ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: INSIGHTS FROM DSM-5

Abstract: Attention Deficit Hyperactivity Disorder is a common neurodevelopmental disorder. This article examines attention-deficit/hyperactivity disorder. The focus is on the Diagnostic Criteria in DSM-5, age of onset, gender differences diagnostic features, prevalence, differential diagnosis, risk and prognostic factors and comorbidity are discussed.

Keywords: Attention-Deficit/Hyperactivity Disorder, DSM-5 Diagnostic criteria, gender differences, prevalence, differential diagnosis, risk and prognostic factors.

Adel El Saied El Banna, PhD
Full Professor of Psychological Measurement and Evaluation
Former Dean of Education College
Damanhour University
Egypt
Contact:
E- mail: adel.elbanna@edu.dmu.edu.eg

Mourad Ali Eissa Saad, PhD
Full Professor of Special Education
Vice president of KIE University
Kie University
Egypt
E-mail: profmouradali@gmail.com

International Journal of Psycho-Educational Sciences | Vol. 8, Special Issue
London Academic Publishing, June 2019, pp 25 – 29
https://www.journals.lapub.co.uk/index.php/IJPES

INTRODUCTION

The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM) is a classification of mental disorders with associated criteria designed to facilitate more reliable diagnoses of these disorders (Mourad Ali, 2018). Attention deficit hyperactivity disorder (ADHD) is a disorder characterized by difficulties paying attention, poor impulse control, and hyperactive behaviours. ADHD starts in early childhood and persists in adulthood in 40–60% of cases (Stéphanie et al., 2018). According to the DSM-5, diagnosis of ADHD requires a persistent pattern of inattention and/or hyperactivity and impulsivity that interferes with function and development. The symptoms of ADHD negatively impact many aspects of individuals' lives, families, and society, including but not limited to, educational and social outcomes, strained parent-child relationships, and increased utilization of and spending on healthcare services (Yuyang et al., 2019).

DIAGNOSTIC CRITERIA IN DSM-5

To be diagnosed with ADHD, a person needs to fulfil the following criteria (American Psychiatric Association 2013, P.59-60):

A. persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterized by (1) and/or (2):

1. Inattention: Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities:

Note: The symptoms are not solely a manifestation of oppositional behaviour, defiance, hostility, or failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.

a. Often fails to give close attention to details or makes careless mistakes in schoolwork, at work, or during other activities (e.g., overlooks or misses details, work is inaccurate).
b. Often has difficulty sustaining attention in tasks or play activities (e.g., has difficulty remaining focused during lectures, conversations, or lengthy reading).
c. Often does not seem to listen when spoken to directly (e.g., mind seems elsewhere, even in the absence of any obvious distraction).
d. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (e.g., starts tasks but quickly loses focus and is easily side-tracked).
e. Often has difficulty organizing tasks and activities (e.g., difficulty managing sequential tasks; difficulty keeping materials and belongings in order; messy, disorganized work; has poor time management; fails to meet deadlines).
f. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (e.g., schoolwork or homework; for older adolescents and adults, preparing reports, completing forms, reviewing lengthy papers).
g. Often loses things necessary for tasks or activities (e.g., school materials, pencils, books, tools, wallets, keys, paperwork, eyeglasses, mobile telephones).
h. Is often easily distracted by extraneous stimuli (for older adolescents and adults, may include unrelated thoughts).
i. Is often forgetful in daily activities (e.g., doing chores, running errands; for older adolescents and adults, returning calls, paying bills, keeping appointments).

2. Hyperactivity and impulsivity: Six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities:

Note: The symptoms are not solely a manifestation of oppositional behaviour, defiance, hostility, or a failure to understand tasks or instructions. For older adolescents and adults (age 17 and older), at least five symptoms are required.

a. Often fidgets with or taps hands or feet or squirms in seat.
b. Often leaves seat in situations when remaining seated is expected (e.g., leaves his or her place in the classroom, in the office or other workplace, or in other situations that require remaining in place).
c. Often runs about or climbs in situations where it is inappropriate. (Note: In adolescents or adults, may be limited to feeling restless.)
d. Often unable to play or engage in leisure activities quietly.
e. Is often "on the go," acting as if "driven by a motor" (e.g., is unable to be or uncomfortable being still for extended time, as in restaurants, meetings; may be experienced by others as being restless or difficult to keep up with).
f. Often talks excessively.
g. Often blurts out an answer before a question has been completed (e.g., completes people's sentences; cannot wait for turn in conversation).
h. Often has difficulty waiting his or her turn (e.g., while waiting in line).
i. Often interrupts or intrudes on others (e.g., butts into conversations, games, or activities; may start using other people's things without asking or receiving permission; for adolescents and adults, may intrude into or take over what others are doing).

Age of Onset

The age of onset criterion (onset of symptoms before or at 7 years of age) is difficult for adults to meet, since many do not recall their functioning before 7, and parent retrospective recall has limited accuracy and may not be available (Lily et al., 2011).

Gender Differences in the Manifestation

ADHD is more frequently identified in boys than girls (Barkley, 2014). According to DSM-5, the male-to-female ratio ranges from 2:1 in children and 1.6:2 in adults (American Psychiatric Association, 2013).

Diagnostic Features

Attention-deficit/hyperactivity disorder (ADHD) is marked by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development. *Inattention* manifests behaviourally in ADHD as wandering off task, lacking persistence, having difficulty sustaining focus, and being disorganized and is not due to defiance or lack of comprehension. *Hyperactivity* refers to excessive motor activity (such as a child running about) when it is not appropriate, or excessive fidgeting, tapping, or talkativeness. In adults, hyperactivity may manifest as extreme restlessness or wearing others out with their activity. *Impulsivity* refers to hasty actions that occur in the moment without forethought and that have high potential for harm to the individual (e.g., darting into the street without looking). Impulsivity may reflect a desire for immediate rewards or an inability to delay gratification. Impulsive behaviours may manifest as social intrusiveness (e.g., interrupting others excessively) and/or as making important decisions without consideration of long-term consequences (e.g., taking a job without adequate information) (American Psychiatric Association 2013)

Prevalence

ADHD is among the most common psychiatric disorders with a prevalence rate of 3–5 %. The prevalence of ADHD in adults across twenty countries was recently estimated at 2.8%, with a range between 1.4 - 3.6% (Kooij et al. 2019).

Differential Diagnosis

- ADHD frequently co-occurs with oppositional defiant disorder (ODD), conduct disorder (CD), anxiety disorders (e.g. generalized anxiety disorder, social anxiety), and depressive disorders (e.g. major depression) (Irene et al., 2016).
- *Intellectual disability (intellectual developmental disorder).* Symptoms of ADHD are common among children placed in academic settings that are inappropriate to their intellectual ability. In such cases, the symptoms are not evident during non-academic tasks. A diagnosis of ADHD in

intellectual disability requires that inattention or hyperactivity be excessive for mental age. (American Psychiatric Association 2013)

- *Autism spectrum disorder.* Individuals with ADHD and those with autism spectrum disorder exhibit inattention, social dysfunction, and difficult-to-manage behaviour. The social dysfunction and peer rejection seen in individuals with ADHD must be distinguished from the social disengagement, isolation, and indifference to facial and tonal communication cues seen in individuals with autism spectrum disorder. Children with autism spectrum disorder may display tantrums because of an inability to tolerate a change from their expected course of events. In contrast, children with ADHD may misbehave or have a tantrum during a major transition because of impulsivity or poor self-control. (American Psychiatric Association 2013).
- *Anxiety disorders.* According to the DSM-5, anxiety disorders involve anticipation of a future threat and the accompanying emotional, behavioural, and physiological symptoms (American Psychological Association, 2013).
- *Depressive disorders.* According to the DSM-5 (2013), common features of depression include sad or irritable mood accompanied by somatic and cognitive changes that impact functioning. Individuals may experience fatigue and sleep disturbance.
- *Personality disorders.* In adolescents and adults, it may be difficult to distinguish ADHD from borderline, narcissistic, and other personality disorders. All these disorders tend to share the features of disorganization, social intrusiveness, emotional dysregulation, and cognitive dysregulation.
- *Neurocognitive disorders.* Early major neurocognitive disorder (dementia) and/or mild neurocognitive disorder are not known to be associated with ADHD but may present with similar clinical features. These conditions are distinguished from ADHD by their late onset (American Psychological Association, 2013).
- *Specific learning disorder***.** Children with specific learning disorder may appear inattentive because of frustration, lack of interest, or limited ability. However, inattention in individuals with a specific learning disorder who do not have ADHD is not impairing outside of academic work (American Psychological Association, 2013).
- *Oppositional defiant disorder.* Individuals with oppositional defiant disorder may resist work or school tasks that require self-application because they resist conforming to others' demands. Their behaviour is characterized by negativity, hostility, and defiance (American Psychological Association, 2013).

Introduction Risk and prognostic factors

- *Temperamental.* ADHD is associated with reduced behavioural inhibition, effortful control, or constraint; negative emotionality; and/or elevated novelty seeking.
- *Environmental.* Very low birth weight (less than 1,500 grams) conveys a two- to threefold risk for ADHD, but most children with low birth weight do not develop ADHD. Although ADHD is correlated with smoking during pregnancy, some of this association reflects common genetic risk. Exposure to environmental toxicants has been correlated with subsequent ADHD, but it is not known whether these associations are causal.
- *Genetic and physiological.* ADHD is elevated in the first-degree biological relatives of individuals with ADHD. The heritability of ADHD is substantial. While specific genes have been correlated with ADHD, they are neither necessary nor sufficient causal factors. Visual and hearing impairments, metabolic abnormalities, sleep disorders, nutritional deficiencies, and epilepsy should be considered as possible influences on ADHD symptoms (American Psychiatric Association 2013, P.62)

Comorbidity

ADHD is often associated with other disorders. Children with ADHD often exhibit comorbid conditions, such as depression, anxiety, and oppositional defiant disorder (ODD), with psychiatric comorbidity rates around 50% (Nour et al. 2017). Personality disorders in adults including Antisocial Personality Disorder and Borderline Personality Disorder, as well as substance abuse disorders are commonly associated with ADHD (Simon et al. 2017). Sleep disorders are another

comorbidity that affect children with ADHD at a much higher level than normally developing children. Furthermore, these sleep disturbances can further aggravate the symptoms of ADHD such as inattention and motor skill dysfunction (Simon et al., 2017). Obesity has been linked with ADHD both in childhood and adulthood in several major longitudinal studies and meta analyses, making it one of the most common comorbidities of ADHD with males being more afflicted with the condition. ADHD was one of the most common risk factors for impulsive internet use and Internet Gaming Disorder (IGD) (Simon et al. 2017). Adult ADHD Hyperactive Impulsive presentation is highly correlated with problematic gambling and had the highest rates of video game addiction (Romo et al. 2015). Addictive behaviours are among the most prominent behavioural tendencies associated with the disorder which can lead to pathological comorbidities such as various types of addictions and dependencies (Simon et al. 2017).

Conclusion

Attention-deficit/hyperactivity disorder (ADHD) is a chronic neurodevelopmental disorder with core symptoms of inattention, hyperactivity, and impulsivity. with the introduction of DSM-5, it is no longer classified as a childhood disorder but as a chronic lifelong disorder. ADHD is associated with significant impairment of cognitive, emotional, and psychosocial functioning (i.e., self-esteem, academic performance, and social acceptance, parent–child and family relationships). It is associated with at-risk behaviours and comorbid psychiatric disorders and affects several areas of life, such as psychosocial functioning, school, work, and health care access and health care use (Stéphanie et al. 2018). A wide range of comorbid behavioural and psychiatric conditions are associated with ADHD, including learning disabilities, language disorders, mood disorders, anxiety, and conduct/oppositional disorder. These comorbid problems can complicate both diagnosis and treatment of ADHD (Yuyang et al. 2019). In adulthood, ADHD is associated with poor functional out-comes, including lower rates of professional employment, more frequent job changes and more difficulties at work, lower socioeconomic status, higher rates of separation and divorce, more traffic violations and accidents, more convictions and incarcerations, more risky sexual behaviour and unwanted pregnancies and higher rates of psychiatric comorbidity (Lily et al. 2011).

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