




CLINICAL PERSPECTIVES

Behavioral Addictive Disorders in Children and Adolescents

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Behavioral addictive disorders (BADs) are syndromes similar to substance use disorders (SUDs) but with a focus on behaviors rather than on use of psychoactive substances. These non-substance-related disorders occur when typical, rewarding behaviors, such as gambling, playing video games, and using social media, are done in excess, affecting daily functioning and/or inducing severe psychological distress. BADs are chronic and relapsing, and characterized by a failure to resist an impulse, drive, or temptation to perform an act despite adverse consequences. They are common among youth and linked to poor mental health outcomes and negative social consequences. Given the high prevalence of BADs and their potential serious outcomes, the burden on the youth population's mental health can be consequential.¹

To identify and address BADs, we need appropriate diagnostic tools. Gambling disorder was the first BAD to be included in the *DSM-5*,² with diagnostic criteria similar to those for SUDs. Albeit with some controversy,³ Internet gaming disorder was included by the World Health Organization (WHO) in the 11th Revision of their *International Classification of Diseases*,⁴ and has also been discussed as a condition for future study in the *DSM-5*. More data are needed to justify the classification of other proposed behavioral addictions, such as social media use disorder or compulsive buying disorder.⁵ The *DSM-5* task force has also proposed a new category of Addiction and Related Disorders that would encompass both SUDs and BADs, but it is not yet clear which behaviors should be classified as disorders.⁶

BADs and SUDs have many commonalities. They share a core defining characteristic, namely the loss of behavioral control. In addition, they present similarities in their natural history, phenomenology, tolerance, comorbidity,

overlapping genetic contribution, neurobiological mechanisms, response to treatments, and adverse consequences.¹ In both BADs and SUDs, there is usually tension before and relief after engaging in the behavior. Unlike obsessive-compulsive behaviors, the behaviors in BADs and SUDs are ego-syntonic in nature, even though they become more ego-dystonic over time, as they are less pleasurable and more motivated by negative reinforcement (ie, the behavior takes place to relieve withdrawal from the substance or activity, or to decrease anxiety). They also present with an urge or craving prior to initiating the behavior to which emotional dysregulation may contribute. Individuals with BADs and SUDs generally also share similar personality profiles, scoring high on impulsivity and sensation seeking and low in harm avoidance.⁷ Many individuals recover on their own without formal treatment, but for others, there can be significant functional impairment. Both BADs and SUDs involve serotonin and dopamine, as well as regions of the brain's reward system, such as the ventral striatum. These 2 groups of disorders may also share cognitive features, may present substantial comorbidities, and they appear to respond to the same psychosocial and pharmacological interventions.¹

The overlap between BADs and SUDs is so significant that, more than a decade ago, various researchers and clinicians began proposing that addiction should be considered as a general syndrome, regardless of it stemming from the consumption of a psychoactive drug or engagement in a rewarding, non-substance-consuming behavior.⁸

Relevant to pediatric professionals, both BADs and SUDs have onset and higher rates in adolescence and young adulthood, and their natural histories may be chronic, with relapsing patterns.⁸ Substance use is generally initiated in adolescence and young adulthood, and the age of onset is

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significantly associated with SUDs in adulthood. For example, the risk for SUDs in adulthood is 6 times higher in persons who initiate cannabis use in adolescence compared to those who start using after 18 years of age.⁹ Initiating substance use before 17 years of age is also associated with worse psychosocial problems, including an increased risk for mental health disorders, and poorer health outcomes, social competence, family and peer relationships, leisure/recreation, and school and work adjustment, compared to late onset of substance use.¹⁰

Although these associations need further investigation with respect to BADs,¹¹ establishing healthy behaviors in general at a young age is crucial for a healthy adulthood. Overall, we believe that there is a need for early identification and clinical interventions that address BADs, and research to develop effective evidence-based treatments. Clinical recommendations for healthy behaviors can follow the framework of the mental health intervention spectrum that focuses on promotion, prevention, treatment, and maintenance.¹²

Health-promoting behaviors change across the life course and tend to decrease during the transition to young adulthood, with yearly small but steady declines in the number of healthy behaviors from ages 13 to 24 years and a concurrent increase in risk-taking behaviors. This progressive decline in health-promoting behaviors in youth differs by individual characteristics such as gender, race, country of origin, and level of psychological distress and self-efficacy. Social factors such as parental support, family composition, socioeconomic status, parent health behaviors, and school connectedness also contribute to health behavior change.¹³

Early-age health promotion and prevention is routine in primary care offices and schools. Universal interventions such as injury prevention education, and provision of recommendations on nutrition, exercise, and healthy use of screens already take place in well-child visits in primary care and could be expanded to systematically include social media use and gaming recommendations. School-based social media literacy interventions can also promote healthy digital behaviors.

For children with already established unhealthy habits, early interventions can be implemented. Clinicians treating children and adolescents can incorporate education on healthy habit formation into their clinical assessment and psychoeducational interventions. Simple interventions such as recommending increased family time and empowering parenting styles can have positive effects on screen time, grades, and homework completion.¹⁴ The external environment (ie, family, school) can be corrective in these formative years and serve as a way

to create healthy habits that can be expanded to other areas. Positive resources during adolescence, including individual psychosocial characteristics, and social support from peers, parents and schools, are protective of healthy behaviors, and their protective effects persist through young adulthood.¹³ Although health professionals may tend to avoid advising on modifying behaviors because it is time consuming, simple recommendations on how to turn healthy behaviors into habits (externally triggered automatic response to frequently encountered contexts) can be provided. For example, we know that repeating a chosen behavior in the same context, until it becomes automatic and effortless, will lead to persistence of the healthy behavior when motivation wanes.¹⁵ This advice can be used by pediatricians, child and adolescent psychiatrists, and other providers to promote healthy habit formation during the clinical visit. The inclusion of advice related to sleep, exercise, behavioral activation, and/or screen time can be adjunct to medication recommendations and brief psychotherapy interventions.

For those children and adolescents in whom the problem has become clinically significant, treatment interventions may be necessary. Given the similarities between BADs and SUDs, evidence-based interventions that have proven to be successful in SUD treatment in adolescents, such as motivational interviewing, cognitive-behavioral therapy, and contingency management, separately or in combination¹⁶ may also have a role in the treatment of BADs.

Finally, community-based interventions and policy changes can facilitate the interventions of clinicians and families to address BADs. Similar to SUDs, clinicians worldwide have created centers for the treatment of BADs, and 12-Step organizations have been established to support individuals with these conditions, such as Gamblers Anonymous (1957), Food Addicts Anonymous (1987), Online Gamers Anonymous (2002), and Exercise Addicts Anonymous (2014).¹ Governments have also attempted to curb these behaviors by establishing related policies. For example, China recently instituted a nationwide time restriction on video-game playing to 90 minutes a day with no playing after 10 pm, and in the United States, members of Congress have introduced legislation in an attempt to reduce our use of social media. In 2019, Josh Hawley (R-Missouri) introduced The Social Media Addiction Reduction Technology (SMART) Act to ban certain social media platform features that are designed to result in prolonged, repetitive, and sustained engagement. The SMART Act would give social media users more power to monitor the time they spend on these platforms.

More recently, bipartisan legislation was introduced by Richard Blumenthal (D-Connecticut) and Marsha Blackburn (R-Tennessee). *The Kids Online Safety Act* attempts to curb the potentially harmful impacts of social media on young people by targeting the handling of content around key issues such as eating disorders, substance abuse, and suicide.

Pediatric professionals have a key role in early identification of children's habit formation and in providing guidance about healthy behaviors. Healthy habit formation is important because unhealthy habits can become pathological, developing into BADs, which are closely linked to mental health disorders. Early guidance on healthy habit formation and intervention is often what families expect, conscious of the potential of changing these maladaptive behaviors in order for their children to lead healthier lives.

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