

Everyday Expressions of Pain and their Relation to Problem Behavior among Children with Autism Spectrum Disorders



Andrea B. Courtemanche, Ph.D. BCBA-D, R. Matthew Reese, Ph.D., & Stephen R. Schroeder, Ph.D.
The University of Kansas Medical Center-Center for Child Health and Development



Background

- Individuals with disabilities are 2.5 times more likely to develop medical conditions that may be associated with pain (van Schroejesstein et al., 2000).
 - Pain is difficult to assess when individuals cannot self-report.
- Populations with anecdotal reports of increased pain thresholds:
 - Individuals with autism spectrum disorders (ASD)
 - Individuals with self-injurious behavior (SIB)

ASD

- Researchers have documented that children with ASD displayed behavioral and physiological signs of pain in response to painful stimuli (Nader et al., 2004; Tordjam et al., 2009).
 - *We know less about everyday expressions of pain among children with ASD.*

SIB

- Studies suggest that adults and children with SIB show signs of pain in response to a variety of stimuli and painful events (Symons et al., 2010; Breau et al. 2003).

- Symons et al. (2009) reported that adults with SIB displayed increased signs of pain during everyday routines compared to adults without SIB.

- *We know less about everyday expressions of pain and their relation to SIB in children.*

Aims

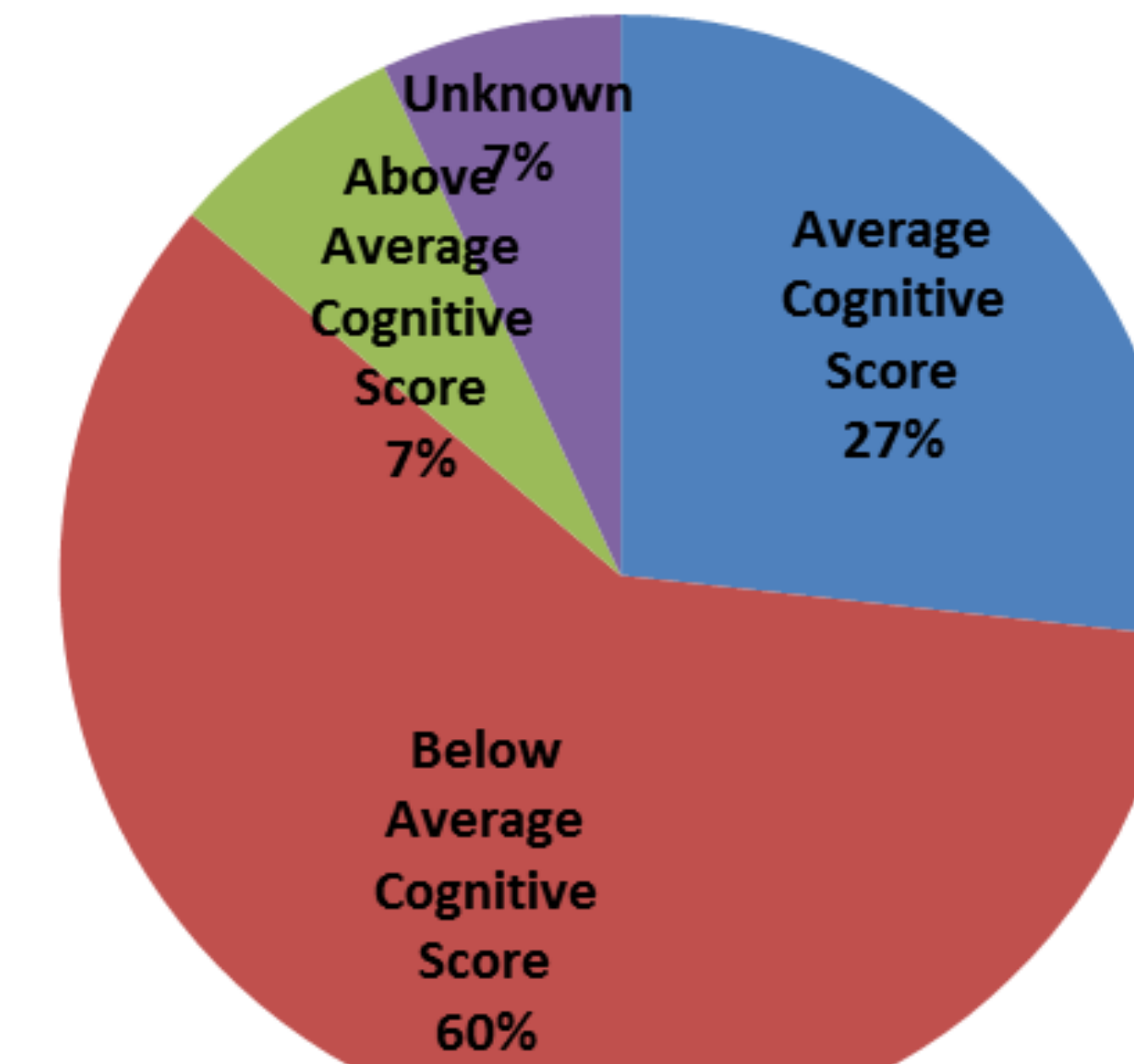
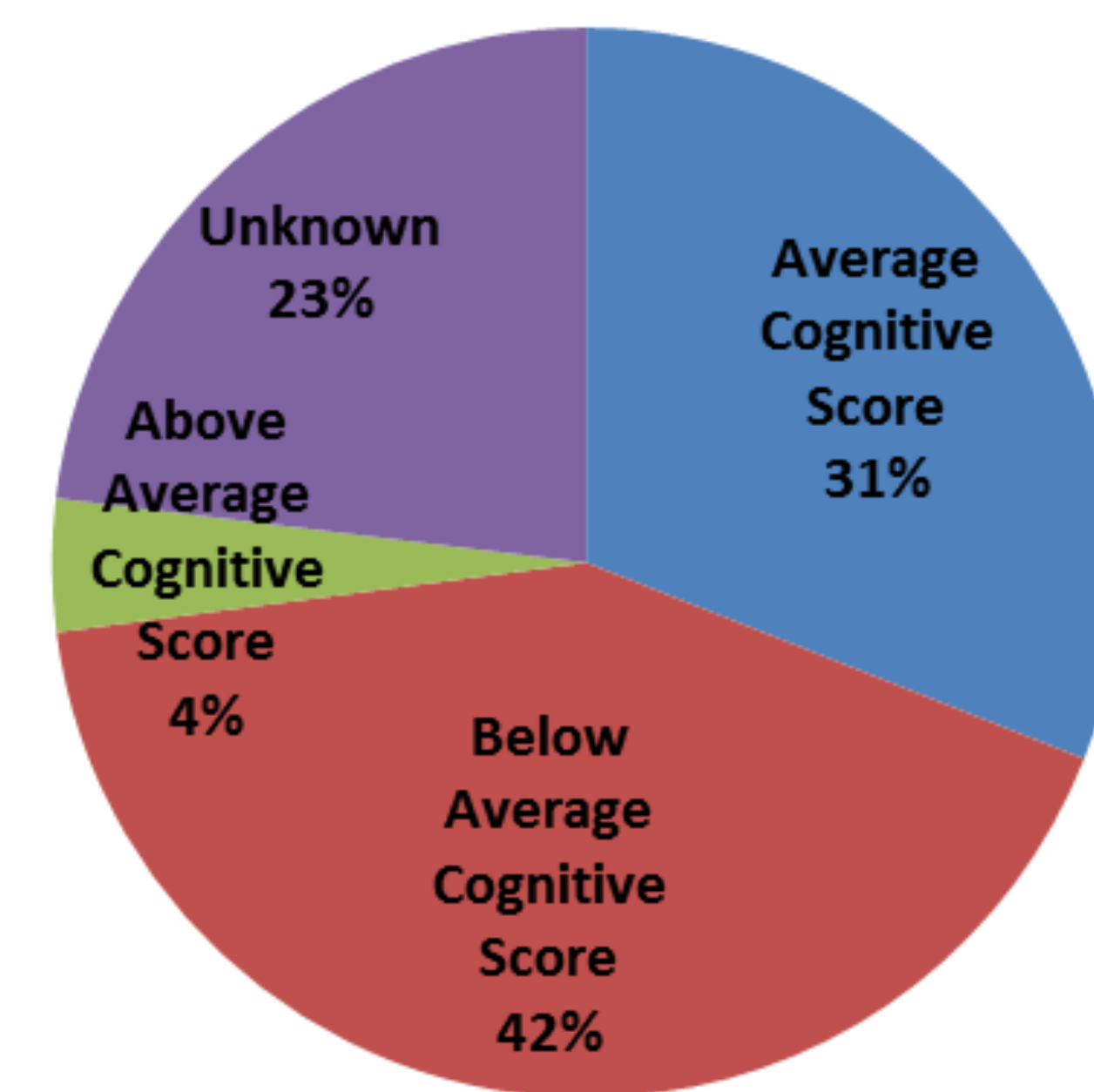
1. To document the frequency of pain-related behaviors displayed by children with ASD compared to other children with developmental delays during everyday routines.
2. To describe the relationship between pain-related behaviors and problem behaviors including:
 - Self-injury, aggression, and stereotypy

Dependent Variables

- Participants (ages 0-6) were recruited from diagnostic evaluations clinics.
- Parents were asked to complete two rating scales:
 - **Non-communicating Children's Pain Checklist-Revised (NCCPC-R)** (Breau et al., 2002)
 - De-identified as pain scale to remove potential bias
 - Parents rated frequency of non-verbal (pain-related) behaviors over the last:
 - 2 hours
 - Week
 - **Behavior Problems Inventory-01 (BPI)** (Rojahn et al., 2001)
 - Parents asked to rate frequency and severity of:
 - Aggressive behavior
 - Self-injurious behavior
 - Stereotypic behavior

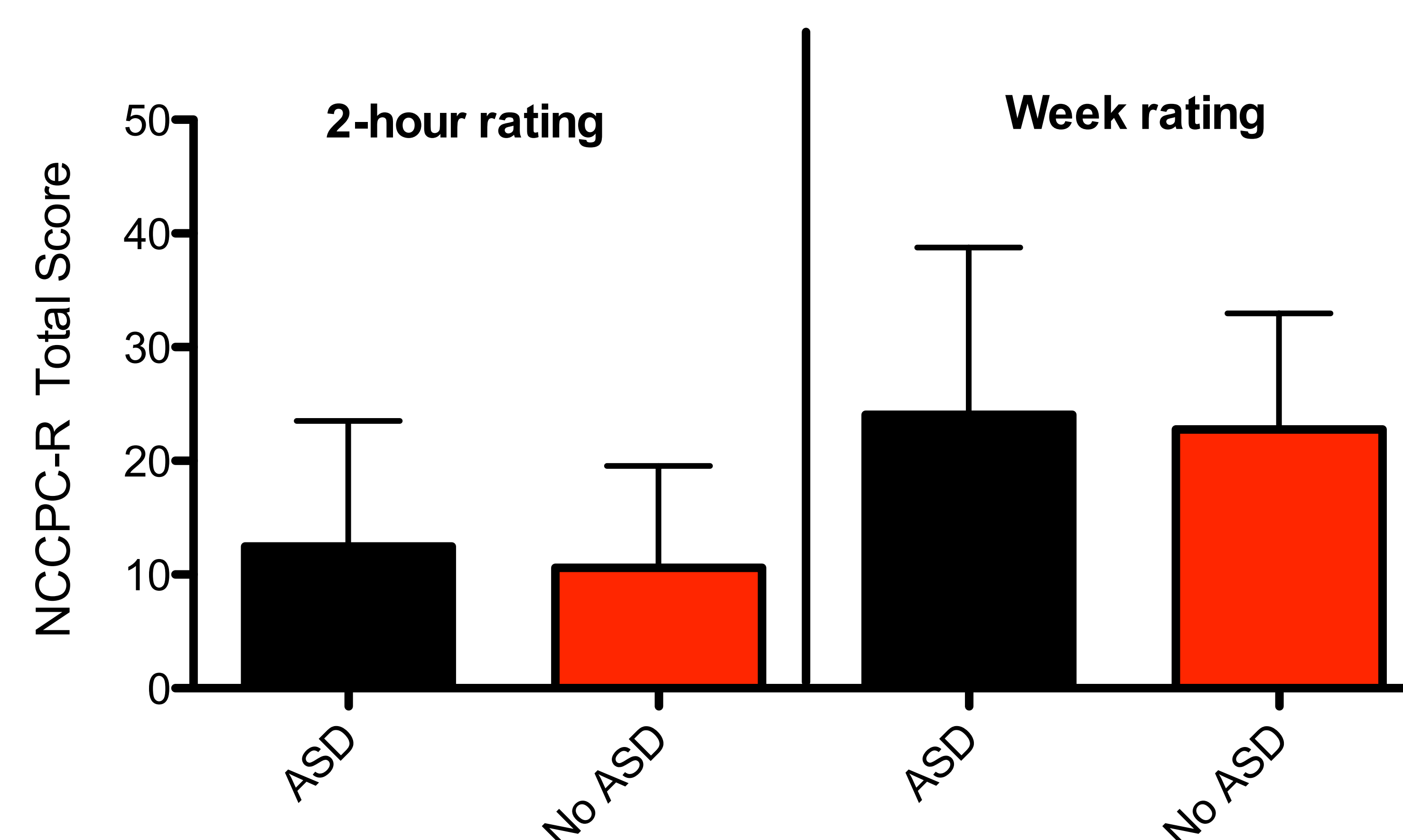
Participants

ASD Group (n=26)	No ASD Group (n=15)
Mean age=3.8 years	Mean age=3.9 years
81% Male	100% Male

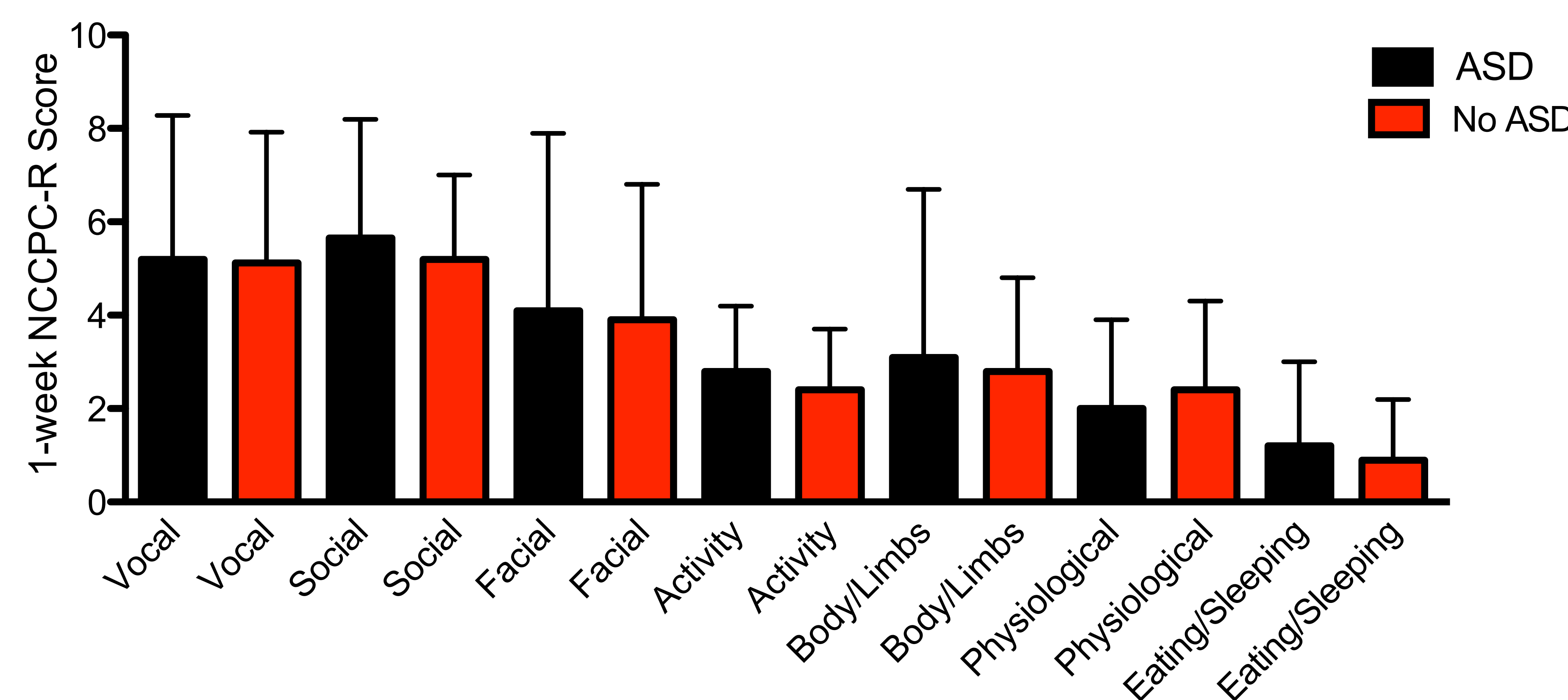


*Groupings determined through a developmental assessment (e.g., Bayley Scales of Infant and Toddler Development) or through a cognitive screener (e.g., K-BIT) conducted by psychologist during diagnostic evaluation.

Results-Aim 1



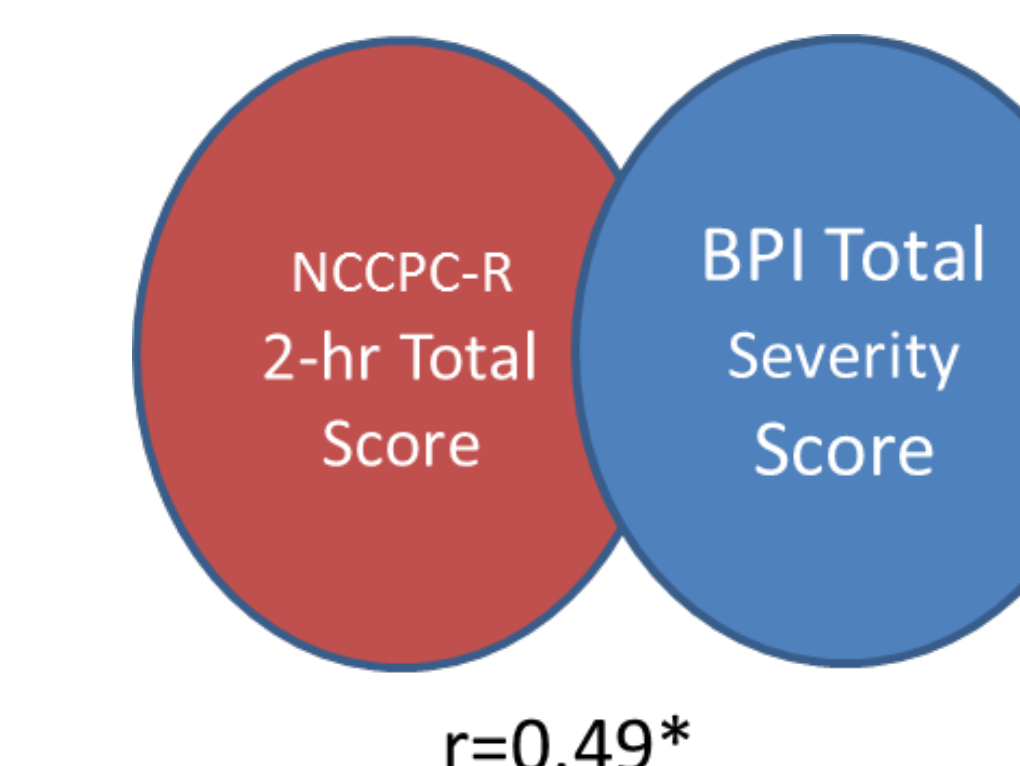
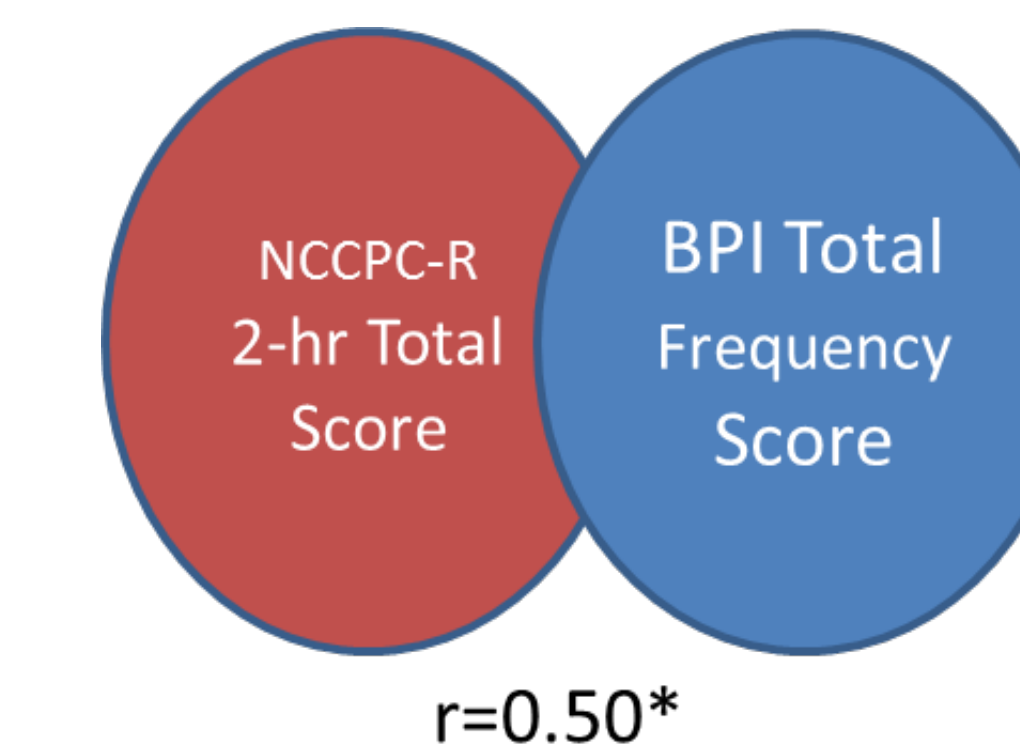
Parental ratings on NCCPC-R across children with and without ASD for the 2-hour and week observation windows.



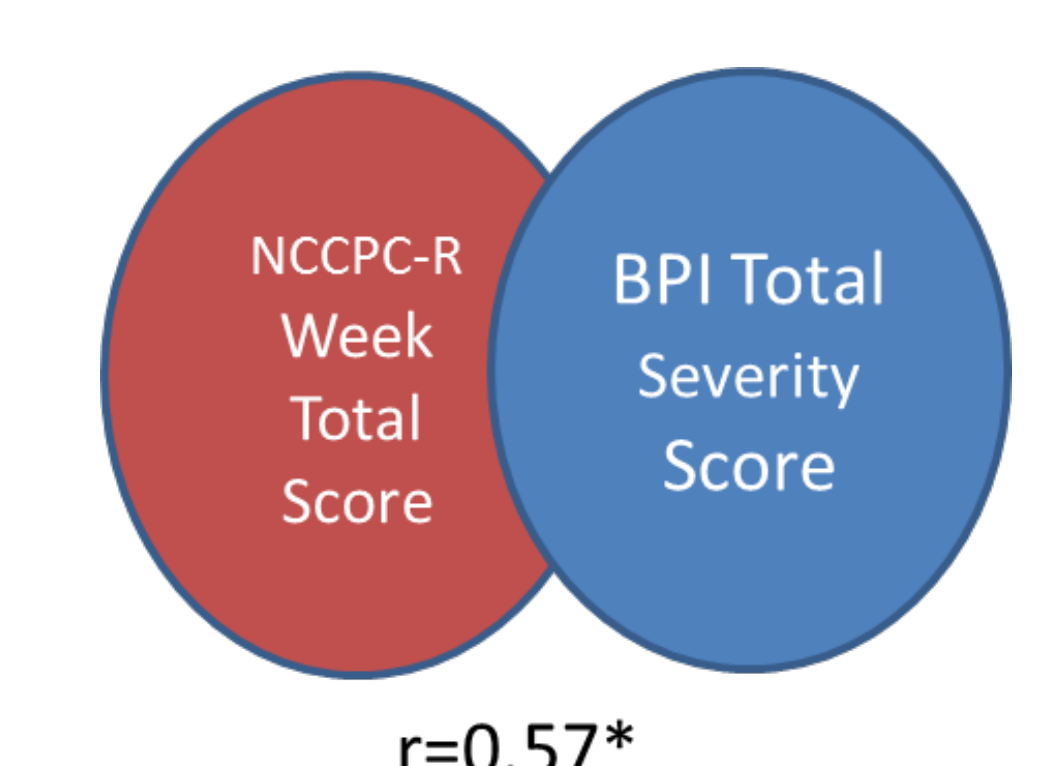
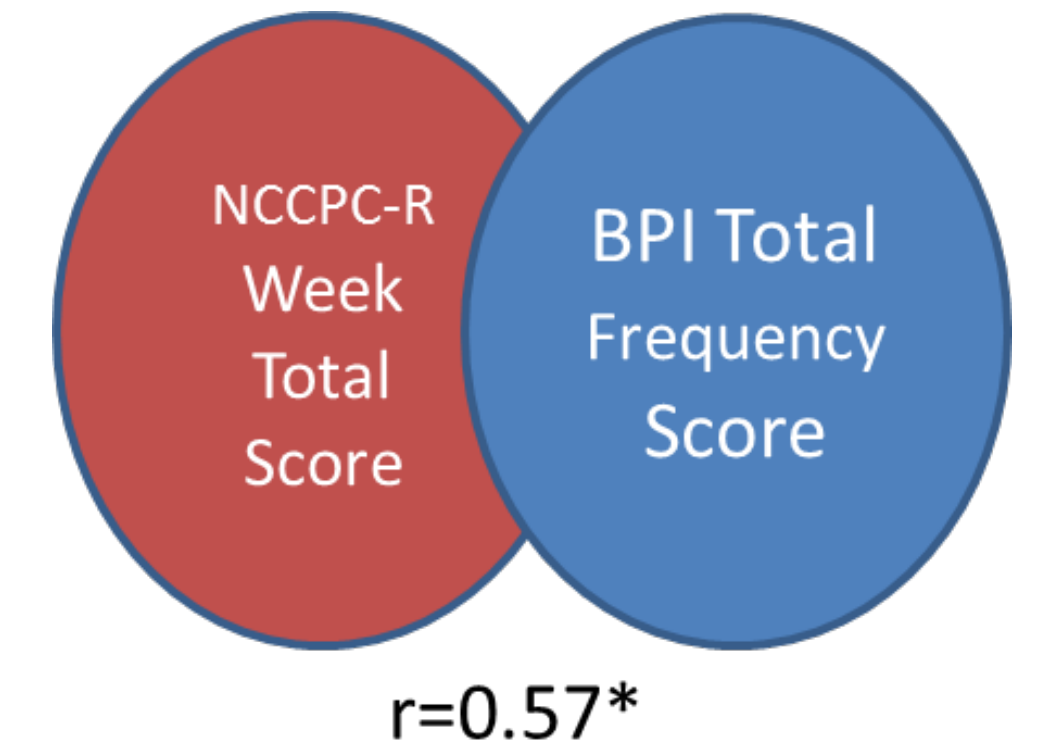
Parental ratings on NCCPC-R categories across children with and without ASD during the 1-week observation window. A similar distribution across categories was found for the 2-hour observation window (data not shown).

Results-Aim 2

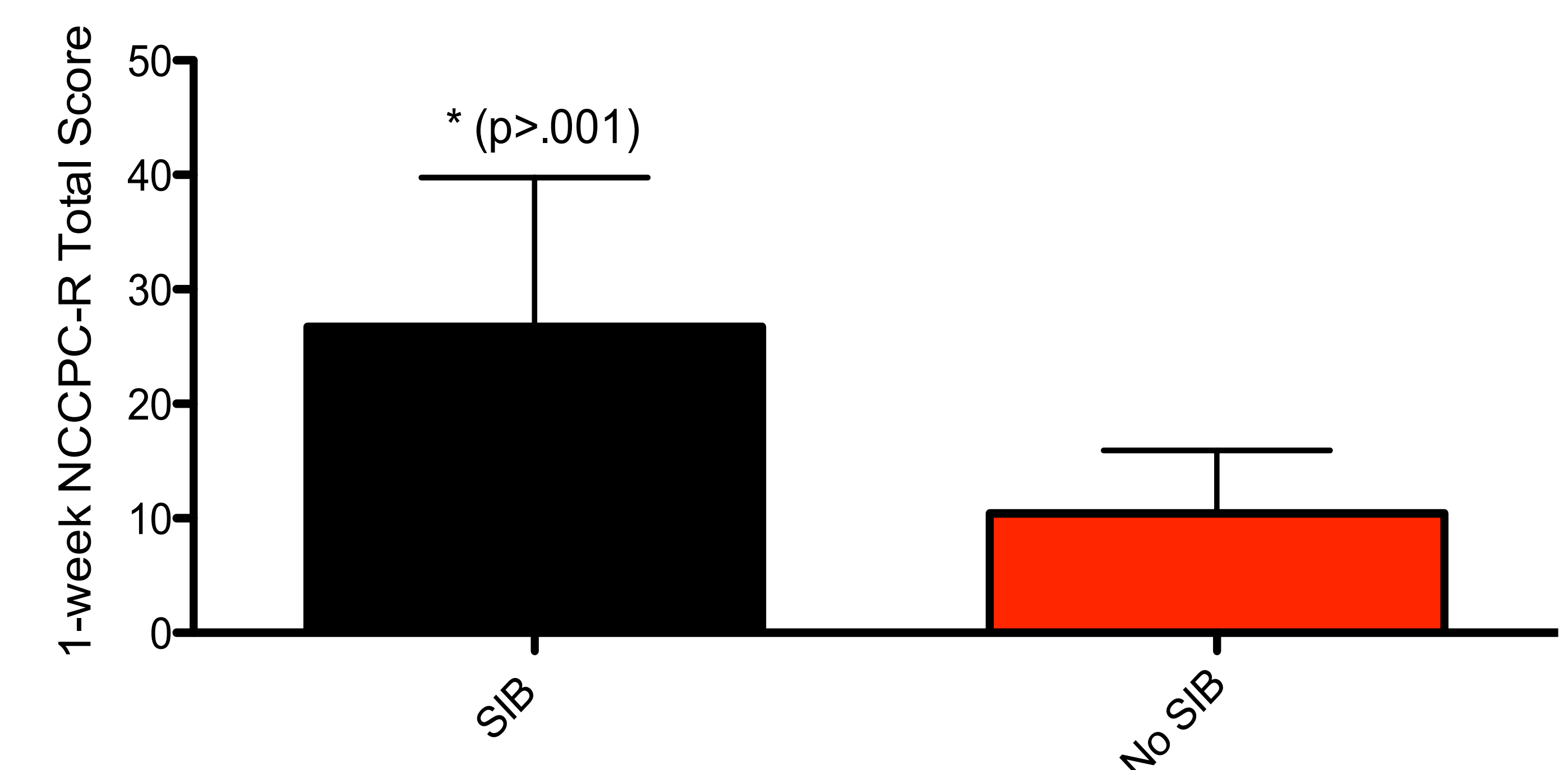
2-Hour Rating



Week Rating



Correlations between total scores on the NCCPC-R and BPI (* $p<0.001$). Significant correlations between NCCPC-R and BPI scores were found for the frequency and severity of aggression, SIB, and stereotypy (data not shown).



Parental ratings on NCCPC-R across children with and without self-injurious behavior during the 1-week observation window.

Discussion

Based on parental ratings,

- Children with ASD had similar expressions of pain during everyday routines compared with children without ASD.
- Increased frequency and severity of problem behaviors was correlated with increased non-verbal expressions of pain across both the 2 hour and 1 week observation.
- Children with SIB showed more signs of pain during everyday routines compared to children without SIB

Future Questions

- How does the severity of ASD symptoms relate to scores on NCCPC-R?
- How does gender, IQ, age, diagnosis relate to NCCPC-R and BPI scores?
- Does the frequency or severity of problem behaviors correlate with the presence of chronic medical conditions?