

Publication

Associations among child abuse, mental health, and epigenetic modifications in the proopiomelanocortin gene (POMC): A study with children in Tanzania.

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Child abuse is associated with a number of emotional and behavioral problems. Nevertheless, it has been argued that these adverse consequences may not hold for societies in which many of the specific acts of abuse are culturally normed. Epigenetic modifications in the genes of the hypothalamus-pituitary-adrenal axis may provide a potential mechanism translating abuse into altered gene expression, which subsequently results in behavioral changes. Our investigation took place in Tanzania, a society in which many forms of abuse are commonly employed as disciplinary methods. We included 35 children with high exposure and compared them to 25 children with low exposure. Extreme group comparisons revealed that children with high exposure reported more mental health problems. Child abuse was associated with differential methylation in the proopiomelanocortin gene (POMC), measured both in saliva and in blood. Hierarchical clustering based on the methylation of the POMC gene found two distinct clusters. These corresponded with children's self-reported abuse, with two-thirds of the children allocated into their respective group. Our results emphasize the consequences of child abuse based on both molecular and behavioral grounds, providing further evidence that acts of abuse affect children, even when culturally acceptable. Furthermore, on a molecular level, our findings strengthen the credibility of children's self-reports.

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