Chapter 1: Introducing Health Psychology: 1-1 The Changing Field of Health
Book Title: Health Psychology: An Introduction to Behavior and Health
Printed By: Bianca Walker (biwalker@claflin.edu)

1-1 The Changing Field of Health

Learning Objectives

1-1 Recognize how the major causes of death have changed over the last century

1-2 Understand how factors such as age, ethnicity, and income relate now to the risk of disease and death

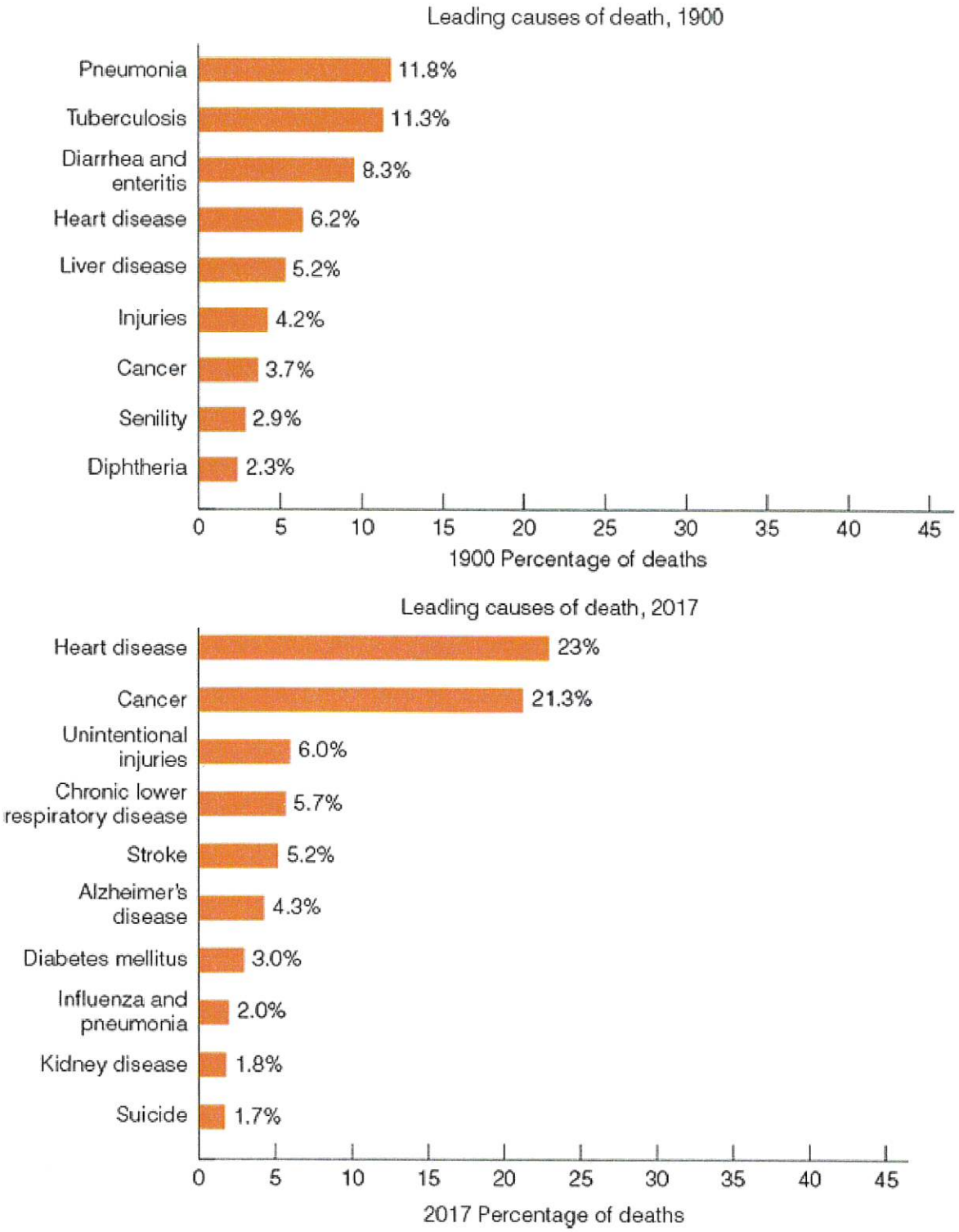
1-3 Contrast the biomedical model with the biopsychosocial model of health

"We are now living well enough and long enough to slowly fall apart" (Sapolsky, 1998, p. 2).

The field of health psychology developed relatively recently—the 1970s, to be exact—to address the challenges presented by the changing field of health and health care. A century ago, the average **life expectancy** (The expected number of years of life that remain for a person of a given age. (Chapters 1, 16)) in the United States was approximately 50 years of age, far shorter than it is now. When people in the United States died, they died largely from infectious diseases such as pneumonia, tuberculosis, diarrhea, and enteritis (see Figure 1.1). These conditions resulted from contact with impure drinking water, contaminated foods, or sick people. People might seek medical care only after they became ill, but medicine had few cures to offer. The duration of most diseases—such as typhoid fever, pneumonia, and diphtheria—was short; a person either died or got well in a matter of weeks. People felt limited responsibility for contracting a contagious disease because such a disease was not controllable.

Figure 1.1

Leading causes of death, United States, 1900 and 2013.

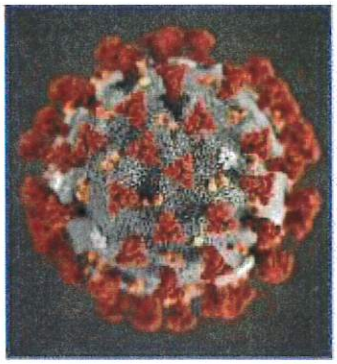


Source: Healthy people, 2010, 2000, by U.S. Department of Health and Human Services, Washington, DC: U.S. Government Printing Office; "Deaths: Final Data for 2017," 2019, by Heron, M., *National Vital Statistics Reports*, *68*(6), Table C.

Life and death are now dramatically different than they were a century ago. Life expectancy in the United States is nearly 80 years of age, with more Americans now than ever living past their 100th birthday. Over 30 countries boast even longer life expectancies than the United States, with Japan boasting the longest at 84 years of age. Public sanitation for most citizens of industrialized nations is vastly better than it was a century ago. Vaccines and treatments exist for many infectious diseases. However, improvements in the prevention and treatment of infectious diseases allowed for a different class of disease to emerge as

today's killers: **chronic diseases** (Long-lasting diseases that can be controlled but not cured. (Chapters 1, 11)) . Heart disease, cancer, and stroke—all chronic diseases—are now the leading causes of mortality in the United States and account for a greater proportion of deaths than infectious diseases ever did. Chronic diseases develop and then persist or recur, affecting people over long periods of time. Every year, over 2 million people in the United States die from chronic diseases, but over 130 million people—almost one out of every two adults—live with at least one chronic disease.

Real-World Profile of COVID-19 Pandemic



Alissa Eckert, MS; Dan Higgins, MAMS/CDC (Centers for Disease Control and Prevention)

This is an image of a SARS-CoV-2 virus. It is tiny, only 100 nanometers in diameter. It would take 1,000 of these, lined up side to side, to make a speck that could be seen by even the sharpest of human eyes.

Yet this virus was the cause of the global COVID-19 pandemic, an unprecedented public health crisis. In the first year of its emergence, COVID-19 resulted in over nearly 2 million deaths, economic collapses, school and business closures, unemployment, and a fundamental shift in how humans interact with one another. How could a virus so small have such a devastating impact?

The SARS-CoV-2 virus cannot reproduce on its own; it requires a host, such as a human, to spread. As such, the SARS-CoV-2 virus is a biological disease-causing agent, but its spread is due to human behavior. It is passed from person to person mainly through close, interpersonal contact with an infected person. People's behavior, in turn, is shaped by psychological, social, and cultural factors, including their beliefs about risk and severity of infection, adherence to preventive measures, their perceptions of what others around them do, and the cultural environment in which they live. For example, some countries such as Singapore, Taiwan, and South Korea endorsed immediate and strict social policies to contain the potential spread of the virus. Other countries such as Sweden did not, at least immediately. Even within countries such as the United States, people's behaviors varied widely from state to state, as did the infection rates between communities.

Among those infected by SARS-CoV-2, the potential for severe illness or death also depends on factors influenced by behavior. Older adults are at greatest risk, as well as people with underlying chronic conditions such as diabetes, cancer, chronic obstructive pulmonary disease, and obesity. As you will learn in this book, the development and management of these medical conditions are influenced, to some degree, by people's past and current behavior. The immune system's ability to fight off an infection, too, can be diminished due to stress, sleep loss, depression, and loneliness; rates of such experiences and conditions increased during the COVID-19 pandemic. Some ethnic groups were at greater risk of illness than others, with these disparities due likely to a combination of environmental, economic, behavioral, and social factors.

When vaccines and cures are available for COVID-19, behavior remains important. People will need to choose to obtain vaccinations or adhere to treatments. These behaviors, again, are shaped by psychological, social, and cultural factors, including beliefs about effectiveness or support from health care providers and family.

The COVID-19 pandemic, like many other health issues we will review in this book, is more than simply a matter of biology, but a matter of behavior as well. For this reason, the field of health psychology emerged and has adopted a **biopsychosocial model of health** (The approach to health that includes biological, psychological, and social influences. (Chapter 1)) , which we introduce in this chapter. The biopsychosocial model accounts for the complex ways that biology, behavior, beliefs, emotions, the social environment, and culture all interact to either increase our risk of illness or help us remain healthy. The rest of this book will cover many issues that are relevant to the COVID-19 pandemic, including how research contributes to our knowledge of behavioral factors in health (Chapter 2), when and why people seek medical care (Chapter 3), why people do not always engage in healthy behaviors (Chapter 4), stress and its role in disease (Chapters 5 and 6), and how behavior relates to health and chronic illness (Chapters 9, 10, 11, 12, 13, 14, and 15). As you read the pages ahead, you will see many examples of the central premise of health psychology: While illness is based in biology, our behavior matters.

Furthermore, most deaths today are attributable to diseases associated with lifestyle and behavior. Heart disease, cancer, stroke, chronic lower respiratory diseases (including emphysema and chronic bronchitis), unintentional injuries, and diabetes are all due in part to cigarette smoking, alcohol abuse, unhealthy eating, stress, and a sedentary lifestyle. Because today's major killers arise in part due to lifestyle and behavior, people have a great deal more control over their health than they did in the past. However, many people do not exercise this control, so unhealthy behavior is an important public health problem. Indeed, unhealthy behavior contributes to the escalating costs of health care.

In this chapter, we describe the changing patterns of disease and disability and the increasing costs of health care. We also discuss how these trends change the very definition of health and require a broader view of health than in the past. This broad view of health is the biopsychosocial model, a view adopted by health psychologists.

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Chapter 1: Introducing Health Psychology Patterns of Disease and Death
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Patterns of Disease and Death

The 20th century brought about major changes in the patterns of disease and death in the United States, including a shift in the leading causes of death. Infectious diseases were the leading causes of death in 1900, but over the next several decades, chronic diseases—such as heart disease, cancer, and stroke—became the leading killers. Only with the COVID-19 pandemic beginning in 2020 has an infectious disease been a leading cause of death in this century. In 2020, COVID-19 was the third most common cause of death in the United States, after heart disease and cancer. When the COVID-19 pandemic subsides, chronic diseases will remain as the leading causes of mortality in the United States.

During the first few years of the 21st century, deaths from some chronic diseases—those related to unhealthy lifestyles and behaviors—began to *decrease*. These include heart disease, cancer, and stroke, which all were responsible for a smaller proportion of deaths in 2010 than in 1990. Why have deaths from these diseases decreased in the last few decades? We will discuss this in greater detail in Chapter 9, but one major reason is that fewer people in the United States now smoke cigarettes than in the past. This change in behavior contributed to some of the decline in deaths due to heart disease; improvements in health care also contributed to this decline.

Death rates due to unintentional injuries, suicide, and homicide have increased in recent years. Significant increases also occurred in Alzheimer's disease, kidney disease, septicemia (blood infection), liver disease, hypertension, and Parkinson's disease. For many of these recently increasing causes, behavior is a less important component than for those causes that have decreased. However, the rising death rates due to Alzheimer's and Parkinson's reflect another important trend in health and health care: an increasingly older population.

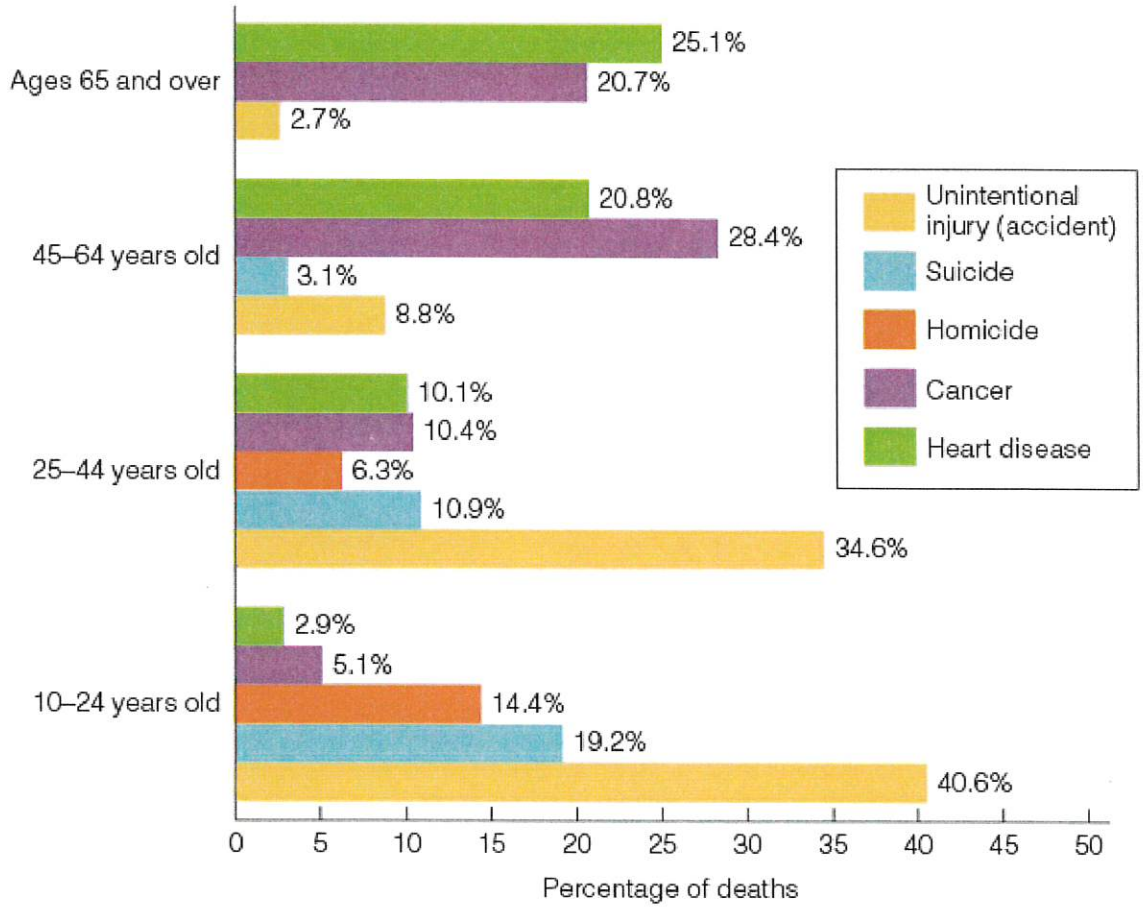
Age

Obviously, older people are more likely to die than younger ones, but the causes of death vary among age groups. Thus, the ranking of causes of death for the entire population may not reflect any specific age group and may lead people to misperceive the risk for some ages. For example, cardiovascular disease (which includes heart disease and stroke) and cancer account for over 50% of all deaths in the United States, but they are not the leading cause of death for young people. For individuals between 1 and 24 years of age, unintentional injuries are the leading cause of death, and violent deaths from suicide and homicide rank high on the list as well (National Center for Health Statistics [NCHS], 2018). Taken together, injuries, suicides, and homicide account for over half of deaths during these younger years. As Figure 1.2 reveals, other causes of death account for much smaller

percentages of deaths among adolescents and young adults than unintentional injuries, homicide, and suicide.

Figure 1.2

Leading causes of death among individuals aged 10–24, 25–44, 45–64, and 65+, United States, 2017.



Source: "Deaths: Final Data for 2017," 2019, by Heron, M., *National Vital Statistics Reports, 68*(6), Figure 2.

For adults 45 and older, the picture is quite different. Cardiovascular disease and cancer become the leading causes of death, accounting for nearly half of deaths. As people age, they become more likely to die, so the causes of death for older people dominate the overall figures. However, younger people show very different patterns of mortality.

Ethnicity, Income, and Disease

Question 2 from the quiz inside the front cover asks if the United States is among the top 10 nations in the world in terms of life expectancy. It is not even close. It ranks 34th among all nations (World Health Organization [WHO], 2018c). Within the United States, ethnicity is also a factor in life expectancy, and the leading causes of death also vary among ethnic groups. Table 1.1 shows the ranking of the leading causes of death for four ethnic groups in the United States. No two groups have identical profiles of causes, and some causes do not appear on the list for each group, highlighting the influence of ethnicity on mortality.

Table 1.1

Leading Causes of Death for Four Ethnic Groups in the United States, 2017

	European Americans	Hispanic Americans	African Americans	Asian Americans
Heart disease	1	2	1	2
Cancer	2	1	2	1
Chronic lower respiratory disease	3	8	6	8
Unintentional injuries	4	3	3	4
Stroke	5	4	4	3
Alzheimer's disease	6	6	9	6
Diabetes	7	5	5	5
Pneumonia & influenza	8	11	12	7
Suicide	9	9	16	11
Kidney disease	10	10	8	9
Chronic liver disease	11	7	14	14
Septicemia	12	13	10	12
Hypertension	14	14	11	10
Homicide	20	12	7	18

Source: "Deaths: Leading Causes for 2017," 2019, by M. Heron, National Vital Statistics Reports, 68(6), Table D.

If African Americans and European Americans in the United States were considered to be different nations, European America would rank higher in life expectancy than African America—38th place and 80th place, respectively (NCHS, 2021; WHO, 2018c). Thus, European Americans have a longer life expectancy than African Americans, but neither should expect to live as long as people in Japan, Canada, Iceland, Australia, the United Kingdom, Italy, France, Hong Kong, Israel, and many other countries.

Hispanics have socioeconomic disadvantages like those of African Americans (U.S. Census Bureau [USCB], 2011), including poverty and low educational level. About 10% of European Americans live below the poverty level, whereas 32% of African Americans and 26% of Hispanic Americans do (USCB, 2011). European Americans also have educational

advantages: 86% receive high school diplomas, compared with only 81% of African Americans and 59% of Hispanic Americans. These socioeconomic disadvantages translate into health disadvantages (Crimmins et al., 2007; Smith & Bradshaw, 2006). That is, poverty and low educational level both relate to health problems and lower life expectancies. Thus, some of the ethnic differences in health are due to socioeconomic differences.

Access to health insurance and medical care is not the only factor that makes poverty a health risk. Indeed, the health risks associated with poverty begin before birth. Even with the expansion of prenatal care by Medicaid, poor mothers, especially teen mothers, are more likely to deliver low-birth-weight babies, who are more likely than normal-birth-weight infants to die (NCHS, 2021). Also, pregnant women living below the poverty line are more likely than other pregnant women to be physically abused and to deliver babies who suffer the consequences of prenatal child abuse (Zelenko et al., 2000).

The association between income level and health is so strong that it appears not only at the poverty level but also at higher income levels. That is, very wealthy people have better health than people who are just, well, wealthy. Why should very wealthy people be healthier than other wealthy people? One possibility comes from the relation of income to educational level, which, in turn, relates to occupation, social class, and ethnicity. The higher the educational level, the less likely people are to engage in unhealthy behaviors such as smoking, eating high-fat foods, and maintaining a sedentary lifestyle (see Would You Believe . . .? box). Another possibility is the perception of social status. People's perception of their social standing may differ from their status as indexed by educational, occupational, and income level; remarkably, this perception relates to health status more strongly than objective measures (Operario, Adler, & Williams, 2004). Thus, the relationships between health and ethnicity are intertwined with the relationships between health, income, education, and social class.

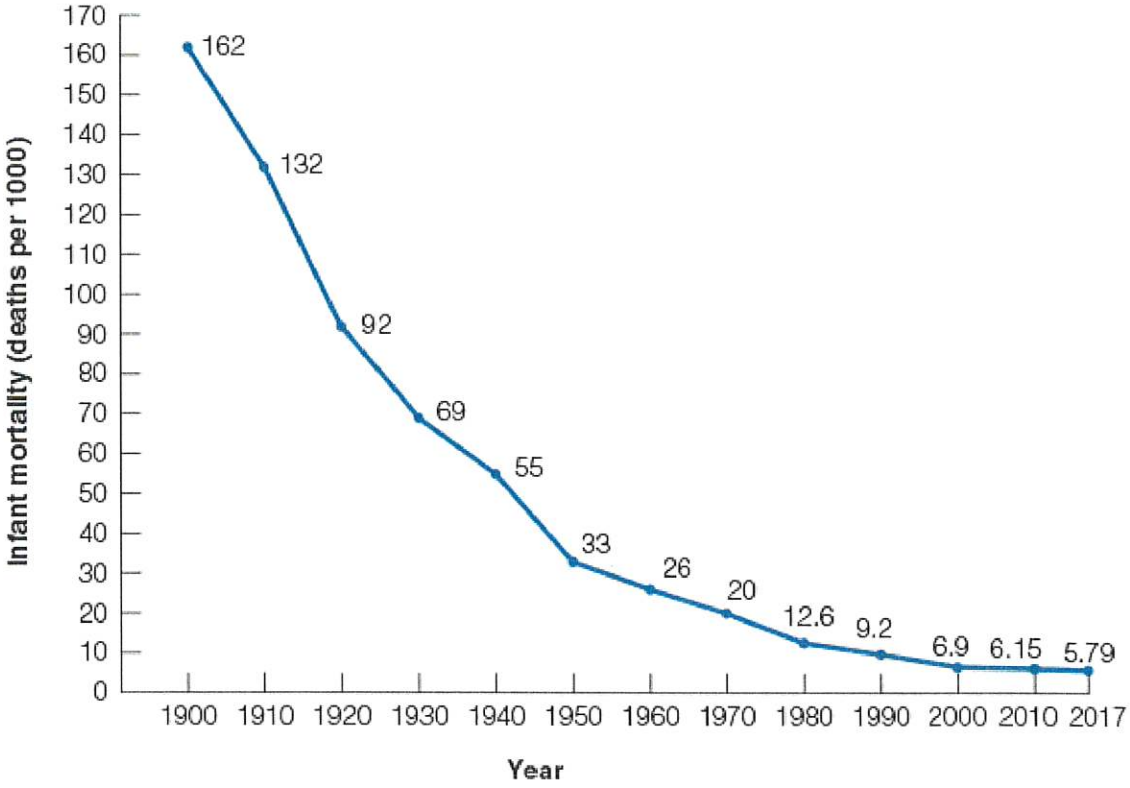
Changes in Life Expectancy

During the 20th century, life expectancy rose dramatically in the United States and other industrialized nations. In 1900, life expectancy was 47.3 years, whereas today it is almost 78 years (NCHS, 2021). In other words, infants born today can expect, on average, to live more than a generation longer than their great-great-grandparents born at the beginning of the 20th century.

What accounts for the 30-year increase in life expectancy during the 20th century? Question 3 from the quiz inside the front cover asks if advances in medical care were responsible for this increase. The answer is "False"; other factors have been more important than medical care of sick people. The single most important contributor to the increase in life expectancy is the lowering of infant mortality. When infants die before their first birthday, these deaths lower the population's average life expectancy much more than do the deaths of middle-aged or older people. As Figure 1.3 shows, infant death rates declined dramatically between 1900 and 1990, but little decrease has occurred since that time.

Figure 1.3

Decline in infant mortality in the United States, 1900–2013.



Source: Data from *Historical statistics of the United States: Colonial times to 1970*, 1975 by U.S. Bureau of the Census, Washington, DC: U.S. Government Printing Office, p. 60; "Deaths: Final Data for 2013," 2016, by Xu, J., Murphy, S. L., Kochanek, K. D., & Bastian, B. A., *National Vital Statistics Reports, 64*(2), Table B; "Recent Declines in Infant Mortality in the United States, 2005–2011," National Center for Health Statistics, Number 120, 2013.

Would You Believe...?

College Is Good for Your Health

Would you believe that attending college could be good for your health? You may find that difficult to believe, as college seems to add stress, exposure to alcohol or drugs, and demands that make it difficult to maintain a healthy diet, exercise, and sleep. How could going to college possibly be healthy?

The health benefits of college appear after graduation. People who have been to college have lower death rates than those who have not. This advantage applies to both women and men and to infectious diseases, chronic diseases, and unintentional injuries (NCHS, 2015). Better-educated people report fewer daily symptoms and less stress than less educated people (Grzywacz et al., 2004).

Even a high school education provides health benefits; but going to college offers much more protection. For example, people with less than a high school education die at a rate of 575 per 100,000; those with a high school degree die at a rate of 509 per 100,000; but people who attend college have a death rate of only 214 per 100,000 (Miniño et al., 2011). The benefits of education for health and longevity apply to people around the world. For example, a study of older people in Japan

(Fujino et al., 2005) found that low educational level increased the risk of dying. A large-scale study of the Dutch population (Hoeymans, van Lindert, & Westert, 2005) also found that education was related to a wide range of health measures and health-related behaviors.

What factors contribute to this health advantage for people with more education? Part of that advantage may be intelligence, which predicts both health and longevity (Gottfredson & Deary, 2004). In addition, people who are well educated tend to live with and around people with similar education, providing an environment with good health-related knowledge and attitudes (Øystein, 2008). Income and occupation may also contribute (Batty et al., 2008); people who attend college, especially those who graduate, have better jobs and higher average incomes than those who do not and thus are more likely to have better access to health care. In addition, educated people are more likely to be informed consumers of health care, gathering information on their diseases and potential treatments. Education is also associated with a variety of habits that contribute to good health and long life. For example, people with a college education are less likely than others to smoke or use illicit drugs (Johnston et al., 2007), and they are more likely to eat a low-fat diet and to exercise.

Thus, people who attend college acquire many resources that are reflected in their lower death rate—income potential, health knowledge, more health-conscious spouses and friends, attitudes about the importance of health, and positive health habits. This strong link between education and health is one clear example of how good health is more than simply a matter of biology.

The prevention of disease also contributes to the recent increase in life expectancy. Widespread vaccination and safer drinking water and milk supplies all reduce infectious disease, which increases life expectancy. A healthier lifestyle also contributes to increased life expectancy, as does more efficient disposal of sewage and better nutrition. In contrast, advances in medical care—such as antibiotics and new surgical technology, efficient paramedic teams, and more skilled intensive care personnel—play a surprisingly minor role in increasing adults' life expectancy.

Escalating Cost of Medical Care

The second major change within the field of health is the escalating cost of medical care. In the United States, medical costs have increased at a much faster rate than inflation, and currently the United States spends the most of all countries on health care. Between 1960 and 2008, medical costs in the United States represented an increasingly larger proportion of the gross domestic product (GDP). Since 1995, the increases have slowed, but medical care costs as a percentage of the GDP are over 16% (Organisation for Economic Co-operation and Development [OECD], 2019). Considered on a per person basis, the total yearly cost of health care in the United States increased from $1,067 per person in 1970 to $9,105 in 2017 (NCHS, 2019), which is a jump of more than 850%!

These costs, of course, have some relationship to increased life expectancy: As people live to middle and old age, they tend to develop chronic diseases that require extended (and often expensive) medical treatment. Nearly half of people in the United States have a chronic condition, and they account for 86% of the dollars spent on health care (Gerteis et al., 2014). People with chronic conditions account for 88% of prescriptions written, 72% of physician visits, and 76% of hospital stays. Even though today's aging population is experiencing better health than past generations, their increasing numbers will continue to increase medical costs.

One strategy for curbing mounting medical costs is to limit services, but another approach requires a greater emphasis on the early detection of disease, changes to a healthier lifestyle, and behaviors that help prevent disease. For example, early detection of high blood pressure, high serum cholesterol, and other precursors of heart disease allow these conditions to be controlled, thereby decreasing the risk of serious disease or death. Screening people for risks is preferable to remedial treatment because chronic diseases are quite difficult to cure and living with chronic disease decreases quality of life. Avoiding disease by adopting a healthy lifestyle is even more preferable to treating diseases or screening for risks. Staying healthy is typically less costly than becoming sick and then getting well. Thus, preventing diseases through a healthy lifestyle, detecting symptoms early, and reducing health risks are all part of a changing philosophy within the health care field. As you will learn in this book, health psychologists contribute to each of these aims.

Chapter 1: Introducing Health Psychology Escalating Cost of Medical Care
Book Title: Health Psychology: An Introduction to Behavior and Health
Printed By: Bianca Walker (biwalker@claflin.edu)
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Chapter 1: Introducing Health Psychology What Is Health?
Book Title: Health Psychology: An Introduction to Behavior and Health
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What Is Health?

"Once again, the patient as a human being with worries, fears, hopes, and despairs, as an indivisible whole and not merely the bearer of organs—of a diseased liver or stomach—is becoming the legitimate object of medical interest," says Franz Alexander (1950, p. 17), one of the founders of the field of psychosomatic medicine.

Technology in medicine is one reason for escalating medical costs.

kali9/E+/Getty Images

What does it mean to be "healthy"? Question 1 from the quiz at the beginning of the book asks if health is merely the absence of disease. But is health more complex? Is health the presence of some positive condition rather than merely the absence of a negative one? Is health simply a state of the physical body, or should health also consider one's beliefs, environment, and behaviors as well?

The **biomedical model** (A perspective that considers disease to result from exposure to a specific disease-causing organism. (Chapter 1)) , which defines health as the absence of disease, has been the traditional view of Western medicine (Papas, Belar, & Rozensky, 2004). This view conceptualizes disease solely as a biological process that is a result of exposure to a specific **pathogen** (Any disease-causing organism. (Chapter 1)) , a disease-causing organism. This view spurred the development of drugs and medical technology oriented toward removing the pathogens and curing disease. The focus is on disease, which is traceable to a specific agent. Removing the pathogen restores health.

The biomedical model of disease is compatible with infectious diseases that were the leading causes of death 100 years ago. Throughout the 20th century, adherence to the biomedical model allowed medicine to conquer or control many of the diseases that once ravaged humanity. However, when chronic illnesses began to replace infectious diseases as the leading causes of death, the biomedical model became insufficient (Stone, 1987).

An alternative model of health exists now, one that advocates a more comprehensive approach to medicine. This alternative model is the **biopsychosocial model** (The approach to health that includes biological, psychological, and social influences. (Chapter 1)) , which includes biological, psychological, and social influences. This model holds that many diseases result from a combination of factors such as genetics, physiology, social support, personal control, stress, compliance, personality, poverty, ethnic background, and cultural beliefs. We discuss each of these factors in subsequent chapters. For now, it is important to recognize that the biopsychosocial model has at least two advantages over the older biomedical model. First, it incorporates not only biological conditions but also psychological and social factors. Second, it views health as a positive condition. The biopsychosocial model can also account for some surprising findings about who gets sick and who stays healthy (see the Would You Believe . . .? box). Thus, the biopsychosocial model has not only all the power of the older biomedical model but also the ability to address problems that the biomedical model has failed to solve.

According to the biopsychosocial view, health is much more than the absence of disease. A person who has no disease condition is not sick; but this person may not be healthy either. A person may have unhealthy lifestyle habits or poor social support, cope poorly with high amounts of stress, or avoid medical care when it is warranted; all of these factors increase the risk of future disease. Because health is multidimensional, all aspects of living—biological, psychological, and social—must be considered. This view diverges from the traditional Western conceptualization, but as Table 1.2 shows, other cultures have held different views.

Table 1.2

Definitions of Health Held by Various Cultures

Culture	Time Period	Health Is ...
Prehistoric	10,000 BCE	Endangered by spirits that enter the body from outside
Babylonians and Assyrians	1800–700 BCE	Endangered by the gods, who send disease as a punishment
Ancient Hebrews	1000–300 BCE	A gift from God; disease is a punishment from God
Ancient Greeks	500 BCE	A holistic unity of body and spirit

Culture	Time Period	Health Is ...
Ancient China	Between 800 and 200 BCE	A state of physical and spiritual harmony with nature
Native Americans	1000 BCE–present	Total harmony with nature and the ability to survive under difficult conditions
Galen in ancient Rome	130–200 CE	The absence of pathogens, such as bad air or body fluids, that cause disease
Early Christians	300–600 CE	Not as important as disease, which is a sign that one is chosen by God
Descartes in France	1596–1650	A condition of the mechanical body, which is separate from the mind
Western Africans	1600–1800	Harmony achieved through interactions with other people and objects in the world
Virchow in Germany	Late 1800s	Endangered by microscopic organisms that invade cells, producing disease
Freud in Austria	Late 1800s	Influenced by emotions and the mind
World Health Organization	1946	"A state of complete physical, mental, and social well-being"

Consistent with this broader view, the World Health Organization (WHO) wrote into the preamble of its constitution a modern, Western definition: "Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity." This definition clearly affirms that health is a positive state and not just the absence of pathogens. Feeling good is different from not feeling bad, and research in neuroscience has confirmed the difference (Zautra, 2003). The human brain responds in distinctly different patterns to positive feelings and negative feelings. Furthermore, this broader definition of health can account for the importance of preventive behavior in physical health. For example, a healthy person is not merely somebody without a disease or a disability but also somebody who behaves in a way that is likely to maintain that state in the future.

Would You Believe...?

It Takes More than a Virus to Give You a Cold

One of the dirtiest jobs that an aspiring health psychologist could have is as a research assistant in Sheldon Cohen's laboratory at Carnegie Mellon University. Cohen's assistants sift through study participants' trash in search of used, mucous-filled tissues. When such tissues are found, the assistants unfold them, locate the gooey treasures within, and painstakingly weigh their discoveries. These assistants have good reason to rummage for snot—they want an objective measure of how severely their participants caught the common cold.

Sheldon Cohen and his research team investigate the psychological and social factors that predict the likelihood that a person will succumb to infection. Healthy participants in Cohen's studies receive a virus through a nasal squirt and are then quarantined in a "cold research laboratory"—actually, a hotel room—for one week. Participants also answer several questionnaires about psychological and social factors such as recent stress, typical positive and negative emotions, and the size and quality of their social networks. Cohen and his team use these questionnaires to predict who gets the cold and who remains healthy.

Cohen's findings expose the inadequacy of the biomedical approach to understanding infection. Even though everybody in his studies gets exposed to the same pathogen in exactly the same manner, only some participants get sick. Importantly, the people who resist infection share similar psychological and social characteristics. Compared with people who get sick, those who remain healthy are less likely to have dealt with recent stressful experiences (Cohen, Tyrrell, & Smith, 1991), have better sleep habits (Cohen et al., 2009), typically experience more positive emotion (Cohen et al., 2006), are more sociable (Cohen et al., 2003), and have more diverse social networks (Cohen et al., 1997).

Thus, it takes more than just exposure to a virus to succumb to a cold or flu bug; exposure to the pathogen interacts with psychological and social factors to produce illness. Only the biopsychosocial model can account for these influences.

In Summary

In the past century, four major trends changed the field of health care. One trend is the changing pattern of disease and death in industrialized nations, including the United States. Chronic diseases now replace infectious diseases as the leading causes of death and disability. These chronic diseases include heart disease, stroke, cancer, emphysema, and adult-onset diabetes, all of which have causes that include individual behavior.

The increase in chronic disease contributed to a second trend: the escalating cost of medical care. Costs for medical care steadily increased from 1970 to 2013. Much of this cost increase is due to a growing elderly population, innovative but expensive medical technology, and inflation.

A third trend is the changing definition of health. Many people continue to view health as the absence of disease, but a growing number of health care professionals view health as a state of positive well-being. To accept this definition of health, one must reconsider the biomedical model that has dominated the health care field.

The fourth trend, the emergence of the biopsychosocial model of health, relates to the changing definition of health. Rather than define "disease" as simply the presence of pathogens, the biopsychosocial model emphasizes positive health and sees disease, particularly chronic disease, as resulting from the interaction of biological, psychological, and social conditions.

Apply What You've Learned

1. Consider an illness that you have learned about from the media or your own personal experiences. What is the biological basis of the illness? What are some of the behaviors, beliefs, and aspects of a person's social and cultural environment that you believe contribute to risk for the illness? Does the biopsychosocial model help broaden your understanding of the condition, compared to the biomedical model?

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1-2 Psychology's Relevance for Health

Learning Objectives

1-4 Trace the expanding role of psychology in understanding physical health, from its roots in psychosomatic medicine and behavioral medicine to its current role in the field of health psychology

Although chronic diseases have biological causes, individual behaviors and lifestyle also contribute to their development. Because behavior is so important for chronic disease, psychology—the science of behavior—is now more relevant to health care than ever before.

It took many years, however, for psychology to gain acceptance by the medical field. In 1911, the American Psychological Association (APA) recommended that psychology be part of the medical school curriculum, but most medical schools did not follow this recommendation. During the 1940s, the medical specialty of psychiatry incorporated the study of psychological factors related to disease into its training, but only a few psychologists were involved in health research (Matarazzo, 1994). During the 1960s, psychology's role in medicine began to expand with the creation of new medical schools; the number of psychologists who held academic appointments on medical school faculties nearly tripled from 1969 to 1993 (Matarazzo, 1994).

In the past several decades, psychologists have gained greater acceptance by the medical profession (Pingitore et al., 2001). In 2002, the American Medical Association (AMA) accepted several new categories for health and behavior that permit psychologists to bill for services to patients with physical diseases. Also, Medicare's Graduate Medical Education program now accepts psychology internships, and the APA worked with the WHO to formulate a diagnostic system for biopsychosocial disorders, the International Classification of Functioning, Disability, and Health (Reed & Scheldeman, 2004). Thus, the role of psychologists in medical settings has expanded beyond traditional mental health problems to include programs to help people stop smoking, eat a healthy diet, exercise, adhere to medical advice, reduce stress, control pain, live with chronic disease, and avoid unintentional injuries.

Chapter 1: Introducing Health Psychology The Contribution of Psychosomatic Medicine
Book Title: Health Psychology: An Introduction to Behavior and Health
Printed By: Bianca Walker (biwalker@claflin.edu)

The Contribution of Psychosomatic Medicine

The biopsychosocial model recognizes that psychological and emotional factors contribute to physical health problems. This notion is not new, as Socrates and Hippocrates proposed similar ideas centuries ago. Furthermore, Sigmund Freud also proposed that unconscious psychological factors could contribute to physical symptoms, but Freud's approach was not based on systematic scientific research.

In 1932, Walter Cannon observed that emotions are accompanied by physiological changes, a discovery that started a search to tie emotional causes to illness (Kimball, 1981). Cannon's research demonstrated that emotions could cause physiological changes capable of causing disease. From this finding, Helen Flanders Dunbar (1943) developed the notion that habitual responses, which people exhibit as part of their personalities, could relate to specific diseases. In other words, Dunbar hypothesized a relationship between personality type and disease. A little later, Franz Alexander (1950), a onetime follower of Freud, began to see emotional conflicts as a precursor to certain diseases.

The role of the psychologist in health care settings has expanded beyond traditional mental health problems to include procedures such as biofeedback.

Will & Deni McIntyre/Science Source

These views led others to see a range of specific illnesses as "psychosomatic." These illnesses included such disorders as peptic ulcer, rheumatoid arthritis, hypertension, asthma, hyperthyroidism, and ulcerative colitis. However, the widespread belief at the time in the separation of mind and body—a belief that originated with Descartes (Papas et al., 2004)—led many laypeople to regard these psychosomatic disorders as not being "real," but rather "all in the head." Thus, psychosomatic medicine exerted a mixed impact on the acceptance of psychology within medicine; it benefited by connecting emotional and physical conditions, but it may have harmed by belittling the psychological components of illness. Psychosomatic medicine, however, laid the foundation for the transition to the biopsychosocial model of health and disease (Novack et al., 2007).

The Emergence of Behavioral Medicine

From the psychosomatic medicine movement, two interrelated disciplines emerged: *behavioral medicine* and *health psychology*.

Behavioral medicine (An interdisciplinary field concerned with developing and integrating behavioral and biomedical sciences. (Chapter 1)) is "the interdisciplinary field concerned with the development and integration of behavioral and biomedical science knowledge and techniques relevant to health and illness and the application of this knowledge and these techniques to prevention, diagnosis, treatment and rehabilitation" (Schwartz & Weiss, 1978, p. 250). A key component of this definition is the integration of biomedical science with behavioral sciences, especially psychology. The goals of behavioral medicine are like those in other areas of health care: improved prevention, diagnosis, treatment, and rehabilitation. Behavioral medicine, however, attempts to use psychology and the behavioral sciences in conjunction with medicine to achieve these goals. Chapters 3, 4, 5, 6, 7, 8, 9, 10, and 11 cover topics in behavioral medicine.

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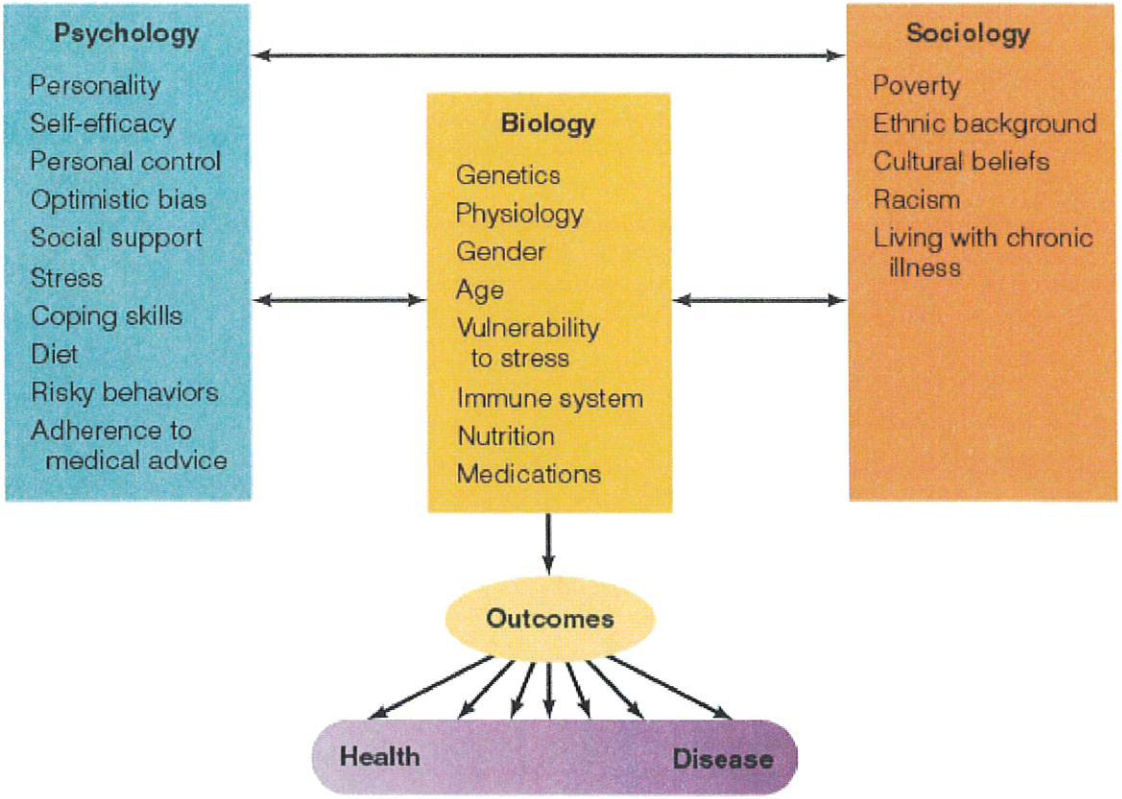
The Emergence of Health Psychology

At about the same time that behavioral medicine appeared, a task force of the American Psychological Association revealed that few psychologists conducted health research (APA Task Force, 1976). The report envisioned a future in which psychologists would contribute to the enhancement of health and prevention of disease.

In 1978, with the establishment of Division 38 of the American Psychological Association, the field of health psychology officially began. **Health psychology** (A field of psychology that contributes to both behavioral medicine and behavioral health; the scientific study of behaviors that relate to health enhancement, disease prevention, and rehabilitation. (Chapter 1)) is the branch of psychology that considers how individual behaviors and lifestyles affect a person's physical health. Health psychology also includes psychology's contributions to the enhancement of health, the prevention and treatment of disease, the identification of health risk factors, the improvement of the health care system, and the shaping of public opinion regarding health. More specifically, it involves the application of psychological principles to physical health areas such as controlling cholesterol, managing stress, alleviating pain, stopping smoking, and moderating other risky behaviors, as well as encouraging regular exercise, medical and dental checkups, and safer behaviors. In addition, health psychology helps identify conditions that affect health, diagnose and treat certain chronic diseases, and modify the behavioral factors involved in physiological and psychological rehabilitation. As such, health psychology interacts with both biology and sociology to produce health- and disease-related outcomes (see Figure 1.4). Note that neither psychology nor sociology contributes directly to outcomes; only biological factors contribute directly to physical health and disease. Thus, the psychological and sociological factors that affect health must "get under the skin" in some way to affect biological processes. One of the goals of health psychology is to identify those pathways.

Figure 1.4

The biopsychosocial model: Biological, psychological, and sociological factors interact to produce health or disease.



With its promotion of the biopsychosocial model, the field of health psychology continues to grow. One branch of this field—that is, clinical health psychology—continues to gain recognition in providing health care as part of multidisciplinary teams. Health psychology researchers continue to build a knowledge base that will furnish information about the interconnections among psychological, social, and biological factors that relate to health.

In Summary

The involvement of psychology in health dates to the beginning of the 20th century, but at that time, few psychologists were involved in medicine. The psychosomatic medicine movement brought psychological factors into the understanding of disease, and that view gave way to the biopsychosocial approach to health and disease. By the 1970s, psychologists had begun to develop research and treatment aimed at chronic disease and health promotion; this research and treatment led to the founding of two fields: behavioral medicine and health psychology.

Behavioral medicine applies the knowledge and techniques of behavioral research to physical health, including prevention, diagnosis, treatment, and rehabilitation. Health psychology overlaps with behavioral medicine, and the two professions have many common goals. However, behavioral medicine is an interdisciplinary field, whereas health psychology is a specialty within the discipline of psychology. Health psychology strives to enhance health, prevent and treat disease, identify risk factors, improve the health care system, and shape public opinion regarding health issues.

Apply What You've Learned

1. Select a health condition that is personally relevant and conduct an internet search of recent research or news reports about the condition. Does current research examine the role of psychological factors in the prevention or development of the condition? If so, how?

1-3 The Profession of Health Psychology

Learning Objectives

1-5 Familiarize yourself with the profession of health psychology, including how health psychologists are trained and the varied types of work that they do

Health psychology now stands as a unique field and profession. Health psychologists have their own associations, publish their research in journals devoted to health psychology (*Health Psychology* and *Annals of Behavioral Medicine*, among others), and acquire training in unique doctoral and postdoctoral programs. In addition, health psychology is recognized within medical schools, schools of public health, universities, and hospitals; health psychologists work within all these settings. However, their training occurs within psychology.

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The Training of Health Psychologists

Health psychologists are psychologists first and specialists in health second, but the training in health is extensive. People who pursue research in health psychology must learn the topics, theories, and methods of health psychology research. Health psychologists who provide clinical care, known as **clinical health psychologists**, must learn clinical skills and how to practice as part of a health care team. Some health psychologists also seek out training in medical subspecialties, such as neurology, endocrinology, immunology, and epidemiology. This training may occur in a doctoral program (Baum, Perry, & Tarbell, 2004), but many health psychologists also obtain postdoctoral training, with at least two years of specialized training in health psychology to follow a PhD or PsyD in psychology (Belar, 1997; Matarazzo, 1987). Practicums and internships in health care settings in hospitals and clinics are common components of training in clinical health psychology (Nicassio, Meyerowitz, & Kerns, 2004).

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Chapter 1: Introducing Health Psychology The Work of Health Psychologists
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The Work of Health Psychologists

Health psychologists work in a variety of settings, and their work setting varies according to their specialty. Angela Bryan is one of these health psychologists, and her work is described in this Real-World Profile. Some health psychologists, such as Angela Bryan, are primarily researchers, who work in universities or government agencies, such as the National Institutes of Health and the CDC, that conduct research. Health psychology research encompasses many topics; it may focus on behaviors related to the development of disease or on evaluation of the effectiveness of new interventions and treatments. Clinical health psychologists are often employed in hospitals, pain clinics, or community clinics. Other settings for clinical health psychologists include health maintenance organizations (HMOs) and private practice.

As Angela Bryan's work shows, health psychologists engage in a variety of activities. Much of their work is collaborative in nature; health psychologists engaged in either research or practice may work with a team of health professionals, including physicians, nurses, physical therapists, and counselors.

Real-World Profile of Angela Bryan

Courtesy of Angela Bryan

Health psychology is a relatively new and fascinating field of psychology. Health psychologists examine how people's lifestyles influence their physical health. In this book, you will learn about the diverse topics, findings, and people that make up this field.

First, let's introduce you to Angela Bryan, a health psychologist from the University of Colorado Boulder. Angela develops interventions that promote healthy behavior,

such as safe sex and physical activity. Angela has won several awards for her work, including recognition that one of her interventions is among the few that work in reducing risky sexual behavior among adolescents ("Safe on the Outs"; Centers for Disease Control and Prevention [CDC], 2011b).

As an adolescent, Angela thought of herself as a "rebel" (Aiken, 2006), perhaps an unlikely start for someone who now develops ways to help people to maintain a healthy lifestyle. It was not until college that Angela discovered her passion for health psychology. She took a course in social psychology that explored how people judge others. Angela quickly saw the relevance for understanding safe sex behavior. At this time, the HIV/AIDS epidemic was peaking in the United States, and condom use was one action people could take to prevent the spread of HIV. Yet people often resisted proposing condoms to a partner due to concerns such as, "What will a partner think of me if I say that a condom is needed?" Angela sought out a professor to supervise a research project on perceptions of condom use in an initial sexual encounter.

Angela continued this work as a PhD student and developed a program to promote condom use among college women. In this program, Angela taught women skills for proposing and using condoms. This work was not always easy. She recalls, "I would walk through the residence halls on my way to deliver my intervention, with a basket of condoms in one arm and a basket of zucchinis in the other. I can't imagine what others thought I was doing!"

Later, she expanded her work to populations at greater risk for HIV, including incarcerated adolescents, intravenous drug users, HIV+ individuals, and truck drivers in India. She also developed an interest in promoting physical activity.

In all her work, Angela uses the biopsychosocial model, which you will learn about in this chapter. Specifically, she identifies the biological, psychological, and social factors that influence health behaviors such as condom use. Angela's interventions address each of these factors.

Angela's work is both challenging and rewarding; she works daily with community agencies, clinical psychologists, neuroscientists, and exercise physiologists. She uses solid research methods to evaluate the success of her interventions. More recently, she has started to examine the genetic factors that determine whether a person will respond to a physical activity intervention.

Although she views many aspects of her work as rewarding, one aspect is especially worthwhile: "When the interventions work!" she says. "If we can get one kid to use a condom or one person with a chronic illness to exercise, that is meaningful."

In this book, you will learn about the theories, methods, and discoveries of health psychologists such as Angela Bryan. As you read, keep in mind this piece of advice

from Angela: "Think broadly and optimistically about health. A health psychologist's work is difficult, but it can make a difference."

The services provided by health psychologists working in clinics and hospitals fit into several categories. One type of service offers alternatives to pharmacological treatment; for example, biofeedback might be an alternative to painkillers for headache patients. Another type of service is providing behavioral interventions to treat physical disorders such as chronic pain and some gastrointestinal problems or to improve the rate of patient compliance with medical regimens. Other clinical health psychologists may provide assessments using psychological and neuropsychological tests or provide psychological treatment for patients coping with disease. Those who concentrate on prevention and behavior changes are more likely to be employed in HMOs, school-based prevention programs, or worksite wellness programs.

Like Angela Bryan, many health psychologists engage in both teaching and research. Those who work exclusively in service-delivery settings are much less likely to teach and do research and are more likely to spend time providing diagnoses and interventions for people with health problems. Some health psychology students go into allied health profession fields, such as social work, occupational therapy, dietetics, or public health. Those who go into public health often work in academic settings or government agencies and may monitor trends in health issues or develop and evaluate educational interventions and health awareness campaigns. Health psychologists also contribute to the development and evaluation of widescale public health decisions, including taxes and warning labels placed upon healthy products such as cigarettes, and the inclusion of nutrition information on food products and menus. Thus, the health psychologists contribute to the promotion of health in a wide variety of manners.

In Summary

To maximize their contributions to health care, health psychologists must be both broadly trained in the science of psychology and specifically trained in the knowledge and skills of areas such as neurology, endocrinology, immunology, epidemiology, and other medical subspecialties. Health psychologists work in a variety of settings, including universities, hospitals, clinics, private practice, and HMOs. They typically collaborate with other health care professionals in providing services for physical disorders rather than for traditional areas of mental health care. Research in health psychology is also likely to be a collaborative effort that may include the professions of medicine, epidemiology, nursing, pharmacology, nutrition, and exercise physiology.

Apply What You've Learned

1. The Society for Health Psychology is the division of the American Psychological Association (APA) that represents the field of health psychology. Their website (societyforhealthpsychology.org) is an excellent resource and includes short profiles of health psychologists who have made outstanding contributions to the field. Read through some of these profiles and answer these questions:

   (1) Where did they get their training, and do they work in a university or hospital?

   (2) What health issues do they focus on and what are some of their major discoveries?

   (3) How do you see their work utilizing the biopsychosocial model of health?