

Neurocognitive, Autonomic, and Mood Effects of Adderall: A Pilot Study of Healthy College Students

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Abstract

Prescription stimulant medications are considered a safe and long-term effective treatment for Attention Deficit Hyperactivity Disorder (ADHD). Studies support that stimulants enhance attention, memory, self-regulation and executive function in individuals with ADHD. Recent research, however, has found that many college students without ADHD report misusing prescription stimulants, primarily to enhance their cognitive abilities. This practice raises the question whether stimulants actually enhance cognitive functioning in college students without ADHD. We investigated the effects of mixed-salts amphetamine (i.e., Adderall, 30 mg) on cognitive, autonomic and emotional functioning in a pilot sample of healthy college students without ADHD ($n = 13$), using a double-blind, placebo-controlled, within-subjects design. The present study was the first to explore cognitive effects in conjunction with mood, autonomic effects, and self-perceptions of cognitive enhancement. Results revealed that Adderall had minimal, but mixed, effects on cognitive processes relevant to neurocognitive enhancement (small effects), and substantial effects on autonomic responses, subjective drug experiences, and positive states of activated emotion (large effects). Overall, the present findings indicate dissociation between the effects of Adderall on activation and neurocognition, and more importantly, contrary to common belief, Adderall had little impact on neurocognitive performance in healthy college students. Given the pilot design of the study and small sample size these findings should be interpreted cautiously. The results have implications for future studies and the education of healthy college students and adults who commonly use Adderall to enhance neurocognition.