Developmental Psychopathology at School

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Identifying, Assessing, and Treating ADHD at School

Springer

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Contents

Chapter 1
Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is the diagnostic category currently used to describe individuals with clinically significant problems with inattention and/or hyperactivity and impulsivity (American Psychiatric Association [APA], 2000). From data provided by the 2003 National Survey of Children's Health (Visser & Lesense, 2005) it has been estimated that 7.8% of children age 4–17 years (or about two students in every kindergarten through 12th grade classroom) have at some point in their lives been diagnosed with ADHD. When this high prevalence is combined with the fact that ADHD is typically associated with school adjustment difficulties, it is not surprising to find that school psychologists annually receive an average of 17 referrals for ADHD assessment (Demaray, Schaefer, & Delong, 2003) and that 27% of children receiving special education assistance are reported by their parents to have this disorder (U.S. Department of Education, 2003; Wagner & Blackorby, 2004). Consequently, it is clear that school professionals need to be prepared to identify and serve students with ADHD. Facilitating attainment of the knowledge and readiness needed to serve these students is the primary goal of this book. In this introductory chapter we begin by providing a further rationale for why this book is needed, an overview of ADHD (including its history and current conceptualization), and an examination of ADHD in relation to educational services and placement.

Why School Professionals Should Read This Book

Along with the high prevalence of ADHD, there are several other reasons why school professionals should increase their knowledge of this disorder. In this section, we review some of the issues that have generated an imperative for school psychologists and other educators to be prepared to address the needs of students with ADHD.

ADHD is one of the most common childhood psychiatric disorders. Given its high prevalence in the general population, it is not surprising that ADHD is one of the most frequent reasons for referrals to school psychologists (Barkley, 2006). Simply put, all educators can expect to be required to address many students with ADHD

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during their careers. In fact, it will be the exception that a given classroom will not have at least one student with this disorder.

ADHD may be under-identified. Contrary to media reports and popular beliefs, it has been suggested that there is currently not enough evidence to support the conclusion that ADHD is systematically over-diagnosed (Sciutto & Eisenberg, 2008). In fact, there is some evidence to suggest that the opposite is the case. Reich, Huang, and Todd (2006), in a population based study of 1610 Missouri twins, report that only about half of the participants who could be diagnosed as having ADHD were receiving any medication treatment. Reich and colleagues state ". . . that many problems remain with implementation of diagnostic screening and appropriate treatment among practitioners" (p. 807).

ADHD is associated with significant school adjustment difficulties. The importance of identifying, assessing, and treating the student with ADHD is emphasized by the fact that this disorder is typically associated with behaviors that interfere with school success. For example, both academic performance and skill deficits are common among these children. Over a quarter of these students will experience grade retention, be placed in a special education program, and/or fail to graduate from high school. In addition, almost half will be suspended at some point and 10–20% will be expelled from school (Barkley, 2006; DuPaul & Power, 2008).

School professionals play a key role in the identification of ADHD. While there is no one protocol that has been agreed upon for the identification of ADHD, it is generally accepted that caregiver reports and direct behavioral observation are a part of the comprehensive diagnostic assessment. Given that ADHD symptoms are especially prevalent in the school environment, teacher reports and classroom observations should be considered an important part of any ADHD assessment (Brock, 1999; Brock & Clinton, 2007; Koonce, 2007).

Accurate identification is important. Accompanying the reality that school professionals play an important role in the identification of ADHD, is the fact that there are important reasons for ensuring an accurate diagnosis. Specifically, this diagnosis is not without negative consequences. While the diagnosis can open doors to special support services and accommodations, its diagnosis and medical treatment can also close doors. For example, it can provide grounds for disqualified from military services (especially if the individual has taken medication for ADHD within one year of planned enlistment; Lansford, 2002). In addition, the medical treatments for ADHD, while relatively safe, are not without their undesired effects and other psychopathologies with similar behavior features (e.g., bipolar disorder) can be made worse by the inappropriate prescription of stimulant medication (Hart, Brock, & Tang, in press).

School-based interventions are an important element of ADHD treatment. While the use of medications in the treatment of ADHD has been found to be highly effective, psychosocial interventions, such as those typically offered as part of a school-based treatment plan, are generally considered to be an important part of a comprehensive intervention program. In other words, school professionals should not simply rely on physicians and their use of medications to treat ADHD. Rather,

they must be a collaborative partner in any ADHD treatment plan (Chronis, Jones, & Raggi, 2006; Jensen et al., 2002).

Inclusion of children with ADHD in general education classrooms. It is important to acknowledge that research and practice has been moving toward the integration of special and general education for some time (Sailor, Gerry, & Wilson, 1991). Consequently, students with disabilities are increasingly placed in general education settings. Regarding students with ADHD, a survey of 34 mid-western elementary and middle school students suggests that the vast majority spend most of their school days in a general education classroom (Reid, Magg, Vasa, & Wright, 1994). Consequently, all educators, both special and general educators alike, need to have up-to-date information on ADHD.

Mandates generated by federal statutes. Finally, it should be recognized that Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990 (ADA), and Part B of the Individuals with Disabilities Act of 2004 (IDEA) place significant responsibilities on schools when it comes to serving students with ADHD. Among these responsibilities, as identified by Soleil (2000), schools must identify and assess these students and provide them with an appropriate education at public expense. As indicated, these educational services must be individualized and should involve the student's families. Furthermore, the educators who provide these services must be appropriately trained and provided the support (including staff development) needed to meet the needs of the student with ADHD. Finally, to the extent that the student with ADHD has associated behavioral challenges resulting in school disciplinary procedures, school districts must ensure that such procedures do not interfere with the provision of a free and appropriate public education.

Conceptualizations of Attention-Deficit/Hyperactivity Disorder

As currently conceptualized, ADHD includes at least three different sub-types (Inattentive, Hyperactive/Impulsive, and Combined Types; APA, 2000). This section reviews how our understanding of this disorder has changed over time and how we currently conceptualize ADHD.

The evolution of ADHD. It is generally acknowledged that George Still (1902) provided the first clinical description of what is now referred to as ADHD. In a series of papers published in the *Lancet*, Still referred to children in his clinical practice, who had problems with sustained attention and overactivity, as having a "defect in moral control." Later, following an encephalitis epidemic in 1917 and 1918, it was observed that a number of children who survived this infection developed ADHD-like behavioral and cognitive challenges (Barkley, 2006). Given this association, it is not surprising that the disorder was initially thought to be due to minimal brain damage or dysfunction (MBD).

By the 1960s, in North America, terms like MBD were fading from use as a clinical label for children with ADHD. Instead attention was directed to what was

considered to be the primary behavioral manifestation of the disorder, hyperactivity (Barkley, 2006). Subsequently, in the late 1960s, the disorder "Hyperkinetic Reaction of Childhood" appeared in the second edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM II; APA, 1968). In *DSM II* the disorder was described as being "... characterized by overactivity, restlessness, distractibility, and short attention span, especially in young children; the behavior diminishes by adolescence" (p. 50).

By the 1970s, in North America, researchers began to question whether hyperactivity was the primary symptom of the disorder. Instead, stimulated in large part by the work of Virginia Douglas (1972) and her colleagues, they began to focus on inattention as the primary symptom. Subsequently, in 1980 the term "Attention Deficit Disorder" (or ADD) appeared in the third edition of *DSM* (APA, 1980). In *DSM III* the disorder included sub-types and using this system an individual could be diagnosed as having ADD with or without hyperactivity. At the time, this subtyping was controversial and its validity questioned. While research would soon validate that there were clinically significant differences between these sub-types, when *DSM III* was revised (APA, 1987) the label for the disorder was changed to "Attention-Deficit Hyperactivity Disorder" and sub-typing was for a relatively short period of time discontinued.

The current conceptualization of ADHD. The current criteria for ADHD are found in the fourth edition of the *DSM* (APA, 1994) and its text revision (APA, 2000). According to *DSM IV-TR*, the primary symptoms of ADHD are developmentally inappropriate degrees of inattention, impulsiveness, and hyperactivity. From research suggesting that sub-types of ADHD have valid clinical distinctions (e.g., August & Garfinkel, 1989; Lahey et al., 1994), the current criteria allow a child to be diagnosed as either Predominantly Inattentive, Predominantly Hyperactive-Impulsive, or Combined types. Diagnostic criteria for ADHD Predominantly Inattentive Type require that six or more of the nine symptoms of inattention be present. Criteria for ADHD Predominantly Hyperactive-Impulsive Type require that four or more of the six symptoms of hyperactivity and impulsivity be present. Criteria for ADHD Combined Type require that both Inattentive and Hyperactive-Impulsive criteria be met. In addition to displaying symptoms, these criteria require that they have persisted for at least 6 months, be inconsistent with developmental level, have their onset before the age of 7 years, be displayed in two or more different settings (e.g., school and home), and be considered clinically significant (APA, 2000). Further discussion of the diagnostic criteria for ADHD is provided in Chapter 5.

ADHD and Educational Placement and Services

A *DSM* diagnosis of ADHD does *not* automatically qualify a student for any special education placement and/or related services (U.S. Department of Education, 2006). In fact, as has already been mentioned, a large majority of these students spend most of their school days in general education classrooms (Reid et al., 1994). However,

it is clear that depending upon the severity of a student's ADHD, he or she *may* be considered eligible for services under Part B of the Individuals with Disabilities Act (IDEA), and/or related aids and services under Section 504 of the Rehabilitation Act of 1973. This section will discuss the series of changes in educational regulations that now govern the provision of special services to ensure that the student with ADHD receives a free and appropriate public education (FAPE).

IDEA 1990. Although initially viewed as a medical/psychiatric condition, ADHD has increasingly come to be recognized as a major educational issue (Reid & Katsiyannis, 1995). By the early 1990s, national advocacy organizations (e.g., Children and Adults with Attention Deficit Disorders [CHADD]) had begun to work toward improving educational services for students with ADHD (Aleman, 1991). Among these efforts was an attempt to make what was then referred to as ADD a disability category under the Individuals with Disabilities Education Act (IDEA) of 1990. The U.S. Department of Education opposed this change as it judged that students with ADD who required special education would already meet existing eligibility criteria. Subsequently, the U.S. Congress made no change to the definitions of "children with disabilities" with respect to ADHD (although it did add categories for Traumatic Brain Injury and Autism). At the same time, however, Congress did direct the Secretary of Education to issue a Notice of Inquiry (NOI) asking for public comment on special education for students with ADHD (Davila, Williams, & MacDonald, 1991).

September 16, 1991, Policy Memorandum. From the Department's review of over 2000 comments generated by the NOI, it was concluded that there was confusion regarding the extent to which students with ADHD may be eligible for special education services and general education accommodations. As a result, the Department issued a policy memorandum titled "Clarification of Policy to Address the Needs of Children with Attention-Deficit Disorders within General and/or Special Education" (Davila et al., 1991; copy provided in Appendix A). Signed jointly by the Assistant Secretaries of the Office of Civil Rights (OCR), Office of Elementary and Secondary Education (OESE), and Office of Special Education and Rehabilitative Services (OSERS), this document indicated that students with ADD who require special education are eligible under the IDEA disability categories of "other health impairment," "specific learning disability," or "serious emotional disturbance." Further, it specified that students with ADHD who do not require special education may nevertheless be eligible for specialized services, under Section 504 of the Rehabilitation Act of 1973 (which prohibits agencies that receive federal funds from discriminating against persons with disabilities on the basis of their disability). Eligibility for 504 services would be based upon the finding that the student with ADHD was judged to be a "handicapped person" (i.e., the student's ADHD substantially limits the major life activity of learning; Davila et al., 1991).

Under Section 504 the student with ADHD and judged to be a "handicapped person," is entitled to FAPE. According to the Davila and colleagues (1991) policy memorandum, this may include either "regular or special education and related aids and services. . .." Although not required, an individualized education program (IEP) was identified as one way to provide FAPE. However, assuming that special

education services are not appropriate for the student with ADHD (and the student is judged to be a "handicapped person"). Davila and colleagues specify that the student's education "must be provided in the regular education classroom." Further, general education classroom teachers were explicitly identified as being "important" in the identification of required instructional adaptations and interventions. Specific examples of general education adaptations for the student with ADHD mentioned in the Davila and colleagues policy memorandum included (a) providing a structured learning environment; (b) repeating and simplifying instructions about in-class and homework assignments; (c) supplementing verbal instructions with visual instructions; (d) using behavioral management techniques; (e) adjusting class schedules; (f) modifying test delivery; (g) using tape recorders, computer-aided instruction, and other audiovisual equipment; (h) selecting modified textbooks or workbooks; (i) tailoring homework assignments; (j) reduced class size; (k) use of one-on-one tutorials; (l) classroom aides and note takers; (m) involvement of a "services coordinator" to oversee implementation of special programs and services; and (n) possible modification of nonacademic times such as lunchroom, recess, and physical education.

Although not specifically mentioned in the September 1991 Policy Memorandum, it is significant to note that the Americans with Disabilities Act of 1990 (ADA), also applies to students with ADHD. ADA prohibits discrimination against persons with disabilities at work, at school and in public accommodations, and applies to institutions that do not receive federal funds. Because ADA has been interpreted as incorporating many of the Section 504 requirements, it has been suggested that by meeting 504 requirements, school districts meet their ADA obligations (Soleil, 2000).

April 29, 1993, Clarification Memorandum. Following the 1991 Policy Memorandum, Acting Assistant Secretary for Civil Rights, Jeanette J. Lim, authored a second memorandum titled "Clarification of School Districts' Responsibilities to Evaluate Children with Attention Deficit Disorders (ADD)" (Lim, 1993; copy provided in Appendix B). Offered as a response to what was viewed as a misinterpretation of earlier communications (including the Davila et al. 1991 Memorandum), this memorandum addressed the responsibility of school districts to evaluate students "suspected" of having ADHD. The Lim (1993) memorandum reiterated that the Davila and colleagues (1991) Memorandum was intended to ensure that students suspected of having ADHD *and* believed by the school district to need special education or related services are evaluated for such (and that these statements were necessary since many districts prior to the 1991 memorandum felt that they did not need to conduct such evaluation given that ADHD was not an IDEA disability category). However, the Lim memorandum also clarified that it was not the intent of prior communications to require school districts to evaluate *every* student suspected of having ADHD, "based solely on parental suspicion and demand." It concluded that if a school district did not judge that a student required special education or related services, then it may refuse to evaluate the child (and notify the parents of their due process rights). The Lim memorandum also included an updated version

of a technical assistance presentation titled "OCR Facts: Section 504 Coverage of Children With ADD" (copy provided in Appendix B).

October 22, 1997, Notice of Proposed Rule Making (NPRM). Published in the Federal Register (U.S. Department of Education, 1997) this NPRM was designed to elicit public comment on the 1997 reauthorization of IDEA. The elements that related to ADHD offered clarification of the conditions under which a student with ADHD would be eligible for IDEA services. "Note 5" indicated that some students with ADHD will meet the criteria for other health impairments (OHI) if (a) the ADHD is "determined to be a chronic health problem that results in limited alertness that adversely affects educational performance" and (b) "special education and related services are needed." In addition, the note clarifies that the term "limited alertness," a key element of OHI criteria, "includes a child's heightened alertness to environmental stimuli that results in limited alertness with respect to the educational environment" (p. 55070). The NPRM's Note 5 further clarifies that some students with "ADHD may be eligible for services under other disability categories in §300.7(b) if they meet the applicable criteria for those disabilities" and "if those children are not eligible under this part, the requirements of section 504 of the Rehabilitation Act of 1973 and its implementing regulations may still be applicable" (U.S. Department of Education, 1997, p. 55031).

March 12, 1999, Final Regulations for IDEA 1997. The analysis of comments and changes to IDEA generated by the October 1997 NPRM, and relevant to ADHD, are provided in Table 1.1 (U.S. Department of Education, 1997). As originally proposed, the final regulations added ADHD to the list of conditions that may result in special education eligibility [Part B, Definition of "Child with a Disability" – 20 U.S.C. 1401(3)(A); 300.7(c)(9)(I) ADD and ADHD – 300.7(c)(9)(i)]. These regulations also clarified that the phrase "limited strength or vitality or alertness" that defines OHI includes "a child's heightened alertness to environmental stimuli that results in limited alertness with respect to the educational environment," which is characteristic of many students with ADHD (U.S. Department of Education, 1997, p. 55031). The Topic Brief, published by the U.S. Department of Education (1999), designed to clarify these changes, is provided in Appendix C.

August 14, 2006, Final Regulations for IDEA 2004. Regulations for the most recent reauthorization of IDEA were published in the Federal Register (U.S. Department of Education, 2006). With this reauthorization no substantive changes were made and the student with ADHD as their primary disability continues to potentially qualify for special education under one of three different eligibility categories: (a) specific learning disability, (b) emotionally disturbed, and (c) other health impaired. However, the only specific mention of ADHD is found in the OHI criteria [§300.8(c)(9)(i)] which states, "Other health impairment means having limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that" – "Is due to chronic or acute health problems such as asthma, *attention deficit disorder or attention deficit hyperactivity disorder*, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell

Table 1.1 The analysis of comments and changes to IDEA generated by the October, 1997 NPRM

Proposed Section 300.7 would make the following changes to the current regulatory definition of "children with disabilities". . .
Note 1 following Section 300.7 of the current regulations . . . would be added without change to proposed Section 300.7, and four new notes would be added to that section, as follows: . . .
Note 5 would address the conditions under which a child with attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD) is eligible under Part B of the Act. The note clarifies that some children with ADD or ADHD who are eligible under this part meet the criteria for "other health impairments" if (1) the ADD or ADHD is determined to be a chronic health problem that results in limited alertness that adversely affects educational performance, and (2) special education and related services are needed because of the ADD or ADHD. (The note clarifies that the term "limited alertness" includes a child's heightened alertness to environmental stimuli that results in limited alertness with respect to the educational environment.)
The note further clarifies that (1) some children with ADD or ADHD may be eligible for services under other disability categories in Section 300.7(b) if they meet the applicable criteria for those disabilities, and (2) if those children are not eligible under this part, the requirements of Section 504 of the Rehabilitation Act of 1973 and its implementing regulations may still be applicable.

Note: From U.S. Department of Education (1997, p. 55031)

anemia, and Tourette syndrome; and" . . . "adversely affects a child's educational performance" (emphasis added, p. 46757).

Purpose and Plan of This Book

In the pages that follow school professionals are provided with information needed to be better prepared to identify and address ADHD. Chapter 2 offers an exploration of the etiology of ADHD. In Chapter 3, epidemiological issues and associated conditions are reviewed. Included here will be a discussion of the rate of ADHD in both special education and in the general population. Chapters 4, 5, and 6 review information essential to identification and assessment, and finally Chapter 7 presents a summary of research examining the effectiveness of interventions for children with ADHD. In addition, this book also offers a list of Internet resources that provides additional ADHD resources in Appendix D.

Chapter 2
Causes

To date no single factor has been identified as *the* cause of ADHD. Rather, as is the case for other psychopathologies (e.g., schizophrenia, autism, PTSD, bipolar disorder), ADHD is thought to be the result of complex interactions between genetic, environmental, and neurobiological factors (Kieling, Goncalves, Tannock, & Castellanos, 2008; Mick & Faraon, 2008; Shastry, 2004; Spencer, Biederman, Wilens, & Farone, 2002). Specifically, it appears that the genetic and environmental etiologies of ADHD lead to the neurobiological differences, which in turn manifest as ADHD symptoms (Biederman & Faraone, 2002). These hypothetical relationships are illustrated in Fig. 2.1, which suggests that genetic and neurobiological variables appear to be the greatest contributors to ADHD symptoms (Barkley, 2006). Further, it is clear that environmental variables play a less significant role in the development of most cases of ADHD and it is not known if environmental insults are required for ADHD to emerge (Das Banerjee, Middleton, & Faraone, 2007). To the extent they are involved it seems likely that they contribute to ADHD symptoms by interacting with genetic predispositions. However, in a few cases (i.e., significant neurological injury) ADHD can arise without genetic predisposition (Max et al., 2005a, 2005b). While psychosocial factors do not appear to cause ADHD per se, they clearly have the potential to effect symptom expression (Barkley, 2006).

Genetics

There is strong evidence that genetics plays a powerful etiological role in ADHD (Biederman, 2005; Daley, 2006; Mick & Farone, 2008; National Institute of Mental Health [NIMH], 2006). Evidence in support of this conclusion comes from a variety of sources including family, twin, adoption, genome, and candidate gene search studies.

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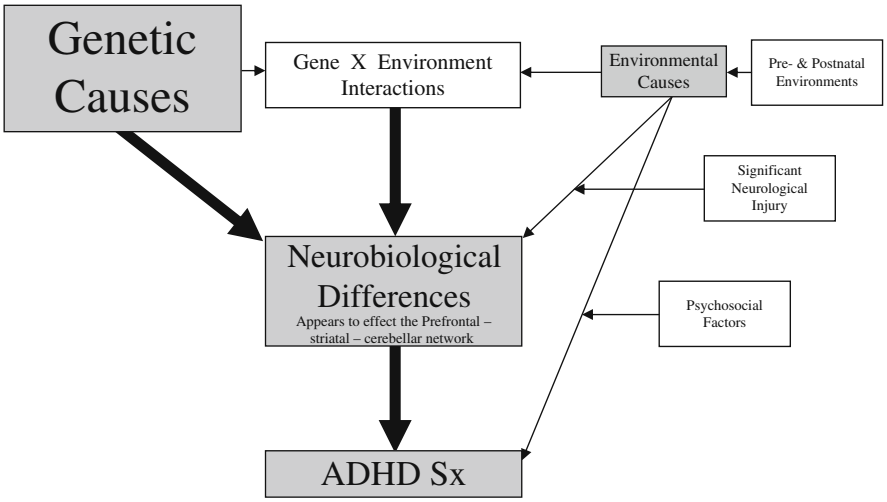

Fig. 2.1 This figure illustrates the hypothetical relationships between genetics, the environment, and the neurobiological differences associated with ADHD. Each of these factors likely has a role in the development and/or manifestation of ADHD and its symptoms

Family Studies

Because children share 50% of their genes with each parent, for genes to be important in the development of ADHD it must run in families (Acton, 1998). Despite changes in diagnostic criteria (as described in Chapter 1), Biederman's (2005) overview of the literature found consistent agreement that the parents and siblings of children with ADHD have a two- to eight-fold increased risk for the disorder. For example, the incidence of ADHD among the parents and siblings of children diagnosed with ADHD is reported to be 25–26% respectively (Biederman, Faraone, Keenan, Knee, & Tsuang, 1990; Welner, Welner, Steward, Palkes, & Wish, 1977). Even more impressive is the report that the incidence of ADHD among children of parents with ADHD is 55% (Biederman et al., 1995). Thus, a family history of ADHD is an important variable to consider when diagnosing this disorder.

Twin Studies

These studies compare identical (monozygotic) twins to fraternal (dizygotic) twins. While identical twins share 100% of their genes, fraternal twins (as is the case with other siblings) share only 50% of their genes. The extent to which identical twin pairs are more likely to have ADHD than fraternal twin pairs is used to estimate "heritability" or the proportion of individual differences in ADHD within a population that can be attributed to genetic differences.