

Introduction and How to Use This Book

In the course of human experience, people are born, mature, feel emotion, develop relationships, produce and reproduce, and struggle to cope with a myriad of challenges to their survival and well-being. This book is about the diverse ways in which health can be compromised; the many factors that contribute to an individual's predisposition, vulnerability, and resilience; the wide range of precipitating events that can trigger a disease, injury, or malfunction; and the complex array of individual differences that determine each patient's unique response to a disease as well as its treatment.

When health and well-being are challenged, humans have, for millennia, sought the aid of healers, individuals who are purported to possess special knowledge about the etiology and treatment of various disorders. History has witnessed the evolution of health care from a spiritually based healing art to a scientifically based technical profession, reflecting advances in our knowledge of the biological functioning of the human body. After World War II, there was a gradual shift away from medicine's exclusive focus on linear causal relationships between a disease and its biological etiology. Physicians began to refer to a "biopsychosocial model," which proposed that psychosocial variables were as important as biological variables in determining health status.

Although a major step forward in understanding that complex interactions exist, the biopsychosocial model failed to explain *how* psychosocial variables actually interact with biological variables. That is, what are the specific connections that exist among the biological (e.g., neurotransmitter systems), psychological (e.g., emotional reactions to stress or memory), and social (cultural prescriptions and proscriptions about appropriate physical and interpersonal responses) factors that define health and illness, and by what mechanisms are they established and maintained? In the final decades of the 20th century, medical researchers

began to explore the knowledge and methodology of psychology, sociology, anthropology, and other behavioral and social sciences as they apply specifically to medicine. Focusing on bio-behavioral connections, their studies have given rise to new fields such as behavioral genetics, behavioral neuroscience, psychoneuroendocrinology, behavioral pharmacology, social biology, and behavioral medicine.

The growing integration among the behavioral and biomedical sciences, coupled with the development of interprofessional education, has revolutionized training, so that behavioral and social science concepts are typically taught within other curricular domains (e.g., organ systems-based courses in medical schools, provider-patient relations in many different professions) without being connected to a particular academic tradition or research domain. We expect that educators responsible for different courses and curricular themes will use different sections of this book separately. The more clinical chapters include case vignettes to facilitate integration with current educational strategies that emphasize case-based or problem-based rather than discipline-based approaches.

The model presented in this book calls attention to the clinical significance of the *interaction* among biopsychosocial variables, and focuses on identifying the mechanisms that interconnect these variables. We call this extension of the biopsychosocial model the *integrated sciences model* (ISM) because it emphasizes the interdependence of the contributions made by *all of the sciences* basic to medicine.

In Section I, we briefly trace the evolution of health care practices and models, the development of contemporary health care provider practice, and the integrated sciences model. In Section II, we present a brief review of the human nervous system and how its evolution has contributed to the unique survival capabilities of *homo sapiens*. In

Section III, we discuss the basic homeostatic systems and the critically important role that the stress response plays in human adaptation. In Section IV, we review basic psychological principles and the higher order bio-behavioral mechanisms involved in sensation, learning, cognition, emotion, and social interaction and cooperation. In Section V, we review human development through the life cycle and important aspects of major developmental theories as they apply to the individual and to the family. In Section VI, we examine social behavior and groups, and the influence of culture, ethnicity, and other social factors on health and health care. In Section VII, we explore several contemporary social issues that contribute to, complicate, or are major problems in health care.

In Section VIII, we examine the organization and functioning of the health care system, in particular the US health care system, the role that certain areas of special focus such as palliative care play, the rise of integrative medicine (the inclusion of complementary therapies in conventional health care plans), and some of the ethical and legal issues faced by health care providers. In Section IX, we discuss the clinical encounter and examine the relevance of basic, clinical, and social science to understanding the patient's complaints, eliciting and interpreting findings, making a diagnosis, negotiating a treatment plan, and motivating patient behavior. We also explore the importance of patients' health literacy and provider impairment in effecting health outcomes. In Section X, we summarize the field of psychopathology, present brief descriptions of the more common psychiatric disorders, and show how basic behavioral science principles help us to understand this complex area of health care.

Each chapter in this volume begins with a set of bulleted questions designed to focus attention on key learning points. Each chapter also concludes with a short set of review questions based on information in the text. We have chosen to emphasize ideas, principles, and established research findings, and to minimize references in

favor of providing selected recommended readings. Finally, significant scientific observations from the behavioral and social sciences as well as clinical applications and examples have been included to make the theoretical practical.

In the Appendix, we have presented several of the psychological tests commonly used in the assessment of cognition, emotion, and behavior in both normal and clinical populations. Lastly, we have included 335 multiple-choice questions with explanations of the correct answer and why the incorrect choices are, in fact, incorrect. Some of the questions in this section provide additional review of material in the text. However, many questions are focused on new material to make the contents of the book even more comprehensive through the use of brief, directed discussions. The construction of these questions is designed to give you a sense of the kind of material and question format you may encounter later in training.

Good medicine is science artfully applied. The laws of probability should be interpreted in the light of experience and intuition, and common sense appreciated as a useful guide to decision making. Respect for the autonomy and self-efficacy of the patient will usually lead to the best outcome – although not everyone may agree with what the patient wants as the outcome.

We have tried to be explicit in defining the mechanisms of bio-behavioral interaction where they are known and to incorporate typical patient experiences where relevant. Some of the material will seem self-evident, some will seem counter-intuitive, but all derives from the amalgam of research findings from the biological, behavioral, cognitive, sociocultural, and environmental sciences that contribute to our knowledge of the determinants of health and illness important for you as well as your patients.

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