Title: The Relationship of Rigid, Repetitive, and Self-Injurious Behaviors in Autism Diagnosis for Young Children

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Introduction: Rigid and repetitive behaviors (RRBs) and self-injurious behaviors (SIBs) are common in people with developmental disabilities (DD), including autism spectrum disorders (ASD) (e.g. Soke et al., 2016). The extent to which RRBs and SIBs are differentially associated with specific disorders, such as ASD versus other DDs, is relatively understudied in early childhood. Understanding prevalence, topography, and evolution of RRBs ad SIBs in younger children can create opportunity for early intervention to prevent the development of additional topographies of these behaviors (Barnard-Brak et al., 2015). The purpose of this study was to identify the associations between RRB/SIBs and child characteristic (sex, ASD diagnosis), child adaptive functioning and problem behavior, and timing of ASD diagnosis.

Method: This study used data from the Oregon Parent Project (R01 HD059838; McIntyre, PI) a longitudinal study of 180 preschool children with DD and their families. Family demographics (child age, sex, diagnosis, parent education, income), child maladaptive behavior (CBCL), and adaptive behavior (Vineland-II) were collected when children were 3 years old (T1) and 5 years old (T2) via parent-report. A 22-item RRB/SIB scale was created using selected items from the CBCL (T1 $\alpha = .82$; T2 $\alpha = .87$). We used t-tests, chi-square analyses, correlations, and hierarchical and logistical regression analyses for this study.

Results: At T1, 24 children were diagnosed with ASD and 156 children were diagnosed with other DDs. At T2, 33 children were diagnosed with ASD and 116 children were diagnosed with other DDs. Group differences (ASD vs. DD) were investigated on maladaptive behavior, RRB/SIBs, adaptive behavior, and key demographics. Children diagnosed with ASD had significantly lower adaptive functioning (Vineland-II ASD = 74.41; DD = 85.41; $t = 4.36; p = .000$), higher problem behavior, (CBCL ASD = 62.48; DD = 55.75; $t = -3.00; p = .004$) and more RRB/SIBs (ASD = 13.94; DD = 9.96; $t = -3.18; p = .002$) than children with other DDs. In the overall sample, RRB/SIBs were fairly common, with a mean score on the RRB/SIB composite at T1 of 11.57 ($SD = 6.74$) and mean score at T2 of 10.84 ($SD = 7.03$). Hierarchical linear regression was used to determine if ASD diagnosis predicted unique variance on RRB/SIBs after accounting for child sex and adaptive functioning. The overall model was significant accounting for 14% of the variance on RRB/SIBs; however, ASD diagnosis did not significantly predict RRB/SIBs ($\beta = .154; p = .085$) after accounting for child sex and adaptive functioning. Future analyses will investigate the role of RRB/SIBs in predicting the change in diagnosis from T1 to T5 and the timing of ASD diagnosis.

Discussion: Although RRB/SIBs were somewhat common in this sample of young children with heterogeneous developmental delay, children with ASD experienced more of these behaviors. Data from this sample suggest that on average, RRB/SIBs may decline in children with DD over the two-year period from 3 to 5 years old; however, in children with ASD, we saw an increase in average number of RRB/SIB symptoms. Further research is recommended to determine sensitivity and specificity of RRB/SIBs in early detection of ASD and in the implementation of prevention strategies to decrease the likelihood of RRBs and SIBs becoming controlled by environmental antecedents and consequences and emerging into operant responses in young children with disabilities. Continued investigation is needed to determine other factors associated with early detection and treatment for RRBs and SIBs in young children with developmental disabilities beyond this sample.

References/Citations: