Evaluation of the Persistence, Remission, and Emergence of Attention-Deficit/Hyperactivity Disorder in Young Adulthood

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ABSTRACT

Importance
Attention-deficit/hyperactivity disorder (ADHD) is now recognized to occur in adulthood and is associated with a range of negative outcomes. However, less is known about the prospective course of ADHD into adulthood, the risk factors for its persistence, and the possibility of its emergence in young adulthood in nonclinical populations.

Objective
To investigate childhood risk factors and young adult functioning of individuals with persistent, remitted, and late-onset young adult ADHD.

Design, Setting, and Participants
The study sample was the Environmental Risk (E-Risk) Longitudinal Twin Study, a nationally representative birth cohort of 2232 twins born in England and Wales from January 1, 1994, to December 4, 1995. Evaluation of childhood ADHD (ages 5, 7, 10, and 12 years) included prenatal and perinatal factors, clinical characteristics, and aspects of the family environment. Among participants aged 18 years, ADHD symptoms and associated impairment, overall functioning, and other mental health disorders were examined. Data analysis was conducted from February 19 to September 10, 2015.

Main Outcomes and Measures
Attention-deficit/hyperactivity disorder according to DSM-IV diagnostic criteria in childhood and DSM-5 diagnostic criteria in young adulthood.

Results
Of 2232 participants in the E-Risk Study, 2040 were included in the present analysis. In total, 247 individuals met diagnostic criteria for childhood ADHD; of these, 54 (21.9%) also met diagnostic criteria for the disorder at age 18 years. Persistence was associated with more symptoms (odds ratio [OR], 1.11 [95% CI, 1.04-1.19]) and lower IQ (OR, 0.98 [95% CI, 0.95-1.00]). At age 18 years, individuals with persistent ADHD had more functional impairment (school/work: OR, 3.30 [95% CI, 2.18-5.00], home/with friends: OR, 6.26 [95% CI, 3.07-12.76]), generalized anxiety disorder (OR, 5.19 [95% CI, 2.01-13.38]), conduct disorder (OR, 2.03 [95% CI, 1.03-3.99]), and marijuana dependence (OR, 2.88 [95% CI, 1.07-7.71]) compared with those whose ADHD remitted. Among 166 individuals with adult ADHD, 112 (67.5%) did not meet criteria for ADHD at any assessment in childhood. Results from logistic regressions indicated that individuals with late-onset ADHD showed fewer externalizing problems (OR, 0.93 [95% CI, 0.91-0.96]) and higher IQ (OR, 1.04 [95% CI, 1.02-1.07]) in childhood compared with the persistent group. However, at age 18 years, those with late-onset ADHD demonstrated comparable ADHD symptoms and impairment as well as similarly elevated rates of mental health disorders.

Conclusions and Relevance
We identified heterogeneity in the DSM-5 young adult ADHD population such that this group consisted of a large, late-onset ADHD group with no childhood diagnosis, and a smaller group with persistent ADHD. The extent to which childhood-onset and late-onset adult ADHD may reflect different causes has implications for genetic studies and treatment of ADHD.