Advances in Psychotherapy – Evidence-Based Practice

Brian P. Daly Aimee K. Hildenbrand Shannon G. Litke Ronald T. Brown

ADHD in Children and Adolescents

2nd edition



Attention-Deficit/Hyperactivity Disorder in Children and Adolescents

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About the Authors

Brian P. Daly, PhD, is associate professor and department head of psychological and brain sciences at Drexel University. Dr. Daly is past president of the Philadelphia Behavior Therapy Association and recipient of grant funding from the Pew Charitable Trusts, W. K. Kellogg Foundation, Sixers Youth Foundation, Shire Pharmaceuticals, and Justice Resource Institute. He currently serves on the editorial board of *Professional Psychology: Research and Practice*, as well as on the advisory committees for several nonprofit organizations.

Aimee K. Hildenbrand, PhD, is an assistant professor of pediatrics at Sidney Kimmel Medical College of Thomas Jefferson University, an assistant research scientist at Nemours Children's Health, and a pediatric psychologist at Nemours Children's Hospital Delaware. Dr. Hildenbrand's research program aims to improve delivery of pediatric health care to optimize pain management and psychosocial outcomes for youth with chronic illness, with a particular focus on pediatric sickle cell disease and cancer.

Shannon G. Litke, BA, is a doctoral student in the clinical psychology program at Drexel University working under the mentorship of Dr. Brian Daly. Ms. Litke's interests include mechanisms of psychosocial treatment for child and adolescent trauma and anxiety disorders. She is particularly interested in improving interventions for at-risk youth from underserved communities.

Ronald T. Brown, PhD, ABPP, is the Dean of the School of Integrated Health Sciences at the University of Nevada, Las Vegas. Dr. Brown has been the past president of the University of North Texas at Dallas and also is the past president of the Association of Psychologists in Academic Health Centers and the Society of Pediatric Psychology of the American Psychological Association. Dr. Bown has published over 300 articles and chapters as well as 12 books related to childhood psychopathology and pediatric psychology.

Advances in Psychotherapy – Evidence-Based Practice

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Brian P. Daly

Department of Psychological and Brain Sciences, Drexel University, Philadelphia, PA

Aimee K. Hildenbrand

Center for Healthcare Delivery Science, Nemours Children's Health, Wilmington, DE

Shannon G. Litke

Department of Psychological and Brain Sciences, Drexel University, Philadelphia, PA

Ronald T. Brown

School of Integrated Health Sciences, University of Nevada, Las Vegas, NV



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EUROPE:	Hogrefe Publishing GmbH, Merkelstr. 3, 37085 Göttingen, Germany Phone +49 551 99950 0, Fax +49 551 99950 111; E-mail publishing@hogrefe.com
SALES & DISTRIBUT	TION
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UK:	Hogrefe Publishing, c/o Marston Book Services Ltd., 160 Eastern Ave., Milton Park, Abingdon, OX14 4SB Phone +44 1235 465577, Fax +44 1235 465556; E-mail direct.orders@marston.co.uk
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examined the incidence of ADHD. Findings from a recent investigation by Shi et al. (2021) suggested that the cumulative incidence of ADHD is approximately 6.62–13.12% among school-age children in the US, whereas studies in the United Kingdom and Denmark indicate an incidence of approximately 59.7 to 91.2 per 100,000 in 2010 (Holden et al., 2013; Mohr Jensen & Steinhausen, 2015).

1.3.2 Sex

ADHD is diagnosed more frequently in males than in females, with an estimated ratio of 2:1 or higher (Sayal et al., 2018). However, this sex difference may be a result of older diagnostic criteria that were developed with predominantly male samples. Additionally, girls are more likely to present with primarily inattentive features and less likely to exhibit overt overactivity or comorbid conduct problems as compared to their male counterparts, which may account for markedly higher treatment referral rates among boys. Perhaps due to more careful identification of specific subtypes (predominantly inattentive presentation), the male to female ratio has reduced over the past two decades (Sayal et al., 2018). While ADHD is more common among boys, research suggests that both groups experience significant functional impairments in academic performance, comorbidity with learning disorders, and social problems (Hinshaw et al., 2012).

1.3.3 Age

ADHD typically emerges early in childhood and is most commonly identified during the elementary school years, when symptoms become more evident and impairing, particularly in academic settings. In preschool-aged children, this disorder primarily manifests as excessive motor activity. While ADHD may be diagnosed in very young children, as suggested in the *DSM-5*, symptoms of overactivity and hyperactivity are particularly difficult to differentiate from normative behaviors for children below the age of 4 years (American Psychiatric Association, 2013). Inattention appears to become more prominent during elementary school. During adolescence, hyperactivity symptoms tend to shift from overt motoric signs (e.g., running, climbing) to more subtle symptoms including fidgetiness, restlessness, or impatience. A substantial proportion of children with ADHD continue to exhibit symptoms into adulthood that result in impairments across settings and situations.

1.3.4 Culture

There is little doubt that ADHD occurs across all nationalities and cultures. Indeed, a consistent two-factor ADHD symptom structure has been replicated across cultures for school-age children (Bauermeister et al., 2010). Both boys and girls experience significant functional impairment from ADHD

АДНД	DDD	Conduct disorder	Depression	Anxiety	ОСD	Adjustment disorder	Bipolar disorder	PTSD	Substance use/abuse
Inattention symptoms									
Fails to give close attention to details or makes careless mistakes in schoolwork			>	>					
Trouble holding attention on tasks or play activities			>	>	>	>		>	>
Does not seem to listen when spoken to directly			>						
Does not follow through on instructions and fails to finish schoolwork or chores			>				>		>
Trouble organizing tasks and activities			>						
Loses things necessary for tasks and activities			>						
Easily distracted							>		>
Forgetful in daily activities			>						>
Hyperactivity and impulsivity symptoms	nptoms								
Fidgets with or taps hands or feet, or squirms in seat				>			>		
Leaves seat in situations when remaining seated is expected									

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ther investigation is required to elucidate other factors that influence genetic vulnerability to ADHD, including potential interactions among genes, as well as interactions between genetic and environmental risk factors (Cortese & Coghill, 2018).

2.1.2 Neurological Factors

Many children with ADHD have structural brain differences relative to their peers Structural and functional neuroimaging studies have identified key neurophysiological differences between individuals with and without ADHD supporting a neurological basis for this disorder. Regarding structural deficits, children with ADHD have been demonstrated to exhibit a 3-5% smaller overall brain size relative to unaffected children. This smaller brain size has been attributed to a significantly lower volume of gray matter in children with ADHD (Castellanos et al., 2002; Faraone et al., 2015). Specifically, structural magnetic resonance imaging studies have consistently demonstrated that compared to healthy controls, individuals with ADHD exhibit significant volumetric reductions in the right globus pallidus, right putamen, caudate nucleus, and cerebellum (Faraone et al., 2015). In addition to these findings, a meta-analysis of neuroimaging studies of children and adults with ADHD provides evidence of further volumetric reductions in the amygdala, nucleus accumbens, and hippocampus (Hoogman et al., 2017). Hoogman and colleagues (2017) observed that these differences in structural volume were most prominent in childhood (compared to adulthood), were not accounted for by pharmacological treatments, and were associated with delayed peaks of volumetric maturation in these subcortical areas. These findings provide support for one conceptual model of ADHD as a disorder of brain maturation delay. Of note, while many structural neuroimaging studies have focused on abnormalities in specific brain regions, a recent review by Samea and colleagues (2019) found an overall lack of convergence in the literature on regional brain alterations for children and adolescents with ADHD. The authors argue that this discrepancy highlights the importance of considering ADHD pathophysiology in terms of complex network interactions, rather than regionally localized alterations. Consistent with this observation, the past two decades have been marked by a conceptual shift to investigation of network versus regional alterations (Cortese & Coghill, 2018).

Various brain regions are implicated in the pathophysiology of ADHD In addition to structural brain alterations, functional neuroimaging studies have revealed that children with ADHD show distinct activation patterns, particularly during tasks requiring attention and inhibition. Several empirical studies of ADHD in children have provided evidence of irregular functional activity in prefrontal cortical regions, as well as within the posterior parietal cortex, cerebellum, and basal ganglia (Cortese et al., 2012; Faraone et al., 2015). A meta-analysis by Cortese and colleagues (2012) suggests that ADHD is associated with hypoactivation in a number of brain regions, including the frontostriatal, frontoparietal, and ventral attention networks. The frontostriatal circuit includes the basal ganglia and subcortical structures such as the anterior cingulate cortex, which plays a role in affective and cognitive

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that an unremarkable developmental history does not necessarily signify the absence of ADHD.

3.1.3 Clinical Interviews

Clinical interviews are a key component of all mental health evaluations and are of central importance in diagnosing ADHD. Interviews offer rich, nuanced, and highly descriptive information that goes beyond that obtained through questionnaires (Sparrow & Erhardt, 2014). In addition, they offer an opportunity to begin to develop rapport with children and their families and can be used across varied settings with minimal expense. Clinical interviews should assess for all DSM-5 criteria related to ADHD, including the frequency, severity, and persistence of symptoms, age of onset and course, pervasiveness of symptoms across settings, associated impairments in functioning, as well as information on differential or comorbid diagnoses. Given that difficulties with inattention, impulsivity, and/or hyperactivity are relevant to many mental health disorders, it is recommended that interviews be structured such that the focus begins broadly and becomes narrower as the interview progresses. Assessing broad domains prior to specific ADHD symptoms can facilitate differential diagnosis and yield a more comprehensive understanding of the child's functioning, thereby enabling a more accurate diagnosis and appropriate treatment recommendations (Sparrow & Erhardt, 2014).

Interviews should be conducted with the child, caregivers, teachers, and service providers (e.g., child's pediatrician) to obtain multiple sources of information on presenting problems and functioning across settings. Of note, information obtained from different sources during the interview process may be discrepant. For instance, the referred child might deny behavioral problems that parents or teachers have observed at home and/or school. Alternatively, teachers may report few problems with the child's ability to sustain attention in a structured and engaging classroom setting, while the caregivers indicate significant issues with the child's attentional control in a home that is characterized by limited structure and routine. Thus, in formulating an ADHD diagnosis, the clinician must carefully consider and weigh multiple sources of information across settings.

Clinicians may choose to conduct the clinical interview with the youth and caregiver(s) together at the beginning, but then engage in individual interviews if additional information is likely to be shared without the other party present (e.g., in the case of adolescents). In addition to general information about ADHD symptoms, children should be assessed for their subjective experience of symptoms and motivational factors. Interviews with children also provide the opportunity to conduct a mental status exam, collect initial behavioral observations of the child and interventions with the family and the child, and discuss family and peer relationships. For evaluations with adolescents, it is critical that practitioners obtain detailed information about the onset and natural history of presenting problems, as symptoms of ADHD must be present by 12 years of age to qualify for the diagnosis. Clinical interviews are a mainstay of ADHD diagnosis

Clinical interviews can be conducted with children and caregivers together, or separate

4.1.4 Psychosocial/Behavioral Therapies

Although there is a compelling evidence base for medication for the management of ADHD, caregivers frequently rate the option of medication lower in acceptability and satisfaction relative to nonmedical therapies (Fiks et al., 2012; Ng et al., 2017). There are several forms of psychosocial and behavioral treatments that may be useful for children with ADHD. Because many children and adolescents with ADHD also have other psychological symptoms that can include depression or aggression, therapy can address aspects of functioning that may not necessarily be responsive to pharmacotherapy. Psychosocial therapies also can target issues common to children with ADHD, such as low self-esteem and self-efficacy. Many youth with ADHD, especially those who did not receive early intervention, have had to endure others' assessments of them as "lazy, ineffective, unfocused, or poorly behaved." Others may have recognized the child's functional deficits and attributed these impairments to inherent characteristics rather than a neurodevelopmental disorder. Since children and adolescents affected by ADHD often have internalized these negative messages, thereby impacting their self-esteem, psychological interventions can help target and correct these inaccurate judgments and their effects on self-schemas.

Family therapy is often a helpful intervention for children with ADHD. Therapists should emphasize that many behaviors demonstrated by children with ADHD stem from the disorder. Caregivers are a critical part of the support and encouragement that is necessary for children to develop positive self-esteem and effective coping strategies for the symptoms of ADHD. At the same time, every child is different, and not every behavior may necessarily be attributable to ADHD. Furthermore, caregivers are likely to have additional issues to bring to therapy besides their child's ADHD. These factors often affect their child's experience and the family's management of ADHD. There are a number of strategic family approaches available that include behavior management within the context of a family systems approach (for a review, see Barkley, 2006).

Behavioral techniques are commonly employed for individuals with ADHD and have been demonstrated as the psychotherapy of choice for the disorder because of their well-established evidence base in the extant literature. Behavioral interventions are based on the principles of social learning theory and contingency management. Behavior therapy may be helpful in its emphasis on structure and its reinforcement of positive behaviors. Behavior therapy also may include interventions that are taught to caregivers and teachers. Children may demonstrate the greatest degree of behavior change when they receive consistent responses for their actions and behavior. Methods of behavior therapy may include management skills for caregivers and teachers, contingency management approaches (such as time outs and positive reinforcement), self-management strategies for the child (e.g., selfmonitoring and self-reinforcement), and training that targets social skills and problem solving. For the child and caregiver, consistency and follow-up are important components of successful treatment with behavior therapy. For Psychosocial and behavioral treatments may be useful for youth with ADHD

Behavioral techniques have been found to be very effective in the treatment of ADHD

5

Case Vignettes

Lakisha (preschool)

Lakisha is a 4-year-old Black African American girl who arrives at her pediatrician's office with her mother Jennifer. Jennifer is concerned that Lakisha is overly active and has difficulty following directions. Although Jennifer had been frustrated with Lakisha's behavior, it was family relatives and Lakisha's preschool teacher who suggested that the mother bring Lakisha to the pediatrician for an evaluation.

Lakisha's father, Damon, is separated from Jennifer. Her parents separated when Lakisha was 2 years of age. Damon lives in a neighborhood about 30 minutes away. He only has sporadic contact with Lakisha, meeting with her approximately four times a year. Lakisha lives with her two older brothers (ages 7 and 11 years), one younger sister (age 6 months), and her maternal grandmother. Because Jennifer works a full-time job, many of the caregiving duties are completed by Lakisha's grandmother.

Jennifer reported that she was generally healthy during her pregnancy with Lakisha. She was delivered 1 month prematurely via Caesarean section due to a breech position at birth. Lakisha was jaundiced at birth and was incubated (without a respirator). Lakisha was a colicky infant who was difficult to feed but had no other major problems after birth and has been healthy except for a few ear infections as a toddler. Lakisha met all developmental milestones on time.

For the physical exam with her pediatrician, Dr. Thomas, Lakisha was found to be in the 55th percentile for height, weight, and head circumference. Vital signs, vision screening, and hearing screening were normal, and she has no dysmorphic features. The only dermatologic finding was pierced ears. Her neurologic exam was normal. Lakisha was friendly and answered questions willingly for Dr. Thomas. He did observe that Lakisha had trouble sitting still, although she was able to be redirected.

Jennifer described Lakisha as a very talkative child with endless energy. Lakisha likes to climb on things and run around the house. She is often observed to act impulsively by grabbing toys from her older brothers without asking and by grabbing for sharp objects such as a kitchen knife even though she has been repeatedly told that knives are dangerous. Jennifer also reports that Lakisha struggles to follow directions, especially when they are multi-

Appendix 1: Support Groups and Organizations, Toolkits, and Rating Scales

This is a **preview** of the content that is available in the downloadable material of this book. Please see p. 89 for instructions on how to obtain the full-sized, printable PDF.

Support Groups and Organizations

Attention Deficit Disorder Association (ADDA) PO Box 103, Denver, PA 17517 USA Tel: +1 (800) 939-1019 Email: info@add.org Website: http://www.add.org/ This association provides information, resources, webinars, and networking opportunities for adults impacted by ADHD, and for the professionals that work with these individuals.

ADD Warehouse

3200 Northwest 70th Ave., Suite 102 Plantation, FL 33317 USA Tel: +1 (800) 233-9273 Website: https://www.addwarehouse.com A central location for ordering books, tapes, assessment scales, and videos selected to help parents, educators, and health professionals assist people affected by developmental disorders and ADHD.

Center for Mental Health Services

5600 Fishers Lane, Rm 15-105 Rockville, MD 20857 USA Tel: +1 (800) 789-2647 Website: https://www.samhsa.gov/about-us/who-we-are/offices-centers/cmhs A branch of the US Department of Health and Human Services that provides a range of information on mental health, treatment, and support services.

Children and Adults with Attention Deficit Disorders (CHADD)

8181 Professional Place, Suite 150 Landover, MD 20785 USA Tel: +1 (800) 233-4050 Website: https://www.chadd.org

This national nonprofit organization provides education, advocacy, and support for individuals with ADHD. In addition to CHADD's informative website, it also publishes a variety of printed materials, including *Attention* magazine, a free newsletter, and other publications, on research advances and treatments for ADHD.

Council for Exceptional Children (CEC)

1110 North Glebe Rd., Suite 300 Arlington, VA 22201-5704 USA Tel: +1 (888) 232-7733

Website: https://exceptionalchildren.org/

The CEC is the largest international professional organization dedicated to improving educational outcomes for individuals with disabilities and/or gifts and talents. It supplies materials for educators working with children.