Sensory Processing and Sleep in Typically Developing Infants and Toddlers

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OBJECTIVE. To explore the relationship between sensory processing patterns and sleep problems in typically developing infants and toddlers.

METHOD. A retrospective chart review of 177 infants and toddlers from a community occupational therapy sleep clinic included descriptive and correlational analyses of data from the Infant/Toddler Sensory Profile and Brief Infant Sleep Questionnaire.

RESULTS. More than half of participants (55%) demonstrated a pattern of increased sensory processing in one or more quadrants, with sensitivity being most common (36%). We found small but significant correlations between increased seeking and shorter daytime sleep duration ($r = -0.24, p = .002$) and between increased sensitivity and longer time to settle to sleep ($r = 0.27, p < .001$).

CONCLUSION. This study adds to recent literature linking sensory processing patterns to sleep problems and is the first to demonstrate this relationship in young, typically developing children. Results support the role of occupational therapy in addressing sleep difficulties in children.

S Sleep is an important occupation to be considered in pediatric practice (American Occupational Therapy Association, 2011). As many as 30% of parents report that their child (0–12 yr) has sleep issues (Galland, Taylor, Elder, & Herbison, 2012), which also affects the well-being of their mothers (Lam, Hiscock, & Wake, 2003). Recent research suggests a relationship between sleep difficulties and patterns of sensory processing (Engel-Yeger & Shochat, 2012; Reynolds, Lane, & Thacker, 2012; Shani-Adir, Rozenman, Kessel, & Engel-Yeger, 2009; Shochat, Tzischinsky, & Engel-Yeger, 2009; Wengel, Hanlon-Dearman, & Fjelstad, 2011). Because infant and toddler sleep is a major concern for parents and professionals (Sadeh, Mindell, Luedtke, & Wiegand, 2009; Thunström, 1999), research to further support occupational therapy practice in addressing sleep issues has the potential to improve the health and well-being of children and their families.

Sleep in Children

According to Hirshkowitz (2004), sleep is a brain process similar to other homeostatic processes, such as thirst or hunger. Influenced by a circadian rhythm, sleep consists of two main stages: rapid eye movement (REM) sleep and non-REM sleep (Hirshkowitz, 2004). Although the reasons for sleep are not fully clear, it is known that sleep is essential to our health and survival (Rechtschaffen, Bergmann, Everson, Kushida, & Gilliland, 1989; Shepard et al., 2005).

Although the literature on sleep norms is supported by a long history of research (Carskadon & Dement, 2011), literature that addresses the sleep norms of children is less thorough than that on adult populations (Galland
et al., 2012). The unavailability of sleep norms in children may be attributable to the large variability in typical sleep duration of infants, for whom a range of values may in fact be the norm in the early periods of life (Jenni, 2013). Galland et al. (2012) suggested that some trends in children’s sleep can be noted, such as a decrease in the total amount of time children spend sleeping during the day from birth to age 12 yr. As consolidation of nighttime sleep occurs from birth to age 2 yr, night awakenings decrease, the length of sleep periods increases, and daytime napping decreases (Galland et al., 2012).

Several studies suggest that sleep difficulties in children appear to be associated with issues later in life. For example, Lam and colleagues (2003) found that sleep problems at age 6–12 mo predicted sleep and behavioral issues at age 3–4 yr. Weinraub et al. (2012) found that sleep awakenings in infants and toddlers foreshadowed sleep and self-regulation difficulties throughout maturity. Barclay and Gregory (2013) found that sleep problems in 8-yr-olds predicted depression in the same children at age 10. Given the predictive nature of these studies, addressing sleep difficulties may provide occupational therapy practitioners with an avenue to improve the health and well-being of children and promote their developmental trajectory.

Sensory Processing

According to Dunn (2001), people’s senses are integral to how they experience and explain their lives. Although an interest in the relationship between sensation and occupational performance was likely part of occupational practice since its advent, interest in sensation gained momentum through the work of Jean Ayres in the 1950s and 1960s (Mailloux et al., 2011). In 1997, Winnie Dunn proposed a model for sensory processing based on a national sample of children without disabilities. This model described the interaction between neural thresholds and behavioral responses and set the stage for further insight into the relationship between sensory processing and occupational performance. To date, sensory processing has been used to guide assessment and intervention in a range of populations for a variety of behaviors, particularly with children with autism (Brown & Dunn, 2010). Although much progress has been made in understanding sensory processing, the relationship between sensory processing and sleep has only recently been explored.

Sensory Processing and Sleep

Existing evidence on the relationship between sleep and sensory processing characteristics currently spans ages 3 to 61 yr. These studies have included children with fetal alcohol spectrum disorder (FASD; Fjeldsted & Hanlon-Dearman, 2009; Wengel et al., 2011), autism spectrum disorder (Reynolds et al., 2012), and atopic dermatitis (Shani-Adir et al., 2009); healthy school-age children and children with attention deficit hyperactivity disorder (Shochat et al., 2009); healthy adults (Engel-Yeger & Shochat, 2012); and adults with sleeping problems (Milner, Cuthbert, Kertesz, & Cote, 2009).

Findings demonstrate that different ways of attending to sensory experiences, particularly increased sensitivity, are correlated with reductions in sleep quality (Engel-Yeger & Shochat, 2012; Reynolds et al., 2012; Shani-Adir et al., 2009; Shochat et al., 2009; Wengel et al., 2011). In addition, sensory processing patterns involving avoiding sensations (Engel-Yeger & Shochat, 2012; Shani-Adir et al., 2009), seeking out sensations (Engel-Yeger & Shochat, 2012; Fjeldsted & Hanlon-Dearman, 2009), and not registering environmental stimuli (Wengel et al., 2011) have been associated with changes in sleep quality. Although issues with sleep have been identified in children with sensory processing difficulties (Koenig & Rudney, 2010), the association of sensory processing patterns with sleep in infants and toddlers aged 0–36 mo is largely unknown.

The purpose of this study was to explore the relationship between sleep and sensory processing patterns in infants and toddlers to inform occupational therapy practice in addressing sleep concerns in young children. We hypothesized that infants and toddlers aged 0–36 mo referred to occupational therapy for sleep problems would demonstrate sensory processing patterns that differed from the typical range, primarily increased sensitivity.

Method

Research Design

This study was a retrospective clinical chart review of infants and toddlers seen in a community occupational therapy practice specializing in pediatric sleep problems. The study was approved by the University of British Columbia clinical research ethics board.

Sample

We reviewed 270 charts of infants (ages 0–6 mo) and toddlers (ages 7–36 mo) seen from October 2010
through December 2013 in a private occupational therapy practice specializing in sleep. All of the children were referred by their parents for evaluation of suspected sleep difficulties; none of the children had any other noted physical, mental, or occupational issues. Charts were included if the Infant/Toddler Sensory Profile (ITSP; Dunn, 2002) and Brief Infant Sleep Questionnaire (BISQ; Sadeh, 2004) were completed. Ninety-three charts were excluded because of use of alternative assessments, incomplete questionnaires, or age at time of assessment >36 mo, leaving a final sample of 177 charts for analysis.

**Instruments**

**Infant/Toddler Sensory Profile.** The ITSP is a parent or caregiver questionnaire used to assess and describe the sensory processing characteristics of infants and toddlers aged birth–36 mo (Dunn, 2002). Within the assessment, sensory processing is referred to as the interaction between the neural regulation of sensory stimulation (i.e., the threshold at which a child perceives sensory stimuli in the environment, such as through touch, taste, or hearing) and the manner in which a child responds to these sensations.

The ITSP asks the parent or caregiver to rate the frequency of a behavior (e.g., “My child gets fussy when exposed to bright lights”) on a 5-point scale from almost always to almost never. The items are classified into five categories that correspond to different senses (e.g., visual or auditory processing). In the infant version (birth–6 mo), categories include (1) general processing, which describes how the child responds to interactions with other people; (2) auditory processing, which describes how the child responds to noise, sound, and being spoken to; (3) visual processing, which describes how the child responds to things he or she sees in the environment; (4) tactile processing, which describes how the child responds to things he or she physically touches or responds to being touched; and (5) vestibular processing, which describes how the child responds to movement, including sitting, physical activity, and changes in body position. The toddler version (7–36 mo) contains the same five categories and an additional oral sensory processing category, which describes how the child responds to having foods or objects in and around his or her mouth.

In both the infant and toddler versions, each item in a category corresponds to one of four possible sensory processing quadrants (Dunn, 2001): (1) registration, which suggests the child has a high neurological threshold and a passive response to environmental stimuli and thereby misses sensory input; (2) seeking, which suggests the child has a high neurological threshold and active behavioral responses that seek out environmental stimuli; (3) sensitivity, which suggests the child has a low neurological threshold (i.e., requires only a small stimulus to become aware of environmental stimuli) and uses a passive behavioral strategy; and (4) avoiding, which suggests the child has a low neurological threshold and uses active behaviors to avoid environmental stimuli. Item responses are added within their corresponding sensory processing quadrants to create a total score for each quadrant.

Quadrant scores fall within a range considered either within the typical range, indicated by scores at or within 1 standard deviation (SD) of the mean, or more or less than the typical range, indicated by scores below and above 1 SD of the mean. Although the quadrant scores are derived in the same way in both the infant and toddler versions, these scores are interpreted slightly differently between versions. In the infant version, scores >1 SD of the mean are referred to as less than typical (i.e., less sensitive than a typical child) and scores <1 SD are referred to as more than typical (i.e., more sensitive than a typical child). In the toddler version, scores falling above or below the typical range are further subdivided into probable difference (between 1 and 2 SD) or definite difference (>2 SD). These descriptors are used to denote the child’s sensory profile (Dunn, 2001).

An expert panel reported excellent content validity of the ITSP, and all items and categories have rs for criterion validity greater than .50 except seeking, which is exclusive to the ITSP measure (Eeles et al., 2013). Items for all categories were determined to be age appropriate during the initial development of the questionnaire (Dunn & Daniels, 2002). For the toddler version, test–retest reliability has been reported as adequate (r = .74) for the quadrant scores and excellent (r = .86) for the individual item scores (Eeles et al., 2013). Additionally, internal consistency has been reported as adequate for the registration (r = .70), sensitivity (r = .72), and avoiding (r = .70) quadrant scores and excellent for the seeking (r = .86) quadrant scores (Eeles et al., 2013). For the infant version, internal consistency has been noted as poor for all sensory processing sections (r = .17–.57); as poor for the avoiding quadrant (r = .56); and as adequate for the registration (r = .62), sensitivity (r = .79), and seeking (r = .79) quadrant scores (Eeles et al., 2013). Predictive validity, construct validity, and intra- and interrater reliability have yet to be reported for either version (Dunn & Daniels, 2002; Eeles et al., 2013).

**Brief Infant Sleep Questionnaire.** The BISQ is a caregiver report questionnaire comprising 15 questions about the
sleep behaviors of children (age <3 yr), including the amount of time the child sleeps during the night, amount of sleep during the day, average time spent awake during the night, and time it takes to fall asleep once put to bed (Sadeh, 2004). Sadeh (2004) conducted two studies to assess the properties of the BISQ: (1) a comparison of the BISQ to objective actigraphy and subjective sleep diaries and (2) a large Internet survey intended to determine the utility of the BISQ as an Internet tool and to compare its validity as a sleep measure to well-established findings in the literature. The findings of these studies established the BISQ as a reliable and valid tool for screening sleep problems in infants and toddlers.

Strong test–retest reliability on the BISQ was found for nocturnal sleep duration (r = .82), daytime sleep duration (r = .89), number of night wakings (r = .88), duration of nocturnal wakefulness (r = .95), nocturnal sleep-onset time (r = .95), and settling time (r = .94). Strong correlations were found between the BISQ and the sleep diary with regard to sleep-onset time (r = .61) and night wakings (r = .83), but correlations were weak to moderate with nocturnal sleep latency (r = .36) and nocturnal sleep duration (r = .27). Lewandowski, Toliver-Sokol, and Palermo (2011) described the BISQ as “the only multidimensional [sleep] measure appropriate for use with infants” (p. 788).

Procedure

We developed a data collection sheet to record non-identifying demographic information, ITSP scores, and data from the BISQ (i.e., average night sleep duration, average day sleep duration, average settling time, and average duration of nighttime wakefulness). No participant identifiers were collected, and access to data was restricted to the four researchers involved in this study (the authors). The clinician possessing the clinical charts (Jennifer Garden) was a member of the research team and granted access to the clinical charts at Sleepdreams Professional Sleep Consultants, Inc., a private community occupational therapy practice specializing in pediatric sleep issues. All clinical charts remained at Sleepdreams during the collection process.

Two researchers (Mark Vasak and James Williamson) reviewed all charts (N = 270) and retained those that met inclusion criteria (n = 185). They assessed the clinical charts for accuracy and completeness. Once initial chart inclusion was established, one researcher (Williamson) systematically read information from each measure to a second researcher (Vasak), who inputted data into the data collection sheet. To ensure reliability of data input, accuracy following input of the first 10 charts was reviewed, and 100% accuracy was demonstrated. Accuracy was checked at frequent, random intervals throughout data collection. Following completion of data collection, the principal investigator (Jill G. Zwicker) and collecting researchers reviewed the data collection sheet to complete a secondary check for inclusion criteria. Eight additional charts were excluded because of missing information in the form of incomplete questionnaires (n = 3), use of an alternative assessment (n = 3), or age at time of assessment >36 mo (n = 2), leaving a final sample of 177 charts for analysis. When a parent or caregiver provided a range of values for a sleep parameter when the questionnaire asked for a single value, a researcher calculated the average; a second researcher reviewed all calculations to ensure accuracy.

Data Analysis

Data were encoded and analyzed using IBM SPSS Statistics (Version 22; IBM Corp., Armonk, NY). Initial analysis involved descriptive statistics for demographic, sensory processing, and sleep data. Because sleep data were not normally distributed, medians and interquartile ranges are reported (Table 1). To describe scores representing increased levels of processing (e.g., increased sensitivity), quadrant scores were recoded as either within the typical range or more than typical. Quadrant scores ≥1 SD of the mean (probably or definitely less than others and within typical performance) were coded as typical; quadrant scores <1 SD of the mean (probably or definitely more than others) were coded as more than typical. A Mann–Whitney U test was then used to determine whether children demonstrating typical quadrant scores differed in their sleep behaviors from those demonstrating more than typical quadrant scores. Two-tailed Spearman correlations were run for significant results of the Mann–Whitney U test. Significance was set at p < .05, with Bonferroni correction for multiple comparisons for correlation analyses (p < .003).

Results

A total of 177 children (85 infants and 92 toddlers; mean age = 8.6 mo, SD = 5.6; age range = 1.4–35.3 mo) were included in the data analysis; the sample consisted of 96 boys (54.2%) and 81 girls (45.8%). The majority of children (n = 98, 55.4%) demonstrated increased sensory processing patterns in one or more quadrants; 40.7% (n = 72) displayed only one quadrant with a more than typical score, and 14.7% (n = 26) displayed more than one quadrant in the elevated range. The portion of the sample scoring more than typical in each quadrant was as follows: 14.1% (n = 25) of the children demonstrated...
a tendency to miss sensory input (registration), 12.4% ($n = 22$) demonstrated a pattern of seeking out sensation (seeking), 21.5% ($n = 38$) demonstrated an avoiding pattern, and 36.2% ($n = 64$) demonstrated increased sensitivity. Consistent with our hypothesis, the most common sensory processing pattern observed in infants and toddlers referred for sleep problems was increased sensitivity.

After correcting for multiple comparisons, we found that children who displayed increased sensitivity quadrant scores required significantly more time to fall asleep once put to bed than children with typical scores (see Table 1). We also found that children with a seeking pattern slept significantly less during the day than children with typical seeking quadrant scores.

We found small but significant Spearman correlations between sleep parameters and sensory processing patterns for children demonstrating more than typical scores in the seeking and sensitivity quadrants. Children with increased seeking showed decreased daytime sleep ($r = –.24$, $p = .002$), whereas children demonstrating increased sensitivity took more time to settle to sleep ($r = .27$, $p < .001$).

### Discussion

More than half of the children in this study demonstrated a pattern of increased sensory processing in one or more quadrants, most commonly that of increased sensitivity. These findings agree with literature suggesting correlations between sensory processing patterns and sleep quality in other populations. This is the first study to our knowledge to extend those findings to typically developing infants and toddlers.

We hypothesized that increased sleep disruption would be associated with increased sensitivity because children with this sensory pattern have a low neurological threshold and use a passive self-regulation strategy (Dunn, 2001). In support of this finding, we found that infants and toddlers demonstrating increased sensitivity required a longer time to settle to sleep. This finding is in line with the findings of a study of healthy adults (Engel-Yeger & Shochat, 2012) and a study of healthy school-age children (Shochat et al., 2009) that linked patterns of sensitivity with restless behavior and difficulty falling asleep. It may be that in typically developing children and adults, hyperarousability associated with a low neurological threshold (as a result of a lack of underlying nervous system inhibition) may manifest as both increased sensitivity and difficulty falling asleep (Engel-Yeger & Shochat, 2012; Mangeot et al., 2001).

We did not find a significant relationship between increased avoiding and sleep behaviors once we controlled for multiple comparisons. Other researchers have reported that increased sensation avoiding in children (0–36 mo) with FASD was associated with increased nighttime wakefulness (Fjeldsted & Hanlon-Dearman, 2009). Increased auditory sensitivity has also been correlated

### Table 1. Sleep Parameters by Sensory Processing Pattern

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Median (IQR) Sensory Processing Quadrant Scores</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night sleep duration, hr</td>
<td>10.00 (8.81–10.50)</td>
<td>10.00 (9.00–10.50)</td>
</tr>
<tr>
<td>Day sleep duration, hr</td>
<td>2.50 (2.00–3.31)</td>
<td>2.25 (1.50–3.00)</td>
</tr>
<tr>
<td>Settling time, min</td>
<td>30 (22–60)</td>
<td>30 (15–45)</td>
</tr>
<tr>
<td>Nighttime wakefulness, min</td>
<td>60 (30–90)</td>
<td>52 (30–90)</td>
</tr>
<tr>
<td>Seeking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night sleep duration, hr</td>
<td>10.00 (9.00–10.50)</td>
<td>10.38 (9.38–10.63)</td>
</tr>
<tr>
<td>Day sleep duration, hr</td>
<td>2.50 (2.00–3.00)</td>
<td>2.00 (1.44–2.50)</td>
</tr>
<tr>
<td>Settling time, min</td>
<td>30 (20–45)</td>
<td>45 (30–60)</td>
</tr>
<tr>
<td>Nighttime wakefulness, min</td>
<td>60 (30–90)</td>
<td>60 (45–92)</td>
</tr>
<tr>
<td>Sensitivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night sleep duration, hr</td>
<td>10.00 (9.00–10.50)</td>
<td>10.00 (9.00–10.50)</td>
</tr>
<tr>
<td>Day sleep duration, hr</td>
<td>2.50 (2.00–3.00)</td>
<td>2.63 (1.81–3.50)</td>
</tr>
<tr>
<td>Settling time, min</td>
<td>30 (20–45)</td>
<td>45 (30–60)</td>
</tr>
<tr>
<td>Nighttime wakefulness, min</td>
<td>60 (30–90)</td>
<td>60 (30–90)</td>
</tr>
<tr>
<td>Avoiding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Night sleep duration, hr</td>
<td>10.00 (9.00–10.50)</td>
<td>10.00 (9.00–11.00)</td>
</tr>
<tr>
<td>Day sleep duration, hr</td>
<td>2.50 (2.00–3.38)</td>
<td>2.00 (1.50–3.00)</td>
</tr>
<tr>
<td>Settling time, min</td>
<td>30 (20–60)</td>
<td>35 (22–61)</td>
</tr>
<tr>
<td>Nighttime wakefulness, min</td>
<td>60 (30–90)</td>
<td>60 (30–90)</td>
</tr>
</tbody>
</table>

Note. IQR = interquartile range (25th–75th percentile).

$^a$Significant after Bonferroni correction.
with poorer sleep quality in healthy adults (Engel-Yeger & Shochat, 2012). Low neurological thresholds leading to avoiding behaviors may be the common thread in reduced nighttime sleep quality.

In regard to a high neurological threshold, we found that children who seek out sensation more than their peers spend less time asleep during the day. This finding agrees with the results of Shani-Adir et al. (2009), who found that seeking was associated with shorter sleep duration in children with atopic dermatitis aged 3–10 yr. Nonetheless, our finding appears contrary to that of Engel-Yeger and Shochat (2012), who found that seeking was negatively correlated with sleep disturbance, suggesting that healthy adults who display a pattern of seeking may have fewer sleep disturbances and thus rest better than those with other sensory processing patterns. Differences may thus exist in the interaction between seeking and sleep in young children compared with adults.

We did not find any relationships between a registration processing pattern and any of the sleep characteristics measured. This finding is consistent with the results of a study of a healthy adult population (Engel-Yeger & Shochat, 2012). It may be that people who register less than others simply do not register or respond to stimuli that could cause increased sleep disturbance. However, Wengel et al. (2011) noted that children with FASD had sleep issues associated with a registration processing pattern. Nonetheless, they also found that all four quadrant scores were elevated in the children with FASD and suggested that these children may processes sensation differently from typically developing children. This factor may help explain why our results with regard to registration fit with those demonstrated in a typical adult population but not with those demonstrated in a sample of children with FASD.

Our study examines the sleep of young children, and we recommend that occupational therapy practitioners working with infants and toddlers for sleep concerns consider sensory processing patterns along with other psychosocial factors. Some occupational therapy interventions for the sensory preferences of children might address levels of stimulation during daytime activities and environmental factors, including noise, light levels in the home, sleeping location within the home, temperature, and textures next to the skin (Barclay & Gregory, 2013; Solet, 2014).

Although beyond the scope of this study, the literature suggests several psychosocial factors affecting sleep that occupational therapy practitioners could address. These factors include parenting styles and infant–parent bonding, sibling interactions, family stress and sleep deprivation, and occupational balance (Karraker & Young, 2007; Solet, 2014). Practitioners should also be aware of sleep-related habits and behavioral factors, including napping practices and sleeping position (Solet, 2014), and the potential impact of medical illness, sleep disorders, psychiatric disorders, and behavioral and developmental difficulties on sleep (Solet, 2014; Wengel et al., 2011).

Barclay and Gregory (2013) found that early-life environmental factors play a greater role in setting healthy sleep behaviors for life than genetic factors. Maldonado-Duran, Garcia, Lartigue, and Karacostas (2002) suggested that parenting quality and behavior are the strongest predictors of children’s mental health. These studies illustrate the importance of therapeutic support of the parent–child relationship. The ability of occupational therapy practitioners to build and engage in strong therapeutic rapport with their clients may position them as ideally suited to help cultivate the parent–child relationship in a way that enhances the many components of children’s health, including sleep (Solet, 2014).

Overall, after correcting for multiple comparisons, we found only two significant correlations between sensory processing patterns and sleep parameters, and these correlations were small. Furthermore, differences in the median values of sleep parameters between children who scored within typical performance and those who did not were also small (i.e., may not be clinically significant). It may be that patterns of increased sensory processing are simply more pronounced in populations with neurodevelopmental disabilities or other physical or occupational issues than in typically developing infants and toddlers. If more pronounced, these patterns of increased sensory processing might lead to stronger correlations between sensory processing patterns and sleep parameters.

Further research is needed to determine whether these population differences would account for the small correlations observed in our study. Although results did not attain significance for any quadrant with regard to night sleep duration, our observed medians of approximately 10 hr per night appear to be less than the toddler norm of approximately 11.5 hr of nighttime sleep (Williams, Zimmerman, & Bell, 2013). It may be that the decreased nighttime sleep duration we observed was a result of factors beyond differences in sensory processing, possibly influenced by some of the non–medically related additional factors affecting sleep noted earlier in this section.
Limitations and Future Research

Because clinical charts were taken from only one private practice in which clients were self-selected, a potential selection bias and use of a convenience sample may limit the generalizability of our findings. Additionally, determination of a whole-number average for statistical analysis may have reduced the validity of responses for parents who responded with ranges when a whole number was requested (e.g., 6–8 night awakenings was averaged to 7). Future research should more closely examine the relationships between sleep parameters and the specific senses (i.e., auditory, visual, oral, tactile) in typically developing infants and toddlers. In addition, studies should aim to clarify the similarities and differences in sensory processing patterns and sleep between typically developing children and those with disabilities or other occupational issues.

Implications for Occupational Therapy

Our findings suggest a relationship between sensory processing and sleep issues in typically developing infants and toddlers. Occupational therapy practitioners are well suited to address this potential relationship because of their familiarity with sensory processing and interactions between person and environment. Furthermore, occupational therapy practitioners have a promising role to play in the research of sleep problems because of their expertise in sensory processing, one of the multiple factors that affect sleep in the lives of children and their families. The findings of this study suggest that occupational therapy practitioners should

- Consider sensory processing as a potential factor influencing sleep issues in typically developing infants and toddlers,
- Assess for increased sensitivity and seeking patterns in relation to sleep disturbances in typically developing infants and toddlers,
- Facilitate environmental modifications informed by the sensory needs of children to address sleep disturbance,
- Use their unique expertise and strong therapeutic relationships with families to become an important member of the team in dealing with sleep problems in children, and
- Take on a leadership role in research examining the relationship of sensory processing and sleep.

Conclusion

Our results add to a new body of literature exploring the relationship between sensory processing patterns and sleep problems and is the first study, to our knowledge, to demonstrate this relationship in young, typically developing children. Occupational therapy practitioners have an important role on teams addressing and researching sleep problems in children.

Acknowledgments

Mark Vasak and James Williamson hold joint first authorship. We thank the parents and children whose data were used in this study and Sleepdreams Professional Sleep Consultants, Inc., for providing access to the clinical charts. Jill Zwicker is funded by the Michael Smith Foundation for Health Research and Canadian Child Health Clinician Scientist Program. Initial study findings were presented at the Canadian Association of Occupational Therapists Annual Conference, Fredericton, New Brunswick, May 2014.

References


