

SUBSTANCE-RELATED DISORDERS

Description

Substance use disorders are a cluster of disorders in which cognitive, behavioral, and physiological symptoms indicate that a person continues using a substance despite significant substance-related problems

Psychiatric symptom clusters may be related to substance use, discontinuation of substance use, or withdrawal from **habitual** substance use.

Substance use disorders lead to changes in brain circuits and physiological functions that lead to a need for detoxification and a possible need for long-term treatment.

The word substance can describe a drug of abuse, a medication, or a toxin that produces psychoactivation and alters cognitive, behavioral, and affective perceptions.

Dependence: repeated use of a substance with or without physical dependence

Abuse: use that is inconsistent with sociality use patterns

Misuse: usually applies to a prescribed substance

Intoxication: reversible syndrome caused by a specific substance affecting memory, judgment, behavior, or social or occupational functioning

Withdrawal: substance-specific symptoms that occur after stopping or reducing use

Tolerance: needing more of the substance to get the desired effect

Etiology

Multiple theories ranging from psychological to neurobiological

Probable multifactorial etiological profile

Two common types of theories: psychodynamic and biological

Psychodynamic theory

Behaviors of abuse are seated in oral-stage fixation.

A person seeks gratification through oral behaviors.

Maladaptive regressive behaviors can become overlearned, fixed, and reinforced through dysfunctional family patterns.

Sociocultural factors attempt to explain population-based differences in substance abuse rates.

Biological theory

Genetic loading

People with a strong genetic vulnerability to addiction are thought to have defects in the working of the reward center of the brain, which predisposes them to stronger-than-normal positive rewards that draw them to substance use.

Gender differences

Ethnic differences

A person is predisposed to stronger-than-normal negative rewards, making it more difficult to stop abuse once it has begun.

Involves two neurobiological processes:

1. Reinforcement

Brain-based changes in structure and function can lead to addictive behavior.

The process of positive and negative rewards is physiologically linked to memory function.

Changes appear to occur with any drug of abuse.

Reinforcement results in “feel good” sensations when a drug of abuse is used and in “feel bad” sensations when the drug exits the body.

Positive rewards of reinforcement result in the social rewards commonly associated with drug use, such as disinhibition, euphoric mood, and anxiety reduction. Mediated by dopamine (DA) pathways.

Negative rewards are aversive, such as increased anxiety and dysphoria. Mediated by the gamma amino butyric acid (GABA) pathways .

Reinforcement occurs in the ventral tegmental area and the nucleus accumbens of the brain, collectively called the reward center.

DA release within the reward center is enhanced further by the release of natural morphine-like neurotransmitters called neuropeptides (enkephalins, beta-endorphins).

Neuropeptides further enhance the reinforcing pleasure experienced by the person.

With repeated drug use, the DA system becomes increasingly sensitized.

Eventually, associated drug use stimuli (e.g., pictures of drug paraphernalia) can cause DA release, leading to reinforcement of use and often to increased drug use.

2. Neuroadaptation