Exploring the Intersection of Adverse Childhood Experiences, Pediatric Chronic Pain and Rheumatic Disease

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While the general relationship between ACEs and the development of chronic pain has become increasingly clear, how ACEs may shape a child's clinical presentation with regards to chronic pain has yet to be fully expounded. We aimed to determine the association between ACEs and clinical manifestations of pediatric chronic pain and explore the interaction of ACEs and pediatric rheumatic disease among youth with chronic pain on health-related outcomes. We conducted a cross-sectional cohort study of patients aged ?18 years with chronic pain seen in a pediatric rheumatology amplified pain clinic between August 2018 and July 2020. We stratified subjects into three groups: no ACEs, one ACE, and ? 2 ACEs. We assessed clinical signs and symptoms associated with the presence of ACEs using Chi-square or Wilcoxon-rank test. The association between ACEs as well as other variables of interest with functional impairment was tested using simple and multivariable linear regression. Of the 412 patients included, more than 75% of patients reported at least one ACE. Most frequent included history of mental illness in a first degree relative (56%) and parental divorce or separation (20%). Those with ?2 ACEs had more somatic symptoms, worse functional disability, and a higher proportion of mental health conditions. There appeared to be a dose dependent interaction between ACEs and functional disability from co-morbid rheumatologic disease. In multivariable regression, higher verbal pain score, symptom severity score (SSS), and presence of autonomic changes were associated with estimated average increase in FDI score (? = 1.05, 1.95 and 4.76 respectively; all $p < 0.01$). Children with chronic pain and/or rheumatologic diseases who are exposed to ACEs are at increased risk of greater symptomatology, functional disability, and somatization of symptoms. Our findings indicate an ongoing need for systemic evaluation of ACEs in children with chronic pain and/or rheumatic disease and incorporation of trauma-based care.

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