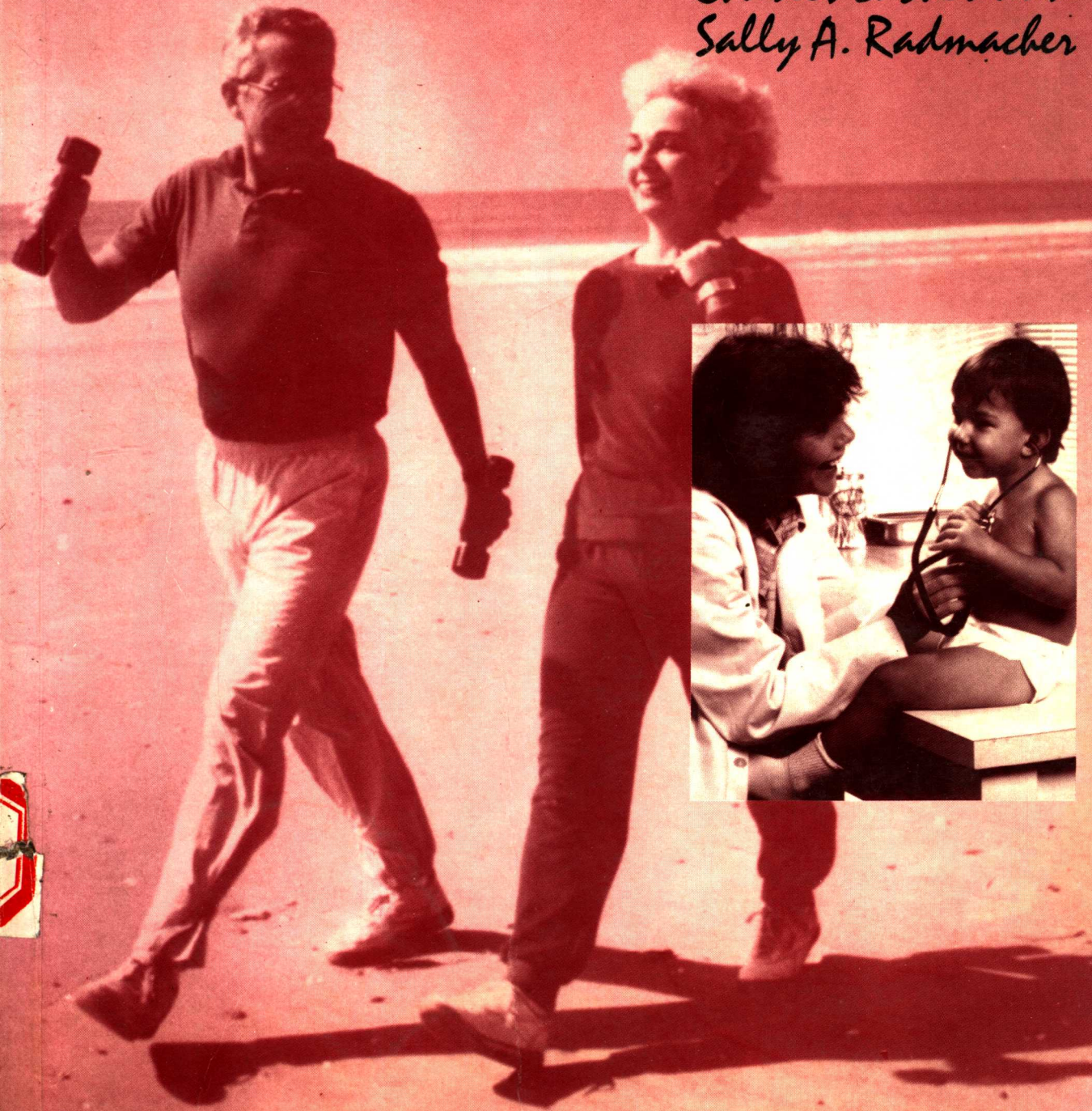


Health Psychology

Challenging the Biomedical Model

Charles L. Sheridan
Sally A. Radmacher



Health Psychology

Challenging the Biomedical Model

Charles L. Sheridan

University of Missouri—Kansas City

Sally A. Radmacher

Missouri Western State College



WILEY

JOHN WILEY & SONS, INC.

New York • Chichester • Brisbane • Toronto • Singapore

ACQUISITIONS EDITOR / Deborah Moore
COPY EDITOR / Elizabeth Swain
PRODUCTION MANAGER / Joe Ford
SENIOR PRODUCTION SUPERVISOR / Savoula Amanatidis
DESIGNER / Laura Nicholls
PHOTO RESEARCH MANAGER / Stella Kupferberg
PHOTO RESEARCHER / Jennifer Atkins
ILLUSTRATION COORDINATOR / Sigmund Malinowski
MANUFACTURING MANAGER / Lorraine Fumoso
COVER PHOTO: David Woods/The Stock Market
INSET PHOTO: Mug Shots/The Stock Market

Recognizing the importance of preserving what has been written, it is a policy of John Wiley & Sons, Inc. to have books of enduring value published in the United States printed on acid-free paper, and we exert our best efforts to that end.

Copyright © 1992 by John Wiley & Sons, Inc.

All rights reserved. Published simultaneously in Canada.

Reproduction or translation of any part of this work beyond that permitted by Sections 107 and 108 of the 1976 United States Copyright Act without the permission of the copyright owner is unlawful. Requests for permission or further information should be addressed to the Permissions Department, John Wiley & Sons.

Library of Congress Cataloging in Publication Data:

Sheridan, Charles L., 1937—

Health psychology : challenging the biomedical model / Charles L. Sheridan, Sally A. Radmacher.
p. cm.

Includes bibliographical references and indexes.

ISBN 0-471-50852-7 (cloth) : alk. paper)

1. Clinical health psychology—Philosophy. 2. Medicine and psychology. I. Radmacher, Sally A. II. Title.

[DNLM: 1. Disease—psychology. 2. Health Behavior. 3. Models, Psychological. 4. Psychology, Medical. 5. Psychophysiological Disorders. WM 90 S552h]

R726.7S47 1992

610'.1'9—dc20

DLC

for Library of Congress

91-10347
CIP

Printed in Singapore

10 9 8 7 6 5 4 3 2 1

Preface

The year 2055 is a kind of Armageddon for modern medicine. It is the year when, given present growth rates, health care costs in the United States are expected to reach 100% of the gross national product! If that happened, it would mean that every hour, every minute, every second of human production would be devoured by medical costs. Of course, this is an impossible scenario. But it tells us one thing very clearly: sometime between now and 2055 there is going to be a revolution in the health care system.

Thomas Kuhn in his pivotal work, *The Structure of Scientific Revolutions*, told us how such changes occur. They happen very slowly. Time after time the established system fails to deal adequately with the problems at hand. Alternatives arise, and they create controversy. Eventually, one of the alternatives or some combination of them becomes the new norm, or "paradigm." This new paradigm inevitably assimilates the old one and includes major facets of it within its own corpus.

Just this kind of thing is happening with the

dominant paradigm of health care—the biomedical model. The main features of present-day biomedicine could be seen by the turn of the century. The biomedical model took the art of medicine and founded it squarely in the biological sciences. This laid the foundation for many great accomplishments; many of the early 20th century's most deadly biological killers have now been subdued. But the easy medical conquests are now but glorious memories, and biomedicine, along with its practitioners, is challenged and subjected to skeptical inquiry at every turn.

One of the most important challenges comes from those, like the present authors, who advocate a biopsychosocial model. We maintain that social and psychological factors are far too important to be ignored by medicine. Many have argued that lifestyle and one's psychological make-up are at least as important to one's health as availability of medical care. And nostalgia for the kind, wise doctors of yore has been transformed by many into serious proposals

that medical effectiveness depends on good human relationships, and even that human contact can heal. The biomedical model must grow to include psychosocial factors.

We should expect that, in the early stages of this revolution, a wild variety of challenges to the old model will be put forth. Some of these alternatives will prove to be solid and will take their place as part of the structure of the new paradigm. Others will fall away and be forgotten, or be exiled to the realm of kooky or even quackish views.

Eventually, there comes a time when the wheat must be separated from the chaff, when someone has to take on the task of presenting a coherent view of the current status of the new model. This is what we have tried to do in the present work. We have done this in the form of a highly readable text because we want to include in our audience the young people who will go on to mold the new model into its mature form. So we have designed this text to be suitable for lower-level undergraduates as well as more advanced students.

SETTING THE BOUNDARIES

The rapid growth and diversity of our field makes it impossible for anyone to have a full grasp of all the traditions that have influenced health psychology. People of many contending persuasions have contributed to the development of health psychology. They range from strict behaviorists at one pole to those interested in holistic medicine at the other. Each of them, to one degree or another, has contributed to the development of a new perspective on health. It was a major task to decide which of the contributions should be part of the corpus of health psychology. We had to be selective, but we tried to do so without unduly narrowing the scope of our topic. Our own backgrounds and interests are diverse (ranging from clinical psychology and neuroscience to public health and community psychology), and we value the contributions made to health psychology from these and many other disciplines.

A glance at the detailed Table of Contents should make it clear that the familiar and favorite topics and references are covered; a look at our extensive and current bibliography is equally revealing. It includes both the latest and the "classic" references of health psychology.

Many "leading-edge" topics that have received little or no attention in other texts are included in this book. For example, we describe research on cognitive processes of physicians while they are formulating and validating diagnoses. We also discuss the role of psychologists in dealing with patients undergoing cosmetic surgery. We not only disclose the present state of health psychology, but also provide a glimpse of its potential and, perhaps, its future.

Our primary goal is to present a well-documented, comprehensive overview of health psychology to the undergraduate student while keeping the excitement that is so much a part of health psychology.

FEATURES OF THE BOOK

The book is theme oriented. We repeatedly contrast the biomedical model with the biopsychosocial model. These contrasting views of health, disease, and health care are clearly drawn, and powerful evidence is presented to indicate the pressing need for a change of models.

Throughout the book, we emphasize a hands-on, applied approach. We focus on the *practice* of health psychology without sacrificing the significance of experimental or theoretical work. The practical information on the training required for health psychologists will give students some idea of how they might pursue their interests in the field.

We have included a number of devices to make learning easier for the student. Key terms are printed in **bold type** and are clearly defined when they are first introduced; each is again defined at length in the Glossary at the end of the book. A summary and discussion questions are provided at the end of each chapter.

Finally, as our primary pedagogical device, we have used "stories" and examples selected

to make the material more interesting and meaningful for the students. All of the stories are based on actual events that are either from the literature or that we know of personally. We have changed only the names and circumstances to make the narratives more readable, and to protect the privacy of those who were willing to share their stories.

ORGANIZATION OF THE BOOK

The first three chapters of the book provide a foundation for the study of health psychology. The first chapter acquaints students with the biomedical model, the dominant paradigm of the health care system, and introduces the challenging paradigm, the biopsychosocial model. This chapter also describes the health care crisis and its antecedents. One of the primary goals of this chapter is to impress upon students that they are beginning their study of health psychology during a period of crisis and revolution in the health care system. The second chapter defines health psychology, describes its breadth, and discusses the training and career opportunities for health psychologists.

Chapter Three provides students with guidelines for evaluating health-related information. We emphasize the distinction between well-controlled research and findings and claims that hold promise but have not yet been thoroughly tested. Students are taught to think critically about media reports of research findings and to develop healthy skepticism even for studies from the most prestigious journals.

Chapter Four uses the familiar issue of "mind over body" as a vehicle for delineating how the nervous system can control health. It explains the relationship between the central nervous system, the autonomic nervous system, and the immune system. A concise account of psychoneuroimmunology is included in this chapter.

The fifth chapter presents an overview of the therapies that are of use to health psychologists.

Cognitive behavioral therapy is featured, but the older psychodynamic approaches are also explained. Specific application of psychological treatments is further described throughout the book. For example, biofeedback and autogenic training are mentioned here, but we present them in more detail in later chapters.

Chapter Six is a cognitive-social perspective on physicians and patients. This chapter covers human information processing and its effect on medical decision making and compliance with medical procedures. It also looks at coping with illness from the perspective of patients and health care providers.

The seventh chapter is a comprehensive review of stress and synthesizes the most important, if not always the most publicized, theories and research in the field. Special emphasis is placed on social support, appraisal, and coping. Stress management is covered in this chapter and in Chapters Eight and Nine.

Chapters Eight and Nine feature the lifestyle factors that are important to health, including nutrition, weight control, exercise, addiction, cigarette smoking, and alcoholism. In both chapters, we have emphasized prevention and the importance of changing environments to promote healthy lifestyles and discourage unhealthy habits.

Chapter Ten provides an overview of the nature and treatment of pain. Since headache is highly prevalent, and often treated behaviorally, special attention is given to headaches and their treatment. This chapter applies autogenic training and biofeedback to the treatment of pain.

Chapters Eleven and Twelve cover the modern epidemics: coronary heart disease, hypertension, cancer, and AIDS. Prevention as well as treatment are discussed. Finally, Chapter Thirteen deals with the widening scope of health psychology. We present several areas of research and treatment in health psychology that are not commonly covered in health psychology texts, including temporomandibular joint syndrome, asthma, and skin disorders.

Contents

1 Changing Paradigms In Health and Health Care 1

PARADIGMS: THE MENTAL
FRAMEWORKS OF SCIENCE 2

THE BIOMEDICAL MODEL VERSUS THE
BIOPSYCHOSOCIAL MODEL 3

The Biomedical Model 3

Psychosomatic Medicine 3

A Paradigm Shift 4

The Biopsychosocial Model 4

DEFINING HEALTH AND
RELATED TERMS 5

Box 1.1 The Meaning of the Root Word
of Health 5

Changing Concepts of Health 6

The Impact of Health Definitions 8

The Wellness Continuum 8

THE CRISIS IN HEALTH CARE 8

The Health Care System 9

Economic Factors 9

The Technological Imperative 10

Box 1.2 The Changing Face of

American Physicians 11

Medical Imperialism 12

Limitations of Technological Medicine 12

Life Expectancy 13

Questioning Technology's Effectiveness 13

Heroic Medicine 14

The Diseases of Civilization 15

ALTERNATIVE HEALTH CARE DELIVERY
SYSTEMS 16

The Impact of Cost Containment 16

Alternative Health Care Settings 17

CONCLUSIONS 19

SUMMARY 20

2 Introduction to Health Psychology 22

HEALTH PSYCHOLOGY: AN EMERGING
DISCIPLINE 24

Defining Health Psychology 25

The Scope of Health Psychology	25
Health Psychology and Mind-Over-Body	26
MAJOR APPROACHES TO HEALTH PSYCHOLOGY	26
The Behavioral Approach	26
The Cognitive-Behavioral Approach	28
The Psychophysiological Approach	29
The Clinical Psychology Approach	30
The General Systems Theory Approach	30
The Community Psychology Approach	31
The Family Systems Approach	32
The Existential-Phenomenological Approach	32
The Holistic Approach	33
HEALTH PSYCHOLOGY AND RELATED DISCIPLINES	33
The Relationship to Medicine	33
Behavioral Medicine and Behavioral Health	34
Medical Psychotherapy	34
THE PRACTICE OF HEALTH PSYCHOLOGY	34
Therapy	34
Crisis Therapy	35
Lifestyle Training	36
Community and Organizational Programs	36
Public Education	36
Political Action	36
Research	36
Career Opportunities	37
TRAINING OF HEALTH PSYCHOLOGISTS	38
Course Work	38
Public Health Psychology	38
The Bottom Line	39
CONCLUSIONS	39
SUMMARY	40
3 Thinking Critically about Health-related Research	43
THE COSTS OF FAULTY RESEARCH	44
Economic Costs of Faulty Research	44
The "Cry Wolf" Effect	45
THE DIFFICULTY OF EVALUATING RESEARCH	46
THE SCIENTIFIC METHOD	46
In the Beginning	46
The Marriage of Reason and Observation	47
DISCOVERY VERSUS VERIFICATION	47
Differences Between Discovery and Verification	48
Sources of Discovery	48
Confusing Discovery with Verification	49
THE EXPERIMENTAL METHOD	50
The Null Hypothesis	51
Treating Speculations as Verified Principles	51
COMMON PITFALLS IN HEALTH RESEARCH	52
Conclusions Based on Testimonials, Opinion or Authority	52
Box 3.1 Darwin's Case of Faulty Testimony	53
Studies Concluding That Variables Have No Effect	53
Studies That Confuse Correlation with Causation	55
Studies with Defective Measures of Variables	56
Studies with Small or Unrepresentative Samples	58
CONCLUSIONS	60
SUMMARY	61
Box 3.2 Guidelines for Evaluating Research	62
4 Psychobiological Mechanisms of Health and Disease	64
THE MIND/BODY PROBLEM	65
THE AUTONOMIC NERVOUS SYSTEM	67
Functions of the Sympathetic Nervous System	67
Functions of the Parasympathetic Nervous System	69

THE LINK BETWEEN THE AUTONOMIC AND CENTRAL NERVOUS SYSTEMS 69

- The Hypothalamus 70
- The Limbic System 71
- The Interconnections 72

THE HYPOTHALAMIC-PITUITARY- ADRENAL CORTICAL SYSTEM 72

- The Hormones of the Adrenal Cortex 72
- The General Adaptation Syndrome (GAS) 73
- The Central Nervous System and the GAS 73
- Central Nervous System Control of Other
Hormones 74

THE IMMUNE SYSTEM 74

- The Innate System of Immunity 74
- The Acquired System of Immunity 75
- Cancer and Immune Surveillance 78
- Psychoneuroimmunology: Does Mind
Matter? 79

CONCLUSIONS 85

SUMMARY 85

5 *Psychological and Behavioral Therapies in Health Psychology 91*

IMPACT OF BIOMEDICAL VERSUS BIOPSYCHOSOCIAL MODELS 92

PERSPECTIVES ON PSYCHOSOCIAL PROCESSES IN HEALTH 93

THE BEHAVIORAL MODEL OF THERAPY 93

- The Cognitive-Behavioral Model of Therapy 93

CHARACTERISTICS OF BEHAVIOR THERAPY 94

- Classical Conditioning 94
- Operant Conditioning 94
- Health-Related Behavior as Conditioned
Responses 95
- Precision and Measurement 95

- Behavioral Management 97
- Cognitive Behavioral Therapy 99

A CENTRAL TECHNIQUE: RELAXATION TRAINING 104

- Progressive Relaxation 104
- Systematic Desensitization 106

EXPRESSIVE THERAPY AND HEALTH PSYCHOLOGY 107

- Expressive Versus Behavioral Therapy 107
- The Psychodynamic Model of Therapy 108
- Uncovering Versus Covering Therapies 108
- Methods of Expressive Therapies 108

CONCLUSIONS 113

SUMMARY 114

6 *A Cognitive-Social Look at Physicians and Patients 119*

HUMAN INFORMATION PROCESSING AND MEDICAL REASONING 121

- Our Limited Channel Capacity 121
- Probabilities, Heuristics, and Cognitive
Errors 122
- Medical Diagnosis and Information
Processing 124

COPING WITH ILLNESS 127

- Stages in the Formulation of Disease 127
- Dispositional Versus Process Analyses of
Coping 127
- The Psychology of Physical Symptoms 128
- Coping with the Sick Role 130

THE ROLE OF THE HEALTH CARE PROFESSIONAL 132

- Dealing with Defense Mechanisms 132
- Keeping Patients Informed 133
- Health Care Provider Stress 134

ADHERENCE TO MEDICAL PROCEDURES 135

- Importance of Correct Implementation 135
- Prevalence of Failures to Implement Biomedical
Treatment 136
- Awareness of Noncompliance 137

Transmittal, Reception, and Retention of Information	137
Improving Compliance	139

7 Stress and Health 147

THE NATURE OF STRESS	148
A STRESS MODEL	148
Stressors	149
Cognitive Appraisals	150
Stress Resistance Resources	151
Box 7.1 The Conservation of Resources Model	151
Short-term Reaction	153
Eustress, Distress, and Neutral Effects	154
SOCIAL SUPPORT	156
Main Effect versus Buffering Models	156
Box 7.2 A Research Investigation of Instrumental Support In Childbirth	157
Negative Effects of Social Support	158
The Link Between Social Support and Health	159
COPING	159
Cognitive Components	159
Problem- and Emotion-Focused Coping	160
Individual Coping Styles	161
STRESS MANAGEMENT	163
Managing Stressors	163
Box 7.3 A Summary of Common Defense Mechanisms	164
Modifying Appraisals	165
Developing Stress Resistance Resources	166
Controlling Stress Reactions	166
Stress Management Programs	166
CONCLUSIONS	167
SUMMARY	167

8 Lifestyle Factors I: Health, Food, and Exercise 170

PREVENTING LIFESTYLE DISEASES	172
NUTRITION	173
The American Diet	173

Diet and Health	174
Box 8.1 Buyer Beware: Watch the Hidden Fat!	174

WEIGHT CONTROL	177
The Glucostatic Theory	177
The Set-point Theory	177
Restrained Eating Theory	178
Dieting and Metabolic Rates	178
Low Calorie Food: Friend or Foe?	178

OBESITY	178
Measuring Obesity	179
Box 8.2 Finding Ideal Weight Through The Body Mass Index	179
Causes of Obesity	180
Effects of Obesity	180
Treatment of Obesity	181

Box 8.3 Very-low-calorie Diets	182
---------------------------------------	-----

EATING DISORDERS	184
Anorexia Nervosa	184
Bulimia Nervosa	185

EXERCISE	186
Aerobic Exercise	186
Stretching and Weight Training	186
Physiological Benefits of Exercise	187
Psychological Benefits of Exercise	187
How Much Exercise Is Enough?	188
Getting Motivated to Exercise	189

DEVELOPING HEALTHY LIFESTYLE BEHAVIORS	189
Theories of Lifestyle Change?	189
Goal Setting and Contracts	190
Box 8.4 Behavioral Change Contract	191

CONCLUSIONS	191
SUMMARY	192
HEALTHSTYLE: A SELF-TEST	194

9 Lifestyles II: The Invisible Drugs 197

DRUG ADDICTION	198
Physical Dependency and Tolerance	198
Set and Settings	199
Effects of Psychoactive Drugs	199

NICOTINE 199

- The Effects of Smoking Tobacco 200
- Passive Smoking 201
- Why Smoking Is Hard to Quit 202
- How Smokers Become Ex-Smokers 202
- Preventing Cigarette Smoking 205

Box 9.1 Tobacco Companies Fight

- Back 205
- Smokeless Tobacco 207

ALCOHOL 208

- Who Uses Alcohol 208
- Alcohol Dependence and Abuse 209
- What Causes Alcohol Dependence and Abuse 209

Box 9.2 The Gene for Alcoholism: Looking Beyond the Headlines 211

- The Biopsychosocial Effects of Alcoholism 212
- Treatment of Alcohol Dependence and Abuse 214
- Prevention of Alcohol Dependence and Abuse 215

CONCLUSIONS 216

SUMMARY 217

10 Pain and Health Psychology 221

A BIOMEDICAL MODEL OF PAIN 222

- The Search for Pain Receptors 222
- Nerve Fibers and Pain Pathways 223
- The Receiving Areas of the Brain 224

ACTIVITY IN PAIN PATHWAYS

AND PAIN 224

- Battle Wounds 224
- Phantom Limb Pain 225
- Acute Versus Chronic Pain 226
- Cultural and Personal Differences in Pain Response 226

BROADENING OUR CONCEPT OF PAIN 227

- The Gate Control Theory of Pain 227
- Operant Control of Pain 230
- Multifaceted and Multimodal Approaches to Pain Treatment 231

A CASE STUDY OF PAIN TREATMENT 233

HEADACHE 234

- Migraine Headache 234
- Tension Headache 239
- Mixed Headache 241

CONCLUSIONS 242

SUMMARY 242

11 Modern Epidemics: Cardiovascular Disease 246

ARTERIOSCLEROSIS 249

PSYCHOLOGICAL APPROACHES TO ESSENTIAL HYPERTENSION 249

- Essential Hypertension 249
- Effects of Hypertension 249
- The Physiological Basis of Hypertension 250
- Measurement of Blood Pressure 252
- Medical Control of Hypertension 252
- Role of Health Psychology in the Control of Hypertension 254

Box 11.1 Relaxation Techniques Used for Hypertension Treatment 256

PSYCHOLOGICAL APPROACHES TO CORONARY HEART DISEASE 259

- Ischemia and Angina 260
- Myocardial Infarction 260
- Biomedical Treatment of Coronary Heart Disease 261
- Prevention of Coronary Heart Disease 262
- Psychology's Role in Prevention 263
- Type A Behavior 263
- Stress and Coronary Heart Disease 268

CONCLUSIONS 269

SUMMARY 270

12 Cancer and AIDS: The Dreaded Diseases 273

CANCER 274

- What Is Cancer? 274
- Types of Cancer 274

The Biopsychosocial Precursors of Cancer	275
The Psychosocial Effects of Cancer and Its Treatment	278
Psychosocial Interventions for Cancer Patients	281

ACQUIRED IMMUNE

DEFICIENCY SYNDROME	284
The HIV Virus and Its Effects	285
The Transmission of AIDS	286
Populations at Risk	286
The Psychosocial Impact of AIDS	287
The Psychosocial Treatment of AIDS	288
Controversy and Contradiction	290

CONCLUSIONS 290

SUMMARY 291

Box 12.1 Fighting Cancer with the Mind 292

13 The Widening Scope of Health Psychology 296

HEALTH PSYCHOLOGY AND TEMPOROMANDIBULAR JOINT SYNDROME 299

History of Temporomandibular Joint Syndrome 299

Response Specificity	299
Biofeedback Treatment	300

HEALTH PSYCHOLOGY AND PLASTIC SURGERY 301

THE ROLE OF THE PSYCHOLOGIST IN ORAL SURGERY 303

HEALTH PSYCHOLOGY AND SKIN DISORDERS 305

Box 13.1 Stigmata Induced by Hypnosis	306
Psychological Factors in Skin Disorders	308
Psychological Treatments of Skin Disorders	310

HEALTH PSYCHOLOGY AND ASTHMA 311

Complexities of Asthma and Its Treatment	312
Psychological Interventions	313

PSYCHOLOGICAL APPROACHES TO DIABETES 315

Psychosocial Factors in Diabetes	315
Psychological Interventions	315
Stress and Diabetes	316
Psychosomatic Families	317

CONCLUSIONS 319

SUMMARY 319

Glossary 323

References 336

Photo Credits 372

Index 373

Chapter 1

Changing Paradigms in Health and Health Care

Paradigms: The Mental Frameworks of Science

The Biomedical Model Versus the Biopsychosocial Model

- The Biomedical Model
- Psychosomatic Medicine
- A Paradigm Shift
- The Biopsychosocial Model

Defining Health and Related Terms

- Changing Concepts of Health
- The Impact of Health Definitions
- The Wellness Continuum

The Crisis in Health Care

- The Health Care System

- Economic Factors

- The Technological Imperative

- Medical Imperialism

- Limitations of Technological Medicine

- Life Expectancy

- Questioning Technology's Effectiveness

- Heroic Medicine

- The Diseases of Civilization

Alternative Health Care Delivery Systems

- The Impact of Cost Containment

- Alternative Health Care Settings

Conclusions

Summary

Mary's 76-year-old father, Bill, was terminally ill suffering from cancer, diabetes, and heart disease. He was bedfast and unable to speak as a result of an earlier stroke. He was obviously in great pain and despair. Mary and her mother were told that he would be unlikely to live another week. Three days later, it was discovered that he had developed gangrene in his right leg. (Gangrene is a decay of the flesh that releases fatal gases as it progresses.) His physicians said that the only choices were to amputate his leg or let him die from gangrene. Mary asked them if her father could survive major surgery in his condition. They told her that his chances of survival were very poor. She then asked if the surgery would relieve his obvious suffering. They said that the pain he would suffer from the amputation could be quite severe. The physicians concluded their remarks by recommending the surgery. Mary and her mother were stunned. Bill was in the last week of his life with no hope for recovery, the surgery would not relieve his pain or prolong his life, and it was unlikely that he would survive it. And, finally, the surgery would cost several thousand dollars. Mary asked why they would recommend amputation under these circumstances. After a painful silence, one of them finally answered: "Because that is the way we have been trained to think. We fix the parts that are broken or remove them."

When the physician said "that is the way we have been trained to think," he was describing the dominant paradigm of his profession—the biomedical model. When Mary questioned the physicians' recommendation to amputate her dying father's leg, she was challenging that paradigm. The biomedical model is facing many challenges as we close the twentieth century. We are beginning our book with a discussion of these challenges and the events leading to them because health psychology has an important role in this revolution.

Our intention in this book is not to deny the great accomplishments of biomedicine or to advocate an exclusive "mind over body" approach as some kind of substitute for traditional medicine. Often biomedicine works very well. For example, recently a fellow professor with cataracts had the lenses of his eyes replaced surgically. He was back to work in a day or two with attained 20/20 vision.

We assume that our readers are well acquainted with the successes of contemporary biomedicine from their own experience and from that of family and friends. Indeed, most of us are constantly inundated with media accounts of medical "miracles." Most of us are not

only aware of biomedical successes but we also tend to exaggerate them. Most people see psychological and social factors as having little or no importance to physical health. The evidence is against that view, as we will show. Our intention is not to malign biological-medical approaches but to help augment and strengthen them through the inclusion of powerful psychosocial factors.

PARADIGMS: THE MENTAL FRAMEWORKS OF SCIENCE

The human mind is always captivated by mental frameworks that help to determine how we see things. These frameworks are called schemata. Information processing theory states that we cannot process all the information that bombards us daily. To make sense of the world, information has to be filtered through mental frameworks. Many years ago, Walter Lippmann (1922/1965), American journalist, provided an eloquent description of this process:

For the most part we do not first see, and then define, we define first and then see. In the great blooming, buzzing confusion of the outer world, we pick out what our culture

has defined for us, and we tend to perceive that which we have picked out in form stereotyped for us by our culture (pp. 54–55).

These mental frameworks influence the way we seek, organize, and interpret information. The *zeitgeist* plays an important part in shaping these mental frameworks. The *zeitgeist* is the general economic, political, and cultural climate of an era, the “spirit of the times.”

Scientists call their mental frameworks paradigms. A **paradigm** is a model or framework of how science is to be conducted (Kuhn, 1962). It identifies the questions that can be studied, and it determines the research methods that may be used. Those problems that do not fit into the scientist’s paradigm tend to be seen as silly or unworthy of study. Although paradigms may limit our ability to see certain things, they offer a coherent plan around which scientists can coordinate their efforts to understand the world.

Physicians, like scientists, are greatly influenced by paradigms or models, although they are often unaware of it. They learn, and take for granted, the paradigms of their profession which are part of “the cultural background against which they learn to become physicians” (Engel, 1980, p. 535). The old saying goes that “a fish will be the last to recognize water.” Because we tend to become completely immersed in our paradigm, it is not easy to notice its influence on us. For example, the young physician described earlier had to do some real soul searching before he could tell Mary why he and his colleague recommended amputation for her father.

THE BIOMEDICAL MODEL VERSUS THE BIOPSYCHOSOCIAL MODEL

In the following section we describe the biomedical and biopsychosocial models and give a brief history of each model. The challenge to the biomedical model and the resistance that challenge is facing are also discussed.

The Biomedical Model

The dominant paradigm of medical science in the twentieth century is called the **biomedical**

model. This paradigm has been strongly influenced by cartesian dualism. **Cartesian dualism** defines mind and body as separate substances. In the seventeenth century, René Descartes (1596–1650) was impressed with life-sized mechanical dolls that had been constructed to make human-like movements. Of course, they could not duplicate higher human operations, but these merely mechanical inventions seemed to execute certain human functions. This observation led Descartes to think that our bodies were like machines but that our minds were a very different kind of spiritual entity. Thus, functions of the mind and the body were radically split apart.

David McClelland, one of the leading researchers in health psychology, describes the biomedical model as a mechanistic model: “The body is treated like a machine that is fixed by removing or replacing the ailing part or destroying the foreign body that is causing the problem” (1985, p. 452). You can see that is just what happened with Mary’s father. They were going to “fix” Bill by removing the “ailing part” without considering the psychological impact it would have on him and his family.

The role of psychological factors in determining health and illness was considered very important before cartesian dualism became accepted. Premodern physicians believed that images and emotions were major influences on the disease process. In contrast, the biomedical model sees images and emotions as belonging to the mind and therefore not capable of affecting the body.

The discovery of external agents of disease such as bacteria, viruses, chemicals, and vitamin deficiencies increased the strength of this model in modern medicine. Within the framework of the biomedical model, only the biochemical factors of illness are considered. Social, psychological, and behavioral dimensions fall outside its narrow framework and are therefore ignored (Engel, 1980).

Psychosomatic Medicine

The challenge to expand the biomedical model originally came from psychosomatic medicine

(Engel, 1977). In spite of the dominance of the biomedical model, psychosomatic medicine has been an organized science and treatment approach for over 50 years (Lipowski, 1986). **Psychosomatic medicine** is the study of the interaction of psychosocial and biological factors in health and disease.

We should note that psychosomatic does not mean "fake" or "imaginary." Psychosomatic means that both mind (psyche) and body (soma) are involved. This approach developed as it became more obvious that not everyone became ill after being exposed to a pathogen (Ader, 1980). It also became clear that the biological factors that influence risks for disease account for only a small number of the cases of illness (Syme, 1984).

Ader (1980) suggests that all disorders might be called psychosomatic because the brain receives and interprets all sensory input. It must still be shown, however, that biological, psychological, and social factors interact to influence health and illness. Psychosomatic medicine has gone a long way toward that end, producing a large body of data that support the mind/body connection. Researchers are now discovering the mechanisms that are involved (Borysenko, 1984; Pert, 1986). We will discuss these mechanisms further in Chapter 4.

A Paradigm Shift

The time seems right for expanding the biomedical model to the **biopsychosocial model**. The social and psychological influences on today's health problems do not fit the narrow framework of the biomedical model. Its mechanistic approach has stirred up discontentment with the health care system. The biomedical model tends to promote specialization and reliance on treatments that are costly and often harmful. Moreover, it does not promote prevention, health enhancement, or individual responsibility for health (Gordon & Fadiman, 1984).

There is great resistance to expanding the biomedical model to include psychological and social factors. Engel (1977, 1980) states that the biomedical model has gone beyond the limits of

a scientific model. He suggests that it has acquired the authority and tradition of dogma. A scientific model is revised or discarded when data are discovered that do not fit it. A dogma, however, distorts the conflicting data to fit the model or ignores their existence. You will be given research examples of these practices in Chapter 3.

In spite of resistance, the biomedical model is facing a serious challenge. The assumption that only the biological factors of health and disease are worthy of study and practice is being questioned. The model may have conditioned us to believe that disease is caused by a single type of influence, but there is a growing awareness that health and illness have many dimensions. Psychological and social factors influence biological functioning and play a role in health and illness. This role will become increasingly clear as you read this book.

The Biopsychosocial Model

The **biopsychosocial model** does not suggest that we disregard biomedical influences. Remember, the "bio" is still there in "biopsychosocial." The idea is to expand our model to include those important factors that now fall outside its narrow framework (Engel, 1980; Jasnosi & Schwartz, 1985). George Engel stated the problem at hand most eloquently in his 1977 landmark paper calling for an expansion of the biomedical model:

We are now faced with the necessity and the challenge to broaden the approach to disease to include the psychosocial without sacrificing the enormous advantages of the biomedical approach. (p. 130)

Including psychosocial factors in the model provides for a treatment approach that takes into account the human qualities of both patient and physician. It is a more realistic model in light of the important role lifestyles play in twentieth-century diseases. It has been thoroughly documented that behavioral factors are implicated in seven of the ten leading causes of death in the United States (Raub, 1989).

The biopsychosocial model is based on

general systems theory. One of the basic assumptions of this theory is that systems exist within systems. In other words, nothing exists in isolation. This approach forces researchers and practitioners to develop a global view of their work. For example, it compels physicians to consider the effects of their treatment on the "whole" patient, not just the part they are trying to "fix." The systems approach is discussed in more detail in Chapter 2.

The biomedical model neglects the whole because it excludes everything but biological factors. Thus, it is preoccupied with the body and disease at the expense of the patient as a person (Engel, 1980). Again, however, we want to stress that biological factors are still important.

DEFINING HEALTH AND RELATED TERMS

Health is one of those words that we think is easy to define until we realize that it has many different meanings to different people. (See Box 1.1 for the historical roots of the word.) Stone (1979) has noted that until we can agree on the meaning of health and how it can be measured, we are going to be unable to answer questions about how we can protect, enhance, and restore health.

Changing Concepts of Health

Whether we are considered to be sick or healthy does not depend just on the way we feel or the state of our bodies. It may depend even more on the economic, political, and cultural climate of the times in which we live. There are many examples of how the zeitgeist has determined the "health" status of many conditions or behaviors. For instance, during this century attitudes toward homosexuality have undergone many transformations. It has gone from a "sin" to a "disease" to an "alternative lifestyle." Recently, the AIDS virus has turned many behaviors associated with male homosexuality into "risk factors."

Heavy alcohol consumption is now classified as a disease, but not so long ago, it was seen as a legal and moral problem. At about this same time, cigarette smoking was viewed as a desirable, glamorous behavior. Full-page ads featured physicians extolling the virtues of smoking.

Cigarette smoking became a health risk and a bad habit after the Surgeon General warned us in 1964 that it may be harmful to our health. With the increasing evidence that second-hand smoke is harmful to nonsmokers, it is becoming a socially undesirable behavior (Glantz & Parmley, in press; USDHHS, 1986).

Box 1.1 The Meaning of the Root Word of Health

The meaning of the root word of health is wholeness. The word comes from the same Anglo-Saxon root that gives us whole, hale, and holy. It is intriguing to find that "holy" and "healthy" share the same root word. Health and religion have a long association and still do in many cultures. For instance, the medicine man has a religious as well as a healing role (Weil, 1983).

The link between health and religion

is also strong in the Judeo-Christian tradition. Religion and psychology were removed from health when medicine became a science. Neither fit within the biomedical model. However, as we have said, there is a crisis, if not a revolution, in health care. Some prominent physicians are suggesting that both psychology and faith may have a place in healing after all (Benson, 1984; Siegel, 1986; 1989).