Family Threat and Emotional Awareness: The Indirect Link via Resting-State Network Connectivity within Negative Urgency Context

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Threat constitutes a dimension of adversity that can impair emotion regulation (ER). Yet, growing research shows that certain adverse environmental conditions elicit neurocognitive adaptations, enhancing survival fit, adaptations that vary by personality differences. An often overlooked neurobiological adaptation is the ability to use emotion regulation to better prepare for threats. We focused on the development of emotional awareness, an ER dimension critical for survival in threatful environments. We aim to study the neurobiological mechanism underpinning adversity and ER by personality trait context. We focus on two key resting-state functional connectivity (rsFC) networks known to underlie emotion regulation-- the ventral attention (VAN) and salience networks (SAN). We hypothesized that family threat affects emotional awareness through reduced VAN-SAN rsFC, and that this indirect association will be moderated by negative urgency. Using multi-level data (survey and fMRI) from the Adolescent Brain and Cognitive Development study (N=9876), we formed latent constructs for family threat (Time 1), negative urgency (Time 1), and emotional awareness (Time 7). The model fit well (CFI=.95; TLI=.95), showing a significant positive association between threat levels and emotional awareness difficulties (b=0.131; 95% CI 0.108 to 0.154; $p < 0.001$), a link that was mediated via a reduction in VAN-SAN rsFC (b= -0.022; 95% CI -0.041 to -0.001; $p = 0.032$). Moderated mediation analyses revealed that higher negative urgency amplified the effect of threat on VAN-SAN rsFC. Findings enhance our understanding of how adversity impacts emotional awareness and regulation, revealing a potentially novel approach to neurobiological adaptations to adverse environments.