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Supporting Children with Neurodevelopmental Disorders: Routines and Environmental Factors Affecting Sleep Quality

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BACKGROUND

Sleep difficulties are more common among children with neurodevelopmental disorders (NDDs) because sleep is an intricate neurological function that requires a typical central nervous system (Jan et al., 2009). Sleep problems affect 25% of typically developing children and up to 80% of children with special needs (Corkum et al., 2016, p. 701). Impaired sleep affects children's mood, behavior, cognition, and physical health, which impact occupational performance (Jan et al., 2009). General interventions for sleep, not specifically for children with NDDs, include changes in bedtime routines, habits, and patterns (Picard, 2017). There is limited research accessible on sleep strategies used by parents of children with NDDs or resources written by occupational therapists.

PURPOSE

Research question: What are the current sleep concerns and strategies used by parents of children with neurodevelopmental disorders?

The Ecology of Human Performance (EHP) was utilized to examine current sleep concerns and strategies used by parents of children with NDDs, including those affecting time it takes to fall asleep, duration of sleep, routines, and environmental factors that influence sleep. EHP focuses on the relationship between the person, context, task, and performance (Dunn et al., 1994). Barriers and strategies related to sleep will be determined through a needs assessment and IRB approved mixed methods.

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METHODS

Parents and caregivers of children with neurodevelopmental disorders (n=22) and with no diagnosis (n=6) were recruited through social media platform, Facebook and snowball sampling using personal contacts. Participants (n=2) also completed an optional, follow-up interview after they provided their email at the end of the survey. Data gathered included demographics, sleep information, sleep quality, bedtime routines, and sleep strategies used. There were open- and closed-ended questions, providing both qualitative and quantitative data. The survey and interview for parents and caregivers were part of an IRB approved mixed methods study.

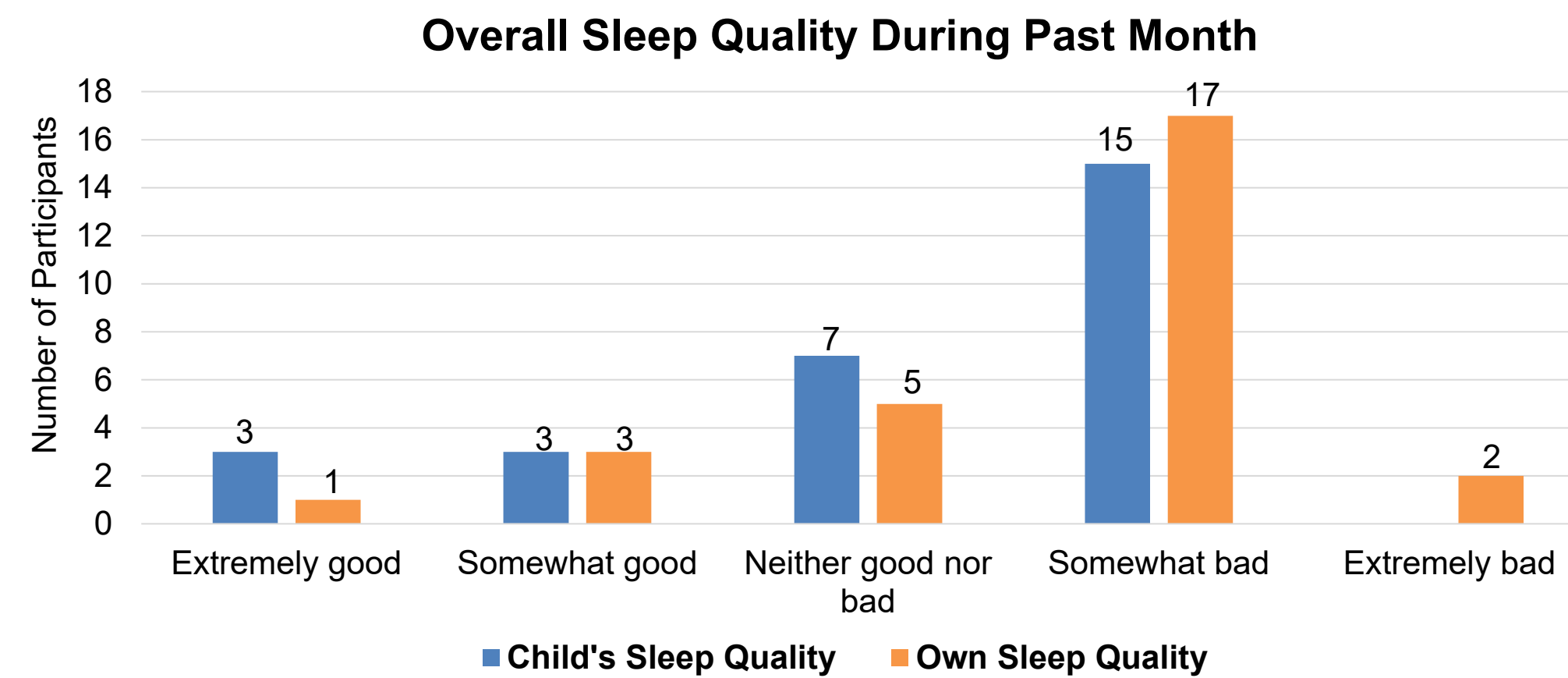
RESULTS

Survey Results:

| Child's Bedtime Routine |
|-------------------------------------|
| Activity |
| Bathe |
| Get dressed |
| Brush teeth |
| Read |
| Hugs and kisses/ cuddle with family |
| Snack/dinner/ nurse/milk |
| Play |
| Watch TV/internet |
| Prayer |
| Massage/lotion |

| Strategies That Worked |
|------------------------------------|
| Strategy |
| Keeping a routine |
| Dark room/blackout curtains |
| Night light |
| White noise |
| Stuffed animals/body pillows |
| Melatonin |
| Cry it out |
| Sleep sack/zip suit/swaddle |
| Massage |
| Cool temperature |
| Bottle/nurse |
| Humidifier |
| Physical activities during the day |
| Essential oils |

Survey Results:



Interview Results:

| | |
|------------------------------|---|
| Sleep Concerns | <ul style="list-style-type: none"> "I'm worried that she shouldn't be waking up so much at night and then it's hard to go back to sleep." "Help him sleep through the night." |
| Affects Family | <ul style="list-style-type: none"> "She's tired so I get tired too." "My day revolves around her and her needs." "When he doesn't sleep, we [have] trouble sleeping too. It affects all of us." |
| Environmental Factors | <ul style="list-style-type: none"> "Sound and air [from fan] help to fall asleep." "Likes it cold", "Making sure room is cool and comfy" "Lights outside the house are bright so we have blackout curtains." |
| Consistent Routine | <ul style="list-style-type: none"> "I've been scared to do any changes because keeping it the same seems to be working." "We have to keep to the routine or he does not sleep." |

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DISCUSSION

The results of this study supported that routine and environmental factors affect the sleep quality of children with neurodevelopmental disorders as well as the sleep quality of the parents and caregivers. The participants with children with neurodevelopmental disorders in the study were over twice as likely to report that their child's sleep was a moderate or serious problem compared to participants with children with no diagnosis. Many factors influence the child's sleep including the environment of the room and the bedtime routine leading up to going to bed. Universal influences within the physical environment that need to be considered are light, noise, and temperature. Healthcare providers, including occupational therapists, need to help parents identify strategies to promote a quiet, dark sleep environment. Having a consistent bedtime routine with activities in preparation for bed was associated with better sleep quality.

FUTURE IMPLICATIONS

A webpage was created to highlight the survey results and was posted to Facebook pages. Further studies could differentiate and analyze the effectiveness of certain sleep strategies. An area of exploration is to focus on how strategies vary based on diagnoses. The expansion of online sleep resources for children with NDDs is needed. Occupational therapy professionals should collaborate with other healthcare providers to create more inclusive and available resources. More education on occupational therapy's role in addressing sleep is necessary for healthcare professionals as well as parents.