



History and Methods



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The History and Background of Health Psychology

Health psychology, the most modern major domain of psychology, flows from ancient intellectual well-springs. From the biblical proverb which taught that “A merry heart does good like a medicine” (Proverbs 17:22) to the definitional “heart-ache” of Shakespeare’s *Hamlet* (act 3, scene 1), the psyche and the soma have long been sensed to be linked. Benjamin Franklin, who uncovered many secrets to a long, successful life, warned against associating with hostile, choleric people; he then developed a self-reinforcing habit chart to discourage himself from drunkenness and gluttony (Franklin, 1794/1906). Yet although such notions of close ties between health and thoughts, feelings, and behaviors date back thousands of years, the scientific discipline of health psychology did not take shape until the 1970s. This emergence was a full century after the beginnings of psychology in the 1870s, and well after the establishment of experimental psychology, social psychology, developmental psychology, physiological psychology, personality psychology, and clinical psychology.

Why is health psychology such a latecomer to the scene, especially given its ancient provenance and the obvious general importance of health and longevity? The answer is a complex one, rooted in long-standing conceptions of disease, illness, and

health and compounded by structural divisions in societal approaches to health and well-being. Health psychology builds on many disciplines, applying their theories and methods to matters of health.

Origins in Ancient Philosophy and Medicine

Early understandings of physical ailments were closely tied to age-old notions of the body’s spiritual nature. In early philosophies, the body’s health and its spirit are inextricably bound.

In ancient Greece, patients visited temples to be cured by Asclepius, the god of healing. These retreats, probably the first hospitals, often contained gardens and fountains, and included bathing, nutrition, and sometimes exercise in their healing rituals (Longrigg, 1998). In ancient Rome, holistic health promotion became quite sophisticated in the integration of individual well-being and public health, as evidenced in such measures as the building of accessible baths, removing sewage, and constructing aqueducts for clean water, while nourishing the spirit. After the fall of the western Roman Empire and the ensuing decline in science and hygiene, some of the spiritual aspects of these ancient practices were

adopted and maintained by early Christians in the Dark Ages (Guthrie, 1945), as healing shrines were set up throughout Europe.

By the fourth century BCE, the Greeks had conceived that the world was composed of air, water, fire, and earth, which in turn had led to the notion of the four bodily humors: blood, phlegm, choler (yellow bile), and melancholy (black bile). This was the age of Hippocrates, who came to be known as the Father of Medicine. Hippocrates and other Greeks of his time had striking skills of observation and laid the basis for much of modern science. In health and medicine, their primary accomplishment was to move conceptions away from supernatural causes and cures. For example, Hippocrates decided that epilepsy was a disease (caused by surplus phlegm in the brain), not a sacred spell or divine affliction. Importantly, their observations demonstrated that the likelihood of certain diseases could be affected by one's food, one's work, one's location, and one's endowment.

It was in the Roman era, several hundred years later, that Greek ideas of health and medicine led to the foundation of what would become modern approaches. Galen, a Greek doctor in second-century Rome, both philosopher and anatomist (who dissected animals), revealed the body to be a beautifully balanced creation, in constant interaction with its environment. Galen used the balance of humors to refer not only to temperament but also to the causes of disease. The predominant humor in a person was thought to produce the dominant temperament, and an excess of a humor led to disease. For example, an excess of black bile was thought to produce a melancholic personality, gluttony, eventual depression, and associated physical illness. Psychology and health, and mental and physical health, were seen as closely related.

Ancient notions of bodily humors have been discarded. Yet the idea that the health-relevant emotional states of individuals can be categorized as sanguine, repressed, hostile, or depressed, as well as balanced or imbalanced, remains with us. This scheme of emotional aspects of personality and health was sufficiently perceptive (or ambiguous) to influence the practice of medicine for 2,000 years. Now, however, we speak of hormones (not humors) associated with optimism, anxiety, anger, and depression.

Analogous concern with balance and harmony emerged in Eastern medicine. Ayurvedic medicine,

originating in India more than 2,000 years ago, paralleled Western medicine in the use of herbs, foods, emetics, and bleedings to restore harmony. Like early Western medicine, it had its share of demons, magic spells, and potions, but it also emphasized spiritual balance and personal hygiene. Traditional Chinese medicine was based on balance between the yin and the yang—the active male force and the passive female force (Venzmer, 1972). Acupuncture, the insertion of needles into the skin at strategic points in order to restore the proper “flow” of energy, is an example of ancient Chinese practice that continues to this day, although modern scientific attention in this area has expanded from bodily “forces” to the roles of neurotransmitters.

Religion and Spiritual Healing

The philosophy of the Middle Ages was heavily concerned with religious and spiritual matters, and this speculation about the human soul and its ties to God directed attention away from biology. The pilgrims depicted in Chaucer's fourteenth-century work *The Canterbury Tales*, are on a pilgrimage to the shrine of St. Thomas à Becket, at Canterbury. For more than a thousand years, pilgrims sought such shrines and saints, to heal their illnesses through divine intervention.

On their journeys, European pilgrims often stopped at hospices, a place of rest for travelers, the elderly, and the sick. Hospices were one of the origins of the modern hospital. As modern medicine developed in the twentieth century and hospitals became centers of aggressive medical intervention, the elderly and the dying were often moved out; the emotional and spiritual aspects departed as well. Hospices were eventually reconstituted as programs to care for the terminally ill, a development that dates from St. Christopher's, a London hospice founded by Cicely Saunders in the 1960s (Stoddard, 1978). These programs focus on the psychological and the spiritual needs of the dying, along with traditional medical care. Many modern hospitals have much they could learn from hospices, both ancient and modern (Greer & Mor, 1986).

Cartesian Dualism

With the coming of the Renaissance, the philosopher and mathematician René Descartes (1596–1650) struggled with the relations between the mind

or soul and the physical body. By freeing the “body” from its religious, spiritual aspects, Descartes helped establish the science of medical biology, less encumbered by religious orthodoxy. But by separating the mind from the body (including separating the mind from the brain), Descartes created a major philosophical conundrum. Although what we think affects what we do, and what we experience affects what we think and feel, how can an intangible spirit interact with a material physicality?

Struggling with the dichotomy, some subsequent philosophers, such as Spinoza (1632–1677), argued that the mental and the physical are different aspects of the same substance. For Spinoza, the superordinate aspect is God. Others argued that the physical world exists only to the extent that it is perceived by a mind. Still others claimed that the psyche does not exist but is simply an epiphenomenon of the physical workings of the body. This history of dichotomy is important to modern health psychology because seventeenth- and eighteenth-century philosophy had a crucial impact on modern notions of human nature and the proper structure of society.

These issues came to a head in the latter part of the nineteenth century, as new developments in biology (evolution), medicine/physiology (neurology), and psychology (sensation) opened wide new fields of inquiry. Most psychologists thereafter followed the lead of William James (1890/1910) and pushed aside the philosophical mysteries to instead focus directly on thinking, feeling, and learning, and on the brain, the nerves, and the hormonal system (Benjamin, 1988; Boring, 1950). Yet incomplete understanding of mind-body matters continues to challenge modern health psychology.

The Interdisciplinary Scientific Origins

The modern discipline of health psychology is, at its best, an interdisciplinary one, emerging from a confluence of important twentieth-century intellectual trends in the understanding of health.

One key thread in the scientific origins of health psychology traces back to the work of Charles Darwin. In his seminal work, Darwin (1859) not only proposed his theory of evolution but also expended considerable effort describing the biological and anatomical similarities between humans and other

species. The revelation that human attributes had many common elements with those of animals reinforced the Cartesian split between those focused on the life of the mind and those concerned with the physical functioning of the body. At the same time, Darwin’s observations inspired research, even up to this day, on evolutionary processes affecting human emotion and its relation to well-being (see, e.g., Ekman & Davidson, 1994).

Darwin’s work also inspired the Russian physiologist Ivan Pavlov to begin examining the relations among environmental stimulation, learning, and physiological responses, a second important thread of modern health psychology. It contributed directly as well to Sigmund Freud’s search for ways in which the hidden workings of the brain might influence health, as he examined the evolutionary significance of mental functioning.

Medical Psychology and Clinical Psychology

In the latter half of the nineteenth century, the American Medical Association (AMA, founded 1847) began to establish minimal standards for medical education and medical practice. This was a time when practices such as bleedings and quack nostrums were widespread, and patients who sought treatment had a greater chance of being harmed than being helped. By the early part of the twentieth century, physicians had organized into guilds and obtained legal status to regulate medical practice. The placing of strict control over the practice of medicine into the hands of physicians had two main results. First, it assured a certain level of quality and standardization in medical care. Second, it concentrated authority into the hands of one group of professionals—physicians—who controlled the definition of health and deemed other (nonmedical) aspects of health care to be ancillary or peripheral.

This professionalization of medicine extended to medical education. The AMA established the Council on Medical Education, with Abraham Flexner charged with surveying the existing medical schools and evaluating their training. The 1910 Flexner report, *Medical Education in the United States and Canada*, became the basis of the reform of medical education, which included standardization of entry requirements and development of a scientifically based curriculum (in which an initial 2 years

of laboratory-based science training preceded 2 years of clinical training; Vevier, 1987).

At about the same time, efforts were made to integrate psychology into medical training. In 1911, Shepherd Ivory Franz, a psychologist and director of the Government Hospital for the Insane in Washington, D.C., attended a conference on the integration of psychology and medicine, hosted by the American Psychological Association (APA; Franz, 1912, 1913). Franz discussed such issues as “the success of placebos,” in which “the mental effect of knowledge appears to be much greater than the chemical action of the drug” (1912, p. 910). Today, the power of placebos is implicitly recognized in the design of clinical trials of new drugs and procedures, where the “double-blind” randomized trial is the gold standard of evidence. Yet almost a century after Franz’s highlighting of placebo responses, the mechanisms accounting for such responses are poorly understood, and discussions of placebo effects remain on the periphery of health care.

Franz chaired an APA committee that surveyed U.S. medical schools and recommended increased cooperation between psychology and medicine, inclusion of psychology in the medical curriculum, and an undergraduate course in psychology as a prerequisite for medical school. By 1928, a psychology professor, E. A. Bott, produced an essay entitled “Teaching of Psychology in the Medical Course.” Noting that two decades of debate about the role of psychology in medical education had already occurred, Bott concluded: “There seems to be a wide and growing acceptance of the view that psychological factors have an important place in the life adjustments of persons (and patients) in general, and that our conception of health must be broadened to take these mental factors fully into account. Some orientation of students towards an understanding and appreciation of these factors should therefore be attempted through formal instruction” (p. 291).

Although a limited number of psychologists have served on the faculties of medical schools over the past century and introduced medical students to a psychological perspective, rarely has psychology been viewed by physicians as a basic science for the practice of medicine. Suggestions for requiring preparation in psychology as a prerequisite for medical school admission were also not acted upon. Rather, psychologists in medical schools for the most part have been called upon to address the so-

called art of medicine, involving communication skills, the relationship between the physician and patient, and the motivation of patients to follow treatment prescriptions. Because this “art of medicine” clearly involved psychology, psychologists were expected to help in the “humanizing” of doctor-patient relations.

Prior to the establishment of the field of health psychology, matters of the psychological aspects of medical care were often termed *medical psychology*. For the most part, clinical psychologists with appointments in departments of psychiatry focused on mental illness and its treatment, as well as doing liaison psychology consultations for distressed patients with serious chronic disease. In some places and some countries (especially Great Britain), medical psychology was closely tied to psychiatry and the treatment of mental illnesses, but in the United States, medical psychologists also worked in medical schools alongside pediatricians, gerontologists, and even internists.

The presence of a cadre of psychologists in medical settings provided an important contribution to the emergence of health psychology. As other scientific and social forces pushed toward the need for a discipline of health psychology, the medical psychologists were already in place, with tremendous depth of relevant knowledge about medical care. For example, in 1969, clinical psychologist William Schofield analyzed psychological research in health domains and projected evolving demand for psychological service in both prevention and treatment (Schofield, 1969).

Although calls for the integration of psychology “back” into the medical curriculum and medical practice continue (Novack, 2003), psychology was never a core piece of modern medicine and health care. Psychologists were primarily employed to deal with deviant behavior, family crises, and stressful situations (such as cancer, burns, assaults, and other forms of trauma); and of course psychology was often a key part of the practice of psychiatry. Psychology was not, however, seen as central to health, by most physicians or even by most psychologists. A significant part of the problem is that the psychological aspects of health were and are often viewed (incorrectly) as an “art,” whereas in reality research and practice in health psychology involve a difficult and complicated science.

Substantial integration of psychological theory and findings into medical school curricula contin-

ues to be challenging. Psychological material is often viewed by physicians as marginal because it lies outside the traditional biomedical focus on disease. Nonetheless, some progress has been made, with national boards for medical students now assessing behavioral science knowledge. Moreover, a report from the Institute of Medicine (Cuff & Vanselow, 2004) explicitly addresses the need for such a curriculum, as well as the obstacles to integrating it. The report identified 20 topics that should be included in a medical school curriculum. Many of these topics are within the purview of health psychology, including psychosocial contributions to chronic disease; developmental influences on disease; psychosocial factors in pain; determinants and modification of health-relevant behaviors; patient and physician beliefs, attitudes and values; communication skills; and social disparities in health. It will be important for those responding to such opportunities at integration to be cognizant of the century of repeated calls and failed efforts, so that they appreciate and anticipate the intellectual, conceptual, and structural barriers to such integration.

Psychosomatic Medicine

In the 1930s, the field of psychiatry began to emerge as an important area of medical specialization. The development and use of sulfa drugs in the 1930s and penicillin in the 1940s had given physicians, for the first time, dramatically effective treatments for many acute problems, and “internal medicine” began its rise to prominence. Medical students began receiving extensive training in biochemistry and microbiology. Matters of the “mind” were increasingly left to psychiatry.

Sigmund Freud, influenced by Darwin, began conducting evolutionary research early in his training, but he endeavored to explain rather than discard or diminish complex human attributes and motivations like love and jealousy. Unwilling to reduce psychology to biology, Freud (in the late nineteenth and early twentieth centuries) was fascinated with biopsychological problems such as hysterical paralysis. Physicians interested in mind-body relations thus gravitated to the Freudian and related psychoanalytic concepts. The psychoanalyst Franz Alexander (1950) argued that various diseases are caused by specific unconscious emotional conflicts. For example, he posited that ulcers were linked to oral conflicts (an unconscious desire to

have basic infantile needs satisfied) and asthma to separation anxiety (i.e., an unconscious desire to be protected by one’s mother). The Menningers (1936), pioneering and influential psychiatrists, noted that very aggressive and ambitious men seemed prone to heart disease.

Flanders Dunbar at Columbia University postulated that mental disturbance often contributed to organic disease (Dunbar, 1943). In 1938–1939, Dunbar started the journal *Psychosomatic Medicine*, which subsequently became the official journal of the American Psychosomatic Society (founded in 1942) (www.psychosomatic.org). It was believed that inner psychic conflict disrupted normal bodily functioning and that the resolution of these psychological conflicts would contribute to a cure. Interestingly, given current knowledge of disease processes, other conditions of primary interest to the early psychosomatic physicians were colitis, hypertension, diabetes, arthritis, and dermatitis.

Little was known about immunology, psychobiology, and metabolism, especially in relation to psychological processes. Psychosomatic practitioners and researchers of the mid-twentieth century thus amassed clinical observations and proposed links between external stress, internal psychological conflict, and organic disease but developed few validated scientific principles or specific efficacious treatments.

By the 1970s, the growth of biological knowledge (neurobiology, neurochemistry, genetics, neurophysiology) overwhelmed traditional psychosomatic psychiatry, and biological psychiatry rose to prominence. For example, the discovery (in 1982) that the bacterium *Helicobacter pylori* was a contributing factor to the development of ulcers called the psychosomatic basis of ulcers into question. But the two explanations are not mutually exclusive; even in the presence of the bacteria, there is individual variation in the experience of symptoms and in the effects of stress on the stomach environment, which are linked to psychosocial experience. However, a pure “psychosomatic” explanation is inadequate, and certainly obsessive mothers are not the root cause. Analogously, although it is today not uncommon for psychiatrists to treat depression and attention deficit disorder primarily through medication, such biological approaches are often viewed as incomplete (by both psychosomatic practitioners and the general public), with demands for more attention to be directed toward psychological, social, and

environmental factors that affect and interact with the biological.

Psychosomatic medicine eventually began using more rigorous research methods and incorporating sociobehavioral science as well as biological science. There was increasing concern with the cumbersome psychoanalytic jargon and the basic premises that did not easily lend themselves to empirical validation. There was also better appreciation of the scientific possibilities of sociobehavioral and epidemiological research. For example, the cardiologists Rosenman and Friedman (Rosenman et al., 1964), noticing a psychological predisposition to heart disease, turned to both psychophysiological studies of stress and longitudinal studies of type A behavior and coronary heart disease. They called for reliable assessment of coronary-proneness and a fully empirical scientific approach. Cardiologists, meanwhile, searched for medical “syndromes” (or complexes of symptoms), and it remained for psychologists to apply multitrait, multimethod assessments and construct validation to this inquiry (Houston & Snyder, 1988).

Social Science: Medical Sociology and Anthropology

Throughout the twentieth century, medical sociology and medical anthropology made important contributions to understanding the social nature of illness and the social roles of patients and healers. Studies across cultures, across ethnicities, and across social classes and social roles made it clear that illness is not simply a biological condition but is inherently social and cultural as well.

In the period following World War II, a period of rapid societal change and medical progress, the influential medical sociologist Talcott Parsons (1902–1979) and his colleagues began documenting the social nature of illness. Parsons began his career as a biologist but moved into social science and primarily worked toward combining structural and functional approaches to understanding basic phenomena of society, including sickness and health. Parsons and the other pioneering medical sociologists described how people in any given society share certain expectations (norms) about the rights and responsibilities of a person who is ill. These roles (such as “sick roles”—norms applied to a category of people, namely, patients) guide and facilitate the functioning of both the individual and

the society. For example, to become a “patient,” one must enter the sick role and be treated by a “healer” (usually a physician in American society; Parsons, 1951, 1958). A sick person is relieved from certain responsibilities (such as going to work) but must seek medical help and profess a desire to get well. The doctor can validate this new status (i.e., confirm that the person is ill and can be a patient). A sick person who does not try to get well, does not seem uncomfortable in the role of patient, and simply shirks all usual responsibilities may be removed from the role of patient, that is, called a fake or a malingerer. Such sociological analyses delineated how illness is a social phenomenon (Hollingshead, 1973). Illness must be agreed to or validated by the opinions of others in the society; it is not just a function of some internal organic state.

Such ideas complemented and illuminated the many conundrums of psychosomatic medicine, such as the surprisingly low correlation often found between documentable tissue (organic) damage and patient reports of illness. These perspectives and analyses provided an intellectual opening to such puzzling issues as individual differences in reactions to pain, and individual differences in seeking medical care. Pain is not isomorphic with organic disintegration and indeed is often more heavily determined by upbringing, personality, mood, social roles, and current social circumstances (Pennebaker, 1982).

With regard to help seeking, social influences lead to problems of both too little and too much. On the one hand, many people delay seeking treatment, both for life-threatening emergencies like heart attacks and strokes and for dangerous progressive conditions such as precancerous lesions, infections, and small tumors. On the other hand, many other people are quick to demand medical attention for every minor ache. The shared social definitions of health and illness have serious consequences for both the individual and the society.

Medical anthropologists further illuminated the ways in which symptoms are noticed, interpreted, and reported across cultures and subcultures (Adler & Stone, 1979). For example, Mark Zborowski (1952) and Irving Zola (1966) documented ethnic differences in the experience of pain and responses to it. Further, many conditions that are considered diseases in the United States—ranging from depression to neurasthenia to hearing voices—are ignored, or seen as normal, or conceived with different meanings in other countries and cultures (Foster

& Anderson, 1978; Kleinman, 1986; Scheff, 1967). This work presaged current debates about what conditions represent “illness” and deserve coverage by medical plans or health insurance. It is also relevant to the struggles of clinical health psychologists to receive reimbursements as health practitioners.

The importance of medical sociology and medical anthropology has grown with the increasing cultural diversity of many Western populations, as well as with issues emerging from a global health perspective. Health care workers increasingly are being evaluated in terms of their “cultural competence” and ability to relate to patients from very different backgrounds, taking into account their belief systems as these affect disease prevention, diagnoses, and treatment.

It is now clear that sociocultural, developmental, and sociodemographic forces, including age, gender, class, wealth, ethnicity, family, work, and nationality, are integral parts of a comprehensive understanding of health and illness. Modern health psychology, as a discipline partly rooted in social science, includes such concepts in its theories and its research, and addresses ethnic disparities in health, special issues in women’s health, and sociodemographic considerations in health promotion.

Epidemiology and Public Health

The late nineteenth century and the first half of the twentieth century saw great changes in the public health. First, the Industrial Revolution vastly increased the wealth of working people in Western societies and created a substantial middle class. Second, the discovery and increasing recognition of the role of infectious microbes in human disease led to enormous improvements in sanitation and hygiene. (In Greek mythology, Hygieia, the goddess of health and cleanliness, was the daughter of Asclepius.) The work of French chemist Louis Pasteur and his colleagues on microorganisms, and the demonstrations of prevention of infection by English surgeon Joseph Lister (in the 1860s; see Metchnikoff, 1939) and others, led to the construction of germ theory—the idea that many diseases are caused by microorganisms. Together, these developments led to enormous changes in the quality of drinking water, the treatment of sewage, and the handling and storage of food (e.g., refrigeration).

As modern cities and suburbs developed, people gained access to safe drinking water, adequate shelter, flush toilets, trash removal, and inspected, monitored, and nutritious food. On the individual level, hand washing and other sanitary practices also increased, as people came to understand the transmission of infectious disease. Together, all these factors produced a dramatic decrease in the death rate from infectious disease (McKeown, 1976, 1979; Grob, 1983). Life expectancy in North America and Western Europe rose dramatically.

The vivid decline in deaths from many infectious diseases occurred in advance of the availability of antibiotics, and even for diseases for which no vaccinations were available. For example, death rates from measles for children in England fell more than 99% from 1850 to 1950 (McKeown, 1976), even though the measles vaccine was not introduced until the 1960s. Nevertheless, the introduction of vaccinations, beginning with a smallpox vaccine in the 1880s, paralleled the time frame of the introduction of improved sanitation, nutrition, and living conditions and further lowered the death rate and decreased morbidity from infectious agents. Together, these sanitation- and vaccination-related public health measures produced a remarkable improvement in health in the 100 years preceding the 1950s.

Interestingly, life expectancy in developed countries began to level off just as antibiotics entered the scene. As advances in biochemistry research created more and more antimicrobial drugs, the field of internal medicine came into its own, but an unintended side effect was to obscure the broader trends in public health. In other words, the dramatic increase in longevity was overattributed to “miracle drugs” (biomedical cures), rather than properly credited to plunging childhood mortality rates and new control of epidemics. Psychologically speaking, people could better understand cures as a result of miracle drugs than they could make the connections between increased life expectancy and a largely invisible set of public health measures; this phenomenon still hinders public health efforts today.

As mortality from infectious diseases declined, death rates from cardiovascular disease skyrocketed, and it became the leading cause of death. Very slowly, the idea began to emerge (or, more accurately, *reemerge*) that lifestyle—including behaviors such as diet, cigarette smoking, and physical

activity—might have significant effects on serious diseases like heart disease. Starting in 1948, about 5,000 residents of Framingham, Massachusetts, began being followed to see what behaviors and other risk factors might affect (predict) heart disease and stroke. Findings from that study indicated that lifestyle-related conditions such as hypertension (high blood pressure) were significant risk factors. By the 1970s, it began to seem both sensible and feasible to try to *prevent* (rather than merely *treat*) the development of cardiovascular disease and other slow-developing conditions as well. The stage was thus set for the new field of health psychology to incorporate a public health perspective as a significant core concept; it would address psychological factors in the prevention of disease, as well as in treatment and recovery. Yet it was not until 1990 that the U.S. government emphatically urged adoption of lifestyles maximally conducive to good health (Healthy People 2000).

The focus on prevention has remained a core concept in public health, as well as in health psychology. The World Health Organization (WHO), an agency of the United Nations, was established in 1948 with a focus on complete physical, mental, and social well-being. It followed a predecessor organization in the League of Nations, set up to help control worldwide epidemics such as typhus and cholera. WHO, along with other organizations addressing global health, has documented that chronic diseases tied to behavioral factors are increasing in the developing world (Yach, Hawkes, Gould, & Hofman, 2004). It is not simply that as infectious diseases are being reduced, there is more opportunity for chronic diseases to account for mortality. Rather, it appears that health-damaging behaviors such as tobacco use and ingestion of excessive amounts of high-calorie foods increase as nations experience economic development. Health promotion is thus a critical component of global health, which has become a domain that requires the expertise of health psychologists.

Although medicine has traditionally paid less attention to prevention than to treatment, some changes in health care organization and delivery have encouraged greater concern. Under fee-for-service arrangements, physicians have little financial incentive to spend time and resources on prevention, since such activity is rarely compensated. In contrast, health maintenance organizations (HMOs) that receive capitated payments (i.e., re-

ceive a lump sum per person per year) have greater motivation to help their patients avoid the need for medical care. HMOs such as Kaiser Permanente (begun in the 1930s in California) and Health Insurance Plan (HIP, begun in 1947 in New York), which care for patients over the long term, tend to invest more in prevention and have often integrated psychologists into their practices. This shift to managing health for populations opens opportunities for health psychologists in concepts, research, and practice.

Biopsychosocial Model

In the 1930s, researcher-physician Adolf Meyer proposed that stressful life events may be important in the etiology of illness (Meyer, 1948). He suggested that these events need not be negative or catastrophic to be pathogenic; they must simply be interpreted by the individual as an important life change.

This work placed a social psychological context around the pioneering efforts of the experimental physiologist and physician Walter Cannon. Cannon, following up on the investigations of the nineteenth-century French physiologist Claude Bernard, focused attention on the stress on the body from emotional activation. Bernard had emphasized the *milieu interne*—the internal environment—the idea that all living things must maintain a constant or balanced internal environment. Bernard (1880) made scientific the study of physiology and homeostasis. Cannon followed up on these ideas, discovering and explaining the relations among stress, the nervous system, and the endocrine system. He proposed one of the most important concepts in health psychology, the so-called *wisdom of the body* (Cannon, 1932).

In 1896, while still a medical student, Cannon began using the newly discovered X-rays to study digestion. He noticed that stomach movements seemed to be affected by emotional state (Benison, Barger, & Wolfe, 1987). Rather than viewing this finding as noisy data interfering with his study of the biology of digestion, Cannon went on to explore what causes our subjective feelings of a “knot in the stomach” when facing a stressful or fear-arousing situation. By 1932, Cannon was able to write a detailed analysis of how bodily alterations occur in conjunction with emotional strife and the experiencing of emotions such as anger or fear (Cannon

1932, 1942). He documented that stress causes an increase in the blood sugar level; a large output of adrenaline (epinephrine); an increase in pulse rate, blood pressure, and respiration rate; and an increase in the amount of blood pumped to the skeletal muscles. Cannon called this the *fight-or-flight response*.

Importantly, according to Cannon and his homeostasis approach, the body has developed a margin of safety, with allowance for contingencies that we count on in times of stress. In other words, the body naturally prepares itself for challenge, including the rare “extra” challenge. This robust internal regulation—this wisdom of the body to self-correct—is built around the hypothalamic-pituitary-adrenal system but extends to systems throughout the body. Cannon also foresaw that the body exists in a social and environmental context, and presciently argued that the study of psychophysiology should not ignore the larger issues of coping with environmental stress.

The idea that sundry noxious stimuli, be they emotional or physical, result in a biological, neuroendocrine response was championed in the 1930s by Hans Selye. Selye (1956) studied the physiological consequences of an ongoing response to threat. In his view, just about any type of threat would produce an arousal in the body’s system of defenses against noxious stimuli. But in Selye’s model, stress would not necessarily lead to disease unless the adaptive responses are required for a prolonged period, an idea consistent with modern views on stress and disruption of metabolic and immune systems (Cacioppo & Berntson, this volume; Kemeny, this volume).

Harold Wolff (1953), a physician with great influence in psychiatric circles, continued this evolutionary view, with a focus on seeing stress as a response to *perceived* challenge or danger, rather than to a necessarily threatening or noxious stimulus. For Wolff, as for Selye, it was continuing but futile efforts to achieve homeostasis through maladaptive coping (such as constant worrying and arousal) that would lead to illness. Note that these models are more general and nonspecific than the “specific conflict to disease” models typically proposed by Dunbar and other founders of psychosomatic medicine. Even today, within modern neurobiology and psychoneuroimmunology, the debate continues about whether stress phenomena mostly begin with a general weakening and vulnerability, or instead involve mostly disease-specific disruptions of a particular biological mechanism.

More recently, recognizing that stress can either help or hurt the body, McEwen (1998) analyzed how the body adapts to stress by what can be termed *allostasis*—the ability to achieve stability through change. The processes of allostasis use the autonomic nervous system, the hypothalamic-pituitary-adrenal axis, and the cardiovascular, metabolic, and immune systems to respond to challenges. In the short term, this can enhance functioning. However, when these systems are used frequently to help respond to much stress, allostatic load occurs, and the body is damaged. That is, if there is repeated stress over time (many challenges, lack of adaptation, or lingering stress), the ongoing and increased exposure to stress hormones harms many physiological functions. The idea of allostasis, though not radically different from previous notions of stress and homeostasis, emphasizes the processes involved in the constant reestablishment of homeostasis and explains how even small degrees of dysregulation, when cumulated across systems, can contribute to disease susceptibility. It is striking how the most modern notions involve many of the same basic adaptation systems uncovered by Cannon and Selye.

The physiological work on stress response was paralleled by psychological research on the nature of stress and how individuals respond to (i.e., cope with) such stressors. In social psychology, Irving Janis (1958), turning attention toward managing the challenges, examined psychological coping mechanisms in facing the stress of surgery. His research showed that before surgery, some patients were worried about their operation and felt very vulnerable; other patients were somewhat concerned and asked for information about their surgery; still other patients were extremely cheerful and relaxed before their operation and did not want to know anything about it. Reactions differed after surgery, and these differences were related in systematic ways to the presurgery behaviors. The highly fearful and the totally fearless patients experienced poorer postoperative reactions than did patients with a moderate amount of anticipatory fear. These successful patients rehearsed ways of dealing with the stresses they faced, a phenomenon referred to by Janis as “the work of worrying.”

Around the same time, Richard Lazarus (1966) began research that showed that an individual’s appraisal of the meaning of an event was critical for determining if the event was experienced as

stressful. Individuals experience stress when they perceive that they do not have the resources needed to address a given threat. An environmental event is not stressful if the individual appraises (interprets) it as manageable. Along with his collaborator, Susan Folkman, Lazarus elaborated the ways of coping with these threats and the implications of these efforts for health (Lazarus & Folkman, 1984). Such research helped launch the modern era of work on stress and coping (Carver, this volume).

Studying both the new developments in psychosomatic psychiatry and the emerging ideas of coping with stress, the physician George Engel (1968, 1977) helped bring together the various threads of mind-body approaches to health. Engel and his colleagues argued that a “giving up” response in the face of situations of loss may precede the development of various illnesses in individuals who have *predispositions* to the particular illnesses. Engel combined the environment (e.g., loss), the ability or inability to cope, and a set of common biological pathways to various health problems.

On the psychobiological side, health psychology was given a big push forward by Neal Miller (1976) and his colleagues. Miller was an eminent psychological researcher of learning and motivation during several decades at Yale University. In the 1960s, he moved to Rockefeller University (a center of brain research) and focused on integrating learning principles with the new discipline of behavioral neuroscience. As research techniques improved, Miller looked further into how the brain affected motivation and learning, and vice versa. By showing that organisms could sometimes learn to control bodily functions like heartbeat, blood pressure, and intestinal contractions (that are regulated by the autonomic nervous system), Miller helped open the door to rigorous research on such topics as biofeedback, placebo effects, and relaxation training.

Also in the 1960s and 1970s, researchers overturned the assumption that the body’s immune system acted autonomously, without input from the nervous system. For example, psychologist Robert Ader, who was studying the classical conditioning of learned taste aversion in rats, was puzzled when the rats that had been injected with an immune-suppressing drug became ill during subsequent experiments, long after the drug was gone from their systems. Ader teamed with immunologist Nicholas Cohen and (using principles of condi-

tioning) found that when the immune-suppressing drug (unconditioned stimulus) was paired with sweetened water (conditioned stimulus), the rats subsequently became ill when they received only the sweetened water (Ader & Cohen 1975, 1985; Kemeny, this volume). This work provided a clear demonstration that the immune system could be classically conditioned. The immune system had learned to respond to the environment and was communicating with the nervous system. Such research helped launch the modern field of psychoneuroimmunology, which postulates that environmental psychosocial challenges may cause or encourage disease through stress effects on suppressing or disrupting the immune system.

Together, these researchers (and others) thus demonstrated the importance of integrating the biological, the psychological, and the social, both conceptually and empirically. The general approach that emerged from the theorizing of Cannon, Selye, Engel, and others has come to be called the *biopsychosocial approach to health*. Still, in the 1950s and 1960s only several hundred articles per year were published in areas now considered within the purview of health psychology, compared with many thousands in medicine and the rest of psychology (Rodin & Stone, 1987). See Figure 1.1 for an overview of the roots of health psychology.

The Establishment of the Field of Health Psychology

By the 1970s, all the major ideas were in place, but the catalyzing structures were needed to launch the field of health psychology.

In 1973, the American Psychological Association appointed the Task Force on Health Research (APA Task Force, 1976). Counseling psychologists, clinical psychologists, and rehabilitation psychologists were increasingly employing a biopsychosocial approach to patient care but were finding that this did not fit well with the traditional medical model being used by their physician colleagues (Wallston, 1997). Simultaneously, social psychologists, developmental psychologists, and community/environmental psychologists were distilling and integrating new concepts of and approaches to health and well-being from the broader social sciences. Topics and issues that were seen as peripheral or puzzling by those in the field of medicine were interesting and

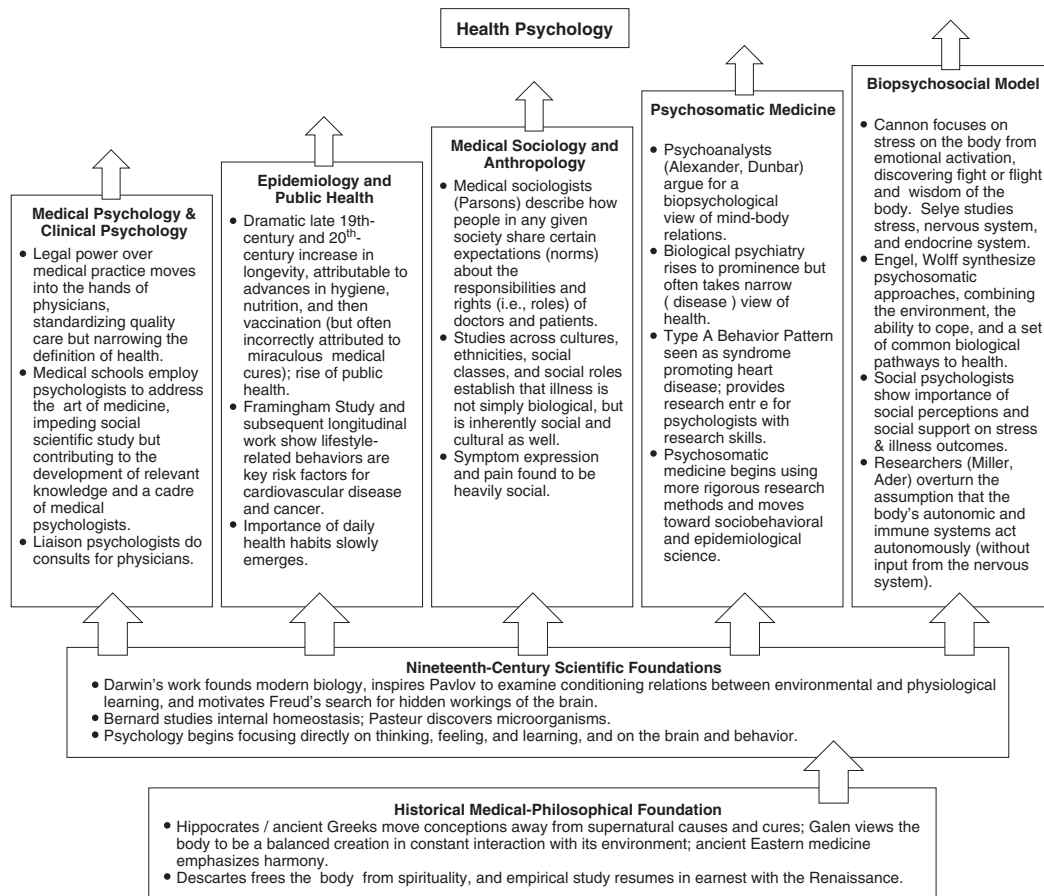


Figure 1.1. Key historical developments in scientific progress of health psychology.

researchable to psychologists—coping with stress, cooperation with treatment, adapting to chronic illness, hospitals as institutions, psychophysiology, environmental challenge, risky behaviors (like smoking), socioeconomic factors and health, gender and health, quality of life, dying with dignity, and more (Friedman & DiMatteo, 1982; Matarazzo, Weiss, Herd, Miller, & Weiss, 1984).

A major organizational step was taken in 1978 when the Division of Health Psychology became the 38th division of the APA, with Joseph Matarazzo as its first president. Matarazzo, who had spent much of his career as a medical psychologist (both clinician and researcher) in a medical school, was well positioned to understand and bring together critical elements from research psychology, clinical psychology, and health care. In a series of papers, he eloquently called for specialty training and research in this new field (Matarazzo, 1980, 1983, 1994).

In 1979, an edited handbook—*Health Psychology*, the first book so titled—was published by George C. Stone, Frances Cohen, and Nancy E. Adler (1979). It defined health psychology as the application of the theory and methods of all branches of psychology to the understanding of physical health and illness. The handbook demonstrated the contributions to this understanding from developmental, social, personality, experimental, physiological, organizational, and clinical psychology. The editors were launching a new doctoral program in health psychology at the University of California, San Francisco, and the handbook was developed to help define the intellectual scope of the new field. The doctoral program was based in a medical school but was run by research psychologists and focused on psychological factors in the etiology, course, and treatment of disease, and in the maintenance of health. This program helped serve as a rallying point for many psychologists in California and then

throughout the nation. A number of programs were established soon after, and a wide range of programs are now in place across the country.

The term *behavioral medicine* also began to be used in the 1970s (e.g., Birk, 1973), and an organizational conference on behavioral medicine was held at Yale University in 1977 (Schwartz & Weiss, 1978). This emerging interdisciplinary field was focused on integrating the mind and the body in treatment of disorders and included a large number of psychologists, as well as physicians and other health professionals. There is considerable overlap between health psychology and behavioral medicine, with the latter including a broader set of disciplines and perhaps a somewhat greater relative focus on clinical application.

The field of health psychology gained greater visibility and legitimacy in 1982, as the first issue of the journal *Health Psychology* was published under the editorship of George Stone. The first article, by Stone himself, was entitled “Health Psychology: A New Journal for a New Field” and outlined Stone’s wide-ranging model of the “health system.” Stone then raised a core issue, asking rhetorically, “With such an enormous range of approaches and topics, it is certainly appropriate to ask whether health psychology can exist as a cohesive and integrated field of specialization” (1982, p. 3). The field of health psychology is still grappling with this matter. Sociobehavioral science research using health as an outcome appears in a wide range of journals, not only those dedicated to health psychology.

The first issue of *Health Psychology* also contained an address from the health psychology division’s second president, Stephen M. Weiss, who was head of the recently formed behavioral medicine branch at the National Heart, Lung, and Blood Institute (Weiss, 1982 [speech delivered in 1980]). Weiss, hopeful but somewhat nervous about the future of the small field of health psychology, proclaimed, “If there ever was a time of opportunity for Health Psychology, that time is now” (p. 81). These words were a hope and a plea as much as a prediction, but they were indeed prophetic, and the field of health psychology exploded during the next two decades—in research, teaching, and structure.

The founding psychologists recognized that they themselves had not received training in the broad new field of health psychology. Rather, each brought to the field his or her own disciplinary background but with an appreciation that this pro-

vided only part of the picture. They believed that psychologists would be better equipped if they were trained not only in their psychological disciplines but also in the issues in health and health care. It was not obvious, however, what the core training should be for this field. In May 1983, a foundational conference was held at the Arden House, an old mansion on the Hudson River. We attended that gathering—the National Working Conference on Education and Training in Health Psychology (see Stone et al., 1987)—and remember it as an exhilarating blend of differing approaches to the same fundamental questions of psychology and health, with a fitting mountaintop location allowing a glimpse of the promised land.

This conference emphasized the coming rapprochement between psychology and health care. It recommended a focus on quality, a broad, interdisciplinary orientation, and significant attention to ethical, legal, and cultural issues. Anticipating the strain between science and practice, the recommendations also had a strong professional (clinical and public health) component embedded in science, emphasizing an integrated mix of theory and practice, training experience in health care settings, and the licensure of health psychologists (Stone, 1983b). This tension between scientists and practitioners continues to be problematic, as health psychologists immersed in patient care seek specific advice and techniques for interventions while health psychologists focused on the scientific underpinnings of health and health policy tend toward more complex and nuanced concepts and models. Nevertheless, the field of health psychology remains an excellent example of the mutual benefits of reciprocal progress between theory and practice, research and application, and policy and implementation.

In addition to several edited books, authored textbooks began to appear in the 1980s. In 1982, M. Robin DiMatteo and Howard S. Friedman published *Social Psychology and Medicine*; in 1983, *An Introduction to Health Psychology* by Robert J. Gatchel and Andrew Baum appeared; and by 1986, textbooks by Shelley E. Taylor and by Michael Feuerstein, Elise E. Labbé, and Andrzej Kuczmierczyk were on the market. Undergraduate courses in health psychology slowly began to appear. A handbook on psychology and health was launched by Robert Gatchel, Andrew Baum, and Jerome Singer (1982).

Thus, by the end of the 1980s, health psychology was firmly established. The structural founda-

tion was laid and remarkable progress made in a little more than a decade. Division 38 became a fast-growing part of the APA. Today, various pre- and postdoctoral programs have been established, and many undergraduate curricula include a course in health psychology. There are multiple journals, and traditional psychology journals now include a substantial number of articles that deal with matters of health.

Defining Health Psychology

As an academic discipline, health psychology might best be defined as “the scientific study of psychological processes related to health and health care.” As a professional and policy field, health psychology might best be defined as “the use of findings from basic psychological theory and peer-reviewed research to understand and encourage thoughts, feelings, and behaviors that promote health.”

These definitions are narrower than the foundational definitions from the 1980s, which emphasize the educational, scientific, and professional contributions of psychology to the promotion of health, the maintenance of health, the prevention of illness, the treatment of illness, and the analysis and improvement of the health care system and health policy (Matarazzo, 1980, 1983; Stone, 1983a). Such broad definitions include almost everything having to do with psychology and health. Because almost every aspect of psychology has some implications for well-being, and because almost every aspect of health and health care involves some aspect of psychology (such as decision making, communication, psychophysiology, or behavior), a broad definition of health psychology means that almost everything in psychology and almost everything in health care involves health psychology. Although it is useful to acknowledge the pervasive interrelationship of psychology and health, such breadth also engenders ambiguity. In fact, health psychologists largely focus on a limited number of core psychological processes related to health. These include social support; coping with stress; communication and patient adherence; adaptation to chronic illness; health developmental issues in childhood, adolescence, and aging; health risk behavior; resource allocation and decision making in health care; psychopharmacology; personality and disease; social context and other social influences on health; and the central nervous system, hormones, and immunity.

The Modern Field of Health Psychology

Still growing and evolving, health psychology has not yet established core research paradigms, core bodies of knowledge, or established boundaries. It remains both enhanced and hindered by its diverse intellectual heritage. It has contributed significantly to other areas of psychology and has been enriched from them.

In 2001, the APA added “promoting health” as a key element of its mission statement. This change marked a formal shift in organized psychology from a traditional focus on behavior and mental health to a more direct and broader emphasis on health. It also raised a challenge to health psychology: If a fundamental focus of psychology is promoting health, then why do we need a subfield called “health psychology”?

This fundamental alteration of the APA’s mission statement is remarkable. As noted, 25 years earlier, there was not even any formal *subfield* called “health psychology.” Even as late as the 1970s and 1980s, few people would have viewed health promotion as an essential ingredient of psychology as a whole. Although a latecomer to the scene, health psychology has rapidly moved to center stage. Yet the field of health psychology has its own views of significant problems to be addressed, its own organizational cultures, its own interfaces with related professions and disciplines, and its own preferred concepts and methods.

Urged on by developments in health psychology and public health, as well as encouragement from the U.S. Congress, the U.S. National Institutes of Health (NIH) opened the Office of Behavioral and Social Sciences Research (OBSSR) in 1995. The OBSSR aims to integrate a biobehavioral perspective across the research areas of the NIH, with an important goal being the initiation and promotion of studies to evaluate the contributions of behavioral, social, and lifestyle determinants in the development, course, treatment, and prevention of illness and related public health problems. The U.S. Centers for Disease Control and Prevention (CDC) likewise have increasingly turned attention toward matters at the core of health psychology, including the promotion of healthy behaviors and the fostering of healthful environments. Funding for health psychology research comes from almost all of the NIH institutes, with major funding provided by

NIMH (mental health), NIDA (drug abuse), NHLBI (heart, lung, blood), NCI (cancer), NICHD (development), and NIA (aging).

In Europe, the establishment of health psychology has accelerated in recent years, often tied to the provision of health care (i.e., medical psychology) and to the establishment of public health principles in national health services. The European Health Psychology Society (EHPS) was formed subsequent to a first meeting at Tilburg (Netherlands) in 1986 and holds annual conferences.

Health Psychology and Health

Perhaps most important, the field of health psychology is bringing together diverse insights into the nature of health itself. By providing a dynamic and multilayered view of what it means to be human, research in health psychology has helped reveal important limits of a traditional medical model that attempts to cure disease. From the perspective of health psychology, it is not the case that we are healthy until we become “sick.” Further, it is not the case that mental problems or mental stresses are clearly distinguishable from physical problems or physical stresses. The human organism is launched with a particular genetic endowment into a specific yet complex and ever-changing environment, in which it reacts, copes, learns, strives, and ages.

Startling new insights emerge from this perspective. There may never be a simple “cure” for heart disease, obesity, stress, pain, or aging. It is not necessarily the case that providing more doctors (whether physician or psychologist) is the best way to improve the health and well-being of the population (Kaplan, this volume). Doctors and other health care providers function best when they communicate effectively with their patients, based on a scientific understanding of practitioner-patient relations (Hall & Roter, this volume). How people think about, verbalize, and cope with challenges can have important direct and indirect effects on whether they become ill or enter the medical care system (Carver, this volume; Pennebaker, & Chung, this volume). Studying personality as a predictor of health forces attention beyond a more narrow focus on psychoimmunology or stress or unhealthy habits; it brings the view of how the pieces fit together in the whole person (Friedman, this volume). Social contact with others, a sense of belonging, and participation in social groups have been docu-

mented to be significantly tied to many key aspects of health, and not always in a simple manner (Taylor, this volume). Life-span and life-course perspectives on health emphasize the processes by which well-being is maintained in the face of age-related changes in functioning (Rook, Charles, & Heckhausen, this volume). Research on adaptation to stress and to chronic diseases has led to multifaceted conceptualizations of adjustment, as well as to attention to the reciprocal influences and intersections of emotions, cognition, behaviors, life roles, and culture (Kemeny, this volume; Stanton & Revenson, this volume); sound measurement and research design are key challenges of the complex biopsychosocial model (Smith, this volume; Westmaas, Gil-Rivas & Silver, this volume). Homeostasis models have been confirmed as fruitful, extended to multiple levels, and considered in an evolutionary context (Cacioppo & Berntson, this volume). There are vast clinical implications, as many common assumptions of treatment do not stand up to scientific review (Wortman & Boerner, this volume). The Cartesian dualism is dissolving, the structural impediments to an encompassing view of well-being are slowly dissipating, and a new view of health is emerging.

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