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

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Introduction

Extant research on adaptive behavior in adolescents and young adults with Autism Spectrum Disorder (ASD) suggests adaptive behavior deficits across the full range 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 from a teachers perspective in high school students with ASD. Growth mixture modeling is a statistical approach that identifies subgroups within a sample rather than characterizing average change of the entire sample. Identifying subgroups of individuals with ASD allows for the potential to develop targeted interventions for subgroups of individuals with differential patterns of development.

Research Objectives

1. Identify groups of individuals with ASD who have similar developmental trajectories during high school on the adaptive behavior domains of communication, daily living skills, and socialization as reported by teachers using growth mixture modeling.
2. Test for group differences in demographic variables (age, biological sex, ethnicity, maternal education), phenotypic characteristics (IQ, autism severity), and school factors (location of school, school quality).
3. Examine the extent to which school quality predicted group membership.

Results

Participants were drawn from the control group of a randomized controlled trial of a comprehensive treatment model for high school students with ASD, the Center on Secondary Education for Students with Autism Spectrum Disorder (CSESA, N=244). Participants were receiving services as usual in 30 high schools across central North Carolina, central and northern Wisconsin, and southern California.

Adolescents and young adults with ASD were assessed at up to four time points across two and a half years of high school. Measures included:
   - Nonverbal IQ
   - Letter-J
   - Teacher reported
     - Vineland Adaptive Behavior Scales-2nd edition Teacher Rating Form (VABS-II)
     - Social Responsiveness Scale-2nd edition (SRS-2)
   - Parent reported
     - Demographic information
     - Social Communication Questionnaire (SCQ)
   - School quality
     - Autism Program Environment Rating Scale (APERS; Odom et al., 2018)

Two distinct groups were identified for each domain of adaptive behavior: 
- Class 1: Moderately Low Adaptive Behavior + Growth, and
- Class 2: Low Adaptive Behavior + No Growth.

Conclusions

This study contributes to the literature on adaptive behavior in high school students with ASD in the school context. 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. Support and strategies to support student’s self-advocacy, independence in routines and activities, self-management, and planning may play a role in improving adaptive behavior outcomes during the high school years.

References


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