Pharmacology and Physiology (C105)

Course Outline

Understanding Pharmacology and Physiology

- Knowledge of Pharmacology and Physiology is Crucial
- SAMHSA’s Counselor Competencies
- What is Addiction?
- NIDA: Why Do People Use Drugs?
- From Abuse to Addiction
- Desired Effects vs. Side Effects
- Levels of Use
- Characteristics of Drug Abuse and Addiction
- Reasons for Drug Addiction
- The Global Impact of Addiction in the U.S.

The History of Drugs

- Five Historical Themes of Drug Use
- A Human Being’s Basic Need for Comfort
- Brain Chemistry
- A History of Involvement
- Technological Advances
- Faster and More Efficient
- What is a Psychoactive Substance?
- Important Terminology for the Addictions Counselor
- What is Psychopharmacology?

The Neurobiology of Addiction

- Addiction and the Brain
- Drug Distribution
- The Nature and Function of the Nervous System
- The Brain: The Most Complex Structure
- Parts of the Brain Affected by Drug Abuse
- Parts of the Brain: Terminology
- Images of the Brain
- How Drugs Get to the Brain
- The Nervous System: Two Major Parts
- Route of Administration
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- Affect on Brain Determined by Drug’s Bioavailability
- Affect of Drugs Partially Determined by Blood Volume
- Metabolism and Excretion of Drugs
- How Long Will A Drug Stay in My System?
- The Neuron and the Central Nervous System
- Neurotransmitter Substances in the Central Nervous System
- The Reward/Reinforcement Pathway
- Three Phases of Brain Activity
- Important Drug Use Terminology

Drugs of Abuse

- Controlled Dangerous Drugs
- Controlled Substances Act
- Amending Drug Schedules: How It Works
- Drug Scheduling in the United States
- What Is a Narcotic?
- More Drug Use Terminology

Drug Classifications

- Drugs Fall Within Different Classifications
- Stimulants
  - Stimulants: Cocaine
    - Methods of Using Cocaine
    - Effects of Cocaine Use and Abuse
    - Cocaine and the Brain
    - Cocaine and Your Health: Short- and Long-Term Effects
    - Street Names for Cocaine and Other Drugs
  - Stimulants: Amphetamines
    - Facts About Amphetamines
    - Amphetamines and the Brain
    - Amphetamines and Your Health: Short- and Long-Term Effects
    - Psychological Effects of Amphetamines
    - Amphetamines and Withdrawal
  - Stimulants: Methamphetamines
    - Methamphetamines and the Brain
    - Methamphetamines and Your Health: Short- and Long-Term Effects
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- Stimulants: Caffeine
  - Sources of Caffeine and Consumption in the US
  - Caffeine and the Body
  - Caffeine Addiction and Withdrawal
- Stimulants: Nicotine and other Tobacco Products
  - Tobacco and the Brain
  - Tobacco and Your Health: Short- and Long-Term Effects
  - Current Trends in Tobacco Use
- Stimulants: Diet Pills
- Stimulants: Over-the-Counter Drugs
- Stimulants: The Energy Drink Phenomenon
  - Four Loko: The Latest Controversy In the News

- Depressants
  - Major Depressant: Alcohol
    - What is a Standard Drink?
    - Alcohol Absorption
    - Alcohol and the Brain
    - Blood-Alcohol Concentration
    - Alcohol and Your Health: Short- and Long-Term Effects
  - Major Depressants: Opioids/Opiates
    - Narcotics: Understanding Terms
    - Heroin
    - Heroin and the Brain
    - Heroin and Your Health: Short- and Long-Term Effects
  - Major Depressants: Sedative Hypnotics Barbiturates
  - Central Nervous System Depressants
  - Minor Depressants: Skeletal Muscle Relaxants
  - Minor Depressants: Antihistamines
  - Over-the-Counter Depressants and Look-Alike Depressants

- Steroids
  - How Are Anabolic-Androgenic Steroids Used?
  - Anabolic Androgenic Steroids and the Brain
  - Anabolic Androgenic Steroids and Mental Health
  - Health Issues and Anabolic Androgenic Steroids
  - Gender- and Age-Specific Effects of AAS Abuse

- All-Arounders
  - All Arounders: Hallucinogens
  - Psychedelics or Hallucinogens: History and Use
  - Common Types of Hallucinogens
  - Hallucinogens and the Brain
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- Hallucinogens and Your Health: Short- and Long-Term Effects
  - Prescription Medications
    - Prescription Drug Addiction: A National Epidemic
    - SAMHSA’s 2009 National Survey on Drug Use & Health
    - Prescription Meds: Beneficial As Prescribed
    - Commonly-Abused Prescription Medications
    - What is DXM?
    - Effects of Abusing Prescription Medications
- Inhalants
  - Types of Inhalant Products Abused
  - Inhalants and Your Brain
  - Inhalants Can Be Deadly
  - Inhalants and Your Health: Short- and Long-Term Effects
  - Cannabinoids
  - How Marijuana is Used
  - Cannabis and the Brain
  - Is Marijuana Addictive?
  - Cannabis and Your Health
  - Marijuana and Medical Purposes: The Debate

Current Trends in Substance Abuse in the US

- National Survey on Drug Use and Health
- NSDUH Findings Valuable to Addictions Counselors
- Categories of Information Captured on the NSDUH
- NSDUH Quick Reference and Highlights
- NSDUH Survey: Illicit Drug Use
  - Does Illicit Drug Use Affect Employment?
  - Sources of Prescription Drugs Used Illicitly
  - Driving Under the Influence of Illicit Drugs
  - Frequency of Use
  - Illicit Drug Use Varies By Geographic Area
  - Does Level of Education Affect Illicit Drug Use?
  - Does Illicit Drug Use Vary By Race and Ethnicity?
- NSDUH Survey: Alcohol Use
  - Does Alcohol Use Vary by Gender?
  - Does Alcohol Use Vary By Race & Ethnicity?
  - Does Level of Education Affect Alcohol Use?
  - Do Full-Time College Students Use Alcohol More?
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- Does Alcohol Use Affect Employment?
- Alcohol Use Varies By Geographic Area
- Recent Trends in Underage Alcohol Use
  - NSDUH Survey: Tobacco Use
  - NSDUH Survey: Initiation of Substance Use

Course Closing

- Final thoughts
- Resources for professionals
- Bibliography