CHAPTER ELEVEN

Substance Use Disorders

CHAPTER OUTLINE

• Symptoms
• Diagnosis
• Frequency
• Causes
• Treatment
OVERVIEW

• DSM-IV-TR uses two terms to describe substance use disorders, and these terms reflect different levels of severity:
  – Substance dependence
  – Substance abuse
  – Addiction

• Drug of abuse: a chemical substance that alters a person’s mood, level of perception, or brain functioning
• Polysubstance abuse: abuse of/dependence on several types of drugs

TABLE 11-1
Commonly Abused Drugs

SYMPTOMS

• The Concept of Substance Dependence
  – Cravings
  – Psychological dependence
  – It is not unusual for the person who abuses drugs to try to stop.
  – Diminished control over drinking is a crucial feature of the disorder.
What is the evidence needed to show that a drug is addictive?

• Tolerance and Withdrawal
  – Two features of substance dependence: tolerance and withdrawal
  – **Tolerance**: the process through which the nervous system becomes less sensitive to the effects of alcohol or any other drug of abuse.
  – **Withdrawal**: the symptoms experienced when a person stops using a drug.

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**SYMPTOMS**

• Alcohol
  – Alcohol affects virtually every organ and system in the body.
  – The rate at which it is absorbed is influenced by many variables, including:
    • Concentration of alcohol in the beverage
    • Volume and rate of consumption
    • Presence of food in the digestive system

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**SYMPTOMS**

• Alcohol
  – **Short-Term Effects**
    • There is a strong correlation between blood alcohol levels and CNS intoxicating effects.
    • Symptoms of alcohol intoxication include slurred speech, lack of coordination, an unsteady gait, nystagmus, impaired attention or memory, and stupor or coma.
SYMPTOMS

• Alcohol
  – Long-Term Effects
    • Disruption of relationships with family and friends
    • Blackouts
    • Interfere with job performance
    • Problems with legal authorities
    • Disrupt functions of organ systems
    • Nutritional disturbance
    • Injury and premature death

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FIGURE 11-1
Male Deaths Caused by Alcohol Use in Established Market Economies

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SYMPTOMS

• Nicotine
  – Short-term Effects
    • The effects of nicotine on the peripheral nervous system include increases in heart rate and blood pressure.
    • In the central nervous system, nicotine has pervasive effects on a number of neurotransmitter systems (Houezec, 1998).
    • Nicotine has a complex influence on subjective mood states.
      — Paradoxical phenomenon

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SYMPTOMS

• Nicotine
  – Long-term Consequences
  • Nicotine is one of the most harmful and deadly addicting drugs.
  • People who are attempting to quit smoking typically experience sleeping problems, weight gain, concentration difficulties, and mood swings ranging from anxiety to anger and depression (Hughes, 2007b).
  • 80% of all deaths caused by lung cancer can be attributed to smoking tobacco. More than 3.5 million people in the world die prematurely each year as a result of tobacco.

SYMPTOMS

• Amphetamine and Cocaine
  – Short-term Effects
  • Called stimulants because they activate the sympathetic nervous system (Constable, 2004).
    – Increases heart rate and blood pressure and dilates the blood vessels and the air passages of the lungs
    – Suppress the appetite and prevent sleep
  • Evidence suggests that prolonged use leads to sexual dysfunction (Jaffe, 1995).
  • Acute overdoses of stimulant drugs can result in irregular heartbeat, convulsions, coma, and death.

SYMPTOMS

• Amphetamine and Cocaine
  – Long-term Consequences
  • High doses can lead to the onset of psychosis.
  • The most devastating effects of stimulant drugs frequently center around the disruption of occupational and social roles.
  • Prolonged use of amphetamines has also been linked to an increase in violent behavior, but it is not clear whether this phenomenon is due to the drug itself or to the lifestyles with which it is frequently associated.
**SYMPTOMS**

**Opiates**
- **Short-term Effects**
  - Can induce a state of dreamlike euphoria, which may be accompanied by increased sensitivity in hearing and vision.
  - Positive emotional effects of opiates do not last.
  - Can induce nausea and vomiting among novice users, constrict the pupils of the eye, and disrupt the coordination of the digestive system.

**Long-term Consequences**
- At high doses, people who are addicted to opiates become chronically lethargic and lose their motivation to remain productive.
- Tolerance develops rather quickly.
- Severe health consequences of opiate use are the result of the lifestyle of the addict rather than the drug itself.

**Barbiturates and Benzodiazepines**
- Also known informally as tranquilizers, hypnotics, and sedatives
- **Short-term Effects**
  - Can lead to a state of intoxication that is identical to that associated with alcohol.
  - Characterized by impaired judgment, slowness of speech, lack of coordination, a narrowed range of attention, and disinhibition of sexual and aggressive impulses.
SYMPTOMS
• Barbiturates and Benzodiazepines
  – Long-term Consequences
    • Discontinuance syndrome
      – In some cases, a worsening of the original anxiety symptoms
    • Withdrawal can include irritability, paranoia, sleep disturbance, agitation, muscle tension, restlessness, and perceptual disturbances.

SYMPTOMS
• Cannabis
  – Marijuana and hashish are derived from the hemp plant, Cannabis sativa.
  – Short-Term Effects
    • The subjective effects of marijuana are almost always pleasant.
    • Marijuana can have variable effects on a person’s mood.
    • Cannabis intoxication is often accompanied by temporal disintegration, a condition in which people have trouble retaining and organizing information.

SYMPTOMS
• Cannabis
  – Long-Term Consequences
    • Tolerance effects in humans remain ambiguous.
    • Withdrawal symptoms are unlikely to develop among occasional smokers of marijuana.
    • Prolonged heavy use of marijuana may lead to certain types of performance deficits on neuropsychological tests, especially those involving sustained attention, learning, and decision making (Pope & Yurgelun-Todd, 1996).
SYMPTOMS

• Hallucinogens and Related Drugs
  – Hallucinogens cause people to experience hallucinations.
    – LSD: most common
    – MDMA (ecstasy): the “club drug”
      – PCP: originally developed as a pain killer
  – Short-term Effects
    • Difficult to study empirically because the effects are based in primarily subjective experience

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SYMPTOMS

• Hallucinogens and Related Drugs
  – Long-Term Consequences
    • The use of hallucinogens follows a different pattern than that associated with most other drugs.
      – Hallucinogens, with the possible exception of PCP, are used sporadically and on special occasions rather than continuously.
      – There seems to be no withdrawal symptoms associated with the hallucinogens.
      – Some people who have taken hallucinogens experience flashbacks.

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DIAGNOSIS

• DSM-IV-TR
  – DSM-IV-TR divides addictions into two categories: substance abuse and substance dependence.
  – The manual lists 11 types of drugs that can lead to problems of abuse and dependence.
  – Must exhibit at least 3 of the 7 criteria for a diagnosis of substance dependence to be made.
  – If there is evidence of either tolerance or withdrawal (or both), the additional specification of physiological dependence is made.

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Where is the boundary between substance abuse and recreational drug use?

• The diagnostic manual emphasizes the terms recurrent and maladaptive pattern for this purpose.
• The problem must be persistent before this diagnosis would be considered. Someone involved in a single drug-related incident would not meet the criteria for this disorder, regardless of how serious the incident might have been (Frances, First, & Pincus, 1995).

DIAGNOSIS

• Course and Outcome
  – It is impossible to specify a typical course for substance dependence, especially alcoholism.
  – The only thing that seems to be certain is that periods of heavy use alternate with periods of relative abstinence, however short-lived they may be (Schuckit & Smith, 2011).

DIAGNOSIS

• Comorbidity
  – The most common disorders are antisocial personality disorder, mood disorders, and anxiety disorders.
  – Conduct disorder is related to concurrent alcohol use in adolescence.
  – Sometimes the depression and anxiety precede the substance use problem.
The use of specific drugs is determined, in part, by their availability.

Culture shapes people’s choices about the use of drugs and the way in which they are used.

Many people who use drugs do not become dependent.

Drinking alcohol before the age of 14 increases risk for developing alcoholism for men and women.

Prevalence of Alcohol Abuse and Dependence

- Approximately two out of every three males in Western countries drink alcohol regularly, at least on a social basis.
  - Less than 25% abstain from drinking completely
- Among all men and women who have ever used alcohol, roughly 20% will develop serious problems – abuse or dependence.
FREQUENCY

• Prevalence of Alcohol Abuse and Dependence — Gender Differences
  • Fewer women develop alcoholism compared to men.
  • The disparity is narrower today than 50 years ago.
  • Social disapproval of women drives solitary drinking.
  • A single standard dose of alcohol, measured in proportion to total body weight, will produce a higher peak blood alcohol level in women than in men.
FREQUENCY

• Prevalence of Drug and Nicotine Dependence
  – The lifetime prevalence of nicotine dependence was reported to be 24% in the National Comorbidity Survey (Kessler et al., 1994).
  – The percentage of adults in the United States who smoke tobacco has actually declined since 1964.

What are the most important risk factors for alcoholism among adolescents?

• Experimentation
• Parental modeling of appropriate versus inappropriate use of alcohol
• Adolescents with alcoholic parents
• High levels of negative affect in the home
• Girls with opposite-sex friends

In what ways are drug problems different among the elderly?

• Diagnostic criterion is difficult to apply
• Drug use has different consequences on their lives
• Tolerance is reduced
• Withdrawal may be more severe
• Occupational and social impairment
CAUSES: Biological Factors

TWIN STUDIES
- Data from a large sample of twins in Australia found concordance rates for alcohol dependence of 56% in male MZ twins and 33% in male DZ twins.
- MZ and DZ female twin pairs were 30% and 17%, respectively.

ADOPTION STUDIES
- The offspring of alcoholic parents who are reared by nonalcoholic adoptive parents are more likely than people in the general population to develop drinking problems of their own.

CAUSES
- Biological Factors
  - Dopamine and Reward pathway
    - People may become dependent on psychoactive drugs because they stimulate areas of the brain that are known as “reward pathways.”
      - Medial forebrain bundle
    - Alcohol affects several different types of neurotransmitters.

FIGURE 11-5
Reward Pathways in the Brain
CAUSES

• Biological Factors
  – Endogenous Opioid Peptides
    • **Endorphins**: endogenous opioids, short chains of amino acids, or neuropeptides
    • Appear to be important in the activities associated with systems that control pain, emotion, stress, and reward
  – It is theorized that alcoholism is associated with activation of this system in response to alcohol.

CAUSES

• Psychological Factors
  – Expectations About Drug Effects
    • Longitudinal studies: adolescents who are just beginning to experiment with alcohol and who initially have the most positive expectations about the effects of alcohol go on to consume greater amounts of alcoholic beverages (Smith et al., 1995).
    • Expectations play a role in the onset of the problem rather than being consequences of heavy drinking.
    • Alcoholism and addiction result from several types of systems.
TREATMENT

DETOXIFICATION
• Removal of the drug for three to six weeks
• Experience marked withdrawal symptoms
• Given various medications as a way of minimizing withdrawal symptoms

MEDICATIONS DURING REMISSION
- Disulfiram (Antabuse)
  - Causes violent illness if alcohol is consumed
- Naltrexone (Revia)
  - May dampen cravings
- Acamprosa (Campral)
- SSRIs (Fluoxetine)

TREATMENT
- Self-Help Groups and Alcoholics Anonymous
  - Fundamentally spiritual
  - The original 12-step program
  - Difficult to evaluate its efficacy
    - Long-term follow-up difficult; early dropout
  - Appears to help people; it is not clear how it helps, or why

COPING SKILLS TRAINING
- Anger management
  - Focus on factors that create and maintain drinking
- Addresses negative patterns of thinking, expectations

RELAPSE PREVENTION
- Relapse is nearly expected
- Focus on increasing sense of control of one's life
- Adaptive coping skills
- Abstinence violation effects
TREATMENT

• Short-term Motivational Therapy
  – Many people do not take full advantage of treatment opportunities
  – Nonconfrontational procedure to resolve ambivalence about use and change behavior
  – Recognize inconsistency between behavior and long-term goals
  – Primary goal is to increase awareness of the substance use problems

TREATMENT

• Outcome Results and General Conclusions
  – Project MATCH
    • Evaluated three forms of psychological treatments:
      – Cognitive behavior therapy
      – 12-step facilitation therapy
      – Motivational enhancement therapy
  – Long-term outcome is best predicted by the person’s coping resources, social support