Title: Adjustment among Typically Developing Siblings of Individuals with Autism Spectrum Disorder: A Meta-Analysis

Authors: Carolyn Shivers, Jeff Jackson, & Casey McGregor

Introduction: As the number of studies on outcomes for typically developing siblings of individuals with autism spectrum disorder (ASD-Sibs) continues to grow, the field continues to struggle with coming to a consensus. Many recent articles on ASD-Sibs still contain some variation on the phrase “findings are mixed” (e.g. Tomeny, Barry & Fair, 2016), reflecting the variation in results reported. Some studies have found that ASD-Sibs are more likely to experience negative outcomes than comparison groups (e.g. O’Neill & Murray, 2016), while others found no differences between ASD-Sibs and comparison groups on measures of adjustment (e.g. Hastings & Petalas, 2014). The current study was modeled after the Rossiter and Sharpe (2001) meta-analysis, one of the most commonly cited studies of siblings of individuals with IDD. The current study aimed to qualitatively synthesize studies comparing ASD-Sibs to other populations to determine whether or not ASD-Sibs have significantly different social, emotional, behavioral, or psychological outcomes.

Method: A systematic literature search was conducted using ProQuest, Web of Science, and EBSCOHost, as well as Proquest Dissertations and Theses Global. The initial search used the terms (autis* OR Asperger* OR PDD-NOS) AND (sibling* OR brother* OR sister*) and yielded over 2,000 results, of which 162 were chosen for further review. Inclusion was determined by the following factors: a) the study assessed an emotional, behavioral, or psychological outcome for ASD-Sibs, b) the ASD-Sibs in the sample were at least 5 years old, and c) the report included usable effect sizes for the ASD-Sib outcomes. The final sample included 69 unique samples with a total of 836 effect sizes. Outcomes were sorted into eleven major codes: adjustment, attention/hyperactivity behavior problems, externalizing behavior problems, internalizing behavior problems, total behavior problems, beliefs, coping, family functioning, psychological functioning, sibling relationship, and social functioning. Parameter estimates were calculated using a random-effects model, and Hedges’ \( g \) was calculated as the estimated aggregated unbiased standardized mean difference. Moderator analyses were run based on the type of comparison group, publication status of the report, study design, type of measure, reporter, sample age, and sample nationality.

Results: Overall results yielded a significant difference between ASD-Sibs and comparison groups (\( g = -.26, SE = .06, 95\% CI [-0.37, -0.15], p \leq .001, K = 69 \)), with specific negative findings for internalizing behavior problems (\( g = -.29, p<.01 \)), beliefs (\( g = -.25, p<.05 \)), psychological functioning (\( g = -.29, p<.01 \)), the sibling relationship (\( g = -.42, p<.001 \)), and social functioning (\( g = -.23, p<.01 \)). There were no areas of functioning in which ASD-Sibs performed better than comparison groups. The type of comparison group was a significant moderator, with ASD-Sibs functioning worse than siblings of individuals with Down syndrome (\( g = -.40, p<.001 \)), siblings of individuals with other IDD (\( g = -.31, p<.05 \)), and siblings of individuals without disabilities (\( g = -.31, p<.001 \)).

Discussion: Results indicate that ASD-Sibs are significantly more likely to have worse functioning than comparison groups, particularly siblings of individuals without ASD. Clinicians and families should take care to include siblings in family-wide support strategies. Researchers should continue to work on identifying individual differences that buffer or enhance negative outcomes for ASD-Sibs, as well as work toward developing targeted intervention and support strategies.

References/Citations: