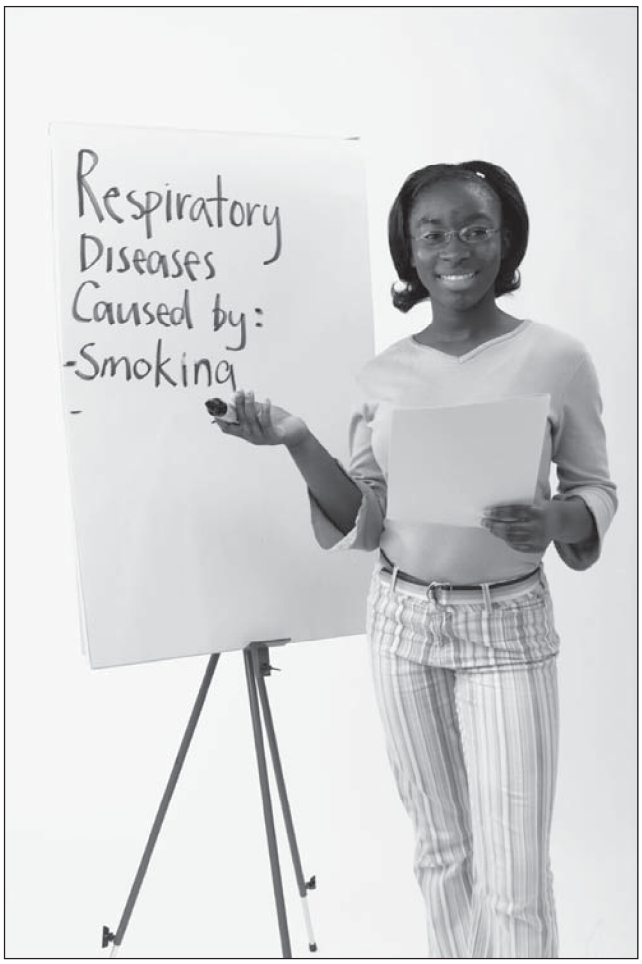
CHAPTER 1

What Is Health Psychology?



CHAPTER OUTLINE

"Life span may be as wide as your smile: The bigger the smile, the longer the life" (March 29, 2010)

"Epidemic of drug overdose deaths ripples across America" (January 20, 2016)

"Vaccination is a social responsibility" (February 4, 2015)

"Smartphone apps help people quit smoking" (January 23, 2015)

"Risk of concussions from youth sports" (December 25, 2015)

Every day, we see headlines about health. We are told that smoking is bad for us, that we need to exercise more, and that we've grown obese. We learn about new treatments for diseases about which we are only dimly aware, or we hear that a particular herbal remedy may make us feel better about ourselves. We are told that meditation or optimistic beliefs can keep us healthy or help us to get well more quickly. How do we make sense of all these claims? Health psychology addresses important questions like these.

DEFINITION OF HEALTH PSYCHOLOGY

Health psychology is an exciting and relatively new field devoted to understanding psychological influences on how people stay healthy, why they become ill, and how they respond when they do get ill. Health psychologists both study such issues and develop interventions to help people stay well or recover from illness. For example, a health psychology researcher might explore why people continue to smoke even though they know that smoking increases their risk of cancer and heart disease. Understanding this poor health habit leads to interventions to help people stop smoking.

Fundamental to research and practice in health psychology is the definition of health. Decades ago, a forward-looking World Health Organization (1948) defined **health** as "a complete state of physical, mental, and social well-being and not merely the absence of disease or infirmity." This definition is at the core of health psychologists' conception of health. Rather than defining health as the absence of illness, health is recognized to be an achievement involving balance among physical, mental, and social well-being. Many use the term **wellness** to refer to this optimum state of health.

Health psychologists focus on *health promotion and maintenance,* which includes issues such as how to get children to develop good health habits, how to promote regular exercise, and how to design a media campaign to get people to improve their diets.

Health psychologists study the psychological aspects of the *prevention and treatment of illness.* A health psychologist might teach people in a high-stress occupation how to manage stress effectively to avoid health risks. A health psychologist might work with people who are already ill to help them follow their treatment regimen.

Health psychologists also focus on *the etiology and correlates of health, illness, and dysfunction.* **Etiology** refers to the origins or causes of illness. Health psychologists especially address the behavioral and social factors that contribute to health, illness, and dysfunction, such as alcohol consumption, smoking, exercise, the wearing of seat belts, and ways of coping with stress.

Finally, health psychologists analyze and attempt to improve *the health care system and the formulation of health policy.* They study the impact of health institutions and health professionals on people's behavior to develop recommendations for improving health care.

In summary, health psychology examines the psychological and social factors that lead to the enhancement of health, the prevention and treatment of illness, and the evaluation and modification of health policies that influence health care.

Why Did Health Psychology Develop?

To many people, health is simply a matter of staying well or getting over illnesses quickly. Psychological and social factors might seem to have little to contribute. But consider some of the following puzzles that cannot be understood without the input of health psychology:

- When people are exposed to a cold virus, some get colds whereas others do not.
- Men who are married live longer than men who are not married.
- Throughout the world, life expectancy is increasing. But in countries going through dramatic social upheaval, life expectancy can plummet.
- Women live longer than men in all countries except those in which they are denied access to

health care. But women are more disabled, have more illnesses, and use health services more.

- Infectious diseases such as tuberculosis, pneumonia, and influenza used to be the major causes of illness and death in the United States. Now chronic diseases such as heart disease, cancer, and diabetes are the main causes of disability and death.
- Attending a church or synagogue, praying, or otherwise tending to spiritual needs is good for your health.

By the time you have finished this book, you will know why these findings are true.

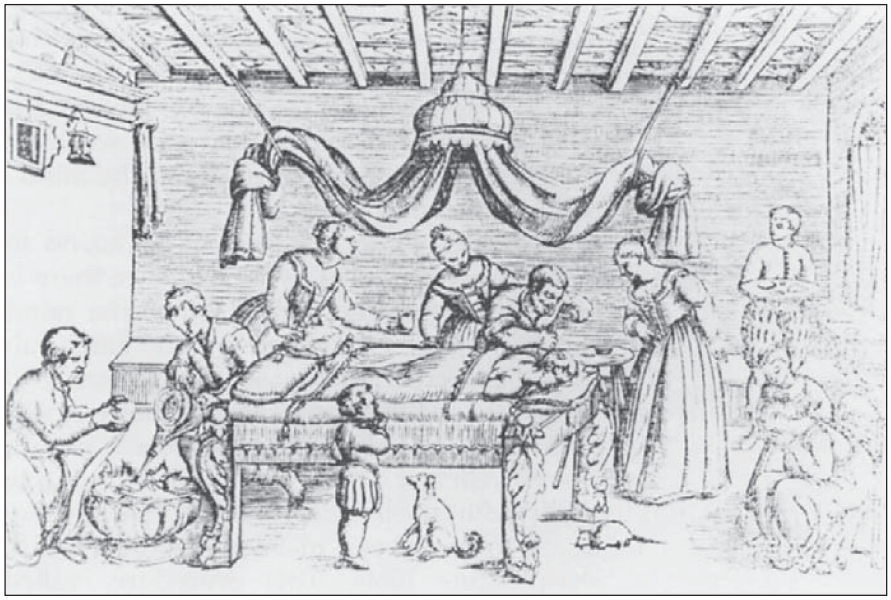
THE MIND-BODY RELATIONSHIP: A BRIEF HISTORY

During prehistoric times, most cultures regarded the mind and body as intertwined. Disease was thought to arise when evil spirits entered the body, and treatment consisted primarily of attempts to exorcise these spirits. Some skulls from the Stone Age have small, symmetrical holes that are believed to have been made intentionally with sharp tools to allow the evil spirit to leave the body while the shaman performed the treatment ritual.

The ancient Greeks were among the earliest civilizations to identify the role of bodily factors in health and illness. Rather than ascribing illness to evil spirits, they developed a humoral theory of illness. According to this viewpoint, disease resulted when the four humors or circulating fluids of the body—blood, black bile, yellow bile, and phlegm—were out of balance. The goal of treatment was to restore balance among the humors. The Greeks also believed that the mind was important. They described personality types associated with each of the four humors, with blood being associated with a passionate temperament, black bile with sadness, yellow bile with an angry disposition, and phlegm with a laid-back approach to life. Although these theories are now known not to be true, the emphasis on mind and body in health and illness was a breakthrough at that time.

By the Middle Ages, however, the pendulum had swung to supernatural explanations for illness. Disease was regarded as God's punishment for evildoing, and cure often consisted of driving out the evil forces by torturing the body. Later, this form of "therapy" was replaced by penance through prayer and good works. During this time, the Church was the guardian of medical knowledge, and as a result, medical practice assumed religious overtones. The functions of the physician were typically absorbed by priests, and so healing and the practice of religion became virtually indistinguishable.

Beginning in the Renaissance and continuing into the present day, great strides were made in understanding the technical bases of medicine. These



Sophisticated, though not always successful, techniques for the treatment of illness were developed during the Renaissance. This woodcut from the 1570s depicts a surgeon drilling a hole in a patient's skull, with the patient's family and pets looking on.

Courtesy National Library of Medicine Prints and Photographs

advances include the invention of the microscope in the 1600s and the development of the science of autopsy, which allowed medical practitioners to see the organs that were implicated in different diseases. As the science of cellular pathology progressed, the humoral theory of illness was put to rest. Medical practice drew increasingly on laboratory findings and looked to bodily factors rather than to the mind as bases for health and illness. In an effort to break with the superstitions of the past, practitioners resisted acknowledging any role for the mind in disease processes. Instead, they focused primarily on organic and cellular pathology as a basis for their diagnoses and treatment recommendations.

The resulting **biomedical model,** which has governed the thinking of most health practitioners for the past 300 years, maintains that all illness can be explained on the basis of aberrant somatic bodily processes, such as biochemical imbalances or neurophysiological abnormalities. The biomedical model assumes that psychological and social processes are largely irrelevant to the disease process. The problems with the biomedical model are summarized in Table 1.1.

TABLE 1.1 | The Biomedical Model: Why Is It Ill-suited to Understanding Illness?

- Reduces illness to low-level processes such as disordered cells and chemical imbalances
- Fails to recognize social and psychological processes as powerful influences over bodily estates—assumes a mind-body dualism
- Emphasizes illness over health rather than focusing on behaviors that promote health
- Model cannot address many puzzles that face practitioners: why, for example, if six people are exposed to a flu virus, do only three develop the flu?

THE RISE OF THE BIOPSYCHOSOCIAL MODEL

The biomedical viewpoint began to change with the rise of modern psychology, particularly with Sigmund Freud's (1856–1939) early work on **conversion hysteria.** According to Freud, specific unconscious conflicts can produce physical disturbances that symbolize repressed psychological conflicts. Although this viewpoint is no longer central to health psychology, it gave rise to the field of psychosomatic medicine.

Psychosomatic Medicine

The idea that specific illnesses are produced by people's internal conflicts was perpetuated in the work of Flanders Dunbar in the 1930s (Dunbar, 1943) and Franz Alexander in the 1940s (Alexander, 1950). For example, Alexander developed a profile of the ulcer-prone personality as someone with excessive needs for dependency and love.

Dunbar and Alexander maintained that conflicts produce anxiety, which becomes unconscious and takes a physiological toll on the body via the autonomic nervous system. The continuous physiological changes eventually produce an organic disturbance. In the case of the ulcer patient, for example, repressed emotions resulting from frustrated dependency and love-seeking needs were thought to increase the secretion of acid in the stomach, eventually eroding the stomach lining and producing ulcers (Alexander, 1950).

Dunbar's and Alexander's work helped shape the emerging field of **psychosomatic medicine** by offering profiles of particular disorders believed to be psychosomatic in origin, that is, caused by emotional conflicts. These disorders include ulcers, hyperthyroidism, rheumatoid arthritis, essential hypertension, neurodermatitis (a skin disorder), colitis, and bronchial asthma.

We now know that all illnesses raise psychological issues. Moreover, researchers now believe that a particular conflict or personality type is not sufficient to produce illness. Rather, the onset of disease is usually due to several factors working together, which may include a biological pathogen (such as a viral or bacterial infection) coupled with social and psychological factors, such as high stress, low social support, and low socioeconomic status.

The idea that the mind and the body together determine health and illness logically implies a model for studying these issues. This model is called the **biopsychosocial model.** Its fundamental assumption is that health and illness are consequences of the interplay of biological, psychological, and social factors (Keefe, 2011).

Advantages of the Biopsychosocial Model

How does the biopsychosocial model of health and illness overcome the disadvantages of the biomedical model? The biopsychosocial model maintains that biological, psychological, and social factors are all important determinants of health and illness. Both macrolevel processes (such as the existence of social support or the presence of depression) and microlevel processes (such as cellular disorders or chemical

imbalances) continually interact to influence health and illness and their course.

The biopsychosocial model emphasizes both health and illness. From this viewpoint, health becomes something that one achieves through attention to biological, psychological, and social needs, rather than something that is taken for granted (Suls, Krantz & Williams, 2013).

Clinical Implications of the Biopsychosocial Model

The biopsychosocial model is useful for people treating patients as well. First, the process of diagnosis can benefit from understanding the interacting role of biological, psychological, and social factors in assessing a person's health or illness. Recommendations for treatment can focus on all three sets of factors.

The biopsychosocial model makes explicit the significance of the relationship between patient and practitioner. An effective patient-practitioner relationship can improve a patient's use of services, the efficacy of treatment, and the rapidity with which illness is resolved.

The Biopsychosocial Model: The Case History of Nightmare Deaths

To see how completely the mind and body are intertwined in health, consider a case study that intrigued medical researchers for nearly 15 years. It involved the bewildering "nightmare deaths" among Southeast Asians.

Following the Vietnam War, in the 1970s, refugees from Southeast Asia, especially Laos, Vietnam, and Cambodia, immigrated to the United States. Around 1977, the Centers for Disease Control (CDC) in Atlanta became aware of a strange phenomenon: sudden, unexpected nocturnal deaths among male refugees from these groups. Death often occurred in the first few hours of sleep. Relatives reported that the victim began to gurgle and move about in bed restlessly. Efforts to awaken him were unsuccessful, and shortly thereafter he died. Even more mysteriously, autopsies revealed no specific cause of death.

However, most of the victims appeared to have a rare, genetically based malfunction in the heart's pacemaker. The fact that only men of particular ethnic backgrounds were affected was consistent with the potential role of a genetic factor. Also, the fact that the deaths seemed to cluster within particular families was consistent with the genetic theory. But how and why would such a defect be triggered during sleep?

As the number of cases increased, it became evident that psychological and cultural, as well as biological, factors were involved. Some family members reported that the victim had experienced a dream foretelling the death. Among the Hmong of Laos, a refugee group that was especially plagued by these nightmare deaths, dreams are taken seriously as portends of the future. Anxiety due to these dreams, then, may have played a role in the deaths (Adler, 1991).

Another vital set of clues came from a few men who were resuscitated by family members. Several of them said that they had been having a severe night terror. One man, for example, said that his room had suddenly grown darker, and a figure like a large black dog had come to his bed and sat on his chest. He had been unable to push the dog off and had become quickly and dangerously short of breath (Tobin & Friedman, 1983). This was also an important clue because night terrors are known to produce abrupt and dramatic physiologic changes.

Interviews with the survivors revealed that many of the men had been watching violent TV shows shortly before retiring, and the content of the shows appeared to have made its way into some of the frightening dreams. In other cases, the fatal event occurred immediately after a family argument. Many of the men were said by their families to have been exhausted from combining demanding full-time jobs with a second job or with night school classes to learn English. The pressures to support their families had been taking their toll.

All these clues suggest that the pressures of adjusting to life in the United States played a role in the deaths. The victims may have been overwhelmed by cultural differences, language barriers, and difficulties finding satisfactory jobs. The combination of this chronic strain, a genetic susceptibility, and an immediate trigger provided by a family argument, violent television, or a frightening dream culminated in nightmare death (Lemoine & Mougne, 1983). Clearly, the biopsychosocial model unraveled this puzzle.

THE NEED FOR HEALTH PSYCHOLOGY

What factors led to the development of health psychology? Since the inception of the field of psychology in the early 20th century, psychologists have made

important contributions to health, exploring how and why some people get ill and others do not, how people adjust to their health conditions, and what factors lead people to practice health behaviors. In response to these trends, the American Psychological Association (APA) created a task force in 1973 to focus on psychology's potential role in health research. Participants included counseling, clinical, and rehabilitation psychologists, many of whom were already employed in health settings. Independently, social psychologists, developmental psychologists, and community/environmental psychologists were developing conceptual approaches for exploring health issues (Friedman & Silver, 2007). These two groups joined forces, and in 1978, the Division of Health Psychology was formed within the APA. It is safe to say that health psychology is one of the most important developments within the field of psychology in the past 50 years. What other factors have fueled the growing field of health psychology?

Changing Patterns of Illness

An important factor influencing the rise of health psychology has been the change in illness patterns in the United States and other technologically advanced societies in recent decades. As Table 1.2 shows, until the 20th century, the major causes of illness and death in the United States were **acute disorders.** Acute disorders are short-term illnesses, often result of a viral or bacterial invader and usually amenable to cure. The prevalence of acute infectious disorders, such as tuberculosis, influenza, measles, and poliomyelitis, has declined because of treatment innovations and changes in public health standards, such as improvements in waste control and sewage.

Now, **chronic illnesses**—especially heart disease, cancer, and respiratory diseases—are the main contributors to disability and death, particularly in industrialized countries. Chronic illnesses are slowly developing diseases with which people live for many years and that typically cannot be cured but rather are managed by patient and health care providers. Table 1.3 lists the main diseases worldwide at the present time. Note how the causes are projected to change over the next decade or so.

Why have chronic illnesses helped spawn the field of health psychology? First, these are diseases in which psychological and social factors are implicated as causes. For example, personal health habits, such as diet and smoking, contribute to the development of heart disease and cancer, and sexual activity is critical to the likelihood of developing AIDS (acquired immune deficiency syndrome).

Second, because people may live with chronic diseases for many years, psychological issues arise in their management. Health psychologists help chronically ill people adjust psychologically and socially to their changing health state and treatment regimens, many of which involve self-care. Chronic illnesses affect family functioning, including relationships with a partner or children, and health psychologists help ease the problems in family functioning that may result.

Chronic illnesses may require medication use and self-monitoring of symptoms, as well as changes in

TABLE 1.2 | What Are the Leading Causes of Death in the United States? A Comparison of 1900 and 2015, per 100,000 Population

1900		2015	
Influenza and pneumonia	202.2	Heart disease	611.1
Tuberculosis, all forms	194.4	Cancer	584.9
Gastroenteritis	142.7	Chronic lower respiratory diseases	149.2
Diseases of the heart	137.4	Accidents (unintentional injuries)	130.6
Vascular lesions of the c.n.s.	106.9	Stroke	129.0
Chronic nephritis	81.0	Alzheimer's disease	84.8
All accidents	72.3	Diabetes	75.6
Malignant neoplasms (cancer)	64.0	Influenza and pneumonia	57.0
Certain diseases of early infancy	62.6	Nephritis, nephrotic syndrome, and nephrosis	47.1
Diphtheria	40.3	Intentional self-harm (suicide)	41.1

Source: Murphy, 2000; Centers for Disease Control and Prevention, September 2015.

TABLE 1.3 | What Are the Worldwide Causes of Death?

2014		2030	
Rank	Disease or Injury	Projected Rank	Disease or Injury
1	Ischemic heart disease	1	Ischemic heart disease
2	Stroke	2	Cerebrovascular disease
3	Chronic obstructive pulmonary disease	3	Chronic obstructive pulmonary disease
4	Lower respiratory infections	4	Lower respiratory infections
5	Trachea bronchus, lung cancers	5	Road traffic accidents
6	HIV/AIDS	6	Trachea, bronchus, lung cancers
7	Diarrhoeal diseases	7	Diabetes mellitus
8	Diabetes mellitus	8	Hypertensive heart disease
9	Road injury	9	Stomach cancer
10	Hypertensive heart disease	10	HIV/AIDS

Source: World Health Organization, May 2014.

behavior, such as altering diet and getting exercise. Health psychologists develop interventions to help people learn these regimens and promote adherence to them.

Advances in Technology and Research

New medical technologies and scientific advances create issues that can be addressed by health psychologists. Just in the past few years, genes have been uncovered that contribute to many diseases including breast cancer. How do we help a college student whose mother has just been diagnosed with breast cancer come to terms with her risk? If she tests positive for a breast cancer gene, how will this change her life? Health psychologists help answer such questions.

Certain treatments that prolong life may severely compromise quality of life. Increasingly, patients are asked their preferences regarding life-sustaining measures, and they may require counseling in these matters. These are just a few examples of how health psychologists respond to scientific developments.

Expanded Health Care Services

Other factors contributing to the rise of health psychology involve the expansion of health care services. Health care is the largest service industry in the United States, and it is still growing rapidly. Americans spend more than $3 trillion annually on health care (National Health Expenditures, 2014). In recent years, the health care industry has come under increasing scrutiny, as substantial increases in health care costs have not brought improvement in basic indicators of health.

Moreover, huge disparities exist in the United States such that some individuals enjoy the very best health care available in the world while others receive little health care except in emergencies. Prior to the Affordable Care Act (known as Obamacare), 49.9 million Americans had no health insurance at all (U.S. Census Bureau, 2011). Efforts to reform the health care system to provide all Americans with a basic health care package, similar to what already exists in most European countries, have resulted.

Health psychology represents an important perspective on these issues for several reasons:

- Because containing health care costs is so important, health psychology's main emphasis on prevention—namely, modifying people's risky health behaviors before they become ill—can reduce the dollars devoted to the management of illness.
- Health psychologists know what makes people satisfied or dissatisfied with their health care (see Chapters 8 and 9) and can help in the design of a user-friendly health care system.
- The health care industry employs millions of people. Nearly every person in the country has direct contact with the health care system as a recipient of services. Consequently, its impact is enormous.

In the 19th and 20th centuries, great strides were made in the technical basis of medicine. As a result, physicians looked more and more to the medical laboratory and less to the mind as a way of understanding the onset and progression of illness.

For all these reasons, then, health care delivery has a substantial social and psychological impact on people, an impact that is addressed by health psychologists.

Increased Medical Acceptance

Another reason for the development of health psychology is the increasing acceptance of health psychologists within the medical community. Health psychologists have developed a variety of short-term behavioral interventions to address health-related problems, including managing pain, modifying bad health habits such as smoking, and controlling the side effects of treatments. Techniques that may take a few hours to teach can produce years of benefit. Such interventions, particularly those that target risk factors such as diet or smoking, have contributed to the decline in the incidence of some diseases, especially coronary heart disease.

To take another example, psychologists learned many years ago that informing patients fully about the procedures and sensations involved in unpleasant medical procedures such as surgery improves their adjustment (Janis, 1958; Johnson, 1984). As a consequence of these studies, many hospitals and other treatment centers now routinely prepare patients for such procedures.

Ultimately, if a health-related discipline is to flourish, it must demonstrate a strong track record, not only as a research field but as a basis for interventions as well. Health psychology is well on its way to fulfilling both tasks.

HEALTH PSYCHOLOGY RESEARCH

Health psychologists make important methodological contributions to the study of health and illness. The health psychologist can be a valuable team member by providing the theoretical, methodological, and statistical expertise that is the hallmark of good training in psychology.

The Role of Theory in Research

Although much research in health psychology is guided by practical problems, such as how to ease the transition from hospital to home care, about one-third of health psychology investigations are guided by theory (Painter, Borba, Hynes, Mays, & Glanz, 2008). A **theory** is a set of analytic statements that explain a set of phenomena, such as why people practice poor health behaviors. The best theories are simple and useful. Throughout this text, we will see references to many theories, such as the theory of planned behavior that predicts and explains when people change their health behaviors (Chapter 3).

The advantages of theory for guiding research are several. Theories provide guidelines for how to do research and interventions (Mermelstein & Revenson, 2013). For example, the general principles of cognitive behavior therapy can tell one investigator what components should go into an intervention with breast cancer patients to help them cope with the aftermath of surgery, and these same principles can help a different investigator develop a weight loss intervention for obese people.

Theories generate specific predictions, so they can be tested and modified as the evidence comes in. For example, testing theories of health behavior change revealed that people need to believe they can change their behavior, and so the importance of self-efficacy was incorporated into theories of health behaviors.

Theories help tie together loose ends. Everyone knows that smokers relapse, people go off their diets, and alcoholics have trouble remaining abstinent. A theory of relapse unites these scattered observations into general principles of relapse prevention that can be incorporated into diverse interventions. A wise psychologist once said, "There is nothing so practical as a good theory" (Lewin, 1946), and we will see this wisdom repeatedly borne out.

Experiments

Much research in health psychology is experimental. In an **experiment,** a researcher creates two or more conditions that differ from each other in exact and predetermined ways. People are then randomly assigned to these different conditions, and their reactions are measured. Experiments to evaluate the effectiveness of treatments or interventions over time are also called **randomized clinical trials,** in which a target treatment is compared against the existing standard of care or a placebo control, that is, an organically inert treatment.

Medical interventions increasingly are based on these methodological principles. **Evidence-based medicine** means that medical and psychological interventions go through rigorous testing and evaluation of their benefits, usually through randomized clinical trials, before they become the standard of care (Rousseau & Gunia, 2016). These criteria for effectiveness are also frequently now applied to psychological interventions.

What kinds of experiments do health psychologists undertake? To determine if social support groups improve adjustment to cancer, cancer patients might be randomly assigned to participate in a support group or to a comparison condition, such as an educational intervention. The patients could be evaluated at a subsequent time to pinpoint how the two groups differed in their adjustment.

Experiments have been the mainstay of science, because they typically provide more definitive answers to problems than other research methods. When we manipulate a variable and see its effects, we can establish a cause-effect relationship definitively. For this reason, experiments and randomized clinical trials are the gold standards of health psychology research. However, sometimes it is impractical to study issues experimentally. People cannot, for example, be randomly assigned to diseases. In this case, other methods, such as correlational methods, may be used.

Correlational Studies

Much research in health psychology is **correlational research,** in which the health psychologist measures whether changes in one variable correspond with changes in another variable. A correlational study, for example, might reveal that people who are more hostile have a higher risk for cardiovascular disease.

The disadvantage of correlational studies is that it is difficult to determine the direction of causality unambiguously. For example, perhaps cardiovascular risk factors lead people to become more hostile. On the other hand, correlational studies often have advantages over experiments because they are more adaptable, enabling us to study issues when variables cannot be manipulated experimentally.

Prospective and Retrospective Designs

Some of the problems with correlational studies can be remedied by using a prospective design. **Prospective research** looks forward in time to see how a group of people change, or how a relationship between two variables changes over time. For example, if we were to find that hostility develops relatively early in life, but heart disease develops later, we would be more confident that hostility is a risk factor for heart disease and recognize that the reverse direction of causality—namely, that heart disease causes hostility—is less likely.

Health psychologists conduct many prospective studies in order to understand the risk factors that relate to health conditions. We might, for example, intervene in the diet of one community and not in another and over time look at the difference in rates of heart disease. This would be an experimental prospective study. Alternatively, we might measure the diets that people create for themselves and look at changes in rates of heart disease, based on how good or poor the diet is. This would be an example of a correlational prospective study.

A particular type of prospective study is **longitudinal research,** in which the same people are observed at multiple points in time. For example, to understand what factors are associated with early breast cancer in

women at risk, we might follow a group of young women whose mothers developed breast cancer, identify which daughters developed breast cancer, and identify factors reliably associated with that development, such as diet, smoking, or alcohol consumption.

Investigators also use **retrospective designs,** which look backward in time in an attempt to reconstruct the conditions that led to a current situation. Retrospective methods, for example, were critical in identifying the risk factors that led to the development of AIDS. Initially, researchers saw an abrupt increase in a rare cancer called Kaposi's sarcoma and observed that the men who developed this cancer often eventually died of general failure of the immune system. By taking extensive histories of the men who developed this disease, researchers were able to determine that the practice of anal-receptive sex without a condom is related to the development of the disorder. Because of retrospective studies, researchers knew some of the risk factors for AIDS even before they had identified the retrovirus.

The Role of Epidemiology in Health Psychology

Changing patterns of illness have been charted and followed by the field of epidemiology, a discipline closely related to health psychology in its goals and interests. **Epidemiology** is the study of the frequency, distribution, and causes of infectious and noninfectious disease in a population. For example, epidemiologists study not only who has what kind of cancer but also why some cancers are more prevalent than others in particular geographic areas or among particular groups of people.

Epidemiological studies frequently use two important terms: "morbidity" and "mortality." **Morbidity** refers to the number of cases of a disease that exist at some given point in time. Morbidity may be expressed as the number of new cases (incidence) or as the total number of existing cases (prevalence). Morbidity statistics, then, tell us how many people have what kinds of disorders at any given time. **Mortality** refers to numbers of deaths due to particular causes.

Morbidity and mortality statistics are essential to health psychologists. Charting the major causes of disease can lead to steps to reduce their occurrence. For example, knowing that automobile accidents are a major cause of death among children, adolescents, and young adults has led to safety measures, such as child-safety restraint systems, mandatory seat belt laws, and raising the legal drinking age.

But morbidity is important as well. What is the use of affecting causes of death if people remain ill but simply do not die? Health psychology addresses health-related quality of life. Indeed, some researchers maintain that quality of life and symptom reduction should be more important targets for our interventions than mortality and other biological indicators (Kaplan, 1990). Consequently, health psychologists work to improve quality of life so that people with chronic disorders can live their lives as free from pain, disability, and lifestyle compromise as possible.

Methodological Tools

This section highlights some of the methodological tools that have proven valuable in health psychology research.

Tools of Neuroscience

The field of neuroscience has developed powerful new tools such as functional magnetic resonance imaging (fMRI) that permit glimpses into the brain. This area of research has also produced knowledge about the autonomic, neuroendocrine, and immune systems that have made a variety of breakthrough studies possible. For example, health psychologists can now connect psychosocial conditions, such as social support and positive beliefs, to underlying biology in ways that make believers out of skeptics. The knowledge and methods of neuroscience also shed light on such questions as, how do placebos work? Why are many people felled by functional disorders that seem to have no underlying biological causes? Why is chronic pain so intractable to treatment? We address these issues in later chapters. These and other applications of neuroscience will help to address clinical puzzles that have mystified practitioners for decades (Gianaros & Hackman, 2013).

Mobile and Wireless Technologies

The revolution in technology has given rise to a variety of tools to intervene in and assess the health environment (Kaplan & Stone, 2013). Ecological momentary interventions (EMI) (Heron & Smyth, 2010) make use of cell phones, pagers, palm pilots, tablets, and other mobile technologies to deliver interventions and assess health-related events in the natural environment. Interventions using EMI have included studies of smoking cessation, weight loss, diabetes management, eating disorders, healthy diet, and physical activity (Heron & Smyth, 2010).

People in these studies typically participate through an apparatus, such as a cell phone, that can provide on-the-spot administration of a treatment or intervention, as well as the collection of data. For example, text messages just before meals can remind people about their intentions to consume a healthy diet. Short text messaging has also been used to enhance smoking cessation programs and ensure maintenance to quitting (Berkman, Dickenson, Falk, & Lieberman, 2011). Activity measures and sensors can accurately assess how much exercise a person is getting. Mobile technology can also help people already diagnosed with disorders. People on medications may receive reminders from mobile devices to take their medications. Numerous other applications are likely.

Measuring biological indicators of health has usually required an invasive procedure such as a blood draw. Now, however, mobile health technologies can assess some biological processes. Ambulatory blood pressure monitoring devices help people with high blood pressure identify conditions when their blood pressure goes up. People with diabetes can monitor their blood glucose levels multiple times a day with far less invasive technology than was true just a few years ago.

At present, evidence for the success of mobile health-based interventions and assessments is mixed (Kaplan & Stone, 2013), suggesting the need for more research. But these procedures have greatly improved health psychologists' abilities to study health-related phenomena in real time.

Meta-analysis

For some topics in health psychology, enough studies have been done to conduct a meta-analysis. **Meta-analysis** combines results from different studies to identify how strong the evidence is for particular research findings. For example, a meta-analysis might be conducted on 100 studies of dietary interventions to identify which characteristics of these interventions lead to more successful dietary change. Such an analysis might reveal, for example, that only those interventions that enhance self-efficacy, that is, the belief that one will be able to modify one's diet, are successful. Meta-analysis is a particularly powerful methodological tool, because it uses a broad array of diverse evidence to reach conclusions.

Qualitative Research

In addition to the methods just described, there is an important role for qualitative research in health psychology (Gough & Deatrich, 2015). Listening to an individual person talk about his or her health needs and experiences is, of course, beneficial for planning an intervention for that person, such as help in losing weight. But more broadly, guided interviews and narratives can provide insights into health processes that summary statistics may not provide. For example, interviews with cancer patients about their chemotherapy experiences may be more helpful in redesigning how chemotherapy is administered than are numerical ratings of how satisfied patients are. Qualitative research can also supplement insights from other research methods. For example, surveys of college students can identify rates of problem drinking, but interviews may be helpful for identifying how to build responsible drinking skills (deVisser et al., 2015). Quantitative and qualitative methods can work hand-in-hand to develop the research evidence for effective interventions.

WHAT IS HEALTH PSYCHOLOGY TRAINING FOR?

Students who are trained in health psychology on the undergraduate level go on to many different occupations. Some students go into medicine, becoming physicians and nurses. Because of their experience in health psychology, some of these health care practitioners conduct research as well. Other health psychology students go into the allied health professional fields, such as social work, occupational therapy, dietetics, physical therapy, or public health. Social workers in medical settings, for example, may assess where patients go after discharge, decisions that are informed by knowledge of the psychosocial needs of patients. Dietetics is important in the dietary management of chronic illnesses, such as cancer, heart disease, and diabetes. Physical therapists help patients regain the use of limbs and functions that may have been compromised by illness and its treatment.

Students who receive either a Ph.D. in health psychology or a Psy.D. most commonly go into academic research as faculty members or into private practice, where they provide individual and group counseling. Other Ph.D.s in health psychology practice in hospitals and other health care settings. Many are involved in the management of health care, including business and government positions. Others work in medical schools, hospitals and other treatment settings, and industrial or occupational health settings to promote healthy behavior, prevent accidents, and help control health care costs. •

SUMMARY

1. Health psychology examines psychological influences on how people stay healthy, why they become ill, and how they respond when they do get ill. The field focuses on health promotion and maintenance; prevention and treatment of illness; the etiology and correlates of health, illness, and disability; and improvement of the health care system and the formulation of health policy.
2. The interaction of the mind and the body has concerned philosophers and scientists for centuries. Different models of the relationship have predominated at different times in history.
3. The biomedical model, which has dominated medicine, is a reductionistic, single-factor model of illness that treats the mind and the body as separate entities and emphasizes illness concerns over health.
4. The biomedical model is currently being replaced by the biopsychosocial model, which regards any health disorder as the result of the interplay of biological, psychological, and social factors. The biopsychosocial model recognizes the importance of interacting macrolevel and microlevel processes in producing health and illness. Under this model, health is regarded as an active achievement.
5. The biopsychosocial model guides health psychologists and practitioners in their research efforts to uncover factors that predict states of health and illness and in their clinical interventions with patients.
6. The rise of health psychology can be tied to several factors, including the increase in chronic or lifestyle-related illnesses, the expanding role of health care in the economy, the realization that psychological and social factors contribute to health and illness, the demonstrated importance of psychological interventions to improving people's health, and the rigorous methodological contributions of health psychology researchers.
7. Health psychologists perform a variety of tasks. They develop theories and conduct research on the interaction of biological, psychological, and social factors in producing health and illness. They help treat patients with a variety of disorders and conduct counseling for the psychosocial problems that illness may create. They develop worksite interventions to improve employees' health habits and work in medical settings and other organizations to improve health and health care delivery.

KEY TERMS

acute disorders
biomedical model
biopsychosocial model
chronic illnesses
conversion hysteria
correlational research
epidemiology
etiology
evidence-based medicine
experiment
health
health psychology
longitudinal research
meta-analysis
morbidity
mortality
prospective research
psychosomatic medicine
randomized clinical trials
retrospective designs
theory
wellness