**Module 11: Substance-Related And Addictive Disorders**

LEARNING OBJECTIVES

**11.1. Clinical Presentation**

* Define substances and substance abuse.
* Describe properties of substance abuse.
* Describe how substance use disorder presents.
* Describe how substance intoxication presents.
* Describe how substance withdrawal presents.
* Define depressants and describe types.
* Define stimulants and describe types.
* Define hallucinogens/cannabis/combination and describe types.
* Describe the effects of using drugs in combination.

**11.2. Epidemiology**

* Describe the epidemiology of depressants.
* Describe the epidemiology of stimulants.
* Describe the epidemiology of hallucinogens.

**11.3. Comorbidity**

* Describe the comorbidity of substance-related and addictive disorders.

**11.4. Etiology**

* Describe the biological causes of substance-related and addictive disorders.
* Describe the cognitive causes of substance-related and addictive disorders.
* Describe the behavioral causes of substance-related and addictive disorders.
* Describe the sociocultural causes of substance-related and addictive disorders.

**11.5. Treatment**

* Describe biological treatment options for substance-related and addictive disorders.
* Describe behavioral treatment options for substance-related and addictive disorders.
* Describe cognitive-behavioral treatment options for substance-related and addictive disorders.
* Describe sociocultural treatment options for substance-related and addictive disorders.

KEY TERMS

**Agonist Drugs**: Medications created to replace the drug on which an individual is dependent, offering a safer alternative with a similar chemical makeup. Example: Methadone for heroin use reduction. They are used in controlled settings to manage addiction, although they can also lead to dependency.

**Alcoholics Anonymous (AA)**: A self-help group founded in 1935 for individuals suffering from alcohol abuse. It uses the Twelve Step Traditions for spiritual and character development. AA and similar programs (e.g., Narcotics Anonymous) provide support for individuals and their families dealing with substance abuse.

**Amphetamines**: Laboratory-manufactured stimulants, often prescribed for sleep disorders. They increase energy and alertness and reduce appetite at clinical levels but can lead to intoxication and violent behaviors at higher dosages.

**Anxiolytic Drugs**: Sedative-hypnotic drugs, such as benzodiazepines, used to treat anxiety-related disorders due to their calming effects. These drugs have a sedative impact at appropriate dosages but can cause intoxication and addictive behaviors.

**Aversion Therapy**: A treatment method for substance abuse that pairs the substance with a negative or aversive stimulus, reducing the individual's desire for the substance. This approach is based on respondent conditioning principles.

**Barbiturates**: Sedative-hypnotic drugs introduced in the early 1900s as the main sedative and hypnotic drug. Due to their addictive nature and respiratory distress at high doses, they have been largely replaced by benzodiazepines.

**Benzodiazepines**: Commonly prescribed anxiolytic drugs, like Xanax, Ativan, and Valium, that bind to GABA receptors and increase GABA activity, producing a sedative and calming effect. These drugs are less likely to cause respiratory distress compared to barbiturates but can lead to intoxication and addiction.

**Caffeine**: The most widely consumed substance globally, found in coffee, energy drinks, soft drinks, chocolate, and tea. Caffeine is often consumed in moderate dosages but can lead to intoxication and withdrawal symptoms, particularly with high consumption levels in energy drinks.

**Cannabis**: Derived from the hemp plant, with varieties like marijuana and hashish. The psychoactive effects of cannabis, including calm, relaxation, and increased hunger, are primarily due to tetrahydrocannabinol (THC). Cannabis effects can vary depending on the individual's body chemistry and the THC concentration.

**Cocaine**: A potent natural stimulant extracted from the coca plant, causing feelings of energy and euphoria. Cocaine can be ingested in various ways, including snorting, smoking (freebasing), and injection. It increases dopamine, norepinephrine, and serotonin levels in the brain.

**Community Reinforcement**: A treatment approach that replaces the positive reinforcements of substance use with those of sobriety through motivational interviewing, coping strategies, and family support. It aims to encourage abstinence from substance use.

**Contingency Management**: A treatment method emphasizing operant conditioning to increase sobriety and treatment adherence through rewards. This approach has been successful in treating various substance abuse types, with patients receiving vouchers or prizes for abstinence.

**Depressants**: Substances like alcohol, sedative-hypnotic drugs, and opioids that inhibit central nervous system activity, often used to alleviate tension and stress. However, in large amounts, they can impair judgment and motor activity.

**Detoxification**: The medical supervision of withdrawal from a drug, either by gradually decreasing the substance or eliminating it while managing withdrawal symptoms. Detoxification can be inpatient or outpatient, depending on the severity of addiction.

**Disulfiram**: An antagonist drug prescribed to individuals trying to abstain from alcohol. It produces significant negative effects, such as nausea and vomiting, when coupled with alcohol consumption.

**Ethyl Alcohol**: The active substance in alcohol, quickly absorbed into the blood and traveling to the central nervous system, producing depressive symptoms like impaired reaction time and disorientation. Its effects are due to binding to GABA receptors, preventing GABA from providing inhibitory messages.

**Expectancy Effect**: The belief about the anticipated effects of substance use, which can motivate drug-seeking behavior. Positive expectations increase drug-seeking, while negative experiences decrease substance use.

**Freebasing**: A method of ingesting cocaine involving heating the drug with ammonia to extract a nearly pure cocaine base, which is then smoked via a glass pipe. Freebased cocaine is absorbed quickly into the bloodstream and brain, producing immediate effects.

**Hallucinogens**: Natural or synthetic substances, such as PCP, Ketamine, LSD, and Ecstasy, known for producing powerful changes in sensory perception, including hallucinations and changes in color perception.

**Hashish**: A form of cannabis derived from the hemp plant, known for its high concentration of THC, the active chemical that determines the potency of cannabis.

**Heroin**: A highly addictive opioid synthesized to alleviate the addictive nature of morphine. It was initially used in cough suppressants but was later found to be more addictive than morphine..

**Hydrocodone**: Not explicitly defined in the text, but it can be classified under opioids, which are known for providing euphoria and drowsiness, with rapid tolerance development and potentially severe withdrawal symptoms.

**Methadone**: An opiate agonist drug used in the reduction of heroin use, replacing heroin addiction with methadone dependence. It is often combined with education and psychotherapy in treatment programs.

**Methamphetamine**: A derivative of amphetamine, abused for its low cost and euphoric effects, but can lead to serious health consequences like heart and lung damage. It is commonly used intravenously or nasally and can drastically change one's physical appearance.

**Morphine**: An opioid derived from opium, known for its analgesic effect. Its popularity grew during the American Civil War but also revealed its addictive nature.

**Naloxone**: An antagonist drug used for opioid abuse, binding to endorphin receptors to prevent the euphoric effects of opioids. It can cause immediate, severe withdrawal symptoms and requires medical supervision.

**Opioids**: Naturally occurring substances derived from the opium poppy, like morphine and heroin. They provide euphoria and drowsiness but are highly addictive, with rapid tolerance development and severe withdrawal symptoms.

**Oxycodone**: Not explicitly defined in the text, but as an opioid, it is likely to have effects and risks similar to other opioids, such as providing euphoria, rapid tolerance development, and severe withdrawal symptoms.

**Relapse Prevention Training**: Identifying high-risk situations for relapse and learning coping strategies and cognitive interventions to prevent relapse. This method involves psychoeducation and role-playing to enhance self-efficacy and reduce relapse chances.

**Residential Treatment Programs**: Treatment centers where individuals live in a drug-free environment and receive therapy. These programs focus on abstinence and incorporate various treatments, including cognitive-behavioral techniques and 12-step programs.

**Sedative-Hypnotic Drugs**: Drugs that have a calming and relaxing effect, used for treating anxiety-related disorders. Includes barbiturates and benzodiazepines, but the latter are considered safer and less addictive.

**Stimulants**: Substances like cocaine and amphetamines that increase central nervous system activity, causing physiological changes such as increased blood pressure and heart rate. They are often used for their euphoric effects.

**Substance Abuse**: The extended consumption of substances in large amounts to achieve the same effect, leading to physical and psychological disturbances and significant time spent on activities related to substance use.

**Substance Intoxication**: Occurs when a substance is recently ingested, leading to significant behavioral, psychological, physical, and physiological changes. The specific symptoms depend on the type of substance ingested.

**Substance Use Disorder**: A disorder characterized by a cluster of cognitive, behavioral, and physiological symptoms indicating continuous substance use despite significant problems related to it. Diagnosis requires at least two specific symptoms.

**Substance Withdrawal**: Diagnosed when there is cessation or reduction of a substance used for a long time, leading to physiological and psychological symptoms that cause distress or impairment in daily functioning.

**Substances**: Substances are any ingested materials that cause temporary cognitive, behavioral, or physiological symptoms within an individual. These include various classes like alcohol, caffeine, cannabis, hallucinogens, inhalants, opioids, sedatives, stimulants, tobacco, and others​​.

**Tetrahydrocannabinol (THC)**: THC is the primary active chemical in cannabis, which is derived from the hemp plant. The potency of cannabis is determined by the concentration of THC, with hashish containing a high concentration and marijuana having a smaller concentration​​.

**Tolerance**: Tolerance refers to the need to continually increase the amount of a substance ingested to achieve the same effect that was previously obtained with smaller amounts. This occurs with repeated use or frequent intoxication from a substance and can lead to significant physical and psychological symptoms, impacting an individual's personal and professional life​​.

**Withdrawal**: Withdrawal is characterized by physiological and psychological symptoms that occur when an individual attempts to reduce or abstain from substance use, especially after long-term or heavy use. Common symptoms include cramps, anxiety attacks, sweating, nausea, tremors, and hallucinations. Withdrawal symptoms vary in duration and severity based on the substance and the level of tolerance​​.