



Pergamon

Archives of Clinical Neuropsychology
16 (2001) 587–604

Archives
of
CLINICAL
NEUROPSYCHOLOGY

Neuropsychological performance deficits in adults with attention deficit/hyperactivity disorder

Diane E. Johnson^{a,*}, Jeffery N. Epstein^a, L. Randolph Waid^b,
Patricia K. Latham^b, Konstantin E. Voronin^b, Raymond F. Anton^b

^a*Attention Deficit Disorder Program, Department of Psychiatry, Duke University Medical Center,
Box 3431, Durham, NC 27710, USA*

^b*Center for Drug and Alcohol Programs, Department of Psychiatry and Behavioral Sciences,
Medical University of South Carolina, Charleston, SC, USA*

Accepted 9 May 2000

Abstract

Neuropsychological deficits in children diagnosed with attention deficit/hyperactivity disorder (ADHD) have been well documented utilizing various neuropsychological tests. Only recently has research begun to examine if similar deficits are present in adults with ADHD. A neuropsychological testing battery was constructed that assessed verbal learning and memory, psychomotor speed, and sustained attention — all demonstrated to be deficient in individuals with ADHD. Fifty-six self-referred nonmedicated adults with a DSM-IV diagnosis of ADHD and 38 normal comparison adults participated. ADHD adults demonstrated verbal and nonverbal memory deficits and decreased psychomotor speed compared to normal controls. Differences between ADHD and normal adults were not documented on traditional measures of executive functioning. A pattern of results emerged whereby ADHD adults' performance, particularly with regard to psychomotor speed, became more impaired as task complexity increased. This study's results largely corroborate similar neuropsychological testing results in ADHD children and recent ADHD adult findings, and support a frontal lobe dysfunction hypothesis of ADHD. © 2001 National Academy of Neuropsychology. Published by Elsevier Science Ltd.

Keywords: Attention deficit/hyperactivity disorder; Neuropsychological functioning; Frontal lobe dysfunction

A large body of research literature has examined neuropsychological functioning in children diagnosed with attention deficit/hyperactivity disorder (ADHD). Much of this

* Corresponding author. Tel.: +1-919-416-2080; fax: +1-919-286-7081.

E-mail address: johns211@mc.duke.edu (D.E. Johnson).

research has assessed specific domains of impairment by comparing the performance of ADHD children to normal children on neuropsychological tests. These studies have shown that ADHD children perform more poorly than non-ADHD children on neuropsychological tasks measuring sustained attention (Douglas, 1983; Seidel & Joschko, 1990), executive functioning (Chelune, Ferguson, Koon, & Dickey, 1986; Shue & Douglas, 1992), motoric inhibition (Iaboni, Douglas, & Baker, 1995; Oosterlaan & Sergeant, 1996), and verbal learning and memory (Loge, Staton, & Beatty, 1990; Seidman et al., 1995; Tannock, Purvis, & Schachar, 1993). These deficits have been consistent and replicable across most studies and are widely acknowledged to be the core neuropsychological deficits in children with ADHD (Barkley, 1997b).

Barkley (1997a), defines executive functions as those neuropsychological processes that permit or assist the person with self-regulation. With Barkley's review of the literature, he concludes that most of the seemingly disparate abilities found to be discrepant in ADHD children (i.e., (1) motor coordination and sequencing; (2) working memory and mental computation; (3) planning and anticipation; (4) verbal fluency and confrontation communication; (5) effort allocation; (6) application of organizational strategies; (7) internalization of self-directed speech; (8) adherence to restrictive instruction; and (9) self-regulation of emotional arousal) fall within the domain of executive functions in the field of neuropsychology and are considered to be mediated by the frontal cortex, particularly the prefrontal lobes.

The aforementioned areas of neuropsychological impairment have associations with frontal lobe functions (Hynd, Hern, Voeller, & Marshall, 1991; Lezak, 1976; Shue & Douglas, 1992). Consequently, ADHD causality has been conceptualized in at least three different ways, as (1) frontal lobe dysfunction (Castellanos et al., 1996; Hynd, Semrud, Lorys, Novoy, & Eliopoulos, 1990), (2) delayed frontal maturation functioning (Chelune et al., 1986), and (3) subcortical-frontal motor subsystems dysfunction (Castellanos et al., 1994; Giedd et al., 1994). Further evidence for attributing ADHD impairments to the frontal lobe comes from studies of frontal lobe-damaged adults who demonstrate similar behavioral and cognitive symptomatology as ADHD patients (Gualtieri & Hicks, 1985; Mattes, 1980). More recently, several neuro-imaging studies have shown abnormalities in the prefrontal cortex of ADHD patients who were participating in tasks requiring executive functioning (Castellanos et al., 1996; Hynd et al., 1990).

For most of its history, ADHD was conceptualized as a childhood disorder. Thus, the neuropsychological functioning of ADHD children has been well documented; however, little is known about the neuropsychological functioning of adolescents and even less is known about the more recently defined diagnosis of adult ADHD. With regard to adolescents, two studies have been conducted that document neuropsychological deficits similar to those found in younger ADHD children (Fischer, Barkley, Edelbrock, & Smallish, 1990; Seidman, Biederman, Faraone, Weber, & Oulette, 1997). Specifically, ADHD adolescents demonstrated impaired performance on neuropsychological tests that assess attention (Fischer et al., 1990; Seidman et al., 1997), executive functioning (Fischer et al., 1990; Seidman et al., 1997), impulse control (Fischer et al., 1990), and verbal learning (Seidman et al., 1997). These findings in adolescent ADHD individuals support the supposition that neuropsychological deficits do not attenuate over time. These studies

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات