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Sleep health literacy in head start families and staff: exploratory study of knowledge, motivation, and competencies to promote healthy sleep

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ABSTRACT

Context: Healthy child development requires sufficient, quality sleep. Sleep problems in early childhood impair social-emotional and cognitive function and increase obesity risk. From a health literacy framework, “sleep health literacy” denotes the knowledge, motivation, and competencies to promote healthy sleep and to recognize a sleep problem.

Design: To explore the untapped potential of early childhood education (ECE) programs to promote sleep health literacy, we surveyed staff (n = 63) and parents (n = 196) in Head Start about sleep-related knowledge, attitudes/beliefs, sleep hygiene, and sleep problems. Head Start is the largest ECE program in the United States.

Results: Most parents believed that their child had healthy sleep habits (81%); few believed that he or she had a sleep problem (10%). Yet, unhealthy bedtime practices and insufficient sleep for age were reported in 50% and 33% of children, respectively. Between 10% and 12% of children had 1 or more sleep onset or awakening problems. Every unhealthy bedtime practice but one was associated with a sleep problem; parental presence at bedtime was associated with the most problems. Insufficient sleep was significantly associated with unhealthy sleep practices. More children with late vs early bedtimes (48% vs 14%, $P < .01$) and frequent vs less frequent parental presence at bedtime (50% vs 26%–30%, $P < .02$) failed to obtain sufficient sleep. Staff members are more comfortable *discussing* healthy sleep with parents (87%) than *counseling* them (45%).

Conclusion: Among parents, there is a “disconnect” between actual and perceived sleep hygiene. Similarly, staff perceived a gap between their competencies to promote healthy sleep in families and their capacity to address sleep problems. US health literacy goals include the need to embed accurate, accessible, and actionable health information in ECE programs. Study findings strongly support the need to work toward sleep health literacy in ECE programs.

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Introduction

Healthy child development requires sufficient, quality sleep. Insufficient sleep, behavioral sleep problems (BSPs), and sleep-disordered breathing (SDB) are prevalent in preschool-age children (3–5 years). At these ages, 25%–50% of children do not sleep enough,¹ 25% have a BSP,² and up to 20% have SDB.³ Behavioral sleep problems are difficulties falling or staying asleep. In young children, the etiologies of insufficient sleep and BSPs are often related and are rooted in parent-child interactions. This is because parents are the external regulators of their young child's sleep, which then affect the child's

biological rhythms and capacity for self-regulation.⁴ Sleep-disordered breathing ranges from snoring to obstructive sleep apnea. Sleep-disordered breathing arises in part from adenotonsillar hypertrophy and obesity.⁵ Sleep problems are associated with impaired social-emotional and cognitive function^{6,7} and increased risk for childhood obesity.⁸ Healthy sleep habits (ie, sleep hygiene) are associated with increased sleep duration and may prevent BSPs.⁹ Time-ly treatment can reduce or eliminate SDB⁵ and improve function.¹⁰

Early childhood is an important time period for promoting healthy sleep. This is when sleep habits are established, parents still control their child's sleep schedule, and the effects of neuronal insults from poor sleep may be irremediable.¹¹ Healthy sleep habits include a regular sleep schedule, an early and stable bedtime routine, falling asleep alone, and eliminating evening media use and TV from the bedroom.^{12–14} Approximately 40%–50% of US families with 1- to 5-year-olds have an irregular bedtime, a late bedtime, and/or an

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inability to fall asleep without a parent present¹⁵; each of these practices is viewed as a cause of insufficient sleep.^{15,16} Insufficient sleep and irregular bedtimes, in turn, are associated with impaired behavioral, cognitive, and physical function.¹⁷ A routine bedtime is associated with improved behavior.^{17,18,7,19} Increasingly, these observational findings are supported by experimental data.^{20,21}

Despite the importance of adequate and sufficient sleep, public health promotion of sleep as a *health* behavior—in contrast to a focus on sleep problems²²—has been minimal.¹⁴ Knowledge about healthy sleep tends to be limited among parents,^{16,23–25} 50% of whom believe snoring is healthy.²³ Ethnic and economic disparities are great. Among low-income, racial-ethnic minority 5- to -6-year-olds, 94% screen positive for sleep problems.²⁶ Disadvantaged families are less likely to use parent-child interactive and optimal bedtime routines,^{27,28} have a higher prevalence and risk of SDB, and are least likely to receive SDB treatment.²⁹ Neighborhood disadvantage exacerbates disparities.³⁰

In addition to parents, early childhood education programs can play a role in promoting healthy child sleep. Early childhood education (ECE) programs, which serve millions of US children in full-day programs, have untapped potential to promote sleep health. To explore the educational needs and capacity of ECE programs to do so, we conducted a study in Head Start. The federally funded Head Start program is the largest ECE provider in the United States. Head Start serves nearly 1 million low-income young children and their families. Most children it serves are low-income or racial/ethnic minority, and thus bear a high burden of sleep problems. Head Start embraces a "whole-child" approach to school readiness through its provision of health, nutrition, social, and other services to children and their families. Head Start sets the health standards for the nation's ECE programs.³¹

The goals of this study were to: (a) assess parent-reported Knowledge, Attitudes/Beliefs, Sleep Hygiene Practices, and Sleep Problems relevant to their child; (b) analyze Attitude/Belief associations with Sleep Hygiene and Sleep Patterns; and (c) assess staff Attitudes, experiences, and preparedness pertaining to promoting healthy sleep. This is the first study to assess Knowledge and Attitudes/Beliefs of parents in Head Start toward their child's sleep. Regarding Head Start staff, we sought to determine their receptivity and capacity to implement a future sleep health education program.

The study is set within the framework of health literacy. Health literacy is the capacity to obtain, process, and understand basic health information needed to make appropriate health decisions.³² Low health literacy among parents correlates with less health knowledge, less healthy behavior in terms of child health, and worse child health outcomes.³³ National standards for child health promotion require the delivery of actionable information that is understood by children and families.³⁴ The study will provide a baseline measure of 'sleep health literacy' among low-income young families in the largest ECE program in the United States.

Method

We surveyed parents and staff from 2 affiliated Head Start sites in New York City, both of which include Early Head Start. Flyers were posted at the sites and sent home in children's backpacks 1 week before recruitment. A research assistant approached parents at each site's morning drop-off for a 1-week period in July 2013. Parents were invited to complete a survey if they were: (a) a parent or guardian of a child aged 0–5 years enrolled at the site; and (b) able to communicate in English. If a parent had 2 children enrolled in the program, they were asked to complete the survey with reference to their oldest ("index") child. Surveys did not include identifying information.

Staff completed surveys at the agency's monthly in-service. A range of administrative, managerial, and direct-services staff attends these meetings: teaching, family service, health, mental health, nutrition, and disabilities. Both parents and staff were orally consented using templates approved by the Albert Einstein College of Medicine Committee on Clinical Investigation. Parents and staff were asked to sign or initial their receipt of a gift card after completing the survey.

Parent survey items were adapted from the 2004 National Sleep Foundation Poll¹ and the literature.^{15,24,25,35,16} Drafts were reviewed with Head Start agency staff and with the Parent Advisory Board to elicit their understanding of the meaning of questions. Based on this feedback, the survey was revised with clearer language, although essential content remained constant. Both parents and staff then reviewed this new version of the survey. Any remaining comments were incorporated into the final version. A copy of the survey is attached in the appendix and described below.

Parent survey

Demographic items pertained to the respondent (hereafter "parent"), the child about whom he or she was responding, and that child's sleep setting. *Knowledge* items (n = 10) consisted of statements supportable as true or false based on the extant literature, for example, "Children who don't get enough sleep have an increased chance of being overweight" and "Snoring in a child indicates that he or she is sleeping well." *Attitude/Belief* items (n = 4) ascertained parent opinions/perceptions about their child's sleep and sleep habits, wanting advice, and their ability to improve their child's sleep. Parents were also asked, "Does your child have a sleep problem at the present time? (Yes/No)." Except for this last item, response options were "Agree," "Disagree," or "Don't Know."

Parents were queried about *Sleep Hygiene*, that is, the variety of practices that are needed to obtain sufficient quality sleep. These items (n = 6) included: having a bedtime routine (Yes/No); having a bedtime after 9:00 PM (Yes/No); frequency of having a usual bedtime (0–1/ 2–4, or 5–7 nights a week+); frequency of needing adult in room to fall asleep (0–1, 2–4, or 5–7 nights a week); and daily caffeine consumption (Yes/No). Those with a daily routine were asked if it included reading, TV/computer, bath, or talking/singing ("check all that apply."). Responses were recoded as "Interactive Only," "Media Only," or "Both" depending upon whether or not they included TV/computer (the only "Media" activity).

Three bedtime and nighttime behaviors were classified as *Sleep Problems* as per published cut-offs.³⁶ These were ≥ 30 minutes to fall asleep once in bed or crib ("sleep onset"), waking ≥ 3 times a night ("night-waking"), and being awake ≥ 60 minutes during the night. For sleep duration, parents reported their child's usual bedtime and wake-time over the past 2 weeks. This sleep duration outcome is based on weeknight sleep: Sunday–Thursday bedtimes and Monday–Friday wake-times. Weeknight sleep was selected as the duration measure because it varies less than on weekends, is pertinent for school, and cannot be compensated for by daytime naps. We classified insufficient weeknight sleep duration as < 10 hours for 3–5 year olds and < 11 hours for birth–2 year olds. We based this on recommended 24 sleep durations of 11–13 hours and 12–14 hours for 3–5 year olds and 1–3 year olds, respectively.³⁷ We subtracted 1 hour from the recommendations' lower bounds—as per local rest period guidelines for full-day preschool—to define insufficient weeknight sleep duration.

Staff survey

Staff survey items focused upon *Attitudes/Beliefs, Practices, and Preparedness* to address sleep health. We modeled them on surveys

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