

Improving Sleep and Parent Stress in Children with Autism Through Behavioral Intervention

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PROBLEM STATEMENT

- Sleep disorders occur in up to 80% of children with Autism Spectrum Disorder (ASD) and are associated with worsened attention, irritability, and decreased family quality of life (CDC, 2020).
- 45.7% of children with ASD are on at least one psychotropic drug and 23% are on more than two, with sleep medications being one of the most prevalently used medications (Jobski et al., 2017).
- In 2021, an outpatient pediatric neurology clinic in Southwest Florida saw 1,665 patients ages two to 18 years old with a diagnosis of ASD; 71% of these patients had a comorbid sleep disorder but were not receiving adequate behavioral support.
- Evidence-based practice guidelines recommend clinicians counsel parents regarding strategies for improved sleep habits and offer behavioral strategies as first-line treatment (American Academy of Neurology, 2020).

PROJECT PURPOSE

- Relieve the burden of sleep disorder in children with ASD by improving access to behavioral support
- Improve total parent stress and child sleep quality by >10%
- In children ages two to 10 years old with ASD and comorbid sleep disorder, does a 12-week clinician-driven, behavioral intervention program compared to pharmacological treatment alone reduce parent stress and improve child sleep behaviors?

MODEL/NURSING THEORY

- University of Iowa's Model of Evidence Based Practice
- Bandura's Self Efficacy Theory

METHODOLOGY AND TOOLS

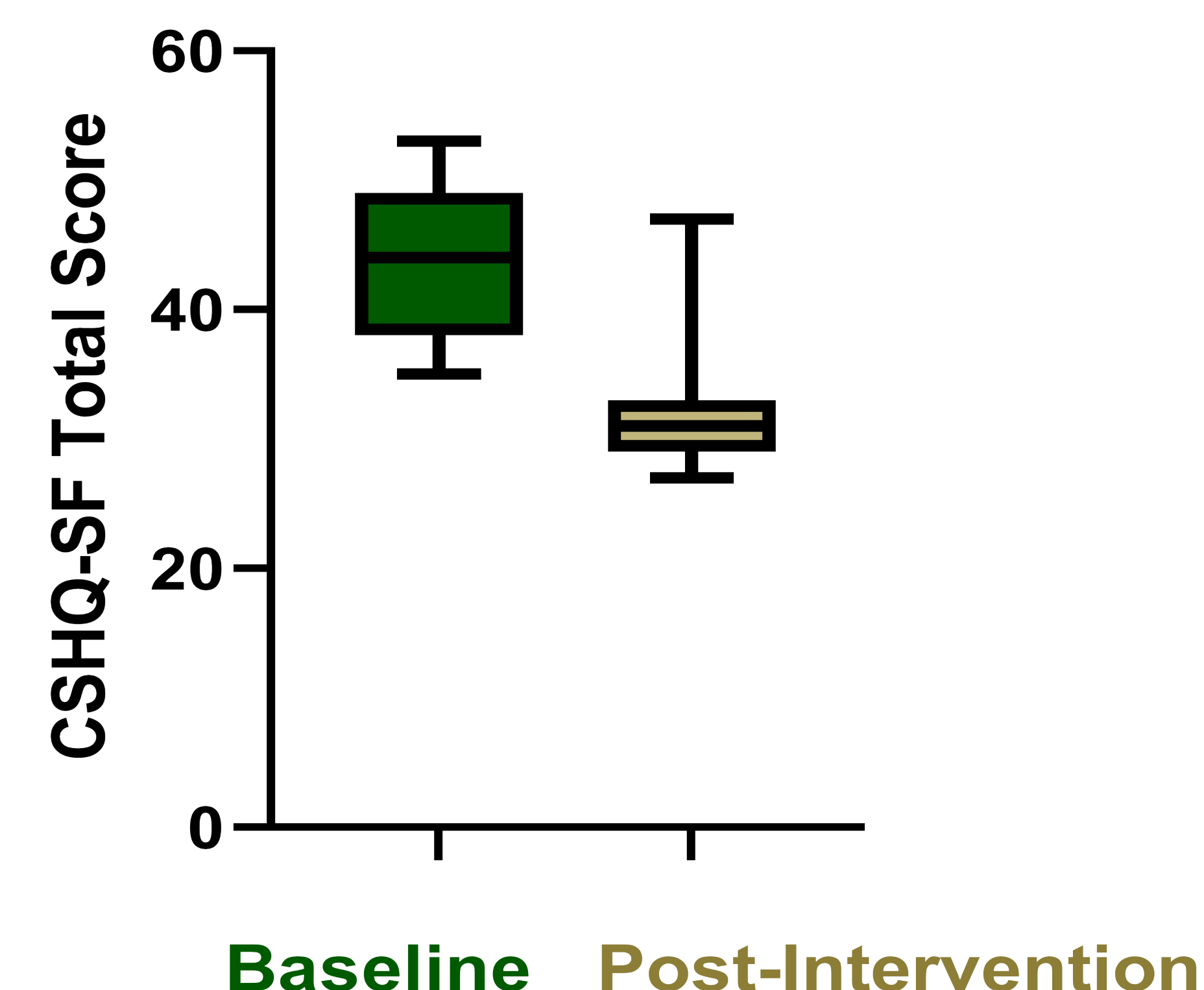
- 15 parents of children with ASD (median age 6 years)
- Sessions conducted remotely via Doxy.me online platform
- Parents received a copy of *ATN/AIR-P Strategies to Improve Sleep in Children with Autism* (Malow & Weiss, 2021) with laminated visual scheduled and bedtime pass
- **Parenting Stress Index Short Form (PSI-SF)**: Domains of Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child combine to form a Total Stress scale
- **Children's Sleep Habits Questionnaire (CSHQ-SF)**: Domains of bedtime resistance, sleep-onset delay, sleep duration, sleep anxiety, night-waking, and daytime sleepiness combine to form total sleep disturbance score

RESULTS

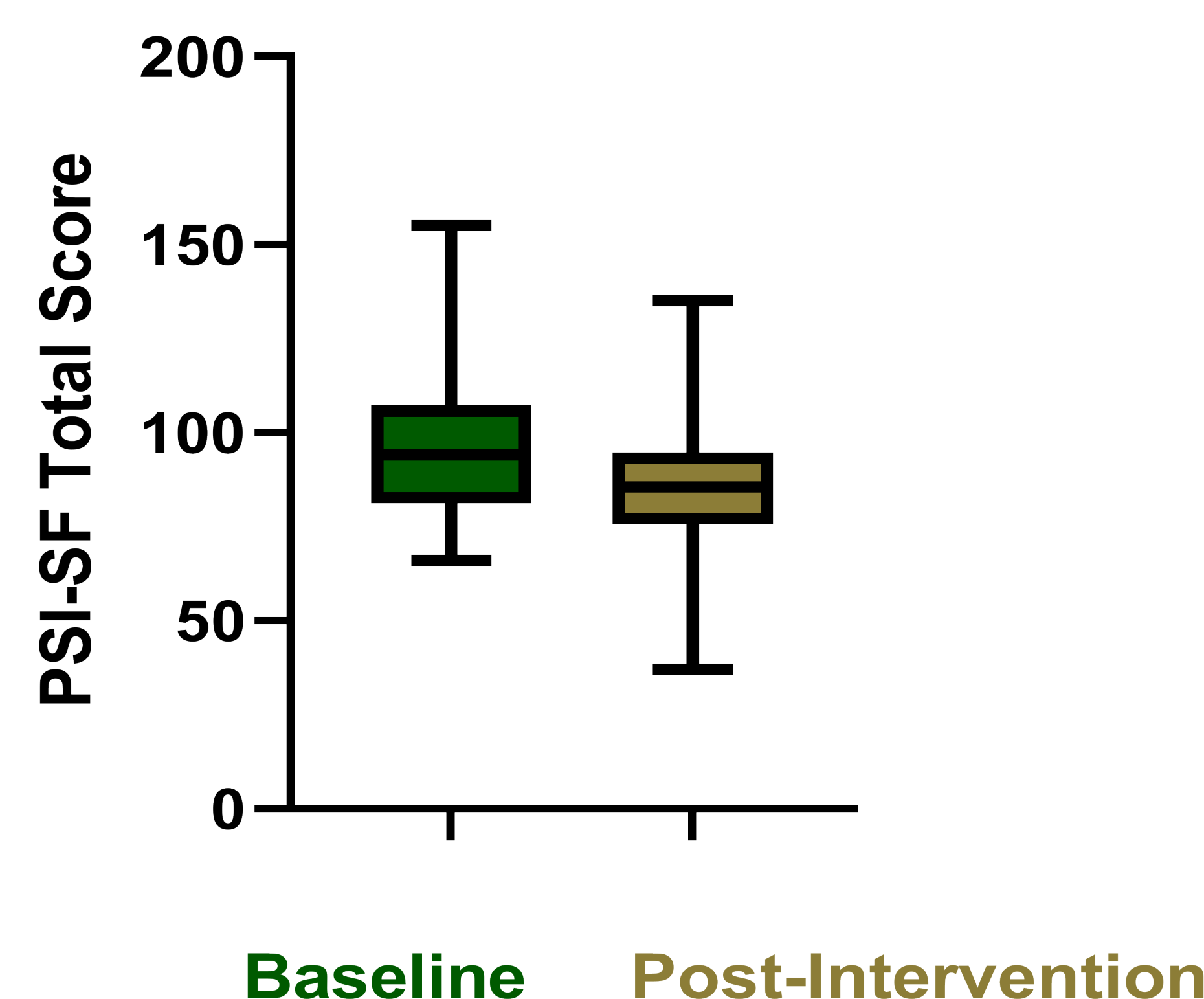
The mean total score on the baseline CSHQ-SF decreased from 44.53 to 32 after the intervention (median of differences -13) ($p < 0.0001$).

Scores >30 on the CSHQ-SF indicate risk for behavioral sleep problems.

Change in Behavioral Sleep Problems



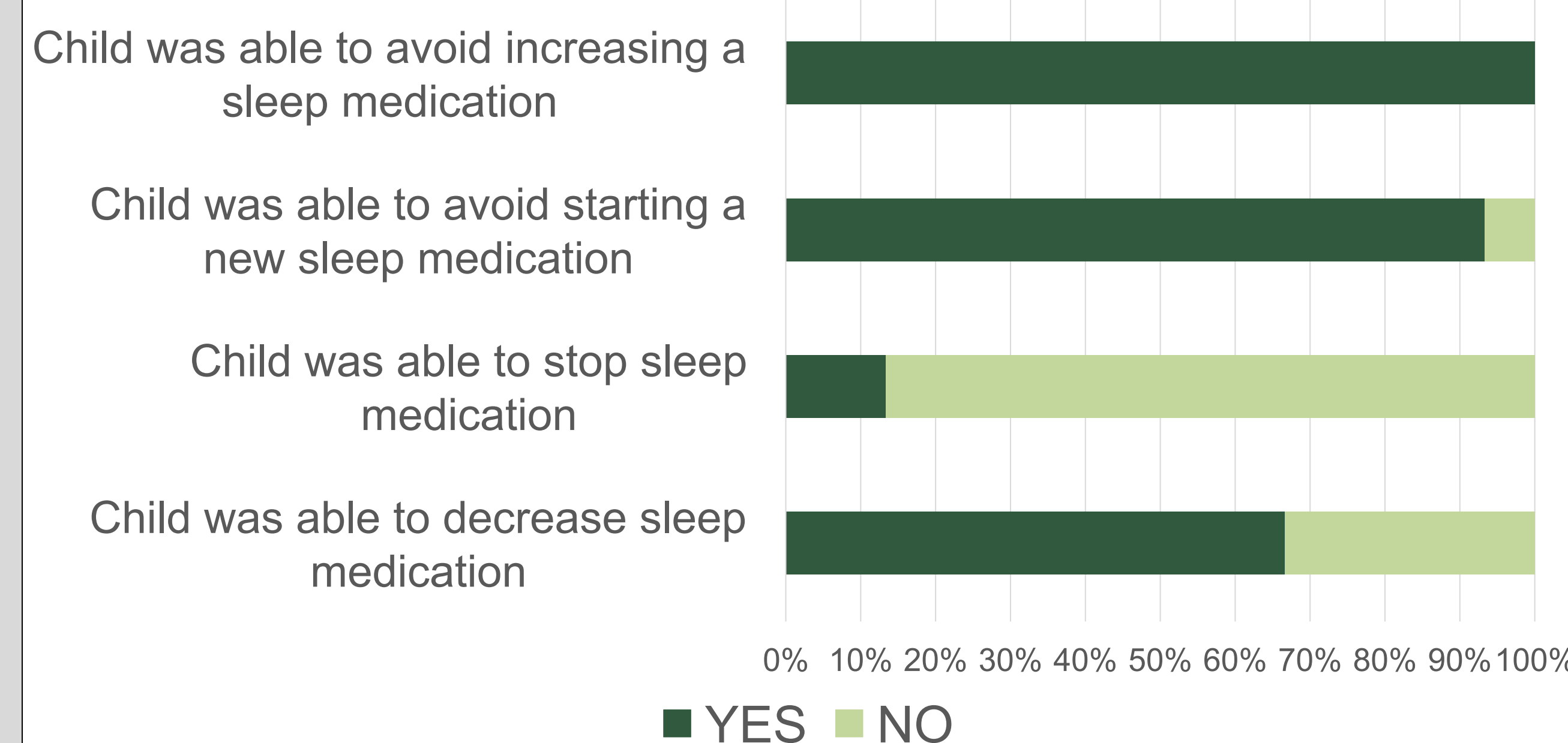
Change in Total Parent Stress



The mean total score on the baseline PSI-SF decreased from 97.14 to 84.07 (median of differences -17, $p = 0.0337$) after the intervention.

Higher raw scores indicate higher levels of stress.

Parent Survey of Program Efficacy



INTERVENTION

- **Session 1:** General information about the nature and function of sleep, sleep requirements, normal versus pathological sleep, and sleep as a learned behavior.
- **Session 2:** Creating an environment for sleep, regular bedtime habits, bedtime routine and visual schedule, daytime behaviors that promote sleep, and independent sleeping through modified extinction and bedtime fading.
- **Session 3:** Identify individual difficulties and methods for replacing maladaptive sleep behaviors.
- **Session 4:** Consolidate treatment strategies, develop methods for coping with ongoing sleep disturbances, and preventing insomnia relapse.

DATA COLLECTION

- Parents completed the PSI-SF and CSHQ-SF at baseline evaluation and program completion.
- Dependent variables (total parent stress and severity of behavioral sleep problems) were collected and compared using a Wilcoxon signed-rank test.

DISCUSSION

- The intervention was effective in improving child sleep problems and overall parent stress as measured with the CSHQ-SF and PSI-SF; this result was statistically significant ($p < 0.05$)
- All patients were able to avoid increasing their baseline dosage of sleep medication, most were able to decrease or avoid starting a sleep medication. Only one patient was able to stop medication completely.
- This program has been developed in such a way as to permit sustainability through the use enduring materials in the form of using a free, downloadable toolkit which is available in both English and Spanish.

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- A novel behavioral intervention that adds to the effect of pharmacological intervention and reduces reliance on prescription drugs represents a safer long-term solution to chronic sleep issues. It promotes self-efficacy and addresses the importance of reducing parent stress.
- The design of this program demonstrates the efficacy and feasibility of using online platforms to deliver behavioral interventions and improve access to care.

REFERENCES



(4) 30-minute parent-directed behavioral counseling sessions resulted in statistically significant improvement in both child sleep disturbances and total parent stress