

Through play, children can navigate the world, especially pertinent for children enduring trauma. When children are consistently stressed, their mental health, social-emotional well-being, and cognitive abilities suffer. Play can serve as a coping method for children enduring stressors and can improve cognitive capacity. This study seeks addresses the research questions: 1) to what extent can play aid children's cognitive capacity?, 2) can play decrease children's arousal after a pressure situation? 3) how is cognitive capacity in children impacted by aroused states of being? The data seeks to provide empirical evidence for how play should be prioritized to support children enduring Adverse Childhood Experiences (ACEs).

Children in North Carolina, aged 5-11, $n = 10$, were randomly assigned to one of three experimental conditions. During the brief session, the children wore a FirstBeat HR monitor tracking their autonomic nervous system arousal. They engaged in experimental tasks and completed a No-go/Go working memory cognitive task three times (baseline, after the primary task, and after the secondary task depending on their condition). Children's cognitive performance increased the most in both accuracy and improved reaction time in the baseline to play condition. All forms of arousal (both play and stress conditions) increased attention and accuracy when analyzed across groups. Physiological arousal data did not indicate a significant change in HRV stress between experimental conditions. The findings of the present study suggest that play in the absence of environmental stressors can be used as a coping tool, improving cognitive abilities, attention, and well-being for children.