Childhood communication enhances brain development, protecting against harmful behaviors

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Children with greater parent communication in early adolescence have less harmful alcohol use and emotional eating in young adulthood, according to a new study in *Biological Psychiatry*.

The 14-year study, which followed participants from 11 to 25 years old, identified that the extent of communication between parents and children promotes the development of a brain network involved in the processing of rewards and other stimuli that, in turn, protects against the overconsumption of food, alcohol and drugs. In this way, robust parent-child communication has an impact on health behaviors in adulthood.

"It might mean that social interactions actually influence the wiring patterns of the brain in the teenage years," said John Krystal, MD, Editor of *Biological Psychiatry*. "It points to an important potential role of family interactions in brain development and the emergence of maladaptive behaviors in adulthood," he added.

The study, led by Christopher Holmes, PhD and colleagues from the University of Georgia's Center for Family Research, focused on rural African Americans, an understudied population that may be disproportionately at risk for these harmful health behaviors in young adulthood. In 2001, the research team began a longitudinal study involving rural African American families with a child 11 years of age. Between the ages of 11 and 13 years, participants reported on

interactions with their parents, including the frequency of discussions and arguing.

When the participants reached 25 years of age, a subsample of 91 participants was recruited from the larger study to take part in a neuroimaging session that measured brain activity using functional magnetic resonance imaging (fMRI). Specifically, the researchers used fMRI to study a network of brain connections called the anterior salience network (ASN). The participants also answered questions about harmful alcohol use and emotional eating at age 25.

Greater parent-child communication in early adolescence predicted greater connectivity of the ASN at age 25, supporting the idea that high-quality parenting is important for long-term brain development. Greater ASN connectivity was, in turn, associated with lower harmful alcohol use and emotional eating at age 25. The findings point to the ASN as a brain mechanism for how parenting in childhood affects health behaviors in early adulthood.

"These findings highlight the value of prevention and intervention efforts targeting parenting skills in childhood as a means to foster long-term, adaptive neurocognitive development," said Allen Barton, PhD, corresponding author of the study.

More information: Christopher J. Holmes et al, Parenting and Salience Network Connectivity Among African Americans: A Protective Pathway for Health-Risk Behaviors, *Biological Psychiatry* (2018). DOI: 10.1016/j.biopsych.2018.03.003

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