

Pandemic-Related Disruption to the Home Environment and Early Vocabulary Acquisition

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Abstract : The COVID-19 pandemic disrupted the stability of the home environment for families across the world. Potential disruptions include parent work modality (in-person vs. remote), levels of health anxiety, family routines, and caregiving. These disruptions may have interfered with the processes of early vocabulary acquisition, carrying lasting effects over the life course. Our justification for this research is as follows: First, early, stable, caregiver-child reciprocal interactions, which may have been disrupted during the pandemic, contribute to the development of the brain architecture that supports language, cognitive, and social-emotional development. Second, early vocabulary predicts several cognitive outcomes, such as numeracy, literacy, and executive function. Further, disruption in the home is associated with adverse cognitive, academic, socio-emotional, behavioral, and communication outcomes in young children. We are interested in how disruptions related to the COVID-19 pandemic are associated with vocabulary acquisition in children born during the first two waves of the pandemic. We are conducting a moderated online experiment to assess this question. Participants are 16 children (10F) ranging in age from 19 to 39 months ($M=25.27$) and their caregivers. All child participants were screened for language background, health history, and history of language disorders, and were typically developing. Parents completed a modified version of the COVID-19 Family Stressor Scale (CoFaSS), a published measure of COVID-19-related family stressors. Thirteen items from the original scale were replaced to better capture change in family organization and stability specifically related to disruptions in income, anxiety, family relations, and childcare. Following completion of the modified CoFaSS, children completed a Web-Based version of the Computerized Comprehension Task and the Receptive One Word Picture Vocabulary if 24 months or older or the MacArthur-Bates Communicative Development Inventory if younger than 24 months. We report our preliminary data as a partial correlation analysis controlling for age. Raw vocabulary scores on the CCT, ROWPVT-4, and MCDI were all negatively associated with pandemic-related disruptions related to anxiety ($r_{12}=-.321$; $r_1=-.332$; $r_9=-.509$), family relations ($r_{12}=-.590^*$; $r_1=-.155$; $r_9=-.468$), and childcare ($r_{12}=-.294$; $r_1=-.468$; $r_9=-.177$). Although the small sample size for these preliminary data limits our power to detect significance, this trend is in the predicted direction, suggesting that increased pandemic-related disruption across multiple domains is associated with lower vocabulary scores. We anticipate presenting data on a full sample of 50 monolingual English participants. A sample of 50 participants would provide sufficient statistical power to detect a moderate effect size, adhering to a nominal alpha of 0.05 and ensuring a power level of 0.80.

Keywords : COVID-19, early vocabulary, home environment, language acquisition, multiple measures

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