Title: Growth Mixture Models of Adaptive Behavior in Adolescents with Autism Spectrum Disorder

Authors: Brianne Tomaszewski¹, Leann Smith DaWalt², & Samuel Odom¹

¹University of North Carolina at Chapel Hill Frank Porter Graham Child Development Institute, ²University of Wisconsin-Madison Waisman Center

Introduction: Extant research on adaptive behavior in adolescents and young adults with Autism Spectrum Disorder (ASD) suggests adaptive behavior deficits regardless of cognitive abilities (Duncan & Bishop, 2015). Adaptive behavior is associated with employment and quality of life during adulthood (Bishop-Fitzpatrick et al., 2016; Taylor & Mailick, 2014); yet there are few comprehensive studies with diverse and large samples characterizing the development of adaptive behavior. Identifying subgroups of individuals with ASD in large samples allows for the potential to develop targeted interventions for individuals across the spectrum. In the current study, we present data from a large multi-site project characterizing high school students with ASD. The current study examined developmental trajectories in adaptive behavior as reported by teachers and the impact of school program quality on these trajectories.

Method: Participants included 244 adolescents and young adults with ASD who were assessed at up to four time points across two and a half years of high school (Mean chronological age at enrollment in the study = 16.4 years SD = 1.50 years). Nonverbal IQ was assessed using the Leiter International Performance Scale- 3rd edition. Teachers completed the Vineland Adaptive Behavior Scales-2nd edition as the measure of adaptive behavior and the Social Responsiveness Scale-2nd edition as a measure of autism severity. Parents completed the Social Communication Questionnaire and provided demographic information. School quality was assessed using the Autism Program Environment Rating Scale (APERS; Odom et al., 2018).

Two-level growth mixture modeling was used to identify distinct groups of individuals with ASD who had similar growth trajectories in communication, daily living skills, and socialization domains of adaptive behavior. Logistic regressions were performed to determine the extent to which demographic variables (age, sex, race, maternal education), phenotypic characteristics (IQ, autism severity), and school factors (location of the school, school quality) predicted group membership.

Result: Two distinct groups were identified for each domain of adaptive behavior. The first group had moderately low adaptive behavior scores and demonstrated growth of adaptive behavior over time and the second group had low adaptive behavior scores and did not demonstrate change over time. Adolescents within the moderately low adaptive behavior group had younger ages at enrollment in the study, higher IQ, and lower autism symptom severity. Logistic regressions were performed, and a domain of school quality, Independence, predicted the likelihood of being in the moderately low group above and beyond parent-reported autism symptoms.

Discussion: This study contributes to the literature on adaptive behavior in high school students with ASD in the school context and the impact of school quality on adaptive behavior. Students demonstrated heterogeneity of adaptive behavior over time. Higher Independence ratings of school quality were associated with membership in the moderately low and improving communication and daily living skills classes. The Independence domain of the APERS examines support and strategies to support student’s self-advocacy, independence in routines and activities, self-management, and planning (Odom et al., 2018). These strategies may play a role in improving adaptive behavior outcomes during the high school years.

References/Citations: