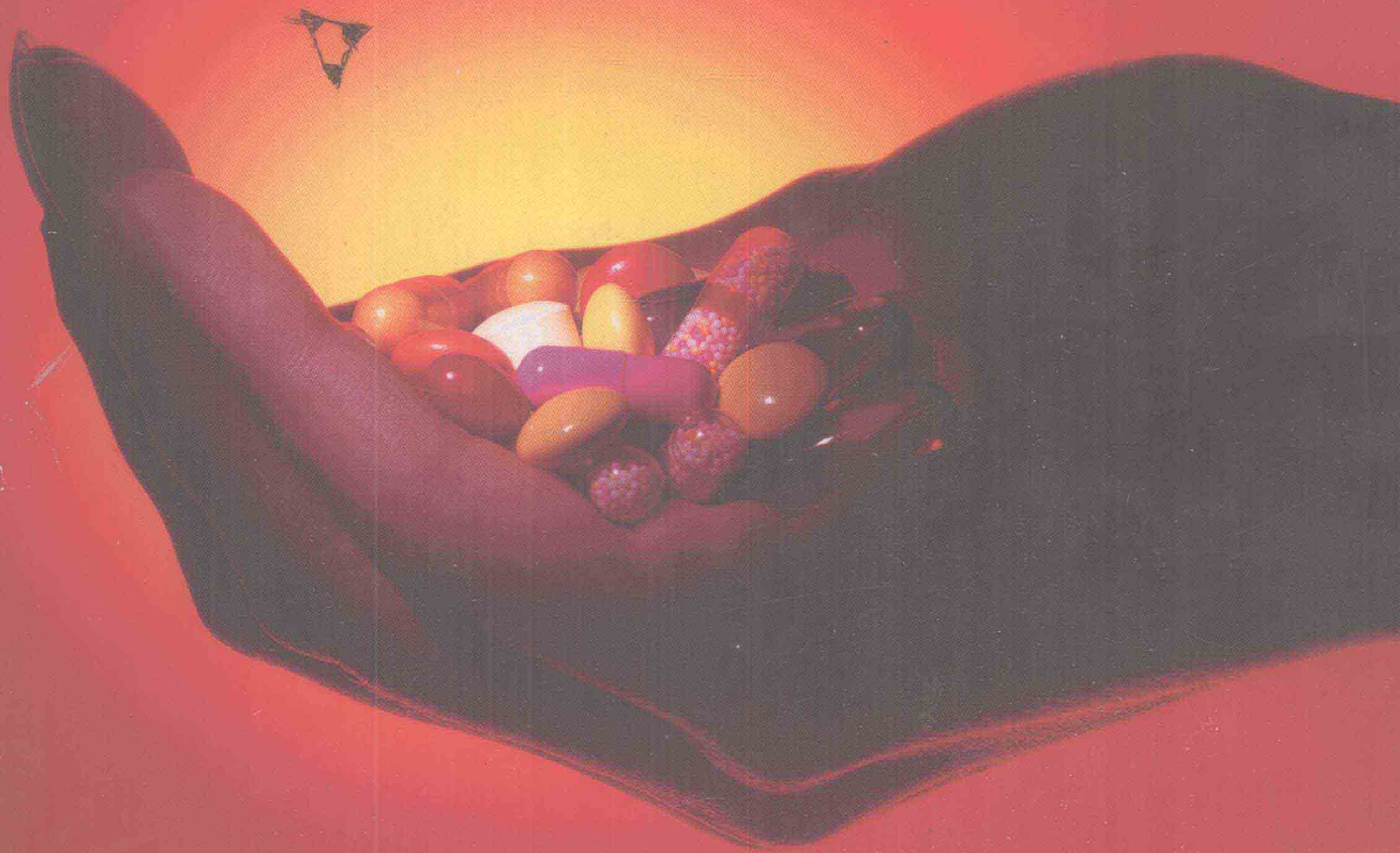


THIRD EDITION

DRUGS

ACROSS THE SPECTRUM



RAYMOND GOLDBERG

Drugs Across the Spectrum

Senior Editor: Ruth A. Horton
Editorial Assistant: Dona Mendoza
Production Service: Joanne R. Saliger, Ash Street
Typecrafters, Inc.

Copy Editor: Carolyn Acheson
Illustrator: Elaine J. McFarlane
Cover Designer: Bob Schram, Bookends, Inc.

COPYRIGHT © 2000 Wadsworth, a division of
Thomson Learning, Inc. Thomson Learning™ is a
trademark used herein under license.

ALL RIGHTS RESERVED. No part of this work
covered by the copyright hereon may be reproduced
or used in any form or by any means graphic, elec-
tronic, or mechanical, including photocopying,
recording, taping, Web distribution, or information
storage and retrieval systems without the written
permission of the publisher.

Printed in the United States of America
1 2 3 4 5 6 7 03 02 01 00

For permission to use material from this text,
contact us by **Web:** <http://www.thomsonrights.com>
Fax: 1-800-730-2215 **Phone:** 1-800-730-2214

ISBN 0-534-57412-2

For more information, contact
Wadsworth/Thomson Learning
10 Davis Drive
Belmont, CA 94002-3098
USA
<http://www.wadsworth.com>

International Headquarters
Thomson Learning
International Division
290 Harbor Drive, 2nd Floor
Stamford, CT 06902-7477
USA

UK/Europe/Middle East/South Africa
Thomson Learning
Berkshire House
168-173 High Holborn
London WC1V 7AA
United Kingdom

Asia
Thomson Learning
60 Albert Street, #15-01
Albert Complex
Singapore 189969

Canada
Nelson Thomson Learning
1120 Birchmount Road
Toronto, Ontario M1K 5G4
Canada

Preface

CONTENT AND ORGANIZATION

Mind-altering substances have had a profound effect on society ever since humans first roamed the planet. This book, I hope, will impart an understanding of drugs and their impact on individuals, families, communities, and society.

Organization

Drugs Across the Spectrum is divided into three distinct sections. The first reviews drugs from an historical perspective, motivations for drug use, social implications of drug use, legal ramifications, and factors affecting how drugs interact with the human body. The second section focuses on specific categories of drugs, exploring their psychological and physiological effects. The last part critically examines various modes of drug treatment, the effectiveness of treatment, and the impact of prevention and education in addressing problems caused by drug use, misuse, and abuse.

In addition to providing a thorough review of illicit drugs, much attention is directed to licit, or legal drugs. This is pertinent because drugs such as tobacco and alcohol account for far more deaths and disabilities than illicit drugs. Millions of people use prescribed and over-the-counter drugs that are potentially harmful. Performance-enhancing drugs such as anabolic steroids are included as well, because of their increased use in the last several years.

FEATURES

Drugs Across the Spectrum has features that other books dealing with drugs typically do not. Each feature is intended to make the information and concepts in the book applicable, relevant, and interesting to the reader. Rather than being abstract concepts, issues that warrant personal reflection. Many people face decisions about their own drug use or drug use by others. No one is immune to the effects of drugs. Anyone who contemplates using drugs or who teaches others about drugs should be aware of the potential effects of drug use upon themselves, their families, their communities, and society. Every individual is responsible for being informed about the personal and social effects of drugs. Knowledge and information are the cornerstones of making informed, responsible, and rational decisions.

New and Enhanced Features of the Third Edition.

New 8 ½ X 11 Full Color Format

Some of the contemporary issues to this edition are:

- Drug abuse by older adults
- Alcohol and women
- Underage drinking
- Human growth hormones
- Creatine and androstenedione
- Cigar smoking

- Medicinal use of marijuana
 - Harm-reduction strategies
 - Mandatory minimum drug sentencing
 - Ketamine (Special K)
 - New drug prevention programs
-
- Each chapter highlights important issues and pertinent information that promotes *critical thinking* and stimulates discussion.
 - *Learning objectives* are at the beginning of each chapter to put the chapter's content into a meaningful framework.
 - At the conclusion of each chapter is an *activity* to promote class discussion.
 - True and False questions appear at the end of each chapter as *self-tests*.
 - Brief *summaries* capsule the information contained in each chapter.
 - Throughout the text, *Key Terms* are highlighted and defined to clarify the content and give the student easy access to the meanings of vocabulary essential to their understanding.
 - Data is incorporated to support the textual presentation through *illustrative tables* and *figures* from the most current sources available.
 - The judicious use of *photographs* illustrates important information.
 - At the end of the text is an updated *Glossary* of the important terminology used in the book, along with a concise, clear definition for each term.
 - *World Wide Web sites*, with annotations, at the end of each chapter direct the reader to further, specific information related to the chapter topic. These entries are current and have been verified for authenticity.

ANCILLARIES

To assist the instructor in presenting the course in an interesting and comprehensive way, the following ancillaries are provided without charge to qualified adopters.

- Instructor Manual
 - Detailed outline of the text
 - Test Questions
- Microtest, a Computerized Testbank
 - More than 1100 multiple-choice, true/false, matching and essay questions.
 - Capability to add or edit test questions in any format.
 - Can add explanations for why a question is true/false, correct, or incorrect.
 - Ability to save and recall previously generated test to create a new version of the test, as the multiple-choice answers will rotate each time a test is printed.
- Available in Windows.

ACKNOWLEDGMENTS

This book has benefited from the assistance of many people. Those who were most instrumental in seeing the project come to fruition include Doug Morton, Publisher; Ruth Horton, Project Editor; Dona Mendoza, Assistant Project Editor, and Joanne Saliger and the staff at Ash Street Typecrafters. Their expertise and support throughout this endeavor are greatly appreciated.

I also would like to thank Kerry Redican for his thorough work on the *Instructor's Manual*. Last, I would like to thank my wife Norma and daughters Tara and Greta for their continuing love and support.

Contents

I An Overall Perspective

1 Drugs in Perspective

Definitions	4
Drug Misuse	4
Drug Abuse	5
The Prevalence of Drug Use	5
The Impact of Drug Use and Abuse	6
An Historical Perspective of Drug Use	8
Alcohol	8
Marijuana	10
Narcotics	11
Coffee	13
Cocaine	13
Amphetamines	14
Sedative-Hypnotic Drugs	14
Hallucinogens	16
Tobacco	17
Summary	19

2 Drugs in Contemporary Society

Drugs From a Social Perspective	26
Patterns of Drug Taking	26
Extent of Drug Use	28
Drug Abuse By Older Adults	31
Drugs in the Workplace	33
Employee Assistance Programs (EAP)	33
Drug Testing	34
Consequences of Drug Use	36
Drugs and the Family	37
Drugs and Deviant Behavior	37
Drugs, Education, and Employment	38
Drug Toxicity	39
Drug Abuse Warning Network (DAWN)	39
Designer Drugs	41
Fentanyl	41
Meperidine	41
Look-alike and Sound-alike Drugs	42
The Drug Business	42
Summary	44

3 Motivations for Drug Use

Reasons for Drug Use	51
Experimentation	52
Pleasure/Escape From Boredom	52
Peer Influence	52
Spiritual Purposes	53

3

25

51

Self-Discovery	54
Social Interaction	54
Rebelliousness	54
Drug Dependency Versus Drug Addiction	55
Theories of Drug Addiction	57
Personality Theories	57
Reinforcement Theory	58
Biological Theories	58
Social Theories	59
Mass Media and Drugs	59
Advertisements	59
Billboards	61
Television	61
Music	61
Celebrities	62
Ergogenic Aids	62
Anabolic Steroids	63
Human Growth Hormones and Erythropoietin	64
Creatine	64
Androstenedione	64
Stimulants	65
Depressants	66
Sexual Performance	66
Summary	67

4 Drugs and the Law

Whiskey Rebellion	73
Significant Laws	74
Pure Food and Drug Act of 1906	74
Harrison Act of 1914	75
Marijuana Tax Act of 1937	76
Food, Drug, and Cosmetic Act of 1938	77
Kefauver-Harris Amendments	78
Comprehensive Drug Abuse Prevention and Control Act of 1970	78
Anti-Drug Abuse Act	79
Legal Issues	81
Drug Paraphernalia	81
The War on Drugs	81
Legalization	82
Drug Enforcement	85
Prevention	87
Racism and Drug Enforcement	88
Mandatory Minimum Drug Sentencing	89
Summary	90

73

5 The Pharmacology and Physiology of Drug Use 95

Pharmacology	95
Drug Actions	96
The Neuron	96
Neurotransmitters	97
Acetylcholine	98
Serotonin	98
Gamma-aminobutyric Acid (GABA)	99
Catecholamines	99
Peptides	100
The Central Nervous System (CNS)	100
Reticular Activating System	100
Hypothalamus	101
Cerebral Cortex	102
Limbic System	102
Medial Forebrain Bundle	102
Basal Ganglia	102
Periventricular System	103
Brain Stem	103
The Peripheral Nervous System (PNS)	103
Somatic Nervous System	104
Autonomic Nervous System	104
Drugs and Major Body Systems	104
Endocrine System	104
Cardiovascular System	105
Respiratory System	105
Gastrointestinal System	105
Factors Influencing the Effects of Drugs	106
Age	106
Gender	106
Dosage	107
Purity and Potency	107
Drug Interactions	108
Tolerance	109
Set and Setting	110
Methods of Administration	110
Oral Ingestion	110
Injection	111
Topical Application	112
Inhalation	112
Summary	112

II Categories of Drugs

6 Alcohol 119

History of Alcohol Use in the United States	120
Colonial Times	120
Temperance Movement	120
Prohibition	122
Current Alcohol Use	123
Alcoholic Beverages	125
Pharmacology of Alcohol	126
Effects of Alcohol	127
Alcohol and the Brain	127
Alcohol and the Liver	128
Alcohol and the Gastrointestinal Tract	129
Alcohol and the Cardiovascular System	129
Alcohol and the Immune System	130
Alcohol and Cancer	130

Alcohol and Women	130
Fetal Alcohol Syndrome	130
Alcohol-Related Issues	131
Underage Drinking	131
Problem Drinking	132
Alcoholism	132
Withdrawal	133
Causes of Alcoholism	133
Genetics	133
Psychosocial Factors	134
Culture	135
Alcohol and Society	135
Automobile Accidents	135
Accidents	136
Suicide	137
Family Violence	137
Children of Alcoholics	137
Summary	138

7 Narcotics 145

Extent of Narcotic Use	147
Use in the United States	147
Worldwide Comparison	149
Characteristics of Narcotics	149
Opium	149
Morphine	150
Heroin	150
Synthetic Opiates	150
Physical and Psychological Effects	151
Physical Effects	152
Emotional and Social Effects	153
Needle-Exchange Programs (NEP)	154
Dependency	155
Toxicity	156
Medical Benefits	156
Analgesia	156
Gastrointestinal Difficulties	156
Cough Suppressant	156
Treatment and Support Groups	157
Detoxification	157
Narcotic Antagonists	157
Methadone and Other Treatments	158
Narcotics Anonymous	159
Summary	159

8 Sedative-Hypnotic Drugs 165

Barbiturates	165
Types of Barbiturates	166
Effects of Barbiturates	166
Potential Hazards	167
Medical Uses	167
Nonbarbiturate Sedatives	168
Chloral Hydrate	168
Paraldehyde	168
Bromides	168
Meprobamate	168
Methaqualone	169
Misconceptions	169
Effects	169
Minor Tranquilizers	170
Benzodiazepines	170

“Date-Rape” Drug	171
Inhalants	172
Glue and Other Solvents	173
Anesthetic Inhalants	173
Nitrite Inhalants	174
Summary	174

9 Psychotherapeutic Drugs 179

Understanding Mental Illness	179
Mental Illness and Medicine	180
Types of Disorders	180
Treatment of Mental Illness Prior to 1950	181
Demographics of Drugs and Mental Disorders	181
Antidepressants	182
Monoamine Oxidase Inhibitors	182
Tricyclic Antidepressants	183
Prozac	184
Zoloft	185
Lithium	185
Effectiveness	185
Side Effects	186
Toxicity	186
Antipsychotic Drugs	186
Effectiveness	187
Side Effects	187
Summary	188

10 Stimulants: Cocaine, Amphetamines, and Caffeine 193

Cocaine	193
Background	193
Properties	194
Mode of Intake	195
Historical Use	195
Crack	198
Cocaine and the Media	198
Effects	199
Dependence	200
Death From Cocaine	201
Cocaine and Pregnancy	201
Amphetamines	202
Early Applications	202
Pharmacology	202
The Amphetamine Trade	203
Consequences of Amphetamine Use	203
Methamphetamines	204
Methcathinone	206
Ritalin	206
Caffeine	207
Pharmacology	207
Properties and Risks	208
Effects of Caffeine	208
Decaffeinated Coffee	208
Caffeinism	209
Summary	209

11 Tobacco 213

History of Tobacco Use	214
Tobacco in the U. S. Colonies	214

Mechanization and Marketing	214
Opposition and Escalation	215
Costs of Smoking	215
Extent of Tobacco Use	215
Demographics of Smoking	216
Smokeless Tobacco	216
Tobacco Use in Other Countries	217
Clove Cigarettes	218
Cigars	218
Characteristics of Smoking and Smokers	218
Nicotine and Performance	219
Tobacco Use by Young People	219
Nicotine Tolerance and Dependence	221
Symptoms of Withdrawal	221
Pharmacology of Tobacco	222
Physical Effects on the Individual	222
Heart Disease and Strokes	223
Respiratory Diseases	224
Cancer	224
Tobacco and Pregnancy	224
Tobacco and Physical Activity	224
Passive Smoke	225
Effects on Nonsmokers	226
Effects on Children of Smokers	226
Rights of Smokers Versus Nonsmokers	226
Anti-Smoking Legislation	226
Liability and Tobacco-Related Illnesses	227
Cessation Techniques	228
Nicotine Gum	228
Nicotine Patches	229
Nicotine Inhalers	229
Drug Therapy	229
Aversive Techniques	229
Behavior Modification	229
Hypnosis	230
Acupuncture	230
Summary	230

12 Marijuana 237

Characteristics	237
Species of Marijuana	238
Points of Origin	239
Extent of Use	239
Pharmacology of Marijuana	240
Absorption	240
Tolerance	241
Physical Dependence	241
Psychological Dependence	242
Effects of Marijuana Use	242
Psychological Effects	242
Perceptual Effects	242
Cognitive Effects	243
Amotivational Syndrome	243
Physical Effects	243
Medical Applications	245
Glaucoma	245
Nausea and Vomiting	245
Asthma	245
Additional Medical Uses	246
Decriminalization and Legalization	246
Medical Uses of Marijuana	247

Cost	247
Crime and Violence	248
Summary	248

13 Hallucinogens 253

Terminology	253
The Origin of Hallucinogens	254
The Search for Hallucinogens	254
Amanita Muscaria	254
Saint Anthony's Fire	254
The U. S. Experience	255
LSD and Mental Health	255
LSD and Creativity	256
LSD and Government Experiments	256
LSD and the U. S. Culture	257
Review of Major Hallucinogens	257
LSD	257
Peyote	259
Psilocybin	260
Anticholinergic Hallucinogens	261
Belladonna	261
Datura	261
Mandrake	262
Nutmeg and Mace	262
Dimethyltryptamine (DMT)	262
Phencyclidine (PCP)	263
Ketamine	264
Summary	264

14 Over-the-Counter Drugs 269

Over-the-Counter Drug Market	269
Regulating Over-the-Counter Drugs	270
Categories of Over-the-Counter Drugs	270
Analgesics	270
Aspirin	271
Acetaminophen	272
Ibuprofen	273
Naproxen Sodium and Ketoprofen	274
Cold and Allergy Drugs	274
Antihistamines	274
Cough Medicines	275
Decongestants	275
Antacids	276
Sodium Bicarbonate	276
Calcium Carbonate	276
Salts of Magnesium and Aluminum	276
Sleep Aids and Sedatives	277
OTC Stimulants	277
Weight-Loss Aids	277
Starch Blockers	278
Phenylpropanolamine	278
Benzocaine	278
Being a Smart Consumer	278
Summary	279

III Treatment and Prevention

15 Substance Abuse Treatment 285

Underlying Causes of Drug Abuse	285
Benefits of Treatment	286
Profile of the Drug Abuser	287

History of Treatment	288
Treatment Issues	289
Voluntary Versus Compulsory Treatment	289
Matching Patients and Treatments	289
Treating Adolescent Drug Abusers	289
Women and Treatment	289
Problems Associated With Treatment	290
Client Resistance to Treatment	290
Community Resistance	290
Continuing Drug Use	290
Relapse	291
Personnel Recruitment and Retention	292
Treatment Programs	292
Methadone Maintenance	292
Therapeutic Communities	293
Outpatient Treatment	294
Inpatient Treatment	294
Self-Help Groups	294
Alcohol Treatment	295
Alcoholics Anonymous	296
Moderate Drinking	298
Disulfiram (Antabuse)	299
Naltrexone	299
Summary	299

16 Drug Prevention and Education 307

Funding Drug Prevention	307
Changes in Drug Prevention	308
Drug Prevention in Retrospect	308
Effectiveness of Prevention Programs	308
Goals of Drug Prevention	309
Levels of Drug Prevention	309
Primary Prevention	310
Secondary Prevention	310
Tertiary Prevention	310
Identifying High-Risk Youths	311
Resilient Children	311
At-Risk Factors	311
Preventing High-Risk Behavior	313
Education	313
Role of Parents	313
Community Efforts	313
Drug Education	314
The Evolution in Drug Education	314
Limitations of Drug Education	315
Goals of Drug Education	315
One-Size-Fits-All Drug Education	316
Current Approaches to Drug Education	316
Personal and Social Skills Training	316
Resistance Skills Training	317
Drug Prevention Programs	317
Drug Abuse Resistance Education (DARE)	317
Just Say NO!	318
Effectiveness of Drug Education	318
Health Education	318
Peer Programs	319
Summary	319
Bibliography	325
Answers	327
Glossary	329
Index	337

An Overall Perspective

**Part
I**

Drugs in Perspective

An historical perspective on drugs provides insight into the role that drugs have played over time. We also can benefit from a common understanding of what the terms *drug*, *drug misuse*, and *drug abuse* mean. Many factors affect how these words are defined. Is a substance defined as a drug according to its behavioral effects, pharmacological effects, its effects on society, its chemical make-up? If drugs are viewed as only illegal or menacing substances, we may not acknowledge substances such as caffeine and tobacco as drugs. If caffeine and tobacco are not considered drugs, one may think they cannot be misused or abused because only illegal drugs are misused or abused. Or a person may grow up thinking that any drug use, from aspirin to nasal decongestants, is unacceptable. If someone takes three aspirins a day, is he or she misusing or abusing drugs? What if a person has a glass of beer with dinner and a glass of wine each night before going to bed?

Living with a diabetic, asthmatic, or alcoholic person may alter one's perception of drugs. Religious groups and their rituals play a crucial role in how drug use is defined. For example, the Native American Church uses the hallucinogen peyote in a spiritual context but not recreationally. If college students were to experiment with hallucinogens to enhance their spirituality, however, this drug use would be perceived differently. Communion wine is part of the service in the Catholic Church and in some Protestant denominations. Drugs used within a religious framework are not likely to be abused.¹ The point is that any definition is limited and is influenced by one's experiences and background. Moreover, definitions are arbitrary.

Try to recall events in your life that influenced how you look at drugs. What were the most important factors influencing your perception of drugs?

1

After completing this chapter, the reader should be able to describe:

- How drugs affect society.
- How drug use, misuse, and abuse differ.
- The role of opium in wars between the Chinese and British governments.
- The economic effect of the rum trade in New England.
- The function of alcohol during the Colonial period.
- Factors leading to the increase in alcohol consumption in the United States in the early 1800s.
- Factors leading to the increase in morphine abuse in the United States in the 19th century.
- The importance of tobacco to the economic viability of the New World.

DEFINITIONS

Although definitions for the word **drug** abound, there is no legal definition. One definition of **psychoactive drugs** is “substances that act to alter mood, thought processes, or behavior, or that are used to manage neuropsychological illness.”³ When a substance affects one’s ability to get along with others, to work, to cope, or to think rationally, it can be classified a drug. Based on this definition, many substances could be designated as drugs. Drugs encompass illegal substances, prescription medicines, and over-the-counter medications.

Could foods be included as drugs? Many people crave ice cream and chocolate to cope with unpleasant experiences or simply to raise their spirits. Should these be considered drugs? Are they used differently than many substances identified as drugs? How would chocolate and ice cream connoisseurs react to the idea that they are drug users? No doubt, support groups for ice cream users would spring up!

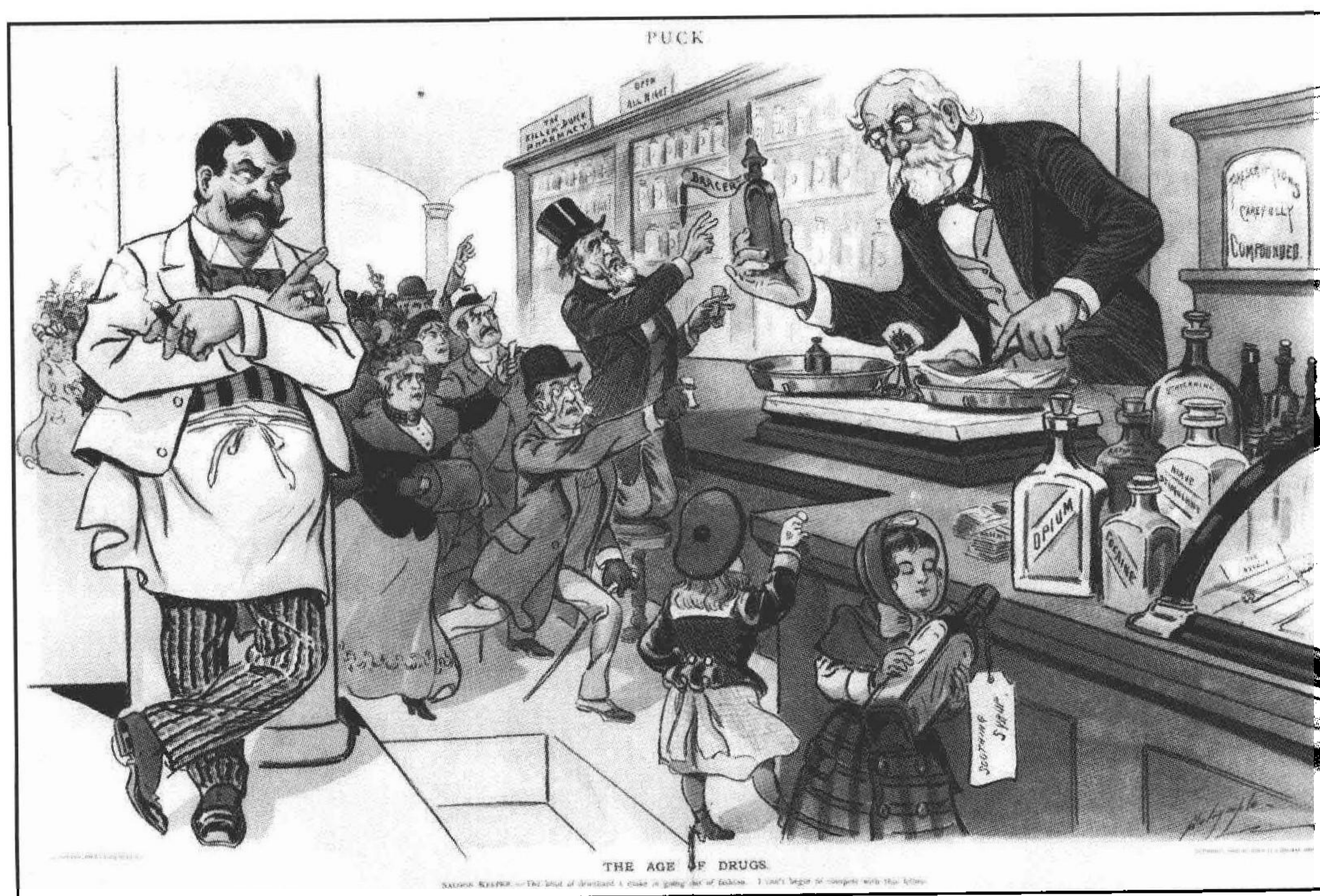
Drug Misuse

Drug misuse refers to the unintentional or inappropriate use of prescribed or over-the-counter drugs. One group especially vulnerable to drug misuse is the elderly.⁴ Although elderly people comprise a small proportion of the population, this group takes a disproportionate amount of prescribed and over-the-counter drugs. An estimated 17% of older adults

(60 years of age and older) misuse alcohol or prescription drugs.⁵ Even aspirin can be fatal when used improperly.

Drug misuse arises from not understanding a drug’s effects. For example, if a student studies for a test and drinks alcohol to improve his or her study skills, the student is misusing alcohol because it does not improve learning. Misuse may arise from deluding oneself about one’s purpose for using drugs. This is illustrated by a person who consumes five glasses of wine daily and says it is for spiritual purposes. Examples of drug misuse are:

- Discontinuing prescribed medicines against the physician’s recommendation (some people, for example, stop taking blood pressure medication once their blood pressure is under control).
- Mixing drugs (some drugs, particularly depressants, can be fatal when consumed together).
- Consuming more of a drug than prescribed (if one pill or tablespoon is good, five are not five times as good!).
- Using more than one prescription at a time without informing the physician who wrote the prescription.
- Saving or using old medications (the properties of drugs and their effectiveness change over time).
- Not following the directions for a drug; some drugs are ineffective when taken at certain times, such as after eating.



Drug misuse and abuse have existed throughout time.

Drug Abuse

Drug abuse is the intentional and inappropriate use of a drug resulting in physical, emotional, financial, social, or intellectual consequences. Any substance, if used by the wrong person, in the wrong dosage, or at the wrong time or place, can be abused. Some drug abuse perhaps results from emotional problems. A lifetime of major depression, for example, has been linked to the abuse of alcohol and other drugs.⁶

Two factors associated with drug abuse are dependency and chronic use. Whether chronic drug use is relevant to drug abuse is a pertinent question. For example, if a person drinks alcohol or uses heroin only on weekends and becomes disoriented from taking either drug, is that person abusing drugs? Does the illegal status of heroin and the legal status of alcohol affect our view of drug abuse? Millions of people smoke or chew tobacco daily or hourly. Are tobacco users drug abusers?

Of all adolescent deaths, 75% are related to drug abuse, and abusers are 8 to 10 times more likely than nonabusers to attempt suicide.⁷ Drug abuse affects men and women alike. Females are estimated to comprise 30% of the drug-using population.⁸

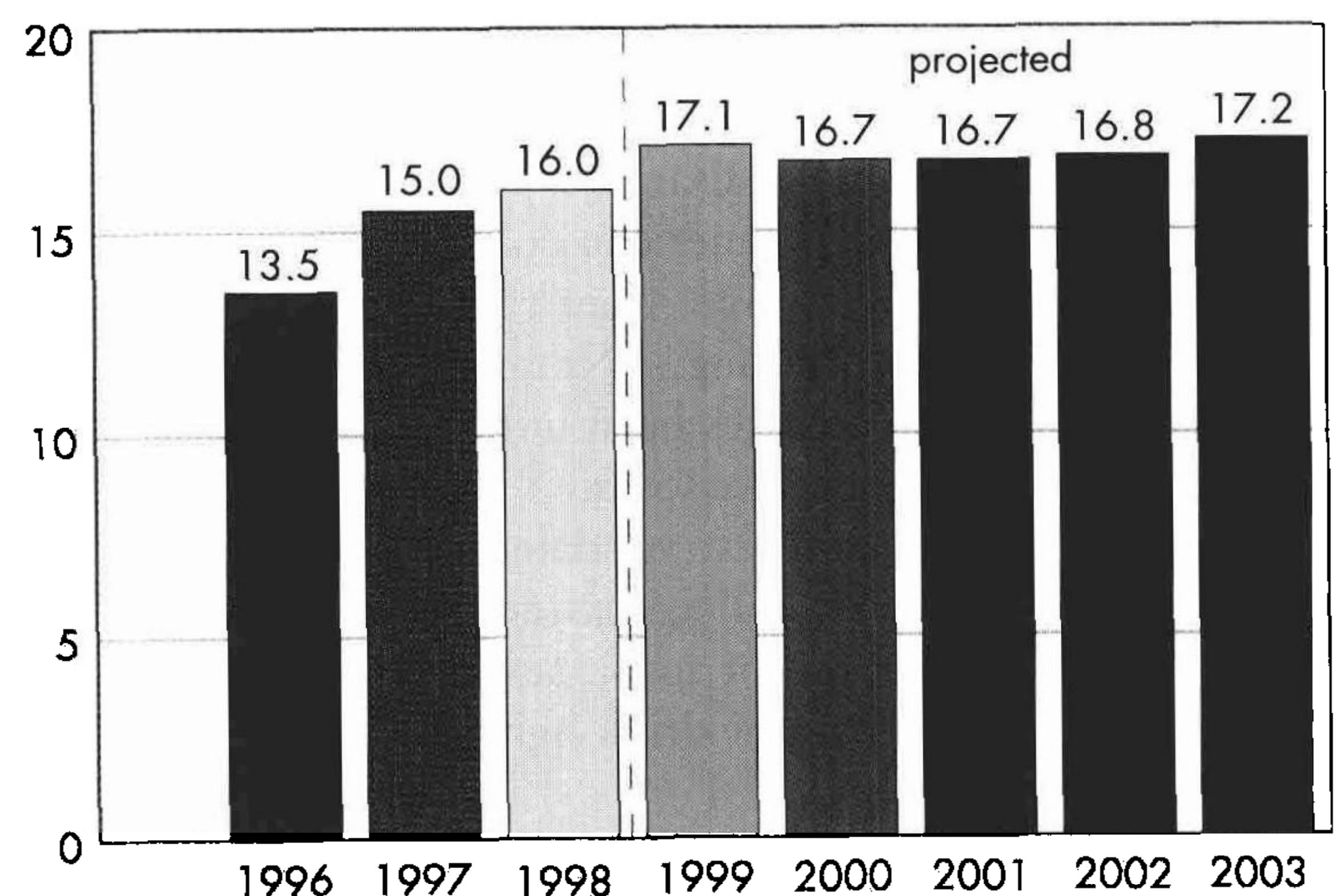
The concept of drug abuse may not relate to whether a drug alters consciousness or is used frequently but, rather, if the drug is socially acceptable. Alcohol, tobacco, and caffeine use is not considered deviant. Heroin use, in contrast, is not socially accepted. To many people, therefore, heroin use is abusive regardless of its effects or frequency of use. Most people who use drugs do not abuse drugs. Also, predicting which drug users will become abusers is difficult.⁹

THE PREVALENCE OF DRUG USE

Drug abuse is an expensive problem. The Office of National Drug Control Policy places the health and social cost of drug use at \$67 billion annually.¹⁰ Untreated alcohol and drug users fill 10% to 50% of hospital and emergency room beds, mostly for treatment of illnesses secondary to the addiction.¹¹ Of all persons admitted to general hospitals an estimated 20% to 40% have alcohol-related problems.¹²

More than 400,000 people are in American jails on any given day for violating a drug law. To address problems associated with drugs, the U.S. government is increasing its funding. By way of comparison, in 1980 the figure for combatting drug abuse was \$1 billion. In 1997, the government spent \$16 billion for drug control. Drug czar Barry McCaffrey asked Congress to allocate more than \$17 billion in 1999 to deal with drug abuse.¹³ About two-thirds of that money was earmarked for domestic law enforcement and reducing the supply of drugs.¹⁴ Figure 1.1 shows the drug control budget, including projections through the year 2003.

Nearly every American has used a mind-altering substance by having a glass of wine, a cigarette, a cup of coffee, a soft drink, or a cup of hot chocolate. In the United States about 2 billion prescriptions are dispensed each year. In 1997 the pharmaceutical industry spent \$917 million to advertise prescription drugs.¹⁵ Recent sales of prescription drugs totaled



Source: "Budget Summary," National Drug Control Strategy, 1998 (Washington, DC: Government Printing Office, 1999).

FIGURE 1.1

National drug control budget.

Drug Any substance that alters one's ability to function emotionally, physically, intellectually, financially, or socially.

Psychoactive drugs Any substance that has the capability of altering mood, perception, or behavior.

Drug misuse The intentional or inappropriate use of prescribed or over-the-counter drugs.

Drug abuse The intentional and inappropriate use of a drug resulting in physical, emotional, financial, intellectual, or social consequences for the user.

\$85 billion and sales of over-the-counter drugs amounted to \$13 billion.¹⁶ Adverse reactions to prescription medicines are the fourth to sixth leading cause of death in the United States in recent times. In 1994, more than 100,000 people died from adverse reactions to prescribed drugs.¹⁷

An estimated 13 million Americans (6% of those 12 years of age and older) have used illegal drugs. Between 1996 and 1997 the percentage of 12-year-olds who know a friend or classmate who has used either heroin or cocaine doubled.¹⁸ Children most often initiate drug use by ages 12 or 13.¹⁹ Ten million Americans have used marijuana, and 1.4 million have used cocaine. Thirteen million consumed 5 or more drinks of alcohol at one sitting in the past month, and 60 million people, including 4.1 million adolescents aged 12–17 smoked cigarettes.²⁰ Almost 5 million people in the United States ages 12 and over have been treated for a drug problem.²¹

THE IMPACT OF DRUG USE AND ABUSE

In 1998 there were more than 30 alcohol-related deaths among students at American colleges and universities. Two in of every five American college students engage in binge drinking.²² Not only has binge drinking at American colleges been linked to student deaths, but it also has been associated with weak academic performance, injuries, vandalism, and property damage.²³ Female college students who are heavy drinkers are more apt to be sexually coerced than students who abstain or drink lightly.²⁴

VANESSA WAS IN A FATAL CAR ACCIDENT LAST NIGHT. ONLY SHE DOESN'T KNOW IT YET.



Photo courtesy of the National Institute on Drug Abuse, U. S. Department of Health and Human Services.

Drug and alcohol use can make people more willing to have unplanned and unprotected sex.

Up to 86% of homicide offenders were under the influence of alcohol at the time of the offense, as were 37% of assault offenders, 60% of sexual offenders, and 13% of child abusers.²⁵ Nearly one-third Americans will be involved in an alcohol-related crash at some time in their lives. In 1996, there were more than 16,000 alcohol-related traffic fatalities.

Some people are concerned that drug use is destroying the very fabric of society, that families and communities are undermined by drug use, and that moral decay will fester. In many instances, however, family and community problems might be the precursors to, rather than the effects of, drug abuse.²⁶ When addressing drug-related problems, there is a sense of frustration that something must be done. One public opinion poll indicated that stopping the flow of drugs was an important foreign policy goal to 85% of the Americans polled.²⁷

Articles in *Newsweek*, the *New York Times*, the *Washington Post*, and other publications point out that LSD is making a comeback in the 1990s. Heroin use also is rising. The cost of heroin is declining, purity is up, and more people are admitted to hospital emergency rooms or dying from heroin overdoses.²⁸ The purity of heroin went from 5% in the 1980s to 59% in 1995.²⁹

Nearly a half a million Americans die each year from tobacco, alcohol, and illegal drugs. More women today die from lung cancer than breast cancer.³⁰ Approximately \$8 billion in Medicaid expenditures goes to people admitted to hospitals because of their drug abuse.³¹ Table 1.1 shows the estimated number and percentage of preventable deaths from drugs and other activities.

Illegal drug use has a substantial connection to crime.³² About one-half of all violence is drug-related.³³ Approximately half of convicts in federal prisons are there because of drug-related crimes, and the drug trade has spawned terror and violence in many neighborhoods.³⁴ More teenage males die from gunshot wounds than from all natural causes combined.³⁵ Drug-related offenses in 1960 in the United States were fewer than 30,000, in contrast to current estimates exceeding 1 million.³⁶ Almost 60% of juveniles arrested in December 1994 tested positive for drugs.³⁷ Table 1.2 shows the number of drug-related murders compared to total murders in the United States between 1986 and 1997.

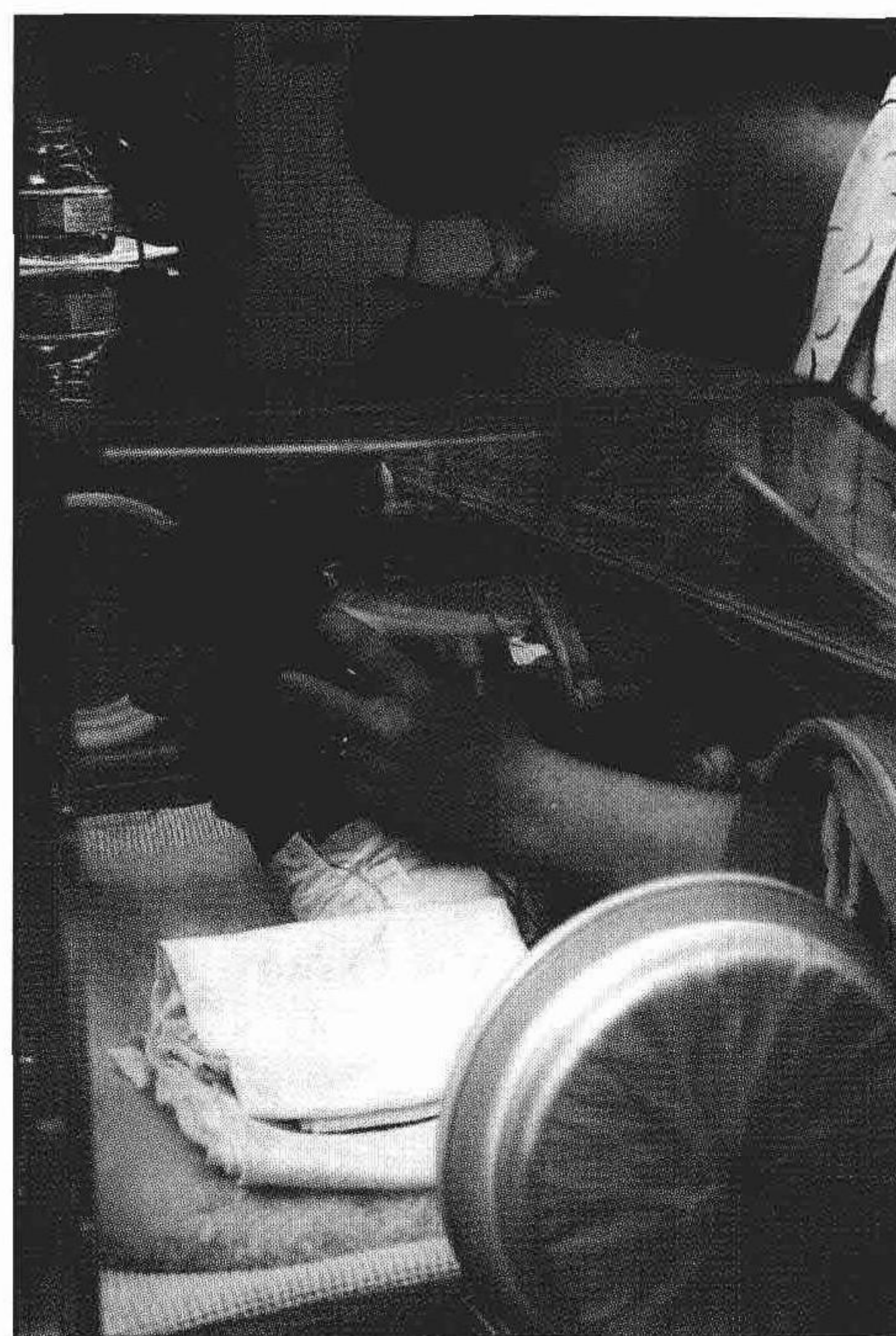
Newspaper headlines recount stories of drug-crazed people perpetrating crimes on others, individuals whose drug use results in fatal diseases, males and females pawning their bodies for drugs, and

TABLE
1.1

Preventable Deaths in United States

Cause	Preventable Deaths	
	Estimated Number	Percentage of Total
Tobacco	400,000	37.7%
Diet/Activity Patterns	300,000	28.3
Alcohol	100,000	9.4
Toxic Agents	90,000	8.5
Microbial Agents	60,000	5.7
Firearms	35,000	3.3
Sexual Behavior	30,000	2.8
Motor Vehicles	25,000	2.4
Illicit Use of Drugs	20,000	1.9
Total	1,060,000	100.0

Source: *Substance Abuse and Mental Health Statistics Sourcebook*, by B. E. Rouse (DHHS Publication No. 95-3604) (Washington, DC: Government Printing Office, 1995).



Having low birthweight babies is a side effect of drug use by pregnant women.

women delivering drug-addicted and drug-impaired babies. An estimated 5.5% of the 4 million women who gave birth in the United States in 1992 used illegal drugs while they were pregnant.³⁸ Drugs account for an estimated 3% of congenital abnormalities.³⁹ An estimated \$500 million would be saved in the cost of obstetric and newborn care if cocaine abuse could be controlled.⁴⁰ At the other end of the lifespan, an estimated 17 percent of Americans 60 years

of age and older misuse alcohol or prescription drugs.⁴¹

The leading cause of death of Americans 25 to 44 years of age is the acquired immunodeficiency syn-

drome (AIDS).⁴² Most of the cases arise among injection drug users, their sex partners, and their children.⁴³ By April 1996, injected drug use was responsible for more than 150,000 cases of AIDS.⁴⁴ In the District of Columbia, one quarter of the nearly 12,000 AIDS cases

through 1994 were linked to injection drug use, most by heterosexuals.⁴⁵ Those who used alcohol and other drugs while having sex were more likely to engage in high-risk sexual behaviors.⁴⁶

Drugs are widely available. In New York City marijuana can be purchased from seemingly legitimate businesses — news stands, record shops, video rental outlets and so on.⁴⁷ To curb drug availability, billions of dollars are allocated for drug enforcement, prevention, and treatment. From 1981 to 1992, the federal government's expenditures to interdict drugs rose from \$350 million to \$2 billion.⁴⁸ High schools and colleges conduct drug tests, especially with athletes. Passing a drug test is a condition of employment for most companies.

Are drugs really a problem in society, or is the concern excessive? The drawbacks to using drugs are numerous. In the attempt to reduce drug use and abuse, what is the best approach? Should drug policy focus on reducing the supply of drugs or the demand for drugs? Which approach would result in the least harm?

TABLE
1.2

Drug-Related Murders: United States, 1989–1997

	1989	1991	1993	1995	1997
Number of Homicides	18,954	21,676	23,180	20,232	15,289
Drug-related Murders	1,402.5	1,343.9	1,274.9	1,011.6	779.7
Percent Drug-Related Murders	7.4	6.2	5.5	5.0	5.1

Note: Includes only those homicides where circumstances were known.

Source: *Drugs and Crime Facts*, U. S. Department of Justice, Office of Justice Programs, Washington DC, May 1999.

Drugs unquestionably can lead to violent behavior, dependency, mental and physical maladies, strained relationships among siblings, children, parents, and spouses, work-related problems, legal dilemmas, problems in school, financial difficulties, accidents and injuries, and death. Over the last 20 years the United States has become much less tolerant of drug use.⁴⁹

A report from the Brookings Institute suggested that the debate over how to address the drug problem is based on speculation not on fact.⁵⁰ It is unclear how much of a drug a person has to take before problems arise and how often one has to use drugs before becoming dependent or developing a psychological or medical problem. No hard-and-fast rules are available for determining when drugs become a problem for an individual.⁵¹ Figure 1.2 illustrates many of the problems associated with using alcohol and other drugs.

AN HISTORICAL PERSPECTIVE OF DRUG USE

Many drugs used today, such as opium and marijuana, have long histories. Other drugs, such as designer drugs (drugs altered molecularly in the laboratory), major and minor tranquilizers, amphetamines, herbal ecstasy, Rohypnol, and LSD have

relatively short histories. In any case, every culture sanctions the use of some drugs and strongly disapproves of others.

Alcohol

Beverages might have been fermented intentionally as early as the Neolithic period, about 10,000 B.C.⁵² Wine made from berries and beer has existed since 6400 B.C. The Bible includes several references to wine, including passages warning against immoderate consumption.⁵³ The early Egyptians revered wine and beer, attributing spiritual qualities to it; they also cautioned others about spending too much time in taverns.⁵⁴

The early Hebrews were fond of alcoholic beverages, as were the ancient Chinese, Greeks, and Romans.⁵⁵ Bacchus was the Roman god of wine, and Dionysius the Greek god of wine. Dionysius was credited with celebrating the harvest and the origins of life. Hippocrates, the Greek father of medicine, recommended wine for therapeutic purposes.⁵⁶ Plato praised moderate wine consumption for its healthful benefits and for the happiness it brought.⁵⁷

The Egyptians developed the process of **distillation**, which produces a higher alcohol content than fermentation. Consuming distilled spirits was the privilege of nobility. The word *alcohol* originated from the Arabic *alkuhl*, meaning “the essence.”

By the end of the 13th century, after alcohol was introduced to Europe, Arnould de Villeneuve, a University of Montpellier medical professor, called alcohol *aqua vitae*, the “water of life.” In 16th-century England, *aqua vitae* was associated with increased criminal activity. The Irish referred to alcohol as “whiskey.” Not surprisingly, it was the Scots who came up with *scotch*, made by drying fermented barley in kilns fired with burning peat, a process that gives scotch its distinctive taste.

Brandy, made by fermenting fruit juice, is derived from the Dutch expression “burnt wine.” Gin comes from the Dutch *jenever*, a term derived from the juniper berries contained in the distillation. In the 1600s the Russians made vodka by adding water to fermented potatoes

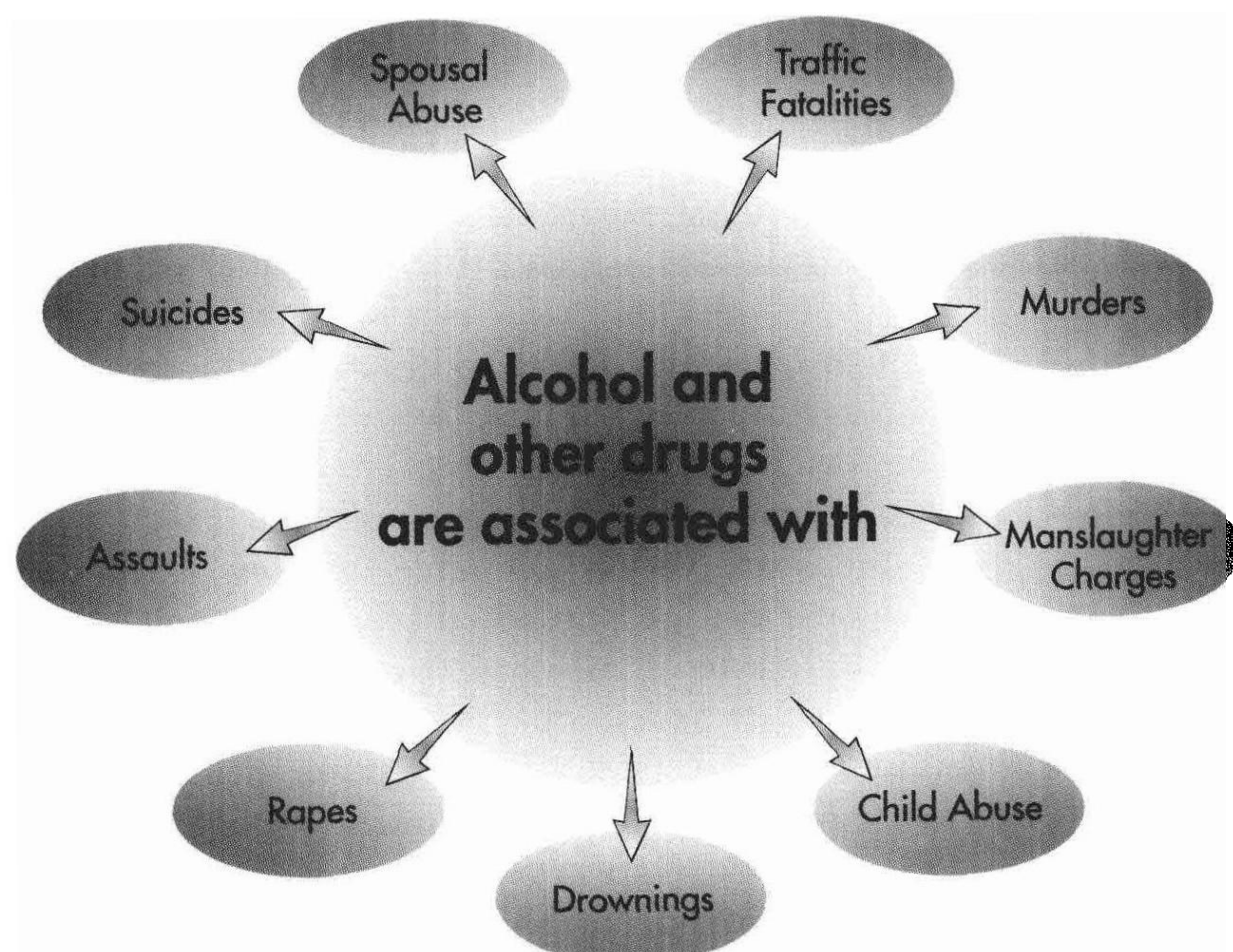


FIGURE 1.2

America's problem with alcohol and other drugs.