Title: A Parallel Process Model of ASD Symptom Severity and Internalizing Mental Health Problems in Autistic Youth

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Introduction: Internalizing mental health problems (i.e., anxiety and depression) are common comorbidities in children and adolescents with autism spectrum disorder (ASD). There has been growing interest in the field to better understand the overlapping and distinct developmental course of ASD symptoms and internalizing mental health symptoms (Bitsika, Sharpley, Andronicos, & Agnew, 2016; Gotham et al., 2015). There appears to be consensus that ASD and depressive and anxiety symptoms are related but independent conditions (Bitsika et al., 2016). To date, the majority of studies examining the occurrence of internalizing mental health symptoms in children and adolescents with ASD have used cross-sectional approaches. The current longitudinal study builds on previous cross-sectional studies by examining the stability, growth, and continuity of internalizing mental health problems concurrently with ASD symptoms in a sample of 187 individuals with ASD (ages 5 to 12) using a parallel process latent growth curve model.

Method: The present study is based on four time points of data collection, spaced 12 months apart (range 12.0 to 15.2 months). Of the families enrolled at Time 1 of the study, 84% of the target children with ASD were white, non-Hispanic, 86% were male, 34.6% had ID, and their average age was 7.90 years (SD = 2.3). The average age of mothers in this study was 38.7 years (SD= 5.6), and 44% had a college degree. Child internalizing mental health problems were assessed through mother report on the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). Severity of the child’s ASD symptoms was assessed via the Social Responsiveness Scale (SRS-2; Constantino & Gruber, 2012). We used the Total Internalizing Problem T-score and SRS Total score collected across the four time points to estimate latent growth and slope factors.

Results: For the present study, a parallel process latent growth curve model (LGM) using MPlus software was run to examine the co-development of internalizing mental health problems in relation to ASD symptoms across four distinct time points (spanning 12 months). We first examined independent LGMs for ASD symptoms and internalizing mental health problems from Time 1 to Time 4 separately, and then concurrently controlling for the presence of intellectual disability (ID). Child ID status was a significant predictor of initial intercept for ASD symptoms (0.28; SE= 3.76, p < .01), but not for internalizing mental health problems. Child ID status did not significantly predict rate of change in either domain. The full model with child ID status as a single predictor had excellent fit: CFI= 1.00, TLI= 0.99, RMSEA= 0.03 (C.I.: 0.00-0.07), Χ²(22)= 24.86, p = 0.30, SRMR= 0.05. In this final model, the average score at Time 1 for ASD symptoms intercept was 75.50 (p < .01), this score significantly decreased (p < .01), on average by .99 (the Slope) over the subsequent 2 years. With respect to children’s internalizing mental health problems, the score at Time 1 was 62.57 (p= .00), with a nonsignificant decrease of .28 over the course of the study.

Discussion: Findings indicate that children’s ASD symptoms and internalizing mental health problems showed significant decreases over the 3-year period. The initial level of child internalizing mental health problems was associated with the rate of change in ASD symptoms over time. A similar pattern emerged for the relation between initial level of ASD symptoms and the rate of change of internalizing mental health problems. These patterns of change suggest that these two processes are interrelated and influence the development of one another over time. Future research should consider the natural co-occurrence of these two conditions in order to better serve the mental health of individuals on the spectrum.

Selected References:


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