



© Christian Mueller/Shutterstock, Inc.

# CHAPTER 1

## Introduction to Drugs and Society

### Did You Know?

- ▶ The popular use of legal drugs, particularly alcohol and tobacco, has caused far more deaths, sickness, violent crimes, economic loss, and other social problems than the use of all illegal drugs combined.
- ▶ The effect a drug has depends on multiple factors: (1) the ingredients of the drug and its effect on the body, (2) the traditional use of the drug, (3) individual motivation, and (4) the social and physical surroundings in which the drug is taken.
- ▶ The first attempts to regulate drugs were made as long ago as 2240 BC.
- ▶ After marijuana, illicit prescription drugs are now the second leading drug of abuse.
- ▶ Drug abuse is an “equal-opportunity affliction.” This means that drug consumption is found across all income levels, social classes, genders, races, ethnicities, lifestyles, and age groups.
- ▶ Among racial/ethnic groups in the United States, past-month illicit drug use is highest among African Americans and whites and lowest among Asians.
- ▶ Approximately 70% of drug users in the United States are employed (18 years or older) either full time or part time, and 76% of full- or part-time employees are heavy drinkers.
- ▶ In major industry categories, past-month illicit drug use was highest in accommodations and food services; arts, entertainment, and recreation; and management; the highest amount of heavy alcohol use was found in the mining, construction, and accommodations and food services industries.
- ▶ Approximately 60% of individuals arrested for most types of crimes test positive for illegal drugs at the time of their arrest.

### Learning Objectives

**On completing this chapter you should be able to:**

- › Explain how drug use is affected by biological, genetic, and pharmacological factors, as well as cultural, social, and contextual factors.
- › Develop a basic understanding of drug use and abuse.
- › Explain when drugs were first used and under what circumstances.
- › Indicate how widespread drug use is and who the potential drug abusers are.
- › List four reasons why drugs are used.
- › Rank in descending order, from most common to least, the most commonly used licit and illicit drugs.
- › Name three types of drug users, and explain how they differ.
- › Describe how the mass media promote drug use.
- › Explain when drug use leads to abuse.
- › List and explain the stages of drug dependence.
- › List the major findings regarding drugs and crime.
- › Describe employee assistance programs, and explain their role in resolving productivity problems.
- › Explain the holistic self-awareness approach.

## Introduction

Each year, at an accelerating rate, social change driven by technology not only affects us individually, but also affects our family, community, city, nation, and the world. It can be said that technology is one of the primary forces driving social change at an unprecedented and relentless speed, affecting our everyday lives.

As an example of technological change, let us look at the transformation of the telephone into cellular phone technology. In all likelihood, your great-grandparents had a single black stationary rotary type of landline phone at home to use for communicating with friends and family living at a distance. Your grandparents experienced newer and more stylized versions of the same telephone, with perhaps one or two other telephones installed in another part of their home. While growing up, your parents had the same landline type of telephone, but it came in an array of colors and was more stylized, and there were multiple extensions of this phone throughout their home in bedrooms, hallways, and/or kitchens. Today, your available technology may still include a landline phone<sup>1</sup> with additional features such as voice mail, call waiting, call forwarding, and call blocking, to name a few of many other standard feature options available with landline phones.

An outgrowth of the landline phone and the radio-phone, which was used in the military, is a gadget that most of us carry today without any sense of technological awe. The cell phone, with over 7 billion worldwide subscribers (Nair 2015), and its recent cousin, the smartphone, named as such because it includes additional software functions resembling a computer, are portable warehouses of technological services that connect to a cellular network. Current cell phones can include an array of accessories and services beyond making phone calls, including caller identification; voice messaging; voice memos; an alarm clock; a stopwatch; calendars; appointment scheduling; current times and temperatures in different cities around the world; a calculator; video games; text messaging (or SMS); a camera with photo albums;

Internet service; email; infrared; Bluetooth; an MP3 player; storage for downloaded music, movies, and/or podcasts; geographic positioning system (GPS) features; radio broadcasts; maps; stock market quotes; weather; reminders; Skype or FaceTime; and iTunes, to name a few “basic” applications. Literally hundreds of thousands of applications (“apps”) offer an array of information, accessories, and services. The completely portable cell phone with its keypad or touchscreen did not exist for the general public 38 years ago. Further, newer generations of cell phones will include unimaginable new applications, accessories, and services.

Consider another example. More than likely, your great-grandparents wrote letters on manual typewriters (or by hand). Your grandparents wrote letters on electric typewriters, whereas your parents started writing letters on electric typewriters and then had to change to computers. Today, you often communicate with family members and friends by email, text messaging, Facebook, Twitter, Google+, Skype, and Pinterest. Although you may perceive many of the electronic devices surrounding your life as normal, a visit to a science and technology museum can offer many surprises and, more than likely, an appreciation for how things were and how much they have changed.

These examples illustrate how technology is in a continuous state of development and how it affects our day-to-day lives. In a sense, the technology we use today will be replaced tomorrow as newer and more advanced forms of innovation give birth to new technology and software.

What does this have to do with drug use and/or abuse? Just as electronics continually evolve, drugs follow similar paths of evolution. Today, there are thousands of new drugs available that are used either legally or illegally. These drugs are used for medicinal purposes, recreational purposes, or to achieve effects that do not include maintaining health. Some people in society use drugs to cope with pressures emanating from social change. Others use and eventually abuse drugs to cope with, delay, or postpone reality. For some, illicit drug use becomes a primary method for instant recreation, a way to avoid anxieties, or a substitute to fulfill human desires and pleasures.

Despite the extensive amount of available information regarding the dangers of drug use and an increasing number of laws prohibiting nonmedical drug use, many people today continue to abuse legal and illegal types of drugs.

<sup>1</sup>Landline phones continue to disappear from U.S. households; approximately 41% of American homes do not have a landline phone or do not use the ones they have (Luckerson 2014; Stobbe 2014).



## Drug Use

Anyone can become dependent on and addicted to a drug. The desire to use a drug before drug dependence and addiction occur is both seductive and indiscriminate of its users. Most people do not realize that drug use causes at least three major simultaneous changes:

1. The social and psychological basis of the attraction to a particular drug can be explained as feeling rewarded or satisfied because social pressures can appear to have become postponed, momentarily rectified, or neutralized and perceived as nonproblematic.
2. Pharmacologically, the nonmedical use of most drugs alters body chemistry largely by interfering with its proper (homeostatic) functioning. Drugs enhance, slow down, accelerate, or distort the reception and transmission of reality.
3. The desire may satisfy an inborn or genetically programmed need or desire.

Many argue that our “reality” would become perilous and unpredictable if people were legally free to dabble in their drugs of choice. Many do not realize, however, that, if abused, even legal drugs can alter our perception of reality, become severely addicting, and destroy our social relationships with loved ones. Before delving into more specific information, we begin by posing some key questions related to drug use that will be discussed in this chapter:

- What constitutes a drug?
- What are the most commonly abused drugs?
- What are designer drugs?
- How widespread is drug abuse?
- What are the extent and frequency of drug use in our society?
- What are the current statistics on and trends in drug use?
- What types of drug users exist?
- How do the media influence drug use?
- What attracts people to drug use?
- When does drug use lead to drug dependence?
- When does drug addiction occur?
- What are the costs of drug addiction to society?
- What can be gained by learning about the complexity of drug use and abuse?

## Dimensions of Drug Use

To determine the perception of drug use in our country, we asked several of the many people we interviewed for this text, “What do you think of the extent and the amount of drug use in our society?” The following are four of the more typical responses:

I think it is a huge problem, especially when you think about the fact that there are so many people doing drugs. Even in my own family, my sister’s kids have had drug problems. My niece became addicted to cocaine, nearly died one night from overdosing, had to leave college for a year and go into rehab. I cannot emphasize enough how this was one of the most beautiful (physically and mentally sharp) and polite nieces I ever had. The rest of the family had no idea why she left school last year. Then, just last week, my sister tearfully announced during a Christmas gathering that Cindee was heavily into drugs while attending her second year of college. We were all shocked by this information. Now, just think how many other kids are addicted to such junk while the people who really care and love them do not have a clue. If the kids are having to deal with this, just stop and think how many other people in other jobs and professions are battling or have caved into their drugs of choice.

How many workers are there on a daily basis doing jobs that require safety and are “high” on drugs? This is a scary thought. Just think of a surgeon on drugs, or an airline pilot. Yes, we have big monster problems with controlling drug use. (*From Venturelli’s research files, female dietician in Chicago, age 43, February 9, 2003*)

A second response to the same question:

I use drugs, mainly weed and alcohol, and at least once a month I have a night of enjoying coke with several friends. As long as I am not a burden on my family, I think drug use is a personal choice. Locking up people for their drug use is a violation of my rights as a human being. For many years now, our government has not been able to stop recreational drug use, this is despite the millions that have been arrested, and countless numbers of other drug users incarcerated. What’s the point of all this? If after so many years of trying to enforce drug

laws has met with failure, we need to take a long hard look at the small percentage of people like me who are fully employed, have families, pay our taxes regularly and outside of drug use, are fully functioning adults. The funny thing is that the two drugs [referring to alcohol and tobacco] that are legalized are far worse or at least as debilitating as the drugs that are legally prohibitive [sic]. Drug use is a personal choice and unless you are causing problems for other people, it should remain a personal choice. If I am using drugs on a particular night at home either by myself or with friends and we are not outside causing problems, we should not be in violation of any drug law or laws. Substances to get high have been around for hundreds and probably thousands of years, these substances that some of us like should not be any concern to others. Even my pet cat loves his catnip and appears to get a high from it; should I prohibit this little pleasure? I let him occasionally have it even if, for example, my neighbor thinks catnip is affecting the normal nature of my cat. How about if I get a rise from snorting or smoking one of the herbs in my kitchen cabinet? Whose business is it if I like to use herbs in this manner? Maybe we should also outlaw catnip and herbs? Again, drug use for whatever purpose is a personal decision and all the laws against the use of drugs are not going to stop me from using drugs. *(From Venturelli's research files, male residing in a Midwestern town, age 27, May 6, 2010)*

A third response to the same question:

My drug use? Whose business is it anyway? As long as I don't affect your life when I do drugs, what business is it but my own? We come into the world alone and leave this world alone. I don't bother anyone else about whether or not so and so uses drugs, unless of course, their drug use puts me in jeopardy (like a bus driver or pilot high on drugs). On certain days when things are slow, I even get a little high on cocaine while trading stocks. These are the same clients who I have had for years and who really trust my advice. Ask my clients whether they are happy with my investment advice. I handle accounts with millions of dollars for corporations and even the board of education! Never was my judgment impaired or adversely affected because of too much coke. In fact, I know that I work even better under a little buzz. Now, I know this stuff has the potential to

become addictive, but I don't let it. I know how to use it and when to lay off for a few weeks. *(From Venturelli's research files, male investment broker working in a major metropolitan city in California, age 48, June 2, 2000)*

A fourth response, to the same question, from an interviewee who recently moved from Indiana to Colorado:

Well, things are changing regarding drug use purely for recreational purposes. I am referring to marijuana of course. In Colorado, marijuana is now legalized. I also think this is the way it should be not only in Colorado but also throughout the country. I can now actually see how state after state will eventually legalize marijuana. There will be holdout states, like usually deep southern states, but it's just a matter of time. I think it was Oakland, California, where by taxing the sale of marijuana, the city was collecting a nice amount of tax revenues from marijuana sales. If I am not in error, it was reported as millions of dollars they were collecting. Now, don't you think this alone will attract other cities and states to legalize and tax this drug in order to gain tax revenues, especially when state and city tax revenues are in dire need to increase revenue coming in? It won't be the spread of liberalism that will legalize marijuana; it will be common business sense that will get rid of the ridiculous laws outlawing marijuana use and sales. I have always smoked pot and nothing has ever stopped me. On top of this add the millions who feel the same way. If you don't want to use this drug to relax like others may use alcohol that is fine but leave the users alone and stop making law violators! It is still illegal and you [referring to this interviewer] and I know that all these laws and the millions upon millions spent on trying to stop marijuana drug users have not worked, so why keep this up? Again, why prohibit something that given its history cannot be stopped? *(From Venturelli's research files, male attorney, currently practicing law and residing in the state of Colorado, age 33, January 2, 2013)*

These four interviews reflect vastly contrasting views and attitudes about drug use. The first interview shows the most contrast from the second, third, and fourth interviews. The second, third, and fourth interviews show a similarity of views about drug use, largely from an insider's (the user's) perspective, indicative of a strong



determination and belief that drug use should not be legally controlled and should be left to the discretion of users. Although much about these viewpoints can certainly be debated, an interesting finding is that such vastly different views about drug use are not only evident, but, more important, often divide drug users and nonusers. From a more social psychological standpoint, drug users and/or sympathizers of drug use are often considered **insiders** with regard to their drug use, whereas nonusers and/or those who are against drug use are **outsiders**. These two classifications result in very different sets of values and attitudes about drug usage. Such great differences of opinion and views about drugs and drug use often result from the following sources: (1) prior socialization experiences, such as family upbringing, relations with siblings, and types of peer group associations; (2) the amount of exposure to drug use and drug users; (3) the age of initial exposure to drug use; and (4) whether an attitude change has occurred regarding the acceptance or rejection of using drugs. Keep in mind that this text views the following four principal factors as affecting how a drug user experiences a drug:

- *Biological, genetic, and pharmacological factors:* Substance abuse and addiction involve biological and genetic factors. The pharmacology of drug use focuses on how the ingredients of a particular drug affect the body and the nervous system and, in turn, a person's experience with a particular drug.
- *Cultural factors:* Society's views of drug use, as determined by custom and tradition, affect our initial approach to and use of a particular drug.
- *Social factors:* The motivation for taking a particular drug is affected by needs such as diminishing physical pain; curing an illness; providing relaxation; relieving stress or anxiety; trying to escape reality; self-medicating; heightening awareness; wanting to distort and change visual, auditory, or sensory inputs; or strengthening confidence. Included in the category of social factors is the belief that attitudes about drug use develop from the values and attitudes of other drug users; the norms in their communities, subcultures, peer groups, and families; and the drug user's personal experiences with using drugs. (These are also known as influencing social factors.)
- *Contextual factors:* Specific contexts define and determine personal dispositions toward drug

use, as demonstrated by moods and attitudes about such activity. Specifically, these factors encompass the drug-taking social behavior that develops from the physical surroundings where the drug is used. For example, drug use may be perceived as more acceptable at fraternity parties, while socializing with drug-using friends, outdoors in a secluded area with other drug users, in private homes, secretly at work, or at music concerts.

Paying attention to the cultural, social, and contextual factors of drug use leads us to explore the sociology and psychology of drug use. Equally important are the biological, genetic, and pharmacological factors and consequences that directly focus on why and how drugs may be appealing and how they affect the body—primarily the central nervous system and brain functions.

Although substances that affect both mind and body functioning are commonly called *drugs*, researchers in the field of drug or substance abuse use a more precise term: **psychoactive drugs (substances)**. Why the preference for using this term as opposed to *drugs*? Because the term *psychoactive drugs* is more precise regarding *how* drugs affect the body. This term focuses on how drugs affect the **central nervous system (CNS)**, the part of the nervous system composed of the spinal cord and brain that is responsible for integrating sensory information and responding accordingly. In particular, the term encompasses how psychoactive drugs alter mood, consciousness, thought processes, perception, and/or behavior. Psychoactive drugs can be used to treat physical, psychological, or mental illness. In addition, with continued use,

## KEY TERMS

### **insiders**

people on the inside; those who approve of and/or use drugs

### **outsiders**

people on the outside; those who do not approve of and/or use drugs

### **psychoactive drugs (substances)**

drug compounds (substances) that affect the central nervous system and alter consciousness and/or perceptions

### **central nervous system (CNS)**

part of the nervous system composed of the spinal cord and brain that is responsible for integrating sensory information and responding accordingly

our bodies can tolerate increasingly larger doses of drugs, often resulting in the need for progressively greater amounts to achieve the same level of effect. For many substances, a user is at risk of moving from occasional to regular use or from moderate to heavy use, ultimately culminating in chronic use. A chronic user may then risk **addiction** (a mostly psychological attachment) and experience **withdrawal symptoms** that are physical and/or psychological in nature whenever the drug is not supplied.

Generally speaking, any substance that modifies the nervous system and state of consciousness is a **drug**. Such modification includes one or more of the following: enhancement, inhibition, or distortion of the body, affecting patterns of behavior and social functioning. Psychoactive drugs are classified as either **licit** (legal) or **illicit** (illegal). (See **Table 1.1** for a list of slang terms used by drug users.) For example, coffee, tea, cocoa, alcohol, tobacco, and **over-the-counter (OTC)** drugs are licit. When licit drugs are used in moderation, they often go unnoticed and are often socially acceptable. Marijuana, cocaine, crack, and all of the hallucinogenic types of drugs are examples of illicit drugs. With the exception of marijuana—which some states allow for medical use and small



© Comstock Images/Getty Images.

Examples of illicit drugs that can become costly once drug dependence occurs.

amounts for personal use—federal law continues to prohibit the possession and use of all of these drugs.

Researchers have made some interesting findings about legal and illegal drug use:

- The use of legal substances such as alcohol and tobacco is much more common than the use of illegal drugs such as marijuana, cocaine, heroin, and hallucinogens (psychedelics). Other legal drugs, such as depressants and stimulants, although less popular than alcohol and tobacco, are still more widely used than heroin and LSD.
- The popular use of licit drugs, particularly alcohol and tobacco, has caused far more deaths, sickness, violent crimes, economic loss, and other social problems than the combined use of all illicit drugs. (See **Figure 1.1** for an illustrated comparison.)
- Societal reaction to various drugs changes with time and place. Today, opium is an illegal drug and widely condemned as a pan-pathogen (a cause of all ills). In the 18th and 19th centuries, however, it was a legal drug and was popularly praised as a panacea (a cure for all ills). Alcohol use was widespread in the United States in the early 1800s, became illegal during the 1920s, and then was legalized a second time and has been widely used since the 1930s. Cigarette smoking is legal in all countries today. In the 17th century, it was illegal in most countries, and smokers were sometimes harshly punished. For example, in Russia, smokers could lose their noses; in Hindustan (India), they could lose their lips; and in China, they could lose their heads (Thio 1983, 1995, 2000). Today, new emphasis in the United States

## KEY TERMS

### **addiction**

generally refers to the psychological attachment to a drug(s); addiction to “harder” drugs such as heroin results in both psychological and physical attachment to the chemical properties of the drug, with the resulting satisfaction (reward) derived from using the drug in question

### **withdrawal symptoms**

psychological and physical symptoms that result when a drug is absent from the body; physical symptoms are generally present in cases of drug dependence to more addictive drugs such as heroin; physical and psychological symptoms of withdrawal include perspiration, nausea, boredom, anxiety, and muscle spasms

### **drug(s)**

any substances that modify (either by enhancing, inhibiting, or distorting) mind and/or body functioning

### **licit drugs**

legalized drugs such as coffee, alcohol, and tobacco

### **illicit drugs**

illegal drugs such as marijuana, cocaine, and LSD

### **over-the-counter (OTC)**

legalized drugs sold without a prescription



**TABLE 1.1** A Sampling of 73,300 Slang Terms Relating to Drugs, Drug Use, and the Drug Trade

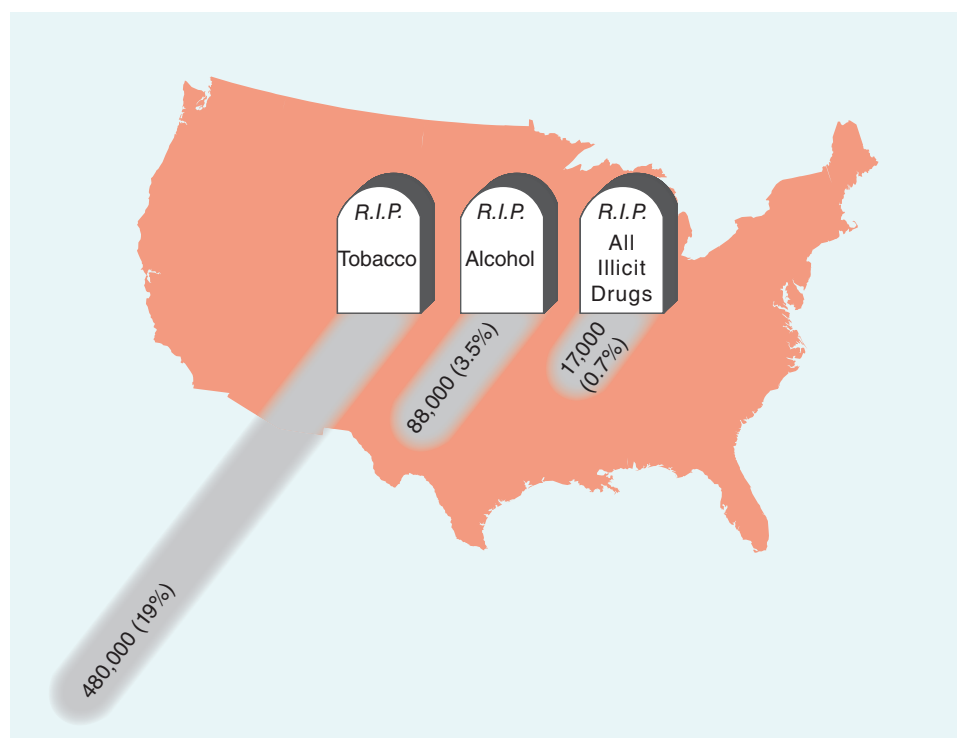
Slang Term	What It Means	Slang Term	What It Means
24-7	Crack cocaine	Blunt	Marijuana and/or cocaine inside a cigar
80	OxyContin pill	Boost and shoot	Steal to support a drug habit
714s	Methaqualone	Brain ticklers	Amphetamines
3750	Marijuana and crack rolled in a joint	Brown bombers	LSD
Abolic	Veterinary steroids	Brown sugar	Heroin
A-bomb	Marijuana cigarette with heroin or opium	Buddha	Potent marijuana spiked with opium
AC/DC	Codeine cough syrup	Bull dog	Heroin
Acid, acid cube	LSD, sugar cube with LSD	Bundle	Heroin
Acid freak	Heavy user of LSD	Ditch weed	Inferior quality marijuana
Adam	Methylenedioxymethamphetamine (MDMA)	Dr. Feelgood	Heroin
Air blast	Inhalants	Easy lay	Gamma hydroxybutyrate (GHB)
All star	User of multiple drugs	Fantasy	GHB
Amped	High on amphetamines	Flower flipping	Ecstasy (MDMA) mixed with mushrooms
Angel dust	PCP	Forget-me-drug	Rohypnol
Author	Doctor who writes illegal prescriptions	Fries	Crack cocaine
Baby habit	Occasional use of drugs	Garbage rock	Crack cocaine
Balloon	Heroin supplier; a penny balloon that contains narcotics	Hit the hay	Smoke weed
Bam	Amphetamine; depressants	Hippie crack	Inhalants
Barbies	Depressants	Hot ice	Smokable methamphetamine
Battery acid	LSD	Huff, huffing	Inhalants, to sniff an inhalant
Batu	Smokable methamphetamine	Ice cream habit	Occasional use of a drug
Beam me up, Scottie	Crack dipped in PCP	Idiot pills	Depressants
Beannies	Methamphetamine	Kiddie dope	Prescription drugs
Beast	Heroin, LSD	Lemonade	Heroin; poor quality drugs
Belladonna	PCP	Lunch money drug	Rohypnol
Bender	Drug party	Magic mushroom	Psilocybin/psilocin
Biker's coffee	Methamphetamine and coffee	Monkey dust	PCP
Bin Laden	Heroin (after 9/11)	Moon gas	Inhalants
Black beauties	Amphetamines, depressants	Mother's little helper	Depressants
Blasted	Under the influence of drugs	Nose candy	Cocaine
Blow your mind	Getting high on hallucinogens	Paper boy	Heroin peddler

(continues)

**TABLE 1.1** A Sampling of 73,300 Slang Terms Relating to Drugs, Drug Use, and the Drug Trade (*continued*)

Slang Term	What It Means	Slang Term	What It Means
Pepsi habit	Occasional use of drugs	Tornado	Crack cocaine
Pony	Crack cocaine	Totally spent	Hangover after MDMA
Ringer	Good hit of crack, to hear bells	Water-water	Marijuana cigarettes dipped in embalming fluid or laced with PCP
Shot	To inject a drug, an amount of coke	West Coast	Ritalin (ADHD drug)
Soda	Injectable cocaine	Working man's cocaine	Methamphetamine
Special "K"	Ketamine	Zig Zag man	Marijuana rolling papers
Strawberry	LSD; female who trades sex for crack or money to buy crack	Zombie	PCP; heavy user of drugs
The devil	Crack cocaine	Zoom	Marijuana laced with PCP

Reproduced from Office of National Drug Control Policy (ONDCP). *Street Terms: Drugs and the Drug Trade*. Washington, DC: Office of National Drug Control Policy, 2016. Available <http://www.streetlightpublications.net/misc/ondcp.htm>



**FIGURE 1.1** Cigarette smoking and exposure to tobacco smoke cause approximately 480,000 premature deaths annually in the United States (includes deaths from secondhand smoke; 278,544 deaths annually among men and 201,773 deaths annually among women). In the United States, more than 88,000 deaths each year are caused by excessive alcohol consumption (direct and indirect causes of death include drunk driving, cirrhosis of the liver, falls, cancer, and stroke). The 17,000 yearly death rate due to illicit drug use is significantly lower in comparison to yearly alcohol and tobacco death rates. Moreover, the average American is 25 times more likely to die from tobacco-related illnesses (cardiovascular diseases, respiratory diseases, and cancer) than from illicit drug-related illnesses. More deaths are caused each year by tobacco use than by all deaths from human immunodeficiency virus (HIV), illegal drug use, alcohol use, motor vehicle injuries, suicides, and murders combined. Americans are five times more likely to die from alcohol-related illnesses than from illicit drug use.

Data from Mokdad, A. H., J. S. Marks, D. F. Stroup, and J. L. Gerberding. "Actual Causes of Death in the United States, 2000." *Journal of the American Medical Association (JAMA)*, 291 (10 March 2004):1238–1245; Centers for Disease Control and Prevention (CDC). "Smoking and Tobacco Use: Tobacco-Related Mortality." 2015a. Available [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/health\\_effects/tobacco\\_related\\_mortality/](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/tobacco_related_mortality/); Centers for Disease Control and Prevention (CDC). "Fact Sheets—Alcohol Use and Your Health." 2015b. Available <http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm>; Centers for Disease Control and Prevention (CDC). "2013 Mortality Multiple Cause Micro-Data Files." Atlanta, GA: Centers for Disease Control and Prevention, 2014.



on the public health hazards from cigarettes again is leading some people to consider new measures to restrict or even outlaw tobacco smoking.

**Table 1.2** introduces some of the terminology that you will encounter throughout this text. It is important that you understand how the definitions vary.

**TABLE 1.2** Commonly Used Terms

Term	Description
Gateway drugs	The word <i>gateway</i> suggests a path or entryway leading to an entrance. Gateway is a theory that the early use of alcohol, tobacco products, and marijuana (the most heavily used illicit type of drug) leads to the use of more powerfully addictive drugs such as cocaine, heroin, and highly addictive prescription medicines.
Medicines	Compounds generally prescribed by a physician that treat, prevent, or alleviate the symptoms of disease. (These can also include over-the-counter [OTC] drugs purchased at pharmacies.)
Prescription medicines	Drugs that are prescribed by a physician. Common examples include antibiotics, antidepressants, and drugs prescribed to relieve pain, induce stimulation, or induce relaxation. These drugs are taken under a physician's recommendation because they are more potent than OTC drugs. In the United States, on a yearly basis, physicians write approximately 4.0 billion prescriptions (The Henry J. Kaiser Family Foundation 2015), with sales totaling \$374 billion in 2015 (Chicago Tribune 2015).
Over-the-counter (OTC)	OTC drugs can be purchased at will without seeking medical advice or a prescription. Examples include aspirin, laxatives, diet pills, cough suppressants, and sore throat medicines. Approximately 1000 active ingredients are used in the more than 100,000 OTC products available in the marketplace today (Consumer Healthcare Products Association [CHPA] 2012), and it is estimated that there are more than 300,000 marketed OTC drug products (U.S. Food and Drug Administration 2015). In 2010, \$23 billion was spent in the United States on OTC medicines* (CHPA 2012).
Drug misuse	The unintentional or inappropriate use of prescribed or OTC drugs. Misuse includes, but is not limited to, (1) taking more drugs than prescribed; (2) using OTC or psychoactive drugs in excess without medical supervision; (3) mixing drugs with alcohol or other drugs, often to accentuate euphoric effects or simply not caring about the effects of mixing drugs; (4) using old medicines to self-treat new symptoms of an illness or ailment; (5) discontinuing certain prescribed drugs at will or against a physician's recommendation; and (6) administering prescription drugs to family members or friends without medical approval and supervision.
Drug abuse	Also known as <i>chemical or substance abuse</i> . The willful misuse of either licit or illicit drugs for recreation, perceived necessity, or convenience. Drug abuse differs from drug use in that drug use is taking or using drugs, whereas drug abuse is a more intense and often willful misuse of drugs, often to the point of becoming addicted.
Drug addiction	Drug addiction involves noncasual or nonrecreational drug use. A frequent symptom is intense psychological preoccupation with obtaining and consuming drugs. Most often psychological and—in some cases, depending on the drug—physiological symptoms of withdrawal are manifested when the craving for the drug is not satisfied. Today, more emphasis is placed on the psychological craving (mental attachment) to the drug than on the more physiologically based withdrawal symptoms of addiction.

\*This amount excludes OTC sales by Walmart and does not include vitamins, minerals, and nutritional supplements.

Data from The Henry J. Kaiser Family Foundation. "Total Number of Retail Prescription Drugs Filled at Pharmacies." Kaiser Family Foundations, 2016. Available <http://kff.org/other/state-indicator/total-retail-rx-drugs/?currentTimeframe=0&sortModel=%7B%22colld%22%3A%22Location%22%22%3A%22asc%22%7D>; Tribune Wire Reports. "U.S. Prescription Drug Spending Jumps to Record \$374 Billion." *Chicago Tribune*, 14 April 2015. Available <http://www.chicagotribune.com/business/ct-drug-spending-0415-biz-20150414-story.html>; U.S. Food and Drug Administration. "Drug Applications for Over-the-Counter (OTC) Drugs." 2015. Available <http://www.fda.gov/drugs/developmentapprovalprocess/howdrugsaredevelopedandapproved/approvalapplications/over-the-counterdrugs/default.htm>; Consumer Healthcare Products Association (CHPA). "The Value of OTC Medicine to the United States." Washington, DC: Booz&Co and Consumer Healthcare Productions Association, 2012. Available [http://www.yourhealthathand.org/images/uploads/The\\_Value\\_of\\_OTC\\_Medicine\\_to\\_the\\_United\\_States\\_BoozCo.pdf](http://www.yourhealthathand.org/images/uploads/The_Value_of_OTC_Medicine_to_the_United_States_BoozCo.pdf)

## Major Types of Commonly Abused Drugs

The six types of major drugs in use are (1) prescription drugs, (2) over-the-counter drugs, (3) recreational drugs (e.g., coffee, tea, alcohol, tobacco, and chocolate), (4) illicit drugs, (5) herbal preparations (generally derived from plants), and (6) commercial drugs (paints, glues, pesticides, and household cleaning products).

To begin, we now briefly examine the major drugs of use and often abuse. The drugs examined next are prescription drugs, performance-enhancing drugs, stimulants, bath salts, hallucinogens (psychedelics) and other similar compounds, depressants, alcohol, nicotine, cannabis (marijuana and hashish), synthetic cannabis (Spice and K2), anabolic steroids, inhalants/organic solvents, narcotics/opiates, and designer drugs/synthetic drugs and synthetic opioids. A brief overview of each is provided.

### ■ Prescription and Performance-Enhancing Drugs

In the United States, young people frequently abuse prescription drugs; the only illicit drug that is abused more frequently is marijuana (Center for Behavioral Health Statistics and Quality [CBHSQ] 2015). In 2015, 2.5% of illicit drug users, more than 6.5 million people aged 12 or older, used prescription-type psychotherapeutic drugs nonmedically.

*Misuse and abuse of prescription medicine continues to be the third most prevalent drug abuse behavior measured among teens, following use of marijuana and alcohol. In addition, Hispanic and African American teens are more likely to report misusing or abusing prescription drugs compared to their Caucasian counterparts, with 27% of Hispanics, 29% of African Americans, and 20% of Caucasians reporting use (Partnership for Drug-Free Kids and MetLife Foundation 2013).*

An estimated 655,000 adolescents aged 12 to 17 were current nonmedical users of

prescription-type psychotherapeutic drugs in 2014. This number corresponds to 2.6% of adolescents. Similarly, with regard to nonmedical use of prescription-type psychotherapeutic drugs among young adults aged 18 to 25, in 2014 an estimated 1.6 million were current users, which corresponds to 4.4% of young adults (CBHSQ 2015). By comparison, 8.4% of the population aged 12 or older were current users of marijuana.

A number of national studies and published reports indicate that the intentional abuse of prescription drugs such as pain relievers, tranquilizers, stimulants, and sedatives to get high is a growing concern—particularly among teens—in the United States. Psychotherapeutic drugs warrant special attention, given that they now make up a significantly larger part of the overall U.S. drug problem than was true 10 to 15 years ago. This is, in part, because use increased for many prescription drugs over that period and because use of a number of street drugs has declined substantially since the middle to late 1990s. It seems likely that young people are less concerned about the dangers of using these prescription drugs outside of a medical regimen because they are widely used for legitimate purposes. (Indeed, the low levels of perceived risk for sedatives and amphetamines observed among 12th graders illustrate this point.) Also, prescription psychotherapeutic drugs are now being advertised directly to the consumer, which implies that they are both widely used and safe to use (Johnston et al. 2016).

In fact, among young people ages 12 to 17 prescription drugs have become the second most abused illegal drug, behind marijuana (CBHSQ 2015). The National Institute on Drug Abuse (NIDA 2014a and CBHSQ 2015) reported that its national survey found that 20% of high school students said they had taken a drug such as Ritalin, Xanax, or OxyContin without having a doctor's prescription, and, according to the Centers for Disease Control and Prevention (CDC 2010), one in five U.S. high school students have taken a prescription drug without a doctor's prescription. In 2014, Adderall and Vicodin were the two prescription drugs abused most often by adolescents (NIDA 2014a).

Three categories of prescription drugs that are currently abused are narcotics, depressants, and stimulants. Narcotics (e.g., OxyContin, Vicodin, Percocet) include analgesics or **opioids** that are generally prescribed for physical pain. Abuse occurs when they are used nonmedically because

## KEY TERM

### opioids

drugs derived from opium



of their euphoric and numbing effects. Depressants (e.g., Xanax, Valium, Librium) are generally used to treat anxiety and sleep disorders. These drugs are abused because of their sedating properties. Stimulants (e.g., Ritalin, Dexedrine, Meridia) are used to treat attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), and asthma. These drugs are abused because of their euphoric effects and energizing potential.

The two drugs in the stimulants category that are most often abused are Ritalin (methylphenidate hydrochloride) and Adderall (amphetamine). These prescription drugs are legitimately prescribed for ADHD, ADD, and narcolepsy (a sleep disorder) (Center for Substance Abuse Research [CESAR] 2003). When used non-medically, they are taken orally as tablets or the tablets are crushed into a powder and snorted (a far more popular method). Students often illegally purchase these tablets for \$5 each from other students who have a legal prescription for the medication.

I feel like Dr. Pill. All these brothers [fraternity brothers] are always looking for me at parties so that I can sell them a few tabs. What the heck, I make extra money selling Ritalin, enough to buy essentials like beer and cigarettes. *(From Venturelli's research files, male undergraduate student at a Midwestern university, age 20, December 9, 2004)*

And,

Funny how when I go back to the frat house during homecoming there are other undergrads who have taken over my business and continue to sell their prescribed Ritalin mostly for partying. *(A second interview with the same former student, age 26, now employed in real estate, October 2, 2010)*

These drugs often are used in conjunction with alcohol or marijuana to enhance the high or for staying awake to increase comprehension and remain focused while reading or studying for an exam (CESAR 2003). Both prescription drugs (Ritalin and Adderall) are readily available and can be easily obtained by teenagers, who may abuse these drugs to experience a variety of desired effects. Increasingly, younger adolescents are obtaining prescription drugs from classmates, friends, and family members or are stealing the drugs from school medicine dispensaries and

from other people for whom the drug has been legitimately prescribed.

Ritalin, Adderall, and other stimulant abusers tend to be late middle school, high school, and college students. Other findings regarding teen abuse of stimulants Ritalin and Adderall include the following (Partnership for Drug-Free Kids 2016):

- One in eight teens (about 2.7 million) report having misused or abused Ritalin or Adderall at least once in their lifetime.
- 9% of teens (about 1.9 million) report having misused or abused Ritalin or Adderall in the past year.
- One in four teens (26%) believe that prescription drugs can be used as a study aid.
- Almost one-third of parents (29%) say they believe that ADHD medication can improve a child's academic or testing performance, even if the teen does not have ADHD.
- One in six parents (16%) believe that using prescription drugs to get high is safer than using street drugs.
- More than half of teens (56%) indicate that it is easy to get prescription drugs from their parents' medicine cabinet. In fact, about half of parents (49%) say anyone can access their medicine cabinet.

In addition, the Partnership for Drug-Free Kids and MetLife Foundation (2013) note that Hispanic and African American teens are more likely to report misusing or abusing prescription drugs compared to their white counterparts, with 27% of Hispanics, 29% of African Americans, and 20% of Caucasians reporting use.

With regard to college students using Adderall, the findings include the following (Muir Wood 2016):

- Full-time college students were twice as likely as non-full-time college students to abuse Adderall.
- About 6.4% of college students admitted to unauthorized Adderall use in 2006–2007.
- College students who abused Adderall were three times as likely to abuse marijuana, eight times as likely to abuse prescription tranquilizers, and five times as likely to abuse prescription painkillers.
- Cocaine use is more common among college students who use Adderall, and students who use both drugs face an increased risk of heart attack, heart problems, and stroke.

## ■ Stimulants

Some stimulants can be considered to be **gateway drugs** (see definition in Table 1.2); these substances act on the CNS by increasing alertness, excitation, euphoria, pulse rate, and blood pressure. Insomnia and loss of appetite are common outcomes. The user initially experiences pleasant effects, such as a sense of increased energy and a state of euphoria, or “high.” In addition, users feel restless and talkative and have trouble sleeping. High doses used over the long term can produce personality changes. Some of the psychological risks associated with chronic stimulant use include violent, erratic, or paranoid behavior. Other effects can include confusion, anxiety, and depression and loss of interest in sex or food. *Major stimulants* include amphetamines, cocaine and crack, methamphetamine (meth), and methylphenidate (Ritalin). *Minor stimulants* include, cocoa, theophylline, theobromine, sugar, caffeine, and nicotine (the most addictive minor stimulant).

## ■ Bath Salts

Bath salts are a designer drug that contains substituted cathinones; they produce similar effects as amphetamines and cocaine (Coppola and Mondola 2012; Spiller et al. 2011). The usual method of taking this drug is sniffing or snorting, but it can also be taken orally, smoked, or mixed with a solution and then injected into a vein. According to Dr. Mark Ryan, director of the Louisiana Poison Center, bath salts are “the worst drug” he has

seen in his 20 years there, noting that “with LSD, you might see pink elephants, but with this drug, you see demons, aliens, extreme paranoia, heart attacks, and superhuman strength like Superman. . . . If you had a reaction, it was a bad reaction” (Vargas-Cooper 2012, p. 60). Other reactions include “very severe paranoia, suicidal thoughts, agitation, combative/violent behavior, confusion, hallucination/psychosis, increased heart rate, hypertension, chest pain, death or serious injury. The speed of onset is 15 minutes, while the length of the high from these drugs is 4–6 hours” (Partnership at DrugFree.Org 2013). In October 2011, these synthetic stimulants were listed as Schedule I substances under the Controlled Substances Act. The Drug Enforcement Administration (DEA) classifies illicit drugs under Schedules I through V, largely depending on their abuse potential. Synthetic stimulants are classified as Schedule I drugs, meaning that they have a high potential for abuse.

## ■ Hallucinogens/Psychedelics and Other Similar Drugs

Whether synthetic or grown naturally, hallucinogens and psychedelic drugs produce a very intense alteration of perceptions, thoughts, and feelings. They most certainly influence the complex inner workings of the human mind, causing users to refer to these drugs as psychedelics (because they cause hallucinations or distortion of reality and thinking). In addition to amplifying states of mind, hallucinogens induce a reality that is



Packets of bath salts sold in head shops.

### KEY TERM

#### gateway drugs

alcohol, tobacco, and marijuana—types of drugs that when used excessively may lead to using other and more addictive drugs such as cocaine, heroin, or “crack”



reported to be qualitatively different from that of ordinary consciousness. For example, while the user is under their influence, these drugs can affect the senses of taste, smell, hearing, and vision. Tolerance to hallucinogens builds very rapidly, which means that increasing amounts of this drug are needed for similar effects. Hallucinogens

include LSD, mescaline, **MDMA** (Ecstasy), phencyclidine (PCP), psilocybin or “magic mushrooms,” ketamine, and the more potent (hybrid) varieties of marijuana, hashish, and opium that are smoked.

## ■ Depressants

These drugs depress the CNS. If taken in a high enough quantity, they produce insensibility or stupor. Depressants are also taken for some of the same reasons as hallucinogens, such as to relieve boredom, stress, or anxiety. In addition, the effects of both opioids (drugs that are derived from opium) and morphine derivatives appeal to many people who are struggling with emotional problems and looking for physical and emotional relief, and in some cases to induce sleep. Depressants include alcohol (ethanol), barbiturates, benzodiazepines (such as diazepam [Valium]), and methaqualone (Quaalude).

## ■ Alcohol

Known as a gateway drug, **ethanol** is a colorless, volatile, and pungent liquid produced through the fermentation of grains, berries, or other fruits and vegetables. Alcohol is a depressant that mainly affects the CNS. Excessive amounts of alcohol often cause a progressive loss of inhibitions, flushing and dizziness, loss of coordination, impaired motor skills, blurred vision, slurred speech, sudden mood swings, vomiting, irregular pulse, and memory impairment. Chronic heavy use may lead to high blood pressure, arrhythmia (irregular heartbeat), and cirrhosis (severe liver deterioration).

## ■ Nicotine

Nicotine is also considered a gateway drug. It is a very addictive, colorless, highly volatile liquid alkaloid found in all tobacco products, including cigarettes, chewing tobacco, pipe tobacco, and cigars. Because nicotine is highly addictive and tobacco use is still socially acceptable under certain circumstances, smokers often start young and have a very difficult time quitting. Long-term use of tobacco products can lead to several different chronic respiratory ailments and cancers.

## ■ Cannabis (Marijuana and Hashish)

Cannabis is the most widely used illicit drug\* in the United States. Marijuana consists of the dried and crushed leaves, flowers, and seeds of the

*Cannabis sativa* plant, which readily grows in many parts of the world. Delta-9-tetrahydrocannabinol (THC) is the primary psychoactive, mind-altering ingredient in marijuana that produces euphoria (often referred to as a “high”). Plant parts (mainly the leaves and buds of the plant) are usually dried, crushed, and smoked much like tobacco products. Other ways of ingesting marijuana include finely crushing the leaves and mixing them into the butter or oil that goes into cookie or brownie batter and baking the batter. Another current derivative is **marijuana wax**, also known as wax or ear wax, butter, honey oil, shatter, BHO (which stands for “butane honey oil” or “butane hash oil”), and dabs. To date, this is one of the most powerful and the most potent (80% pure THC) types of marijuana on both the illegal and legal drug markets (in states where marijuana has either been decriminalized or medically sanctioned), with smoking or vaporizing this type of marijuana leading to a “quicker, stronger high” (Kimble 2013). Finally, hashish is a cannabis derivative that contains the purest form of resin and also has very high amounts of THC.

## ■ Designer Drugs/Synthetic Drugs or Synthetic Opioids

In addition to the most commonly abused illicit drug categories just described, innovations in technology have produced new categories known as **designer drugs/synthetic drugs or synthetic opioids**. These relatively new types of drugs are developed by people who seek to circumvent the

## KEY TERMS

### **MDMA**

a type of illicit drug known as Ecstasy or Adam and having stimulant and hallucinogenic properties

### **ethanol**

the pharmacological term for alcohol; a consumable type of alcohol that is the psychoactive ingredient in alcoholic beverages; often called grain alcohol

### **marijuana wax**

a more recent, extremely potent cannabis product with approximately 80% THC levels made by using butane to extract the THC, producing a “waxy” residue that is smoked or vaporized that is highly hallucinogenic, often resulting in high levels of physical and mental impairment

### **designer drugs/synthetic drugs or synthetic opioids**

new drugs that are developed by people intending to circumvent the illegality of a drug by modifying a drug into a new compound; Ecstasy is an example

\*Federal law specifies that Cannabis is an illicit drug while state laws in 25+ states have currently legalized this drug.



Courtesy of DEA.



Designer pills made from the illicit drug Ecstasy. This drug has some stimulant properties like amphetamines as well as hallucinogenic properties like LSD.

illegality of a drug by modifying the drug into a new compound. Ecstasy is an example of a designer drug/synthetic drug or synthetic opioid. Such drugs are created as **structural analogs** of substances already scheduled and legally prohibited under the Controlled Substances Act. Structural analogs are the drugs that result from altered chemical structures of already existing illicit drugs. Generally, these drugs are created by an underground chemist whose goal is to make a profit by creating compounds that mimic, change, or intensify the psychoactive effects of controlled substances. The number of designer drugs that are created and sold illegally is very large.

Anyone with knowledge of college-level chemistry can alter the chemical ingredients and produce new designer drugs, although it may be nearly impossible to predict their properties or effects except by trial and error. Currently, three major types of synthetic analog drugs are available through the illicit drug market: analogs of PCP; analogs of fentanyl and meperidine (both synthetic narcotic analgesics), such as Demerol or MPPP (also called MPTP or PEPAP); and analogs of amphetamine and methamphetamine (which have stimulant and hallucinogenic properties), such as MDMA, known as Ecstasy or Adam, which is widely used on college campuses as a euphoriant.

The production of these high-technology psychoactive substances is a sign of the new levels of

## KEY TERM

### structural analogs

a new molecular species created by modifying the basic molecular skeleton of a compound; structural analogs are structurally related to the parent compound

risk and additional challenge to the criminal justice system. As the production and risk associated with the use of such substances increase, the need for a broader, better-informed view of drug use becomes even more important than in the past.

## SYNTHETIC CANNABIS: SPICE AND K2

Synthetic marijuana is made by mixing a raw Schedule I drug and analogue powder chemicals with surfactants, acetone, and glue and then spraying it with *damiana*, a dried vegetable matter, to create a product that can be smoked. To manufacture bath salts, Schedule I drugs and analogues are mixed and cut with adulterants and then packaged for snorting or ingesting (U.S. Department of Justice 2016).

Synthetic cannabinoids are substances that are designed to affect the body in a manner similar to marijuana but that are not derived from the marijuana plant (Office of National Drug Control Policy [ONDCP] 2013b). They are most often smoked like marijuana. Street names for synthetic cannabis include Spice, K2, Mr. Smiley, Red X Dawn, and Blaze. “A package of K2, a synthetic marijuana, is a concoction of dried herbs sprayed with chemicals, used in the herbal blends that are sold in head shops on the Internet to a growing number of teens and young adults” (Caldwell 2010, p. 30). Many of the contents are listed as inactive on the product packaging (DEA 2012). A retired organic chemistry researcher from Clemson University reports such medical problems from synthetic cannabis use as “overdoses, cases of addiction, and even suicide” (Caldwell 2010, p. 30).



Courtesy of DEA.

K2 contains synthetic cannabinoids that affect the body in similar fashion as marijuana.

K2 and Spice are generic trademarks that first went on sale in 2000, initially as legal herbs. Several years later, it was discovered that they contained synthetic cannabinoids that affected the



body in a similar fashion as marijuana (cannabis). In July 2012, federal law placed this drug under Schedule I, making it an illegal drug with the highest abuse potential. The illegality of this drug removed it from retail sales.

As mentioned, prior to 2012, Spice was sold as a legal herb-based alternative to cannabis. The ingredients list contained only herbs, with no cannabinoid constituents; however, the listed ingredients seemed suspiciously unlikely to produce the drug's reported effects. Herbs listed on packages of Spice included *Nymphaea caerulea*, *Leonotis leonurus*, *Zornia latifolia*, *Canavalia maritima*, *Scutellaria nana*, *Pedicularis densiflora*, *Nelumbo nucifera*, and *Leonurus sibiricus*. A lab in Germany tested for the presence of these ingredients, and they were not found. Numerous other organizations have now tested the material, and three chemicals have been identified in various Spice products, including JWH-018, HU-210, and a homologue of CP-47,497 (Erowid Center 2013). In addition to these three chemicals, which were recently outlawed under the jurisdiction of the Emergency Controlled Substances Act, the following have also been added as controlled substances: AM678, JWH-019, JWH-200, JWH-250, JWH-081, JWH-122, JWH-398, AM2201, AM694, SR-19 and RCS-4, SR-18 and RCS-8, and JWH-203 (Erowid Center 2013).

Another study indicated that the following have been found in samples of Spice (U.S. Department of Justice 2011):

- *CP-47,497*: A synthetic cannabinoid agonist without the classical cannabinoid chemical

structure. Although CP-47,497 is likely to have similar effects in humans as delta-9-tetrahydrocannabinol ( $\Delta$ 9-THC), the main active ingredient of marijuana, CP-47,497 and its homologues are now a controlled substance classified as a Schedule I drug in the United States.

- *HU-210 and HU-211*: First synthesized around 1988, these are structurally and pharmacologically similar to  $\Delta$ 9-THC. HU-210 was recently purported to be found in the herbal mixture Spice, sold in European countries mainly via Internet shops. HU-210 is a Schedule I controlled substance in the United States; HU-211 is not a controlled substance in the United States, although it may fall under the federal Analogue Act of outlawed drugs because it is categorized as a THC substance and is similar to those THC substances that occur naturally in marijuana.
- *JWH-018, JWH-073, and JWH-074*: These are synthetic cannabinoid agonists without the classic cannabinoid chemical structure. The substances have been identified in herbal products such as Spice, K2, and others sold via the Internet and head shops. Although JWH-018, JWH-073, and JWH-074 are likely to have the same effects in humans as  $\Delta$ 9-THC, they are not controlled in the United States.

The U.S. Army, U.S. Marines, U.S. Air Force, and U.S. Navy have also outlawed this drug, and violators risk immediate expulsion from service and incarceration. (For information regarding the extent of Spice use, see "Here and Now: Spice/K2: Past and Current Usage Rates.")

## HERE AND NOW

### Spice/K2: Past and Current Usage Rates

Spice, also known as herbal incense, is dried, shredded plant material treated with a cannabinoid analog. Although labels on spice products will list the ingredients as "natural" psychoactive plant products, chemical analyses show that their active ingredients are primarily synthetic cannabinoids added to the plant material. These synthetic analogs function similarly to the active ingredient in marijuana, delta-9-tetrahydrocannabinol ( $\Delta$ 9-THC) (Substance Abuse and Mental Health Services Administration [SAMHSA] 2014).

K2 and Spice are two names for a more recently created psychoactive designer drug whose dried, leafy, natural herbs are sprayed with a psychoactive

chemical; it is then smoked so the user can experience euphoric effects. In 2011, prior to the Synthetic Drug Abuse Prevention Act being signed into law, one in nine U.S. high school seniors reported having used synthetic marijuana. A large sample survey found that annual prevalence was 11.4%, ranking synthetic marijuana as the second most widely used class of illicit drug after marijuana among 12th graders (Johnston et al. 2013). In 2012, use among 12th graders remained virtually unchanged at 11.3%. Eighth, 10th, and 12th graders were asked if they associated a great risk with trying synthetic marijuana once or twice; the results showed that there was quite a low level of perceived

(continues)

## HERE AND NOW

### Spice/K2: Past and Current Usage Rates (*continued*)

risk (only 23% and 25%, respectively, thought there was great risk in using once or twice).

Another study at a large public university in the state of Georgia between November 2011 and March 2012 found that 14% of undergraduate students reported synthetic cannabinoid use, with the highest level of use among male students largely identifying with the lesbian, gay, bisexual, or transgender (LGBT) community (CESAR 2013). This was the first known study to obtain a detailed profile of users of any type of synthetic cannabinoid. Findings indicated the following:

1. The average age of first use was 18 years.
2. The percentage ever using synthetic cannabinoids was twice as high for males as for females (19% vs. 9%).
3. Heavier users were more likely to identify themselves as LGBT; significantly less usage was found

in students identifying themselves as heterosexual (27% vs. 14%).

More current findings are that “[e]fforts at the federal and state levels to close down the sale of these substances appear to be having an effect” (Johnston et al. 2015). Use fell by a statistically significant amount in 2015 for the three grades combined (8th, 10th, and 12th graders). The percentages of students saying they used any synthetic marijuana in the past 12 months now stand at 3%, 4%, and 5% in grades 8, 10, and 12, respectively—down considerably from the 4%, 9%, and 11% observed in those same grades in 2012. According to the authors of the study, “While there has been some increase in the proportion of students seeing use of this drug as dangerous, it hardly seems enough to account for the considerable declines in use, which leads us to conclude that efforts to reduce availability have been successful to some degree” (Johnston et al. 2015).

.....  
Data from Johnston, L. D., P. M. O'Malley, J. G. Bachman, and J. E. Schulenberg. *Monitoring the Future National Results on Drug Use: 2012 Overview, Key Findings on Adolescent Drug Use*. Ann Arbor, MI: Institute for Social Research, The University of Michigan, 2013; Center for Substance Abuse Research (CESAR). “Study Finds that 14% of Undergraduate Students at a Southeastern University Report Synthetic Cannabinoid Use; Users More Likely to Be Male and Identify as LGBT.” CESAR FAX (20 May 2013). Available <http://www.cesar.umd.edu>; Johnston, L. D., P. M. O'Malley, R. A. Miech, J. G. Bachman, and J. E. Schulenberg. *Monitoring the Future National Survey Results on Drug Use, 1975–2015: Overview, Key Findings on Adolescent Drug Use*. Ann Arbor, MI: Institute for Social Research, The University of Michigan, February 2016.

© Michael Newman/Photofest, Inc.



**Inhalants.** These volatile chemicals, which include many common household substances, are often the most dangerous drug, per dose, a person can take. In addition, inhalants are most often used by young children.

#### ■ Anabolic Steroids

Steroids are a synthetic form of the male hormone testosterone. They are often used to increase muscle size and strength. Medically,

steroids are used to increase body tissue, treat allergies, or reduce swelling. Steroids are available in either liquid or pill form. Athletes have a tendency to use and abuse these drugs because dramatic results can occur with regard to increased body mass and muscle tissue. Some side effects include heart disease, liver cancer, high blood pressure, septic shock, impotence, genital atrophy, manic episodes, depression, violence, and mood swings.

#### ■ Inhalants/Organic Solvents

Inhalants and organic solvents also are often considered gateway drugs and are very attractive to and popular among preteens and younger teenagers. Products used include gasoline, model airplane glue, and paint thinner. When inhaled, the vapors from these solvents can produce euphoric effects. Organic solvents can also refer to certain foods, herbs, and vitamins, such as “herbal Ecstasy.”

## ■ Narcotics/Opiates

These drugs depress the CNS and, if taken in a high enough quantity, produce insensibility or stupor. Narcotics or opiates are highly addictive. Narcotics include heroin, opium, morphine, codeine, meperidine (often a substitute for morphine, also known as Demerol), Darvon, and Percodan.

## An Overview of Drugs in Society

Many people think that problems with drugs are unique to this era. In reality, drug use and abuse have always been part of nearly all—past and present—human societies. For example, the Grecian oracles of Delphi used drugs, Homer's Cup of Helen induced sleep and provided freedom from care, and the mandrake root mentioned in the first book of the Bible, Genesis, produced a hallucinogenic effect. In Genesis 30:14–16, the mandrake is mentioned in association with bartering for lovemaking:

In the time of wheat harvest Reuben went out, found some mandrakes in the open country, and brought them to his mother Leah. Then Rachel asked Leah for some of her son's mandrakes, but Leah said, "Is it so small a thing to have taken away my husband, that you should take my son's mandrakes as well?" However, Rachel said, "Very well, let him sleep with you tonight in exchange for your son's mandrakes." So when Jacob came in from the country in the evening, Leah went out to meet him and said, "You are to sleep with me tonight; I have hired you with my son's mandrakes." That night he slept with her.

Ancient literature is filled with references to the use of mushrooms, datura, hemp, marijuana, opium poppies, and so on. Under the influence of some of these drugs, many people experienced extreme ecstasy or sheer terror. Some old pictures of demons and devils look very much like those described by modern drug users during so-called bummers, or bad trips. The belief that witches could fly may also have been drug induced because many natural preparations used in so-called witches' brews induced the sensation of dissociation from the body, as in flying or floating.

As far back as 2240 BC, attempts were made to regulate drug use. For instance, in that year, problem drinking was addressed in the Code of Hammurabi, where it was described as "a problem of men with too much leisure time and lazy

dispositions." Nearly every culture has experienced drug abuse, and as found in the historical record, laws were enacted to control the use of certain types of drugs.

## ■ How Widespread Is Drug Abuse?

As mentioned earlier, drug abuse today is more acute and widespread than in any previous age (see "Here and Now: Numbers of Past Month: Illicit Drug Users and Illicit Drug Use Among People Aged 12 or Older by Age Group"). The evidence for this development is how often large quantities of illicit drugs are seized in the United States as well as throughout the world (see "Here and Now: *The World Factbook*: Current Global Status of Illicit Drugs and Drug Use"). Media exposure about illicit drug use is more likely to occur today than in the past. On any given day, you can scan most major national and international newspapers and run across stories about illegal drug manufacture, storage and distribution, use and/or abuse, and convictions. Drug use is an **"equal-opportunity affliction."** This means that no one is immune from the use and/or abuse of both licit and illicit drugs. Research shows that drug consumption is found across the many different

Amanda Geiger never saw the drunk driver.

**Friends Don't Let Friends Drive Drunk.**



Photo by Michael Mazzeo



U.S. Department of Transportation



Courtesy of the Advertising Council.

Although the media is often credited with glamorizing dangerous drug use, many successful prevention campaigns have used TV, radio, and print media as outlets. Since the Advertising Council began their "Friends Don't Let Friends Drive Drunk" campaign, 79% of Americans have stopped an intoxicated friend from getting behind the wheel.

## KEY TERM

### **equal-opportunity affliction**

refers to the use of drugs, stressing that drug use cuts across all members of society regardless of income, education, occupation, social class, or age

income, education, social class, occupation, race and ethnic, lifestyle, and age groups. To date, no one has proved to be immune from drug use and/or abuse.

Many of us, for example, are dismayed or surprised when we discover that certain individuals we admire—our family members (a mother, father, aunt, uncle, cousin, grandparent), close friends, workmates, celebrities, politicians, athletes, clergy, law enforcement personnel, physicians, academics,

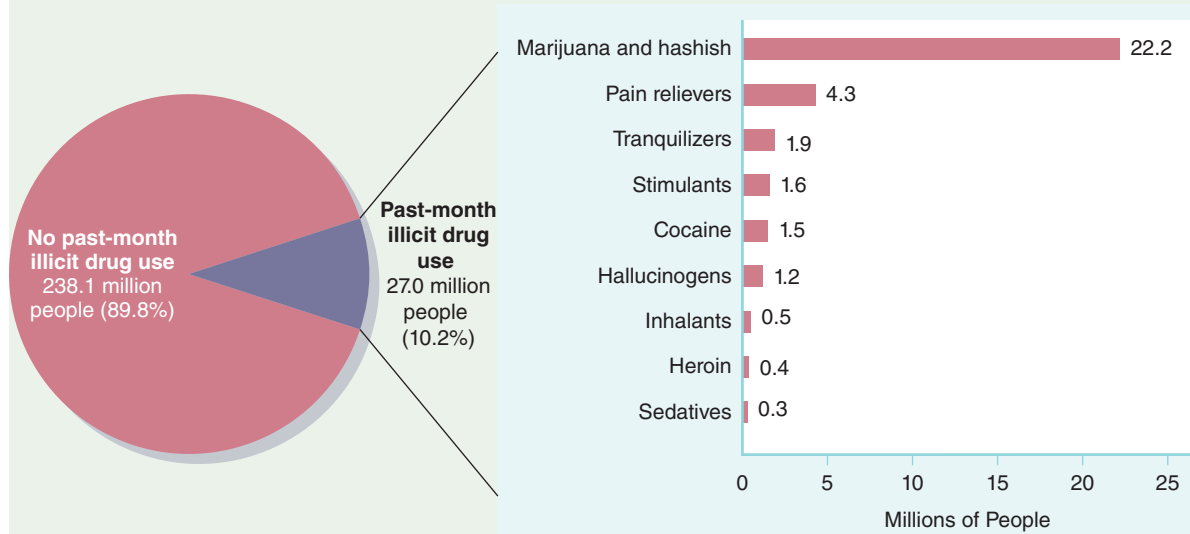
and even the seemingly upstanding man or woman next door—either admit to, are accused of, need treatment for, or are arrested for licit and/or illicit drug use. We are also taken aback when we hear that cigarettes, alcohol, and marijuana abuse are commonplace in many public and private middle schools. Furthermore, most of us know of at least one (and many times more than one) close friend or family member who appears to secretly or not so secretly use drugs.

## HERE AND NOW

### Numbers of Past-Month Illicit Drug Users and Age Groups by People Aged 12 and Older, 2014

In 2014, an estimated 27 million Americans aged 12 or older were current (past-month) illicit drug users, meaning that they had used an illicit drug during the month prior to the survey interview (**Figure A**). The most commonly used illicit drug in the past month was marijuana, which was used by 22.2 million people aged 12 or older. An estimated 6.5 million people

reported nonmedical use of psychotherapeutic drugs in the past month, including 4.3 million nonmedical users of prescription pain relievers. Thus, the number of current nonmedical users of pain relievers was second to marijuana among specific illicit drugs. Smaller numbers of people in 2014 were current users of the other illicit drugs shown in Figure A.



**FIGURE A** Number of past-month illicit drug users among persons aged 12 or older: 2014.

Data from Center for Behavioral Health Statistics and Quality (CBHSQ). Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health. Rockville, MD: Substance Abuse and Mental Health Services (SAMHSA), HHS Publication No. SMA 15-4927, NSDUH Series H-50, 2015. Available <http://www.samhsa.gov/data/>

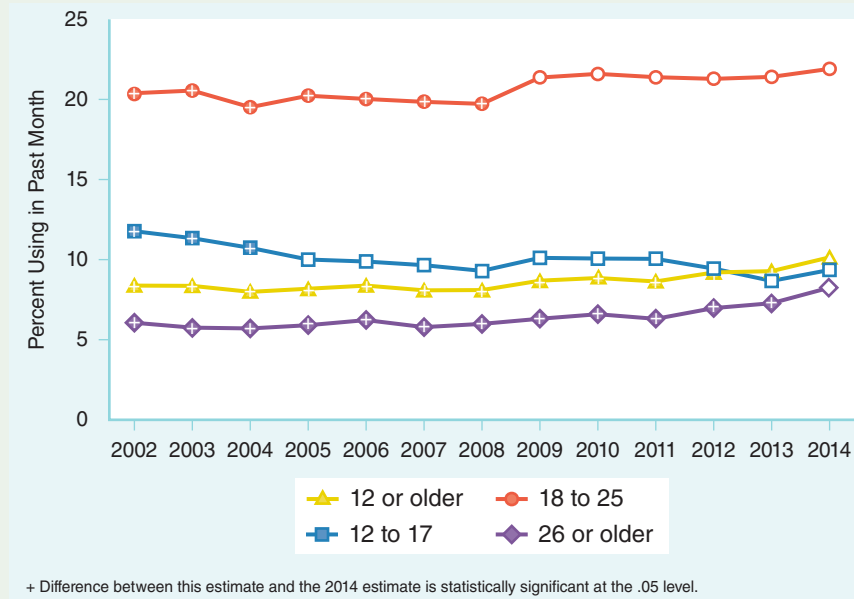
The estimated 27 million people aged 12 or older who were current illicit drug users in 2014 (**Figure A**) represent 10.2% of the population aged 12 or older (**Figure B**). Stated another way, 1 in 10 individuals aged 12 or older in the United States used illicit drugs in the past month. The percentage of people aged 12 or older who were current illicit drug users

in 2014 was higher than the percentages from 2002 to 2013. The rise in illicit drug use among those aged 12 or older since 2002 may reflect an increase in illicit drug use by adults aged 26 or older and, to a lesser extent, increases in illicit drug use among young adults aged 18 to 25 relative to the years before 2009.



## HERE AND NOW

### Numbers of Past-Month Illicit Drug Users and Age Groups by People Aged 12 and Older, 2014 (*continued*)



**FIGURE B** Past-month illicit drug use among persons aged 12 or older by age group: 2001–2014.

Data from Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. Rockville, MD: Substance Abuse and Mental Health Services (SAMHSA), HHS Publication No. SMA 15-4927, NSDUH Series H-50, 2015. Available <http://www.samhsa.gov/data/>

Data from Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927, Rockville, MD: Substance Abuse and Mental Health Services, 2015. Available <http://www.samhsa.gov/data/>

### ■ Extent and Frequency of Drug Use in Society

Erich Goode (2012), a much-respected sociologist, lists four types of drug use:

- *Legal instrumental use*. Taking prescribed drugs and OTC drugs to relieve or treat mental or physical symptoms.
- *Legal recreational use*. Using such licit drugs as tobacco, alcohol, and caffeine to achieve a certain mental or psychic state.
- *Illegal instrumental use*. Taking drugs without a prescription to accomplish a task or goal, such as taking nonprescription amphetamines to drive through the night or relying excessively on barbiturates to get through the day.
- *Illegal recreational use*. Taking illicit drugs for fun or pleasure to experience euphoria, such as abusing prescribed methylphenidate (Ritalin) as a substitute for cocaine.

Why has the prevalence of licit and illicit drug use remained consistent since 1988? Why has this trend occurred, when federal, state, and local government expenditures for fighting the drug war have been increasing at the same time? There are several possible answers, none of which, by itself, offers a satisfactory response. One perspective notes that practically all of us use drugs in some form, with what constitutes “drug use” being merely a matter of degree. A second explanation is that more varieties of both licit and illicit drugs are available today. One source estimated that approximately 80% of all currently marketed drugs were either unknown or unavailable 30 years ago (Critser 1996). Regarding prescriptions, “the average number of prescriptions per person, annually, in 1993 was seven, and in 2005 it was 12 (Critser 2005, p. 23) and in 2011, 13 prescriptions per person in the U.S.” Another source stated, “The retail sales of all OTC drugs that includes approximately 27 categories of drugs totaled over \$32.1 billion in 2015” (CHPA 2016). In

## HERE AND NOW

### *The World FactBook: Current Global Status of Illicit Drugs and Drug Use in Selected Countries*

#### **Afghanistan**

Afghanistan is world's largest producer of opium; poppy cultivation increased 7%, to a record 211,000 hectares\* in 2014 from 198,000 hectares in 2013, while eradication dropped sharply. However, Afghanistan has had relatively low opium yields due to poor weather that has kept potential opium production—6,300 metric tons—below the record set in 2007. The Taliban and other antigovernment groups participate in and profit from the opiate trade, which is a key source of revenue for the Taliban inside Afghanistan. Widespread corruption and instability in Afghanistan impede counterdrug efforts. Most of the heroin consumed in Europe and Eurasia is derived from Afghan opium. Afghanistan is also struggling to respond to a burgeoning domestic opiate addiction problem and is vulnerable to the laundering of drug money through informal financial networks. Afghanistan also has extensive illicit cultivation of cannabis and is a regional source of hashish.

#### **Argentina**

Argentina is a transshipment country for cocaine headed for Europe, heroin headed for the United States, and ephedrine and pseudoephedrine headed for Mexico. Some money laundering occurs, especially in the Tri-Border Area. Law enforcement corruption is also a problem. Argentina is a source for precursor chemicals, and there is increasing domestic consumption of drugs in urban centers, especially cocaine base and synthetic drugs (2008 data).

#### **Aruba**

This is a transit point for U.S.- and Europe-bound narcotics, with some accompanying money-laundering activity. A relatively high percentage of its population consumes cocaine.

#### **Australia**

Tasmania is one of the world's major suppliers of licit opiate products. The government maintains strict controls over areas of opium poppy cultivation and the output of poppy straw concentrate. It is a major consumer of cocaine and amphetamines.

#### **Bahamas**

The Bahamas is a transshipment point for cocaine and marijuana bound for the United States and Europe; it is also an offshore financial center.

#### **Belgium**

Belgium is a growing producer of synthetic drugs and cannabis. It is a transit point for U.S.-bound Ecstasy and a source of precursor chemicals for South American cocaine processors. It is a transshipment point for cocaine, heroin, hashish, and marijuana entering Western Europe. Despite a strengthening of legislation, the country remains vulnerable to money laundering related to narcotics, automobiles, alcohol, and tobacco. Significant domestic consumption of Ecstasy is also a problem.

#### **Bolivia**

Bolivia is the world's third-largest cultivator of coca (after Colombia and Peru), with an estimated 30,000 hectares under cultivation in 2011, a decrease of 13% over 2010. It is also the third-largest producer of cocaine, estimated at 265 metric tons of potential pure cocaine in 2011, a 29% increase over 2010. Bolivia is a transit country for Peruvian and Colombian cocaine destined for Brazil, Argentina, Chile, Paraguay, and Europe, due to its weak border controls. Money-laundering activity related to the narcotics trade is a problem, as is domestic cocaine consumption (2013).

#### **Brazil**

The second-largest consumer of cocaine in the world, Brazil is an important market for Colombian, Bolivian, and Peruvian cocaine. It is an illicit producer of cannabis and trace amounts of coca cultivation in the Amazon region, used for domestic consumption. The government has a large-scale eradication program to control cannabis. It is an important transshipment country for Bolivian, Colombian, and Peruvian cocaine headed for Europe and is also used by traffickers as a way station for narcotics air transshipments between Peru and Colombia. It has experienced an upsurge in drug-related violence and weapons smuggling. Illicit narcotics proceeds are often laundered through the financial system, with significant illicit financial activity in the Tri-Border Area (2008).

#### **Burma**

Burma is the world's third-largest producer of illicit opium, with estimated production in 2012 of 690 metric tons, an increase of 13% over 2011. Poppy cultivation in 2012 totaled 51,000 hectares, a 17% increase over 2011. Shan state is the source of 94.5% of

## HERE AND NOW

### *The World FactBook: Current Global Status of Illicit Drugs and Drug Use in Selected Countries (continued)*

Burma's poppy cultivation; lack of government will to take on major narco-trafficking groups and lack of serious commitment against money laundering continues to hinder the overall antidrug effort. It is a major source of methamphetamine and heroin for regional consumption (2013).

#### **Canada**

Canada is a producer of cannabis for the domestic drug market and export to United States. The use of hydroponics technology permits growers to plant large quantities of high-quality marijuana indoors, some of which is destined for the United States. Production of Ecstasy has also increased. Canada is vulnerable to narcotics money laundering because of its mature financial services sector.

#### **China**

China is a major transshipment point for heroin produced in the Golden Triangle region of Southeast Asia. Domestic consumption of synthetic drugs and heroin from Southeast and Southwest Asia is increasing. It is a source country for methamphetamine and heroin chemical precursors, despite new regulations on its large chemical industry. Nongovernmental organizations (NGOs) claim that more people have been convicted and executed for drug offences in China than anywhere else in the world (2008 data).

#### **Colombia**

Colombia is an illicit producer of coca, opium poppy, and cannabis. It is the world's leading coca cultivator, with 83,000 hectares in coca cultivation in 2011, a 17% decrease over 2010, producing the potential for 195 metric tons of pure cocaine. It is also the world's largest producer of coca derivatives, and supplies cocaine to nearly all of the U.S. market and the great majority of other international drug markets. Colombia is an important supplier of heroin to the U.S. market, although opium poppy cultivation is estimated to have fallen to 1100 hectares in 2009, and pure heroin production to 2.1 metric tons. In 2012, aerial eradication efforts sprayed herbicide over 100,549 hectares, in addition to manual eradication of 30,486 hectares. A significant portion of narcotics proceeds are either laundered or invested in Colombia through the black market peso exchange.

#### **Germany**

Germany is a source of precursor chemicals for South American cocaine processors. It is a transshipment point for and consumer of Southwest Asian heroin, Latin American cocaine, and European-produced synthetic drugs. It is also a major financial center.

#### **Guatemala**

Guatemala is a major transit country for cocaine and heroin. In 2005, it cultivated 100 hectares of opium poppy after reemerging as a potential source of opium in 2004, with potential production of less than 1 metric ton of pure heroin. Marijuana cultivation is mostly for domestic consumption. Its proximity to Mexico makes Guatemala a major staging area for drug trafficking (particularly for cocaine). Money laundering and corruption are serious problems in Guatemala.

#### **Haiti**

Haiti is a Caribbean transshipment point for cocaine en route to the United States and Europe; there is also substantial bulk cash smuggling activity. Colombian narcotics traffickers favor Haiti for illicit financial transactions. Corruption is pervasive, and the country is a significant consumer of cannabis.

#### **Iran**

Despite substantial interdiction efforts and considerable control measures along the border with Afghanistan, Iran remains one of the primary transshipment routes for Southwest Asian heroin to Europe. Iran has reached out to neighboring countries to share counterdrug intelligence. It also suffers one of the highest opiate addiction rates in the world and has an increasing problem with synthetic drugs. Iran regularly enforces the death penalty for drug offences, but lacks anti-money-laundering laws.

#### **Ireland**

Ireland is a transshipment point for and consumer of hashish from North Africa en route to the United Kingdom and the Netherlands. It is also a minor transshipment point for heroin and cocaine destined for Western Europe. Ireland is also a consumer of European-produced synthetic drugs and South American cocaine. Despite recent legislation, narcotics-related money laundering that relies on currency exchanges,

(continues)

## HERE AND NOW

### *The World FactBook: Current Global Status of Illicit Drugs and Drug Use in Selected Countries (continued)*

trusts, and shell companies involving the offshore financial community remains a concern.

#### **Israel**

Israel is increasingly concerned about Ecstasy, cocaine, and heroin abuse. These drugs arrive in country from Lebanon and, increasingly, from Jordan. Israel is also a money-laundering center.

#### **Italy**

Italy is an important gateway for and consumer of Latin American cocaine and Southwest Asian heroin entering the European market. Organized crime is involved in money laundering and smuggling.

#### **Mexico**

A major drug-producing and transit nation, Mexico is the world's second-largest opium poppy cultivator. Opium poppy cultivation in 2009 rose 31% over 2008 to 19,500 hectares, yielding a potential production of 50 metric tons of pure heroin, or 125 metric tons of "black tar" heroin, the dominant form of Mexican heroin in the western United States. Marijuana cultivation increased 45% to 17,500 hectares in 2009. The Mexican government conducts the largest independent illicit-crop eradication program in the world. Mexico continues to be the primary transshipment country for U.S.-bound cocaine from South America, with an estimated 95% of annual cocaine movements toward the United States stopping in Mexico. Major drug syndicates control the majority of drug trafficking throughout the country. It is a producer and distributor of Ecstasy, a significant money-laundering center, a major supplier of heroin, and the largest foreign supplier of marijuana and methamphetamine to the U.S. market (2007 data).

#### **Morocco**

Morocco is one of the world's largest producers of illicit hashish. Shipments of hashish are mostly directed to Western Europe. It is also a transit point for cocaine from South America destined for Western Europe. Morocco is a significant consumer of cannabis.

#### **Netherlands**

The Netherlands is a major European producer of synthetic drugs, including Ecstasy, and a cannabis cultivator. It is an important gateway for cocaine, heroin, and hashish entering Europe and a major source of U.S.-bound Ecstasy. Its large financial sector is vulnerable

to money laundering. The Netherlands is also a significant consumer of Ecstasy.

#### **Nigeria**

Nigeria is a transit point for heroin and cocaine intended for European, East Asian, and North American markets. It is a consumer of amphetamines, a safe haven for Nigerian narco-traffickers operating worldwide, and a major money-laundering center. Nigeria also faces massive corruption and criminal activity. Nigeria has improved some of its anti-money-laundering controls, resulting in its removal from the Financial Action Task Force's (FATF) Noncooperative Countries and Territories List in June 2006. However, Nigeria's anti-money-laundering efforts continue to be monitored by the FATF.

#### **Pakistan**

Pakistan is a significant transit area for Afghan drugs, including heroin, opium, morphine, and hashish, bound for Iran, Western markets, the Gulf States, Africa, and Asia. Financial crimes related to drug trafficking, terrorism, corruption, and smuggling remain problems. Opium poppy cultivation was estimated at 2,300 hectares in 2007, with 600 of those hectares eradicated. Federal and provincial authorities continue to conduct antipoppy campaigns that utilize forced eradication, fines, and arrests.

#### **Panama**

Panama is a major cocaine transshipment point. It is a primary money-laundering center for narcotics revenue because of its status as an offshore financial center. Money-laundering activity is especially heavy in the Colón Free Zone. Although monitoring of financial transactions is improving, official corruption remains a major problem. There are negligible signs of coca cultivation.

#### **Peru**

Until 1996, Peru was the world's largest coca leaf producer. Today, Peru is the world's second-largest producer of coca leaf, lagging far behind Colombia. Cultivation of coca in Peru was estimated at 40,000 hectares in 2009, a slight decrease over 2008. It is the second-largest producer of cocaine, estimated at 225 metric tons of potential pure cocaine in 2009. Finished cocaine is shipped out from Pacific ports to the international drug market; increasing amounts of base and finished cocaine, however, are being moved to Brazil, Chile, Argentina, and Bolivia for use in the Southern Cone (the region of South America comprising the countries of



## HERE AND NOW

### *The World FactBook: Current Global Status of Illicit Drugs and Drug Use in Selected Countries (continued)*

Brazil, Paraguay, Uruguay, Argentina, and Chile) or are being transshipped to Europe and Africa. Peru is experiencing increasing domestic drug consumption.

#### **Poland**

Despite diligent counternarcotics measures and international information sharing on cross-border crime, Poland is a major illicit producer of synthetic drugs for the international market as well as a minor transshipment point for Southwest Asian heroin and Latin American cocaine to Western Europe.

#### **South Africa**

South Africa is a transshipment center for heroin, hashish, and cocaine and a major cultivator of marijuana in its own right. Cocaine and heroin consumption in South Africa is on the rise. It is the world's largest market for illicit methaqualone, usually imported illegally from India through various East African countries, but it is increasingly producing its own synthetic drugs for domestic consumption. It is an attractive venue for money launderers given the increasing level of organized criminal and narcotics activity in the region and the size of the South African economy.

#### **United States**

The United States is the world's largest consumer of cocaine (shipped from Colombia through Mexico and the Caribbean), Colombian heroin, and Mexican heroin

and marijuana. It is also a major consumer of Ecstasy and Mexican methamphetamine and a minor consumer of high-quality Southeast Asian heroin. An illicit producer of cannabis, depressants, stimulants, hallucinogens, and methamphetamine, the United States is also a money-laundering center.

#### **Worldwide Facts: Illicit Drugs**

##### **Cocaine**

Worldwide coca leaf cultivation in 2013 likely amounted to 165,000 hectares, assuming a stable crop in Bolivia. Colombia produced slightly less than half of the worldwide crop, followed by Peru and Bolivia. Potential pure cocaine production increased 7% to 640 metric tons in 2013. Colombia conducts an aggressive coca eradication campaign. Peru has increased its eradication efforts, but remains hesitant to eradicate coca in key growing areas.

##### **Opiates**

Worldwide illicit opium poppy cultivation increased in 2013, with potential opium production reaching 6,800 metric tons. Afghanistan is world's primary opium producer, accounting for 82% of the global supply. Southeast Asia is responsible for 12% of global opium, with Pakistan producing 3% of global opium. Latin America produced 4% of global opium, most being refined into heroin destined for the U.S. market.

\* A hectare is a metric measurement used throughout the world. One hectare is equivalent to 2.47 acres.

Courtesy of Central Intelligence Agency. *The World Factbook 2013–14*. Washington, DC: Central Intelligence Agency, 2014. Available <https://www.cia.gov/library/publications/the-world-factbook/fields/2086.html>. Accessed March 27, 2016.

the United States alone, the rate of yearly prescription growth from 2012 to 2013 was up 1% (IMS Health 2013). In 2013, the total global prescription pharmaceutical market had sales of \$950 billion; in 2016, sales were expected to reach \$1.2 trillion (Herper 2012). Similarly, Reuters reports that “[G]lobal pharmaceutical sales are expected to reach \$1.1 trillion in 2014” (Berkrot 2010, p. 1). Further, CBS News reported “that 40% of Americans are on at least one prescription drug, and more than half receive at least two prescriptions” (Fearnow 2013).

Other findings reflecting problems with prescription drug use are as follows (NIDA 2014b):

- Fifty-two million people in the United States older than age of 12 have used prescription drugs nonmedically in their lifetime.
- Approximately 6.1 million Americans have used prescription drugs nonmedically in the past month.
- Although the United States is just 5% of the world's population, it consumes 75% of the world's prescription drugs.
- With regards to obtaining prescription drugs, 54.2% reported obtaining them for free from a friend or relative, 18.1% from one doctor, and 16.6% buying or taking them from a friend or relative.

Such figures indicate that it may be more difficult to find people who do not use psychoactive drugs compared to individuals who do.

Further, a third category of drug sales has joined OTC and prescription drugs: herbal

medicines, vitamins, minerals, enzymes, and other natural potions. According to Boyles (2009), “Out-of-pocket spending on herbal supplements, chiropractic visits, meditation, and other forms of complementary and alternative medicines (CAM) was estimated at \$34 billion in a single year” and “Americans spend almost a third as much money out-of-pocket on herbal supplements and other alternative medicines as they do on prescription drugs.” A more recent study found that “Americans will spend \$21 billion on vitamins and herbal supplements in 2015. If protein powders are included, supplements are as big a market as all organic foods combined” (Scott 2015). This is even though the U.S. Preventive Services Task Force does not recommend regular use of any multivitamins or herbs.

Other findings regarding these types of drugs include (Scott 2015):

- 50% of Americans take multivitamins.
- One in five U.S. adults take herbal supplements.
- Americans will spend \$21 billion on supplements in 2015.
- The FDA only spot tests 1% of the 65,000 dietary supplements on the market.

Drug use is so common that the average household in the United States owns about five drugs, of which two are prescription drugs and the other three are OTC drugs. Of the many prescriptions written by physicians, approximately one-third modify moods and behaviors in one way or another. A 2010 National Institute on Drug Abuse (NIDA 2010) study and other research indicate that more than 60% of adults in the United States have, at some time in their lives, taken a psychoactive drug (one that affects mood or consciousness). More than one-third of adults have used or are using depressants or sedatives.

A third explanation is that “in the modern age, increased sophistication has brought with it techniques of drug production and distribution that have resulted in a worldwide epidemic of drug use” (Kusinitz 1988, p. 149). In the 1980s and 1990s, for example, illicit drug cartels proliferated, and varieties of marijuana with ever-increasing potency infiltrated all urban and rural areas in the United States, as well as the world. Many of these varieties are crossbred with ultra-sophisticated techniques and equipment available everywhere.

Finally, even coffee has undergone a technological revolution. Higher levels of caffeine content have become available worldwide. This trend has

led to the phenomenal growth of the following: (1) franchise duplication of gourmet coffee bars in the United States (e.g., Starbucks, Peet’s, Three Brothers Coffee); (2) sales of espresso and cappuccino coffeemakers for home use, with accompanying coffee grinders or coffee pods and capsules; and (3) sales of specialized coffees and teas through a multitude of email coffee/tea clubs.

Approximately 25 years ago, it was difficult to purchase a cup of espresso or cappuccino in a typical restaurant; today, availability of such types of coffees is commonplace. Even at university unions and libraries, airports, shopping malls, and inner-city coffee shops, it is not unusual to see people lined up waiting to order and purchase their specially made and specially flavored coffee or tea. This is just one example of how caffeine (often seen as a benign drug) has evolved, with many new varieties of coffee beans from exotic islands and countries coming together with more sophisticated electronic equipment, with the result that the idea of simple brewing has been relegated to the past. The standard American “cup of coffee in the morning” has spilled into including coffee during the afternoon and evening. This is a small example of a much-tolerated drug maintaining its own impressive history of development, increased use, complexity in developing many more varieties, and added sophistication.

## ■ Drug Use: Statistics, Trends, and Demographics

An incredible amount of money is spent each year for licit (legal) and illicit (illegal) chemicals that alter consciousness, awareness, or mood. The following are six categories of widely used licit and illicit types of psychoactive drugs:

1. *Social drugs:* Approximately \$90 billion is spent on alcohol each year. Another \$51.9 billion goes toward tobacco products, of which 90% comes from cigarette sales. The other 5% accounts for the \$2 billion or so spent on cigars, chewing tobacco, pipe tobacco, roll-your-own tobacco, and snuff tobacco. During 2014, nearly 264 billion cigarettes were sold in the United States, a decrease from approximately 273 billion sold in 2013. About 13 billion cigars, including 12.4 billion large cigars and cigarillos and 0.6 billion little cigars, were sold in the United States in 2014 (CDC 2015a). Smokeless tobacco sales totaled approximately 124.6 million pounds in the United States in 2011, an increase from

122.6 million pounds sold in 2010 (CDC 2015a). E-cigarette sales in 2012 were approximately \$500 million and in 2013 were projected to increase by \$1 million per year (ECIG Review Central 2014). E-cigarettes account for 5% of the tobacco market, and 47.6% of current smokers have tried e-cigarettes and 55.4% of smokers who have quit used e-cigarettes (*The Motley Fool* 2015). In addition, \$5.7 billion is spent on coffee, tea, and cocoa.

2. *Prescription drugs:* As mentioned earlier, the prescription pharmaceutical market racked up \$950 billion in worldwide sales in 2012. The United States is the world's largest pharmaceutical market. In 2012, \$237.5 to \$240.5 billion of pharmaceutical prescription drugs were sold (IMS Health 2012, 2013). According to the *Pharmacy Times* (2007), total purchases of outpatient prescription medicines increased from approximately 2 billion to nearly 3 billion from 1997 to 2004.
3. *Over-the-counter (patent) drugs:* These products, including cough and cold items, external and internal analgesics, antacids, laxatives, anti-diarrheal products, sleep aids, sedatives, and so on, had \$30.8 billion in sales in 2014, with U.S. households spending, on average, about \$338 per year on OTC products. Eighty-one percent of adults use OTC medicines as a first response to minor ailment (CHPA 2016).
4. *Illicit drugs:* A report prepared by the Rand Corporation for the White House estimated that over a 10-year period, from 2000 to 2010, an astonishing \$1 trillion were spent on illicit drugs (Ferner 2014). Pinpointing specific types of drugs, another source indicated that "[d]rug users in the United States spend on the order of \$100 billion annually on cocaine, heroin, marijuana, and meth. While this total figure has been stable over the decade, there have been important compositional shifts. In 2000, much more money was spent on cocaine than marijuana; in 2010 the opposite was true" (Rand Corporation 2014).
5. *Nonmedical use of prescription-type drugs:* Misuse of prescription drugs is second only to marijuana as the nation's most prevalent illicit drug problem and is a major public health concern, with approximately 22 million persons initiating nonmedical pain reliever use since 2002 (CBHSQ 2013). Combined 2010 and 2011 data indicate that about 1 in 22 (4.6%) persons aged 12 or older nationwide reported having used pain relievers nonmedically in

the past year, which was lower than the rate using combined 2009 and 2010 data (4.9%) (CBHSQ 2013). Finally, as mentioned above, in 2015, 2.5% of illicit drug users, over 6.5 million persons age 12 or older, used prescription-type psychotherapeutic drugs nonmedically. Even the very young are not immune to significant nonmedical use of prescription-type drugs. For example, 2.8% of 8th graders, 7.2% of 10th graders, 10.5% of 12th graders, 7.5% of college students, and 8.6% of young adults had used narcotics, specifically OxyContin and Vicodin (Johnston et al. 2012) (see "Here and Now: Sources of Prescription Drugs Misused by Youths").

6. *Miscellaneous:* Finally, the amount spent on inhalants and other miscellaneous drugs, such as nutmeg and morning glory seeds, cannot be estimated.

Regarding nationwide trends in the use of illicit drug use in 2013, the following findings are noteworthy (NIDA 2015):

- Illicit drug use in the United States has been increasing. In 2013, an estimated 24.6 million Americans aged 12 or older—9.4% of the population—had used an illicit drug in the past month. This number is up from 8.3% in 2002. The increase mostly reflects a recent rise in use of marijuana, the most commonly used illicit drug.
- Marijuana use has increased since 2007. In 2013, there were 19.8 million current users—about 7.5% of people aged 12 or older—up from 14.5 million (5.8%) in 2007.
- Use of most drugs other than marijuana has stabilized over the past decade or has declined. In 2013, 6.5 million Americans aged 12 or older (or 2.5%) had used prescription drugs nonmedically in the past month. Prescription drugs include pain relievers, tranquilizers, stimulants, and sedatives. And 1.3 million Americans (0.5%) had used hallucinogens (a category that includes ecstasy and LSD) in the past month (NIDA 2015).
- Most people use drugs for the first time when they are teenagers. There were just over 2.8 million new users of illicit drugs in 2013, or about 7,800 new users per day. Over half (54.1%) were under 18 years of age.
- More than half of new illicit drug users begin with marijuana. Next most common are prescription pain relievers, followed by inhalants (which is most common among younger teens).

- Drug continues to increase among people in their fifties and early sixties. This increase is, in part, due to the aging of the baby boomers, whose rates of illicit drug use have historically been higher than those of previous generations.
- Binge and heavy drinking are more widespread among men than women. In 2013, 30.2% of men and 16.0% of women 12 and older reported binge drinking in the past month. And 9.5% of men and 3.3% of women reported heavy alcohol use.
- After alcohol, marijuana has the highest rate of dependence or abuse among all drugs. In 2013, 4.2 million Americans met clinical criteria for dependence or abuse of marijuana in the past year—more than twice the number for dependence/abuse of prescription pain relievers (1.9 million) and nearly five times the number for dependence/abuse of cocaine (855,000).
- Drug use is highest among people in their late teens and twenties. In 2013, 22.6% of 18- to 20-year-olds reported using an illicit drug in the past month. **Table 1.3** shows that in regard to age groups, 18- to 25-year-olds are by far the heaviest users and experimenters in terms of past-month and past-year usage.

**TABLE 1.3** Trend Data on the Prevalence of Illicit Drug Use: 2009–2014

	2009	2010	2011	2012	2013	2014
<b>Used in Past Month</b>						
All ages 12+	8.7	8.9	8.7	9.2	9.4	10.2
12–17	9.8	10	9.9	9.4	8.7	9.2
18–25	21.3	21.5	21.3	21.3	21.5	21.9
26–34	12.5	13.9	13	13.9	15.3	15.3
35+	5.3	5.3	5.4	6.1	6.2	7.5
<b>Used in Past Year</b>						
All ages 12+	15.1	15.3	14.9	16	15.9	16.7
12–17	19	19.2	18.6	17.7	17.1	17.2
18–25	35.8	35	35	36.2	35.7	36.1
26–34	21.9	22.7	21.6	23.9	25.6	25.3
35+	9.1	9.6	9.3	10.6	10.2	11.8
<b>Used in Lifetime (Ever Used)</b>						
All ages 12+	47.1	47.3	47	48	48.6	49.2
12–17	26.1	25.4	25.1	24	23.1	22.9
18–25	58.4	57.6	57.2	57.8	57.1	56.7
26–34	59.4	60	60	60.8	61.7	61.2
35+	48.4	49	49	50.5	51.3	52.2

Data from Substance Abuse and Mental Health Services Administration (SAMHSA). *Results from the 2007 National Survey on Drug Use and Health: National Findings*. Office of Applied Studies, NSDUH Series H-36, HHS Publication No. (SMA) 09-4435. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2008; Substance Abuse and Mental Health Services Administration (SAMHSA). *Results from the 2009 National Survey on Drug Use and Health: Volume II. Technical Appendices and Selected Prevalence Tables*. Office of Applied Studies, NSDUH Series H-38B, HHS Publication No. (SMA) 10-4586 Appendices. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2010; Substance Abuse and Mental Health Services Administration (SAMHSA). *Results from the 2011 National Survey on Drug Use and Health: Summary of National Findings*. NSDUH Series H-44, HHS Publication No. (SMA) 12-4713. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2012. *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*. NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014; Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.



## HERE AND NOW

### Sources of Prescription Drugs Misused by Youths

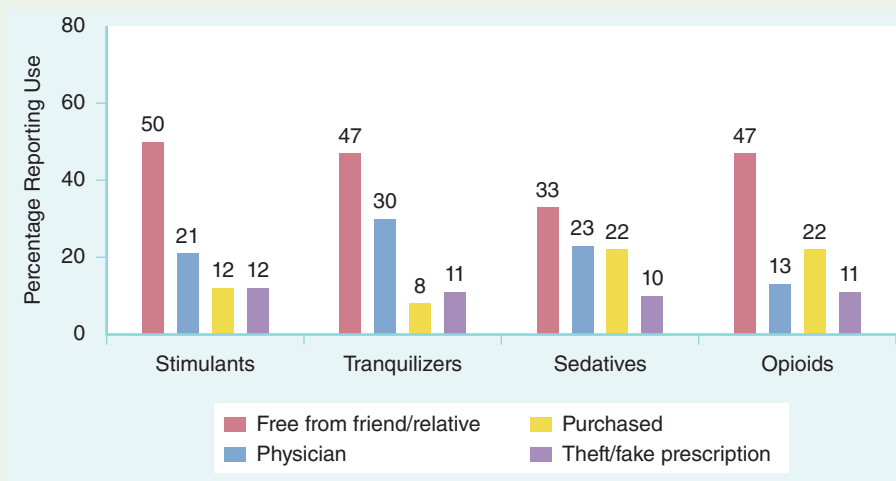
Friends and family are the most common source of prescription drugs misused\* by youths in the United States, according to an analysis of data from the National Survey on Drug Use and Health (NSDUH). Around one-half of youths who reported misusing prescription stimulants (50%), tranquilizers (47%), or sedatives (47%) in the past year said that they most recently obtained the medication for free from friends or family, as did one-third of those who reported the misuse of prescription opioids. The second most common source for obtaining stimulants, tranquilizers, and sedatives was purchasing from a friend/relative, drug dealer/stranger, or the Internet, and the second most common source for obtaining prescription opioids was acquiring them from a physician.

Another source (Read 2012) reported that teens get their prescription drugs from the following locations:

- In the medicine cabinet
- At a neighbor's house
- Online
- A friend of a friend

- At schools
- At parties

According to a University of Florida study, “[u]sing someone else’s medication is the most common form of prescription stimulant misuse among adolescents,” with researchers finding that 88% of teens who used the drugs nonmedically in the past 30 days said “they had obtained the medications from someone else” (ScienceDaily 2016). Friends and family are the most common source of prescription drugs misused\* by youths in the U.S., according to an analysis of data from the National Survey on Drug Use and Health (NSDUH). Around one-half of youths who reported misusing prescription stimulants (50%), tranquilizers (47%), or sedatives (47%) in the past year said that they most recently obtained the medication for free from friends or family, as did one-third of those who reported the misuse of prescription opioids. The second most common source for obtaining stimulants, tranquilizers, and sedatives was purchasing from a friend/relative, drug dealer/stranger, or the Internet, while the second most common source for obtaining prescription opioids was acquiring it from a physician (CESAR FAX 2009 and Schepis and Krishnan-Sarin 2009).



Most recent source of prescription medicines misused in the past year among youths aged 12 to 17: 2005 and 2006.

(continues)

## HERE AND NOW

### Sources of Prescription Drugs Misused by Youths (*continued*)

\* Misuse was defined as “any intentional use of a medication with intoxicating properties outside of a physician’s prescription for a bona fide medical condition, excluding accidental misuse.”

Note: Respondents also reported that prescription medicines were obtained “some other way” (stimulants, 5%; tranquilizers, 4%; sedatives, 12%; opioids, 7%). Data are from 36,992 adolescents aged 12 to 17 participating in the 2005 and/or 2006 National Survey on Drug Use and Health. Of these youths, 8.3% reported any prescription drug misuse in the past year, 7% reported opioid misuse, 2% reported tranquilizer misuse, 2% reported stimulant misuse, and 0.4% reported sedative misuse.

Reproduced from University of Maryland, Center for Substance Abuse Research (CESAR). “Friends and Family Are Most Common Source of Prescription Drugs Misused by Youths.” *CESAR FAX* 18(32) (2009) using data from Schepis, T.S., and S. Krishnan-Sarin. “Sources of Prescriptions for Misuse by Adolescents: Differences in Sex, Ethnicity, and Severity of Misuse in a Population-Based Study.” *Journal of the American Academy of Child and Adolescent Psychiatry* 48(8) (2009): 828–836.

**Table 1.4** shows a more recent percentage of population and estimated number of alcohol, tobacco, and illicit drug users in the United States among persons aged 12 or older. In looking at past-month usage, an estimated 13.9 million Americans, or 52.7% of the total U.S. population

aged 12 or older, were drinkers. Statistics also reveal that with regard to past-month usage of cigarettes, approximately 55.2 million Americans (20.8%) smoked cigarettes and 22.1 million 8.4% used marijuana/hashish in 2014 (see Table 1.4).

**TABLE 1.4** National Household Survey on Drug Abuse: 2014

Percentage of population and estimated number of alcohol, tobacco, and illicit drug users in the United States among persons aged 12 or older.

	LIFETIME*		PAST MONTH	
	Percentage	Number of Users (in thousands)	Percentage	Number of Users (in thousands)
Alcohol	82.1	217,765	52.7	139,677
Cigarettes	61.0	161,789	20.8	55,241
Marijuana/hashish	44.2	117,213	8.4	22,188
Nonmedical use of any psychotherapeutics†	20.5	54,395	2.5	6,537
Smokeless tobacco	17.1	45,290	3.3	8,662
Cocaine	14.8	39,200	0.6	1,530
Crack	3.6	9,424	0.1	354
Hallucinogens	15.0	39,647	0.4	1,173
LSD	9.4	25,035	0.1	287
Ecstasy	6.6	17,548	0.2	609
PCP	2.4	6,388	0.0	33
Pain Relievers	13.6	36,064	1.6	4,325
OxyContin	2.7	7,031	0.1	356
Tranquilizers	9.4	24,851	0.7	1,875
Inhalants	8.0	21,293	0.2	546

(*continues*)

**TABLE 1.4** National Household Survey on Drug Abuse: 2014 (*continued*)

Percentage of population and estimated number of alcohol, tobacco, and illicit drug users in the United States among persons aged 12 or older.

	LIFETIME*		PAST MONTH	
	Percentage	Number of Users (in thousands)	Percentage	Number of Users (in thousands)
Stimulants	8.5	22,530	0.6	1595
Methamphetamine	4.9	12,943	0.2	569
Sedatives	3.0	7,826	0.1	330
Heroin	1.8	4,813	0.2	435
Any illicit drug <sup>§</sup>	49.2	130,332	10.2	26,983
Illicit Drugs Other Than Marijuana <sup>§</sup>	30.2	80,119	3.3	8,719

Note: The results obtained from this national survey were completed at 142,938 addresses, and 68,736 completed interviews were obtained. The survey was conducted from January 2014 through December 2014. Weighted response rates for household screening and for interviewing were 89.0% and 74.4%, respectively.

\* Lifetime refers to ever used. This column shows the use of drugs from highest to lowest percentages as well as the number of persons using.

† Nonmedical use of prescription-type psychotherapeutics includes the nonmedical use of pain relievers, tranquilizers, stimulants, or sedatives but does not include over-the-counter drugs.

§ Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically. Illicit drugs other than marijuana include cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically.

Data from Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

## ■ Current Patterns of Licit and Illicit Drug Use

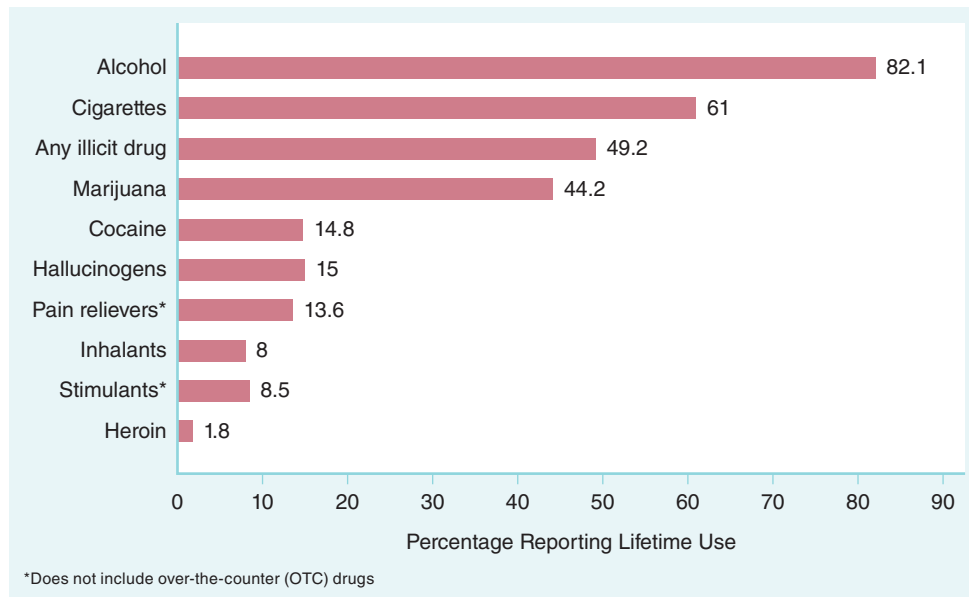
Table 1.4 shows that illicit drug use remains an alarming problem. In looking at lifetime use of illicit types of drugs, it is estimated that approximately 27 million Americans aged 12 years or older were current illicit drug users in 2014. This number represents 10.2% of the population aged 12 years or older (CBHSQ 2015). The leading types of lifetime use of drugs (see **Figure 1.2**) were alcohol (82.1%), cigarettes (61.0%), use of any illicit drug (49.2%), marijuana (44.2%), cocaine (14.8%), hallucinogens (15.0%; mainly LSD and Ecstasy), pain relievers (13.6%; not including OTC drugs), inhalants (8%), stimulants (8.5%; not including OTC drugs), and heroin (1.8%).

**Figure 1.3** shows the number of past-month illicit drug users among persons age 12 or older in 2011. The category “illicit drugs” shows the highest use (22.5 million), followed by use of marijuana (18.1 million), psychotherapeutics (6.1 million), cocaine (1.4 million), hallucinogens (1 million), inhalants (0.6 million), and heroin (0.3 million).

## NONMEDICAL USE OF PSYCHOTHERAPEUTICS (PAIN RELIEVERS)

**Figure 1.4** shows the four categories of prescription-type drugs (pain relievers, tranquilizers, stimulants, and sedatives) that currently are or have been available by prescription; see the Case in Point highlighting the number of painkiller prescriptions in each of the 50 states, plus the District of Columbia in 2012 (CDC 2014). These groupings also include drugs that may be available as prescription medications but currently are much more likely to be manufactured and distributed illegally; one such drug is methamphetamine, which is included under stimulants. Major findings regarding the age groups are the following:

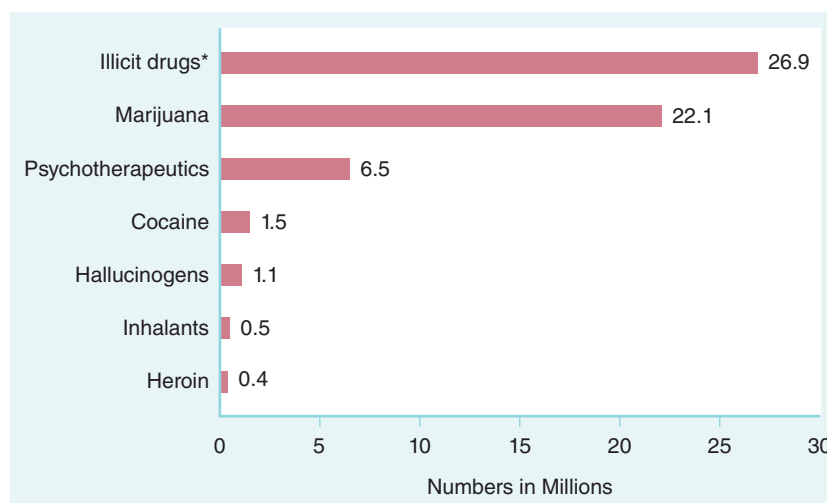
- **Aged 12 to 17:** An estimated 655,000 adolescents aged 12 to 17 were current nonmedical users of psychotherapeutic drugs in 2014. This number corresponds to 2.6% of adolescents. The 2014 estimate for current nonmedical use of psychotherapeutic drugs among adolescents was lower than the estimates in most years from 2002 to 2009.



**FIGURE 1.2** Percentage of U.S. residents aged 12 or older reporting lifetime use of alcohol, tobacco, and illicit drugs: 2014.

Data from Center for Behavioral Health Statistics and Quality (CBHSQ), *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

- Aged 18 to 25:** In 2014, an estimated 1.6 million young adults aged 18 to 25 were current nonmedical users of psychotherapeutic drugs, which corresponds to 4.4% of young adults. The 2014 estimate for current nonmedical use of psychotherapeutic drugs among young adults was lower than the estimates from 2002 to 2010.
- Aged 26 or Older:** In 2014, 4.3 million adults aged 26 or older were current nonmedical users of psychotherapeutic drugs. This number corresponds to 2.1% of adults aged 26 or older. The 2014 estimate for current nonmedical use of psychotherapeutic drugs among those aged 26 or older was similar to the estimates for most years between 2002 and 2013.

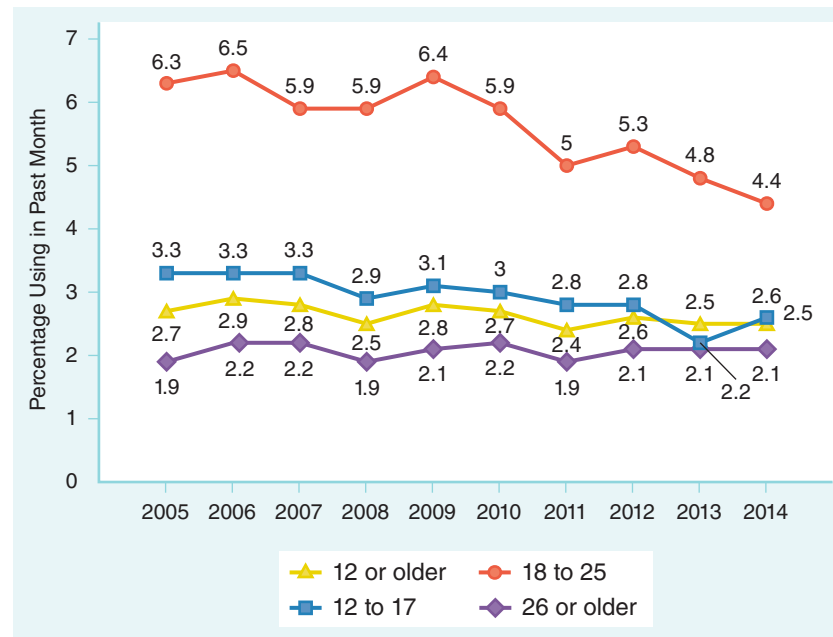


**FIGURE 1.3** Past-month use of selected illicit drugs among persons aged 12 or older: 2014.

<sup>1</sup> Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically.

Data from Center for Behavioral Health Statistics and Quality (CBHSQ), *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.





**FIGURE 1.4** Past-month nonmedical use of types of psychotherapeutic drugs (pain relievers, tranquilizers, stimulants, and sedatives) among persons aged 12 or older: 2005–2014

Reproduced from Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

## ► CASE IN POINT

### Figures A and B: State Differences in the Number of Painkiller Prescriptions per 100 People

The color-coded U.S. map (**Figure A**) shows the number of painkiller prescriptions per 100 people in each of the 50 states, plus the District of Columbia in 2012 (CDC 2014). The major findings from this map are as follows:

- Some states have significantly more painkiller prescription per person than other states (CDC 2014).
- Healthcare providers show significant state differences in prescribing pain killers.

Some states (**Figure B**) have more painkiller prescriptions per person than others.

The illustration below shows health care providers in different states prescribe at different levels resulting in significant variances with some states having more painkiller prescriptions per person than others.

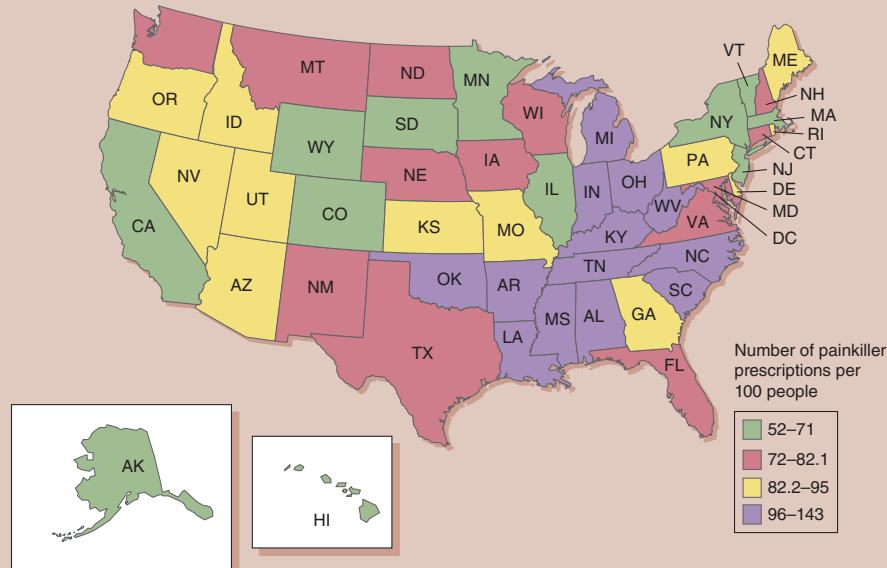
- “Ten of the highest prescribing states for narcotic painkillers are in the South, with Alabama, Tennessee and West Virginia leading the nation” (Thompson 2014).
- “The Northeast, especially Maine and New Hampshire, had the most prescriptions per person for long-acting/extended-release painkillers and for high-dose painkillers” (Thompson 2014).
- States with the lowest pain prescription per 100 people are New Jersey, New York, Hawaii, Minnesota, and California.
- “Prescriptions for oxymorphone varied the most between states, out of all narcotic medications. Nearly 22 times as many prescriptions were written for oxymorphone in Tennessee as were written in Minnesota” (Thompson 2014).

.....  
Data from Centers for Disease Control and Prevention (CDC). “Vital Signs: Opioid Painkiller Prescribing Infographic.” 2014. Available <http://www.cdc.gov/vitalsigns/opioid-prescribing/infographic.html>; Thompson, D. “The States with the Worst Prescription Painkiller Problem.” New York: CBS Interactive, Inc., 1 July 2014. Available <http://www.cbsnews.com/news/the-states-with-the-worst-prescription-painkiller-problem/>

(continues)

## ▶ CASE IN POINT

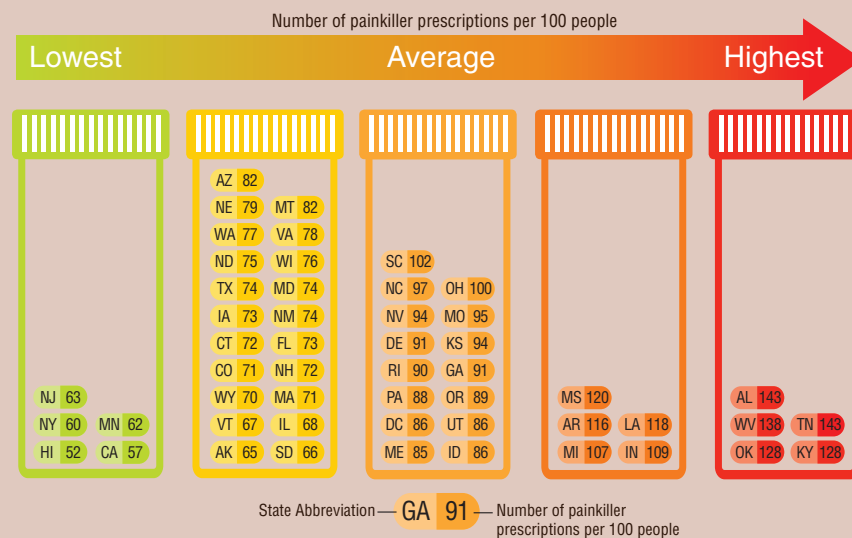
Figures A and B: State Differences in the Number of Painkiller Prescriptions per 100 People (*continued*)



**FIGURE A** This color-coded U.S. map shows the number of painkiller prescriptions per 100 people in each of the 50 states, plus the District of Columbia in 2012.

Data from IMS, National Prescription Audit (NPATM), 2012.

Health care providers in different states prescribe at different levels.



SOURCE: IMS, National Prescription Audit (NPA™), 2012

**FIGURE B** Figures A and B: State Differences in the Number of Painkiller Prescriptions per 100 People Some states (Figure B) have more painkiller prescriptions per Person than others. The illustration below shows health care providers in different states prescribe at different levels resulting in significant variances with some states having more painkiller prescriptions per person than others.

Reproduced from Centers for Disease Control and Prevention (CDC). "Vital Signs: Opioid Painkiller Prescribing infographic." Atlanta, GA: National Center for Injury Prevention and Control, 2014. Available <http://www.cdc.gov/vitalsigns/opioid-prescribing/infographic.html>



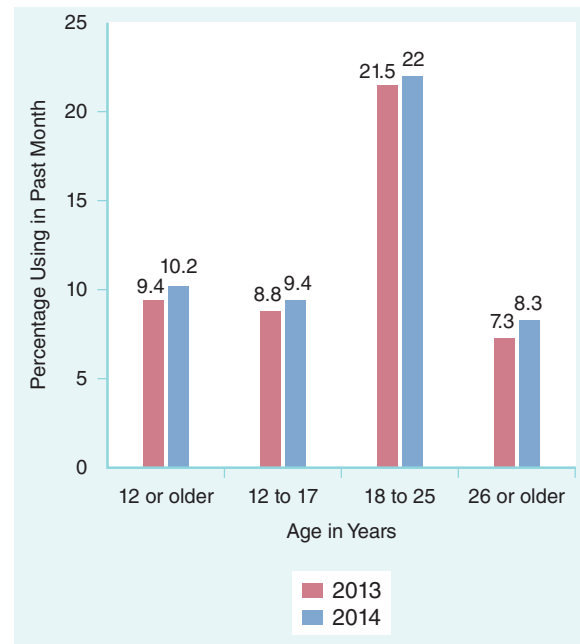
**FIGURE 1.5** Nonmedical use of pain relievers in the past year among persons aged 12 or older, by state: Percentages, annual averages based on 2013 and 2014.

Reproduced from Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

**Figure 1.5** shows the nonmedical use of pain relievers in past year among person's aged 12 or older, by state.

**Figure 1.6** shows past-month use of illicit drugs among persons aged 12 or older, by age group, in 2013–2014. With regard to age patterns, the following trends are apparent:

- Rates of drug use shows substantial variation by age group.
- In comparing 2013 with 2014, past-month illicit drug use was similar across age groups.
- In comparing 2013 with 2014 across all age groups, past-month illicit drug use increased slightly in 2014.
- The highest percentage of illicit drug use was among 18- to 25-year-olds (21.5% in 2013; 22% in 2014).
- Of the four age groups (12 or older, 12 to 17, 18 to 25, and 25 or older), those 25 or older had the lowest percentage of past-month illicit drug use.



**FIGURE 1.6** Percentage of past-month illicit drug use among persons aged 12 or older, by age: 2013 and 2014.

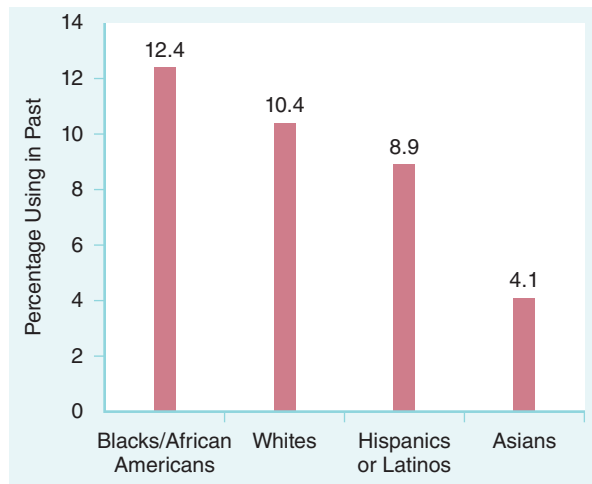
Reproduced from the Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

### RACIAL AND ETHNIC DIFFERENCES

**Figure 1.7** shows average past-month illicit drug use among persons age 12 or older by race and ethnicity (black or African American, white, Hispanic or Latino, and Asian) for 2014. The figures in this chart reveal the following trends:

- In 2014, from highest to lowest, racial/ethnic groups had the following rates of illicit drug use: black or African American (12.4%), whites

(10.4%), Hispanic or Latino (8.9%), and Asian (4.1%). (Note: Two or more races [13.5%] and American Indians or Alaska Natives [13.4%] are not shown in Figure 1.7 because the sample sizes for these two groups were too small for reliable trend presentation.)



**FIGURE 1.7** Past-month illicit drug use among persons age 12 or older, by race/ethnicity: 2014

Reproduced from Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

- As in past years when this research was conducted, Asians continue to have the lowest percentage of current illicit drug use, just as many other racial and ethnic group studies on drug use have found previously.
- The current illicit drug use rate for blacks or African Americans, whites, Hispanics or Latinos, and Asians increased from 2011 to 2014.\* (Latest published findings in the breakdown of illicit drugs among Hispanic groups, indicates that Puerto Ricans were the heaviest users of illicit drugs, followed by Mexican Americans, and Cuban Americans. Central and South Americans had the lowest amount of current illicit drug use [SAMHSA 2012].)

In 2014, the following were the major findings regarding illicit drug use by gender, pregnant women, education, college students, and criminal justice populations/arrestees (SAMHSA 2014b):

### GENDER

- In 2013, as in prior years, the rate of current illicit drug use among persons aged 12 or older was higher for males (11.5%) than for females (7.3%). Males were more likely than females to be current users of several different illicit drugs, including marijuana (9.7 vs. 5.6%), cocaine (0.8 vs. 0.4%), and hallucinogens (0.7 vs. 0.3%).

- In 2013, the rate of current illicit drug use was higher for males than females aged 12 to 17 (9.6 vs. 8.0%).
- Likewise, in 2013, the rate of current marijuana use was higher for males than females aged 12 to 17 (7.9 vs. 6.2%), which is a change from 2012 when the rates of current marijuana use for males and females were similar (7.5 and 7.0%).
- Among females aged 12 to 17, the rate of current marijuana use decreased from 7.2% in 2002 and 2003 to 6.2% in 2013.

### PREGNANT WOMEN

- Among pregnant women aged 15 to 44, 5.4% were current illicit drug users based on data averaged across 2012 and 2013. This was lower than the rate among women in this age group who were not pregnant (11.4%). Among pregnant women aged 15 to 44, the average rate of current illicit drug use in 2012–2013 (5.4%) was not significantly different from the rate averaged across 2010–2011 (5.0%).
- The rate of current illicit drug use in the combined 2012–2013 data was 14.6% among pregnant women aged 15 to 17, 8.6% among women aged 18 to 25, and 3.2% among women aged 26 to 44.

### EDUCATION

Illicit drug use rates in 2013 were correlated with educational status of adults aged 18 or older. The rate of current illicit drug use was lower among college graduates (6.7%) than those with some college education but no degree (10.8%), high school graduates with no further education (9.9%), and those who had not graduated from high school (11.8%) (SAMHSA 2014b).

### COLLEGE STUDENTS

In the college-age population (persons ages 18 to 22 years), the most significant findings regarding college students and illicit drug use are as follows:

- In 2013, the rate of current illicit drug use was 22.3% among full-time college students aged 18 to 22. This was similar to the rate among other persons aged 18 to 22 (23.0%), which included part-time college students, students in other grades or types of institutions, and nonstudents.



- In 2013, about one-quarter of male full-time college students aged 18 to 22 were current illicit drug users (26.0%). This rate was higher than the rate of current illicit drug use among female full-time college students aged 18 to 22 (19.2%). Similarly, 23.6% of male full-time college students aged 18 to 22 were current marijuana users compared with 16.6% of female full-time college students aged 18 to 22.
- Among full-time college students aged 18 to 22 in 2013, the rate of current illicit drug use was 9.4% for Asians, 19.7% for blacks, 21.5% for Hispanics, and 25.1% for whites.

### CRIMINAL JUSTICE POPULATIONS/ARRESTEES

Certain significant findings and correlations are unique to criminal justice populations:

- In 2013, an estimated 1.7 million adults aged 18 or older were on parole or other supervised release from prison at some time during the past year. About one-quarter (27.4%) were current illicit drug users, with 20.4% reporting current use of marijuana and 12.1% reporting current nonmedical use of psychotherapeutic drugs. These rates were higher than those reported by adults aged 18 or older who were not on parole or other supervised release during the past year (9.3% for current illicit drug use, 7.5% for current marijuana use, and 2.4% for current nonmedical use of psychotherapeutic drugs) (SAMHSA 2014b).
- In 2013, an estimated 4.5 million adults aged 18 or older were on probation at some time during the past year. More than one-quarter (31.4%) were current illicit drug users, with 23.5% reporting current use of marijuana and 12.3% reporting current nonmedical use of psychotherapeutic drugs. These rates were higher than those reported by adults who were not on probation during the past year (9.0% for current illicit drug use, 7.3% for current marijuana use, and 2.3% for current nonmedical use of psychotherapeutic drugs) (SAMHSA 2014b).
- “An estimated 56% of state prisoners, 45% of federal prisoners, and 64% of jail inmates have a mental health problem ... at the time of the survey ... conducted by the Urban Institute, ... 49% of state prisoners, 40% of federal prisoners, and 60% of jail inmates had a symptom of a mental disorder, such as developmental and personality disorders, as well as clinical symptoms as specified in the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (DSM-IV)” (KiDeuk, Becker-Cohen, and Serakos, 2015).
- In 2011, 197,050 sentenced prisoners were under federal jurisdiction. Of these, 94,600 were serving time for drug offenses (Carson and Sabol 2012).
- In 2010, Home Health Testing (2010) reported that drugs were involved in a wide range of crimes, including violent crimes (78%), property crimes (83%), weapons offenses (77%), and parole violations (77%).
- Arrestee Drug Abuse Monitoring (ADAM) reports that at the time of arrest 40% of arrestees tested positive for the presence of multiple drugs. Approximately 40% tested positive for marijuana, 30% tested positive for cocaine, and 20% tested positive for crack (National Institute of Justice [NIJ] 2009). These three drugs are the most prevalent drugs that arrestees test positive for at the time of arrest. (The 2013 ADAM II report provides a comparison of the results over the years [ONDCP 2013a].)

### ■ Types of Drug Users

Just as a diverse set of personality traits exists (e.g., introverts, extroverts, type A, obsessive-compulsive, and so on), drug users also vary according to their general approach or orientation, frequency of use, and types and amounts of the drugs they consume. Some are occasional or moderate users, whereas others display a much stronger attachment to drug use. In fact, some display such obsessive-compulsive behavior that they cannot let a morning, afternoon, or evening pass without using drugs. Some researchers have classified such variability in the frequency and extent of usage as fitting into three basic patterns: experimenters, compulsive users, and “floaters” or “chippers” (members of the last category drift between experimentation and compulsive use).

**Experimenters** begin using drugs largely because of peer pressure and curiosity, and they confine their use to recreational settings. Generally, they more often enjoy being with peers who

### KEY TERM

#### **experimenters**

first category of drug users, typified as being in the initial stages of drug use; these people often use drugs for recreational purposes

also use drugs recreationally. Alcohol, tobacco, marijuana, prescription drugs, hallucinogens, and many of the major stimulants are the drugs they are most likely to use. They are usually able to set limits on when these drugs are taken (often preferred in social settings), and they are more likely to know the difference between light, moderate, and chronic use.

**Compulsive users**, in contrast, “devote considerable time and energy to getting high, talk incessantly (sometimes exclusively) about drug use ... [and ‘funny’ or ‘weird’ experiences] ... and become connoisseurs of street drugs” (Beschner 1986, p. 7). For compulsive users, recreational fun is impossible without getting high. Other characteristics of these users include the need to escape or postpone personal problems, to avoid stress and anxiety, and to enjoy the sensation of the drug’s euphoric effects. Often, they have difficulty assuming personal responsibility and suffer from low self-esteem. Many compulsive users are from dysfunctional families, have persistent problems with the law, and/or have serious psychological problems underlying their drug-taking behavior. Problems with personal and public identity, excessive confusion about their

sexual identity and at times sexual orientation, boredom, family discord, childhood sexual and/or mental abuse, academic pressure, and chronic depression all contribute to the inability to cope with issues without drugs.

**Floater or chippers** initially focus more on using other people’s drugs without maintaining a steady supply of drugs. Nonetheless, floaters or chippers, like experimenters, are generally light to moderate drug users. Floaters or chippers feel a largely unconscious need to seek pleasure from using drugs and the desire to relieve moderate to serious psychological problems. Even though most are on a path to drug dependence, at this stage they may generally drift between or simultaneously intermix with other experimental drug-taking peers and chronic drug-using peers. In a sense, these types of drug users feel marginally attached to conventional society and often appear to conventional members of society as norm abiding, while masking their secret drug use. At this stage, floaters or chippers are not yet firmly attached to compulsive users often because they have not made the commitment to continually do drugs. (See “Signs and Symptoms: Who Is More Likely to Use Licit and Illicit Drugs?”)

## SIGNS & SYMPTOMS

### Who Is More Likely to Use Licit and Illicit Drugs?

Many factors influence whether an adolescent tries drugs, including the availability of drugs within the neighborhood, community, and school and whether the adolescent’s friends are using them. The family environment is also important: violence, physical or emotional abuse, mental illness, or drug use in the household increase the likelihood an adolescent will use drugs. Finally, an adolescent’s inherited genetic vulnerability; personality traits such as poor impulse control or a high need for excitement; mental health conditions such as depression, anxiety, or ADHD; and beliefs such as that drugs are “cool” or harmless make it more likely that an adolescent will use drugs (NIDA 2014).

According to the National Institute of Drug Abuse (2014), adolescents experiment with drugs or continue taking them for several reasons, including:

- *To fit in:* Many teens use drugs “because others are doing it”—or they think others are doing it—and they fear not being accepted in a social circle that includes drug-using peers.
- *To feel good:* Abused drugs interact with the neurochemistry of the brain to produce feelings of pleasure. The intensity of this euphoria differs by the type of drug and how it is used.
- *To feel better:* Some adolescents suffer from depression, social anxiety, stress-related disorders, and physical pain. Using drugs may be an attempt to lessen these feelings of distress. Stress especially plays a significant role in starting and continuing drug use as well as returning to drug use (relapsing) for those recovering from an addiction.
- *To do better:* Ours is a very competitive society, in which the pressure to perform athletically and academically can be intense. Some adolescents may turn to certain drugs like illegal or prescription stimulants because they think those substances will enhance or improve their performance.
- *To experiment:* Adolescents are often motivated to seek new experiences, particularly those they perceive as thrilling or daring.

(continues)

## SIGNS & SYMPTOMS

### Who Is More Likely to Use Licit and Illicit Drugs? (*continued*)

Finally, when attempting to determine who among drug users has a greater likelihood of becoming addicted, one research finding reports that “As with many other conditions and diseases, vulnerability to addiction differs from person to person. Your genes, mental health, family and social environment all play a role in addiction” (Helpguide.org n.d.). The following risk factors increase a person’s vulnerability to addiction (Helpguide.org n.d.):

- Family history of addiction
- Abuse, neglect, or other traumatic experiences
- Mental disorders such as depression and anxiety
- Early use of drugs
- Method of administration (smoking or injecting a drug may increase its addictive potential)

Data from National Institute of Drug Abuse (NIDA). *Principles of Adolescent Substance Use Disorder Treatment: A Research-Based Guide*. Bethesda, MD: National Institute on Drug Abuse, January 2014. Available [https://www.drugabuse.gov/sites/default/files/podata\\_1\\_17\\_14.pdf](https://www.drugabuse.gov/sites/default/files/podata_1_17_14.pdf); Helpguide.org. “Drug Abuse and Addiction.” n.d. Available <http://www.helpguide.org/articles/addiction/drug-abuse-and-addiction.htm>

### ■ Drug Use: Mass and Electronic Media and Family Influences

Studies continually show that the majority of young drug users come from homes in which drugs are liberally used (Goode 1999; National Association for Children of Alcoholics 2005; SAMHSA, Office of Applied Studies 1996). Children from these homes constantly witness drug use at home, often on a daily basis. For instance, parents may consume large quantities of coffee to wake up in the morning and other forms of medication throughout the day: cigarettes with the morning coffee, pills for either treating or relieving an upset stomach, vitamins for added nutrition, or aspirin for a headache. Finally, before going to bed, the grown-ups may take a few “nightcaps” or a sleeping pill to relax. The following is an interview related to the overuse of drugs:

Yeah, I always saw my mom smoking early in the morning while reading the newspaper and slowly sipping nearly a full pot of coffee. She took prescription drugs for asthma, used an inhaler, and took aspirin for headaches. When she accused me of using drugs at concerts, I would pick up her pack of cigarettes and several prescription bottles and while she was raging on me, I would quietly wave all her drugs close up in front of her face. She would stop nagging within seconds and actually one time I think she wanted to laugh but turned away toward the sink and just started washing cups and saucers. The way I figure it, she has her

drugs, and I have mine. She may not agree with my use of my drugs but then she is not better either. It’s great to have a drug-using family ain’t it? (*From Venturelli’s research files, male college student, age 20, June 12, 2000*)

This next interview is an example of how “pill-pilfering” can easily occur:

Yes, I came from a home with dozens of pharmacy prescriptions and with medicine cabinets crammed with over-the-counter drugs. In fact, my mom noticed that certain friends of mine were helping themselves to our medicine cabinet. At first, she told my dad that I was taking the pills. Finally, she had to remove most of the prescription medicines from the guest bathroom and hide them in her bedroom bathroom. This was about four years ago when I was in high

## KEY TERMS

### **compulsive users**

second category of drug users, typified by an insatiable attraction followed by a psychological dependence on drugs

### **floaters or chippers**

third category of drug users; these users vacillate between the need for pleasure-seeking and the desire to relieve moderate to serious psychological problems; this category of drug user has two major characteristics: (1) a general focus mostly on using other people’s drugs (often without maintaining a personal supply of the drug) and (2) vacillation between the characteristics of chronic drug users and experimenter types

school. She was right, several of my friends had a knack of lifting tabs from other homes when visiting friends. I know that one of my friends was into this when he told another friend of mine that our home had a nice variety of great drugs in the bathroom. Now, I know why my friends always had to go to the bathroom whenever they would stop by to see me. (*From Venturelli's research files, male attending a mid-size university in the Midwest, age 20, June 6, 2010*)

Some social scientists believe that everyday consumption of legal drugs—caffeine, prescription and OTC drugs, and alcohol—is fueled by the pace of modern lifestyles and greatly accelerated by the influence of today's increasingly sophisticated mass media.

If you look around your classroom building, the dormitories at your college, your college library, or your own home, evidence of mass media and electronic equipment can be found everywhere. Cultural knowledge and information are transmitted via media through electronic gadgets we simply “can’t live without,” to the point that they help us define and shape our everyday reality. One recent survey reports that “digital peer pressure appears to have played a significant role in getting teens started on drugs and booze—something that was not the case before the era of social networking sites. Seventy-five percent of respondents said that seeing Facebook pictures of their peers partying with alcohol and marijuana encourages other teens to imitate them” (Huffington Post 2012, p. 1). In addition, “[c]ompared to teens who have not seen pictures on Facebook or other social networking sites of kids getting drunk, passed out, or using drugs, teens who have seen such pictures are: [f]our times likelier to have used marijuana, [m]ore than three times likelier to have used alcohol; and [a]lmost three times likelier to have used tobacco” (CASA Columbia 2012, p. 3).

With regards to drug advertising, television remains the most influential medium. Today, most homes (82%) have more than one television (Nielsen 2016). Nielsen (2016) also reports that “in 2009 the average American home had 2.86 TV sets, which is roughly 18% higher than in 2000 (2.43 sets per home).” Just as the number of televisions in the average home has been increasing over the last 30 years, “Drug firms ... [have been increasing] ... their spending on television advertising to consumers seven-fold from 1996 to 2000” (CBS News 2002). “Drug makers in 2014 spent \$4.5 billion marketing prescription drugs, up

from \$3.5 billion in 2012. That’s also up from the \$2.5 billion drug makers spent in 2000, or \$3.39 billion in 2015 dollars when adjusted for inflation” (Millman 2015).

As an example, “[i]n 2014, two widely recognized erectile dysfunction drugs that have been on the market for more than a decade—Pfizer’s Viagra and Eli Lilly’s Cialis—ranked among the top five, .... Pfizer’s advertising budget for its ‘little blue pill’ has more than doubled in the past five years to \$232 million, and the company notably started marketing directly to women” (Millman 2015).

As another example, “Each year, the top 14 major alcohol marketers spent more than a \$3.45 billion dollars on ‘measured media’ advertising, that is television, radio, print, online, direct mail and outdoor ads” (Federal Trade Commission [FTC] 2015). “The advertising budget for one beer—Budweiser—is more than the entire budget for research on alcoholism and alcohol abusers” (Kilbourne 1989, p. 13). Other findings indicate that “Alcohol companies spent \$4.9 billion on television advertising between 2001 and 2005. They spent 2.1% of this amount (\$104 million) on ‘responsibility advertisements’” (Center on Alcohol Marketing and Youth [CAMY] 2007). “For the entire period from 2001 to 2003, Anheuser-Busch spent 20 times more on product ads than on ‘responsibility’ ads, and placed 30 times as many product ads as ‘responsibility’ ads” (CAMY 2005).

Radio, newspapers, and magazines are also saturated with advertisements for OTC drugs that constantly offer relief from whatever illness you may have. There are pills for inducing sleep and those for staying awake, as well as others for treating indigestion, headache, backache, tension, constipation, and the like. Using these medicinal compounds can significantly alter mood, level of consciousness, and physical discomfort. Experts warn that such drug advertising is likely to increase.

In the early 1990s, the Food and Drug Administration (FDA) lifted a 2-year ban on consumer advertising of prescription drugs; since then, there has been an onslaught of new sales pitches. In their attempts to sell drugs, product advertisers use the authority of a physician or health expert or the seemingly sincere testimony of a product user. Viewers, or listeners are strongly affected by testimonial advertising because these drug commercials can appear authentic and convincing.

The constant barrage of commercials, including many for OTC drugs, relays the message that, if



## HERE AND NOW

### Abuse of Licit and Illicit Drugs by the Elderly

SAMHSA (2012) reports the following regarding drug misuse and abuse by the elderly:

Older adults are among those most vulnerable to medication misuse and abuse because they use more prescription and over-the-counter (OTC) medications than other age groups. They are likely to experience more problems with relatively small amounts of medications because of increased medication sensitivity as well as slower metabolism and elimination. Older adults are at high risk for medication misuse due to conditions like pain, sleep disorders/insomnia, and anxiety that commonly occur in this population. They are, therefore, more likely to receive prescriptions for psychoactive medications with misuse and abuse potential, such as opioid analgesics for pain and central nervous system depressants like benzodiazepines for sleep disorders and anxiety. Approximately 25% of older adults use prescription psychoactive medications that have a potential to be misused and abused. Older adults are more likely to use psychoactive medications for longer periods than younger adults. Longer periods of use increases the risk of misuse and abuse. In addition to concerns regarding misuse of medications alone, the combination of alcohol and medication misuse has been estimated to affect up to 19% of older Americans.

#### Scope of the Problem: Drug Use and Abuse Among Older Adults

- “An estimated 4.8 million adults aged 50 and older have used an illicit drug in the past year. . . . The prevalence of illicit drug use was higher among adults aged 50 to 59 than those aged 60 and older” (Reardon 2012).
- “Overall, alcohol was the most frequently reported primary substance of abuse for persons aged 50 or older. Opiates were the second most commonly reported primary substance of abuse, reported most frequently by individuals aged 50 to 59. These individuals also had the highest proportions of inpatient admissions for cocaine, marijuana, and stimulant abuse” (Bogunovic 2012).
- Marijuana use was more common than nonmedical use of prescription-type drugs for adults aged 50 to 54 and those aged 55 to 59 (6.1% vs. 3.4%

and 4.1% vs. 3.2%, respectively), but among those aged 65 or older nonmedical use of prescription-type drugs was more common than marijuana use (0.8% vs. 0.4%) (NSDUH Report 2009).

- Marijuana use was more common than nonmedical use of prescription-type drugs among males aged 50 or older (4.2% vs. 2.3%), but among females the rates of marijuana use and nonmedical use of prescription-type drugs were similar (1.7% and 1.9%) (*The NSDUH Report* 2009).
- “Among adults aged 50 or older, the prevalence rates of any illicit drug use and marijuana use in the past year were higher among males than females” (Crabb 2014).
- “Among adults aged 50 or older who used illicit drugs in the past year, 45.2% used only marijuana, 31.5% used only prescription-type drugs nonmedically, and 5.6% used only other illicit drugs (including cocaine, heroin, hallucinogens, or inhalants) with the remainder using other combinations of illicit drugs” (Crabb 2014).
- “The number of Americans aged 50+ years is increasing as large numbers of baby boomers reach age 50 years or older, and this cohort uses more psychoactive drugs than older cohorts” (Li-Tzy and Blazer 2011).
- Many Americans who are now young or middle-aged will carry their use and abuse of alcohol and other drugs with them into old age—and they will also live longer (SAMHSA 2013).
- Older adults are more likely to take prescribed psychoactive medications for longer periods of time than younger adults and run an additional risk of becoming addicted to their prescribed medications (SAMHSA 2013).

An example of elderly drug abuse includes the following:

Oh, I started with cigarettes when I was fourteen. Then came the alcohol when I was sixteen, and now I am now 62 years old and still playing around with drugs. I have several friends who still smoke weed, but not too many around who continue like I do. I generally smoke cigarettes, weed (as they call it today), sometimes buy a little bag of coke and smoke that, too, and drink alcohol. I don't do the coke much because I like

(continues)

## HERE AND NOW

### Abuse of Licit and Illicit Drugs by the Elderly (*continued*)

to smoke it, and it is tough on the heart. My drug using friends who are around my age don't really know about the coke use; they think I stopped this years ago. I still have days when I long for it, but I have enough of a hard time with the weed and the drinking. My children do not know how much I drink since I live alone, and they even think I have nothing to do with weed. So, I guess I am a closet user. At times I am sorry to continue with these unnecessary drugs, and it's even darn right embarrassing if anyone finds out. Even the cigarettes are a pain in the butt. I just need to get high every now and then, and I don't know why. I think it is something genetic since I want to quit all these drugs but simply do not do it. You asked if I think a lot of the elderly use drugs unnecessarily [drugs used without medical

purposes]. Yes, there are many of us, especially the baby boomers who still smoke weed, but we kind of keep it secret. So, if the numbers of users my age are increasing, I would double the real number of users. As I said, many of us just keep it secret because we still work, have good jobs with a lot of responsibilities, and our kids would look down on us if they knew. You asked if I feel addicted to these drugs. Yes, I am addicted since I really don't want to quit everything, yet it is not good for my health and still keep using these drugs. Isn't this a classic example of addiction, which is to keep using drugs even though you know they are not good for you? If it's not addiction, what else would it be? (*From Venturelli's research files, male, age 62, April 22, 2011*)

.....

Data from Reardon, C. "The Changing Face of Older Adult Substance Abuse." *Social Work Today* 12 (January/February 2012):8; Bogunovic, O. "Substance Abuse in Aging and Elderly Adults." *Psychiatric Times*, 27 July 2012. Available <http://www.psychiatrictimes.com/geriatric-psychiatry/substance-abuse-aging-and-elderly-adults>; Substance Abuse and Mental Health Service Administration (SAMHSA). "Older Americans Behavioral Health, Issue Brief 5: Prescription Medication Misuse and Abuse Among Older Adults." Rockville, MD: Older Americans: Behavioral Health Technical Assistance Center, 2012. Available [http://www.aoa.acl.gov/AoA\\_Programs/HPW/Behavioral/docs2/Issue%20Brief%205%20Prescription%20Med%20Misuse%20Abuse.pdf](http://www.aoa.acl.gov/AoA_Programs/HPW/Behavioral/docs2/Issue%20Brief%205%20Prescription%20Med%20Misuse%20Abuse.pdf); *The NSDUH (National Survey on Drug Use and Health) Report*. "Illicit Drug Use Among Older Adults." Rockville, MD: U.S. Department of Health and Human Services (USDHHS), Office of Applied Studies (OAS), 2012; Crabb, G. "Illicit Drug Use Among Older Adults." Naples, FL: Dr. George Crabb, Physician and Addiction Expert, 7 March 2014. Available <http://drgeorgecrabb.com/uncategorized/illicit-drug-use-among-older-adults.html>; Li-Tzy, W., and D. G. Blazer. "Illicit and Nonmedical Drug Use Among Older Adults: A Review." *Journal of Aging Health* 23 (2011):481-504; Substance Abuse and Mental Health Services Administration (SAMHSA). *Substance Abuse Among Older Adults*. Rockville, MD: National Center for Biotechnology Information, 2013.

you are experiencing restlessness or uncomfortable symptoms, taking drugs is an acceptable and normal response. As a result, television viewers, newspaper and magazine readers, and radio listeners are led to believe or unconsciously select the particular brand advertised when confronted with dozens upon dozens of drug choices for a particular ailment. In effect, this advertising reaffirms the belief that drugs are necessary when taken for a real or an imagined symptom.

### Drug Use and Drug Dependence

Why are so many people attracted to drugs and the effects of recreational drug use? Like the ancient Assyrians, who sucked on opium lozenges, and the Romans, who ate hashish sweets some 2000 years ago, many users claim to be bored, in pain, frustrated, unable to enjoy life, or alienated. Such people turn to drugs in the hope of finding

oblivion, peace, inner connections, outer connections (togetherness), or euphoria. The fact that many OTC drugs never really cure the ailment, especially if taken for social and psychological reasons, and the fact that frequent use of most drugs increases the risk of addiction, do not seem to be deterrents. People continue to take drugs for many reasons, including the following:

- Searching for pleasure and using drugs to heighten good feelings.
- Taking drugs to temporarily relieve stress or tension or provide a temporary escape for people with anxiety.
- Taking drugs to temporarily forget one's problems and avoid or postpone worries.
- Viewing certain drugs (such as alcohol, marijuana, and tobacco) as necessary to relax after a tension-filled day at work.
- Taking drugs to fit in with peers, especially when peer pressure is strong during early and late adolescence; seeing drugs as a rite of passage.

- Taking drugs to enhance religious or mystical experiences. (Very few cultures teach children how to use specific drugs for this purpose.)
- Taking drugs to relieve pain and some symptoms of illness.
- Resuming drug use from teenage and young adult period(s) of life, for example, elderly baby boomers who may have used drugs in their youth.

It is important to understand why, historically, many people have been unsuccessful in eliminating the fascination with drugs. To reach such an understanding, we must address questions dealing with (1) why people are attracted to drugs, (2) how experiences with the different types of drugs vary (here, many attitudes are conveyed from the “inside”—the users themselves), (3) how each of the major drugs affects the body and the mind, (4) how patterns of use vary among different groups, and (5) what forms of treatment are available for the addicted.

### ■ When Does Use Lead to Abuse?

Views about the use of drugs depend on one's perspective. For example, from a pharmacological perspective, if a patient is suffering severe pain because of injuries sustained from an automobile accident, high doses of a narcotic such as morphine or Demerol should be given to control discomfort. While someone is in pain, no reason exists not to take the drug. From a medical standpoint, once healing has occurred and pain has been relieved, drug use should cease. If the patient continues using the narcotic because it provides a sense of well-being or he or she has become dependent to the point of addiction, the pattern of drug intake is then considered abuse. Thus, the amount of drug(s) taken or the frequency of dosing does not necessarily determine abuse (even though individuals who abuse drugs usually consume increasingly higher doses). Most important is the motive for taking the drug, which is the principal factor in determining the presence of abuse.

Initial drug abuse symptoms include (1) excessive use, (2) constant preoccupation about the availability and supply of the drug, (3) denial in admitting the excessive use, and (4) reliance on the drug. All of these four factors frequently result in producing the initial symptoms of withdrawal whenever the user attempts to stop taking the drug. As a result, the user often begins to neglect other responsibilities or ambitions in favor of using the drug.

Even the legitimate use of a drug can be controversial. Often, physicians cannot decide even among themselves what constitutes legitimate use of a drug. For example, MDMA (Ecstasy) is currently prohibited for therapeutic use, but in 1985, when the **Drug Enforcement Administration (DEA)** was deciding MDMA's status, some 35 to 200 physicians (mostly psychiatrists) were using the drug in their practice. These clinicians claimed that MDMA relaxed inhibitions and enhanced communication and was useful as a psychotherapeutic adjunct to assist in dealing with psychiatric patients (Leventhal 1996; Schecter 1989). From the perspective of these physicians, Ecstasy was a useful medicinal tool. However, the DEA did not agree and made Ecstasy a Schedule I drug. Schedule I excludes any legitimate, legal use of the drug in therapeutics; consequently, according to this ruling, anyone taking Ecstasy is guilty of drug abuse (Goode 2012) and is violating drug laws.

If the problem of drug abuse is to be understood and solutions are to be found, identifying the causes of the abuse is most important. When a drug is being abused, it is not legitimately therapeutic; that is, it does not improve the user's physical or mental health. When drug use is not used for therapeutic purposes, what is the motive for taking the drug?

There are many possible answers to this question. Initially, most drug abusers perceive some psychological advantage when using these compounds. For many, the psychological lift is significant enough that they are willing to risk social exclusion, health problems, and dramatic changes in personality, arrest, incarceration, and fines to have their drug. The psychological effects that these drugs cause may entail an array of diverse feelings. Different types of drugs have different psychological effects. The type of drug an individual selects to abuse may ultimately reflect his or her own mental state.

For example, people who experience chronic depression, feel intense job pressures, are unable to focus on accomplishing goals, or have a sense of inferiority may find that a stimulant such as cocaine or an amphetamine-type of drug appears to provide immediate relief—a solution to a set

### KEY TERM

#### **Drug Enforcement Administration (DEA)**

the principal federal agency responsible for enforcing U.S. drug laws

of psychological frustrations. These drugs cause a spurt of energy, a feeling of euphoria, a sense of superiority, and imagined self-confidence. In contrast, people who experience nervousness and anxiety and want instant relief from the pressures of life may choose a depressant such as alcohol or barbiturates. These agents sedate, relax, provide relief, and even have some amnesiac properties, allowing users to suspend or forget their immediate pressing concerns or problems. People who perceive themselves as creative or who have artistic talents may select hallucinogenic types of drugs to “expand” their minds, heighten their senses, and distort what appears to be a confining and sometimes monotonous nature of reality. As individuals come to rely more on drugs to inhibit, deny, accelerate, or distort their realities, they run the risk of becoming psychologically dependent on drugs.

Some have argued that taking a particular drug to meet a psychological need, especially if a person is over 21 years of age, is not very different from taking a drug to cure an ailment. The belief here is that physical needs and psychological needs are really indistinguishable. In fact, several drug researchers and writers, including Szasz (1992) and Lenson (1995), believe that drug taking is a citizen’s right and a personal matter involving individual decision making. They see drug taking as simply a personal choice to depart from or alter consciousness. Lenson states that taking drugs for recreational purposes is simply an additional form of diversity, a type of mental diversity that should exist with many other acceptable forms of diversity, such as cultural, racial, religious, gender, and sexual orientation diversity. (For additional elaboration on these views, see Venturelli 2000.) Obviously, this is a very different and often extremely controversial point of view that can easily cause polemic and very debatable perspectives!

## ■ Drug Dependence

This section introduces some underlying factors that lead to drug dependence. Our discussion emphasizes drug dependence instead of addiction because the term *addiction* is both controversial

and relative, as evidenced with celebrities and rock and movie stars and their drug dependence, including some who have died from drug dependence. Stars such as Charlie Sheen, Mel Gibson, and Ben Affleck (alcoholism); John Belushi, Lindsay Lohan, and Robin Williams (alcoholism and cocaine); Robert Downey, Jr. (cocaine and heroin); Michael Jackson (prescription drugs); Philip Seymour Hoffman (illegal drug); Cory Monteith (illegal drug and alcohol); Chris Kelly (illegal drug); Whitney Houston (illegal drug); Amy Winehouse (alcohol); and Eminem (analgesic prescription drugs) are just a few examples.

Even when drug dependence becomes full-fledged, addiction remains debatable, with many experts unable to agree on one set of characteristics that constitutes addiction. Furthermore, the term *addiction* is viewed by some as a pejorative that adds to the labeling process.

The main characteristics necessary for drug dependence are as follows:

- Both physical and psychological factors precipitate drug dependence. Recently, closer attention has been focused on the mental (psychological) attachments than on the physical addiction to drug use as principally indicative of addiction—mostly, the craving aspect of wanting the drug for consumption.
- More specifically, psychological dependence refers to the need that a user may feel for continued use of a drug to experience its effects. Physical dependence refers to the need to continue taking the drug to avoid withdrawal symptoms that often include feelings of discomfort and illness.
- With repeated use there is a tendency to become dependent on and addicted to most psychoactive drugs.
- Addiction to a drug sets in when the drug user has advanced within the dependence phase. (Having an addiction to a drug is simply an advanced stage of dependence.)
- Generally, the addiction process involves mental (psychological) and physical (physiological/biophysiological) dependence.

## KEY TERMS

### relief phase

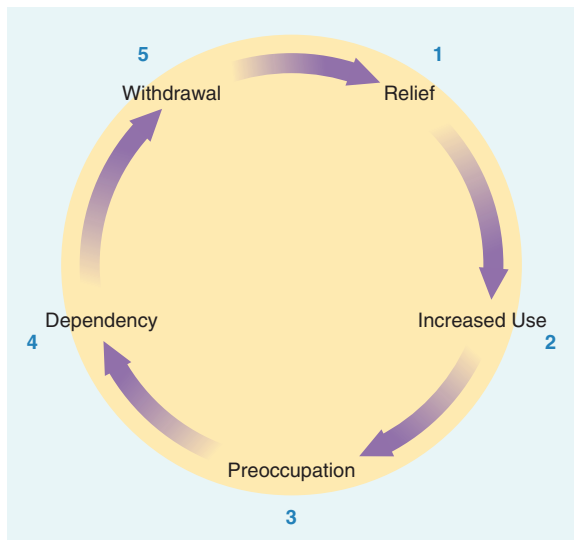
satisfaction derived from escaping negative feelings by using the drug

### increased use phase

taking increasing quantities of the drug

**Figure 1.8** shows that the process of addiction involves five separate phases: relief, increased use, preoccupation, dependency, and withdrawal. Initially, the **relief phase** refers to the relief experienced by using a drug, which allows a potential addict to escape one or more of the following feelings: boredom, loneliness, tension, fatigue, anger, or anxiety. The **increased use phase**





**FIGURE 1.8** Stages of drug dependence.

involves taking greater quantities of the drug. The **preoccupation phase** consists of a continuous interest with and concern for the substance—that is, always having a supply of the drug and taking the drug is perceived as “normal” behavior. The **dependency phase** is synonymous with addiction. In this phase, more of the drug is sought without regard for the presence of negative physical symptoms, such as congested coughing and/or shortness of breath in cases of cigarette and marijuana addiction, blackouts from advanced alcohol abuse, and moderate to acute soreness and inflammation of nasal passages from snorting cocaine. The **withdrawal phase** involves such symptoms as itching, chills, tension, stomach pain, or depression from the nonuse of the addictive drug and/or an entire set of psychological concerns mainly involving an insatiable craving for the drug (Monroe 1996).

## The Costs of Drug Use to Society

Many of the costs of drug addiction go beyond the user. Society pays a high price for drug addiction. Consider, for example, the loss of an addicted person’s connection with reality and the loss of responsible dedication to careers and professions, illnesses experienced by the addicted individual, marital strife, shortened lives, and so on. Additionally, the dollar costs of addiction are also enormous.

The **National Institute on Drug Abuse (NIDA)** has estimated that the typical narcotic habit costs

the user approximately \$150 a day to support his or her addiction. The precise dollar amount spent to support a narcotic addiction largely depends on the geographic location where the drug is procured and used, availability of the drug affecting the price, and numerous other factors. For example, a heroin addict, will spend “\$150–200 per day in order to support his or her habit” (Heroin.net 2016), which adds up to \$54,750 to \$73,000 per year just to maintain the drug supply. It is impossible for most addicts to get this amount of money legally; therefore, many support their habits by resorting to criminal activity or by working as or for drug dealers.

Most crimes related to drugs involve theft of personal property—primarily burglary and shoplifting—and, less commonly, assault and robbery (often mugging). Estimates are that a heroin addict must steal three to five times the actual cost of the drugs to maintain the habit, which becomes an astronomical and impractical amount per year. Further, it is not unusual with crack and heroin use that a high proportion of hardcore addicts resort to pimping and prostitution (with no accurate figures available regarding the cost of drug-related prostitution), although some law enforcement officials have estimated that prostitutes take in a total of \$10 billion to \$20 billion per year. It has also been estimated that nearly three out of every four prostitutes in major cities have a serious drug dependency.

In looking at the history of past-month methamphetamine (meth) users in the United States, we find that according to the yearly National Survey on Drug Use and Health (NSDUH) there were 569,000 (0.2%) users in 2014 (CBHSQ 2015). There were 440,000 (0.2%) users in 2011; 353,000 (0.1%) in 2010; 502,000 (0.2%) in 2009; 314,000 (0.1%) in 2008; 731,000 (0.3%) in 2006; and 530,000 (0.2%) in 2007 (SAMHSA 2012). In 2012, there were 133,000 new users of

## KEY TERMS

### **preoccupation phase**

constant concern with the supply of the drug

### **dependency phase**

synonym for addiction

### **withdrawal phase**

physical and/or psychological effects derived from not using the drug

### **National Institute on Drug Abuse (NIDA)**

the principal federal agency responsible for directing research related to drug use and abuse

methamphetamine aged 12 or older, with the same number the previous year but a continuing a general downward trend across the past decade (SAMHSA 2012).

In the late 1990s there was a significant concern regarding the nationwide increase in clandestine laboratories involved in synthesizing or processing this type of illicit drug. Such laboratories produced amphetamine-type drugs, heroin-type drugs, designer drugs, and LSD and processed other drugs of abuse such as cocaine and crack. The DEA reported that 390 laboratories were seized in 1993, a figure that increased to 967 in 1995. Another example of the phenomenal growth of methamphetamine laboratories was found in Missouri. From 1995 to 1997, seizures of such labs in Missouri increased by 535% (Steward and Sitarmiah 1997). “In Dawson County in western Nebraska ... ‘The percentage of meth-related crimes is through the roof’ ... as reiterated by an investigator with the county sheriff’s office.... In the state as a whole, officials discovered 38 methamphetamine laboratories in 1999; last year [2001] they discovered 179” (Butterfield 2002, p. A23). In 2012, the total number of meth clandestine laboratory incidents was 11,210, and included lab, dumpsite, and Chem/Glass/Equipment incidents (USDOJ 2013). Regarding seizures of this drug, one report states that “36,572 pounds: That’s the amount of methamphetamine seized near the U.S.–Mexico border at U.S. Border Patrol stations and Customs and Border Protection ports of entry near the border from 2005 to 2011” (Chen 2013). In 2015, the state of Indiana had the highest amount of clandestine methamphetamine lab incidents, resulting in 1530 site seizures (Meth. IN.gov 2015). The reasons for such dramatic increases and usage are related to the enormous profits and relatively low risk associated with these operations. As a rule, clandestine laboratories are fairly mobile and relatively crude (often operating in a kitchen, basement, or garage) and are run by individuals with only elementary chemical skills.

Another interesting discovery was that these laboratories were not always stationary in locations such as garages, barns, homes, apartments, and so on. Although these stationary labs predominated, especially in the production of methamphetamine, mobile labs also made an appearance:

Cooking in cars and trucks helped producers in two ways: It eludes identification by law enforcement and motion helps the chemical reaction [of methamphetamine production]. Motels are a new production setting ...

[though fewer in number today]. Clandestine labs are also set up in federal parklands, where toxic byproducts pose a danger to hikers and campers. (ONDCP 2002, p. 58)

To demonstrate how a drug such as methamphetamine affects society, in 2003, the following was reported:

With portable meth labs popping up everywhere from motel bathrooms to the back seat of a Chevy, it was only a matter of time before they made their way onto campus. Last November, a custodian notified campus police at [University in Texas] about what appeared to be a lab set up in a music practice room in the [university’s] Fine Arts Center. “We found beakers of red liquid, papers and other residue, and the room had this horrible odor....”

Students were on vacation, so the practice room, which had its windows blackened out, would have afforded the occupant a few days to cook. [One campus police official] ... speculates that this is just the beginning: “Labs are popping up on campuses all over the country. It’s just too easy now. You can get the recipe on the Internet. Still, how could someone be so brazen as to set up an operation next to the French horn section?” (Jellinek 2003, p. 54)

Because of a lack of training, inexperience, and the danger of experiencing the effects of methamphetamine while making the drug, the chemical “cooking” procedures are performed crudely, sometimes resulting in adulterants and impure products. Such contaminants can be very toxic, causing severe harm or even death to the unsuspecting user as well as a greater likelihood of sudden explosion (Drug Strategies 1995). Fortunately, when looking at all the illicit drugs produced by such underground laboratories, such outbreaks of physically harmful drugs do not occur very often. Partial proof of this is found in the small number of news stories of deaths or poisonings from illicit drugs. Nevertheless, because profit drives these clandestine labs, which obviously have no government supervision, impurities or “cheap fillers” are always possible so that greater profits can be made. Here, caution is very advisable in that drug purchasers do not have any guarantees when purchasing powerful illicit drugs.

Society continues paying a large sum even after users, addicts, and drug dealers are caught and sentenced because it takes from \$75 to \$1500 per day to keep one person incarcerated. A recent

post by the Federal Register (2015) reports that “The fee to cover the average cost of incarceration for Federal inmates in Fiscal Year 2014 was \$30,619.85 (\$83.89 per day). (Please note: There were 365 days in FY 2014.) The average annual cost to confine an inmate in a Residential Re-entry Center for Fiscal Year 2014 was \$28,999.25 (\$79.45 per day).”

Supporting programs such as methadone maintenance costs much less. New York officials estimate that methadone maintenance costs about \$3000 per year per patient. For nonhospital residential treatment, methadone costs average around \$76.13 per day. With outpatient methadone programs, daily costs average around \$17.78 per day (Methadone Centers 2016), which is much less than the cost of incarceration.

A more long-term effect of drug abuse that has substantial impact on society is the medical and psychological care often required by addicts due to disease resulting from their drug habit. Particularly noteworthy are the communicable diseases spread because of needle sharing within the drug-abusing population, such as hepatitis and HIV.

In the United States, the Centers for Disease Control and Prevention (CDC) estimates that 1,218,400 persons aged 13 years and older are living with HIV infection, including 156,300 (12.8%) who are unaware of their infection. Over the past decade, the number of people living with HIV has increased, while the annual number of new HIV infections has remained relatively stable. Still, the pace of new infections continues at far too high a level—particularly among certain groups (CDC 2015b). (Acquired immune deficiency syndrome [AIDS] has a tendency to develop within 5 to 10 years of the onset of HIV.) Worldwide, approximately 35 million people are living with HIV/AIDS (CDC 2016). This number includes people living in sub-Saharan Africa, Asia, Latin America and the Caribbean, Eastern Europe, Central Asia, North America, Western and Central Europe, North Africa and the Middle East, and Oceania (Clinton 2006).

In the United States, HIV is spread primarily through unprotected sexual intercourse and sharing of previously used needles to inject drugs. HIV in the injecting-drug-user subpopulation is transmitted in the small (minuscule) amount of contaminated blood remaining in the used needles. The likelihood of a member of the drug-abusing population contracting HIV directly correlates with the frequency of injections and the extent of needle sharing. Care for AIDS patients lasts

a lifetime, and many of these medical expenses come from federal- and state-funded programs. Many cities throughout the United States have publicly funded programs that distribute new, uncontaminated needles to drug addicts. The needles are free of charge in exchange for used injection needles in order to prevent the spread of HIV and hepatitis B and C from contaminated needles. These programs are often referred to as **needle-exchange programs**.

Also of great concern is drug abuse by women during pregnancy. Some psychoactive drugs can have profound, permanent effects on a developing fetus. The best documented is fetal alcohol syndrome (FAS), which can affect the offspring of alcoholic mothers. Cocaine and amphetamine-related drugs can also cause irreversible congenital changes when used during pregnancy. All too often, the affected offspring of addicted mothers become the responsibility of welfare organizations. In addition to the costs to society just mentioned, other costs of drug abuse include drug-related deaths, emergency room visits and hospital stays, and automobile fatalities.

## ■ Drugs, Crime, and Violence

There is a long-established close association between drug abuse and criminality. The beliefs (hypotheses) for this association range along a continuum between two opposing views: (1) criminal behavior develops as a means to support addiction, and (2) criminality is inherently linked to the user's personality and occurs independently of drug use (Bureau of Justice Statistics [BJS] 2006; Drug Strategies 1995; McBride and McCoy 2003). In other words, does drug addiction cause a person to engage in criminal behavior such as burglary, theft, and larceny to pay for the drug habit? Or, does criminal behavior stem from an already existing criminal personality such that drugs are used as an adjunct to commit such acts? In other words, are drugs used in conjunction with crime to sedate and give the added confidence needed to commit daring law violations?

## KEY TERM

### **needle-exchange programs**

publicly funded programs that distribute new, uncontaminated needles to drug addicts in exchange for used injection needles in order to prevent the spread of HIV and hepatitis B and C

The answers to these questions have never been clear because findings that contradict one view in favor of the other continue to mount on both sides. Part of the reason for the controversy about the relationship between criminal activity and drug abuse is that studies have been conducted in different settings and cultures, employing different research methods, and focusing on different addictive drugs. As a result, too many factors are involved to allow us to distinguish the cause from the result. We know that each type of drug has unique addictive potential and that interpretation of exactly when a deviant act is an offense (violation of law) varies. Furthermore, we know that people think differently while under the influence of drugs. Whether criminalistic behavior is *directly* caused by the drug use or whether prior socialization and peer influence work in concert to cause criminal behavior remains unclear. Certainly, we think it would be safe to believe that prior socialization, law-violating peers, and drugs are strong contributing factors for criminal behavior.

Although this controversy about the connection between drugs and crime continues to challenge our thinking, the following findings are also noteworthy:

- The United States ranks first the world in the number of people incarcerated in federal and state correctional facilities. In 2014, 1,561,500 prisoners were under the jurisdiction of state and federal correctional authorities (BJS 2015a). Almost half (48%) of the federal inmates were serving time for drug offenses (Carson and Sabol 2012).
- The United States incarcerates more people for drug offenses than any other country (Natarajan et al. 2008; Sentencing Project 2013).
- With an estimated 24.6 million Americans struggling with current (within 30 days of use) drug use and/or dependence (SAMHSA 2014b), the growth of the prison population continues to be driven largely by incarceration for drug offenses.
- In 2006, “17% of State and 18% of Federal prisoners committed their crime to obtain money for drugs” (Mumola and Karberg 2007, p. 1). Approximately one out of every six major crimes is committed because of the offender’s need to obtain money for drugs.
- An estimated 516,900 black males were in state or federal prison on December 31, 2014, on sentences of more than 1 year, which was 37% of the sentenced male prison population. White males made up an additional 32% of the male population (453,500 inmates), followed by Hispanic males (308,700 inmates, or 22%). White females in state or federal prison at yearend 2014 (53,100 prisoners) outnumbered black (22,600) and Hispanic females (17,800) combined (BJS 2015b).
- 80% of offenders abuse drugs or alcohol (National Council on Alcoholism and Drug Dependence [NCADD] 2015).
- Nearly 50% of jail and prison inmates are clinically addicted (NCADD 2015).
- Approximately 60% of individuals arrested for most types of crimes test positive for illegal drugs at arrest (NCADD 2015).
- In 2011, 45% of arrestees tested positive for marijuana during their arrest, 41% for cocaine, 61% for opiates, and 61% for methamphetamine (ONDCP 2012).
- The Arrestee Drug Abuse Monitoring Program (ADAM) reports that arrestees are tested for the presence of 10 drugs. The proportion of arrestees testing positive for any of the 10 drugs ranged from 63% in Atlanta to 83% in Chicago and Sacramento. Arrestees testing positive for multiple drugs in their system ranged from 12% in Atlanta to 50% in Sacramento (ONDCP 2014).
- Marijuana remained the most commonly detected drug in urine testing, from 34% of ADAM II arrestees testing positive in Atlanta to 59% in Sacramento. Those who obtained marijuana in the prior 30 days reported little difficulty obtaining the drug, indicating an overall high availability of the drug in all sites (ONDCP 2014).
- In federal prisons in 2015, the Bureau of Justice Statistics (2015b) reports that almost all (99.5%) drug offenders in federal prison were serving sentences for drug trafficking.
- Cocaine (powder or crack) was the primary drug type for more than half (54%) of drug offenders in federal prison.
- Race of drug offenders varied greatly by drug type. Blacks were 88% of crack cocaine offenders, Hispanics or Latinos were 54% of powder cocaine offenders, and whites were 48% of methamphetamine offenders (BJS 2015b).
- More than one-third (35%) of drug offenders in federal prison at sentencing had either no or minimal criminal history (BJS 2015b).



- 52% of female jail inmates were found to be dependent on alcohol or drugs, compared to 44% of male inmates (BJS 2015b).
- Jail inmates between the ages of 25 and 44 had the highest rate of substance dependence or abuse (7 in 10 inmates). Those age 55 or older had the lowest rate (nearly 5 in 10 inmates) (Karberg and James 2002).
- More than 50% of drug or property offenders were dependent on or had abused a substance, compared to over 60% of violent and public-order offenders (Karberg and James 2002).
- Women and white inmates were more likely to have used drugs at the time of their offense (Karberg and James 2002).
- Thirty-two percent of state and 26.4% of federal prison inmates reported being under the influence of drugs at the time of their offense in 2004 (see **Table 1.5**). Approximately 44% were incarcerated for drug offenses in state prisons and 32% were incarcerated in federal prisons. Of these, 46% in state prisons and 21% in federal prisons were arrested for possession. Forty-two percent were serving time in state prisons and 34% were serving time in federal prisons for trafficking in drugs. One outcome of these findings is that one out of every four major crimes committed—violent, property, and drug offenses—involves an offender who is under the influence of drugs (Mumola and Karberg 2007).
- Of the 1,561,231 arrests for drug law violations in 2014, 83.1% (1,297,384) were for possession of a controlled substance. Only 16.9% (263,848) were for the sale or manufacturing of a drug (DrugWarFacts.org 2016).

In regard to the connection between drug use and crime, the following findings can be summarized: (1) drug users in comparison to nondrug users are more likely to commit crimes, (2) a high percentage of arrestees are often under the influence of a drug while committing crimes, and (3) a high percentage of drug users arrested for drug use and violence are more likely to be under the influence of alcohol and/or stimulant types of drugs such as cocaine, crack, and methamphetamines.

Drug-related crimes are undoubtedly overwhelming the U.S. judicial system. Table 1.5 shows the percentage of state and federal inmates reporting being under the influence of drugs at the time of their offenses in 2004. Approximately 29%

**TABLE 1.5** Percentage of State and Federal Inmates Reporting Being Under the Influence of Drugs at the Time of Their Offense: 2004

	State (%)	Federal (%)
<b>Total<sup>a</sup></b>	32.1	26.4
<b>Violent offenses</b>	27.7	24.0
Homicide	27.3	16.8
Sexual assault <sup>b</sup>	17.4	13.8
Robbery	40.7	29.4
Assault	24.1	20.1
<b>Property offenses</b>	38.5	13.6
Burglary	41.1	:
Larceny/theft	40.1	:
Motor vehicle theft	38.7	:
Fraud	34.1	9.3
<b>Drug offenses</b>	43.6	32.3
Possession	46.0	20.9
Trafficking	42.3	33.8
<b>Public order offenses<sup>c</sup></b>	25.4	18.7
Weapons	27.6	27.8
Other public order	24.6	8.0

<sup>a</sup> Includes offenses not shown.

<sup>b</sup> Includes rape and other sexual assault.

<sup>c</sup> Excluding DWI/DUI.

: Not calculated; too few cases to permit calculation.

Data from Mumola, C. J., and J. C. Karberg. *Drug Use and Dependence, State and Federal Prisoners*. Washington, DC: U.S. Dept. of Justice (USDJ), Office of Justice Programs (OJP), 19 January 2007: 1–12.

of state and federal prisoners were under the influence of drugs for violent offenses (e.g., homicide, sexual assault, robbery, assault), 26% for property offenses (e.g., burglary, larceny/theft, motor vehicle theft, fraud), 38% for drug offenses (possession, trafficking), and 22% for public order offenses (e.g., weapons, other public order offenses) (Mumola and Karberg 2007). Furthermore, nearly 40% of the young people (often younger than 21 years of age) in adult correctional facilities reported drinking before committing a crime.

## DRUG CARTELS

**Drug cartels** are defined as large, highly sophisticated organizations composed of multiple drug-trafficking organizations (DTOs) and **drug cells** with specific assignments, such as drug transportation, security/enforcement, or money laundering. (A drug cell is similar to a terrorist cell, consisting of only three to five members to ensure operational security. Members of adjacent drug cells usually do not know each other or the identity of their leadership.) Drug cartel command-and-control structures are based outside the United States; however, they produce, transport, and distribute illicit drugs domestically with the assistance of DTOs that are either a part of or in an alliance with the cartel. Here are some reports of incidents in the world of drugs, violence, and crime:

As a political analyst living and working in Mexico for the last three decades, I have watched with horror how the United States–Mexico drug war strategy has led to the explosion of violence and criminal activity here. The deep-rooted complicity between government officials and security forces on the one hand and cartels on the other means that the training, equipment and firepower given in aid and sold to the Mexican government fuel violence on both sides.

The lines blur. The cartels are not fighting the state for political power; they are seeking to protect a \$40 billion drug-trafficking business that has been converted into a war for control of territory, a war against the people. (Carlsen 2016)

In recent years, ... (notorious drug lord “El Chapo”) ... Guzman extended the operations of his Sinaloa cartel to an estimated

50 countries across Latin America, Africa, and Europe, even hooking up with one of the most notorious Italian mafias, the ‘Ndrangheta. (Fausset and Wilkinson 2014)

In Mexico, [former] President Felipe Calderon may [have been] the constitutionally elected leader of the nation [in 2007], but in reality, drug cartels and warlords exercise de facto authority over much of the area.... Drug trafficking overwhelmingly is the prevailing social malady throughout the country, particularly along the border with the United States. In spite of lengthy declarations by government officials in Mexico City and Washington, and their insistence that important battles are being won against drug trafficking, criminal organizations like the Tijuana cartel continue to thrive, ruling over whole sections of the Mexican countryside like sectoral feudal lords.... The governor of the state of Nuevo Leon (bordering the United States), Natividad Gonzalez Paras, has declared that: “Unfortunately, the drug problem has escalated significantly in the past six to seven years. It is a national problem affecting most of the country’s states. It is a dispute between cartels or organizations to control locations, cities, and routes.” (Birns and Sánchez 2007)

In another news report:

Once known merely as “mules” for Colombia’s powerful cocaine cartels, today Mexico’s narcotics traffickers are the kingpins of this hemisphere’s drug trade, and the front line of the war on drugs has shifted from Colombia to America’s back door.

In August 2005, the *Christian Science Monitor* reported that according to senior U.S. officials, in the biggest reorganization since the 1980s, Mexican cartels had leveraged the profits from their delivery routes to wrest control from the Colombian producers. As a result, Mexican drug lords are in control of what the U.N. estimates is a \$142 billion a year business in cocaine, heroin, marijuana, methamphetamine, and other illicit drugs.

The new dominance of Mexican cartels has caused a spike in violence along the 2000-mile U.S.–Mexico border where rival cartels are warring against Mexican and U.S. authorities. Drugs are either flown from Colombia to Mexico in small planes, or, in the case of marijuana and methamphetamine, produced locally.

## KEY TERMS

### drug cartels

large, highly sophisticated organizations composed of multiple drug-trafficking organizations (DTOs) and cells with specific assignments, such as drug transportation, security/enforcement, or money laundering

### drug cells

are similar to terrorist cells, consisting of only three to five members to ensure operational security; members of adjacent drug cells usually do not know each other or the identity of their leadership

Then, they're shipped into the U.S. by boat, private vehicles, or in commercial trucks crossing the border....

The Sept. 26 edition of the *San Antonio Express-News* reported that a new method of intimidation is being utilized by Mexican drug cartels—beheadings. So far this year, at least 26 people have been decapitated in Mexico, with heads stuck on fences, dumped in trash piles, and even tossed onto a nightclub dance floor. In the latter act of violence, which took place in early morning hours of Wednesday, Sept. 6, five heads were scattered on the dance floor of a bar in the state of Michoacan, notorious for drug trafficking. No arrests for the killings have been announced. (Worldpress.org 2006)

And, in another news report:

The dead policeman is found propped against a tree off a dirt road on the outskirts of the city. He is dressed like a cartoon version of a Mexican cowboy wearing a blanket. The murder and symbolic mutilation of *policia* has become almost routine in Caliacán, capital of the Mexican state of Sinaloa: Pablo Aispuro Ramírez is one of 90 cops to be killed here this year. There is a note pinned to the body, a warning to anyone who dares to oppose the powerful drug lord who ordered the execution “I’m a copy-cowboy!” the note reads. “Ahoo-ya! There are going to be more soon.” (Lawson 2008, p. 76)

In addition,

The Tijuana-based Felix drug cartel and the Juarez-based Fuentes cartel began buying legitimate businesses in small towns in Los Angeles County in the early 1990s.... They purchased restaurants, used-car lots, auto-body shops and other small businesses. One of their purposes was to use these businesses for money-laundering operations. Once established in their community, these cartel-financed business owners ran for city council and other local offices. (Farah 2006, quoting an excerpt from *In Mortal Danger* by Tom Tancredo, a former U.S. Congressman, Colorado)

These news briefs are just a very small sampling of the types of crimes and violence perpetrated by drug dealers. It is clear that production, merchandising, and distribution of illicit drugs have developed into a worldwide operation worth hundreds of billions of dollars (Goldstein 2001); one publication states that the United Nations (UN)

estimates that the global world drug trade is worth \$320 billion annually (Stopthedrugwar.org 2005). These enormous profits have attracted organized crime, both in the United States and abroad, and all too frequently even corrupt law enforcement agencies (McShane 1994). For the participants in such operations, drugs can mean incredible wealth and power. For example, dating back to 1992, Pablo Escobar was recognized as a drug kingpin and leader of the cocaine cartel in Colombia, and he was acknowledged as one of the world’s richest men and Colombia’s most powerful man (Wire Services 1992). With his drug-related wealth, Escobar financed a private army to conduct a personal war against the government of Colombia (Associated Press 1992); until his death in 1993, he was a serious threat to his country’s stability.

In December 1999, the notorious Juarez drug cartel was believed to be responsible for burying more than 100 bodies (including 22 Americans) in a mass grave at a ranch in Mexico. All of the deaths were believed to be drug related. According to a news story on this gruesome discovery, the alleged perpetrator, Vincente Carrillo Fuentes, is one among dozens of drug lords and lieutenants wanted by U.S. law enforcement agents (Associated Press 1999). A more current drug lord, Ismael “el Mayo” Zambada, age 62, is “one of Mexico’s most wanted drug lords, who has never been arrested despite a \$5 million reward offered in the United States” (Campbell 2010, p. 1). This same news release indicated that the drug trade would not end until drug cartels are eliminated. Such occurrences, which are often reported by the mass media, indicate the existence of powerful and dangerous drug cartels that are responsible for the availability of illicit drugs around the world.

And finally, more recent information involves another drug kingpin, “El Chapo” Guzmán:

Born in Badiraguato, Mexico, Joaquín Guzmán Loera entered the drug trade as a teenager. Nicknamed “El Chapo,” he founded the Sinaloa cartel in 1989, over time building it into an immensely profitable global drug-trafficking operation. Known for his violent actions and powerful influence, Guzmán has successfully orchestrated daring escapes from maximum-security prisons in his home country. One such escape came in July 2015, although he was recaptured the following January in the Mexican city of Los Mochis....

Guzmán coupled that success with serious muscle. He established gangs with names such as “Los Chachos,” “Los Texas,” “Los Lobos,” and “Los Negros” to protect his empire. Over the years, Guzmán’s men have been accused of committing more than 1000 murders throughout Mexico, the casualties including both incompetent henchmen and rival bosses....

On January 8, 2016, Mexican President Enrique Peña Nieto announced on Twitter that Mexican authorities had recaptured Guzmán after a shootout earlier that morning in the city of Los Mochis.

“Mission Accomplished,” the President wrote. “We have him.” (Bio. 2016)

Drug-related violence takes its toll at all levels, as rival gangs fight to control their “turf” and associated drug operations. Innocent bystanders often become unsuspecting victims of the indiscriminate violence. For example, a Roman Catholic cardinal was killed on May 24, 1993, when a car he was a passenger in was inadvertently driven into the middle of a drug-related shootout between traffickers at the international airport in Guadalajara, Mexico. Five other innocent bystanders were killed in the incident (Associated Press 1993). Finally, it was recently reported that, when spotted, the Mexican army engages in shooting at cartel members and likewise armed cartel members shoot back. When this occurs, mostly in border towns and cities in Mexico, innocent bystanders, many of them children, are often caught in the crossfire and are routinely killed (Del Bosque 2010). On April 13, 2010, one report cites just such an incident. In Acapulco, Mexico, 24 people died, half of whom were innocent bystanders: “[T]he shootout broke out in the middle of the day in the center of the town as it was full of bystanders” (Associated Press 2010, p. 38). In many other incidents, unsuspecting people have been injured or killed by drug users who, while under the influence of drugs, commit violent criminal acts.

### ■ Drugs in the Workplace: A Persistent Affliction

“He was a good, solid worker, always on the job—until he suddenly backed his truck over a 4-inch gas line.” If the line had ruptured, there would have been a serious explosion, according to the driver’s employer. The accident raised a red flag: “under the company’s standard policy, the

employee was tested for drugs and alcohol. He was positive for both” (Edelson 2000, p. 3).

Another tragic incident involving drug use occurred in Alvin, Texas, in December 2012, when “a 20-year-old man ran over two young boys, ages 11 and 12, in front of their father after having too much drink. Later, the driver was killed by gunshot, and the boys’ father was charged” (Project Know 2016).

Generally, once drug use becomes habitual, drug use is brought into the workplace, because, second to the home and social environments, the work environment for full-time employees is the place where they spend the most time. The National Household Surveys, for example, found evidence of significant drug use among full-time workers, with approximately 7% to 9% drinking while working. In the surveys, 64.3% of full-time workers reported alcohol use within the past month (SAMHSA 2012). Some 6.4% of full-time workers reported marijuana use within the past month. Part-time employees were slightly more likely to be past-month illicit drug users in comparison to full-time workers in 2010 (11.2 % vs. 8.4%) (SAMHSA 2012).

### WORKER SUBSTANCE ABUSE IN DIFFERENT INDUSTRIES

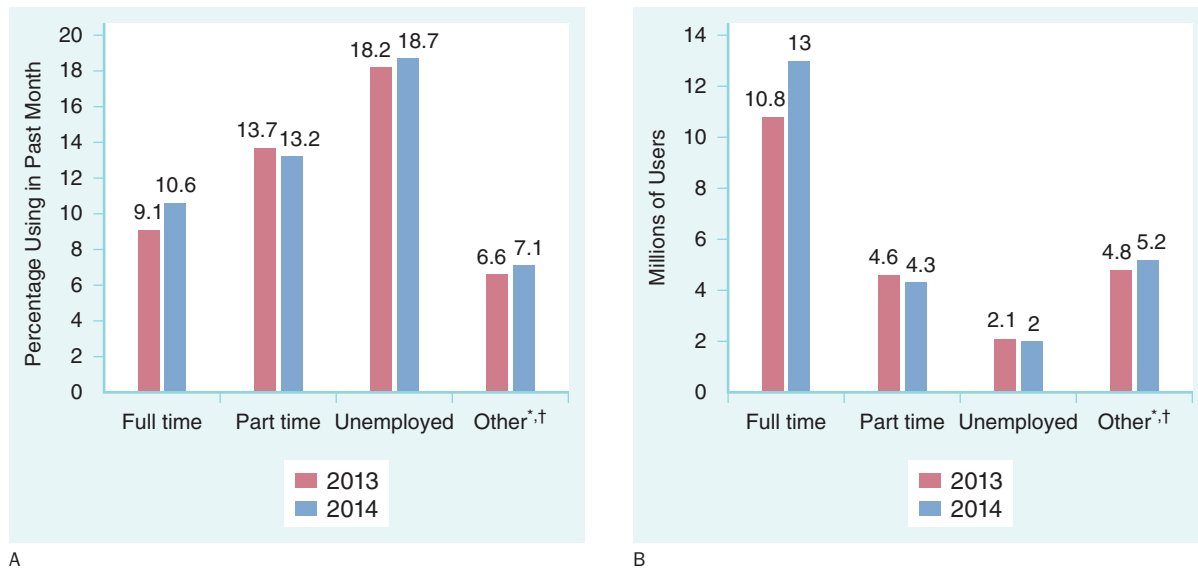
Substance use in the workplace negatively affects U.S. industry through lost productivity, workplace accidents and injuries, employee absenteeism, low morale, and increased illness. The loss to U.S. companies due to employees’ alcohol and drug use and related problems is estimated at billions of dollars a year. Research shows that the rate of substance use varies by occupation and industry (Larson et al. 2007). Studies also have indicated that employers vary in their treatment of substance use issues and that workplace-based employee assistance programs (EAPs) can be a valuable resource for obtaining help for substance-using workers (Delaney, Grube, and Ames 1998; Reynolds and Lehman 2003).

Regarding employment, highlights from SAMHSA (2014b) indicate the following:

### ILLCIT DRUG USE

- Current illicit drug use differed by employment status in 2013 and 2014. Among adults age 18 or older, the numbers and percentage of illicit drug use was higher for unemployed persons (2.1 million users, or 18.2%, in 2013 and 2 million, or 18.7%, in 2014) than for those who were employed full time (10.8 million, or 9.1%,





**FIGURE 1.9** Panel A shows the percentages of past-month illicit drug use among persons aged 18 or older by employment status in 2013 and 2014. Panel B shows the numbers in millions of past-month illicit drug users based on employment status.

\* Difference between this estimate and the 2014 estimate is statistically significant at the .05 level.

† The Other employment category includes retired persons, disabled persons, homemakers, students, or other persons not in the labor force.

Reproduced from Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.

in 2013 and 13 million, or 10.6%, in 2014) or part time (4.6 million, or 13.7%, in 2013 and 4.3 million, or 13.2%, in 2014). The rate of other employment, which includes retired and disabled person, homemakers, students, or other persons not in the labor force, was 4.8 million (6.6%) in 2013 and 5.2 million (7.1%) in 2014. These rates were all similar to the corresponding rates in 2012 (see **Figure 1.9**).

- Of the 22.4 million current illicit drug users aged 18 or older in 2013, 15.4 million (68.9%) were employed either full or part time.

### ALCOHOL USE

- The rate of current alcohol usage in 2013 was 65.8% for full-time employed adults aged 18 or older, which was higher than the rate for unemployed adults (53.8%). The rates of binge drinking were similar for adults who were employed full time and those who were unemployed (30.5% and 31.3%, respectively).
- Among adults in 2013, most binge and heavy alcohol users were employed. Among the 58.5 million adults who were binge drinkers, 44.5 million (76.1%) were employed either full or part time. Among the 16.2 million adults who were heavy drinkers, 12.4 million (76.0%) were employed.

### TOBACCO USE

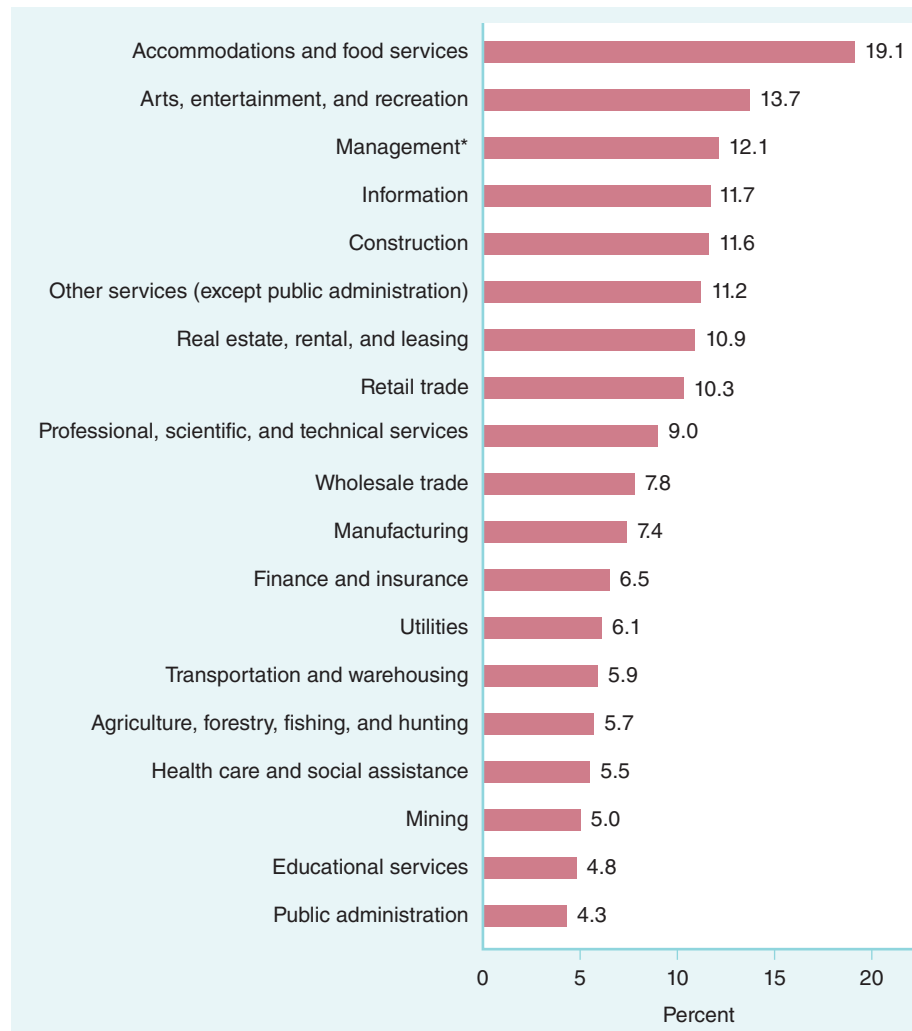
- In 2013, current cigarette smoking was more common among unemployed adults aged 18 or older (40.1%) than among adults who were working full time or part time (22.8% and 23.4%, respectively).
- Current use of smokeless tobacco in 2013 was higher among adults aged 18 or older who were employed full time (4.8%) and those who were unemployed (4.9%) than among those who were employed part time (2.2%) and those in the “other” employment category, which includes persons not in the labor force (1.9%).

### SUBSTANCE DEPENDENCE

- Rates of substance dependence or abuse were associated with current employment status in 2013. A higher percentage of unemployed adults aged 18 or older were classified with dependence or abuse (15.2%) than were full-time employed adults (9.5%) or part-time employed adults (9.3%).
- Over half of the adults aged 18 or older with substance dependence or abuse were employed full time in 2013. Of the 20.3 million adults who were classified with dependence or abuse, 11.3 million (55.7%) were employed full time.

Highlights from SAMHSA, Office of Applied Studies (2007), indicate the following (see **Figure 1.10**):

- Among the 19 major industry categories, the highest rates of past-month illicit drug use among full-time workers ages 18 to 64 were found in accommodations and food services (19.1%) and arts, entertainment, and recreation (13.7%).
- The industry categories with the lowest rates of past-month illicit drug use were found in mining (5.0%), educational services (4.8%), and public administration (4.3%).
- The overall rate of past-month illicit drug use among full-time workers aged 18 to 64 was 8.6%. Rates of past-month illicit drug use ranged from 19.1% among workers in the accommodations and food services industry to 4.3% among workers in the public administration industry. These findings remained true even when controlling for gender and age differences across industries.
- The overall rate of past-year substance use disorder among full-time workers aged 18 to 64 was 9.5%. Rates of past-year substance use disorder ranged from 16.9% among workers in the accommodations and food services industry to 5.5% among workers in the educational services industry.
- Although the accommodations and food services industry group had the highest rate of past-year



**FIGURE 1.10** Illicit drug use by industry category: Past-month illicit drug use among full-time workers aged 18 to 64: 2011–2012, combined.

\*The full title of this category is "Management of companies and enterprises, administration, support, waste management, and remediation services."

Reproduced from Substance Abuse and Mental Health Services Administration (SAMHSA). *The National Survey on Drug Use and Health (NSDUH) Report. Worker Substance Use, by Industry Category*. Rockville, MD: Office of Applied Studies, 24 March 2012.

substance use disorder, this finding did not remain true after controlling for age and gender distributions. *This indicates that the high rate can be attributed to the demographic composition of the accommodation and food services industry.*

Although not shown in Figure 1.10, the following findings have also been reported (CBHSQ 2012 unless otherwise noted):

- The overall rate of past-month heavy alcohol use among full-time workers aged 18 to 64 was 8.7%. Rates of past-month heavy alcohol use ranged from 17.5% among workers in the mining industry to 4.4% among workers in the healthcare and social assistance industry.
- Workers in the mining (17.5%) and construction (16.5%) industries had the highest rates of past-month heavy alcohol use. For the workers in the construction industry, this finding remained true even when controlling for gender and age differences across industries. This indicates that there is something unique about past-month heavy alcohol use for the construction industry that would remain even if the construction industry had the same gender and age distribution of any other industry. However, for the mining industry, this higher rate did not remain when controlling for age or gender differences. *This indicates that the high heavy alcohol use rate in the mining industry can be attributed to the demographic composition of the mining industry.*
- Approximately 80% of large companies test for drug use, and approximately 60% of medium companies and 26% of small companies perform such testing. Of those companies that drug test, more than 90% use urine analysis, less than 20% use blood analysis, and less than 6% use hair analysis.
- Most companies that administer drug tests test for marijuana, cocaine, opiates, amphetamines, and PCP.
- Age is the most significant predictor of marijuana and cocaine use. Younger employees (18 to 24 years) are more likely to report drug use than older employees are (25 years or older).
- In general, unmarried workers report roughly twice as much illicit drug and heavy alcohol use as married workers. Among food preparation workers, transportation drivers, and mechanics, and in industries such as construction and machinery (not electrical), the discrepancy between married and unmarried workers is especially notable.

- Workers who report having three or more jobs in the previous 5 years are twice as likely to be current or past-year illicit drug users as those who held two or fewer jobs over the same period (NCADD 2016).
- 70% of the estimated 14.8 million Americans who use illegal drugs are employed (NCADD 2016).
- Marijuana is the most commonly used and abused illegal drug by employees, followed by cocaine, with prescription drug use steadily increasing (NCADD 2016).
- Workers in occupations that affect public safety, including truck drivers, firefighters, and police officers, report the highest rate of participation in drug testing.
- “Among full-time workers, heavy drinkers and illicit drug users are more likely than those who do not drink heavily or use illicit drugs to have skipped work in the past month or have worked for three or more employers in the past year” (Robert Wood Johnson Foundation 2001, p. 45).
- Most youths do not cease drug use when they begin working.

In summarizing this research on employees who abuse alcohol or other drugs, five major findings emerge: (1) these workers are three times more likely than the average employee to be late to work, (2) they are three times more likely to receive sickness benefits, (3) they are 16 times more likely to be absent from work, (4) they are five times more likely to be involved in on-the-job accidents (note that many of these hurt others, not themselves), and (5) they are five times more likely to file compensation claims.

## Employee Assistance Programs

Many industries have responded to drugs in the workplace by creating **drug testing** and **employee assistance programs (EAPs)**. Most often, drug testing generally involves urine screening, blood screening, and/or hair follicle analysis that is undertaken to identify which employees are using

### KEY TERMS

#### **drug testing**

urine, blood screening, or hair analysis used to identify those who may be using drugs

#### **employee assistance programs (EAPs)**

drug assistance programs for drug-dependent employees

drugs and which employees may have current or potential drug problems. EAPs are employer-financed programs administered by a company or through an outside contractor. More than 400,000 EAPs have been established in the United States.

The following are some important findings regarding workplace substance use policies and programs among full-time workers:

- Full-time workers aged 18 to 64 who used illicit drugs in the past month were generally less likely than those who did not use illicit drugs in the past month to work for an employer with a written policy about employee use of alcohol and drugs. Similarly, full-time workers who drank heavily in the past month were less likely than those who did not drink heavily to have an employer that provided these workplace policies and programs (SAMHSA 2014c).
- Of employees ages 18 to 64 who had used an illicit drug in the past month, 32.1% worked for an employer who offered educational information about alcohol and drug use, 71% were aware of a written policy about drug and alcohol use in the workplace, and 45.4% worked for an employer who maintained an EAP or other type of counseling program for employees who have an alcohol- or drug-related problem (SAMHSA, OAS 2007).
- Among full-time workers who used alcohol heavily in the past month, 37.2% worked for an employer who provided educational information about drug and alcohol use, 73.7% were aware of written policies about drug and alcohol use, and 51.1% had access to an EAP at their workplace (SAMHSA, OAS 2007).
- The most common EAP service that companies utilize is for job stress (87.9%), followed by substance abuse (84.1%), bereavement (83.4%), work-life balance (82.8%), and relationship counseling (82.2%), with slightly lower percentages mainly involving elder care/child care/parenting issues (78.3%), family violence (75.2%), harassment (73.2%), and financial or legal services (72.6%) (Pyrillis 2014).
- Approximately three-quarters of companies have an EAP (Pyrillis 2014).
- “U.S. enrollment in EAPs has increased by 285% since 2002, according to a 2011 survey

by Open Minds, a market research firm based in Gettysburg, Pennsylvania. More than 97% of companies with more than 5000 employees have an EAP and continued growth is expected, according to the Employee Assistance Research Foundation” (Pyrillis 2014).

EAP programs are designed to aid in identifying and resolving productivity problems associated with employees’ emotional or physical concerns, such as those related to health, marital problems, family relationships, financial issues, and substance abuse. EAPs have also expanded their focus to combat employee abuse of OTC and prescription drugs in addition to illicit psychoactive substances. Overall, the programs attempt to formally reduce problems associated with impaired job performance.

Regarding drug testing today, the Society for Human Resource Management (SHRM) conducted an online survey taken by 454 randomly selected human resource managers from diverse organizations (U.S. Department of Labor 2009). The following drug testing practices were in effect:

- 84% of employers required new hires to pass drug screenings.
- 74% used drug screening when reasonable suspicion of drug use was determined.
- 58% of organizations used post-accident drug screening.
- 39% used random drug screening.
- 14% used scheduled drug testing.

Further, 70% of those responding to this survey indicated that their organization has a written policy that addresses drug testing. From these survey results, we can see that the future for employee drug testing is very bright. In all probability, if you have not already experienced such a screening, you will experience one at some point in your working life.

Today, drug testing can include the following (U.S. Department of Labor 2016):

- *Urine*: Testing for drug metabolites in a person’s urine.
- *Breath*: The breath-alcohol test is the most common test for finding out how much alcohol is currently in the blood.
- *Hair*: Analysis of hair provides a much longer “testing window,” giving a more complete drug-use history going back as far as 90 days.
- **Oral fluids**: Saliva, or oral fluids, collected from the mouth also can be used to detect traces of drugs and alcohol. Oral fluids are

## KEY TERMS

### oral fluids

oral fluid testing analyses a saliva sample for drugs of abuse and their metabolites



easy to collect (a swab of the inner cheek is the most common collection method), harder to adulterate or substitute, and may be better at detecting specific substances, including marijuana, cocaine, and amphetamines/methamphetamines.

- **Sweat:** Another type of drug test consists of a skin patch that measures drugs in sweat. The patch, which looks like a large adhesive bandage, is applied to the skin and worn for some length of time. A gas-permeable membrane on the patch protects the tested area from dirt and other contaminants. Although relatively easy to administer, this method has not been widely used in workplaces and is more often used to maintain compliance with probation and parole.

The following drugs that are detectable differ in the length of time they are detectable (U.S. Department of Labor 2016):

- Alcohol: 1 oz. for 1.5 hours
- Amphetamines: 48 hours
- Barbiturates: 2 to 10 days
- Benzodiazepines: 2 to 3 weeks
- Cocaine: 2 to 10 days
- Heroin metabolites: Less than 1 day
- Morphine: 2 to 3 days
- LSD: 8 hours
- Marijuana: Casual use, 3 to 4 days; chronic use, several weeks
- Methamphetamine: 2 to 3 days
- Methadone: 2 to 3 days
- PCP: 1 week

## Venturing to a Higher Form of Consciousness: The Holistic Self-Awareness Approach to Drug Use

Whenever drug use leads to abuse, it rarely results from a single, isolated cause. Instead, it is often caused or preceded by multiple factors, which may include combinations of the following:

- Hereditary (genetic) factors
- Psychological conditioning
- Peer group pressures
- Inability to cope with the stress and anxiety of daily living
- Quality of role models
- Degree of attachment to a family structure
- Level of security with gender identity and sexual orientation

- Personality traits
- Perceived ethnic and racial compatibility with society as a whole and socioeconomic status (social class)

As authors, we strongly endorse and advocate a **holistic self-awareness approach** that emphasizes a healthy balance among mind, body, and spirit. Health and wellness can be achieved only when these three domains of existence are free from any unnecessary use of psychoactive substances. The holistic philosophy is based on the idea that the mind has a powerful influence on maintaining health. All three—mind, body, and spirit—work as a unified whole to promote health and wellness. Similarly, we are in agreement with holistic health advocates who emphasize the following viewpoint:

Holistic Health is based on the law of nature that a whole is made up of interdependent parts. The earth is made up of systems, such as air, land, water, plants and animals. If life is to be sustained, they cannot be separated, for what is happening to one is also felt by all the other systems. In the same way, an individual is a whole made up of interdependent parts, which are the physical, mental, emotional, and spiritual. While one part is not working at its best, it impacts all the other parts of that person.... A common explanation is to view wellness as a continuum along a line. The line represents all possible degrees of health. The far left end of the line represents premature death. On the far right end is the highest possible level of wellness or maximum well-being. The center point of the line represents a lack of apparent disease. This places all levels of illness on the left half of the wellness continuum. The right half shows that even when no illness seems to be present, there is still a lot of room for improvement.... Holistic Health is an ongoing process. As a lifestyle, it includes a personal commitment to be moving toward

## KEY TERMS

### sweat

sweat is used for drug testing; a skin patch is used to absorb sweat that is analyzed for the presence of cocaine, marijuana, opiates, amphetamine, methamphetamine, and PCP.

### holistic self-awareness approach

emphasizes that nonmedical and often recreational drug use interferes with the healthy balance among the mind, the body, and the spirit

the right end of the wellness continuum. No matter what their current status of health, people can improve their level of well-being. Even when there are temporary setbacks, movement is always headed toward wellness. (Walter 1999, pp. 1–2)<sup>2</sup>

This passage embodies the essence of achieving a holistic self-awareness perspective by presenting a unified blend of different perspectives that can add to our awareness of what is at stake when the goal of drug use is for nonmedical purposes, such as using drugs for the sole purpose of achieving a high. Knowing about the holistic self-awareness perspective should expand people's often limited and narrow values and attitudes about drug use so that the information about and the use of drugs are viewed and understood from pharmacological, psychological, and sociological perspectives.

As mentioned earlier, understanding drug use is important not only for comprehending our own health, but also for understanding the following:

- Why and how others can become attracted to drugs
- How to detect drug use and abuse in others

- What to do (remedies and solutions) when family members and/or friends abuse drugs
- How to help and advise drug abusers about the pitfalls of substance use
- What the best available educational, preventive, and treatment options are for victims of drug abuse
- What danger signals can arise when others you care about exceed normal and/or necessary drug usage

Awareness and knowledge about drug use and/or abuse coupled with holistic health awareness can result in self-awareness, and self-awareness leads to self-understanding and self-assurance. Maintaining at least some belief in holistic self-awareness, either as a humanistic philosophy or adding this philosophy into a religious orientation you may already have, should increase an understanding of your own drug use practices as well as those of family members and close friends. By including at least some aspect of holistic self-awareness regarding the use of psychoactive substances, you will be better equipped to understand not only yourself but also others who may be in need of advice and role modeling.

<sup>2</sup>Reproduced from Walter, S. *The Illustrated Encyclopedia of Body-Mind Disciplines*. New York: Rosen Publishing Group, 1999. Used with permission.

## LEARNING PORTFOLIO

### Discussion Questions

1. Give an example of a drug-using friend and describe how he or she may be affected by biological, genetic, pharmacological, cultural, social, and contextual factors.
2. Discuss and debate whether the often considered “benign” drug known as marijuana is or is not addictive. In your discussion/debate, consider the finding in Table 1.4 by the Center for Behavioral Health Statistics and Quality that in 2014 for persons aged 12 or older, 44.2% of illicit drug users (117.2 million) had used marijuana during their lifetime and past-month users of this drug accounted for 8.4% of all illicit drug users (22.1 million). Do you think this often-perceived “less addictive” drug is harmless to society?
3. What is the future of prescription drug abuse? For example, how much will it increase in the years to come? Do you think prescription drugs will ever become *the* drugs of choice for recreational and/or abusive use? Will prescription drug abuse ever surpass the use of marijuana? Should parents be prosecuted for not guarding their legally prescribed drugs if their children are caught using them?
4. In reviewing the ancient historical uses of drugs, how do you think drug use today is different from than in the past? Explain your answer.
5. Why do Americans use so many legal drugs (e.g., alcohol, tobacco, and OTC drugs)? What do you think is primarily responsible for such extensive nonmedical and recreational drug use?
6. Table 1.3 shows that the amount of drug use remained stable from 2009 to 2014 (showing little change in usage rates for past-month usage for persons aged 18 to 25 years). Cite two reasons why you think this high stable trend has occurred despite the media campaigns promoted by private organizations, state governments, the federal government, and efforts by law enforcement organizations against recreational drug use.
7. Because most casual and experimental drug users do not gravitate toward excessive drug use, should these two groups be left alone or perhaps be given legal warnings or fines? Overall, how do you think recreational drug users be punished by society?
8. Do the mass media promote drug use, or do they merely reflect our extensive use of drugs? Provide some evidence for your position.
9. At what point do you think drug use leads to abuse? When do you think drug use does not lead to abuse?
10. What do you believe is the relationship between drug use and crime? Does drug use cause crime or is crime simply a manifestation of personality?
11. What principal factors are involved in the relationship between drugs and crime?

### Key Terms

addiction	6
central nervous system (CNS)	5
compulsive users	36
dependency phase	43
designer drugs/synthetic drugs or synthetic opioids	13
drug cartels	48
drug cells	48
Drug Enforcement Administration (DEA)	41
drug(s)	6
drug testing	53
employee assistance programs (EAPs)	53
equal-opportunity affliction	17
ethanol	13
experimenters	35
floaters or chippers	36
gateway drugs	12
holistic self-awareness approach	55
illicit drugs	6
increased use phase	42
insiders	5
licit drugs	6
marijuana wax	13
MDMA	13
National Institute on Drug Abuse (NIDA)	43
needle-exchange programs	45
opioids	10
oral fluids	54
outsiders	5
over-the-counter (OTC)	6
preoccupation phase	43
psychoactive drugs (substances)	5
relief phase	42
structural analogs	14
sweat	55
withdrawal phase	43
withdrawal symptoms	6

12. Should all employees be randomly tested for drug use? If not, which types of employees or occupations should randomly drug test?
13. List and rank order at least three things you found very interesting regarding drug use in this chapter.
14. Should all students and faculty be randomly drug tested at their schools and universities? Why or why not?
15. Do you think that the holistic self-awareness approach advocated by the authors regarding drug use is a viable one that can be used successfully for stopping drug use? Why or why not? What, if any, additional improvements can be made to strengthen this approach?

## Summary

1. Biological issues; genetic issues; pharmacological issues; and cultural, social, and contextual issues are the four principal factors responsible for determining how a drug user experiences drug use. Biological, genetic, and pharmacological factors take into account how a particular drug effects and affects the body. Cultural factors examine how society's views, determined by custom and tradition, effect and affect the use of a particular drug. Social factors include the specific reasons why a drug is taken and how drug use develops from factors such as family upbringing, peer group alliances, subcultures, and communities. Contextual factors account for how drug use behavior develops from the physical surroundings in which the drug is taken.
2. Initial understanding of drug use includes the following key terms: drug, gateway drugs, medicines and prescription medicines, over-the-counter (OTC), drug misuse, drug abuse, and drug addiction.
3. Mentions of drug use date back to biblical times and ancient literature that goes back to 2240 BC. Under the influence of drugs, many people experienced feelings ranging from extreme ecstasy to sheer terror. At times, drugs were used to induce sleep and provide freedom from care.
4. Drug users are found in all occupations and professions, at all income and social class levels, and in all age groups. No one is immune to drug use. Thus, drug use is an equal-opportunity affliction.
5. According to sociologist Erich Goode (2012), drugs are used for four reasons: (a) legal instrumental use, (b) legal recreational use, (c) illegal instrumental use, and (d) illegal recreational use.
6. The most commonly used licit and illicit lifetime drugs (rated from highest to lowest in the percentages [frequency] of use) are alcohol, cigarettes, marijuana/hashish, nonmedical use of any psychotherapeutics, smokeless tobacco, cocaine, hallucinogens, pain relievers, tranquilizers, inhalants, stimulants, sedatives, and heroin.
7. The three types of drug users are experimenters, compulsive users, and floaters or chippers. Experimenters try drugs because of curiosity and peer pressure. Compulsive users use drugs on a full-time basis and continually desire to escape from or alter reality. Floaters or chippers vacillate between experimental drug use and chronic drug use.
8. The mass media tend to promote drug use through advertising. The constant barrage of OTC drug commercials relays the message that if you are experiencing some symptom, taking drugs is an acceptable option.
9. Drug use leads to abuse when the following occurs: (a) excessive use, (b) constant concern and preoccupation about the availability and supply of the drug, (c) refusal to admit excessive use, and (d) reliance on the drug.
10. The stages of drug dependence are *relief* from using the drug, *increased use* of the drug, *preoccupation* with the supply of the drug, *dependency* or addiction to the drug, and experiencing (either or both) physical and/or psychological *withdrawal* effects from not using the drug.
11. The following are the major findings of the connection between drugs and crime: (a) drug users are more likely to commit crimes, (b) arrestees are often under the influence of drugs while committing their crimes, and (c) drugs and violence often go hand in hand, especially when alcohol, cocaine, crack, methamphetamine, or other stimulant types of drugs are used.



12. Employee assistance programs (EAPs) are employer-financed programs administered by a company or through an outside contractor. More than 400,000 EAPs have been established in the United States. They are designed to aid in identifying and resolving productivity problems associated with employees' emotional or physical concerns, such as those related to health, marriage, family, bereavement, finances, and substance abuse. Recently, EAPs have expanded their focus to combat employee abuse of OTC and prescription drugs as well as illicit psychoactive substances.
13. The holistic self-awareness philosophy is based on the idea that the mind, body, and spirit have a powerful influence on maintaining health. These three domains—mind, body, and spirit—work best when unobstructed by unnecessary drug use, and when all three domains work in a unified manner to promote health and wellness.

## References

- Associated Press. "Program to Fight Drug Smuggling Costs U.S. a Lot, Produces Little." *Salt Lake Tribune* 244 (17 August 1992): A-1.
- Associated Press. "Mexican Cardinal, Six Others Killed in Cross-Fire as Drug Battles Erupt in Guadalajara." *Salt Lake Tribune* 246 (25 May 1993): A-1.
- Associated Press. "Discovery of Mexican Graves Unlikely to Slow Flow of Drugs." *The Times* (Munster, Indiana) (5 December 1999): A-13.
- Associated Press. "Mexico: Drug War Death Toll Worsens, 11 Die in One Shootout, 24 in a Day in Small-Town Gun Battles." *Post Tribune* (Northwest Indiana) 100 (14 March 2010): 38.
- Berkrot, B. "Global Drug Sales to Top \$1 Trillion." Thomson Reuters (20 April 2010). Available <http://www.reuters.com/article/idUKTRE63J0Y520100420>
- Beschner, G. "Understanding Teenage Drug Use." In *Teen Drug Use*, edited by G. Beschner and A. Friedman, 1–18. Lexington, MA: D.C. Heath, 1986.
- Bio. "Joaquin 'El Chapo' Guzman Loera." n.d. Available <http://www.biography.com/people/el-chapo-joaquin-guzman-loera>
- Birns, L., and A. Sánchez. "The Government and the Drug Lords: Who Rules Mexico?" *Worldpress.org*. 23 April 2007. Available <http://www.worldpress.org/Americas/2763.cfm>
- Boyles, S. "Americans Spend \$34 Billion on Alternative Medicines." WebMD. 2009. Available <http://www.rxlist.com/script/main/art.asp?articlekey=104255#>
- Bureau of Justice Statistics (BJS). *Drugs and Crime Facts: Drug Law Violations*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, 2006.
- Bureau of Justice Statistics (BJS). "U.S. Prison Population Declined One Percent in 2014." Washington, DC: U.S. Department of Justice, Office of Justice Programs, 17 September 2015a.
- Bureau of Justice Statistics (BJS). "Drug Offenders in Federal Prison: Estimates of Characteristics Based on Linked Data." Washington, DC: U.S. Department of Justice, Office of Justice Programs, 27 October 2015b.
- Butterfield, F. "As Drug Use Drops in Big Cities, Small Towns Confront Upsurge." *New York Times* (11 February 2002): A23. Available <http://www.nytimes.com/2002/02/11/us/as-drug-use-drops-in-big-cities-small-towns-confront-upsurge.html?scp=1&sq=As%20Drug%20Use%20Drops%20in%20Big%20Cities,%20A%20small%20Town%20Confront%20Upsurge,%20Butterfield,%20Fox&st=cse>
- Caldwell, A. A. "U.S. Cracks Down on Fake Pot." *Post-Tribune* (Merrillville, IN) 101 (December 2010): 30.
- Campbell, R. "Mexican Cartels Cannot Be Defeated, Drug Lord Says." Thomson Reuters (4 April 2010). Available <http://www.reuters.com/article/idUSTRE6331DZ20100404>
- Carlsen, L. "The Opinion Pages/Letter: The Drug War and Mexico." *New York Times* (25 January 2016). Available [http://www.nytimes.com/2016/01/26/opinion/the-drug-war-and-mexico.html?rref=collection%2Ftimestopic%2FMexican%20Drug%20Trafficking&action=click&contentCollection=world&region=stream&module=stream\\_unit&version=latest&contentPlacement=7&pgtype=collection](http://www.nytimes.com/2016/01/26/opinion/the-drug-war-and-mexico.html?rref=collection%2Ftimestopic%2FMexican%20Drug%20Trafficking&action=click&contentCollection=world&region=stream&module=stream_unit&version=latest&contentPlacement=7&pgtype=collection)
- Carson, E. A., and W. J. Sabol. *Prisoners in 2011*. NCJ239808. Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics, December 2012. Available <http://bjs.ojp.usdoj.gov/content/pub/pdf/p11.pdf>
- CASA Columbia. *National Survey of American Attitudes on Substance Abuse XVII: Teens*. New York: QEV Analytics, August 2012. Available <http://www.casacolumbia.org/upload/2012/20120822teensurvey.pdf>
- CBS News. "Drug Advertising Skyrockets." CBS Worldwide. 13 February 2002. Available [http://www.cbsnews.com/2100-204\\_162-329293.html](http://www.cbsnews.com/2100-204_162-329293.html)
- Center for Behavioral Health Statistics and Quality (CBHSQ). "The NSDUH Report: State Estimates of Nonmedical Use of Prescription Pain Relievers." Rockville, MD Substance Abuse and Mental Health Services Administration, 8 January 2013.

- Center for Behavioral Health Statistics and Quality (CBHSQ). *Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. NSDUH Series H-50, HHS Publication No. (SMA) 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2015.
- Center for Substance Abuse Research (CESAR). "Ritalin and Adderall Abused by Students as Party Drugs and Study Aids." *CESAR FAX* (1 December 2003). Available <http://www.cesar.umd.edu>
- Center on Alcohol Marketing and Youth (CAMY). "Alcohol Industry 'Responsibility' Advertising on Television, 2001 to 2003." Washington, DC: Center on Alcohol Marketing and Youth, 20 July 2005. Available [http://www.camy.org/\\_docs/resources/reports/archived-reports/alcohol-industry-responsibility-advertising-tv-01-03-full-report.pdf](http://www.camy.org/_docs/resources/reports/archived-reports/alcohol-industry-responsibility-advertising-tv-01-03-full-report.pdf)
- Center on Alcohol Marketing and Youth (CAMY). *Drowned Out: Alcohol Industry's Responsibility: Advertising on Television, 2001–2005*. Washington, DC: Center on Alcohol Marketing and Youth, 2007: 1–4.
- Centers for Disease Control and Prevention (CDC). *CDC Survey Finds that 1 in 5 U.S. High School Students Have Abused Prescription Drugs*. Atlanta, GA: U.S. Department of Health and Human Services, 3 June 2010. Available [http://www.cdc.gov/HealthyYouth/yrbs/pdf/press\\_release\\_yrbs.pdf](http://www.cdc.gov/HealthyYouth/yrbs/pdf/press_release_yrbs.pdf)
- Centers for Disease Control and Prevention (CDC). "Vital Signs: Opioid Painkiller Prescribing infographic." 2014. Available <http://www.cdc.gov/vitalsigns/opioid-prescribing/infographic.html>
- Centers for Disease Control and Prevention (CDC). "Economic Facts About U.S. Tobacco Production and Use." 2015a. Available [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/economics/econ\\_facts/index.htm#sales](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/economics/econ_facts/index.htm#sales)
- Centers for Disease Control and Prevention (CDC). "HIV in the United States: At A Glance." 2015b. Available <http://www.cdc.gov/hiv/statistics/overview/ataglance.html>
- Centers for Disease Control and Prevention (CDC). "Global HIV/AIDS." 2016. Available <http://www.cdc.gov/globalaids/>
- Chen, K. "Meth Seizures at U.S. Ports of Entry on the Rise." Center for Investigative Reporting, 20 June 2013. Available <http://cironline.org/blog/post/meth-seizures-us-ports-entry-rise-4739>
- Clinton, Bill. "My Quest to Improve Care." *Newsweek* CXL-VII (15 May 2006): 50–53.
- Consumer Healthcare Products Association (CHPA). "The Value of OTC Medicine to the United States." Washington, DC: Booz&Co and Consumer Healthcare Products Association, 2012. Available [http://www.yourhealthathand.org/images/uploads/The\\_Value\\_of\\_OTC\\_Medicine\\_to\\_the\\_United\\_States\\_BoozCo.pdf](http://www.yourhealthathand.org/images/uploads/The_Value_of_OTC_Medicine_to_the_United_States_BoozCo.pdf)
- Consumer Healthcare Products Association (CHPA). "Statistics on OTC Use." 2016. Available <http://www.chpa.org/marketstats.aspx>
- Consumer Healthcare Products Association (CHPA). "OTC Retail Sales 1964-2015." 2016. Available <http://www.chpa.org/OTCRetailSales.aspx>
- Coppola, M., and R. Mondola. "Synthetic Cathinones: Chemistry, Pharmacology and Toxicology of a New Class of Designer Drugs of Abuse Marketed as 'Bath Salts' or 'Plant Food.'" *Toxicology Letters* 211(2) (2012): 144–149.
- Critser, G. "Oh, How Happy We Will Be: Pills, Paradise, and the Profits of the Drug Companies." *Harper's Magazine* (June 1996): 39–48.
- Critser, G. *Generation RX: How Prescription Drugs Are Altering American Lives, Minds and Bodies*. Boston, MA: Houghton-Mifflin, 2005.
- Delaney, W., J. W. Grube, and G. M. Ames. "Predicting Likelihood of Seeking Help Through the Employee-Assistance Program Among Salaried and Union Hourly Employees." *Addiction* 93 (1998): 399–410.
- Del Bosque, M. "Mexico's Future in 2010, Calderon's Failed Drug War." *Texas Observer* (5 January 2010): 1–2. Available <http://www.texasobserver.org/lalinea/calderons-war-on-drugs-is-a-failure>
- Drug Enforcement Administration (DEA). *Drug Fact Sheet: K2 or Spice*. Washington, DC: U.S. Department of Justice (DOJ), 2012. Available [http://www.justice.gov/dea/pr/multimedia-library/publications/drug\\_of\\_abuse.pdf#page=62](http://www.justice.gov/dea/pr/multimedia-library/publications/drug_of_abuse.pdf#page=62)
- Drug Strategies. *Keeping Score: What We Are Getting for Our Federal Drug Control Dollars 1995*. Washington, DC: Drug Strategies, 1995.
- DrugWarFacts.org. "Crime, Arrests, and US Law Enforcement." 2016. Available <http://www.drugwarfacts.org/cms/Crime#sthash.Hlaogs9z.fqvRrxej.dpbs>
- Edelson, E. "Drug Use in the Workplace Plummets." *Cannabis News* (February 2000). Available <http://cannabisnews.com/news/4/thread4627.shtml>
- ECIG Review Central. "E-Cig Sales to Hit 100 Billion or More in Next Decade?" *ECIGReviewCentral.com*. 2 January 2014. Available <http://ecigreviewcentral.com/e-cig-sales-to-hit-100-billion-or-more-in-next-decade/>
- Erowid Center. "Spice Product: Legal Status." *Erowid.org*. 2013. Available [http://www.erowid.org/chemicals/spice\\_product/spice\\_product\\_law.shtml](http://www.erowid.org/chemicals/spice_product/spice_product_law.shtml)
- Farah, J. "Invasion USA: Mexican Drug Cartels Take Over U.S. Cities." *WorldNet Daily*, 18 June 2006. Available [http://www.worldnetdaily.com/news/article.asp?article\\_id=50518](http://www.worldnetdaily.com/news/article.asp?article_id=50518)

- Fausset, R., and T. Wilkinson. "‘El Chapo’ Guzman: Life of the Cartel King of Sinaloa." *Los Angeles Times* (22 February 2014). Available <http://www.latimes.com/world/worldnow/la-fg-wn-guzman-arrest-20140222-story.html>
- Fearnow, B. "Study: 70 Percent of Americans on Prescription Drugs." CBS Atlanta, 19 June 2013. Available <http://atlanta.cbslocal.com/2013/06/19/study-70-percent-of-americans-on-prescription-drugs-one-fifth-take-5-or-more/>
- Federal Register. "Annual Determination of Average Cost of Incarceration." Washington, DC: Office of the Federal Register (OFR), 9 March 2015. Available <https://www.federalregister.gov/articles/2015/03/09/2015-05437/annual-determination-of-average-cost-of-incarceration>
- Federal Trade Commission (FTC). *Self-Regulation in the Alcohol Industry: Report of the Federal Trade Commission*. Washington, DC, March 2015. Available <https://www.ftc.gov/system/files/documents/reports/self-regulation-alcohol-industry-report-federal-trade-commission/140320alcoholreport.pdf>
- Ferner, M. "Americans Spent About a Trillion Dollar on Illegal Drugs in the Last Decade." *Huffington Post* (13 March 2014). Available [http://www.huffingtonpost.com/2014/03/13/americans-trillion-dollars-drugs\\_n\\_4943601.html](http://www.huffingtonpost.com/2014/03/13/americans-trillion-dollars-drugs_n_4943601.html)
- Goldstein, A. *Addiction: From Biology to Drug Policy*. New York: Oxford University Press, 2001.
- Goode, E. *Drugs in American Society*, 5th ed. Boston, MA: McGraw-Hill, 1999.
- Goode, E. *Drugs in American Society*, 8th ed. New York: McGraw-Hill, 2012.
- Heroin.net. "How Much Does Heroin Cost?" 2016. Available <http://heroin.net/about/how-much-does-heroin-cost/#the-street-cost-of-heroin>
- Herper, M. "Why Big Pharma Won't Get Its Piece of the \$1.2 Trillion Global Drug Market." *Forbes* (12 July 2012). Available <http://www.forbes.com/sites/matthewherper/2012/07/12/the-global-drug-market-will-swell-to-1-2-trillion-while-big-pharma-treads-water/>
- HomeHealthTesting. "FactsAboutPrisonandDrugUse." 2010. Available <http://www.homehealthtesting.com/blog/2010/06/facts-about-prison-and-drug-use/>
- Huffington Post. "School Drug Use: Survey Finds 17 Percent of High School Students Drink, Smoke, Use Drugs During the School Day." 23 August 2012. Available [http://www.huffingtonpost.com/2012/08/23/annual-survey-finds-17-pe\\_n\\_1824966.html](http://www.huffingtonpost.com/2012/08/23/annual-survey-finds-17-pe_n_1824966.html)
- IMS Health. *IMS Retail Drug Monitor*. London, UK: IMS Health, 2012.
- IMS Health. "World Pharma Market Summary: Analytics and Insights from IMS Health." London, UK: IMS Health, 2013.
- Jellinek, J. "Musical Meth Lab Uncovered." *Rolling Stone* (20 February 2003): 54.
- Johnston, L. D., P. M. O'Malley, J. G. Bachman, and J. E. Schulenberg. *Monitoring the Future: National Survey Results on Drug Use, 1975–2011, Volume I: Secondary School Students*. Bethesda, MD: National Institute on Drug Abuse, 2012.
- Johnston, L. D., P. M. O'Malley, R. A. Miech, J. G. Bachman, and J. E. Schulenberg. *Monitoring the Future National Survey Results on Drug Use, 1975–2015: Overview, Key Findings on Adolescent Drug Use*. Ann Arbor, MI: Institute for Social Research, University of Michigan, February 2016.
- Karberg, J. C., and D. J. James. *Special Report, Substance Dependence, Abuse, and Treatment of Jail Inmates, 2002*. Bureau of Justice Statistics (BJS). Washington, DC: U.S. Department of Justice, Office of Justice Programs, 2002.
- KiDeuk K., M. Becker-Cohen, and M. Serakos. *Research Report: The Procession and Treatment of Mentally Ill Persons in the Criminal Justice System*. Washington, DC: Urban Institute, March 2015.
- Kilbourne, J. "Advertising Addiction: The Alcohol Industry's Hard Sell." *Multinational Monitor* (June 1989): 13–16.
- Kimble, J. "Everything You Need to Know About Marijuana Wax." Atlanta, GA: Complex Media Inc., 22 October 2013. Available <http://www.complex.com/pop-culture/2013/10/marijuana-wax-facts-info/>
- Kusnitz, M. "Drug Use Around the World." In *Encyclopedia of Psychoactive Drugs*, edited by S. Snyder. Series 2. New York: Chelsea House, 1988.
- Larson, S. L., J. Eyeman, M. S. Foster, and J. C. Gfroerer. *Worker Substance Use and Workplace Policies and Programs*. DHHS Publication No. SMA 07-4273, Analytic Series A-29. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies, 2007.
- Lawson, G. "The War Next Door: As Drug Cartels Battle the Government, Mexico Descends into Chaos." *Rolling Stone* 1065 (13 November 2008): 74–81, 108–111.
- Lenson, D. *On Drugs*. Minneapolis, MN: University of Minnesota Press, 1995.
- Levinthal, C. F. *Drugs, Behavior, and Modern Society*. Boston, MA: Allyn and Bacon, 1996.
- Luckerson, V. "Landline Phones Are Getting Closer to Extinction." *Time* (8 July 2014). Available <http://time.com/2966515/landline-phones-cell-phones/>
- McBride, D. C., and C. B. McCoy. "The Drugs–Crime Relationship: An Analytical Framework." In *Drugs, Crime, and Justice*, edited by L. K. Gaines and B. Kraska, 100–119. Prospect Heights, IL: Waveland Press, 2003.

- McShane, L. "Cops Are Crooks in N.Y.'s 30th Precinct." *Salt Lake Tribune* 238 (18 April 1994): A-5.
- Meth.IN.gov. "Statistics." 2015. Available <http://www.in.gov/meth/2330.htm>
- Methadone Centers. "What Is the Typical Methadone Clinic Cost?" 31 March 2016. Available <http://www.methadonecenters.com/typical-methadone-clinic-cost/>
- Millman, J. "It's True: Drug Companies Are Bombarding Your TV with More Ads Than Ever." *The Washington Post* (23 March 2015). Available <https://www.washingtonpost.com/news/wonk/wp/2015/03/23/yes-drug-companies-are-bombarding-your-tv-with-more-ads-than-ever/>
- Monroe, J. "What Is Addiction?" *Current Health* 2 (January 1996): 16–19.
- The Motley Fool*. "Did the CDC Just Save the Electronic Cigarette Industry?" 21 November 2015. Available <http://www.fool.com/investing/general/2015/11/21/did-the-cdc-just-save-the-electronic-cigarette-ind.aspx>
- Muir Wood. "Teen Adderall Abuse." Muir Wood Teen Boys & Girls Outpatient Program, 2016. Available <http://www.muirwoodteen.com/adderall-abuse/>
- Mumola, C. J., and J. C. Karberg. *Drug Use and Dependence, State and Federal Prisoners, 2004*. Washington, DC: U.S. Department of Justice, 19 January 2007: 1. Available <http://bjs.ojp.usdoj.gov/content/pub/pdf/dudsfp04.pdf>
- Nair, R. "Internet & Mobile Phone Users Worldwide 2015: 50% Populations on Internet [Report]." Dazeinfo, 27 May 2015. Available <http://dazeinfo.com/2015/05/27/internet-mobile-phone-users-worldwide-2000-2015-report/>
- Natarajan, N., A. Petteruti, N. Walsh, and J. Ziedenberg. "Substance Abuse Treatment and Public Safety (A Policy Brief)." Justice Policy Institute, January 2008. Available [http://www.justicepolicy.org/images/upload/08\\_01\\_REP\\_DrugTx\\_AC-PS.pdf](http://www.justicepolicy.org/images/upload/08_01_REP_DrugTx_AC-PS.pdf)
- National Association for Children of Alcoholics. *Children of Addicted Parents: Important Facts*. Rockville, MD: HopeNetworks, 2005. Available <http://www.hopenetworks.org/addiction/Children%20of%20Addicts.htm>
- National Council on Alcoholism and Drug Dependence, Inc. (NCADD). "Alcohol, Drugs and Crime." New York: National Council on Alcoholism and Drug Dependence, 27 June 2015.
- National Council on Alcoholism and Drug Dependence, Inc. (NCADD). "Drugs and Alcohol in the Workplace." New York: National Council on Alcoholism and Drug Dependence, Inc. 2016.
- National Institute of Justice (NIJ). *ADAM II, 2008 Annual Report*. Arrestee Drug Abuse Monitoring Program II (ADAM). U.S. Department of Justice (DOJ), Office of National Drug Control Policy. Washington, DC: U.S. Government Printing Office, 2009.
- National Institute on Drug Abuse (NIDA). *Prescription Medications*. Bethesda, MD: U.S. Government Printing Office, 2010.
- National Institute on Drug Abuse (NIDA). "Drug Facts: High School and Youth Trends." December 2014a. Available <https://www.drugabuse.gov/publications/drugfacts/high-school-youth-trends>
- National Institute on Drug Abuse (NIDA). "Popping Pills: Prescription Drug Abuse in America." 2014b. Available <https://www.drugabuse.gov/related-topics/trends-statistics/infographics/popping-pills-prescription-drug-abuse-in-america>
- National Institute on Drug Abuse (NIDA). "Drug Facts: Nationwide Trends." Bethesda, MD: National Institutes of Health, 2015.
- Nielsen. "More Than Half the Homes in the U.S. Have Three or More TVs." New York: The Nielsen Company, 2016. Available <http://www.nielsen.com/us/en/insights/news/2009/more-than-half-the-homes-in-us-have-three-or-more-tvs.html>
- Office of National Drug Control Policy (ONDCP). *Pulse Check: Trends in Drug Abuse*. Washington, DC: Executive Office of the President, Office of National Drug Control Policy, 2002.
- Office of National Drug Control Policy (ONDCP). *What America's Users Spend on Illegal Drugs, 2000–2006*. Washington, DC: Executive Office of the President, 2012.
- Office of National Drug Control Policy (ONDCP). *ADAM (Arrestee Drug Abuse Monitoring Program) II, 2012 Annual Report*. Washington, DC: Office of National Drug Control Policy, May 2013a. Available [http://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/adam\\_ii\\_2012\\_annual\\_rpt\\_final\\_final.pdf](http://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/adam_ii_2012_annual_rpt_final_final.pdf)
- Office of National Drug Control Policy (ONDCP). "Synthetic Drug (a.k.a. K2, Spice, Bath Salts, etc.)." 2013b. Available <http://www.whitehouse.gov/ondcp/ondcp-fact-sheets/synthetic-drugs-k2-spice-bath-salts>
- Office of National Drug Control Policy (ONDCP). *ADAM II: 2013 Annual Report Arrestee Drug Abuse Monitoring Program II*. Washington, DC: Executive Office of the President, January 2014. Available [https://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/adam\\_ii\\_2013\\_annual\\_report.pdf](https://www.whitehouse.gov/sites/default/files/ondcp/policy-and-research/adam_ii_2013_annual_report.pdf)
- Partnership at Drugfree.org. "Drug Guide: Bath Salts." 2013. Available <http://www.drugfree.org/drug-guide/bath-salts>
- Partnership for Drug-Free Kids. "National Study: Teen Misuse and Abuse of Prescription Drugs Up 33 Percent



- Since 2008.” New York: Partnership for Drug Free Kids, 2016.
- Partnership for Drug-Free Kids and MetLife Foundation. *The Partnership Attitude Tracking Study*. New York: Partnership for Drug-Free Kids, 2013. Available <http://www.drugfree.org/wp-content/uploads/2014/07/PATS-2013-FULL-REPORT.pdf>
- Pharmacy Times*. “Drug Spending Increases Dramatically in 8 Years.” 73 (July 2007): 2.
- Project Know. “15 of the Most Horrific Drinking and Driving Accidents.” 2016. Available <http://www.projectknow.com/15-of-the-most-horrific-drinking-and-driving-accidents/>
- Pyrillis, R. “Special Report: EAPs: Devoid of Data.” 5 June 2014. Available <http://www.workforce.com/articles/20497-eaps-devoid-of-data>
- Reynolds, G. S., and W. E. Lehman. “Levels of Substance Use and Willingness to Use the Employee Assistance Program.” *Journal of Behavioral Health Services and Research* 30 (2003): 238–248.
- Robert Wood Johnson Foundation. *Substance Abuse: The Nation’s Number One Health Problem*. Prepared by the Schneider Institute for Health Policy for the Robert Wood Johnson Foundation, Brandeis University. Princeton, NJ: Robert Wood Johnson Foundation, February 2001.
- Schecter, M. “Serotonergic-Dopaminergic Mediation of 3,4-Methylenedioxy-Methamphetamine (MDMA, Ecstasy).” *Pharmacology, Biochemistry and Behavior* 31 (1989): 817–824.
- Scott, C. “Americans Spend Billions on Vitamins and Herbs That Don’t Work.” Healthline News, 9 March 2015. Available <http://www.healthline.com/health-news/americans-spend-billions-on-vitamins-and-herbs-that-dont-work-031915>
- Sentencing Project. “Drug Policy News.” 5 February 2013. Available <http://www.sentencingproject.org/template/page.cfm?id=128>
- Spiller, H. A., M. L. Ryan, R. G. Weston, and J. Jansen. “Clinical Experience with and Analytical Confirmation of ‘Bath Salts’ and ‘Legal Highs’ (Synthetic Cathinones) in the United States.” *Clinical Toxicology* 49 (2011): 499–505.
- Steward, P., and G. Sitarmiah. “America’s Heartland Grapples with Rise of Dangerous Drug.” *Christian Science Monitor* (13 November 1997): 1, 18.
- Stobbe, M. “More U.S. Households Hanging Up Their Landline Phones.” Associated Press (8 July 2014). Available <http://www.dailyfinance.com/2014/07/08/more-us-households-dump-landline-telephones/>
- Stopthedrugwar.org. “Global: World Drug Trade Worth \$320 Billion Annually, UN Says.” 1 July 2005: 1–2. Available <http://stopthedrugwar.org/chronicle-old/393/320billion.shtml>
- Substance Abuse and Mental Health Services Administration (SAMHSA). *Results from the 2006 National Survey on Drug Use and Health: National Findings*. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2007.
- Substance Abuse and Mental Health Services Administration (SAMHSA). *Results from the 2011 National Survey on Drug Use and Health: Summary of National Findings*. NSDUH Series H-44, HHS Publication No. SMA 12-4713. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2012.
- Substance Abuse and Mental Health Services Administration (SAMHSA). “Spice, Bath Salts, and Behavioral Health.” *Advisory* 13 (2014a). Available <http://store.samhsa.gov/shin/content/SMA14-4858/SMA14-4858.pdf>
- Substance Abuse and Mental Health Services Administration (SAMHSA). *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*. NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014b.
- Substance Abuse and Mental Health Services Administration (SAMHSA). *The NSDUH Report: Workplace Policies and Programs Concerning Alcohol and Drug Use*. National Survey on Drug Use and Health, Rockville, MD, 7 August 2014c.
- Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies (OAS). *The Relationship Between Family Structure and Adolescent Substance Use*. Rockville, MD: U.S. Department of Health and Human Services, July 1996.
- Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies (OAS). *The National Survey on Drug Use and Health (NSDUH) Report. Worker Substance Use, by Industry Category*. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2007.
- Substance Abuse and Mental Health Services Administration (SAMHSA), Office of Applied Studies (OAS). *Results from the 2008 National Survey on Drug Use and Health: National Findings*. NSDUH Series H-36, DHHS Publication No. SMA 09-4435. Rockville, MD: Office of Applied Studies, 2009.
- Szasz, T. *Our Right to Drugs: The Case for a Free Market*. Westport, CT: Praeger, 1992.
- Thio, A. *Deviant Behavior*, 2nd ed. Boston: Houghton Mifflin, 1983: 332–333.
- Thio, A. *Deviant Behavior*, 4th ed. New York: Harper Collins College, 1995.
- Thio, A. *Deviant Behavior*, 6th ed. New York: Pearson Education, 2000.

- U.S. Department of Justice (USDOJ). "Total of All Meth Clandestine Laboratory Incidents Including Labs, Dumpsites, Chem/Glass/Equipment." 27 January 2013. Available [http://www.justice.gov/dea/resource-center/meth\\_lab\\_maps/2012.jpg](http://www.justice.gov/dea/resource-center/meth_lab_maps/2012.jpg)
- U.S. Department of Justice (USDOJ). "Multiple Defendants in synthetic Marijuana, Bath Salts Distribution Ring Sentenced." Western District of Tennessee: U.S. Attorney's Office, 29 January 2016. Available <https://www.justice.gov/usao-wdtn/pr/multiple-defendants-synthetic-marijuana-bath-salts-distribution-ring-sentenced>
- U.S. Department of Labor. *SHRM Survey Reveals Majority of HR Professionals' Organizations Drug Test*. Washington, DC: U.S. Government Printing Office, Department of Labor, 2009.
- U. S. Department of Labor. "Drug-Free Workplace Advisor: Workplace Testing." Washington, DC: U.S. Department of Labor, 2016.
- Vargas-Cooper, N. "Bathlands." *Spin* (July/August 2012): 58–64, 94.
- Venturelli, P. J. "Drugs in Schools: Myths and Reality." In *Annals of the American Academy of Political and Social Science*, edited by W. Hinkle and S. Henry, 567. Thousand Oaks, CA: Sage, 2000.
- Walter, S. "Holistic Health." In *Illustrated Encyclopedia of Body–Mind Disciplines*, edited by N. Alison, 1–2. New York: Rosen Publishing Group, 1999. Available <http://ahha.org/rosen.htm>
- Wire Services. "Cocaine Kingpin Escapes After Bloody Shootout." *Salt Lake Tribune* 244 (23 July 1992): A-1.
- Worldpress.org. "Mexico: Drug Cartels a Growing Threat." 2 November 2006. Available <http://www.worldpress.org/Americas/2549.cfm#down>