Contributors

Jeanne Achterberg-Lawlis, Ph. D., Department of Rehabilitation Science, University of Texas Health Science Center, Dallas, Texas

A. Barney Alexander, Ph. D., Clinical Psychologist, 8790 West Colfax, Lakewood, Colorado

John Palmer Anderson, Ph. D., Division of Special Studies, University of Alabama, Birmingham, Alabama

Frank Andrasik, Ph. D., Department of Psychology, State University of New York, Albany, New York

D. A. Begelman, Ph. D., Clinical Psychologist, Three Corners, West Meetinghouse Road, New Milford, Connecticut

Alan S. Bellack, Ph. D., Department of Psychology, University of Pittsburgh, Pittsburgh, Pennsylvania

Irving Bieman, Ph. D., Farr Associates, Greenboro, North Carolina

Anthony R. Ciminero, Ph. D., Psychology Service, Veterans Administration Hospital, Miami, Florida

Dave Coleman, Ph. D., University of Maryland, Munich Campus, APO New York

Robert S. Davidson, Ph. D., Director, Behavioral Medicine and Automated Assessment Laboratories, Veterans Administration Medical Center, and Department of Psychology, Florida International University, Miami, Florida
Jerry L. Deffenbacher, Ph. D., Department of Psychology, Colorado State University, Fort Collins, Colorado

Daniel M. Doleys, Ph. D., Program Director, Behavioral Programs, Brookwood Medical Center, Birmingham, Alabama

Michael E. Dunn, Ph. D., Psychology Service, Veterans Administration Medical Center, Palo Alto, California

Leonard H. Epstein, Ph. D., Department of Psychiatry, University of Pittsburgh School of Medicine, Western Psychiatric Institute and Clinic, 3811 O'Hara Street, Pittsburgh, Pennsylvania

Michael Feuerstein, Ph. D., Department of Psychology, McGill University, Montreal, Quebec, Canada

J. Gainer, Department of Psychology, McGill University, and Behaviour Therapy Institute, Montreal, Quebec, Canada

Steven H. Herman, Ph. D., Psychology Service, Veterans Administration Medical Center, and Behavioral Medicine Institute, Miami, Florida

Pam Hyde, Neurosciences Program, University of Alabama School of Medicine, Birmingham, Alabama

Martin Y. Iguchi, Ph. D., Department of Psychology, Boston University, Boston, Massachusetts

Cornelia Kenner, Ph. D., Department of Surgery, University of Texas Health Science Center, Dallas, Texas

Dean G. Kilpatrick, Ph. D., Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, South Carolina

D. Alan Lankford, Ph. D., Department of Psychiatry and Behavioral Sciences, University of Texas Medical Branch, Galveston, Texas

Bruce James Masek, Ph. D., Department of Psychiatry, Harvard Medical School, Boston, Massachusetts

Ronald L. Meredith, Psy. D., Vaughan Clinic, Brookwood Medical Center, Birmingham, Alabama
CONTRIBUTORS

Susan J. Middaugh, Ph. D., Department of Physical Medicine and Rehabilitation, Medical University of South Carolina, Charleston, South Carolina

Jesse B. Milby, Ph. D., Chief of Psychology Service, Birmingham Veterans Administration Medical Center, Departments of Psychiatry and Psychology, University of Alabama, Birmingham, Alabama

Randall L. Morrison, Ph. D., Department of Psychology, University of Pittsburgh, Pittsburgh, Pennsylvania

David I. Mostofsky, Ph. D., Department of Psychology, Boston University, Boston, Massachusetts

I. Keith Orton, Ph. D., Good Samaritan Hospital and Medical Center, Portland, Oregon

Vernon Pegram, Ph. D., Department of Psychiatry, University of Alabama School of Medicine, Birmingham, Alabama

Nancy Rainwater, Ph. D., Staff Psychologist, Barbara Davis Center for Childhood Diabetes, Denver, Colorado

Patricia A. Resick, Ph. D., Department of Psychology, University of Missouri, St. Louis, Missouri

Richard M. Suinn, Ph. D., Chairman, Department of Psychology, Colorado State University, Fort Collins, Colorado

Jerry J. Sweet, Ph. D., Department of Psychiatry, Illinois Masonic Medical Center, Chicago, Illinois

C. Barr Taylor, M. D., Department of Psychiatry, Stanford University, Stanford, California

Dennis C. Turk, Ph. D., Department of Psychology, Yale University, New Haven, Connecticut

Samuel M. Turner, Ph. D., Department of Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania

Lois J. Veronen, Ph. D., Department of Psychology and Behavioral Sciences, Medical University of South Carolina, Charleston, South Carolina
C. Eugene Walker, Ph. D., *Department of Psychiatry and Behavioral Sciences, University of Oklahoma Medical School, Oklahoma City, Oklahoma*

Donald A. Williamson, Ph. D., *Department of Psychology, Louisiana State University, Baton Rouge, Louisiana*

Steven Zlutnick, Ph. D., *Department of Educational Psychology/Counseling, University of San Francisco, and Pacific Medical Center, San Francisco, California*
Contents

CHAPTER 1. Professional and Legal Issues in Behavioral Medicine 1
D. A. Begelman

PART I. GENERAL ASSESSMENT AND INTERVENTION PROCEDURES

CHAPTER 2. Operant Conditioning 19
Jesse B. Milby

CHAPTER 3. Cognitive Learning Approaches: Applications in Health Care 45
Dennis C. Turk

CHAPTER 4. Relaxation Training and Relaxation-Related Procedures 69
John Palmer Anderson

CHAPTER 5. Biofeedback: Clinical and Research Considerations 83
Frank Andrasik, Dave Coleman, and Leonard H. Epstein

CHAPTER 6. Social Skills and Physical Disability 117
Michael E. Dunn and Steven H. Herman
CHAPTER 7. Muscle Training  145  
Susan J. Middaugh

PART II. THERAPEUTIC APPROACHES TO SPECIFIC DISORDERS

CHAPTER 8. The Behavioral Assessment and Treatment of Essential Hypertension  175  
I. Keith Orton, Irving Beiman, and Anthony R. Ciminero

CHAPTER 9. Chronic Headache: Etiology and Management  199  
Michael Feuerstein and John Gainer

CHAPTER 10. Behavior Control of Seizure Disorders  251  
David I. Mostofsky and Martin Y. Iguchi

CHAPTER 11. Chronic Pain  269  
Steven Zlutnick and C. Barr Taylor

CHAPTER 12. Obesity and Anorexia Nervosa  295  
Alan S. Bellack and Donald A. Williamson

CHAPTER 13. Urological Disorders  317  
Daniel M. Doleys and Ronald L. Meredith

CHAPTER 14. Addictive Behaviors: Alcohol, Drugs, and Smoking  347  
Robert S. Davidson

CHAPTER 15. Sexual Disorders  371  
C. Eugene Walker

CHAPTER 16. Movement Disorders  407  
Samuel M. Turner and Randall L. Morrison

CHAPTER 17. Respiratory Disorders: Asthma  435  
Nancy Rainwater and A. Barney Alexander
CONTENTS

Chapter 18. Sleep, Sleep Disorders, and Some Behavioral Approaches to Treatment of Insomnia 447
  Pam Hyde and Vernon Pegram

PART III. THERAPEUTIC APPROACHES TO SPECIAL POPULATIONS

Chapter 19. Psychological Sequelae to Rape: Assessment and Treatment Strategies 473
  Dean G. Kilpatrick, Lois J. Veronen and Patricia A. Resick

Chapter 20. Burn Patients 499
  Jeanne Achterberg-Lawlis and Cornelia Kenner

Chapter 21. Compliance and Medicine 527
  Bruce James Masek

Chapter 22. Geriatric Patients 547
  D. Alan Lankford and Steven H. Herman

Chapter 23. The Chronically Anxious Patient 563
  Jerry L. Deffenbacher and Richard M. Suinn

Chapter 24. The Mistreating Parent 581
  Patricia A. Resick and Jerry J. Sweet

Author Index 603

Subject Index 621
Introduction and Overview

The introduction to any book of this type is the shortest section but also one of the more difficult tasks to accomplish well. The introduction should provide some underlying thread, rationale, or conceptual model that will allow the reader to put the remaining material into proper perspective. The present task is made even more difficult than usual by the relative newness of the term behavioral medicine and the rapid growth that has characterized the field in the last several years. Relatively little has been written about what behavioral medicine actually is, though many researchers and practitioners attach this or some similar label to their clinical and research activities. In spite of the apparent lack of clarity and agreement, recent years have seen such enormous growth in this area that today a separate Society of Behavioral Medicine exists. Three publications, Journal of Behavioral Medicine, Behavioral Medicine, Behavioral Medicine Abstracts, and the society's newsletter, Behavioral Medicine Update, are available, not to mention a growing number of books (Ferguson & Taylor, 1980; McNamara, 1979; Melamed & Siegal, 1980; Pomerleau & Brady, 1979; Williams & Gentry, 1977). In 1978, the American Psychological Association announced the addition of the division of Health Psychology as its newest and 38th division. Internships, postdoctoral training, and doctoral programs in behavioral medicine, health psychology, and medical psychology have appeared throughout the country. Funding from governmental agencies has also been channeled into this area (Matarazzo, 1980).

This general area seems, at least in part, to have grown out of discussions over the inadequacy of the "medical model" to account for and generate effective treatment strategies for problems of health. Two somewhat separate yet related trends appear to have merged. First, the emphasis on expanding, modifying, and/or revamping the traditional medical model of disease. Engle (1977) described a biopsychosocial model in which the professional's task was to weigh the "relative contributions of social and psychological as well as biological factors in the patient's
dysphoria and dysfunction as well as in his decision to accept or not accept patienthood and with it the responsibility to cooperate in his own health care” (p. 133). Second, advancements in behavioral technology and behavioral therapy were expanding the therapeutic horizons beyond those of “neurotic” and maladaptive behavior disorders to address health-related issues. Pomerleau, Bass, and Crown (1975) and Pomerleau (1979), for example, outlined the potential role of behavioral psychology in the management, prevention, and alleviation of “medical problems.” Other articles also began to appear noting the efficacy of psychological services in reducing utilization of the health care system (Rosen & Wiens, 1979). These trends seemed destined to merge, and they did. However, the merger created some difficulty, highlighted by the use of a variety of labels including *medical psychology* (Prokop & Bradley, 1981) and *behavioral medicine* (Pomerleau et al., 1975; Schwartz & Weiss, 1977). This “new” approach was also seen as a renewed interest in an existing area, *psychosomatic medicine* (Lipowski, 1977). The terms *health psychology* and *behavioral health* were also being used with increasing regularity (Matarazzo, 1980). The multiplicity of terms and definitions seems to have added confusion rather than solidarity. But, perhaps such growing pains are necessary as traditional conceptual models are revised and new directions formulated.

**DEFINITIONS**

It might be useful to review some of the existing definitions of behavioral medicine and related terms. The term *behavioral medicine* has been defined in various ways. Schwartz and Weiss (1977) commented that

> behavioral medicine is the field concerned with the development of behavioral science knowledge and techniques relevant to the understanding of physical health and illness, and the application of this knowledge and the techniques to diagnosis, prevention, treatment and rehabilitation. Psychoses, neuroses and substance abuse are included only insofar as they contribute to physical disorders as an end point. (p. 379)

This proposed definition was later expanded (Schwartz & Weiss, 1978). Pomerleau and Brady (1979) argued that the above definition was too broad. Recognizing the potential problem of being too narrow they suggested a compromise:

> Behavioral medicine can be defined as [a] the clinical use of techniques derived from the experimental analysis of behavior—behavior therapy and behavior modification—for the evaluation, prevention and treatment of physical disease or physiological dysfunction; and [b] the conduct of research contributing to the functional analysis and understanding of behavior associated with medical disorders and problems of health care. (p. xii)

This definition focused on the application of the experimental analysis of behavior to health problems rather than to call for the incorporation of
more diverse behavioral-science knowledge and methodology. Blanchard (1977) was perhaps even more specific when he noted that

by behavioral medicine I mean the systematic application of the principles and technology of behavioral psychology to the field of medicine, health and illness. By behavioral psychology I mean primarily experimental, or at least empirical psychology which has its roots in psychology of learning, social psychology and to a lesser degree, physiological psychology. (p. 2)

Ferguson and Taylor (1980) take a similar view as they emphasize the application of behavioral techniques to medical problems as the defining characteristic of behavioral medicine.

Benson (1979) seems to be in line with the definition proposed by Schwartz and Weiss by defining behavioral medicine as “an interdisciplinary approach to health care which incorporates principles of medicine, physiology, psychiatry and psychology” (p. 16). He emphasizes the integrative and synthesizing functions of behavioral medicine and places it in the same arena as holistic medicine.

According to Matarazzo, *behavioral-health* has become

an interdisciplinary field dedicated to promoting a philosophy of health that stresses individual responsibility and the application of behavioral and biomedical science, knowledge and techniques to the maintenance of health and the prevention of illness and dysfunction by a variety of self-initiated individuals or shared activities. (1980, p. 813)

He refers to *health psychology* as

the aggregate of the specific educational, scientific and professional contribution of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness and the identification of etiology and diagnostic correlates of health, illness and related dysfunction. (p. 815)

In summary, there appear to be two general views of behavioral medicine. One is a broad view focusing on the development and integration of knowledge and technology from the behavioral sciences. The other emphasizes the application of behavioral analysis and technology to problems of health and disease. Webster's dictionary (1969) says the word *definition* means “word or phrase expressing the essential nature of a person or thing” (p. 216). Perhaps what exists today are a variety of descriptions rather than definitions of behavioral medicine, as it would seem clear that the “essential nature” of this area remains elusive. Most likely the ultimate definition of behavioral medicine will grow out of the activities of the individuals who identify themselves as practicing in this area. To date, unfortunately, this could include almost anyone who chooses to participate because of the variety and scope of existing definitions. As time passes, the meaning of behavioral medicine will probably be shaped by the natural contingencies of funding policies, journal editing, society membership, and academic employment criteria. The relationship between behavioral medicine and the other terms noted above also remains uncertain. It is our view that the term *behavioral*
medicine should be considered in the more restrictive sense, as suggested by Pomerleau and Brady (1979), and the more generic term medical psychology be used to refer to those activities that are broader in scope.

GOALS AND METHODS

An examination of these descriptions, of the papers being presented at regional and national conventions, and of the published articles reveals the difficulty in defining the parameters of behavioral medicine. Indeed, we do not propose, nor do we desire to propose, yet another definition. An alternative and perhaps more instructive way of approaching this task might be to examine and speculate on the goals and methodology of behavioral medicine. Within this context some attention must also be given to the behavioral medicine practitioner/researcher. Specifically, what might constitute adequate training or background?

Behavioral medicine differs from the general area of clinical psychology in the problems it addresses. The word behavioral itself implies that the focus of attention is on problems of disturbed, disordered, maladaptive or dysfunctional behaviors that have some associated physiological (medical) component. Behavioral disturbance or dysfunction may be a precipitating factor in eliciting or promoting the underlying pathology (e.g., ulcers, headaches, etc.), maintaining the illness (e.g., noncompliance to treatment regimens), or may be a function of the physiological condition (e.g., chronic pain). These categories obviously are not mutually exclusive. If this is the case, then it would follow that an adequate assessment of the behavioral-psychological factors involved would be enhanced by some understanding of the physiology of the organism and the nature of the physical pathology. Furthermore, the development and effective implementation of intervention procedures would seem to be related to such a knowledge base. If we accept these premises, then it would appear that behavioral medicine practitioners and researchers would be well served to have a working knowledge and understanding, if not adequate training (specialized seminars and clinical training), in areas of anatomy, physiology, pharmacology, neurosciences, and learning-conditioning. This background would maximize effectiveness and also enhance the ability to communicate with medically trained colleagues.

Others have commented on the goals and methodology of behavioral medicine, which are certainly implied, if not clearly indicated, in the descriptions reviewed above. Our views seem to parallel those presented by Blanchard (1977) and Pomerleau and Brady (1979). First, behavioral medicine should be empirically based on and couched in sound experimental methodology, using appropriate single-subject and group experimental design. Maintaining rigor in defining and measuring both independent and dependent variables and in the execution of intervention strategies is paramount. Second, behavioral medicine should focus on
prevention and reduction of disease and disease-related behaviors. An important activity is describing the functional relationships between behavior, environment, "disease," and health. The application of principles of the experimental analysis of behavior will be invaluable in accomplishing this task. Third, behavioral medicine should strive to develop effective assessment and intervention strategies for disease and physiological dysfunction and for the various behavioral and emotional consequences of diseases. Such strategies may be oriented toward some presumed underlying physiological mechanism, such as EEG patterns in the seizure-disordered patient and vascular blood flow in headache patients, or more indirectly via modification of broader response patterns, such as medication compliance in the hypertensive patient and diet adherence in the obese or diabetic patient. Finally, behavioral medicine should strive to integrate the expertise of colleagues in other behavioral sciences, thus making our efforts multidisciplinary in nature to prevent a myopic approach to problems of health. This does not imply that every project that is conducted under the guise of behavioral medicine need involve a multitude of disciplines. It does, however, recognize that cooperation among professionals of various disciplines may facilitate the development and execution of intervention strategies likely to have significant impact on the total health picture.

ORGANIZATION OF CHAPTERS

It takes little scrutiny to realize the great variability among the chapters in this book. The book is not intended to be a "handbook" in behavioral medicine nor a "textbook" of behavioral medicine. Rather, it is an attempt to describe some of what appear to be the more commonly used procedures for assessment and intervention and to illustrate the scope of the disorders to which these procedures have been applied. The range of topics is not exhaustive but should be considered as representative. The chapters vary considerably in terms of the extent to which authors have chosen to elaborate a particular disorder, the existing data, and the intervention procedures. In some cases little data are available. The methods by which the various contributors have presented their topics may further reflect a variety of interpretations on how specific issues in behavioral medicine should be approached. It should also be recognized that in any venture of this type the data are somewhat outdated by the time the book is published. The approaches to generating assessment and treatment strategies, however, maintain their practical and heuristic value.

The chapters are divided into three sections, General Assessment and Intervention Procedures, Therapeutic Approaches to Specific Disorders, and Therapeutic Approaches to Special Populations. The first section was designed to review general operant and behavioral methods and
discuss how such procedures have been or could be applied to problems of disease, rehabilitation, and health. Although an understanding of the various procedures is not sufficient, it is necessary. A good working knowledge of the therapies available can be invaluable in the development and refinement of efficient and effective assessment and treatment strategies. By providing a relatively broad overview, we hope to stimulate even more creative but empirically sound approaches in behavioral medicine. As once noted, "if the only tool one possesses is a hammer, then everything around you can look like a nail."

The second section of the book attempts to exemplify the application of various behavioral procedures to a variety of specific disorders. In some cases a specific procedure, such as biofeedback, was the mainstay of treatment, while in others a "package" consisting of a number of techniques was found to be most useful. These chapters are not intended to be exhaustive nor represent the state of the art. Rather, they illustrate how a functional analysis of these disorders can lead to the systematic development of effective treatment strategies. The treatment outcome data are not always complete or clinically impressive. But the technology is still developing. In many cases the data argue for a better understanding of the nature of these disorders and how they might be susceptible to modification via behavioral technology and therapies. Advancement in such technology is inevitable when sound experimental procedures are employed.

The second section also covers a number of common medically oriented problems, such as hypertension, headaches, seizure disorders, movement disorders, and pain. It also includes problems not typically reviewed in other books of this type, such as urological disorders and problems with sleep. One might wonder about the inclusion of sexual dysfunctions. Our basic understanding of the methodology for the management of sexual dysfunction can be invaluable in screening candidates for penile prosthesis, thus assuring that surgery is not undertaken except in cases when it appears to be warranted. Additionally, this information can be useful in developing programs of rehabilitation for spinal-cord-injury patients.

The third section of the book focuses on intervention strategies with various populations. The differentiation of "populations" from "disorders" is somewhat arbitrary and might better be viewed from the standpoint of patient management versus treatment of a problem. There are difficulties encountered in treating various types of patients regardless of the specific problem involved. For example, many geriatric patients are disoriented or depressed and experience neurological dysfunction. Procedures that are ordinarily effective (i.e., urine alarm for enuresis) may have to be modified to take these other factors into account. Therapeutic goals may also have to be adjusted.

Some of the material in this section has received considerable attention, for example, treatment of the anxious and the noncompliant patient.
However, only in recent years has behavioral psychology made a concerted effort to examine the problems of the geriatric patient. Similarly, relatively little has been written about management of the burn victim. The chapter dealing with the mistreating parent was included in an attempt to foster greater understanding of factors that lead parents to engage in abusive behavior. Children who experience chronic medical problems, such as asthma or any of a number of developmental disabilities, are often targets of abusive treatment. Some parents will misapply techniques taught to them by well-intentioned professionals. Children who are products of such environments may develop a number of psychophysiological problems.

Daniel M. Doleys  
R. L. Meredith  
A. R. Ciminero

REFERENCES