Attention Deficit Hyperactivity Disorder (ADHD) in Children

Description/Etiology

Attention deficit hyperactivity disorder (ADHD) is one of the most common neurodevelopmental disorders in children (Centers for Disease Control and Prevention [CDC], 2016). ADHD is characterized by problems with attention and/or hyperactivity-impulsivity, resulting in significant psychosocial and academic impairment. The Diagnostic and Statistical Manual of Mental Disorder, 5th edition, (DSM-5) diagnosis of ADHD is divided into three categories: predominantly inattentive, predominantly hyperactive-impulsive, and the combined type, in which both inattentive and hyperactive-impulsive characteristics are present. The combined type is most common; the inattentive type is diagnosed more frequently in girls and the hyperactive-impulsive type is diagnosed more frequently in boys. Diagnostic criteria specify that there must be at least six symptoms of either inattention or hyperactivity-impulsivity that are severe enough to interfere with functioning or affect activities, and that at least some of these symptoms started prior to 12 years of age. Symptoms usually begin in early childhood and may diminish between the ages of 10 and 25, although impulsivity and inattentiveness often continue into adolescence and adulthood. The specific cause of ADHD remains undetermined, but researchers believe it results from a complex interaction between genetic, social, and environmental factors (including diet) (American Psychological Association [APA], 2013). Although, these factors are not considered predictors of ADHD so much as triggers of an underlying predisposition toward ADHD. Common comorbid conditions are learning disabilities, mood disorders, oppositional defiant disorder, and conduct disorder. DSM-5 does not exclude a diagnosis of autism spectrum disorder when criteria for both disorders are met.

Executive functioning is the most common area of impairment in children with ADHD. Executive functioning, controlled by the frontal lobe, involves activation, focus, effort, emotion, memory, and action. Impairment in executive functioning often results in psychosocial impairment. Children with ADHD often have difficulty participating successfully in age-appropriate tasks, especially those related to focus and attention. They experience frequent frustration and are less likely to have the positive experiences necessary for the development of a positive sense of self-efficacy. Impairment in executive functioning may in turn affect the child’s relationship with his or her parents. Parents often must increase monitoring and involvement in the child’s daily activities, and this additional burden on parents may lead to parental frustration, shame, or diminished self-efficacy.

The most successful treatment of ADHD involves a combination of medication and behavioral management. Research studies support the finding that medication (usually stimulants) is a vital variable in successfully treating ADHD (Chow et al., 2014). Symptoms of ADHD diminish in 50% of children as they mature; the other 50% continue to struggle with inattention and impulsivity throughout their lives (Sadock et al., 2015). ADHD is treatable and manageable if early, individualized medical, behavioral, educational, and therapeutic interventions are offered.
Facts and Figures
› ADHD is the most commonly diagnosed psychiatric disorder in children. It affects approximately 7.2% of children worldwide, although this varies greatly by region (Thomas et al., 2015)
› In the United States, ADHD is diagnosed in 11% of children 4–17 years of age as reported by parents. State by state, the rate of diagnosis ranges from 5.6% to 18.7% (CDC, 2016)
› In the United States, ADHD is the number-one reason for a referral to mental health treatment (American Academy of Pediatrics, 2011)
› In Australia, ADHD is the most common reason for a child to present to a pediatrician (Chow et al., 2014)
› ADHD is diagnosed 3 to 4 times more often in boys than in girls (Stroffoff et al., 2016)
› Anxiety is a common comorbidity with ADHD and may manifest most often as social phobia, generalized anxiety, or separation anxiety. Researchers in Australia found that 26% of children with ADHD who were studied had one anxiety disorder and 39% had two or more anxiety disorders. When two or more anxiety disorders were present, children with ADHD had a decreased quality of life and more behavior problems (Sciberras et al., 2014)

Risk Factors
ADHD is influenced by both genetic and environmental factors known to have adverse effects on brain development, including smoking, substance use, exposure to infections during pregnancy, exposure to environmental toxins, and child maltreatment. There is evidence that ADHD is caused by multiple genes (Zhang et al., 2012). Genetic disorders that increase the risk that a child will have ADHD include fragile X syndrome, Williams syndrome, Turner syndrome, and Klinefelter syndrome. Febrile seizures in childhood can increase the risk for ADHD. Fetal alcohol syndrome is strongly linked to ADHD. Central nervous system (CNS) infections or CNS trauma, prematurity, and brain injury can also increase the chances of a child’s developing ADHD. Most of the suspected genes are those that affect dopamine transporters.

Common social risk factors found in children with ADHD are chronic family conflict, poverty, violence, and exposure to parental pathology (especially maternal). Adverse childhood experiences (ACE), specifically parental/familial divorce, substance abuse, mental illness, incarceration or domestic violence, as well as socioeconomic hardship and neighborhood violence significantly increase the risk for a child developing ADHD. Cigarette and alcohol exposure in utero, exposure to secondhand smoke in early childhood, and very poor nutrition all may increase the risk of ADHD in children. There is increasing concern about the effects on the developing brain of exposure to toxins (e.g., lead, mercury, polychlorinated biphenyls [PCBs], traffic-related air pollution), including their potential to increase the risk for ADHD.

Children with ADHD may be at greater risk for depression, social isolation, and poor school performance. ADHD is associated with increased risk for oppositional defiant disorder, conduct disorder, substance use disorders, antisocial behavior, criminality, emotional difficulties, trouble with law enforcement, and suicide attempts in adults. The increased risk for these outcomes is likely due to the poor judgment and lack of impulse control that can characterize persons with ADHD. Children in whom hyperactivity is diagnosed can be a challenge for parents to manage; familial discord and child abuse are increased risks for children with ADHD.

Signs and Symptoms/Clinical Presentation
ImPAIRMENT from symptoms must be present in two or more settings (e.g., at school and at home).

According to the DSM-5 for ADHD (APA, 2013), six or more of the following symptoms of inattention are present for at least 6 months and are inappropriate for the child’s developmental level:
› Often does not pay close attention or makes careless mistakes
› Often has trouble keeping attention on tasks or play activities
› Often does not seem to listen when spoken to directly
› Often does not follow through on instructions and fails to finish tasks
› Often has trouble organizing activities
› Often avoids, dislikes, or does not want to do things that take a lot of mental effort
› Often loses things needed for tasks and activities
› Often is easily distracted
› Often is forgetful in daily activities

Six or more of the following symptoms of hyperactivity-impulsivity are present for at least 6 months to an extent that is troublesome and inappropriate for the child’s developmental level:
› Often fidgets with hands or feet or squirms in seat when sitting still is expected
Often gets up from seat when remaining in seat is expected
Often excessively runs about or climbs when and where it is not appropriate
Often has trouble playing or doing leisure activities quietly
Often is “on the go” or acts as if “driven by a motor”
Often talks excessively
Often blurts out answers before questions are finished
Often has trouble waiting his or her turn
Often interrupts others

Social Work Assessment

Client History
• Complete a comprehensive biopsychosocial-spiritual assessment, which includes information on physical, mental, environmental, social, financial, and medical factors as they relate to the child and family, including
  – child’s developmental history, attainment of milestones, communication, behavior, and family and peer relationships
  – parents’ functioning and risk factors, preconceived beliefs about disability, understanding of child’s condition and implications, and adjustment to child’s disability, including possible guilt or grief and perceptions and hopes for the child; efficacy regarding the child’s condition and needs; overall coping; mother’s history of substance use
  – family’s socioeconomic status, employment, housing, access to resources, family or marital stress, impact on siblings, social support, quality of life, cultural factors
  – systemic issues and barriers including lack of financial resources and lack of transportation and service providers in child’s community
• The social worker should include parents, siblings, and teachers in the assessment process because they are valuable sources of information about the child’s development and the level of the child’s impairment

Relevant Diagnostic Assessments and Screening Tools
• Psychological testing is not needed for the diagnosis of ADHD, although psychometric tests can be of use in determining the type of ADHD and identifying any comorbid diagnosis or learning difficulty. There is no single test for ADHD. The diagnosis is a process that involves gathering information from multiple sources (e.g., parent, teacher, caregiver). Although not commonly used for diagnostic purposes, brain imaging and MRIs are valuable: smaller brain volumes in the prefrontal cortex, cerebellum, and subcortical structures have been linked to ADHD. There are multiple assessment tools used to screen for ADHD, including:
  – Conners Comprehensive Behavior Rating Scale (Conners CBRS) is an administered scale that collects answers from parents/caregivers, teachers, and, when appropriate, the child, to create a comprehensive inventory of the child’s behaviors
  – Comprehensive Behavior Rating Scales (CBRS) are an administered assessment that includes parent and teacher forms for children aged 6–18 years and a self-report form for children aged 8–18 years
  – Brown Attention-Deficit Disorder Scales (BADDs) are administered scales that assess executive function impairments for ages 3 years through adulthood
  – Strengths and Difficulties Questionnaire (SDQ) is a brief screening tool for children aged 3–16 years; several versions are available; parent and teacher tools are utilized as well as a self-completed tool for youths over 11 years of age; multiple languages available
  – Achenbach Child Behavior Checklist (CBCL) is a set of assessment tools for preschool (1½–5 years) and school-aged (6–18 years) children utilizing parent-, teacher-, and adolescent-completed questionnaires; available in over 90 languages
  – ADHD Rating Scale IV is an administered assessment tool used to diagnose ADHD and monitor response to treatment in children aged 5–17 years

Laboratory and Diagnostic Tests of Interest to the Social Worker
• Lead levels in the blood should be checked if risk to the child is high. Lead exposure is linked to ADHD
• Hearing and vision testing may need to be completed to rule out issues in those areas as causes of inattention

Social Work Treatment Summary
Treatment recommendations vary based on age. For pre-school-aged children, behavior therapy administered by the parents and/or teacher should be the first line of treatment, with medication utilized only when behavior therapy does not result in positive change and there are moderate to severe behavior disturbances. For children ages 6 to 11, behavior therapy combined
with an FDA-approved medication is the most common treatment plan. Adolescents with ADHD more commonly receive a prescription and may or may not have behavior therapy. Cognitive behavior therapy (CBT) is the most common therapy model used for ADHD. CBT works to change the child’s thoughts or cognitions related to behaviors to effect change in behavior. Strategies often address planning, time management, and organization along with emotion regulation.

Children with ADHD often have behavioral and social difficulties. Behaviorally, they need clear and consistent expectations and contingencies. Behavioral parent training focuses on teaching parents to better manage and shape their children’s behavior utilizing social learning principles such as positive and negative reinforcement and punishment. Effective approaches, particularly with pre-school-aged children, include New Forest Parenting Programme, Triple P, Incredible Years, and Parent Child Interaction Therapy (PCIT). School-based psychoeducational interventions used with school-aged children include CBT, social skills training, and academic interventions. ADHD coaching can be delivered by peers, parents, teachers, or anyone involved with the child and focuses on goal setting, behavior skills development, structure, and accountability.

Social workers should be aware of their own cultural values, beliefs, and biases and develop specialized knowledge about the histories, traditions, and values of their clients. Social workers should adopt treatment methodologies that reflect their knowledge of the cultural diversity of the societies in which they practice. Educational information should be delivered in a culturally sensitive manner using language that can be easily understood by the client and family. If the assessment indicates that a client has a low literacy level, the use of pictograms (i.e., a symbol or picture representing a concept or idea) can be beneficial. Social workers should utilize evidence-based practices, ensure the client’s privacy and confidentiality, and keep accurate records of service in the client’s file.

Social workers should practice with awareness of and adherence to the NASW Code of Ethics core values of service, social justice, dignity and worth of the person, importance of human relationships, integrity, and competence. Become knowledgeable of the NASW ethical standards as they apply to children with ADHD and practice accordingly (National Association of Social Workers, 2008).

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<tr>
<th>Problem</th>
<th>Goal</th>
<th>Intervention</th>
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<td>Child is showing signs of inattention and/or behavior struggles in at least two life settings (school, home)</td>
<td>Determine whether child meets criteria for diagnosis of ADHD</td>
<td>Refer child to psychologist/licensed clinical social worker/school personnel to begin testing and evaluation. Parents and teachers should fill out behavior checklist(s) to offer specific descriptions of child’s observed behavior(s)</td>
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<td>ADHD is diagnosed in child</td>
<td>Assist child in reaching full potential academically, socially, and behaviorally</td>
<td>Ensure child has access to appropriate medical care and refer for medication, provide full medical workup and growth monitoring, use both medications and behavior therapy to teach child appropriate behavior(s), incorporate behavioral and social support groups for child, provide parents/caretakers with support and information, communicate with school personnel to ensure child’s learning accommodations and rights are met</td>
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**Applicable Laws and Regulations**

› United States

• In 1975, Congress passed Public Law 94-142 (Education of All Handicapped Children Act), now codified as Individuals with Disabilities Education Act (IDEA). To receive federal funds, states must develop and implement policies that ensure a free, appropriate public education (FAPE) to all children with disabilities

• Under IDEA, free screening and early intervention services are provided to children from birth to age 3 years. IDEA also provides special-education–related services from ages 3 to 21
• An Individual Family Service Plan (IFSP) is a plan for special services for children from birth to 3 years of age with developmental delays. Once a child turns 3, an Individualized Education Plan (IEP) is designed for a child who qualifies for special education under IDEA. The purpose is to meet that child’s specific special education needs by setting goals and objectives. An IEP describes what services a child will receive as part of his or her special education program.
• Schools in the United States are required by law to provide testing and Section 504 plans, which spell out the modifications the student with ADHD needs to accomplish the same educational goals as other students. Once a child is designated as having ADHD, school districts are required to work with the child’s teachers and parents/caregivers to develop an individualized education program (IEP) to accommodate the child’s educational needs.

The Canadian Charter of Rights and Freedoms addresses rights of persons with disability to equality and accommodations. Educational policies and services in Canada are determined at the provincial level.
In the United Kingdom, Education Act 1996 and Special Educational Needs and Disability Act 2001 address educational services for persons with a disability that causes impairment in the ability to carry out day-to-day activities.
Each country has its own standards for cultural competence and diversity in social work practice. Social workers must be aware of the standards of practice set forth by their governing body (e.g., National Association of Social Workers in the United States, British Association of Social Workers in the UK) and practice accordingly.

Available Services and Resources
› Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD), www.chadd.org/
› ADHD-Europe, https://www.adhdeurope.eu/
› Attention Deficit Disorder Warehouse, www.addwarehouse.com
› ADDA (Attention Deficit Disorder Association), www.add.org
› Canadian ADHD Resource Alliance (CADDRA), https://www.caddra.ca/

Food for Thought
› Aerobic exercise is thought to be beneficial for children with ADHD, in particular for adolescents.
› Excessive television watching and viewing of violent movies can increase hyperactivity.
› Typical rambunctiousness or rowdiness of boys may be misinterpreted as ADHD characteristics; care should be taken when assessing young males for ADHD.
› Adherence to medications treatment can be difficult with children. Medications are available in a variety of delivery mechanisms including liquid formulations, tablets that disintegrate in the mouth, chewable tablets, and transdermal patches.

Red Flags
› Abuse of stimulant medication by adolescents has become a concern; parents should carefully store and monitor ADHD medication prescriptions and access.
› Overdiagnosis of ADHD and overmedication of children with this diagnosis are a danger; teachers, parents, and caretakers may urge ADHD treatment for children who are simply challenging or difficult to deal with.
› Impulsivity can result in an increased risk for substance use, as can executive functioning impairment that affects judgment.

Discharge Planning
› Educate the parents on the importance of ongoing medical monitoring, especially if medication is prescribed; height and weight should be charted, and regular follow-up appointments must be kept.
› Encourage the parents or caregivers to have regular communication with school staff and substitute caregivers regarding observed side effects and medication efficacy to help determine correct medication and correct dosage. Sleep or appetite changes should be noted.
› Offer to assist teachers with classroom management techniques; parent/teacher communication may include daily report cards.
› Encourage support groups, which may be helpful in decreasing stress levels for parents and increasing a sense of self-worth in children with ADHD.
› Educate parents that the hyperactivity component may become easier to control with age and maturity.
› Encourage activities, sports, careers, and other outlets that allow mobility, independence, and autonomy.
› Ensure that the parents/caregivers understand the child’s diagnosis and needs, are educated about treatment and medication if applicable, have realistic expectations for his or her behaviors, and are prepared to manage challenges.
Medical, financial, therapeutic, childcare, housing, and educational services may be sought for the family; if possible, regular contact should be maintained.

References


17. Neuman, N., Patrick, R., LefMasters, G., Levin, L., Bernstein, D., Hershey, G. K. K., ... Dietrich, K. N. (2013). Traffic-related air pollution exposure in the first year of life and behavior scores at 7 years of age. Environmental Health Perspectives, 121(6), 731-737. doi:10.1289/ehp.1205555


