Parent and Child Perception of Sleep for Children with Sensory Processing Difficulties

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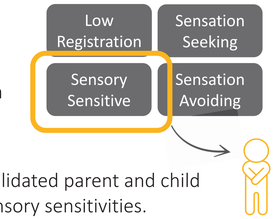
BACKGROUND AND SIGNIFICANCE

- Roughly 5.3 million elementary children in the USA experience **sensory processing difficulties**, like sensitivities to touch and overstimulation with movement.
- Emerging research suggests that certain sensory processing patterns, specifically **sensory sensitivities**, may have a negative impact on sleep health in children.
- However, research has yet to explore sleep in children with sensory sensitivities compared to peers to understand the relationship.
- Our study aims to characterize sleep using validated parent and child reported questionnaires for children with sensory sensitivities.

Dunn's Model of Sensory Processing



METHODS

STUDY TYPE AND STATISTICAL ANALYSIS

Cross-sectional observation study

Quantitative data used to compare groups using Student's *t* test and Hedges'*g* effect size estimate.

Qualitative data analyzed using rapid qualitative analysis for unique themes within each group.

PARTICIPANTS

Children 6 - 10 years old in the US

22 Children with sensory sensitivities

33 Children without sensory sensitivities

INSTRUMENTS

Sensory Profile-2

Children's Sleep Habits Questionnaire

Child's Sleep Self-Report

Caregiver Interviews examining bedtime supports and barriers, history of sleep, supportive adaptations.

Main Findings:

Children with sensory sensitivities have significantly more sleep difficulties than peers on both parent and child-reported questionnaires.

Poor sleep is positively associated with sensory sensitivities and sensory avoiding

RESULTS

Children with sensory sensitivities n = 22
Mean age (*SD*)= 7.46 (1.44)

Children without sensory sensitivities n = 33
Mean age (*SD*)= 7.46 (1.65)

Children's Sleep Habits Questionnaire *Parent reported sleep*

CSHQ Subsection	SS group	NSS group	*p*-value	Hedge's *g* effect size
Bedtime Resistance	9.64 (2.66)	7.61 (2.32)	.001*	0.83‡
Sleep Onset Delay	2.09 (0.81)	1.45 (0.56)	.003*	0.95‡
Sleep Duration	5.05 (2.01)	4.12 (1.39)	.095	0.56‡
Sleep Anxiety	7.41 (2.40)	5.64 (2.12)	.004*	0.79‡
Night Waking	4.82 (1.87)	3.70 (0.92)	.018	0.81‡
Parasomnia	10.68 (2.42)	8.42 (1.52)	<.001**	1.17‡‡
Sleep Disordered Breathing	3.59 (1.01)	3.39 (0.70)	.493	0.24
Daytime Sleepiness	11.64 (3.90)	10.79 (2.70)	.557	0.26

CSHQ total score

Children with sensory sensitivities:
54.91 (10.00)

Children without sensory sensitivities:
45.12 (7.27)

> *"Things tend to fall apart very quickly for him if he doesn't sleep well."*

> *"It was like she just didn't have like, this rhythm, or anything. It was so hard to get her to go down."*

SSR total score

Children with sensory sensitivities:
42.18 (8.26)

Children without sensory sensitivities:
33.55 (6.71)

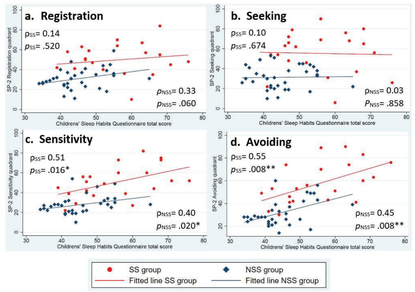
Sleep Self Report Questionnaire *Child reported sleep*

SSR Subsection	SS group	NSS group	*p*-value	Hedges' *g* effect size
Bedtime Behaviors	22.45 (4.78)	12.97 (4.19)	<.001**	1.01‡
Sleep Behaviors	12.68 (3.05)	9.64 (2.01)	<.001**	1.23‡‡
Daytime Sleepiness	7.05 (1.84)	5.94 (1.58)	.021	0.66‡

Notes for tables: SS= sensory sensitivities, NSS= no sensory sensitivities
* $p < .01$, ** $p < .001$
‡$g > 0.41$ minimum effect, ‡‡$g > 1.15$ moderate effect, ‡‡‡$g > 2.70$ strong effect

RELATIONSHIP BETWEEN SENSORY PROCESSING PATTERNS AND SLEEP

More frequent sensory sensitivity or avoiding behaviors are correlated with more frequent poor sleep behaviors.



TAKE AWAY POINTS

1. **Sleep needs to be assessed as part of routine care**

   Sleep may be impacted by sensory sensitivities and avoiding behaviors for children, with or without significant sensitivities.

2. **Children with atypical sensory processing patterns may be especially prone to poor sleep behaviors**

   Children with sensory sensitivities have significantly more sleep problems, than their peers without sensory sensitivities per parent and child report.

FUTURE DIRECTIONS and LIMITATIONS

Further research may explore the efficacy of pediatric sleep interventions for children with atypical sensory processing patterns.

Small sample size and limits our abilities to make generalizable conclusions about the relationship between sleep and sensory processing across different populations.

ACKNOWLEDGEMENTS

Thank you to our participants and their families and the Pediatric Research Laboratory. Project supported by the Sensory Integration Network and University of Pittsburgh's School of Health and Rehabilitation Science.