CHAPTER 2

DRUG-TAKING BEHAVIOR: THE PERSONAL AND SOCIAL ISSUES

DISCUSSION QUESTIONS AND ASSIGNMENTS

1. The list of celebrities who have died under drug-related circumstances (page 32 of the text) does not include those cases in which the contributing reason was the consumption of alcohol or tobacco. Assign students to research one or two instances in which a well-known person has died from the toxic effects of these two products (acute or chronic toxicity in the case of alcohol, chronic toxicity in the case of tobacco). A discussion can ensue concerning instances of drug toxicity not only involving well-known personalities but also people in their families or acquaintances of theirs. Some possible recent examples are Heath Ledger, Michael Jackson, Greg Giraldo, and Whitney Houston. Other classic examples include: Yul Brynner (lung cancer, tobacco), John Wayne (lung cancer, tobacco), Peter Jennings (lung cancer, tobacco), Walt Disney (lung cancer, tobacco), Edward R. Murrow (lung cancer, tobacco), and Mickey Mantle (cirrhosis, alcohol).

2. Have students collect, over a fourteen-day period, one or two articles in a newspaper, magazine, or from a trusted on-line source that covers drug-related violent acts or crimes. A selection might focus upon organized crime (e.g., a drug cartel in Colombia or Mexico) or a street-level incident (e.g., a homicide among gang members in a turf war). The selection should be analyzed in terms of whether the violence or crime would be categorized as pharmacological, economically compulsive, or systemic (pages 45–48 of the text).

3. Have students research the extent to which needle exchange programs for intravenous drug abusers have been proposed or implemented in their community. If there are existing needle exchange programs, are they officially sanctioned or merely ignored by authorities?

4. Invite a police officer or parole officer to class and take questions from the class regarding his or her experiences with drug-related crime.

5. Organize a brief debate on the pro and con arguments for the legalization of psychoactive
drugs. Assign two groups of people to organize among themselves their ideas supporting each side. They may wish to use some of the positions expressed in the Point/Counterpoint Debate “Should we legalize drugs?” at the end of Part I in the text (pp. 58–59) as starting points for a debate.

NOTE: Continually updated statistical information about drug-related emergency cases in the United States can be accessed through the following web sites:

   The Drug Abuse Warning Network (DAWN) program
   http://www.samhsa.gov/data/DAWN.aspx

   Substance Abuse and Mental Health Services Administration
   http://www.oas.samhsa.gov

Continually updated statistical information about arrestees and illicit drug use in the United States can be accessed through the following web site:

   International Arrestee Drug Abuse Monitoring (I-ADAM)
   http://www.nij.gov/topics/drugs/markets/adam/

LECTURE OUTLINE FOR CHAPTER TWO

A. Drug Toxicity

1. The toxicity of a drug refers to the potential physical or psychological harm that a drug might present to a user. If harmful effects are short term or temporary, the drug has some level of acute toxicity. If effects are long term or acquired over time, the drug has some level of chronic toxicity. Issues of chronic toxicity are examined in the context of drug tolerance and/or drug dependence.

2. A dose-response curve is a graph of the percentage of a population that experiences some response as a function of dosage level. An “ED50” refers to the dosage that produces a response in 50 percent of the population. A “LD50” refers to the dosage that is lethal for 50 percent of the population. In general, the further apart the ED-response and LD-response curves, the safer (less toxic) the drug.

3. Two ratios, the therapeutic index (LD50 over ED50) and the margin of safety (LD1 over ED99), provide information regarding a drug’s relative safety. The higher the ratio, the safer (or less toxic) the drug is. It should be pointed out, however, that these measures cannot be calculated for street drugs that have unknown dosage levels and possible contaminants.
4. News reports of well-known public individuals who have died as a direct consequence of drug misuse or abuse are vivid reminders of the hazards of drug use, but they can be misleading when one is attempting to arrive at an idea about the toxicity of particular drugs within a general population.

B. The DAWN Reports

1. The Drug Abuse Warning Network (DAWN) is a system for reporting drug-related emergencies in U.S. metropolitan hospitals. These occurrences are referred to as drug-related ED visits (ED being an abbreviation for emergency department).

2. In 2011, approximately one-half of all ED visits were associated with either drug abuse or drug misuse, with an average of two drugs being reported in a given drug-related ED visit. About a third of the time, a drug-related ED visit involved more than one drug, and in some cases, there were five or more drugs mentioned at the time. The percentage of ED visits involving prescription or OTC medication alone (34 percent) was greater than with illicit drugs alone (27 percent), and the percentage involving medications in some combination (57 percent) was greater than the percentage involving illicit drugs in some combinations (51 percent).

3. DAWN statistics are not reported for ED visits involving alcohol use alone by individuals who are twenty-one years or older. If all emergencies related to alcohol use alone were reported, the numbers would far exceed those related to any other drug. An examination of other ED-related circumstances would be obscured.

4. In 2011, about 1/4 (24 percent) of drug-related ED visits involved some use of alcohol in combination with an illicit drug, with a prescription or OTC medication, or with an illicit drug and a medication. Of the illicit-drug-related ED visits, the largest number of cases involved cocaine, marijuana, heroin, and stimulants (chiefly methamphetamine).

5. Current DAWN statistics on drug-related deaths in the United States are not reported on a nationwide basis but instead in terms of individual metropolitan areas. Although the demographics and size of these areas vary widely, some generalizations can be made. Across regions, however, opiate drugs and cocaine are the two most frequently represented in drug-related deaths. Alcohol is commonly in third place. Medications to treat anxiety and depression are typically in the top five most frequently reported drugs in drug-related death cases. Multiple-drug (polydrug) use is commonly responsible for drug-related deaths. Marijuana is far less prominent in drug-related deaths than other illicit substances.

6. DAWN reports provide information only regarding the acute toxicity of drugs.

C. Behavioral Tolerance and Drug Overdose
1. Tolerance refers to the capacity of a certain dosage of a drug to have a gradually diminished effect as the drug is taken repeatedly. Due to tolerance, a drug user requires a higher dosage in order to maintain an equivalent response.

2. Behavioral tolerance refers to the process of drug tolerance that is linked to drug-taking behavior occurring consistently in the same surroundings or under the same circumstances.

3. Drug-taking behavior can be highly influenced by the surroundings in which that behavior occurs. In these cases, tolerance effects are maximized when drugs are used in the same environment or under the same circumstances. This process, referred to as behavioral tolerance (alternatively, conditioned tolerance), is related to classical or Pavlovian conditioning principles.

4. Environmentally induced withdrawal symptoms can increase the chances of craving the drug when the individual is in an environment that is associated with prior drug-taking behavior.

D. Physical and Psychological Dependence

1. In cases of physical dependence, the drug abuser continues the drug-taking behavior in order to avoid physical withdrawal symptoms that would occur when that behavior ceases. In cases of psychological dependence, the continuance of drug-taking behavior is motivated by a craving for the pleasurable effects of the drug.

2. The concept of physical dependence is largely based upon the experiences of heroin abusers, since heroin cessation produces significant physical withdrawal symptoms. The cessation of other abused drugs, however, produces little or no physical withdrawal symptoms. In these cases, animals can be shown to demonstrate incessant and intense attraction to the drugs, resulting in patterns of self-administration.

3. Current experts in the field of drug abuse assert that the distinction between physical and psychological dependence has outgrown its usefulness in understanding patterns of drug-taking behavior.

E. Diagnosing Drug-Related Problems: The Health Professional’s Perspective

1. From 2000-2013, The Diagnostic and Statistical Manual, Fourth Edition, Text Revision (DSM-IV-TR) of the American Psychiatric Association identified two general conditions related to drug-taking behavior: substance dependence and substance abuse. Substance dependence identifies a situation in which an individual displays signs of dependence with respect to a certain drug: tolerance, withdrawal, unintentional overuse, preoccupation with the drug, or continued drug use despite major drug-related problems. Substance abuse identifies a situation in which drug-taking behavior continues despite recurrent social, occupational, interpersonal, or legal
problems related to that behavior.

2. “Substance dependence” and “substance abuse” are preferred terms rather than “drug dependence” and “drug abuse” because there is often confusion in the public mind as to the definition of a drug, particularly in instances of alcohol and nicotine use.

3. In 2013, The Diagnostic and Statistical Manual, Fifth Edition, (DSM-5) was issued with two major changes involving drug taking behavior. First, the four possible criteria previously listed for the diagnosis of substance abuse and the seven possible criteria for the diagnosis of substance dependence have been combined into one set of eleven criteria for a newly established diagnosis called substance use disorder.

4. Substance use disorder is the new DSM-5 diagnostic term to identify an individual with significant problems that are associated with some form of drug-taking behavior. A minimum of two criteria has been established for an individual to be identified as having a substance use disorder. The DSM-5 has set a severity-of-symptoms scale for this condition. The presence of two or three criteria is considered to reflect a mild level of substance use disorder, four or five criteria for a moderate level, and six or more for a severe level. See page 42, Table 2.1 for both DSM-IV-TR and DSM-5 criteria.

F. Special Circumstances in Drug Abuse

1. A particular problem in drug abuse involves drug-taking behavior of women who are pregnant at the time. The developing fetus is subject to the toxic effects of the ingested drug.

2. Injecting drugs carry the additional hazard of spreading disease through shared or non-sterile needles. Hepatitis and HIV infections are two prominent examples of health hazards associated with injected drug use.

G. Drugs, Violence, and Crime

1. The Arrestee Drug Abuse Monitoring (ADAM) program in the U.S. Department of Justice tracks the percentage of arrestees in major U.S. cities who have tested positive for an illicit drug. It is an attempt to connect drug-taking behavior with violence and crime, though the connection between drugs and these behaviors is far from simple. Drug-related violence can be discussed in three categories: pharmacological violence, economically compulsive violence, and systemic violence.

2. Pharmacological violence refers to acts of violence resulting from the influence of a particular drug. Some drugs can increase the likelihood of violent behavior, while others can decrease it. In general, ADAM statistics reflect the fact that many arrestees have some illicit drug in their system at the time of arrest. However, the length of the detection period in standard urinalysis tests for illicit drugs (ranging from a matter of several hours to two months, depending on the drug) makes it difficult to determine
whether an offense was committed as a direct result of the influence of a particular drug. Nonetheless, there is no question that alcohol as a drug can induce pharmacological violence.

3. Economically compulsive violence refers to acts of violence resulting from the need to finance the cost of purchasing a particular drug. The market conditions for drug sales represent an influential factor for this form of violence. As drug prices increase, economically compulsive violence goes up. The type of economically compulsive crime committed in association with drug use varies by gender. Males are likely to commit crimes against persons or property, whereas females are more likely to commit crimes against the public order, such as prostitution.

4. Systemic violence refers to acts of violence that are related to drug dealing and the heightened violence within a network of illicit drug distribution. Systemic violence became a major social problem during the 1980s and 1990s, when crack cocaine abuse was at its height.

H. Governmental Policy, Regulation, and Laws

1. Between 1900 and 1970, U.S. drug policy changed from a philosophy of laissez-faire (“do as you please”) to an increasingly restricted philosophy with respect to drug access and use.

2. The Harrison Act of 1914 was the first legislation to restrict access to opiate drugs and cocaine. At that time, the U.S. Treasury Department was entrusted with drug law enforcement responsibilities. Under the Harrison Act, opiate drugs were defined as “narcotics.” Eventually cocaine was included in the narcotic category, though its pharmacology and behavior effects are diametrically opposite to those of opiates.

3. In 1970, the Comprehensive Drug Abuse Prevention and Control Act classified drugs in terms of five schedules of controlled substances. Schedule I drugs include heroin, LSD, mescaline, and marijuana. By definition, Schedule I drugs have no acceptable medical use. Schedule I and II refer to drugs presenting the highest level of abuse potential, and carry the most stringent restrictions on their possession and access. Schedule V drugs present the least abuse potential, and are the most accessible among controlled substances.


5. Since 1970, the responsibility for drug-law enforcement has moved from the Department of the Treasury to the Department of Justice, ending the era of U.S. drug regulation based upon taxation.
I. Drug Law Enforcement and Global Politics

1. The federal Drug Enforcement Administration (DEA) is responsible for limiting the supply of illicit drugs in the United States. A majority of the funds budgeted for drug control purposes are used for restricting the supply of drugs, as opposed to the demand for drugs by individuals. Several billions of dollars are currently spent each year in attempts to stop the trafficking of illicit drugs and their importation into the United States from other countries: principally nations in Central and South America.

2. Additional federal agencies involved in drug control include the U.S. Customs and Border Patrol Agency, the U.S. Coast Guard and other branches of the U.S. military, and the Immigration and Naturalization Service. Government agents are stationed overseas, working with the Departments of Defense and State, to limit exportation of illicit drugs at the source.

3. Increasing pressure is being placed on changing official drug-control policy from a goal of zero tolerance (i.e., a complete and total cessation of illicit drug trafficking and illicit drug-taking behavior) to a goal of harm reduction. The goal of a harm reduction policy focuses on minimizing the social and psychological costs associated with drug-taking behavior rather than the elimination of the behavior itself.
VIDEO SUGGESTIONS


As the war on drugs continues, drugs are cheaper and easier to get than ever before. This documentary examines the more than 40 year war on drugs, the impact on countries, on society, and whether we need to support drug liberalization.


The vast majority of drug addicts are not criminals; tobacco and alcohol, both perfectly legal in most societies, are used and abused in staggering abundance. This program details the ways smoking and drinking chemically take hold of the brain. Explaining the many reasons—besides nicotine—for tobacco’s stealthy effects, the program describes the existence of thousands of other addictive chemicals in the plant. It also studies properties in alcohol, which some scientists have nicknamed the “dirty drug,” that short-circuit the brain and cause considerable damage.


This documentary follows five young addicts through the camp’s 30-day rehab program and tracks their progress, or lack thereof, in the months that follow. Featuring remarkably candid interviews with the participants, riveting one-on-one and family counseling sessions, and heartbreaking portrayals of post-camp life—which means relapses, more detox, and even jail time for some—the video clearly illustrates the challenges a recovering addict faces in order to avoid becoming the worst kind of statistic. Contains harsh language. An HBO Production.

“Substance abuse in the elderly” (2000), 30 min. Films for the Humanities and Sciences, 132 West 31st Street 17th Floor New York, NY 10001. Available on DVD.

Senior citizens discuss how they deal with the challenges of complex regimens of medication and diminished tolerance for alcohol, as they run the risk of falling into the trap of substance abuse.

“If…drugs were legal” (2005), 61 min. Films for the Humanities and Sciences, 132 West 31st Street 17th Floor New York, NY 10001. Available on DVD.
A projection to 2015 when a coalition of European nations has decriminalized most stimulants, narcotics, and hallucinogens. Interwoven with the fictional narrative are real-world interviews, highlighting both sides of the drug legalization debate.

“The war on drugs: The reality behind the movie Traffic (2001), 5-part series, 22 min. each. Films for the Humanities and Sciences, 132 West 31st Street 17th Floor New York, NY 10001. Available on DVD.

ABC News Anchor Ted Koppel and correspondent Deborah Amos update the subject of America’s war on drugs, addressing the gritty facts so realistically portrayed in the Steven Soderbergh film Traffic.
ESSAY QUESTIONS FOR CHAPTER 2

2.1 Describe the therapeutic index and margin of safety measures as a way of understanding drug toxicity. Include in your answer an explanation of the denominator and numerator that go into each ratio.

pp. 30–31

2.2 Picture yourself as an emergency room physician at a metropolitan hospital that participates in the DAWN reporting system. What questions would you ask an incoming patient who is displaying symptoms that might be drug-related? What circumstances might prevent you from making an accurate record of the role drugs may have played in these symptoms?

pp. 33–35

2.3 Define behavioral tolerance and explain how this phenomenon might account for a drug-related overdose fatality, even though the dose might have fallen short of the lethal range.

pp. 37–39

2.4 Distinguish between the major DSM-IV-TR criteria for a diagnosis of substance dependence and a diagnosis of substance abuse and the new DSM-5 criteria for substance use disorder, as defined by the American Psychiatric Association.

pp. 41–43

2.5 Distinguish between pharmacological, economically compulsive, and systemic types of drug-related violence. Give a specific example for each type.

pp. 45–48

2.6 Discuss how harm reduction may be a better alternative than use reduction.

pp. 53–54
TRUE/FALSE QUESTIONS FOR CHAPTER 2

2.1 Cocaine has been used as a local anesthetic in the United States.  
*p. 29 Ans: T*

2.2 Water has the potential for being a psychoactive substance.  
*p. 29 Ans: T*

2.3 There are substances that exist which do not have any potential for toxicity.  
*p. 30 Ans: F*

2.4 Drug safety depends on the possibility that the drug can be toxic at low doses compared to other drugs.  
*p. 30 Ans: T*

2.5 If a drug is ED50, it means the drug will become toxic if 50 mg of the drug is taken.  
*p. 30 Ans: F*

2.6 Each effect produced by a particular drug will have its own dose-response curves.  
*p. 30 Ans: T*

2.7 Examining the properties of a drug effect is that same as examining the properties of the drug itself.  
*p. 30 Ans: F*

2.8 If an LD100 dose were to be given to a group of 50 mice, all of them would die.  
*p. 30 Ans: T*

2.9 The margin of safety measure of a particular drug is a more conservative (in the direction of safety) measure of drug toxicity than the therapeutic index for that drug.  
*p. 31 Ans: T*

2.10 The higher the margin of safety ratio, the more toxic the drug.  
*p. 31 Ans: F*

2.11 A problem with street drugs is that the user doesn’t know the toxicity risks until the drug has been used.  
*p. 31 Ans: T*

2.12 The DAWN reporting program reaches practically all emergency department patients in the United States.  
*p. 33 Ans: F*

2.13 According to 2011 DAWN statistics, about 1/4 (27 percent) of drug-related ED visits involved some use of illicit drug use only.