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The relationship between attention deficit hyperactivity disorder and child temperament ☆

Marie Foley [a,*], Sandra Graham McClowry [b], Francisco X. Castellanos [c]

[a] College of Nursing, Seton Hall University, 400 South Orange Avenue, South Orange, NJ, 07079, USA
[b] Applied Psychology Department, School of Education, New York University, USA
[c] New York University Child Study Center and Radiology Department, New York University School of Medicine, USA

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Abstract

This study examined empirical and theoretical differences and similarities between attention deficit hyperactivity disorder (ADHD) and child temperament in 32 ADHD children aged 6–11 years, and a comparison group of 23 children with similar sociodemographic characteristics. Children were assessed for ADHD symptoms (hyperactivity, impulsivity, and inattention) and dimensions of child temperament (negative reactivity, task persistence, activity, attentional focusing, impulsivity, and inhibitory control) using standardized parent reports and interviews. Symptoms of ADHD and temperament dimensions were correlated; children in the ADHD group had significantly higher scores on negative reactivity, activity and impulsivity, and lower scores on task persistence, attentional focusing and inhibitory control than normative samples. Results indicate that although the constructs of ADHD and temperament have been regarded as two separate bodies of knowledge, theoretical and empirical overlaps exist. Applied implications are discussed.

Keywords: ADHD; Temperament; Self-regulation; Parenting; Middle childhood

1. Introduction

ADHD is one of the most common behavioral disorders diagnosed in children and adolescents. Although prevalence varies among different communities and is dependent upon the criteria used for diagnosis, national estimates indicate that 3%–5% of school-age children have been diagnosed with ADHD (National Institutes of Health, 2000). The criteria for a diagnosis of this disorder include impairment within the areas of activity, attention, and impulsivity (American Psychiatric Association, 2000).

The same behaviors are regarded differently from a temperament perspective. Temperament theorists view children's temperaments as existing on a continuum that includes a wide range of normal variations (Cloninger, 1987;

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* Corresponding author.
E-mail address: foleymaa@shu.edu (M. Foley).

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Rothbart & Bates, 1998). While children whose temperaments at the extreme end of the continuum are more arduous for parents and teachers to manage, their behavior is still considered normal.

Although the terminology used to diagnose ADHD is also used in the temperament literature (activity, impulsivity, inattention and low task persistence), few empirical investigations have examined these domains simultaneously. Instead, research in the fields of child temperament and child psychopathology, as related to attention deficit hyperactivity disorder, have been regarded as two separate bodies of knowledge. The purpose of this study was to examine the theoretical differences and similarities of child temperament and ADHD.

1.1. Attention deficit hyperactivity disorder (ADHD)

A diagnosis of ADHD in the US is based on the criteria cited in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*; American Psychiatric Association, 2000). The subtypes are ADHD inattentive, ADHD hyperactive–impulsive, and ADHD combined. Inattention includes failing to pay close attention to details or making careless mistakes, having difficulty sustaining attention, not listening, not following through, having difficulty organizing, having low task persistence, losing things, being easily distracted, and being forgetful. Hyperactivity includes fidgeting, being out of seat, running or climbing excessively, being unable to play quietly, constantly moving, and talking excessively; impulsivity includes calling out answers, having difficulty waiting in turn, and interrupting. The presence of six or more symptoms in each of these two groups is considered a clinical diagnosis. Symptoms must be present before age seven years, impairment must be seen in two or more settings, and evidence of impairment in both social and academic functioning must be documented (American Psychiatric Association, 2000). ADHD symptoms predict a decrease in children's functioning in all areas of their environment, including learning problems and difficulty in relationships with family members, teachers, and peers (Barkley, 1998). Such problems often are correlated with low self-esteem and low self-efficacy which are further predictive of poor school outcomes (Dulcan et al., 1997).

ADHD is a common childhood disorder that results in major public health costs. Public school expenditures for children diagnosed with ADHD have averaged between $3.5–4 billion annually (National Institutes of Health, 2000). Society generally shares in this burden because these children consume a disproportionate share of resources in the health care system, schools, social services, and the criminal justice system. Manuzza, Klein, Bessler, Malloy, and LaPaluda (1998) found that children with ADHD were at a significantly higher risk for antisocial disorders in adulthood. Likewise, children with ADHD are also at higher risk for substance use and dependence in adolescence and adulthood (Flory & Lynam, 2003; Manuzza et al., 1998; Molina, Smith, & Pelham, 1999). A national survey revealed that students with ADHD were more likely to receive special services than their non-ADHD special education peers (Schnoes, Reid, Wagner, & Marder, 2006). In addition, families of children with ADHD can experience a financial burden when their health insurance does not cover treatment.

The identification of children with ADHD remains challenging. However, multiple tools are available to assist in the diagnosis of ADHD. Parent, teacher and self-report instruments as well as structured interviews exist. An accurate assessment in different environments and from differing perspectives is essential for an accurate diagnosis and for proper treatment. It must be kept in mind that parents and teachers do not always agree. Low correlations between their reports can be partially accounted for by memory of the event, subjectivity, and individual interpretation of behaviors.

Once a child is diagnosed, parents can be confused about the treatment choices because recommendations vary considerably. Treatments for the disorder include medication, behavioral interventions, or a combination of the two (multimodal). Between 76% and 99% of children diagnosed with ADHD are medicated with stimulants or with the nonstimulant atomoxetine. The most commonly used stimulants are methylphenidate (in both oral and transdermal routes), a mixture of amphetamines called Adderall, and dextroamphetamine (Dexedrine).

The functional and interpersonal behavior of many children with ADHD is impaired in multiple settings, and medications can dramatically decrease problem behaviors in many of these children. In general, their activity level is reduced, attention is improved and impulsivity may be lessened. In contrast to their peers without a diagnosis of ADHD, however, troublesome behaviors still remain high (National Institutes of Health, 2000).

Behavioral management techniques designed to decrease the frequency and severity of such troublesome behaviors have been taught to both parents and/or teachers. These techniques have been tested in controlled classrooms, psychoeducational groups and specialized summer camps. Such techniques are derived from behavior modification, social skills training, parent and teacher training and support groups (Pelham & Hoza, 1996). For treatments to be most