



# Creating a Sleep Sensory Toolkit for Children with Sensory Aversions

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## Introduction

- 5 to 16% of children experience sensory processing difficulties that affect their everyday lives.
- Sleep difficulties affect between 11% and 37% of typical children, and 40% to 80% of children with special needs.
- Sleep is important for human development and brain development, and not getting enough sleep can result in negative effects on cognitive functions such as memory, attention, mood and behavior.
- Children that experience sensory processing difficulties are more likely to also experience sleep difficulty, especially when compared to those who are not affected by sensory issues.
- Because there is a significant percentage of the pediatric population with sensory processing difficulties, it is important to understand how their sleep is affected and what can be done to improve the quality of sleep for this population.
- Little research has been completed evaluating what interventions can be implemented to improve sensory processing and sleep difficulties for children.
- Aim:** to study the effects of lavender-scented soap and a weighted blanket on sleep patterns in children ages 18-months-old to 3-years-old who experience sensory processing difficulties.

## Methods

- Ten children aged 18-months-old to 3-years-old and their caregivers were recruited from The Bell Center for Early Intervention Programs, a non-profit center-based program in Birmingham, Alabama.
- The participants were recruited through purposive sampling.

### Demographics:

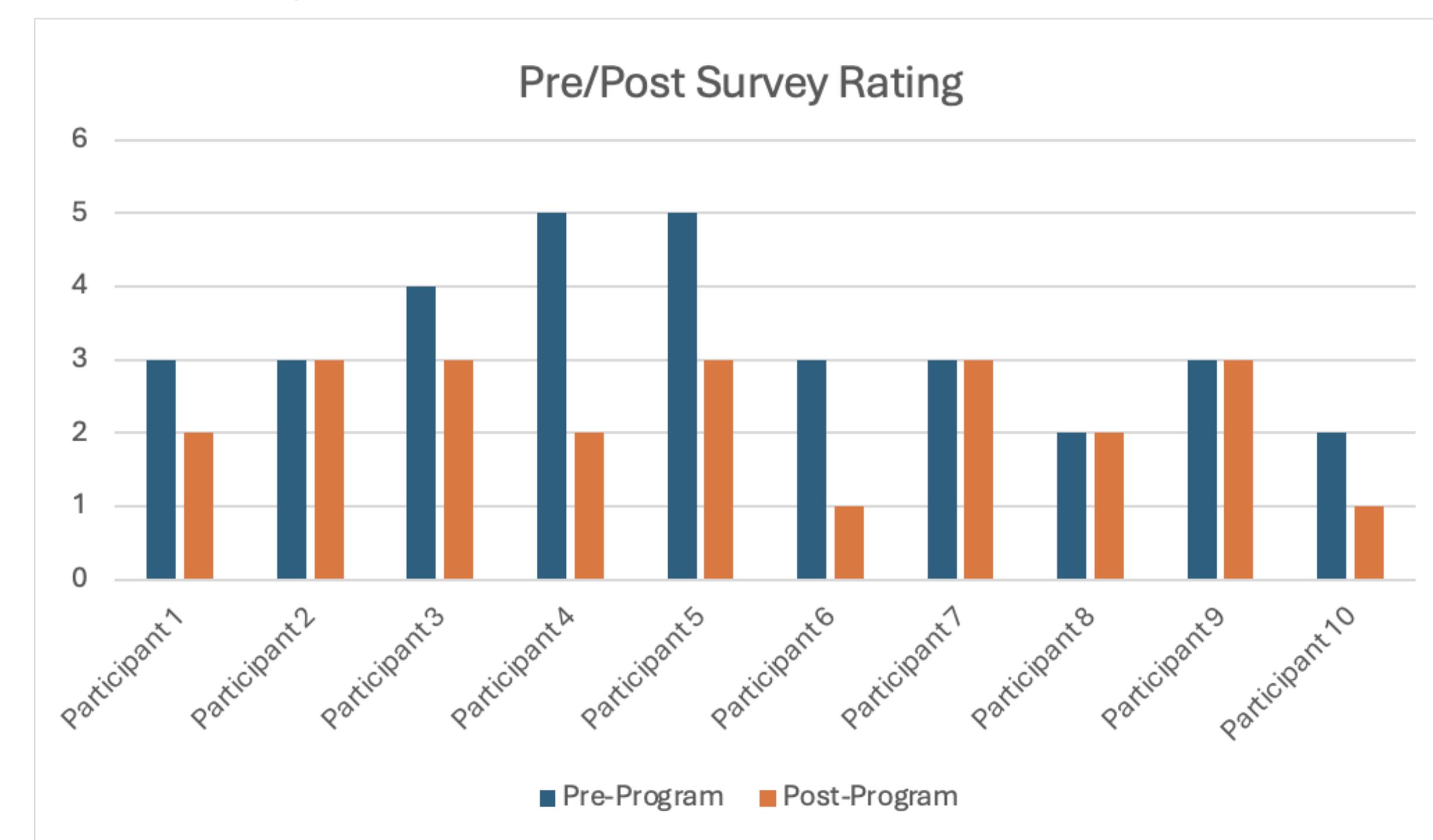
- 10% of participants were 1-year-old. 70% of participants were 2-years-old. 20% of participants were 3-years-old.
- 100% of participants were male.

### Methods:

- A "Sleep Sensory Toolkit" was created and included instructional handouts for:
  - how to set up a successful environment for sleep
  - how to establish a good bedtime routine and why it's important
  - lavender-soap (provided for family)
  - 2-pound weighted blanket, and instructions for how to use them and how often (loaned from UAB for study)
- Caregivers were instructed to implement the lavender-scented soap in the bath and use the weighted blanket during a quiet time before bed during reading and listening to music for six weeks and keep a weekly log to record progress.
- Caregivers completed a pre-survey, 6 weekly sleep logs, semi-structured interviews with the student once a week, and a post-survey.

## Results

- All 10 participants completed the six-week program.
- All participants used the lavender-scented soap in the bath for 5 out of 7 nights a week
- 9 out of 10 participants used the weighted blanket before bed for 5 out of 7 nights a week.
- When participants were asked if the weighted blanket calmed their child before bed and if they were able to fall asleep faster, sleep better without waking, or demonstrate less restlessness after using the weighted blanket, 80% responded "yes" and 20% responded "no".
- 70% of participants responded "yes" to if the lavender-scented soap helped calm their child in the bath, fall asleep faster, or cry less when putting them to bed.
- Multiple participants reported it was difficult to interpret if the lavender-scented soap has any effects when used in conjunction with the weighted blanket.
- Participants were asked to rate the difficulty of getting their child to fall asleep on a Likert scale, where 1 represents 'No Difficulty' and 5 represents 'Very Difficult'. Sixty percent of participants scores decreased and 40% of participants scores remained the same. See results on the bar graph below.



## Discussion

- Results provide support for previous literature suggesting lavender-scented soap, and a weighted blanket can help calm children down before bed.
- While only 60% of caregiver participants reported a positive change in how difficult it is to put their child to bed, 90% reported in narrative questions of the post-survey that it had positive effects on their child's sleep patterns.
- Caregivers reported their child could not tolerate the weighted blanket in the beginning of the study, but over time, was able to use it for several minutes, suggesting it might take time for children to adjust to the weight.
- Caregivers reported the lavender-scented soap helped their child feel "soothed", "calm", "tired", and "enjoy bathtime more". The aroma from the scent may cause children to "become tired" and "transition to bedtime easier".
- When a change in routine was noted on the daily sleep log, the child's tolerance of the blanket and overall sleep quality shifted as well. This suggests that disruptions in routines can influence sleep patterns.

## Discussion cont.

### Limitations:

- Small sample size (n= 10), limiting results and conclusions
- Study included all male participants, no female participants
- All results of the study are based on subjective caregiver reports, objective measures were not used
- Study only involved children from The Bell Center, ages 18-months-old to 3-years-old
- Reported sensory processing difficulties for children were based on therapist and caregiver's reports, not an objective measure
- Weighted blanket and lavender soap were used in conjunction, which can lead to unclear results

### Occupational Therapy's Role:

- Results of the study and post-survey answers show that occupational therapy can provide education, suggestions, and interventions to help children with sensory processing challenges by educating caregivers and other therapists about aromatherapy, weighted materials, addressing sensory needs, and recommending therapeutic materials.

## Conclusion

### Implications:

- Therapists should consider suggesting using a weighted blanket before bed or lavender-scented soap in the bath to help calm children that demonstrate sleep difficulties.
- Data supports that using a weighted blanket could help children with sensory challenges relax before bed, and using lavender-scented soap may produce calming aromas.

### Future Research:

- Isolate the effects of weighted blankets and lavender-scented soap to obtain clearer, more accurate results
- Larger and more diverse sample size
- Longer time frame using the weighted blanket and lavender soap

## References

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