Chapter 10: Substance Use Disorders in Adolescents

# 10.1 Substance Use & Substance Use Disorders

## What Are Substance Use Disorders?

* Substance Use Disorders are characterized by problematic patterns of substance use leading to distress or impairment and characterized by (1) impaired control, (2) social problems, (3) risk-taking, and/or (4) tolerance or withdrawal. In DSM-5, individuals are diagnosed based on the type of substance they use (i.e., Alcohol Use Disorder, Cannabis Use Disorder).
* Two features of Substance Use Disorders are tolerance and withdrawal. Although many adolescents show tolerance for substances like cigarettes, alcohol, and marijuana, withdrawal symptoms are relatively rare in adolescents for these substances.
* Substance-Induced Disorders are a group of DSM-5 disorders that describe syndromes caused by either the ingestion or withdrawal of specific substances. They include (1) Substance Intoxication, (2) Substance Withdrawal, and (3) Substance-Induced Mental Disorders.

## How Are Substance Use Disorders Different in Adolescents than in Adults?

* Adolescents with substance use problems tend to have academic problems and engage in truancy. However, these signs are not part of the diagnostic criteria for Substance Use Disorders.
* Adolescents are more likely than adults to show tolerance, to spend large amounts of time obtaining substances, and to use substances in hazardous situations.
* Adolescents are more likely to use substances episodically, and to use multiple substances simultaneously, than adults.
* The CRAFFT and ASSIST are useful to screen adolescents for substance use problems

## What Disorders Are Associated with Adolescent Substance Use Problems?

* ADHD is the most frequently-occurring comorbid disorder. Between 15 and 30% of youths with ADHD develop substance use problems, whereas 50-75% of adolescents with substance use problems have a history of ADHD.
* Between 25 and 50% of youths with substance use problems have depression. Usually, depression arises after the onset of adolescents’ substance use problems.
* Marijuana use may elicit psychotic symptoms in some individuals who have a high genetic risk for developing Schizophrenia or other psychotic disorders.

## How Common Are Substance Use Problems among Adolescents?

* Although occasional alcohol use is normative for older adolescents, only about one-third have tried marijuana or smoke cigarettes regularly. Misuse of prescription medications or other illicit substances (e.g., cocaine, heroin) is much less common.
* The prevalence of Substance Use Disorders among adolescents in the general population ranges from 1 to 5%. Approximately 3-4% of high school seniors report daily alcohol, marijuana, or cigarette use. Nearly one-fifth of high school seniors report binge drinking in the past two weeks.
* Boys are more likely than girls to develop substance use problems. Native American and White, non-Latino adolescents are more likely to develop substance use problems than youths of other ethnicities. On average, African-American adolescents show the lowest prevalence of substance use problems.

# 10.2 Causes

## What Are the Effects of Alcohol?

* Alcohol has a biphasic effect on most people. Initial consumption produces largely pleasurable effects such as euphoria and anxiety reduction whereas continued consumption largely produces unwanted effects such as sedation.
* Alcohol use is maintained physiologically through activation of the reticular formation (arousal) and the mesolimbic pathway (reward). Norepinephrine and dopamine are the primary neurotransmitters involved in each pathway, respectively.
* Alcohol acts as a GABA agonist, slowing activity of the central nervous system. It causes a reduction in autonomic arousal and sedation with prolonged consumption.

## What Are the Effects of Marijuana?

* The effects of marijuana on adolescents include euphoria and disinhibition, anxiety reduction and relaxation, and slowed movement and problem-solving. High doses can produce paradoxical effects (e.g., agitation).
* THC is detected by cannabinoid receptors throughout the brain, especially the basal ganglia, cerebellum, hippocampus, and cortex.
* Chronic use of marijuana can impair adolescents’ respiratory health and lead to amotivational syndrome.

## What Developmental Pathways Predict Substance Use Disorders?

* According to the enhanced reinforcement pathway, substance use disorders emerge due to (1) genetic risk, (2) unusual sensitivity to the effects of the substance, and (3) positive expectations for substance use.
* The negative affect pathway assumes that substance use is negatively reinforced by the alleviation of stress or negative affect
* According to the deviance-prone pathway substance use disorders emerge due to (1) neurobehavioral undercontrol, (2) disruptive behavior and academic problems, and (3) peer rejection and affiliation with deviant peers.

# 10.3 Evidence-Based Treatment

## Can We Prevent Adolescent Substance Use Disorders?

* Despite their popularity, older primary prevention programs have shown limited effectiveness in reducing substance use problems.
* Newer, secondary prevention programs are effective in reducing both substance use and substance use problems. These programs focus on (1) providing education and refusal skills to adolescents, (2) improving parent–child communication and parental monitoring, and (3) improving schools and communities.

## Is Medication Effective?

* Medication is typically used to treat comorbid behavioral or emotional disorders in adolescents with substance use problems.
* Substitution therapy or aversion therapy can be used to decrease chronic substance use problems. However, these therapies are typically used with adults rather than adolescents.

## What Psychosocial Treatments Are Effective for Adolescents?

* Inpatient treatment for Substance Use Disorders typically involves (1) abstinence and detoxification, (2) participation in individual therapy using a 12 model, and (3) brief individual and family therapy.
* Cognitive-behavioral therapy focuses largely on altering environmental factors that elicit or reinforce substance use, and changing maladaptive beliefs that contribute to continued use.
* Motivational enhancement therapy seeks to increase an adolescents’ willingness to change his or her pattern of substance use. It often adopts a harm reduction approach in which any decrease in use is seen as positive and is reinforced by the clinician.
* Multidimensional family therapy is effective in reducing adolescent substance use problems. It addresses (1) the adolescent’s substance use, (2) the quality of parent–child interactions, and (4) the school climate and peer relationships.

## What is Relapse Prevention?

* Relapse prevention is a therapeutic strategy in the clinician and adolescent anticipate relapse and develop a plan for responding if relapse should occur.
* Relapse prevention is designed to reduce the abstinence violation effect, that is, feelings of guilt, shame, and negative affect following relapse. Instead, adolescents are encouraged to learn from the relapse experience.