Title: The Impact of Autism Symptoms on Adaptive Functioning in Preschool Children with Autism Spectrum Disorder

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Introduction: People with autism spectrum disorder (ASD) have clear differences in social-communication and behavior. Further, ASD is associated with deficits in adaptive functioning, even when cognitive skills are intact (e.g., Liss et al., 2001; Volkmar et al., 1987). Adaptive functioning encompasses skills that are involved in coping with the demands of the everyday environment. Deficits in adaptive functioning may be, in part, due to the symptoms of ASD such as the presence of restricted, rigid, and repetitive behaviors (RRBs) and impairments in social communication; however, adaptive behavior is a broader construct than specific behavioral excesses or deficits. Recent research focused on the relations between ASD severity and adaptive functioning has not yet investigated the extent to which behaviors related to ASD symptomology are associated with overall adaptive skills. The purpose of this study was to examine associations between specific ASD symptoms (i.e., social communication, RRBs) and adaptive functioning in preschool children with ASD.

Method: Data were obtained from the first wave of the Oregon Early Autism Project, a longitudinal study of preschool children with autism spectrum disorder and their families (N = 60; child M age = 4.5 years). Family demographics (child age, sex, race, diagnosis, income, caregiver education), child temperament (Temperament and Atypical Behavior Scale [TABS]), child adaptive behavior (Vineland-II), and child autism symptom severity (Childhood Autism Rating Scale-2 [CARS-2]) were collected via home visit and parent interview. To measure specific symptoms of ASD, two composites (social communication and RRB) were created using raw scores from three selected items on the CARS-2 (Lobban-Shymko, Im-Bolter, & Freeman, 2017). Social communication (α = .76) and RRB (α = .71) composite scores ranged from 1 to 12 with higher scores indicating more pronounced ASD symptoms. Bivariate correlations, chi-square analysis, t-tests, and two hierarchical linear regression analyses were used in this study.

Result: Average child adaptive behavior scores fell within the moderately low range (M = 71.88, SD = 10.70). Overall, children displayed severe symptoms of ASD (M = 39.2, SD = 6.51). As expected, children had deficits in social communication (M = 7.08, SD = 1.89) and RRBs (M = 8.42, SD = 1.68). There was a significant negative association between adaptive behavior and ASD symptom severity (r = -.51, p < .01), social communication (r = -.54, p < .01) and RRBs (r = -.26, p < .05). A hierarchical linear regression was used to determine if ASD severity (CARS-2 total score) predicted unique variance on child adaptive functioning (Vineland-II composite) after accounting for child sex, age, race, and temperament. The overall model was significant, and accounted for 40% of the variance on adaptive functioning. Autism severity explained 28% of this variance after accounting for child demographics and temperament (β = -.63; p < .01). A second hierarchical linear regression was used to determine if social communication specifically predicted adaptive functioning after accounting for child sex, age, race, and temperament. The second model was significant and accounted for 53% of the variance on adaptive functioning. Social communication symptoms explained 44% of the variance after accounting for other variables in the model including child demographics, temperament, and RRBs (β = -.70; p < .001). Interestingly, RRBs were not significant in predicting adaptive functioning. Future analyses will investigate the role of social communication symptoms and RRB symptoms on specific domains of adaptive functioning (e.g., Communication, Daily Living Skills).

Discussion: Findings from this investigation are consistent with previous research indicating ASD severity as a factor implicating adaptive functioning. The severity of social communication deficits (central to the diagnosis of ASD) significantly predicted overall adaptive functioning; however, RRBs did not predict adaptive functioning. Although these results may appear intuitive, children may have intact language, including vocabulary, syntax, grammar, and still experience significant social communication differences. Implications of these findings highlight the importance of early intervention for social communication deficits in children with ASD to potentially increase later adaptive behavior development. Future research could utilize an experimental approach to investigate the effects of early intervention for ameliorating core symptoms of ASD, such as social communication deficits, on later adaptive behavior development.
References/Citations:


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