

EIGHTH EDITION

Drug Use and Abuse



Stephen A. Maisto | Mark Galizio | Gerard J. Connors

GLOSSARY OF DRUG SLANG

burned out	poor psychological functioning in someone who has taken drugs for too long	line	a measured amount of cocaine
buzz, flash, rush	euphoric reaction to a drug	mainline	an intravenous drug injection
chasing the dragon	inhaling the fumes of heroin and/or crack that has been melted over a flame	roached	under the influence of Rohypnol (roofies)
cold turkey	abrupt drug withdrawal	rolling	under the influence of MDMA (Ecstasy)
crash	the end of a drug experience	speedball	combination of heroin and cocaine or amphetamine
cut	to adulterate a drug	stoned	intoxicated
dabbing	smoking hash oil concentrates	tripping	hallucinating, usually associated with LSD or psilocybin
huffing	inhaling solvents such as glue	tweaking	prolonged drug use, usually meth
hook up, connect, score	make a drug purchase	vaping	using (inhaling the vapors from) electronic cigarettes
jones, jonesing	experiencing drug withdrawal	works, rig	equipment for injecting drugs
junkie	heroin addict		
k-hole	under the influence of ketamine, unable to move		

SLANG NAMES FOR DRUGS

2-CB (and related drugs)	nexus, bees	hash oil concentrates	dabs, crumble, wax, butter
amphetamines	addys, crank, crystal, dexies, ice, meth, speed	mescaline	buttons, mesc, peyote
cocaine	blow, C, coke, crack, freebase, girl, lady, rock, snow, white	MDMA	adam, E, Ecstasy, M&Ms, roll, X, XTC, jellies, beans
heroin	boy, China white, H, horse, junk, scag, smack	nitrous oxide	balloons, laughing gas, whippets
ketamine	special K	phencyclidine	angel dust, animal tranquilizer, lovely, PCP, sherm
LSD	acid, blotter, Lucy, sugar, sunshine, tabs, windowpane	psilocybin	shrooms, caps, fungus
marijuana	420, dagga, dank, doobie, ganja, grass, herb, kif, Mary Jane, pot, reefer, rope, spliff, sinsemilla, bud, skunk, etc.	salvinorin A	salvia, sage, Mexican mint
		synthetic cathinones	bath salts, meow, plant food
		synthetic THC	spice, K2

EIGHTH EDITION



Drug Use and Abuse

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Australia • Brazil • Mexico • Singapore • United Kingdom • United States

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To Joseph A. Maisto
S. A. M.

To Kate and Annie
M. G.

To Elyse and Guy
G. J. C.

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PREFACE

We began writing the first edition of this text in the late 1980s. At that time, drug use and related problems were of major interest and concern in the United States and in other countries. Awareness, interest, and concern about drug use have not abated since that time, nor has the need for a general undergraduate text to educate college students on the biological, psychological, and social factors that influence drug use and its effects. Therefore, we have completed this eighth edition, which retains many features of previous editions but also reflects changes that have occurred in this very dynamic area of study since the seventh edition was published in 2015.

As in all of the text's previous editions, the central theme of this edition is that a drug's effects are determined not only by its chemical structure and interaction in the body but also by drug users' biological and psychological characteristics and the setting in which they use the drug. This central theme is reflected in the inclusion of chapters on pharmacology and psychopharmacology, and is continued throughout the presentation of individual drugs or drug classes and in the discussion of prevention and treatment. The text examines the complexity of human drug consumption on biological, psychological, and social levels. Although the text is scholarly, it is understandable to students with little background in the biological, behavioral, or social sciences.

The text also retains a number of pedagogical features designed to increase students' interest and learning. **Diagnostic pretests** at the beginning of each chapter challenge students to test their knowledge of drugs while drawing their attention to important concepts or facts that follow in the chapter. Pretest answers and explanations at the end of each chapter provide an important review of the main concepts. The **margin glossary** helps students identify and define important terms within the text. **Margin quotes** help bring abstract concepts to life through personal accounts, comments, and quips about drug use and its ramifications. **Drugs and Culture boxes** explore variations in drug use and its consequences. They highlight the importance of differences in drug use that are associated with factors such as a person's sex, race, and ethnic background. Finally, **Contemporary Issue boxes** discuss current controversies involving drugs or drug use, as well as events related to such controversies.

New in This Edition

As mentioned earlier, drugs and drug use are popular and dynamic areas of study. For example, when the seventh edition was published in 2015, synthetic designer drugs like “Spice” and “bath salts” had recently emerged as international phenomena. These designer drugs are sold on the Internet, often legally. The eighth edition chronicles the impact of this drug trade, with a focus on the legal changes in the United States designed to address the problem (Synthetic Drug Abuse Prevention Act of 2012, Chapter 2) and reviews of the major drugs involved: synthetic cathinones or bath salts (Chapter 6), synthetic opiate drugs (Chapter 10), synthetic cannabinoids or Spice (Chapter 11), and phenethylamine hallucinogens (2C-B, Chapter 12).

Numerous other changes have occurred in the field since publication of the seventh edition. Each chapter of the eighth edition has been updated to represent findings from the latest research, as well as to reflect social and legal changes related to drugs. Among the many revisions, we present the latest survey data available at this writing on patterns of drug use in the United States and in other countries worldwide. Chapter 2, “Drug Use: Yesterday and Today,” includes new information on the voter and legislative approvals in multiple states to regulate, tax, and control marijuana use and distribution, updates on the continuing movement to legalize the use of marijuana for medical reasons, and new coverage on the synthetic opioid fentanyl being used alone or mixed with heroin.

Chapter 3, “Drugs and the Nervous System,” adds detail on how drugs affect neurotransmission processes.

Chapter 6, “Cocaine, Amphetamines, and Related Stimulants,” adds information on the changing trends in cocaine and methamphetamine use, as well as new information about synthetic cathinones (bath salts).

Chapter 7, “Nicotine,” has updated National Survey on Drug Use and Health (NSDUH) data on the epidemiology of nicotine use in the United States, along with an expanded and updated section on the treatment of nicotine addiction. The latter includes how the concept of precision medicine is influencing the pharmacological treatment of tobacco cigarette smoking. Chapter 7 also features updated material on the harm-reduction approach to cigarette smoking, including expanded discussion of products billed as “safer” alternatives to traditional cigarettes, such as the electronic cigarette and smokeless tobacco products.

Chapter 8, “Caffeine,” includes the latest data on caffeine effects, including a variety of apparent health benefits of coffee. Also included are new insights on the metabolism of caffeine, including the genetics of caffeine consumption. The chapter also features coverage of caffeine withdrawal as a clinical phenomenon. The latest information on the combined use of alcohol and caffeine is also provided.

Chapter 9, “Alcohol,” has new epidemiological data on alcohol consumption in the United States and around the world, as well as the health “benefits” of moderate alcohol consumption. Chapter 9 also contains updated data on the effects of a pregnant woman’s moderate alcohol use on the health of the fetus that she is carrying.

Chapter 10, “Opiates,” provides extensive new coverage of the dramatic increase in use of heroin, prescription opiates, and synthetic opiates. Two new sections are included on the events that led to the opiate epidemic and the current status and impact of the epidemic. The increase in opiate overdose deaths is chronicled and we add a new box on treating overdose with naloxone.

The chapter on marijuana (Chapter 11) includes the latest epidemiological data on marijuana use around the world, including use among youth. Chapter 11 also contains the latest information on the therapeutic uses of marijuana, on the relationship between cannabis use and various mental health outcomes, and on newer methods of consumption (such as vaping and dabbing).

Chapter 12 covers the exciting new research on psychological effects of hallucinogens, especially psilocybin and MDMA. New sections expand coverage of the therapeutic uses of hallucinogens like psilocybin for anxiety and depression, MDMA for post-traumatic stress disorder, and ketamine for depression. A new box discusses the potential and challenges for medical use of hallucinogens.

Chapter 13, “Psychotherapeutic Medications,” includes the most recent data on the nature and extent of mental illness in the United States. It also includes the latest information on newly prescribed psychotherapeutic medications, with discussion of their benefits and side effects. Chapter 13 also provides coverage of the use of

psychotherapeutic medications during pregnancy, which often has been a difficult and challenging issue for pregnant women and their physicians alike.

Chapter 14, “Other Prescription and Over-the-Counter Drugs,” adds coverage of the controversial plant compound “kratom” which has become popular in recent years.

Chapter 15, “Treatment of Substance Use Disorders,” includes a new Contemporary Issue Box on the use of telehealth (the use of technology, such as electronic medical records, smart phones, and web-based applications to support the delivery of health care, health-related education, and other health-related services and functions) in efforts to help patients sustain changes that they make in treatment, added discussion of the effectiveness of mutual help support groups such as Alcoholics Anonymous, and updated information on the integration of the Affordable Care Act in our discussion of economics and the stepped-care approach to substance use disorders treatment.

Chapter 16, “Prevention of Substance Abuse,” covers the latest trends in prevention interventions, including temperament-based programs that focus on traits, such as sensation-seeking and anxiety sensitivity, uniquely associated with risk for subsequent development of a drug-related problem. Updates on the broad array of negative consequences associated with problematic use of alcohol among college students, including deaths, assault, sexual abuse, and academic problems, are provided.

Accompanying the eighth edition are both new and expanded supplements that will help instructors with class preparation and help students by providing opportunities for review, including an Instructor’s Manual, Test Bank, Instructor PowerPoints, an online companion website, and MindTap. The Instructor’s Manual provides chapter outlines, learning objectives, key terms, glossary terms and definitions, and useful web links. The Instructor’s Manual follows the text chapter by chapter with organized material to aid in planning an effective, engaging course. To aid instructors in integrating technology into their classroom, the manual also includes a MindTap Integration Chart and Educator’s Guide, designed to highlight important activities and content found in MindTap.

The Test Bank is available in Cengage electronic format, an online system which allows instructors to author, edit, and manage test bank content from multiple Cengage solutions. Instructors may also easily create multiple test versions in an instant and deliver tests from a chosen Learning Management System (LMS), the classroom, or anywhere else internet access is available. The test bank features multiple choice, true/false, and essay questions. Questions are tagged to Bloom’s Taxonomy and to the associated text content.

Instructor PowerPoint presentations accompany each chapter. These slides address all major topics covered within the text in an easy-to-use and condensed format. Slides may be used to guide classroom presentations or conversations, as a classroom handout for student preparation, or as an additional student resource for chapter review. Instructors may customize the slides to best suit their course.

A student companion website offers text-specific review and enrichment materials, including tutorial quizzes, flashcards, and an online glossary. An instructor companion website features the instructor’s manual, PowerPoint lectures, and test bank materials.

The eighth edition also includes MindTap. MindTap®, a digital teaching and learning solution, helps students be more successful and confident in the course—and in their work with clients. MindTap guides students through the course by combining the complete textbook with interactive multimedia, activities, assessments, and learning tools. Readings and activities engage students in learning core concepts, practicing needed skills, reflecting on their attitudes and opinions, and applying what

they learn. Instructors can rearrange and add content to personalize their MindTap course, and easily track students' progress with real-time analytics. And, MindTap integrates seamlessly with any learning management system.

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Stephen A. Maisto
Mark Galizio
Gerard J. Connors



Drug Use and Abuse

Pharmacology and Drugs

- Drug Classification
- The Drug Experience

Alcohol and Drug Use in the United States

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- Multiple Drug Use
- International Comparisons of Drug Use
- Negative Consequences of Alcohol and Drug Use

Defining Harmful Drug Use

- Use of the *DSM*
- Drug Tolerance, Withdrawal, and Drug-Taking Behavior

Overview of the Text

Evaluating Websites

Summary

What Do You Think? True or False?

Answers are given at the end of the chapter.

- | | |
|---|--|
| <p>___ 1. Because the effects of drugs are both predictable and obvious, it is relatively easy to define drug abuse.</p> <p>___ 2. A drug's street name sometimes describes the actual effects of that drug.</p> <p>___ 3. A person's reaction to a drug depends mostly on the biological action of the drug in the body.</p> <p>___ 4. Because drug use is complicated, it is impossible to estimate patterns of drug use for the population of a whole country.</p> <p>___ 5. Within the United States, similar patterns of alcohol and other drug use are found even among different subgroups of the population.</p> <p>___ 6. The highest rates of alcohol and other drug use are found among 18- to 25-year-olds.</p> | <p>___ 7. A person's use of more than one drug at a time is of little concern because it happens so infrequently.</p> <p>___ 8. The total economic cost of alcohol and drug abuse in the United States is about \$1 billion annually.</p> <p>___ 9. The chemical action of alcohol and other drugs causes violence and crime.</p> <p>___ 10. Modern researchers rely on definitions of alcohol and other drug use that are free of social or cultural biases.</p> <p>___ 11. A diagnosis of drug use disorder is made when a person has become either physically or psychologically dependent on a drug.</p> <p>___ 12. Definitions of addiction emphasize overwhelming involvement with a drug.</p> <p>___ 13. The continued use of any drug will eventually lead to tolerance of and physical dependence on that drug.</p> |
|---|--|

Athletic	Legal	Religious
Biological	Medical	Social/cultural
Economic	Political	
Educational	Psychological	

Q: How are these 10 systems alike?

A: They influence or are influenced by alcohol and other drug use.

This one-question quiz shows that drugs¹ may affect us in many ways, whether or not we use them. Although what we see and hear in the media often focuses on the negative consequences of drug use, drugs are popular all over the world because people perceive that they benefit from using drugs. For example, on an *individual* level, people say that drugs make them feel more relaxed, socialize more easily, feel sexier, escape boredom, and feel more confident and assertive. Drugs have also helped to ease a lot of suffering in humans and other animals when used for specific medical purposes. On a *group* or *community* level, drugs have been used for thousands of years as part of social and religious rituals. Drugs are used for such purposes less for the effects of the drug's chemistry than for social or cultural reasons. One society may condone the use of a drug—say, alcohol in the United States and European

¹Sometimes in this text we use the phrase *alcohol and drugs*; at other times, we use *drugs* as the inclusive term. Because alcohol is a drug, saying "alcohol and drugs" is redundant. However, we do so on occasion, when it seems useful, to distinguish alcohol from all other drugs.

countries—whereas another society condemns it—such as the Islamic countries of Iran and Saudi Arabia. This complex picture of human drug use suggests that many different factors influence drug use.

What influences drug use and how that use affects us make up the subject of drugs and human behavior and are what this text is about. Because our subject matter is so wide-ranging, this introductory chapter spans a variety of topics. We include formal definitions throughout the chapter, beginning with terms such as *pharmacology*, *drug*, and *drug abuse*.

Introducing a lot of terms in one chapter might be confusing at first, but there is no need to feel that you have to grasp all the terms immediately. Because the terms will be used repeatedly throughout the book, you will have time to learn them. By introducing the terms now, we give you the vocabulary to read later chapters more easily.

In this chapter, we also explain the drug-classification systems used in this book and then move to a discussion of who uses drugs. The final sections of the chapter cover ways to define harmful drug use. The chapter closes with a brief overview of the rest of the text.

“Food is good. Poison is bad. Drugs may be good or bad, and whether they are seen as good or bad depends on who is looking at them.”

(Weil & Rosen, 1983, p. 10)

Pharmacology and Drugs

Humans have used drugs for several thousand years, but the scientific study of drugs is more recent. The scientific study of drugs is called **pharmacology**, which is concerned with all information about the effects of chemical substances (drugs) on living systems. Pharmacology is considered a part of biology and is allied with physiology and biochemistry (Blum, 1984). **Psychopharmacology** is an area within the field of pharmacology that focuses on the effects of drugs on behavior. Although *psychopharmacology* is a joining of the words *psychology* and *pharmacology*, it is now recognized that understanding how drugs affect human behavior requires knowledge about social and environmental factors as well. This book is about human psychopharmacology.

Drugs are easy enough to talk about, or so it seems from the numbers and variety of people who do so. However, defining *drug* is not so simple. Although they have run into confusion along the way, experts have arrived at a workable definition. According to a World Health Organization (WHO) report published in 1981, **drug** is defined in the broadest sense as “any chemical entity or mixture of entities, other than those required for the maintenance of normal health (like food), the administration of which alters biological function and possibly structure” (p. 227). This definition remains useful today (Advokat, Comaty, & Julien, 2014; United Nations Office on Drugs and Crime, 2003).

These fundamental definitions bring us to the questions: What is drug *use*, and what is drug *abuse*? We discuss these distinctions in more detail later in this chapter, but it is important for you to get an idea at the outset of what is called drug use and drug abuse. Abuse has been referred to in different ways when people write about drugs, and there is no generally accepted definition. In such circumstances, one way to define a term is by a consensus of experts. A study by Rinaldi et al. (1988) achieved such a consensus definition for a number of terms used in research and clinical work on alcohol and drugs. In the Rinaldi et al. study, the experts defined **drug abuse** as “any use of drugs that causes physical, psychological, legal, or social harm to the individual or to others affected by the drug user’s behavior.” Often the term “drug misuse” is used interchangeably with “drug abuse.”

pharmacology

The scientific study of drugs concerned with all information about the effects of drugs on living systems.

psychopharmacology

The subarea of pharmacology that concerns the effects of drugs on behavior.

psychology

The scientific study of behavior.

drug

Broadly defined as any chemical entity or mixture of entities not required for the maintenance of health but that alters biological function or structure when administered.

drug abuse

Any use of drugs that causes physical, psychological, legal, or social harm to the individual user or to others affected by the drug user’s behavior.

As you can see, the definition of abuse centers on the consequences of drug users' behavior, both to themselves and to others in their social environment. Our opening question on the 10 systems and drug use comes into sharper relief with this definition of abuse. The definition also illustrates the difficulties in defining abuse. A major problem is that the behavior that causes consequences in one community or culture may not cause them in another, or not to the same degree. Therefore, the goal to have a standard reference for drug abuse has proved elusive. Nevertheless, in writing and other forms of communication about alcohol and other drugs, the word *abuse* is used frequently, and thus efforts to arrive at a more generally applicable definition should continue. For now, however, our initial definition of abuse is sufficient for understanding what we say in the first part of this chapter.

If *abuse* is drug use with negative consequences, then drug *use* may be viewed as the larger category, with drug abuse as a subset. Drug consumption that does not meet the criteria for drug abuse is referred to as drug use.

Drug Classification

As the WHO panel of experts understood, their definition of *drug* is very broad. To make the definition useful for research and practical purposes, it is necessary to order the substances that fit the definition of drug into smaller categories. Pharmacologists have done this with their many systems for classifying drugs. These classification systems have been based on the primary properties of drugs to communicate a drug's nature and the ways it can be used. Following are some of the major ways of classifying drugs:

1. By origin. An example is drugs that come from plants, such as the opiates, which are derived from the opium poppy. The "pure" (nonsynthetic) opiates include compounds such as morphine and codeine. Heroin, which is a semisynthetic compound, is often called an opiate drug. Because this classification distinguishes only the source of the drug, a given drug class may include many drugs that have different chemical actions.
2. By therapeutic use, or according to similarity in how a drug is used to treat or modify something in the body. For example, with this system, amphetamines are called appetite-suppressant drugs. Note that the reasons some drugs are used can be much different from their therapeutic effects. Amphetamines are often used nonmedically because of their stimulant effects. Similarly, morphine may be used medically as a powerful painkiller, but street users most commonly take morphine for its euphoric effects.
3. By site of drug action, which pertains to where in the body the drug is causing physical changes. For example, alcohol is often called a depressant drug because of its depressant action on the central nervous system (CNS). Conversely, because of its CNS stimulant properties, cocaine is often called a stimulant drug. The utility of this system is limited when a drug affects several different body sites. One example is the CNS stimulant cocaine, which also has local anesthetic (pain-reducing) effects. Furthermore, drugs that differ widely in chemical structure or mechanisms of action may affect the same body site.
4. By chemical structure. For example, the barbiturates (such as phenobarbital, amobarbital, and secobarbital) are synthetic compounds derived from the chemical structure of barbituric acid, the synthetic compound that forms the chemical base for barbiturate drugs.

5. By mechanism of action, which means how a drug produces its **drug effects**. This is a good system in principle, and ongoing research in pharmacology is directed at specifying the mechanisms of action of an increasing number of drugs.
6. By street name, which comes from drug “subcultures” and the street drug market. For example, amphetamines are called “speed,” and drugs like the barbiturates or depressants such as methaqualone (Quaalude) are called “downers.” As these examples show, street names sometimes reflect actual drug effects (Brands, Sproule, & Marshman, 1998, pp. 11–13).

The topics of this text’s drug chapters (Chapters 6 through 14) were determined according to several different ways of classifying drugs. One of the ways to classify drugs, by their effects, applies to virtually all of the drugs covered in this text. We are most interested in **psychoactive** drugs—those that affect mood, thinking, and behavior. Some substances have been designated formally as psychoactive, such as alcohol, whereas others have not, such as aspirin. Psychoactive drugs are most important in this text because they are the ones that people are most likely to use, sometimes in ways that create serious problems for them. This text mainly concerns the nonmedical use of psychoactive drugs, but we also discuss medical uses.

The Drug Experience

As we said earlier, people like many of the experiences they have when they take drugs. This raises an important question: What causes the “drug experience”? The drug’s chemical action is part of the answer, but how much? Not too long ago, the chemical actions of drugs were viewed as the primary reason people experienced certain changes when they took different drugs. However, research from different disciplines, such as pharmacology, psychology, and sociology, has shown that the drug experience is a product of more factors than just the drug’s pharmacological action.

Generally, we can look at three sets of factors, one pharmacological and two non-pharmacological. The first set includes *pharmacological factors*, and three of them stand out. First are the chemical properties and action on the body of the drug used. Another is **drug dosage** (or dose), which is the measure of how much of the drug is consumed. The third pharmacological factor is the **route of drug administration**, or the way the drug enters the body. This is important because the route affects how much of a dosage reaches its site(s) of action and how quickly it gets there. Chapter 4 discusses in detail major routes of drug administration and their effects on the drug experience.

The second set of factors is nonpharmacological and consists of the *characteristics of the drug user*. Included are such factors as the person’s genetic makeup (biologically inherited differences among people govern their bodies’ reaction to the ingestion of different drugs), gender, age, drug tolerance, and personality. An important part of personality is the person’s **psychological set** about a drug, which refers to knowledge, attitudes, expectations, and thoughts about a drug. For example, sometimes the strong belief that a drug will produce a certain effect will be enough to produce the effect, even though the person has ingested a chemically inactive substance (**placebo**).

The third and last set of factors, also a nonpharmacological one, is the *setting in which a drug is used*. The factors in this group span a wide range and include laws pertaining to drug use in the community where the drug is taken, the immediate physical environment where the drug is used, and whether other people are present at the time of drug use.

drug effects

The action of a drug on the body. Drug effects are measured in different ways.

“I don’t do drugs. I am drugs.”

Salvador Dali

psychoactive

Pertaining to effects on mood, thinking, and behavior.

drug dosage

Measure of the quantity of drug consumed.

route of drug administration

The way that drugs enter the body.

psychological set

An individual’s knowledge, attitudes, expectations, and other thoughts about an object or event, such as a drug.

placebo

In pharmacology, a chemically inactive substance.

Together, these three sets of factors influence what people experience when they take a drug. You may have guessed that the path to a drug experience is not always easy to chart. However, many people are trying to do just that—to understand how drugs affect people. The accumulated knowledge from these efforts is the foundation of this book.

Alcohol and Drug Use in the United States

The way the popular media tell it, it may seem as if virtually everyone has positive experiences using drugs because everyone seems to be using them. However, scientists learned long ago that our impressions or feelings about a subject often are inaccurate, and to find out what is really going on, it is best to study the subject systematically. This means using the scientific method, which is the major way we have learned as much as we do know about drugs. One of the best ways to answer questions about the uses of alcohol and drugs in a community or larger region is to do a survey study. When we want to learn about a whole country, we do what is called a national survey study.

In the United States, national survey studies of alcohol and drug use have involved interviewing a sample of individuals (in this case, age 12 or older) across the country. Such studies generally ensure that those interviewed are as similar as possible to the U.S. population as a whole—regarding, for example, factors such as gender, age, race, region of the country, and rural versus urban living environments. The national survey data give us the best estimate we have of what the findings would be if we studied every person in the population aged 12 and older. In the United States, that means about 255 million people.

The U.S. federal government goes to great trouble and expense to support these national surveys of drug use, because the knowledge gained from them is extremely valuable in making legal, tax, educational, and health policy decisions. More narrowly, we are interested in the information from national surveys for this text because many

“I could have easily gotten stoned [before coming to this interview]; it wouldn’t have bothered me. It depends on the situation. I wouldn’t like to smoke [marijuana] in the middle of the day if I have things to do. Or I wouldn’t smoke in the middle of a class. Things like that.”

Research participant
(Zinberg, 1984, p. 140)



Dmitry Shironosov/Alamy stock photo



Thomas Baker/Alamy stock photo

People use drugs in a variety of situations and experience different reactions to them.

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U.S. Society and Drug Use

Learning about alcohol and drug use in the United States is important. One reason is the sheer number of people in the United States who use alcohol or other drugs. Another reason is the negative consequences associated with alcohol and drug use, which are discussed later in more detail. A third reason is the amount of controversy that drugs, especially illicit drugs, create. Despite the prevalence of drug use among U.S. citizens, popular opinion in the country has been to eradicate illicit drug use, at times ranking such use among the nation's top problems. Indeed, a 2007 survey conducted by the University of Michigan involved collection of data on adults' perceptions of the main problems threatening children's and adolescents' well-being, and "drug abuse" was number 2 in the top 10. (Interestingly, smoking tobacco and alcohol abuse were numbers 1 and 4, respectively.) Think of some of the major headline events that have occurred and the controversies they have generated in the last few years. Some of them touch upon the basic constitutional rights of Americans:

- The right of the federal government and other public and private employers to conduct urine

screens (tests for drug taking) of employees as a way to control drug abuse in the workplace

- The question of whether intravenous drug users should be supplied with clean syringes free of charge as a way of preventing the spread of human immunodeficiency virus (HIV) infection
- The continuing debate on whether marijuana should be available as a prescription drug, and, more recently, whether it should be legally available to adults for recreational purposes
- Some proposed legal penalties related to selling or using drugs—the requirement of life sentences for drug dealers who are convicted twice of selling drugs to teenagers and the imposition of the death penalty for dealers when a murder occurs during a drug deal

Many Americans use alcohol or other drugs. However, the country's attitudes toward such use, especially regarding illicit drugs, are far from permissive. Society's proposed and actual solutions to drug use in the United States have far-reaching legal, social, and financial implications. Which stand out to you?

people do not know the typical patterns of drug use among Americans. For example, the popular media expose us primarily to extreme cases of use and problems associated with it. The national survey data on alcohol and drug use give us a more balanced reference for understanding any one person's or group's use. In the same way, our brief review of national survey data in this chapter will help you understand drug use patterns and related problems that we write about in later chapters of this book.

National Household Survey

To provide you with an overview of current alcohol and drug use, we used a national survey that is conducted annually by the Office of Applied Studies within the Substance Abuse and Mental Health Services Administration. The National Survey on Drug Use and Health (NSDUH) includes households in all 50 U.S. states and the District of Columbia. In this section, we refer to findings from the 2015 survey (Center for Behavioral Health Statistics and Quality, 2016).

This survey included individuals 12 years of age or older. Personal and self-administered interviews were completed with 68,073 respondents. As it was a household survey, people such as military personnel in military installations, individuals in long-term hospitals, and prisoners were excluded from the sample. As a result, the data cannot be viewed as completely representative of everyone in the 50 states. Nevertheless, the NSDUH provides the best single description of frequency and quantity of drug use among a broad age range of people in U.S. society.

prevalence

The general occurrence of an event, usually expressed in terms of percentage of some population. Another common statistic in survey studies is *incidence*, or the number of first-time occurrences of an event during some time period.

In the 2015 NSDUH, a variety of data about drug use in the United States were collected. We first discuss data on the overall **prevalence** of use in the last year and the last month respectively for different drugs, including alcohol and tobacco cigarettes. In this case, “use” means the person used the reference drug at least once during the time in question; “past month” and “past year” are from the time the respondents give information about their drug use. We also offer counterpart prevalence data from the 2014 survey when they are available to allow for comparison with the 2015 data. Table 1.1 presents this first set of percentages. Several findings stand out in Table 1.1. First, alcohol leads the use list, followed by cigarettes in a distant second place. Marijuana heads the list of illicit drug use (drug use not in accordance with legal restrictions). Note that, although it now is legal in several U.S. states to use marijuana, in the 2015 NSDUH marijuana was defined as an illicit drug. The rank order of prevalence of use among alcohol, tobacco cigarettes, and marijuana holds for use both in the past year and in the past month.

Table 1.1 gives you an overall picture of drug use, but as we noted before, drug use differs with characteristics of people. Tables 1.2 and 1.3 give you an initial look at some of the characteristics that are highly associated with drug use differences. Table 1.2 centers on age differences in drug use in the past year and month, as reported in the 2015 national survey. As you can see in Table 1.2, individuals in the age range 18–25 have the most prevalent substance use. Over three of every four of these respondents said they used alcohol in the last year, and over one of every three of them reported at least one occasion of illicit drug use in the past year. In Table 1.3, we provide 2015 substance use data for the past month according to ethnic or racial group and gender. The most striking findings in Table 1.3 are the gender differences. Men were almost one and two-thirds times as likely as women to report any illicit drug use in the past month, and about 20% more likely than women to report any alcohol use. For ethnic or racial differences, whites showed the highest rate of alcohol use in the last month, followed by Hispanics and blacks, who did not differ by much. For use of any illicit drug in the last month, Hispanics showed the highest prevalence, followed by whites and blacks.

TABLE 1.1 Percentages of Individuals Aged 12 and Older Who Reported Use of Drugs for the Past Year and Past Month, 2014 and 2015

Drug	Past Year		Past Month	
	2014	2015	2014	2015
Marijuana	13.2	13.5	8.4	8.3
Cocaine	1.7	1.8	0.6	0.7
Inhalants	N/A	1.0	N/A	0.2
Hallucinogens	N/A	1.8	N/A	0.5
Heroin	0.3	0.3	0.2	0.1
Nonmedical use of any psychotherapeutic	N/A	7.1	N/A	2.4
Alcohol	66.6	65.7	52.7	51.7
Cigarettes	24.8	23.1	20.8	19.4

Note: Psychotherapeutic drugs include any prescription-type stimulant, sedative, tranquilizer, or analgesic. They do not include over-the-counter drugs. “Use” means used at least one time. N/A = due to change in 2015 survey design, data not available.

Source: Center for Behavioral Health Statistics and Quality (2016).

TABLE 1.2 Percentages of Individuals in Different Age Groups Who Reported Use of Drugs for the Past Year and Past Month, 2015

Drug	Past Year			Past Month		
	12–17	18–25	≥26	12–17	18–25	≥26
Any illicit drug	17.5	37.5	14.6	8.8	22.3	8.2
Alcohol	22.7	75.5	69.2	9.6	58.3	55.6
Cigarettes	8.1	35.0	22.9	4.2	26.7	20.0

Note: Any illicit drug use includes the nonmedical use of psychotherapeutics or the use of marijuana, cocaine (including crack), inhalants, hallucinogens, heroin, or methamphetamine.

Source: Center for Behavioral Health Statistics and Quality (2016).

TABLE 1.3 Percentages of Individuals Aged 12 and Older of Different Ethnic and Gender Groups Who Reported Any Illicit Drug or Alcohol Use in the Past Month, 2015

	Any Illicit Drug	Alcohol
Ethnic/Racial Group		
White	8.9	57.0
Black	8.8	43.8
Hispanic	9.2	42.4
Gender		
Male	12.9	56.2
Female	7.8	47.4

Note: Any illicit drug use includes the nonmedical use of psychotherapeutics or the use of marijuana, cocaine (including crack), inhalants, hallucinogens, heroin, or methamphetamine.

Source: Center for Behavioral Health Statistics and Quality (2016).

Summary of Survey Data

The NSDUH data suggest that people in the United States use a variety of drugs, and that some drugs are used far more commonly than others. For example, alcohol and nicotine use are considerably more prevalent than the use of any illicit drug. Furthermore, characteristics of the respondents can make a considerable difference in the prevalence of substance use, as we saw for age, gender, and ethnic or racial groups in the 2015 data.

Multiple Drug Use

The person who is counted in the percentage of, say, marijuana users in a survey sample may be the same person who increases the percentage of alcohol users. Such multiple drug use (also called **polydrug use**) is extremely important because of the effects that drug combinations have on the body. We explore those effects in detail in Chapter 4. For now, it is important for you to know that polydrug use is a critical health and social problem.

Using multiple substances on one occasion is not uncommon. For example, according to the 2015 NSDUH data, 6.4% of past-month alcohol users used

polydrug use
A person's regular use of more than one drug.