Title: Examining the Factor Structure of The Eyberg Child Behavior Inventory in Children with Autism Spectrum Disorder Receiving Community Mental Health Services

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Introduction: While measures currently exist for assessing challenging behaviors in children, there is limited understanding of how these tools work with children with autism spectrum disorder (ASD), especially those with complex clinical presentations. This is especially important because challenging behaviors are commonly exhibited in children with ASD and are often the primary presenting problem for children with ASD receiving services in community mental health care¹-³. Furthermore, research in ASD has relied on measures of challenging behavior that were developed for and validated among non-ASD populations. The Eyberg Child Behavior Inventory (ECBI) has been used in ASD to assess disruptive behavior, identify treatment goals, and track treatment progress¹-²,⁴-⁷. To date, only one study has conducted a detailed examination of the psychometric properties of the ECBI⁸. However, the sample in this study was predominantly Caucasian (74%) and was based on chart review and archival data collection from two sources: a university-based psychology clinic and the Interactive Autism Network. Therefore, the aim of the current study was to test whether the four factors identified by Jeter et al. (2017); Emotional Reactivity, Conduct Problems, Defiant Behavior, and Attention Problems were confirmed with a separate, ethnically diverse sample of children with ASD receiving publicly funded outpatient mental health services.

Method: Data were drawn from a large-scale community effectiveness trial of An Individualized Mental Health Intervention for ASD (AIM HI)⁵; in the intervention condition therapists received training in AIM HI and delivered the intervention to their client for 6 months. Caregivers self-reported child challenging behaviors using the ECBI at baseline. The sample (n=201) consisted of 84% males, with a mean age of 9.12 (SD = 2.44). About 80% of the children were from an ethnic minority background; all children were receiving publicly funded community mental health services. Confirmatory factor analyses (CFA) with geomin rotation were conducted using Mplus version 8, specifying Jeter et al.’s (2017) 4-factors (Emotional Reactivity, Conduct Problems, Defiant Behavior, and Attention Problems) as the model.

Results: The root mean square error of approximation (RMSEA) and the standardized root mean square residual (SRMR) were used to evaluate model fit, with an RMSEA and SRMR < .08 indicative of good model fit. In response to poor model fit using the 4-factor solution proposed by Jeter et al. (2017) (RMSEA = 0.097, SRMR = 0.079) and strong correlations between factors, the current analyses combined Emotional Reactivity and Conduct Problems to form “Factor 1” (“Dysregulation”; 18 items) and Disruptive Behavior and Attention Problems to form “Factor 2” (“Attention and Hyperactivity”; 11 items). Error terms were correlated using Mplus’ modification indices to improve model fit, resulting in an adequate model fit (RMSEA = .079 and SRMR = .073) for the two-factor solution. On average caregivers reported higher scores on, Attention and Hyperactivity (M = 4.69, SD = 0.085) compared to Dysregulation (M = 3.58, SD = 0.084).

Discussion: Conclusions: Findings based on CFA, suggest that among a community sample of children with ASD the ECBI is best characterized by a two-factor model, in which Jeter’s Emotional Reactivity and Conduct Problem factors make up our Dysregulation factor, and Jeter’s Defiant Behavior and Attention Problems make up our Attention and Hyperactivity factor. Next steps will include examining other psychometric properties, including internal consistency, convergent validity, and discriminant validity. Furthermore, the differences in these scores support the clinical utility of the composite scores generated from these analyses. Therefore, an additional next step will include examining clinical factors (e.g. co-occurring diagnoses, ASD symptom severity) associated with these scores. Finally, we will examine AIM HI intervention effects using these scores. Further, the current study results may help to inform best practices for providers using the ECBI to assess disruptive behaviors among community samples of children with ASD and co-occurring mental health concerns.
References:


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