Addictive Disorders in Adolescents

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KEYWORDS

- Adolescence • Addiction • Substance use disorders • Gambling • Internet gaming
- Video games

KEY POINTS

- Addictive disorders in adolescents show continuously changing patterns owing to increased availability, shifts in adolescent perceptions of available drugs, new psychoactive substances, and new technologies.
- Treatment recommendations should be personalized based on the assessment and needs of the adolescent.
- Attention to underlying mental health and medical conditions and severity of symptoms help to determine the optimal treatment setting.
- Emerging trends show legitimate use of prescription pain medication in adolescence increases risk of opioid use disorder with a significant increase in heroin addiction and overdose deaths in young adulthood.

EPIDEMIOLOGY

Addictive disorders include substance-related and non–substance-related disorders. Substance-related disorders are a leading cause of morbidity and mortality in the United States and are becoming increasingly pervasive in the adolescent population. Data from national surveys show a changing pattern of substance use in teens, with the prevalence of marijuana use decreasing at a slower rate than alcohol or cigarettes. Recent data shows the prevalence of electronic tobacco is steadily increasing, whereas opioids, and particularly nonprescription pain medications in youth, have increased to epidemic levels.[1,2] Recent surveys show use of any illicit substances to be 15% by the time teens reach 8th grade, 28% by 10th grade, 39% by 12th grade, and 41% by the time adolescents reach college. With the recent legalization of marijuana use in many states, there are now concerns that there may be an increase in the use of illicit substances among adolescents in the coming years.[1]

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Recreational drug use is a significant cause of mortality and morbidity in children and adolescents.[3] Delivery systems have changed to provide novel ways to use substances, including vaporization and electronic cigarettes.[1] Common drugs of abuse have also continued to evolve and now contain a variety of designer drugs, including synthetic marijuana, synthetic stimulants, synthetic cathinones ("bath salts"), and other new psychoactive substances.

Although novel drugs continue to come into the market, opioid use remains rampant in adolescents. There are now an estimated 26 million to 36 million individuals abusing opioids worldwide, with 2.1 million people in the United States suffering from abuse of prescription opioid pain relievers. The nonmedical use of opioids is especially problematic, with overdose deaths involving prescription opioids having quadrupled since 1999 in the United States.[4] In contrast with prior studies, recent literature highlights the potential risk of legitimate prescription opioid use with future misuse in adolescents.[5,6] Recent findings show legitimate opioid prescription use by 12th grade significantly predicts future opioid misuse after high school in individuals with little to no history of drug use or a strong disapproval of drug use. Those who were provided legitimate opioid prescriptions were 33% more likely to have opioid misuse after high school compared with those who had never received an opioid prescription.[5] This association is thought to be mediated by an individual's initial experience with the substance, which can be pleasurable, seemingly safe, and with limited perceived risk or consequence.[7]

Non–substance-related disorders include gambling disorder and Internet gaming disorder: gambling and problematic Internet use are becoming more of a concern with the spread of Internet and online access for youth. Currently, 0.2% to 12.3% of youth meet criteria for problematic gambling.[8] The prevalence of Internet gaming disorder is estimated to be 6% to 11% in adolescents, with a 2:1 male predominance.[9,10] The popularity of Internet gaming may be attributed in part to the social aspects of Internet gaming, including increased social relationships, communication between friends, team building with coordination or leadership of teams of players to advance in a game, and continued character development.[11] One genre of Internet gaming that has received particular attention is massive multiplayer online role playing games, which have been found to be particularly addictive owing to social networks and never-ending game play in a detailed virtual world.[12]

SUBSTANCE USE DISORDERS

Substance use disorders fundamentally involve a cluster of cognitive, behavioral, and physiologic symptoms associated with ongoing use of a substance despite significant substance-related dysfunction. The brain's circuitry is thought to undergo an underlying change that may persist after detoxification, especially in severe cases. Diagnosis is based on a pathologic pattern of behavior related to substance use, which is divided into 4 basic categories of criteria in the *Diagnostic and Statistical Manual of Mental Disorders*, 5th edition (DSM-5): impaired control, social impairment, risky use, and pharmacologic criteria (**Box 1**). In general, the presence of 2 to 3 criteria indicates a mild substance use disorder, 4 to 5 criteria indicate a moderate disorder, and 6 or more criteria indicate a severe disorder.

Substance-Induced Disorders

Substance-induced disorders include intoxication, withdrawal, and substance-induced mental disorders. The essential feature of intoxication is development of a reversible substance-related syndrome owing to the recent ingestion of a substance. Withdrawal is a substance-specific syndrome owing to cessation or reduction in heavy