Association Between Medication Use and Performance on Higher Education Entrance Tests in Individuals with Attention-Deficit/Hyperactivity Disorder

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Abstract

Importance Individuals with attention-deficit/hyperactivity disorder (ADHD) are at greater risk for academic problems. Pharmacologic treatment is effective in reducing the core symptoms of ADHD, but it is unclear whether it helps to improve academic outcomes.

Objective To investigate the association between the use of ADHD medication and performance on higher education entrance tests in individuals with ADHD.

Design, Setting, and Participants This cohort study observed 61,640 individuals with a diagnosis of ADHD from January 1, 2006, to December 31, 2013. Records of their pharmacologic treatment were extracted from Swedish national registers along with data from the Swedish Scholastic Aptitude Test. Using a within-patient design, test scores when patients were taking medication for ADHD were compared with scores when they were not taking such medication. Data analysis was performed from November 24, 2015, to November 4, 2016.

Exposures Periods with and without ADHD medication use.

Main Outcomes and Measures Scores from the higher education entrance examination (score range, 1-200 points).

Results Among 930 individuals (493 males and 437 females; mean [SD] age, 22.2 [3.2] years) who had taken multiple entrance tests (n = 2524) and used ADHD medications intermittently, the test scores were a mean of 4.80 points higher (95% CI, 2.26-7.34; P < .001) during periods they were taking medication vs nonmedicated periods, after adjusting for age and practice effects. Similar associations between ADHD medication use and test scores were detected in sensitivity analyses.

Conclusions and Relevance Individuals with ADHD had higher scores on the higher education entrance tests during periods they were taking ADHD medication vs nonmedicated periods. These findings suggest that ADHD medications may help ameliorate educationally relevant outcomes in individuals with ADHD.