

WORKING MEMORY CONTROL DEFICIT IN KINDERGARTEN ADHD CHILDREN

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The present study tests the hypothesis that a working memory deficit is also found in children with attention deficit/hyperactivity disorder (ADHD) symptoms as young as 5 and is related to the control of interfering information. One group of 23 kindergarten children identified by the presence of ADHD symptoms and one group of 23 children matched for gender, age, and socioeconomic status were administered a visuospatial working memory task that required the selective recall of information. Children with ADHD symptoms performed more poorly than controls and were affected to a particularly high extent by intrusion errors (i.e., recalling of information initially encoded but that needed to be consequently suppressed during the task).

Keywords: ADHD; Working memory; Preschool; Children; Control.

INTRODUCTION

Attention deficit/hyperactivity disorder (ADHD) is the commonest diagnostic label used to define a disorder of childhood and adolescence characterized by three main categories of symptoms: inattention, hyperactivity, and impulsivity. ADHD symptoms are pervasive (observed across all life environments), persistent (across the entire life span), and debilitating, in social life contexts and, similarly in both work and school environments.

As regards the core problems of ADHD children, many different hypotheses have been proposed, but there is converging evidence of the critical involvement of controlled attention and working memory (two closely related aspects; Heitz, Unsworth, & Engle, 2005) in developmental disorders (Alloway, 2007) and in particular in ADHD (see, for example, Barkley, 1997; Cornoldi et al., 2001). Working Memory (WM) is the system that does not only maintain information temporarily but also processes it (Baddeley, 1986). Developmental studies have shown that the investigation of WM in children may clarify important issues related to atypical development and that the patterns of performance in WM tasks can be similar at different ages, including preschool ages (Baddeley, 1986; Garon, Bryson, & Smith, 2008; see also Mariani & Barkley, 1997). In particular, the examination of control problems in WM, in relation to attention and inhibitory processes (e.g., Barkley, 1997) seems promising in studies of neuropsychological deficits in children suffering from ADHD. There is evidence that children with ADHD perform poorly in various tasks assumed to tap WM (Mariani & Barkley; Barkley; Roodenrys, Koloski, & Grainger,

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