

Relationship Among Attention, Sensory Processing, and Social Responsiveness Among Adults With and Without Autism Spectrum Disorder

Olivia J. Green¹, Jewel E. Crasta, PhD, OTR/L¹

¹The Ohio State University, Columbus, Ohio, United States

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Primary Author and Speaker: Olivia J. Green, gre329@osumc.edu

PURPOSE: Attention deficits and sensory symptoms are common features of autism spectrum disorder (ASD) and are often associated with limited social functioning (Baranek et al., 2018). While research has shown that individuals with ASD demonstrate deficits in attention, sensory and social areas, the dynamic relationship between these variables needs to be further investigated (Kojovic et al., 2019). The purpose of this study was to evaluate the impact of attention on social responsiveness by using sensory processing as a mediator, in young adults with and without autism spectrum disorder (ASD).

DESIGN: This study employed a cross-sectional, quantitative design.

METHOD: A total of 48 participants were recruited via convenience sampling. Twenty-four participants had a diagnosis of autism (M = 23.3 years, SD = 3.8) and 24 participants were age-matched, neurotypical (NT) peers (M = 24 years, SD = 3.5). To assess attention, participants were administered the Test of Everyday Attention (TEA). To assess sensory processing and social responsiveness, participants completed the self-report forms, Adolescence and Adults Sensory Profile (AASP) and the Social Responsiveness Scale-2 (SRS-2) respectively. Mediation analyses were completed to evaluate how sensory processing mediated the relationship between attention and social responsiveness. Mediation analyses examine if a relationship between two variables are explained by a third variable, and full mediation implies that the mediator fully explains the association between these two variables (Hayes, 2017). All four AASP quadrants were used as mediators to evaluate how different areas of sensory processing impact the relationship between attention (TEA total score) and social responsiveness (SRS-2 total score). These analyses were also completed within each group to compare the relationship in adults with and without ASD.

RESULTS: Across all participants, mediation analyses demonstrated that the low registration and sensation seeking AASP quadrants were consistent with full mediation and accounted for 70% and 40% of the variance in the relationship between attention and social responsiveness respectively. Mediation analyses with the other quadrants were not significant. For both mediation models, the mediational hypothesis was supported and attention was no longer a significant predictor of social responsiveness after these mediators were controlled for. Within group analyses indicated that, for the low registration quadrant, the relationship between attention and sensory processing trended towards significance in the ASD group ($B = -.24$, $SE = .12$, $p = .07$), but this relationship was not significant in the NT group ($B = -.06$, $SE = .13$, $p = .63$). Low registration was a significant predictor of social responsiveness for both the ASD and NT groups ($B = 3.2$, $SE = .58$, $p < .0001$, and $B = 2.6$, $SE = .38$, $p < .0001$ respectively). Models with other quadrants were not significant for within group analyses.

CONCLUSION: Low registration and sensation-seeking quadrants on the AASP fully mediated the relationship between attention and social responsiveness. The within-group analyses suggest that the pattern of relationship between attention, sensory processing, and social responsiveness was likely driven by the ASD group.

IMPACT STATEMENT: The pattern of associations observed between attention, sensory processing, and social responsiveness suggests that adults with greater attention issues have greater sensory and social impairments. Understanding the relationships between these variables will guide therapists in developing effective interventions to target the foundational attention and sensory skills to ultimately improve social functioning in adults with ASD.

References

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