), and their relationship to perceptions of problematic sleep in a multinational sample. It was hypothesized that the majority of parents would report wanting to change something about their child's sleep, with fewer parents reporting that their child's sleep is perceived as a problem. Desired areas of change were analyzed across caregiver perceived sleep problem status, child age group (newborn, infants, younger toddlers, and older toddlers), and country.

2. Materials and methods

2.1. Participants

Overall, 2219 parents and primary caregivers (96.5% mothers) (referred to as 'caregivers' throughout) of infants and toddlers ($M = 13.7$ mos; 49.8% male) completed a one-time online survey about their child's sleep (see Table 1 for complete demographics). Data were collected in six countries: 9.5% Indonesia ($n = 210$), 32.4% Japan ($n = 718$), 10.3% New Zealand ($n = 229$), 9.0% Singapore ($n = 199$), 10.0% Thailand ($n = 219$), and 29.0% United States ($n = 644$). All caregivers responded in reference to their youngest child. The sample consisted of 16.7% newborns (0–2 months; $n = 371$), 33.7% infants (3–11 months, $n = 747$), 28.8% young toddlers (12–23 months, $n = 638$), and 20.9% older toddlers (24–36 months, $n = 463$).

Overall, there were equal girls (50.2%) and boys (49.8%), $\chi^2 = 0.00$, $p = 0.99$. The majority of respondents were mothers (96.5%) between 25 and 39 years old (84.8%). There were significant differences across countries for child age ($M = 9.1$ – 17.0 months), as well as caregiver age ($M = 29.2$ – 34.6 years), relationship to child (eg, mother, father, grandparent), and education (see Supplemental Table A).

2.2. Procedure

This study was approved by the Institutional Review Board at Saint Joseph's University. Participants completed a survey on Qualtrics between October 2017 and September 2019, accessed via an anonymous link posted through social media, including Facebook and WhatsApp. On average, the survey required 11 min of the respondents' time to complete. All respondents provided informed consent, and no identifying information was collected. In addition, no compensation or feedback was provided to participants. The survey included demographic information and asked questions about their child's sleep and desired areas of change related to their child's sleep. The questionnaire was translated into each respective language and back-translated to ensure appropriate translation.

Table 1
Demographic characteristics.

	N	%
Child's sex		
Boy	1106	49.8
Girl	1113	50.2
Child age		
Newborns: 0–2 months	371	16.7
Infants: 3–11 months	747	33.7
Young toddlers: 13–24 months	638	28.3
Older toddlers: 25–37 months	463	18.7
Respondent		
Mother	2141	96.5
Other	78	3.5
Respondent Age		
<25	100	4.5
25–29	297	13.4
30–34	895	40.3
35–39	690	31.1
40+	235	10.6
Respondent Education		
Secondary school/diploma	218	9.8
University degree	1016	45.8
Postgraduate/Professional degree	984	44.3

2.3. Demographics

Participants answered questions regarding demographic information including respondent country of residence, relationship to child, age, and highest level of education, as well as youngest child's gender, and age.

2.4. Sleep

Participants were asked to consider their youngest child's sleep over the past week and to base their responses on a "typical night." Participants completed an abbreviated version of the Brief Infant Sleep Questionnaire (BISQ-R), a well-validated sleep measure that captures information about infant sleep patterns and sleep-related behaviors [19,20]. Sleep problem status was assessed by the question "Do you consider your child's sleep a problem?" Respondents that indicated "not a problem" or a "very small problem" were coded as not reporting a child sleep problem. Respondents that indicated a "small," "moderate," or "serious" problem were coded as reporting a child sleep problem.

2.5. Desired areas of change

Caregivers were prompted to "think about if there is anything you want to change about your child's sleep." Options for desired areas of change (DACs) were presented related to the following four areas: bedtime and falling asleep, during the night, in the morning, and at naptime. A question about each of the broad categories was presented first, followed by a list of specific areas of change. For example, "What, if anything do you want to change about bedtime or how your child falls asleep (check all that apply)." Examples of desired areas of change included within this broader category included, "make bedtime earlier," "fall asleep independently (without an adult in the room)," "stay in his/her room overnight," and "fall asleep easier and faster at naptime." A total of 58 DACs within these four broader categories were presented to all participants. Desired areas of change were collated from qualitative analyses of caregiver concerns submitted to an Ask the Expert feature of a smartphone app [18]. The option of "there is nothing I would change about my child's <category>" was offered as the first choice for each category, followed by the complete list of items.

2.6. Analyses

Means and frequencies were utilized for demographic variables. Descriptive statistics were examined for percentage of caregivers who reported a sleep problem and percentage that indicated a desired change, as well as the most frequent categories and areas of change. A McNemar chi-square was calculated comparing endorsement of a sleep problem compared to a desired change. Pearson chi-squares were conducted for comparisons across independent groups (eg, age groups, countries), with Friedman chi-squares conducted for within-subject variables (eg, categories of change). Adjusted residuals (adj. res.) and their corresponding adjusted alpha levels were examined post-hoc [21,22]. Furthermore, ANCOVAs were conducted to determine between country differences in the number of categories a caregiver wishes to change about their child's sleep, controlling for demographic differences across countries (see Supplemental Table A). Covariates included child age, as well as respondent (caregiver) relationship to child, age, and education. ANCOVAs were also conducted across age groups, controlling for caregiver relationship to child, respondent age, respondent education, and country. Because of the large cohort size and the multiple analyses, findings were considered significant if $p < 0.001$.

3. Results

3.1. Overall

Overall, caregivers were significantly more likely to indicate that they would like to change something about their child's sleep (95.9%; $n = 2127$) than they were to report a child sleep problem (34.5%; $n = 765$), $\chi^2 = 1359.00$, $p < 0.001$. Of those desiring a change, the average number of categories (ie, bedtime/falling asleep, overnight, morning, naps) was 3.10 ($SD = 0.87$), with 4.7% endorsing only one category, 19.4% two categories, 36.8% three categories, and 39.1% all four categories. The most common categories of change related to bedtime/falling asleep (80.4%), followed by naps (73.7%), overnight (67.2%), and morning (54.6%), $\chi^2 = 448.40$, $p < 0.001$. The top three most prevalent specific areas of change overall, as well as by sleep problem status, age group, and country, are presented in Table 3 (complete list of desired areas of change can be found in Supplemental Table B). Overall, caregivers were most likely to endorse wanting their child to sleep for longer stretches (38.6%), wake up later in the morning (33.5%), and have an earlier bedtime (30.1%).

3.2. Age group

Based on age groups, caregivers of infants were most likely to endorse a sleep problem (40.3%) compared to those of newborns (34.0%), younger toddlers (31.7%), or older toddlers (29.4%), $\chi^2 = 19.00$, $p < 0.001$, $\Phi = 0.19$. Post-hoc analysis examining adjusted residuals indicated caregivers of infants reported a sleep problem significantly more than expected by the null hypothesis (adj. res. = 4.13, $p < 0.001$), using an adjusted p -value of 0.006 accounting for the multiple comparisons. No differences across age groups were found related to endorsing wanting to make a change in their child's sleep (94.6%–96.7%), $\chi^2 = 3.41$, $p = 0.33$. However, a statistically significant difference was found in number of categories endorsed by age group of the child, comparing newborns ($M = 3.16$), infants ($M = 3.22$), younger toddlers ($M = 3.10$), and older toddlers ($M = 2.89$), $F(3, 1781) = 10.41$, $p < 0.001$; $\eta_p^2 = 0.02$, controlling for caregiver relationship to child, age, and education, as well as country. Post-hoc tests utilizing a Tukey HSD indicated that caregivers of older toddlers endorsed fewer categories of change than the other age groups. The most common category for changes for newborns and toddlers was bedtime/falling asleep (73.7%–86.2%), with nap category most frequently endorsed in the infant group (81.5%). The top 3 desired categories of change for each age group are presented in Table 3. For specific changes, sleep consolidation, including reducing night wakings and night feedings, was the primary denoted area of change endorsed by caregivers of newborns, infants, and younger toddlers. An earlier bedtime was the top area for caregivers of older toddlers, followed by falling asleep more easily at naptime. A schedule-related change (ie, earlier bedtime or later morning waketime) was also ranked in the top three for newborns, infants, and young toddlers.

3.3. Sleep problem group

The indication of a desired change (yes vs. no), as well as the number of desired change categories were examined between sleep problem groups (sleep problem vs. no sleep problem). Those who reported a child sleep problem were more likely to report an area of change (100.0% vs 93.7%, $\chi^2 = 50.53$, $p < 0.001$, $\Phi = 0.15$) and endorsed more DAC categories ($M = 3.41$) than those who did not endorse a sleep problem ($M = 2.90$), $F(1, 1783) = 156.83$, $p < 0.001$; $\eta_p^2 = 0.08$, controlling for caregiver relationship to child, age, and education, as well as child age and country. As noted, almost all

Table 2
Sleep problem report, desired area of change indication, and average number of changes indicated by country.

Country	Sleep Problem (%)	Desired change (%)	Number of desired categories (M/SD)
Indonesia	29.0	91.9	3.24 (0.86)
Japan	34.4	96.1	3.09 (0.90)
New Zealand	47.4	96.5	3.19 (0.79)
Singapore	44.7	98.0	3.14 (0.85)
Thailand	35.2	97.7	3.15 (0.84)
United States	28.4	95.3	2.99 (0.89)

Note: M = Mean; SD= Standard deviation.

caregivers reported wanting to make a change in their child's sleep, although those who reported no sleep problem (87.8%) were less likely to indicate changing some aspect of sleep compared to those who indicated a very small problem (99.5%), small problem (100.0%), moderate problem (100.0%), or serious problem (100.0%), $\chi^2 = 173.60, p < 0.001, \Phi = 0.28$. In terms of categories, those who reported a sleep problem compared to no sleep problem were more likely to desire a change at bedtime (92.7% vs 74.0%, $\chi^2 = 111.29, p < 0.001, \Phi = 0.22$), during the night (91.1% vs 54.7%, $\chi^2 = 301.51, p < 0.001, \Phi = 0.37$), in the morning (64.6% vs 49.4%, $\chi^2 = 111.29, p < 0.001, \Phi = 0.15$), and related to naps (83.4% vs 68.5%, $\chi^2 = 56.98, p < 0.001, \Phi = 0.16$). Caregivers who endorsed a child sleep problem most frequently indicated wanting a change at bedtime/falling asleep (92.7%) and overnight (91.1%), followed by naps (83.4%) and morning (64.6%). Looking at specific areas of change, those who reported a problem were most likely to indicate the following areas: reduce night wakings (64.4%), reduce night feedings (45.1%), and wake later in the morning (38.6%). As noted above, of those who did not report a child sleep problem, 93.7% still endorsed a desired change to their child's sleep, with the most common category being bedtime/falling asleep (74.0%) and naps (68.5%), followed by overnight (54.7%) and morning (49.4%). Specific

Table 3
Most prevalent change categories.

Overall (n = 2219)		Category		%								
1	Bedtime			80.4								
2	Nap			73.7								
3	Overnight			67.2								
4	Morning			54.6								
Problem Status	Problem (n = 765)				No problem (n = 1453)							
	Category	%		Category	%							
1	Bedtime	92.7		Bedtime	74.0							
2	Overnight	91.1		Nap	68.5							
3	Nap	83.4		Overnight	54.7							
4	Morning	64.6		Morning	49.4							
Age groups	Newborns (n = 371)		Infants (n = 747)		Younger toddlers (n = 638)		Older toddlers (n = 463)					
	Category	%	Category	%	Category	%	Category	%				
1	Bedtime	85.2	Nap	81.5	Bedtime	73.7	Bedtime	86.2				
2	Nap	74.9	Bedtime	80.3	Nap	69.3	Nap	66.1				
3	Overnight	69.8	Overnight	75.0	Overnight	65.4	Morning	56.6				
4	Morning	55.0	Morning	52.7	Morning	55.2	Overnight	55.3				
Country	Indonesia (n = 210)		Japan (n = 718)		New Zealand (n = 229)		Singapore (n = 199)		Thailand (n = 219)		United States (n = 644)	
	Category	%	Category	%	Category	%	Category	%	Category	%	Category	%
1	Bedtime	82.4	Bedtime	84.3	Bedtime	83.4	Bedtime	86.9	Bedtime	89.5	Nap	79.5
2	Nap	74.3	Nap	70.2	Nap	79.5	Nap	80.9	Overnight	77.6	Bedtime	69.4
3	Overnight	62.9	Overnight	65.2	Overnight	78.6	Overnight	74.9	Nap	76.7	Overnight	61.0
4	Morning	61.9	Morning	61.7	Morning	48.8	Morning	49.2	Morning	54.3	Morning	48.8

concerns including a later morning waketime (30.9%), an earlier bedtime (27.2%), and reduced night wakings (25.1%).

3.4. Country

Regarding specific countries, caregivers from New Zealand reported the highest rate of child sleep problems (47.4%), followed by Singapore (44.7%), Thailand (35.2%), Japan (34.4%), Indonesia (29.0%), and the United States (28.4%), $\chi^2 = 39.27, p < 0.001; (\Phi = 0.13)$. Post-hoc analysis examining adjusted residuals indicated that caregivers in Singapore (adj. res. = 3.18, $p = 0.002$) and New Zealand (adj. res. = 4.32, $p < 0.001$) reported a sleep problem more frequently than expected by the null hypothesis, and caregivers in the United States (adj. res. = -3.85, $p < 0.001$) reported a sleep problem less frequently than expected, using an adjusted p-value of 0.004.

In contrast, there were no differences in caregiver likelihood to indicate a desired change to their child's sleep across countries, ranging from 91.1% in Indonesia to 98.0% in Singapore, $\chi^2 = 13.22, p = 0.02$. In addition there were no differences in the number of categories of change (ie, bedtime/falling asleep, overnight, morning, and naps) endorsed across countries: Indonesia ($M = 3.24$), New Zealand ($M = 3.19$), Thailand, ($M = 3.15$), Singapore ($M = 3.14$), Japan ($M = 3.09$), and the United States ($M = 2.99$), $F(5, 1782) = 1.73, p = 0.124; \eta_p^2 = 0.005$ (see Table 2), controlling for caregiver relationship to child, age, and education, as well as child age and country. The top three specific areas of change by country are presented in Supplemental Table C.

4. Discussion

The present study examined differences in caregiver-perceived sleep problems in young children, as well as caregiver-desired changes for young children's sleep. Overall, the vast majority of caregivers (95.9%) reported wanting to change something about

their child's sleep, with fewer caregivers (34.5%) reporting that they perceive their child's sleep as problematic. As expected, caregivers who reported a child sleep problem were more likely (100% of caregivers) to desire changes in their child's sleep compared to those who did not report a problem. Of note, however, desire for sleep change was almost universal (88%) even without reporting a problem. Not only was desiring a change almost universal by caregivers, but also the majority (76%) desired a change across 3 or more of the 4 categories. This desire for a change in behavior was also consistent across the age of the child (newborn to older toddlers) and country. Thus, caregivers wanting a change in their child's sleep is fairly universal, and they want multiple changes.

As indicated above, approximately one-third to one-half of parents reported a child sleep problem, ranging from 28% in the United States to 47% in New Zealand. These results are similar to findings from past studies [23]. In regard to the specific desired changes, the findings across country and sleep problem group highlight caregivers' main concerns regarding their young child's sleep. As expected, all caregivers that reported a child sleep problem also desired to change something about their child's sleep and desired change across all assessed categories (bedtime, overnight, morning, and naptime) at a higher rate than those caregivers who did not believe their child's sleep to be problematic, with bedtime/falling asleep and overnight sleep being the most frequently endorsed change areas, and overnight sleep showing the largest gap between problem and non-problem sleepers. Looking at specific behaviors, rather than categories, caregivers of children with perceived sleep problems were primarily concerned about sleep consolidation, that is night wakings and night feedings. Of those caregivers who did not perceive a sleep problem, sleep changes are primarily schedule based related to a desired earlier bedtime and later waketime. Sleep consolidation, including reduced night wakings and night feedings, are also of concern to these caregivers but at less than half of the rate. However, what is most striking about these findings is that almost all parents want to change something about their child's sleep, and it is not just one thing but multiple aspects.

The desire to change something about their child's sleep remains consistent across age, from caregivers of newborn to older toddlers. Categorically, caregivers of infants expressed most frequent concern about naps, whereas caregivers of newborns and toddlers noted more issues related to bedtime/falling asleep. In terms of specific behaviors endorsed, sleep consolidation was a primary focus of caregivers of children overall in the first two years of life. As well established in the literature, child sleep disruption can lead to caregiver and family sleep disruption, which can affect functioning at multiple levels [24]. Night wakings and poor nighttime sleep are especially associated with maternal depression. A recent study of mothers of infants at ages 2 weeks to 6 months found bidirectional links between maternal postpartum depression symptoms and infant unsettled sleep [25], with studies finding improvements in maternal depression, anxiety, and stress following infant sleep intervention [26,27]. Interestingly, naps have traditionally not been a focus of caregiver sleep education but these results indicate that daytime sleep is one of the top two categories endorsed and is especially an issue for caregivers of infants.

The specific desired areas of change align with previously reported areas of concern in a 2015 study that analyzed parents' questions about their children's sleep via smartphone app utilizing an Ask the Expert feature [18]. The major areas of concern identified include night wakings, bedtime problems, and sleep schedule issues. As previously noted, it is important for clinicians to have conversations about expectations of night waking episodes, as well as sleep schedules, to help clarify for caregivers the parameters of healthy sleep in young children. Education should also include

information about naps, including normative information and how to manage naptime challenges.

The need for expanded caregiver sleep education, made apparent by the high rate of desired changes in sleep, is further supported by a previous study that found that infants of parents who reported that they "did not know" whether their child had a sleep problem had the same problematic sleep behaviors as children with reported sleep problems [28]. Thus, sleep education should be provided universally to all caregivers about areas typically perceived to be problematic, primarily related to sleep consolidation, napping, bedtimes, and waketimes. In addition, assessment of sleep by pediatric providers should not exclusively focus on caregiver perceived sleep problems. Whether a caregiver identifies sleep as a problem per se may not align with their desire for changes, especially given the high likelihood for attributional bias, with individualized caregiver, familial, and sociocultural factors impacting this designation. Rather, there should be an assessment of whether there is anything the caregiver would like to change about their child's sleep. At times, these areas of change may simply be normative, but an engaged conversation including provision of educational resources and anticipatory guidance, if warranted, may help decrease caregiver frustration while providing support for sleep challenges. Thus, regardless of sleep problem report, clinicians may need to provide guidance about managing sleep concerns such as bedtime resistance, night wakings, and naptime challenges, as well as providing support for outlining an optimal sleep schedule that meets the needs of the infant within individual familial contexts. More importantly, publicly-available educational resources regarding sleep in young children need to be available for all caregivers with a focus on common issues and not just targeted at problems per se. These resources should provide culturally relevant and context-specific sleep information, such as guidance on how to best accommodate an infant in different sleeping spaces and arrangements, nighttime routines, and creating a sleep schedule that accommodates typical lifestyles in different settings.

Finally, there is the question of what it means for a caregiver to desire a change in some aspect of their child's sleep but not consider it a problem. The *stages of change* [29] as conceptualized via the *transtheoretical model of health behavior change* [30] could be applicable, as a desire to change may not fully overlap with problem conceptualization. This model describes six stages, with the first two stages encompassing precontemplation (no intention to take action) and contemplation (intention to take future action). Variations of this model have been applied in a variety of pediatric and/or parent-mediated contexts including diet/healthy food intake [31] and physical activity [32]. Applied in the current context, a desire for change in a specific area of behavioral sleep without recognizing sleep as a problem may align with a caregiver being in a precontemplative or contemplative stage of change, with some families moving on to take action and others not.

The limitations of this study should be considered. First, it is important to consider a potential response bias from participants, with caregivers who are concerned about sleep more likely to respond. However, the consistency in sleep problem report compared to past studies supports the generalizability of these findings. Additionally, caregiver-report of infant sleep problems is highly subjective and the factors that contribute to each caregiver's judgement of their infant's sleep behaviors are highly individualized. This study focused on behaviorally-based sleep issues and did not include other sleep problems, such as symptoms of parasomnias and sleep-disordered breathing. Future studies should include these additional areas. Finally, future research may benefit from targeting diverse and representative samples within countries in terms of education level and racial composition.

5. Conclusion

The findings of the present study indicate that although approximately one-third of caregivers perceive their child as having a sleep problem almost all parents desire to change something about their child's sleep and often have multiple areas they would like to modify. Navigating sleep can be challenging for caregivers, yet sleep during the first 3 years is crucial for young children's healthy development and family functioning. Therefore, regardless of sleep problem report, pediatric care providers should broaden their assessment of sleep to include desired areas of change, with an expectation that many caregivers are concerned about sleep across the night and the day.

Credit author statement

Jodi A. Mindell: Conceptualization, Methodology, Investigation, Formal Analysis, Writing – Original draft preparation, Writing – Review & Editing; **Meghan Collins:** Investigation, Data Curation, Formal Analysis; **Erin S. Leichman:** Conceptualization, Methodology, Investigation, Data Curation, Writing – Original draft preparation, Writing – Review & Editing; **Alex Bartle:** Methodology, Investigation, Manuscript approval; **Jun Kohyama:** Methodology, Investigation, Manuscript approval; **Rini Sekartini:** Methodology, Investigation, Manuscript approval; **Montida Veeravigrom:** Methodology, Investigation, Manuscript approval; **Robert Kwon:** Conceptualization, Manuscript approval; **Daniel Goh:** Conceptualization, Methodology, Investigation, Manuscript approval.

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Conflict of interest

Jodi Mindell and Erin Leichman have served as consultants for Johnson & Johnson Consumer Inc. Robert Kwon is a former employee of Johnson & Johnson Pte. Ltd., Singapore.

Daniel Goh has served as a speaker for Johnson & Johnson Consumer Inc.

The ICMJE Uniform Disclosure Form for Potential Conflicts of Interest associated with this article can be viewed by clicking on the following link: <https://doi.org/10.1016/j.sleep.2022.02.021>.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.sleep.2022.02.021>.

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