Psychopathic traits mediate the association of serotonin transporter genotype and child externalizing behavior.

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Abstract

Although the promoter polymorphism of the serotonin transporter (5-HTTLPR) gene is associated with externalizing behavior, its mediating pathways are unknown. Given their sensitivity to serotonin neurotransmission and unique association with attention-deficit/hyperactivity disorder (ADHD) and oppositional defiant disorder (ODD), we tested callous-unemotional (CU) traits and narcissism as separate mediators of the association of 5-HTTLPR with ADHD and ODD. We evaluated 209 5-9 year-old children with and without ADHD at baseline; approximately 2 years later (i.e., Wave 2), parents and teachers separately rated ADHD and ODD symptoms and youth self-reported antisocial behavior. Controlling for race-ethnicity and baseline ADHD/ODD, narcissism uniquely mediated predictions of multi-informant rated Wave 2 ADHD and ODD from variation in 5-HTTLPR; CU traits mediated predictions of Wave 2 ADHD from variations in 5-HTTLPR, but did not mediate the associations of 5-HTTLPR with ODD or youth self-reported antisocial behavior. Specifically, the number of 5-HTTLPR long alleles positively predicted CU traits and narcissism; narcissism was positively associated with Wave 2 ADHD and ODD symptoms, whereas CU traits were positively associated with Wave 2 ADHD. Child sex also moderated indirect effects of CU traits and narcissism, such that narcissism mediated predictions of ADHD/ODD in girls but not boys. Psychopathic traits may represent a relevant pathway underlying predictions of prospective change in ADHD and ODD from 5-HTTLPR, particularly in girls. We consider the role of psychopathic traits as a potential intermediate phenotype in genetically sensitive studies of child psychopathology.