

Applying Psychology to Everyday Life

Paying Attention to Attention-Deficit/ Hyperactivity Disorder

2.15 Identify some potential causes of attention-deficit/hyperactivity disorder.

Attention-deficit/hyperactivity disorder (ADHD) is a developmental disorder involving behavioral and cognitive aspects of inattention, impulsivity, and hyperactivity. Despite what many people have been told over the years, it is not due to bad parenting, too much junk food, or certain types of food coloring, and while symptoms may change somewhat, people do not outgrow the disorder. ADHD is a biological disorder that is related to genetics, environmental influences, and variations in brain structure and function.

Previously referred to as attention deficit disorder (ADD), there are currently three diagnostic categories for this disorder in the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. These include ADHD predominantly hyperactive/impulsive presentation, ADHD predominantly inattentive presentation, and ADHD combined presentation (American Psychiatric Association, 2013). Although ADHD is most commonly diagnosed in children, the disorder tends to persist into adolescence and adulthood. Inattention and impulsivity are often reported in adults, whereas symptoms of hyperactivity tend to decline with age. The ADHD-related problems in adults can range from strained relations with family, friends, or a significant other to problems with substance abuse, traffic accidents, or job stability (Barkley et al., 2008). A longitudinal study found a group of males diagnosed with ADHD in childhood were more likely to have issues across a variety of domains when followed up with as adults. At a mean age of 41, the men with ADHD had significantly worse educational, occupational, economic, and social outcomes and more divorces than non-ADHD comparisons (Klein et al., 2012).

There are not only ongoing issues from the disorder itself but also with the medications used to treat it. In the United States there is a growing concern over the misuse of prescription drugs on college campuses, for example, by students without ADHD in the attempt to improve their attention or concentration when studying. And for some students, the most common source of the medication is a friend with a prescription (Garnier-Dykstra et al., 2012). Furthermore, an ongoing increase in the number of ADHD diagnoses and prescriptions for stimulant medications appears to coincide with the use of ADHD medications as “neuroenhancers” in otherwise healthy children and adolescents and has prompted the American Academy of Neurology to publish a position paper against such practices (Graf et al., 2013).

The brain areas involved in the behavioral and cognitive characteristics of ADHD are typically divided into those responsible for regulating attention and cognitive control and those responsible for alertness and motivation (Nigg, 2010). Cortical and subcortical brain areas involved and found to be smaller in neuroimaging studies of ADHD are the prefrontal cortex (primarily on the right side), basal ganglia (subcortical structures involved in response control), cerebellum, and corpus callosum (Giedd et al., 2015; Nigg, 2006).

Since ADHD involves a variety of behaviors and cognitive aspects, research has often looked for specific markers that may lead to the actual causes of the disorder. These markers may be biological, cognitive, or behavioral measures (Nigg, 2010). To assess individual markers, researchers may combine neuroimaging and electrophysiological studies of individuals with ADHD while at rest or while they perform specific cognitive tasks (like various tests of attention). Some studies use EEG or ERPs (Clarke et al., 2007; Loo et al., 2009; Missonnier et al., 2013; van der Stelt et al., 2010; White et al., 2005), whereas others use MRI, fMRI, or PET (Bush et al., 2008; Mostert et al., 2016; Volkow et al., 2007).