2021 Gatlinburg Conference Poster Submission

Title: Associations between Parental Stress and Depressive Symptoms and Language and Communication Outcomes in Infant Siblings of Children with and without Autism

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Introduction: Parents of children with autism present with higher stress levels and depressive symptoms, which are known to negatively impact language and communication of children diagnosed with autism. However, we do not yet know how elevated parent stress and depression impact later communication in younger siblings of children on the autism spectrum (Sibs-autism), who are at increased (approximately twenty-fold) likelihood of receiving a future diagnosis of autism and/or language impairment themselves. We hypothesize that parents with increased stress might speak less to their children, resulting in reduced communication abilities later in life. The present study explored the mechanisms by which parent stress and depressive symptoms influence later communication outcomes of infant siblings at high and low likelihood for later autism diagnosis.

Method: Participants were 40 infants, 20 Sibs-autism and 20 infants with non-autistic, otherwise typically-developing older sibling/s (Sibs-NA) who were followed longitudinally. Infants were excluded from participation if they had adverse neurological history, a known genetic condition, and/or preterm birth (gestation < 37 weeks). All families spoke English as their primary language. During the first visit, at 12-18 months, education of the primary caregiver was recorded on a 9-point scale, and parent stress was reported by the Parenting Stress Index Short Form (PSI-4 SF). Additionally, adult word count (AWC; a proxy for parent input) was obtained from Language ENvironment Analysis (LENA) recorders. Nine months later (21-27 months), language and communication outcomes were assessed using aggregate receptive and expressive language scores derived from the Vineland Adaptive Behavior Scales, the Mullen Scales of Early Learning, and the MacArthur Bates Communicative Development Inventory: Words and Sentences. A series of moderation and mediation models were carried out to determine the degree to which the association between parent stress and later expressive and receptive communication was mediated by parent input and to test whether these associations varied by risk group.

Results: Mediation models indicated that the relation between parent stress and expressive communication was significantly mediated by AWC (receptive communication 95% CI = [-.0231, -.0016]; expressive communication 95% CI = [-.0194, -.0003]), when controlling for caregiver education (see Figure 1), consistent with our theoretical model. This indirect effect was "complete," meaning that the direct effect of parental stress on later communication was non-significant when controlling for AWC. Moderated mediation models indicated that sibling-status was not a significant moderator of any of the relations relevant to the aforementioned indirect effect.

Discussion: These findings provide empirical support for the theory that parent stress levels influence later language outcomes in infants at heightened and population-level likelihood for being diagnosed with autism. Results suggest that this relation is moderated by the adult language input that an infant receives in their home environment. Clinical and research implications, limitations, and future directions for this line of research will be discussed.

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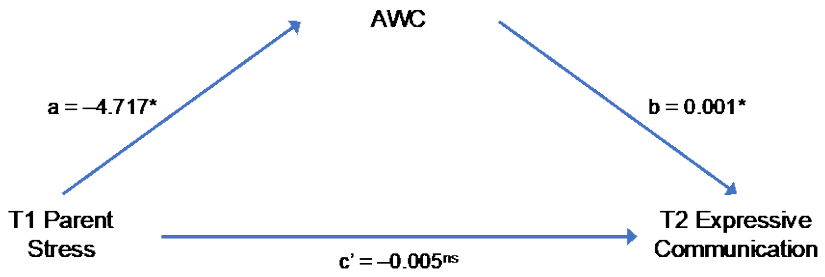
Figure 1

Indirect effect of parental stress on later expressive communication through adult word count



Note. T1 = first timepoint (12-18 mos), AWC = adult word count, T2 = second timepoint (21-27 mos). a = the relation between parental stress and AWC, controlling for caregiver education level. b = the relation between AWC and later expressive communication, controlling for parent stress and caregiver education level. c' = the direct effect of parent stress on later expressive communication (i.e., the c' path), controlling for AWC and caregiver education. Note that c' is non-significant, meaning that the association between parent stress and later expressive communication is completely mediated by AWC while controlling for caregiver education level. This indirect effect is not moderated by sibling group. All values are standardized coefficients. *p < .05, ns = non-significant result.

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