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Sleep Problems in Children with Special Needs

by Susan Agrawal

Sleep problems are common in all children, and some estimates suggest that up to 30% of children experience difficulty with sleep or have diagnosed sleep problems.¹ In children with special needs, medical issues or disabilities, this number is even higher, with up to 80% of these children diagnosed with a sleep problem.²

But just what are these sleep problems and how are they treated? In order to answer this question, we undertook a survey of parents of children with special needs, asking them general questions about their children's sleep problems. We received 84 surveys that met our criteria. A handful of surveys were not included due to duplication, age (children under age one were excluded), lack of special needs, or lack of sleep problems.

Common Sleep Problems in Children with Special Needs

The most commonly reported sleep problem was difficulty staying asleep or frequent night wakings. 57 of 84 children (67.9%) experienced this problem. While the cause of these awakenings varies considerably, many parents noted that these night wakings are due to pain and discomfort, including pain from reflux, muscle pain, neuropathic pain, and other causes of pain.

The next most commonly reported sleep problem was trouble falling asleep, with 40 of 84 children (47.6%) having this specific issue. This is a problem common both to children with special needs and those without special needs. Many children have difficulty calming themselves or settling down, and this problem may be compounded in children who cannot use typical self-soothing techniques due to motor, sensory or developmental limitations.

Another frequently reported problem for many children, especially preschool-aged children, was sleep disordered breathing and respiratory issues during sleep, which includes sleep problems such as sleep apnea, hypopnea and hypoventilation. 32 of 84 children (38.1%) experienced some form of respiratory issues during sleep.

Other less common problems reported include not sleeping enough (21.4%); periodic leg movements during sleep (20.2%); sleeping at the wrong time of the day or night (14.3%); night terrors, nightmares, sleep walking, and similar issues (14.3%); and sleeping too much (13.1%). See Table 1.

Table 1: Reported Sleep Problems in Children with Special Needs

Problem	Frequency	
Trouble staying asleep or frequent night wakings	57	67.9%
Trouble falling asleep	40	47.6%
Sleep disordered breathing and respiratory issues during sleep	32	38.1%
Not sleeping enough	18	21.4%
Periodic leg movements	17	20.2%
Sleeping at the wrong time of day/night	12	14.3%
Night terrors, nightmares, sleep walking, etc.	12	14.3%
Sleeping too much	11	13.1%
Other	12	14.3%

Most parents reported their children had more than one sleep problem. 32 of 84 children (38.1%) had two sleep problems, while 15 of 84 children (17.9%) had three, and 15 of 84 children (17.9%) had four or more.

The vast majority of children who only had one sleep problem experienced difficulty staying asleep. 13 of 22 children (59.1%) with only one sleep problem struggled with these frequent night wakings. Of children who had two sleep problems, the most common combination was difficulty with falling and staying asleep. 11 of 32 children (34.3%) experienced this pair of problems.

Frequency of Sleep Problems

Not surprisingly, the majority of children had sleep problems every single night. 43 of 84 children (51.2%) struggled on a nightly basis with sleep issues, and 80 of 84 children (95.2%) experienced sleep issues at least once a week. See Table 2.

Table 2: Frequency of Sleep Problems

Frequency	Number	Percentage
A few times a year	2	2.4%
A few times a month	2	2.4%
1-2 times a week	4	4.8%
3-4 times a week	14	16.7%
5-6 times a week	19	22.6%
Every night	43	51.2%

Treatment of Sleep Problems

Children included in this survey were treated with a wide range of treatment modalities, ranging from behavioral and environmental modifications to prescription sedatives and other strong prescription medications. Most children were treated with more than one treatment method. See Table 3 for a list of treatment options.

Table 3: Treatment Options for Sleep Problems

Treatment	Number	Percentage
Over-the-counter medication such as benadryl or melatonin	37	44.0%
Sleep hygiene modification	27	32.1%
Prescription medication (non-benzodiazapene)	20	23.8%
Ventilatory support (oxygen, BiPAP, Vent, etc.)	20	23.8%
Prescription sedative (Ativan, Valium, Klonopin)	16	19.0%
No treatment at all	12	14.3%
Behavioral modification	10	11.9%

The most common sleep treatment option reported was over-the-counter medication, with 37 of 84 children (44.0%) taking these types of medications. 27 of 84 (32.1%) children also used sleep hygiene modification to improve sleep, which includes techniques such as modifying the sleep schedule, the sleep environment or the bedtime routine. A previous article, <http://articles.complexchild.com/sept2010/00233.html>, discusses this topic. 12 children (14.3%) received no treatment at all. Interestingly enough, no children in the survey took a prescription medication specifically designed for sleep, such as Ambien or Lunesta.

Since most children were treated in more than one way, children were further categorized into four groups based on the most invasive intervention they received. Respiratory issues and ventilatory treatment options differ greatly from the other types of treatments, and thus the presence or lack of ventilatory support was not evaluated when categorizing children. The first group of children (12 of 84) received no treatment. The second group, children who received only non-medication treatments such as behavioral or sleep hygiene modifications, includes 12 additional children. The third group, children who received only over-the-counter medication, with or without non-medication treatment, includes 19 children. Children who received any form of prescription medication for sleep made up the fourth group, which includes 33 children. 8 children who only received ventilatory support or other interventions alone were excluded. See Table 4.

Table 4: Most Invasive Treatment Interventions

Intervention	Number	Percentage
No treatment	12	15.8%
Behavioral/hygiene modification only	12	15.8%
Over-the-counter medication	19	25.0%
Prescription medication	33	43.4%

Categorizing children in this manner demonstrates that the vast majority of children (68%) received some sort of sleep medication, including over-the-counter medication in 25% of children and prescription medication in 43.4%.

Success of Treatment

The vast majority of children's sleep problems continued, even with treatment, as shown in Table 5. Only 13 of 84 children (15.5%) had sleep problems that were fully under control or outgrown. Most of these children (9 of 13 or 69%) had only one or two sleep problems.

Children with uncontrolled sleep problems, which included 14 of 84 children (16.7%), typically had a diagnosis of sleep-disordered breathing (9 of 14 or 64.3%), and almost all had multiple sleep problems.

Ten children had not yet been evaluated for sleep problems.

The remaining children, 47 of 84 (56.0%), had sleep problems that were partially controlled.

Table 5: Success of Treatment

Level of Control	Number	Percentage
No Evaluation	10	11.9%
Uncontrolled	14	16.7%
Partially Controlled	47	56.0%
Controlled or Outgrown	13	15.5%

Control was not particularly dependent on the treatment received. Approximately one out of every six children achieved control, regardless of the maximum treatment method used. Children on prescription medications were the most likely to have their sleep issues reported as "partially controlled." Uncontrolled sleep problems were most common in children who were only treated with ventilatory support, while those who were treated with prescription medications were least likely to be described as "uncontrolled." See Table 6.

Table 6: Success of Treatment Based on Method

Treatment	No Evaluation	Uncontrolled	Partially Controlled	Controlled or Outgrown
No Treatment (12)	4 (33.3%)	2 (16.7%)	4 (33.3%)	2 (16.7%)
Behavior/Hygiene (12)	2 (16.7%)	2 (16.7%)	6 (50.0%)	2 (16.7%)
Over-the-counter Medication (19)	3 (15.8%)	3 (15.8%)	10 (52.6%)	3 (15.8%)
Prescription Medication (33)	1 (3.0%)	4 (12.1%)	23 (69.7%)	5 (15.2%)
Vent Support Only (7)	0	2 (28.6%)	4 (57.1%)	1 (14.3%)
Other Only (1)	0	1 (100%)	0	0

The number following the treatment category is the number of total children with that treatment as their most invasive intervention.

Very young children and older children were the most likely to use behavioral or hygiene modifications, while treatment with prescription medications tended to increase with the age of the child.

Conclusions

Children with special needs experience a wide variety of sleep problems, with the most common problems being difficulty falling asleep, difficulty staying asleep, and respiratory issues while sleeping. Most children had more than one sleep problem, and these problems occurred every night or most nights in the majority of children.

Children were typically treated with multiple methods of intervention, including both non-medical and medical modalities. Almost half of children received a prescription medication as their most invasive intervention.

Most children continued to have sleep problems, even with medication and changes in behavioral or sleep hygiene routines. More than half of the children were described as having partially controlled sleep problems. The type of treatment received did not impact the likelihood of gaining control over sleep issues, although those children who received prescription medication tended to fare better than those who did not.

Children with special needs continue to exhibit very disruptive sleep patterns that likely impact their health and the health of their caregivers. In treating such problems, a multimodal approach incorporating changes in the sleep schedule, sleep environment, behavior, and bedtime routine needs to be combined with medical and respiratory solutions to improve sleep in these children. Additional research needs to be performed in the future to find safer sleep medications with fewer side effects to treat these children.

¹ Joseph C. Blader, *et al.* Sleep Problems of Elementary School Children. *Arch Pediatr Adolesc Med.* 1997;151(5):473-480.

² James E. Jan, *et al.* Sleep Hygiene for Children with Neurodevelopmental Disabilities. *Pediatrics* 2008;122(6):1343-50.