

A SUMMARY OF A PUBLISHED RESEARCH ARTICLE

## Relationships Among Repetitive Behaviors, Sensory Features, and Executive Functions in High Functioning Autism

By Brian A. Boyd, Matthew McBee, Tia Holtzclaw, Grace T. Baranek, and James W. Bodfish
The University of North Carolina at Chapel Hill

## Key terms:

Repetitive behaviors: Along with social and communication deficits, repetitive behaviors are one of the core clinical symptoms that characterize autism spectrum disorder (ASD). Behaviors may range from lower order (self-injury, stereotypic behaviors) to higher order (compulsions, rituals, restricted interests).

Sensory features: Unlike repetitive behaviors, sensory features are considered secondary symptoms of ASD. These features may present behaviorally through hyporesponsiveness (under-reactivity to environmental stimuli), hyperresponsiveness (over-reactivity), or sensory seeking (craving or fascination with stimuli).

Executive function: An umbrella term for neurological functions that are used to carry out high order cognitive tasks. The abilities

to plan, organize, and self-monitor are examples of executive functions.

The presence of repetitive behaviors in autism has been linked with deficits in executive functioning; however, it is unlikely that executive dysfunction is the primary explanation for these symptoms. Additionally, very little research has been done to determine if a shared mechanism, such as executive functioning, underlies both repetitive behaviors and sensory behaviors.

The purpose of this study was to examine (1) the relationship between sensory features and repetitive behaviors in children with high functioning autism (HFA), (2) whether deficits in executive function are correlated with both repetitive behaviors and sensory features, and (3) the variables that predict the presence of repetitive behaviors in HFA.

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Study participants included 61 children diagnosed with ASD and 64 children who were typically developing. The ASD group included individuals diagnosed with autistic disorder, Asperger's syndrome, pervasive developmental disorder- not otherwise specified, and ASD. To measure repetitive behaviors, the primary caregiver of each participant completed the Repetitive Behavior Scale- Revised (RBS-R), which assesses the presence and frequency of 43 types of repetitive behaviors. Sensory features were assessed using the Sensory Questionnaire (SQ), which measures whether a child presently or ever displayed sensory processing issues. Lastly, the executive functioning of participants was assessed using the Behavior Rating Inventory of Executive Function (BRIEF), a rating scale that evaluates executive functioning deficits in children and young adults. All measures are informant-based and were administered with the primary caregiver acting as informant.

Analysis of the data from the aforementioned measures confirmed the expectation that school -aged children with HFA were reported as having more restricted repetitive behaviors, sensory processing issues, and executive functioning impairments. The researchers found a correlation between sensory processing issues and the presence of repetitive behaviors such as stereotypies and compulsions. Additionally, a correlation was found between sensory processing issues and the total score on the RBS-R. A relationship between executive dysfunction and the sensory features of ASD was not found. Regarding a possible relationship between executive

dysfunction and repetitive behaviors, only one index of the BRIEF was correlated with repetitive behaviors. This suggests that executive dysfunction is not the shared mechanism underlying the relationship between sensory processing issues and repetitive behaviors in high functioning autism.

A few limitations to the study design exist. First, only caregiver report measures were used to assess behaviors. Observational measures would be needed to validate these caregiver reports. Second, this study focused only on high functioning autism. Further studies including the range of functioning levels in autism would need to be done to determine correlations in children with more significant cognitive impairments. Third, the relationship between sensory features and repetitive behaviors was not explored for the typical group, who displayed low frequencies of both behaviors. It may be important to determine whether this relationship exists in other clinical groups who display these types of behaviors (e.g., Fragile-X syndrome).

Brian Boyd, Ph.D., is an Assistant Professor in the Division of Occupational Science at the University of North Carolina at Chapel Hill. He is a co-investigator on the Sensory Experiences Project.

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For more information about The Sensory Experiences
Project please visit our website: http://
www.med.unc.edu/sep