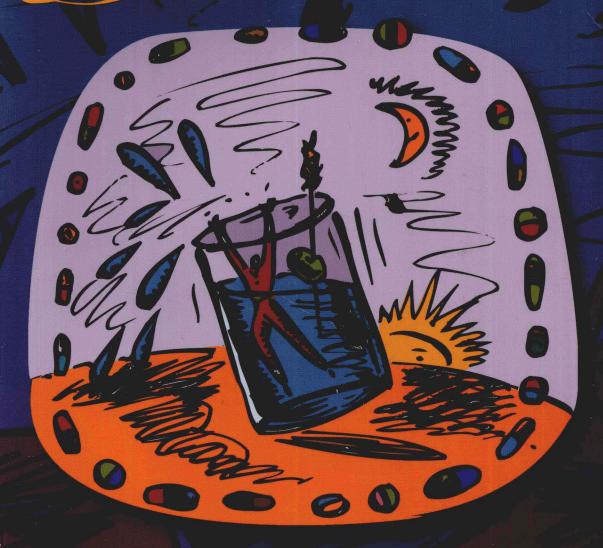
Trugs, Society, and Human Behavior



Ninth Edition

Oakley Ray and Charles Ksir

Drugs, Society, anд Human Behavior

Ninth Edition

Oakley Ray, Ph.D.

Professor, Departments of Psychology and Psychiatry Associate Professor, Department of Pharmacology Vanderbilt University and Vanderbilt University School of Medicine Nashville, Tennessee

Charles Ksir, Ph.D.

Professor, Department of Psychology University of Wyoming Laramie, Wyoming



McGraw-Hill Higher Education 👷

A Division of The McGraw-Hill Companies

DRUGS, SOCIETY, AND HUMAN BEHAVIOR, NINTH EDITION

Published by McGraw-Hill, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, New York, New York, NY 10020. Copyright © 2002, 1999, 1996, 1993, 1987, 1983, 1978, 1972 by The McGraw-Hill Companies, Inc. All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written consent of The McGraw-Hill Companies, Inc., including, but not limited to, in any network or other electronic storage or transmission, or broadcast for distance learning.

Some ancillaries, including electronic and print components, may not be available to customers outside the United States.

This book is printed on acid-free paper.

234567890 VNH/VNH098765432

ISBN 0-07-231963-1

Vice president and editor-in-chief: Thalia Dorwick

Executive editor: Vicki Malinee

Senior developmental editor: Melissa Martin Senior marketing manager: Pamela S. Cooper

Project manager: Mary Lee Harms Production supervisor: Sherry L. Kane

Coordinator of freelance design: Michelle D. Whitaker

Freelance cover/interior designer: Kim Rokusek/Rokusek Design

Cover image: [®] Jody Winger/Stock Illustration Source Photo research coordinator: John C. Leland Photo research: Connie Gardner Picture Research Senior supplement producer: David A. Welsh Media technology producer: Judi David

Compositor: GAC/Indianapolis Typeface: 10/12 Garth Graphic Printer: Von Hoffmann Press, Inc.

The credits section for this book begins on page 516 and is considered an extension of the copyright page.

1-0-

Library of Congress Cataloging-in-Publication Data

Ray, Oakley Stern.

Drugs, society, and human behavior / Oakley Ray, Charles Ksir.—9th ed.

p. cm.

Includes index.

ISBN 0-07-231963-1

1. Drugs of abuse. 2. Drug abuse—Social aspects. 3. Neuropsychopharmacology.

I. Ksir, Charles. II. Title.

RM316.R39 2002

362.29-dc21

2001030409

CH

The web addresses listed in this text were accurate at the time of publication. The inclusion of a web address does not constitute an endorsement of the site's content by the authors or by The McGraw-Hill Companies. Furthermore, The McGraw-Hill Companies does not guarantee the accuracy of the information presented at these websites.

www.mhhe.com

Preface

Today's media-oriented college students are aware of critical issues relating to substance abuse. Nearly every day we hear about new pharmaceuticals, club drugs, HIV and AIDS, and the effects of tobacco and alcohol, and most of us have had some personal experience with these issues through family, friends, or coworkers. This course is one of the most exciting you will take because it will help you relate the latest information on drugs to their effect on society and human behavior. You will then be able to examine your attitudes toward drugs and have the ability to modify your behavior to improve your health.

since *Drugs*, *Society*, *and Human Behavior* was first published. The 1970s were a period of widespread experimentation with marijuana and hallucinogens, while the 1980s brought increased concern about illegal drugs and conservatism, along with decreased use of alcohol and all illicit drugs. Not only did drug-using behavior change, but so did attitudes and knowledge. And, of course, each decade the particular drugs of immediate social concern have changed: LSD gave way to angel dust, then to heroin, then to cocaine and crack. In the 1990s we saw increased use of LSD and marijuana, but not to

the levels of the 1970s. Methamphetamine use—

associated with the so-called speed freaks of the

Much has changed in the nearly 30 years

late 1960s—also increased, but the drug was more often smoked than injected.

Update trends through 2000

The new millenium has brought with it a focus on the "club drugs," especially ecstacy and GHB. While we cannot predict the next drug on which we will focus our attention, we can confidently predict that there will be a next one. As these changes have occurred, our old standbys, alcohol and tobacco, have remained with us and have continued to be serious social problems. Although regulations have changed, new scientific information has become available, new approaches to prevention and treatment are being tried, and these substances continue to be the most widely used drugs in our society.

This text approaches drugs and drug use from a variety of perspectives—behavioral,

pharmacological, historical, social, legal, and clinical—which will help you apply the content to your own needs.

SPECIAL FEATURES

Updated Content

Throughout each chapter we have included the very latest information and statistics, and the Drugs in the Media feature has allowed us to comment on breaking news right up to press time. In addition, we have introduced many timely topics and issues that are sure to pique your interest and stimulate class discussion.

HealthQuest Activities

Each chapter contains a new activities box to complement the *HealthQuest* 3.0 CD-ROM that accompanies the text. These activities and *HealthQuest*'s exciting graphics and interactive approach will help you assess your knowledge of drugs and lifestyle in many different areas.

Web Watch Activities

Today we can find reliable health and drug information at our fingertips when we search the web. New Web Watch activities at the end of each chapter direct you to important websites related to the material. The activities, including many assessments and quizzes, will help you think critically about valuable health information.

Taking Sides

These boxes discuss a particular drug-related issue or problem and ask you to take a side in the debate. This thought-provoking material will help you apply what you learned in the chapter. Each box also refers you to a special McGraw-Hill website, www.dushkin.com/takingsides, for current news and valuable links, in case you wish to pursue the topic in more depth.

Online Learning Center Resources

Online Learning Center Resources boxes, found on the opening page of each chapter, direct you toward the useful resources available

on the Online Learning Center that accompanies this text. These resources include chapter key terms and definitions, learning objectives, question-and-answer sites, and chapter quizzes. The Online Learning Center Resources boxes also list some of the web links that you will find on the OLC.

Drugs in the Media

Your world revolves around media of all types—TV, films, radio, print media, and the web. To meet you on familiar ground, we've included Drugs in the Media boxes (see inside front cover for a list of boxes), which take an informative and critical look at these media sources of drug information. This feature appears on the first page of each chapter.

Exploring Your Spirituality

Spirituality has become an important focus in health courses. The new Exploring Your Spirituality boxes highlight the spiritual dimension of dealing with substance use, abuse, and addiction. This new feature includes topics such as spiritual resources as alternatives to drugs, a rewarding social life without alcohol and other drugs, and the search for humane drug policies.

Targeting Prevention

The new Targeting Prevention boxes offer perspective and provoke thought regarding what drug-related behaviors we, as a society, want to reduce or prevent. These boxes will help you better evaluate prevention strategies and messages.

Drugs in Depth

The Drugs in Depth boxes examine specific, often controversial drug-related issues and are a perfect starting point for class or group discussions.

Try It!

These self-assessments help you put health concepts into practice. Each Try It! asks you to answer questions and analyze your own habits and behavior.

Attractive Design and Updated Illustration Package

The inviting new look, bold colors, and exciting graphics in *Drugs, Society, and Human Behavior* will draw you in at every turn of the page. Sharp and appealing photographs, attractive drawings,

and informative tables support and clarify the chapter material.

New or Expanded Topics

Following is a sampling of topics in each chapter that are new or have been significantly expanded:

Chapter 1

Drug and alcohol use patterns and statistics Risk factors and protective factors for substance abuse

Chapter 2

Drug toxicity

Drug use among those arrested for nondrug crimes

Chapter 3

Substance-abuse treatment admissions for various drugs

Success of treatment for adolescents

Chapter 4

The İnstitute of Medicine's new prevention model Successful family-oriented prevention programs

Chapter 5

Regulation of legal pharmaceuticals Regulation of tobacco and alcohol Drug-related imprisonment New regulations on club drugs

Chapter 6

Effects of behavior on brain chemistry Sexual dysfunction among drug addicts

Chapter 7

Drug interactions

Chapter 8

How ADHD affects drug treatment

Chapter 9

Trends in use of club drugs

Chapter 10

New drugs to treat mental disorders

Chapter 11

Trends in beer, wine, and liquor sales New findings about alcohol and health

Chapter 12

Alcohol use reported state-by-state Alcohol-related crashes in the United States Chapter 13

Trends in tobacco use Settlements against tobacco companies Cigarettes in the movies

Chapter 14

New findings about caffeine and health

Chapter 15

The latest herbal products and dietary supplements

Chapter 16

Trends in treatment of narcotic addiction

Chapter 17

Explanation of "entheogens" Ibogaine as a treatment for addiction

Chapter 18

New findings about medical uses of marijuana
Drug use, drug-related problems, and treatment
admissions
Trends in alcohol use
Shoring up of DUI laws
Latest drug-control expenditures and policies

Chapter 19

Use of performance-enhancing substances among athletes

Pedagogical Aids

Definition Boxes

Key terms are set in boldface type and are defined in corresponding boxes. Other important terms in the text are set in italics for emphasis. Both approaches facilitate your vocabulary comprehension.

Chapter Summaries

Each chapter concludes with a bulleted summary of key concepts and their significance or application. You can then return to any topic in the chapter for clarification or study.

Review Questions

A set of questions appears at the end of each chapter to aid you in review and analysis of chapter content.

Appendices

The appendices include handy references on brand and generic names of prescription drugs; drug organizations and resources; and drug categories, uses, and effects.

Owner's Manual

Are you looking for drug information in the media? working to change your attitude and health for the better? trying to improve your grade? The great features in *Drugs, Society, and Human Behavior* will help you do all this and more! Let's take a look.

Online Learning Center

Want to get a better grade? This box reminds you about the study aids and other resources avail-

able at our free Online Learning Center and describes some of the useful web links you'll find there.

Drugs in the Media

How can you tell whether to trust drug information in the media? These boxes take a critical look at coverage of drug issues on the web, on television, in film, and in print.

HealthQuest Activities

You received a free *HealthQuest* 3.0 CD-ROM with your new copy of *Drugs, Society, and Human Behavior*. This feature provides activities to help you explore *HealthQuest* and assess your behavior in relation to drugs and alcohol.

Exploring Your Spirituality

A healthy body and a healthy mind go hand-inhand. This feature helps you consider the spiritual dimension of health in your own attitudes toward alcohol and other drug use.

Web Watch Activities

Get healthier and smarter by surfing the web! These fun activities guide you to interactive self-assessments on the web. Do you know drug slang? Do you need advice on a drug-related problem? Has your "social drinking" gone too far? Log on and find out.

Try It!

Taking these self-assessments will help you analyze your behavior and habits and apply health concepts to your personal life.

Taking Sides

Is there a medical need for marijuana? Are alternatives to drugs *really* alternatives? Is methadone maintenance an effective treatment or an admission of failure? Read these articles and decide where you stand on controversial issues.

Targeting Prevention

These boxes will provoke thinking about what drug-related behaviors it's important to reduce or prevent. They'll help you evaluate prevention strategies and messages.

Drugs in Depth

Want to take a closer look? These articles examine specific drug-related issues and are a great starting point for discussion.

ANCILLARIES

Course Integrator Guide

This comprehensive manual is a traditional instructor's manual combined with a useful guide to incorporating McGraw-Hill supplements into

the course. It incorporates all these useful features and more:

- Chapter outlines and special supplements outlines with teaching suggestions, key terms, and relevant Presentation Manager illustrations noted at relevant points
- Current resources lists, including annotated readings, websites, journals, and films

Test Bank

This printed manual includes a test bank of multiple choice, true/false, matching, and critical thinking questions. It has been rewritten to enhance clarity, and it now includes more applications questions.

Computerized Test Bank

Test questions from the printed test bank are available on our computerized testing and grading program, MicroTest III, for Windows or Macintosh.

HealthQuest 3.0. CD By Bob Gold and Nancy Meyer

Packaged free with new copies of *Drugs, Society, and Human Behavior,* this interactive CD may be used with any personal health text and includes coverage of alcohol and other drugs. This edition of *Drugs, Society, and Human Behavior* includes *HealthQuest* Activities boxes to integrate multimedia into the course.

Health and Human Performance Discipline Page www.mhhe.com/hhp

McGraw-Hill's Health and Human Performance Discipline Page provides a wide variety of information for instructors and students, including monthly articles about current issues, monthly articles that celebrate our diversity, downloadable text supplements, a "how to" guide to McGraw-Hill technology, study tips, and more. The page lists professional organizations, convention schedules, career possibilities, and information for instructors on how to become a McGraw-Hill author. Additional features of the discipline page include the following:

- This Just In—This feature presents the latest hot topics, the best web resources, and more—all updated monthly!
- Faculty Support—Instructors can access downloadable course supplements such as

lecture outlines and PowerPoint presentations, and create their own course website

with PageOut!

 Student Success Center—Find online study guides and other resources to improve your academic performance. Explore scholarship opportunities and learn how to launch your career!

 Author Arena—Interested in writing a textbook or a supplement for the college market? Read the McGraw-Hill proposal guidelines, find links to the Editorial and Marketing teams, and meet and talk with our current authors!

McGraw-Hill Online Learning Center

The Online Learning Center provides instructors with downloads of helpful ancillaries. For students, the OLC offers self-scoring quizzes, review material for exam preparation, and access to web links and updated material.

PowerWeb

PowerWeb is a password-protected website developed by McGraw-Hill/Dushkin. It offers current articles from Annual Editions—peerreviewed articles from some of the most important magazines, journals, and newspapers published today. Self-scoring quizzes allow students to gauge their understanding of the material in each article. Dozens of additional web links are organized by topic. Each online text includes a glossary of standard terms with a selftesting feature. PowerWeb also offers surveys, interactive illustrations, current news updates, study tips, interview tips, and a résumé builder. Students and faculty receive \$25 worth of free research time on NorthernLight.com, which provides access to more than 6,300 journals.

Visual Resource Library to Accompany Drugs, Society, and Human Behavior

The Visual Resource Library is a bank of images for use in the classroom and in the accompanying PowerPoint presentation. It's easy to import useful illustrations right into the pre-packaged PowerPoint lecture, which you can customize to fit your needs.

WebCT

WebCT, a product of Universal Learning Technology, makes it even easier for instructors to take their course online. McGraw-Hill content is delivered through one of the most popular and easy-to-use platforms available. With the adoption of Focus on Health, McGraw-Hill will pre-pay the WebCT student site license, and the school may use our Online Learning Center free of charge. In addition, McGraw-Hill offers our Instructor Advantage program to all Mc-Graw-Hill/WebCT customers. This program provides unlimited technical support by phone and e-mail directly from WebCT. Other WebCT customers have access to e-mail support from WebCT and are charged for phone support.) Each technical support representative has been specially trained to work with McGraw-Hill customers.

Overhead Transparency Acetates

Seventy-two full-color key illustrations and graphics from the text are available as transparency acetates. These useful tools facilitate learning and classroom discussion. They were chosen specifically to help explain complex concepts. This ancillary is provided free to all instructors who wish to use acetates.

McGraw-Hill PageOut: The Course Website Development Center

PageOut is a program that enables instructors to easily develop websites for their courses. The site includes the following:

A course home page

An instructor home page

- A syllabus (the syllabus is interactive and customizable, allows quizzing and the addition of instructor notes, and can be linked to the Online Learning Center)
- Web links
- Online discussion areas (multiple discussion areas per class)

Online grade book

- An area to list links to students' web pages
- Sixteen design templates to choose from

ACKNOWLEDGMENTS

We would like to express our appreciation to the following instructors who reviewed the seventh and eighth editions and helped lay the groundwork for the improvements and changes that were needed in the ninth edition:

Brian A. Adrian, Ph.D. Grand Valley State University

Scott Alpert University of Maryland

Martin Ayim, Ph.D. Grambling State University

Karen Ball, Ph.D. Alma College

Robert W. Bell Texas Tech University

Angela K. Bray Illinois State University

Joseph Brown, Ph.D.Austin Peay State University

Gary L. Chandler, Ed.D. Gardner-Webb University

Diane L. Clemen Illinois Wesleyan University

Akbar Davami California State University-Sacramento

Lou Ebrite, Ph.D. University of Central Oklahoma

Dale W. Evans, Ph.D. California State University

Getene Gebrewold, Ph.D. Western Illinois University

William T. Hey, Ph.D. Delta State University

Ping Hu, Ph.D. Florida Atlantic University

Howard Ishisaka, Ed.D. Indiana State University

John Janowiak, Ph.D. Appalachian State College

Linda Kryel, RPH Drake College

Jerry W. Lee, Ph.D. Loma Linda University

Linda Ludovico, MS Tyler Junior College

Jennifer McLean Corning Community College

Edward Meister, Ph.D. Worcester State College

Patricia A. Miller Anderson University

Ed Mink University of Arkansas

Ranjita Misra Ohio University

Patsy Queen Gaston College

Kerry Redican, Ph.D. Virginia Tech

Laurna Robinson, Ph.D. University of Illinois

Thomas Rowe University of Wisconsin

Glenn B. Schmidt Mississippi University for Women

Israel M. Schwartz, Ph.D. Hofstra University

Sharon Simson University of Maryland

Barry A. Staples Lacawanna Junior College

George T. Taylor University of Missouri-St. Louis

Peggy Trueman, MSN Gaston College

Martin Turnauer Radford University

Ralph Wood Southeastern Louisiana University

Special thanks to Carl Hart, College of Physicians and Surgeons, Columbia University, who gave us detailed suggestions for chapters 8 and 16, and Roland D. Shytle, University of South Florida, who gave us valuable advice for chapters 17 and 18.

Keeping up with all the changes in this field is a formidable task, one in which we are aided immensely by our continuing to teach courses based on the text and receiving feedback and new information from our students, from students at other institutions, and from other faculty members who use the text. We appreciate (and need!) all that input. Although we also welcome regular mail, in keeping with the information age we invite comments, questions, and criticisms to be sent by electronic mail to cksir@uwyo.edu.

Oakley Ray Charles Ksir

Contents in Brief

Preface,	xi	
Section	I 1 2 3 4 5	Drug Use in Modern Society Drug Use: An Overview, 2 Drug Use as a Social Problem, 26 Addictions: Theory and Treatment, 43 Preventing Substance Abuse, 66 Drug Regulations, 86
Section	II 6 7	How Drugs Work The Nervous System, 116 The Actions of Drugs, 140
Section	III 8 9 10	Uppers and Downers Stimulants, 166 Depressants and Inhalants, 199 Psychotherapeutic Drugs, 219
Section	IV 11 12	Alcohol Alcohol in the Body, 241 Alcohol and Society, 271
Section	V 13 14 15	Familiar Drugs Tobacco, 300 Caffeine, 328 Over-the-Counter Drugs, 351
Section	VI 16 17 18 19	Restricted Drugs Opiates, 376 Hallucinogens, 412 Marijuana and Hashish, 450 Steroids and Other Drugs in Sport, 481
Appendi Glossary Credits, Index,	504 516	98

Contents

Pref	face, xi	Drug Abuse Warning Network, 29 Try It! What's Your Risk of Drug Toxicity? 31 How Dangerous Is It? 33
Sec	tion I	HealthQuest Activities, 33
	ug Use in Modern Society, 1	AIDS, 34
UI	ug Use in Modern Society,	Targeting Prevention: HIV and AIDS, 36
1	Drug Use: An Overview, 2	Drug Addiction:
	Key Terms, 2	Problems of Definition, 36
	Online Learning Center Resources, 2	Crime and Violence:
	Drugs in the Media:	Does Drug Use Cause Crime? 36
	Reporting on the "Drug du Jour," 2	Taking Sides: Are Current Laws Fair? 40
	"The Drug Problem," 3	Why We Try to Regulate Drugs, 40
	Talking About Drug Use, 3	Summary, 40 Review Questions, 41
	Drugs in Depth: Some Important Definitions—	Web Watch: Activities Related
	and a Caution! 5	to Drugs and Society, 41
	Four Principles of Psychoactive Drugs, 6	References, 42
	How Did We Get Here? 7	110101010001
	Have Things Really Changed? 7	3 Addictions: Theory and Treatment, 43
	Four Pharmacological Revolutions, 7	Key Terms, 43
	Taking Sides: Can We Predict or Control Trends in	Online Learning Center Resources 43
	Drug Use? 8 Recent Cultural Change, 9	Drugs in the Media: Hollywood Knows, and
	HealthQuest Activities, 10	Shows, Hard Truth About Drugs, 43
	Drugs and Drug Use Today, 10	Drug Addiction, 44
	Extent of Drug Use, 10	Exploring Your Spirituality: Hope Is the Way Out of
	Drugs in Depth: Methamphetamine Use in	Addiction, 45
	Your Community, 12	Three Basic Processes, 45
	Correlates of Drug Use, 13	Changing Views of Drug Addiction, 47
	Exploring Your Spirituality: Turning to Spiritual	Which is More Important, Physical Dependence o
	Resources Instead of Drugs, 15	Psychological Dependence? 48
	Antecedents of Drug Use, 16	The Broad Views of Addictions, 49 Is Addiction Caused by the Substance? 49
	Try It! Do Your Goals and Behaviors Match? 19	Try It! Are You Addicted to an Activity? 51
	Motives for Drug Use, 21	Is Addiction Biological? 53
	Targeting Prevention: Preventing What? 22	Is There an Addictive Personality? 53
	Summary, 24	Is Addiction a Family Disorder? 53
	Review Questions, 24	Is Addiction a Disease? 54
	Web Watch: Activities to Assess Your Drug	Assessment of Addictive Disorders:
	Knowledge, 25 References, 25	Diagnosis, 54
	References, 23	DSM-IV: Psychiatric Diagnosis of Substance
2	Drug Use as a Social Problem, 26	Disorders, 55
	Key Terms, 26	Addiction Treatment, 56
	Online Learning Center Resources, 26	Deciding to Quit, 56
	Drugs in the Media:	Defining Treatment Goals, 56
	Counting Crack Babies, 26	Treatment Stages, 57
	Laissez-Faire, 27	Taking Sides: Methadone Maintenance:
	Exploring Your Spirituality: Having a Social Life	Effective Treatment or Admitting Defeat? 57
	Without Drug and Alcohol Use, 28	Targeting Prevention: Avoiding Relapse, 59
	Toxicity, 28	Treatment Approaches, 59
	Catagories of Toxicity 28	readificit ripproduction, 05

Categories of Toxicity, 28

Drugs in Depth: The 12 Steps of	Online Learning Center Resources, 86
Alcoholics Anonymous, 61	Drugs in the Media: Advertising
Treatment: The Big Picture	Prescription Drugs on Television, 86
in the United States, 62	The Beginnings, 88
HealthQuest Activities, 62	Reformism, 88
Is Treatment Effective? 62	Problems Leading to Legislation, 88
Summary, 63	1906 Pure Food and Drugs Act, 89
Review Questions, 63	Harrison Act of 1914, 90
Web Watch: Activities	Targeting Prevention: Prescribing Practices, 90
Related to Addiction, 64	Two Bureaus, Two Types of Regulation, 91
References, 64	Regulation of Pharmaceuticals, 91
Therefore 64	Purity, 91
Preventing Substance Abuse, 66	Safety, 92
Key Terms, 66	
Online Learning Center Resources, 66	
Drugs in the Media: Prime-Time	Marketing a New Drug, 94
Drug-Prevention Programming, 66	HealthQuest Activities, 95
Defining Goals and	Dietary Supplements, 95
	Narcotics, Dangerous Drugs,
Evaluating Outcomes, 67	and Controlled Substances, 96
Types of Prevention, 68	After the Harrison Act, 96
Targeting Prevention:	Exploring Your Spirituality:
Preventing Inhalant Abuse, 69	Looking for More Humane Policies, 99
Prevention Programs in the Schools, 69	Drug Abuse Control Amendments of 1965, 99
The Knowledge-Attitudes-Behavior Model, 69	Comprehensive Drug Abuse Prevention
Affective Education, 70	and Control Act of 1970, 99
Taking Sides: Are "Alternatives to Drugs"	Drugs in Depth: Americans in Prison, 102
Really Alternatives? 72	Try It! Consider the Consequences, 103
"Just Say No!" 72	State and Local Regulations, 105
Drugs in Depth:	Federal Support for Urine Screening, 106
Effective Prevention Programs, 73	Military and Federal Employees, 106
Drug-Free Schools, 73	Transportation Workers, 106
Peer Counseling, 74	Private Employers, 106
Development of the Social Influence Model, 74	Testing Methods, 106
Drugs in Depth: How Much Do You Know About	Taking Sides: Prescription Marijuana? 107
DARE? 76	The Impact of Drug Enforcement, 108
DARE, 76	Budget, 108
Programs That Work, 77	International Programs, 109
Peers, Parents, and the Community, 78	Other Federal Agencies, 110
Peer Programs, 78	Other Costs, 110
Try It! Does Your Family Function Well? 79	
Parent and Family Programs, 81	Effectiveness of Control, 111
Community Programs, 81	Summary, 112
Exploring Your Spirituality: Integrating Treatment	Web Watch: Activities Related
and Prevention with Pregnancy Services, 82	to Drug Regulations, 112
	Review Questions, 113
Prevention in the Workplace, 82	References, 113
What Should We Be Doing? 83	
HealthQuest Activities, 83	Section II
Summary, 84	
Review Questions, 84	How Drugs Work, 115
Web Watch: Activities Related to Preventing	6 The Nervous System, 116
and Confronting Drug Problems, 84	
References, 85	Key Terms, 116
Drug Regulations, 86	Online Learning Center Resources, 116
	Drugs and the Media: Coverage of Chemical
Key Terms, 86	Causes of Mental Disorders, 116

Chemical Messengers, 118	Possible Mechanisms of Drug Actions, 157
Hormones, 118	HealthQuest Activities, 158
Neurotransmitters, 119	Drug Deactivation, 159
The Nervous System, 122	Mechanisms of Tolerance
Central Nervous System, 122	and Physical Dependence, 159
Somatic Nervous System, 122	Drug Disposition Tolerance, 160
Autonomic Nervous System, 122	Behavioral Tolerance, 160
The Brain, 123	Pharmacodynamic Tolerance, 160
The Whole Brain, 123	Try It! How Do Drugs Work? 161
Major Structures, 124	Summary, 163
Chemical Pathways, 126	Review Questions, 163
Exploring Your Spirituality:	Web Watch: Activities Related
Harnessing the Mind and Spirit, 128	to Drug Effects, 164
Drugs and the Brain, 128	References, 164
Try It! What's Your Body's Natural Cycle? 129	C-t'- III
Targeting Prevention:	Section III
Sexual Dysfunction in Chronic	Uppers and Downers, 165
Drug Users, 131	8 Stimulants, 166
Life Cycle of a Neurotransmitter, 131	* *** ** **
Examples of Drug Actions, 134	Key Terms, 166
Chemical Theories of Behavior, 136	Online Learning Center Resources, 166
HealthQuest Activities, 136	Drugs in the Media: Should Herbal
Brain Imaging Techniques, 137	Supplements Be Regulated? 166
Summary, 138	Cocaine, 168
Web Watch: Activities Related	History, 168
to Drugs and Their Actions, 138	Local Anesthesia, 169
Review Questions, 138	Early Psychiatric Uses, 169
References, 139	Legal Controls on Cocaine, 170
m	Crack, 171
The Actions of Drugs, 140	Basic Pharmacology, 171
Key Terms, 140	Beneficial Uses, 173
Online Learning Center Resources, 140	Causes for Concern, 174
Drugs in the Media:	Supplies of Illicit Cocaine, 176
The Grapefruit-Juice Effect, 140	Current Patterns of Cocaine Use, 176
Sources and Names of Drugs, 141	Targeting Prevention: Cocaine and Friendship, 177
Sources of Drugs, 141	Cocaine Treatment, 177
Names of Drugs, 142	Cocaine's Future, 178
Categories of Drugs, 142	Amphetamines, 179
Exploring Your Spirituality:	History, 179
Taking Good Care of Yourself, 144	Basic Pharmacology, 182
Drug Identification, 145	HealthQuest Activities, 184
Drug Effects, 145	Beneficial Uses, 184
Nonspecific (Placebo) Effects, 145	DSM-IV: Diagnostic Criteria for Attention-Deficit
Dose-Response Relationships, 146	Hyperactivity Disorder, 188
Taking Sides: Animal Toxicity Tests, 149	Exploring Your Spirituality: How Far Should We Go
Targeting Prevention:	to Enhance Human Abilities? 189
Avoiding Withdrawal Symptoms, 150	Causes for Concern, 191
Potency, 150	Supplies of Illicit Amphetamine, 193
Time-Dependent Factors in Drug Actions, 150	Current Patterns of Amphetamine Abuse, 193
Getting the Drug to the Brain, 152	Summary, 194
A Little "Chemistry," 152	Review Questions, 194 Web Watch:
Routes of Administration, 152	Activities Related to Stimulant Use, 195
Transport in the Blood, 156	
Blood-Brain Barrier, 156	References, 195
Drugs in Depth: Drug Interactions, 157	Try It! Sensation Seeking Scale, 197

9	Depressants and Inhalants, 199	Try It: Track Your Daily Mood Changes, 233
	Key Terms, 199	Exploring Your Spirituality: Consequences of Drug Treatments
	Online Learning Center Resources, 199	for Mental Illness, 236
	Drugs in the Media:	Solitude: Therapy for the Soul, 238
	The Legacy of Samantha Reid, 199	HealthQuest Activities, 238
	History and Pharmacology, 201	Summary, 238
	Before Barbiturates, 201	Review Questions, 239
	Barbiturates, 202	Web Watch: Activities Related
	Meprobamate, 203	to Psychotherapeutic Drugs, 239
	Methaqualone, 203	References, 239
	Benzodiazepines, 204	References, 239
	Targeting Prevention: The Drug-Induced Rape	Section IV
	Prevention and Punishment Act, 206	Alcohol, 241
	HealthQuest Activities, 206	(E. 335 Special) 50 (EU 6.)
	Mechanism of Action, 207	11 Alcohol in the Body, 242
	Beneficial Uses, 207	Key Terms, 242
	As Sedatives, 207	Online Learning Center Resources, 242
	As Sleeping Pills, 209	Drugs in the Media:
	As Anticonvulsants, 210	Advertising Alcohol on Television, 242
	Causes for Concern, 210	Alcoholic Beverages, 243
	Dependence Liability, 210	Fermentation and Fermentation Products, 243
	Targeting Prevention:	Distilled Products, 244
	Falling Asleep Without Pills, 211	Alcohol as a Consumer Item, 244
	Exploring Your Spirituality: How Are Social Barriers	Beer, 245
	a Factor in Drug Use? 213	Wine, 246
	Toxicity, 213	Distilled Spirits, 249
	Patterns of Abuse, 213	Alcohol Pharmacology, 251
	Inhalants, 214	Absorption, 251
	Gaseous Anesthetics, 214	Metabolism, 252
	Nitrites, 214	Drugs in Depth: The "Flushing" Reaction and
	Volatile Solvents, 214	Alcohol Consumption in Asia, 252
	Summary, 216	Central Nervous System Effects, 253
	Review Questions, 216	Targeting Prevention:
	Web Watch: Activities Related to	Estimating Blood Alcohol Calculations, 257
	Depressants and Inhalant Use, 217	HealthQuest Activities, 258
	References, 217	Blackouts, 258
		Sexual Behavior, 258
10	Psychotherapeutic Drugs, 219	Alcohol Withdrawal—Delirium Tremens, 259
		Exploring Your Spirituality:
	Key Terms, 219	
	Online Learning Center Resources, 219	Overcoming Codependence, 260
	Drugs in the Media:	Physiological Effects, 261
	Mental Illness at the Movies, 219	Alcohol Toxicity, 261
	Mental Illness, 220	Hangover, 261
	Medical Model, 220	Chronic Disease States, 263
	Classification of Mental Disorders, 221	Brain Damage, 263
	DSM-IV: Anxiety Disorders, 222	Liver Disorders, 264
	DSM-IV: Diagnosis of Schizophrenia, 223	Heart Disease, 265
	Treatment of Mental Disorders, 223	Cancer, 265
	Before 1950, 223	The Immune System, 265
	DSM-IV: Diagnosis of Mood Disorders, 224	Fetal Alcohol Syndrome, 266
	Antipsychotics, 225	Taking Sides:
	Antidepressants, 228	Protecting the Unborn from Alcohol, 268
	Taking Sides: Prozac for Everyone? 231	Summary, 268
	Lithium 232	Review Questions, 269

12

	Web Watch: Quiz Yourself: Alcohol	Early Medical Uses, 302
	Risks 269	The Spread of Tobacco Use, 302
	References, 269	Tobacco in Early America, 303
19	Alcohol and Society, 271	Chewing Tobacco, 304
14		Cigars and Cigarettes, 304
	Key Terms, 271	Current Tobacco Products, 305
	Online Learning Center Resources, 271	Less Hazardous Cigarettes, 307
	Drugs in the Media: Linking Alcohol	Trends in Smoking Behavior, 308
	with Violence in the News, 272	Smokeless Tobacco, 309
	Alcohol Use and	Are Cigars Back? 311
	"the Alcohol Problem," 272	A Social and Economic Dilemma, 311
	The Temperance Movement in America, 273	Taking Sides: Should the U.S. Government Continue
	Prohibition, 274	to Pursue Cigarette Manufacturers? 313
	Regulation After 1933, 276	Causes for Concern, 313
	Taxation, 277	Adverse Health Effects, 313
	Who Drinks and Why? 277	Passive Smoking, 315
	Cultural Influences in Drinking, 277	HealthQuest Activities, 316
	Regional Differences in the United States, 278	Smoking and Health in Other Countries, 316
	Gender Differences, 279	Smoking and Pregnancy, 317
	Drinking Among College Students, 279	Pharmacology of Nicotine, 317
	HealthQuest Activities, 280	Absorption and Metabolism, 318
	Time-Out and Alcohol Myopia, 280	Physiological Effects, 318
	Social Problems, 280	Drugs in Depth: Possible New Painkiller? 319 Behavioral Effects, 320
	Driving Under the Influence, 280	Addiction to Nicotine, 320
	Crime and Violence, 282	How to Stop Smoking, 321
	Who Is an Alcoholic? 283 Treatment of Alcoholism, 287	Exploring Your Spirituality: The Hidden Costs
		of Smoking, 322
	Alcoholics Anonymous, 287	Try It! Test Your Tobacco Awareness, 323
	Drugs in Depth: The 12 Steps of Alcoholics Anonymous, 288	Summary, 325
	Medical Approaches, 288	Review Questions, 325
	Exploring Your Spirituality:	Web Watch: Learn About Tobacco
	Online Support for Recovery, 289	Addiction 326
	Behavioral Approaches, 290	References, 326
	Is Controlled Drinking a Realistic Goal? 290	11010101000, 020
	Taking Sides: Should Controlled Drinking	Caffeine, 328
	Be Supported as a Treatment Goal? 291	Key Terms, 328
	Is Alcoholism Treatment Effective? 292	Online Learning Center Resources, 328
	Try It! How Can You Tell Whether	Drugs in the Media:
	You Have a Drinking Problem? 293	Fancy Coffee Drinks and Humor, 328
	Summary, 295	Caffeine: The World's Most Common
	Review Questions, 295	Psychostimulant, 329
	Web Watch: Warning Signs of Alcohol	Coffee, 329
	Abuse 296	HealthQuest Activities, 333
	References, 296	Tea, 333
		Chocolate, 336
Sec	ction V	Other Sources of Caffeine, 338
Fa	miliar Drugs, 299	Soft Drinks, 338
		Over-the-Counter Drugs, 340
13	Tobacco, 300	Caffeine Pharmacology, 340
	Key Terms, 300	Time Course, 341
	Online Learning Center Resources, 300	Taking Sides: Caffeine-Dependence
	Drugs in the Media:	Syndrome? 342
	Cigarette Smoking in the Movies, 300	Mechanism of Action, 342
	Tobacco, 302	Physiological Effects, 342

	Exploring Your Spirituality: Get a Mantra, Not a Mocha, 343 Behavioral Effects, 344 Drugs in Depth: Caffeine and Panic Attacks, 344 Causes for Concern, 345 Cancer, 345 Benign Breast Disease, 345 Reproductive Effects, 346 Heart Disease, 346	Review Questions, 372 References, 372 Try It: Can You Guess What These OTC Products Are Used For? 373 Section VI Restricted Drugs, 375 16 Opioids, 376
	Caffeinism, 346	Key Terms, 376
	Summary, 347	Online Learning Center Resources, 376
	Review Questions, 347	Drugs in the Media: The Rise and Fall
	Web Watch: Finding Alternatives to	of Heroin "Epidemics," 376
	Caffeine Addiction 347	History of Opioids, 378
	References, 348	Opium, 378
	Try It: How Much Caffeine Do You Consume? 349	Morphine, 382 Heroin, 382
15	Over-the-Counter Drugs, 351	Opiate Abuse Before the Harrison Act, 383
	Key Terms, 351	Abuse After the Harrison Act, 385
	Online Learning Center Resources, 351	Taking Sides: Should Heroin Be Made Available for
	Drugs in the Media: Concern over the	Medical Purposes? 386
	Growing Risk of Drug Interaction, 351	Pharmacology of the Opioids, 389
	FDA Regulation of OTC Products, 353	Chemical Characteristics, 389
	Simplifying Labels, 354	Exploring Your Spirituality: Imitating Fashion Trends
	Over-the-Counter Versus	Versus Developing a Personal Style, 391
	Prescription Drugs, 354	Mechanism of Action, 392
	Taking Sides: Should There Be a Class of	Beneficial Uses, 394
	"Pharmacist-Recommended" Drugs? 355	Pain Relief, 394
	Some Psychoactive OTC Products, 355	Intestinal Disorders, 394
	Stimulants, 355	Cough Suppressants, 394
	Weight-Control Products, 356	Causes for Concern, 394
	Sedatives and Sleep Aids, 357	Dependence Potential, 394
	Targeting Prevention: The Medicine Chest, 358	Toxicity Potential, 397
	Analgesics, 358	Patterns of Abuse, 398
	People and Pain, 358	HealthQuest Activities, 399
	HealthQuest Activities, 358	Treatment of Narcotic Dependence, 400
	Aspirin, 359	History, 400
	Acetaminophen, 363	Current Medical Approaches, 401
	Ibuprofen and Other NSAIDs, 364	Taking Sides:
	Colds and Allergy Products, 364	Tough Moral Stances Versus Harm Reduction, 405
	The All-Too-Common Cold, 364	Summary, 406
	Treatment of Cold Symptoms, 366	Try It: Street Slang, 407
	Drugs in Depth: Cold Medications and Kids, 366	Review Questions, 409
	Allergy and Sinus Medications, 367	Web Watch: Check Out Publications on
	Choosing an OTC Product, 367	Narcotics, 409
	Drugs in Depth:	References, 409
	Abuse of OTC Dextromethorphan, 369	17 Hallucinogens, 412
	Herbal Products, 369	
	Exploring Your Spirituality: Will Aging Baby	Key Terms, 412
	Boomers Raise Substance-Abuse Rates? 370	Online Learning Center Resources, 412
	St. John's Wort, 370	Drugs in the Media:
	SAMe, 370 Ginkgo Biloba, 371	The Psychedelic Sixties—Reflections in Film, Music, and Literature, 412
	Ginkgo Biloba, 371 Summary, 371	Animism and Religion, 413
	Web Watch: Drug Store Knowledge 371	Terminology and Types, 414
	The material brag otore mioritage of I	terminology and Types, 414

18

Causes for Concern, 468 Dependence Potential, 468

Toxicity Potential, 469 HealthQuest Activities, 470

Phantastica, 414	Drugs in Depth: Long-term Effects
Indole Hallucinogens, 414	of Marijuana Smoke in Monkeys, 472
HealthQuest Activities, 426	Marijuana and American Society, 473
Catechol Hallucinogens, 429	Summary, 475
Exploring Your Spirituality: Living in the Flow, 435	Web Watch: Are You Abusing
Taking Sides:	Marijuana? 476
Can Ibogaine Cure Drug Dependence? 438	Review Questions, 476
Anticholinergic Hallucinogens, 439	References, 476
Belladonna, 439	Try It: Short-term Memory, 479
Mandrake, 440	•
Henbane, 440	19 Steroids and Other Drugs in Sport, 481
Datura, 441	
Synthetic Anticholinergics, 442	Key Terms, 481
Amanita Muscaria, 442	Online Learning Center Resources, 481
Drugs in Depth: Toadlicking: An Urban Legend, 443	Drugs in the Media: Banned Substances
Summary, 444	and How to Avoid Them, 481
Review Questions, 444	Historical Use of Drugs in Athletics, 483
Try It! Hallucinogens from Plants, 445	Ancient Times, 483
Web Watch: Check Out Publications on	Early Use of Stimulants, 483
Hallucinogens 447	Amphetamines, 484
References, 447	International Drug Testing, 485
	American Football, 485
Marijuana and Hashish, 450	Steroids, 485
	Exploring Your Spirituality:
Key Terms, 450	Promoting Overall Fitness, 486
Online Learning Center Resources, 450	Cocaine, 487
Drugs in the Media:	Stimulants as
Medical Marijuana in the News, 450	Performance Enhancers, 487
Cannabis, the Plant, 452	HealthQuest Activities, 488
Preparations from Cannabis, 452	Steroids, 489
History, 454	Psychological Effects, 490
Early History, 454	Drugs in Depth: Nutritional Ergogenic Aids, 491
The Nineteenth Century: Romantic Literature	Adverse Effects on the Body, 492
and the New Science of Psychology, 455	Regulation, 492
"Marijuana, Assassin of Youth," 456	Other Hormonal Manipulations, 492
The Marijuana Tax Act of 1937, 458	Taking Sides: Has Creatine Killed Wrestlers? 493
After the Marijuana Tax Act, 458	Beta-2 Agonists, 493
Exploring Your Spirituality: Diversity and	Creatine, 494
Dialogue 459	Summary, 494
Pharmacology, 460	Web Watch: Do You Mix Drug and
Cannabinoid Chemicals, 460	Sports? 494
Absorption, Distribution, and Elimination, 461	Review Questions, 494
Mechanism of Action, 462	Try It! How Would You Run the Race? 495
Physiological Effects, 462	References, 497
Behavioral Effects, 463	
Medical Uses of Cannabis, 465	
Taking Sides: Should Medical Patients	Appendices, 498
Have Access to Marijuana? 468	Glossary, 504
Causes for Concern, 468	Credits, 516
D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

Index, 517