ADHD Symptoms in Post-Institutionalized Children Are Partially Mediated by Altered Frontal EEG Asymmetry

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Abstract

Individual differences in the propensity for left versus right frontal electroencephalogram (EEG) asymmetry may underlie differences in approach/withdrawal tendencies and mental health deficits. Growing evidence suggests that early life adversity may shape brain development and contribute to the emergence of mental health problems. The present study examined frontal EEG asymmetry (FEA) following the transition to family care in children adopted internationally from institutional care settings between 15 and 36 months of age (N = 82; 46 female, 36 male). Two comparison groups were included: an international adoption control consisting of children adopted from foster care with little to no institutional deprivation (N = 45; 17 female, 28 male) and a post-adoption condition control consisting of children reared in birth families of the same education and income as the adoptive families (N = 48; 23 female, 25 male). Consistent with evidence of greater approach and impulsivity-related behavior problems in post-institutionalized (PI) children, PI status was associated with greater left FEA than found in the other two groups. In addition, left FEA served as a mediator between institutionalization and age 5 ADHD symptoms for girls. Age at adoption and other preadoption factors were examined with results suggesting that earlier adoption into a supportive family resulted in a more typical pattern of brain functioning. Findings support the idea that the capacity of brain activity to evidence typical functioning following perturbation may differ in relation to the timing of intervention and suggest that the earlier the intervention of adoption, the better.