Title: Relations between Sensory Responsiveness and Broader Symptomatology in Children with and without Autism

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Introduction: Autism spectrum disorder (ASD) has historically been characterized by deficits in social communication and by the presence of restricted and repetitive patterns of behavior, interests, and activities (RRBs). Individuals with ASD may also present with co-morbid language and intellectual impairments. The most recent diagnostic criteria for ASD now additionally recognize differences in patterns of responding to sensory stimuli (i.e., sensory responsiveness) as a core characteristic of ASD. Clinically, these differences in sensory responsiveness can be characterized as hyperresponsiveness (i.e., over-responding to sensory stimuli), hyporesponsiveness (i.e., under-responding to sensory stimuli), and sensory seeking (i.e., craving of certain sensory stimuli). It has been proposed that differences in sensory responsiveness, particularly early in life, may produce cascading effects on broader development, potentially causing or contributing to the constellation of deficits that have conventionally considered the core characteristics of ASD. Previous research indicates that children with ASD present with significantly more of these symptoms compared to their typically developing (TD) peers, and that these patterns of sensory responsiveness are associated with concurrent ASD and related symptoms in early childhood (e.g., in children ≤ 8 years old). The present study examines sensory responsiveness in school-aged children and adolescents with ASD. Specifically, we explored (a) whether between-group differences are present in sensory responsiveness in ASD and well-matched TD peers, (b) whether there are associations between patterns of sensory responsiveness and broader ASD and related symptoms, and (c) whether those associations are moderated by group.

Methods: Preliminary analyses were conducted on 26 older children and adolescents with ASD (aged 8;0-21;11) and 26 TD controls matched on sex and chronological age. The measures collected and used in statistical analyses include parent report measures of sensory responsiveness (i.e., the Sensory Experiences Questionnaire [SEQ] and Sensory Profile [SP]), core ASD symptomatology (i.e., the Social Communication Scale [SCQ] and Social Responsiveness Scale [SRS]), adaptive functioning (i.e., the Vineland Adaptive Behavior Scales [VABS]), social emotional wellbeing (i.e., the Behavior Assessment System for Children [BASC]), and a battery of norm-referenced and standardized language assessments (i.e., the Clinical Evaluation of Language Fundamentals [CELF-4] and Receptive/Expressive One Word Picture Vocabulary Tests [ROWPVT/EOWPVT]).

Results: Preliminary results indicated that groups significantly differed in all three patterns of sensory responsiveness, with large effect sizes (d’s = 3.4, 2.7, and 1.7 for hyporesponsiveness, hyperresponsiveness, and sensory seeking, respectively). Additionally, patterns of sensory responsiveness were correlated with several metrics derived from measures of other core and related symptoms of ASD. For example, across groups increased sensory seeking symptoms were associated with greater language impairments on the CELF (r = 0.36), increased social communication difficulties on the SCQ (r = 0.61) and SRS (r = 0.63), increased restricted and repetitive behaviors on the SRS (r = 0.68), increased incidence of anxious behaviors (r = 0.42) and other internalizing behavior problems (r = 0.48), and more severe communication deficits on the VABS (r = 0.45). These aforementioned metrics were also highly correlated with increased hyporesponsiveness (r’s = 0.37 – 0.90) and hyperresponsiveness (r’s = 0.47 – 0.80). None of the associations were moderated by group.

Discussion: This study extends prior work to show that differences in sensory responsiveness that are linked with core and related ASD symptomatology persist in older children and adolescents on the autism spectrum. Preliminary results indicate that associations between sensory responsiveness and social communication and language symptoms are particularly robust. Final results, along with limitations and implications for theory and clinical practice, will be presented at the Gatlinburg Conference.
**References/Citations:**