CHAPTER ONE

THE SCOPE OF HEALTH BEHAVIOR AND HEALTH EDUCATION

The Editors

The range of health education and health behavior change strategies today is nearly limitless. Health professionals and health education specialists may counsel people at risk for AIDS about safe sex; help children avoid tobacco, alcohol, and drugs; help adults to stop smoking; help patients to manage and cope with their illnesses; and organize communities or advocate policy changes aimed at fostering health improvement. Health education professionals work all over the world in a variety of settings including schools, worksites, voluntary health organizations, medical settings, and communities. They are challenged to disseminate the best of what is known in new situations. They may also forge and test fundamental theories that drive research and practice in public health, health education, and health care. A premise of *Health Behavior and Health Education* is that a dynamic exchange between theory, research, and practice is most likely to produce effective health education.

Perhaps never before have those concerned with health behavior and health education been faced with more challenges and opportunities than they are today. Kanfer and Schefft (1988) observed that "as science and technology advance, the greatest mystery of the universe and the least conquered force of nature remains the human being and his actions and human experiences." The body of research in health behavior and health education has grown rapidly over the past two decades, and health education is recognized increasingly as a way to meet public health objectives and improve the success of public health and medical interventions.

Although this increasing literature improves the science base of health behavior and health education, it also challenges those in the field to master and be facile with an almost overwhelming body of knowledge.

The science and art of health behavior and health education are eclectic, rapidly evolving, and reflective of an amalgamation of approaches, methods, and strategies from social and health sciences. They draw on the theoretical perspectives, research, and practice tools of such diverse disciplines as psychology, sociology, anthropology, communications, nursing, and marketing. Health education is also dependent on epidemiology, statistics, and medicine. There is increasing emphasis on identifying evidence-based interventions and disseminating them widely (Rimer, Glanz, and Rasband, 2001). This often requires individual health education and health behavior professionals to synthesize large and diverse literatures.

Many types of professionals contribute to and conduct health education and health behavior (HEHB) programs and research. Health education practice is strengthened by the close collaboration among professionals of different disciplines, each concerned with the behavioral and social intervention process, and each contributing a unique perspective. Psychology brings to health education a rich legacy of over a hundred years of research and practice on individual differences, motivation, learning, persuasion, and attitude and behavior change (Matarazzo, Weiss, Herd, Miller, and Weiss, 1984). Physicians are important collaborators and are in key positions to effect change in health behavior. Likewise, nurses and social workers bring to health education their particular expertise in working with individual patients and patients' families to facilitate learning, adjustment, and behavior change, and to improve quality of life. Other health, education, and human service professionals contribute their special expertise as well. Increasingly, there will be partnerships with genetic counselors and other specialists in this rapidly developing field.

Health, Disease, and Health Behavior: The Changing Context

The major causes of death in the United States and other developed countries are now chronic diseases, such as heart disease, cancer, and stroke (National Center for Health Statistics, 2000). Behavioral factors, particularly tobacco use, diet and activity patterns, alcohol consumption, sexual behavior, and avoidable injuries are among the most prominent contributors to mortality (McGinnis and Foege, 1993). The resurgence of infectious diseases, including foodborne illness and tuberculosis, and the emergence of new infectious diseases such as antibiotic-resistant infections, HIV/AIDS, Hepatitis C, and human papillomavirus (HPV)

are also largely affected by human behaviors (Lederberg, Shope, and Oakes, 1992; Glanz and Yang, 1996). Substantial suffering, premature mortality, and medical costs can be avoided by positive changes in behavior. Most recently, there has been a renewed focus on public health as a result of anthrax exposure due to terrorism.

During the past twenty years, there has been a dramatic increase in public, private, and professional interest in preventing disability and death through changes in lifestyle and participation in screening programs. Much of this interest in disease prevention and early detection has been stimulated by the epidemiologic transition from infectious to chronic diseases as leading causes of death, the aging of the population, rapidly escalating health care costs, and data linking individual behaviors to increased risk of morbidity and mortality. More recent developments, such as the AIDS epidemic, have also contributed. Even as epidemiologists' efforts to better specify the links between diet, lifestyle, genetic predisposition, and environmental factors and disease approach the limits of science, they continue to generate headlines (Taubes, 1995) and influence public policy (Marshall, 1995).

Landmark reports in Canada and the United States during the 1970s and 1980s heralded the commitment of governments to health education and promotion (Lalonde, 1974; U.S. Department of Health, Education, and Welfare, 1979; Epp, 1986). In the United States, federal initiatives for public health education and monitoring populationwide behavior patterns were spurred by the development of the health objectives published in *Promoting Health and Preventing Disease: Health Objectives for the Nation* (U.S. Department of Health and Human Services, 1980) and their successors, outlined in *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* and *Healthy People 2010* (U.S. Department of Health and Human Services, 1991 and 2000). Increased interest in behavioral and social determinants of health behavior change spawned numerous training programs and public and commercial service programs.

Data systems now make it possible to track trends in risk factors, health behaviors, and healthy environments and policies in the United States and, in some cases, to tie these changes to disease incidence and mortality. Indeed, there have been positive changes in several areas. A major accomplishment has been surpassing the targets for reducing deaths from coronary heart disease and cancer (National Center for Health Statistics, 2001). Blood pressure control has improved and mean population blood cholesterol levels have declined. Alcohol-related motor vehicle deaths and deaths due to automobile crashes and drowning have continued to decrease. Fewer adults are using tobacco products, and more are engaging in moderate physical activity. More adults are meeting dietary guidelines for consumption of fruits, vegetables, and grain products and for dietary fat as a percentage of calories (National Center for Health Statistics, 2001). Rates of HIV/AIDS

have leveled off and transfusion-related HIV infections have decreased markedly. The proportion of women age fifty and older who have had breast examinations and mammograms has exceeded the goal of 60 percent in forty-seven states. The United States has made progress toward the goal of reducing health disparities for more than half the objectives identified in *Healthy People 2000* (National Center for Health Statistics, 2001). Major litigation against the tobacco industry and a multi-state settlement have resulted in increased restrictions on tobacco advertising and enforcement of laws against selling tobacco to minors. The collective efforts of those in health education and public health have indeed made a difference. While this progress is encouraging, much work remains to be done in these areas.

Not all the news is favorable, though. More adults and children are overweight. Diabetes is increasing in near-epidemic proportions. More adolescents are sexually active. After major increases in seatbelt use in the early 1990s, rates have declined slightly and remain at 67 percent, well below the target rate of 85 percent (National Center for Health Statistics, 2001). One-fifth of children under three years old have not received a basic series of vaccinations for polio, measles, diphtheria, and other diseases. Sixteen percent of adults under sixty-five years of age have no health in-surance coverage. More than 70 percent of adults over age fifty have not been screened for colorectal cancer (National Center for Health Statistics, 2001). Ethnic minorities and those in poverty still experience a disproportionate burden of pre-ventable disease and disability, and for many conditions the gap between disadvan-taged and affluent groups is widening (House and Williams, 2000).

Changes in the health care system provide new supports and opportunities for health education. Respect for patients' rights is now recognized as fundamen-tal to the practice of medicine (Levinsky, 1996). Moreover, there is increased at-tention to issues of shared decision making (Edwards and Elwyn, 1999). At the same time, patients' access to information about their health care institutions and providers remains limited. Insurance carriers and managed care systems can im-pose barriers that impede patients' exercise of their rights to make treatment de-cisions (Weston and Lauria, 1996; Levinsky, 1996). The advent of managed health care and health care financing reform pose new challenges as the drive for cost containment affects the entire health care system. While increased accountability often results in cost savings and fewer unnecessary services, little is known about its effects on the health of patients and the overall quality of care (Iglehart, 1996). Clinical prevention and behavioral interventions may grow in importance under managed care when their cost-effectiveness is demonstrated and recognized (Cen-ter for the Advancement of Health, 2000; Rimer, Glanz, and Rasband, 2001), but the climate of fiscal constraint will probably slow adoption of efficacious be-havioral strategies in the short run.

The rapid emergence of new communication technologies and new uses of older technologies, such as the telephone, also provide new opportunities and dilemmas. A new chapter has been added to *Health Behavior and Health Education* to reflect the importance of new communication technologies (see Chapter Twenty-Two). A variety of electronic media for interactive health communication (for example, the internet, CD-ROMs, personal digital assistants) can serve as sources of both general and individualized health information, reminders, and social support for health behavior change.

Since the last edition of this book, use of the Internet has grown dramatically. E-health strategies are becoming an important part of the armamentarium of strategies for those in health education and health behavior. Internet and computer-based applications can support many of the strategies that evolve naturally from the theories presented in this book. It is important that use of the new technologies be based and evaluated on theories of health behavior. Otherwise, we risk being technology driven instead of outcomes driven.

New technologies have the potential to cause harm through misleading or deceptive information, promotion of inappropriate self-care, and interference in the patient-provider relationship (Science Panel on Interactive Communication and Health, 1999). Interactive health communications provide new options for behavioral medicine and preventive medicine (Noell and Glasgow, 1999; Fotheringham, Owies, Leslie, and Owen, 2000) and are altering the context of health behavior and health education as they unfold and as their effects are studied.

Health Education and Health Behavior

The Scope and Evolution of Health Education

In the fields of health education and health behavior, the emphasis during the 1970s and 1980s on individuals' behaviors as determinants of health status eclipsed attention to the broader social determinants of health. Advocates of system-level changes to improve health called for renewal of a broad vision of health education and promotion (Minkler, 1989; see Chapter Twenty). These calls for moving health education toward social action heralded a renewed enthusiasm for holistic approaches rather than an entirely new worldview. They are well within the tradition of health education and are consistent with its long-standing concern with the impact of social, economic, and political forces on health.

Over the past fifty years, outstanding leaders in health education repeatedly stressed the importance of political, economic, and social factors as determinants

of health. Mayhew Derryberry (1960) noted that "health education . . . requires careful and thorough consideration of the present knowledge, attitudes, goals, perceptions, social status, power structure, cultural traditions, and other aspects of whatever public is to be addressed." In 1966, Dorothy Nyswander spoke of the importance of attending to social justice and individuals' sense of control and self-determination (Nyswander, 1966). These ideas were reiterated later when William Griffiths (1972) stressed that "health education is concerned not only with individuals and their families, but *also with the institutions and social conditions* that impede or facilitate individuals toward achieving optimum health" (emphasis added).

The view of health education as an instrument of social change has been renewed and invigorated during the past decade. Policy, advocacy, and organizational change have been adopted as central activities of public health and health education. Most recently, experts have explicitly recommended that interventions on social and behavioral factors related to health should link multiple levels of influence, including the individual, interpersonal, institutional, community, and policy levels (Smedley and Syme, 2000). This volume purposefully includes chapters on community and societal influences on health behavior and strategies to effect community and social policy changes. In this context, definitions of health education and health promotion can be recognized and discussed as overlapping and intertwined.

Definitions of Health Education

According to Griffiths (1972), "health education attempts to close the gap between what is known about optimum health practice and that which is actually practiced." Simonds (1976) defined health education as aimed at "bringing about behavioral changes in individuals, groups, and larger populations from behaviors that are presumed to be detrimental to health, to behaviors that are conducive to present and future health."

Subsequent definitions of health education emphasized voluntary, informed behavior changes. In 1980, Green defined health education as "any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health (Green, Kreuter, Partridge, and Deeds, 1980). The Role Delineation Project defined health education as "the process of assisting individuals, acting separately or collectively, to make informed decisions about matters affecting their personal health and that of others" (National Task Force on the Preparation and Practice of Health Educators, 1985).

Health education evolved from three settings: communities, schools, and patient care sites. Kurt Lewin's pioneering work in group process and his developmental field theory during the 1930s and 1940s form the intellectual roots of

much of today's health education practice. One of the earliest models developed to explain health behavior, the Health Belief Model, was developed during the 1950s to explain behavior related to tuberculosis screening (Hochbaum, 1958).

Health education includes not only instructional activities and other strategies to change individual health behavior but also organizational efforts, policy directives, economic supports, environmental activities, mass media, and community-level programs. Two key ideas from an ecologic perspective help direct the identification of personal and environmental leverage points for health promotion and education interventions (Glanz and Rimer, 1995). First, behavior is viewed as being affected by, and affecting, *multiple levels of influence.* Five levels of influence for health-related behaviors and conditions have been identified. They are (1) intrapersonal, or individual factors; (2) interpersonal factors; (3) institutional, or organizational factors; (4) community factors; and (5) public policy factors (McLeroy, Bibeau, Steckler, and Glanz, 1988). The second key idea relates to the possibility of *reciprocal causation* between individuals and their environments; that is, behavior both influences *and* is influenced by the social environment (Stokols, 1992).

Health education covers the continuum from disease prevention and promotion of optimal health to the detection of illness to treatment, rehabilitation, and long-term care. Health education is delivered in almost every conceivable setting—universities, schools, hospitals, pharmacies, grocery stores and shopping centers, recreation settings, community organizations, voluntary health agencies, worksites, churches, prisons, health maintenance organizations, migrant labor camps, advertising agencies, the Internet, people's homes, and health departments at all levels of government. These diverse settings are discussed later in this chapter.

Health promotion is a term of more recent origin than *health education.* As defined by Green, it is "any combination of health education and related organizational, economic, and environmental supports for behavior of individuals, groups, or communities conducive to health" (Green and Kreuter, 1991). Another, slightly different definition is suggested by O'Donnell (1989): "Health promotion is the science and art of helping people change their lifestyle toward a state of optimum health . . . Lifestyle change can be facilitated by a combination of efforts to enhance awareness, change behavior, and create environments that support good health practices." Definitions arising in Europe and Canada have another emphasis again (Kolbe, 1988; Hawe, Degeling, and Hall, 1990). For example, the *Ottawa Charter for Health Promotion* defines health promotion as "the process of enabling people to increase control over, and to improve, their health . . . a commitment to dealing with the challenges of reducing inequities, extending the scope of prevention, and helping people to cope with their circumstances . . . creating environments conducive to health, in which people are better able to take care of themselves" (Epp, 1986).

While some may argue that greater precision of terminology can be achieved by drawing a clear distinction between health education and health promotion, to do so is to ignore long-standing tenets of health education and its broad social mission. Clearly, health educators have long used more than "educational" strategies. In fact, the terms *health promotion* and *health education* are often used interchangeably in the United States (Breckon, Harvey, and Lancaster, 1994). In some countries, such as Australia, health education is considered a much narrower endeavor than health promotion. Nevertheless, although the term *health promotion* emphasizes efforts to influence the broader social context of health behavior, the two terms remain closely linked and overlapping, share a common historical and philosophical foundation, and are often used in combination. In most cases, we consider the two terms too closely related to distinguish between them. In this book, the term *health education* is used most often. It is to be understood in the historical sense, as a broad and varied set of strategies to influence both individuals and their social environments, to improve health behavior, and to enhance health and quality of life.

Health Behavior

The central concern of health education is *health behavior.* It is included or suggested in every definition of health education and is the crucial dependent variable in most research on the impact of health education intervention strategies. Positive informed changes in health behavior are typically the ultimate aims of health education programs; if behaviors change but health is not subsequently improved, the result is a paradox that must be resolved by examining other issues, such as the link between behavior and health status or the ways in which behavior and health are measured. Informed decision making is a desirable endpoint for problems involving medical uncertainty, and studies suggest that shared decision making may lead to improved patient satisfaction and health outcomes (Frosch and Kaplan, 1999). Likewise, environmental or structural interventions to change presumed social environmental determinants of health behavior are intended to improve health by changing behavior. Thus, efforts to improve environments, policies, and so on should ultimately be evaluated for their effects on health behavior; if policy changes but it does not lead to measurable changes in behavior, it may be either too weak, too short-lived, or only a limited determinant of behavior.

In the broadest sense, *health behavior* refers to the actions of individuals, groups, and organizations as well as their determinants, correlates, and consequences, including social change, policy development and implementation, improved coping skills, and enhanced quality of life (Parkerson and others, 1993). This is similar to the working definition of health behavior that Gochman proposed (though his

definition emphasized individuals): it includes not only observable, overt actions but also the mental events and feeling states that can be reported and measured. He defined health behavior as: "those personal attributes such as beliefs, expectations, motives, values, perceptions, and other cognitive elements; personality characteristics, including affective and emotional states and traits; and overt behavior patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement" (Gochman, 1982; Gochman, 1997).

Gochman's definition is consistent with and embraces the definitions of specific categories of overt health behavior proposed by Kasl and Cobb in their seminal articles (1966a, 1966b). Kasl and Cobb define three categories of health behavior as follows:

Preventive health behavior. Any activity undertaken by an individual who believes himself to be healthy, for the purpose of preventing or detecting illness in an asymptomatic state.

Illness behavior. Any activity undertaken by an individual who perceives himself to be ill, to define the state of health, and to discover a suitable remedy [Kasl and Cobb, 1966a].

Sick-role behavior. Any activity undertaken by an individual who considers himself to be ill, for the purpose of getting well. It includes receiving treatment from medical providers, generally involves a whole range of dependent behaviors, and leads to some degree of exemption from one's usual responsibilities [Kasl and Cobb, 1966b].

Settings and Audiences for Health Education

During the past century and more specifically during the past few decades, the scope and methods of health education have broadened and diversified dramatically. This section briefly reviews the range of settings and audiences of health education today.

Settings: Where Is Health Education Provided?

Today, health education can be found nearly everywhere. The settings for health education are important because they provide channels for delivering programs, provide access to specific populations and gatekeepers, usually have existing communication systems for diffusion of programs, and facilitate development of policies and organizational change to support positive health practices (Mullen and

others, 1995). Six major settings are particularly relevant to contemporary health education: schools, communities, worksites, health care settings, homes, and the consumer marketplace.

Schools. Health education in the schools includes classroom teaching, teacher training, and changes in the school environment that support healthy behaviors (Luepker and others, 1996). To support long-term health enhancement initiatives, theories of organizational change are used to encourage adoption of comprehensive smoking control programs in schools (see Chapter Fifteen). Diffusion Theory and the Theory of Reasoned Action have been used to analyze factors associated with adoption of AIDS prevention curricula in Dutch schools (Paulussen, Kok, Schaalma, and Parcel, 1995).

Communities. Community-based health education draws on social relationships and organizations to reach large populations with media and interpersonal strategies. Models of community organization enable program planners both to gain support for and to design suitable health messages and delivery mechanisms (see Chapter Thirteen). Community interventions in churches, clubs, recreation centers, and neighborhoods have been used to encourage healthful nutrition, reduce risk of cardiovascular disease, and use peer influence to promote breast cancer detection among minority women (see Chapters Nine and Ten).

Worksites. Since its emergence in the mid-1970s, worksite health promotion has grown and spawned new tools for health educators. Because people spend so much time at work, the workplace is both a source of stress and a source of social support (Israel and Schurman, 1990). Effective worksite programs can harness social support as a buffer to stress, with the goal of improving worker health and health practices. Today many businesses, particularly large corporations, provide health promotion programs for their employees (National Center for Health Statistics, 2001). Both high-risk and populationwide strategies have been used in programs to reduce the risk of cancer (Tilley, Glanz, and others, 1999; Tilley, Vernon, and others, 1999; Sorenson and others, 1996) and cardiovascular disease (Glasgow and others, 1995).

Health Care Sites. Health education for high-risk persons, patients, their families, and the surrounding community and inservice training for health care providers are all part of health care today. The changing nature of health service delivery has stimulated greater emphasis on health education in physicians' offices, health maintenance organizations, public health clinics, and hospitals (Walsh

and McPhee, 1992; King and others, 1993). Primary care settings, in particular, provide an opportunity to reach a substantial number of people (Campbell and others, 1993; Glanz and others, 1990). Health education in these settings focuses on preventing and detecting disease, helping people make decisions about genetic testing, and managing acute and chronic illnesses.

Homes. Health behavior change interventions are delivered to people in their homes, both through traditional public health means—home visits—and through a variety of communication channels and media such as the Internet, telephone, and mail (Science Panel on Interactive Communication and Health, 1999; McBride and Rimer, 1999). The use of strategies such as mailed tailored messages (Skinner, Campbell, Rimer, Curry, and Prochaska, 1999) and motivational interviewing by telephone (Emmons and Rollnick, 2001) makes it possible to reach larger groups and high-risk groups in a convenient way that reduces barriers to their receiving motivational messages.

The Consumer Marketplace. The advent of home health and self-care products, as well as the use of "health" appeals to sell consumer goods, has created new opportunities both for health education and for misleading consumers about the potential health effects of items they can purchase (Glanz and others, 1995). Social marketing, with its roots in consumer behavior theory, is used increasingly by health educators to enhance the salience of health messages and to improve their persuasive impact (see Chapter Nineteen). Theories of Consumer Information Processing (CIP) provide a framework for understanding why people do or do not pay attention to, understand, and make use of consumer health information such as nutrient labels on packaged food products (Rudd and Glanz, 1990).

Audiences: Who Are the Recipients of Health Education?

For health education to be effective, it should be designed with an understanding of the recipients, or target audiences, and their health and social characteristics as well as their beliefs, attitudes, values, skills, and past behaviors. These audiences consist of people who may be reached as individuals, in groups, through organizations, as communities or sociopolitical entities, or through some combination of these. They may be health professionals, clients, people at risk for disease, or patients. This section discusses four dimensions in which the potential audiences can be characterized: sociodemographic characteristics, ethnic or racial background, life cycle stage, and disease or at-risk status.

Sociodemographic Characteristics and Ethnic or Racial Background. Socio-
economic status has been linked with both health status and health behavior, with
less affluent persons consistently experiencing higher morbidity and mortality
(Adler and others, 1994). The recognition of differences in disease and mortal-
ity rates across socioeconomic and ethnic or racial groups has led to increasing
efforts to reduce or eliminate such health disparities (U.S. Department of Health
and Human Services, 2000). For example, it has long been known that African
Americans die at earlier ages than do whites. As of 1998, life expectancy for
African American males was 67.6 years compared to 74.5 years for white males.
The difference is slightly less for African American women, 74.8 versus 80 for
white women, but still alarmingly discrepant (National Center for Health Statistics,
2000).

A variety of sociodemographic characteristics such as gender, age, race, marital
status, place of residence, and employment characterize health education audiences.
These factors, while generally not *modifiable* within the bounds of health education
programs, are useful in guiding the tailoring of strategies and educational material
and identifying channels through which to reach consumers. Printed educational ma-
terials should be appropriate to, and, ideally, tailored to the educational and reading
levels of particular target audiences and be consistent with their ethnic and cultural
backgrounds. Chapter Twenty-One examines the role of culturally diverse and other
unique populations in health behavior theory, research, and practice.

Life Cycle Stage. Health education is provided for people at every stage of the
life cycle, from childbirth education, the beneficiaries of which are not yet born, to
self-care education and rehabilitation for the very old. Developmental perspec-
tives help guide the choice of intervention and research methods. Children may
have misperceptions about health and illness, such as that illnesses are a punish-
ment for bad behavior (Armsden and Lewis, 1993). Knowledge of children's cog-
nitive development helps provide a framework for understanding these beliefs and
ways to respond to them. Adolescents may feel invulnerable to accidents and
chronic diseases. The Health Belief Model (see Chapter Three) is a useful frame-
work for understanding the factors that may predispose youth to engage in unsafe
sexual practices. Older adults may attribute symptoms of cancer to the inexorable
process of aging. Beliefs such as this must be considered in designing, imple-
menting, and evaluating health education programs (Rimer and others 1983;
Keintz, Rimer, Fleisher, and Engstrom, 1988).

Disease and At-Risk Status. People who are diagnosed with specific diseases often
experience not only symptoms but also the distress associated with their progno-
sis and with having to make decisions about medical care (see Chapter Ten, on

stress and coping). Thus, while they may benefit from receiving health education, their ability to attend to new information may be compromised at critical points due to their illness. Because of this, the timing, channels, and audiences for patient education need to be carefully considered. Successful patient education depends on a sound understanding of the patient's view of the world (Glanz and Oldenburg, 2001). For individuals at high risk due to family history or identified risk factors, health behavior change interventions may have heightened salience when linked to strategies for reducing individual risk (see Chapter Six, on the Precaution Adoption Process Model). Even so, strategies used to enable initial changes in behavior, such as quitting smoking, may be insufficient for maintaining behavior change over the long term even in these persons. Models and theories of health behavior can suggest strategies for relapse prevention for high-risk individuals (Glanz and Oldenburg, 2001).

Progress in Health Promotion and Health Behavior Research

Over the past two decades, research programs have been established to identify and test the most effective methods for achieving health behavior change. More precise quantification of personal health behaviors and improved health outcomes has grown from partnerships between behavioral health scientists and biomedical experts. During this period, findings from some major health behavior intervention studies have become available and have provided important insights for the field.

In the late 1970s and early 1980s, three large community cardiovascular disease intervention studies were begun in California, Minnesota, and Rhode Island (Winkleby, 1994). Each study addressed smoking, hypertension, high-fat diets, obesity, and physical inactivity—all widespread risk factors that many practitioners were tackling. The multicomponent risk reduction programs in these trials used mass media, interpersonal education programs for the public, professionals, and those at high risk. Community organization strategies were used to create institutional and environmental support for the programs, and theory-derived program planning strategies emphasized community participation (Winkleby, 1994). In the 1990s, all three studies reported their findings for risk factor changes. They each found favorable secular trends in control sites and modest or nonsignificant intervention effects on risk factor reduction (Farquhar and others, 1990; Luepker and others, 1994; Carleton and others, 1995). Two large worksite trials of multicomponent nutrition and smoking interventions yielded similar findings (Glasgow and others, 1995; Sorensen and others, 1996).

These studies produced a wealth of knowledge about health behavior, and many of the short-term targeted interventions within the larger studies were found to be effective (Winkleby, 1994). Nonetheless, the results cast doubt on the presumed effectiveness of population-based intervention strategies over the long term, especially against the backdrop of a dynamic, changing environment. Still, the lack of significant communitywide impacts in these studies should not be assumed to "disprove" the conceptual foundations of the intervention methods. An alternative view is to regard the interventions used in these studies as contributors to the substantial secular trend in chronic disease prevention (Winkleby, 1994). Also, more attention must be paid to how to reach the people who have resisted previous messages and programs.

While randomized, controlled trials provide the most rigorous test of health behavior interventions, the past decade has been marked by an increase in carefully designed evaluation research in health education that combines quantitative and qualitative methods. Recently published evaluations of community-based AIDS prevention projects (Janz and others, 1996) and coalitions for prevention of alcohol, tobacco, and other drug abuse (Butterfoss, Goodman and Wandersman, 1996) exemplify new applications of community research methodologies that offer in-depth process information across multiple programs in diverse settings.

Overall, there has been a growing trend toward evidence-based health education and health behavior as the findings of numerous large health behavior intervention studies have been published (Rimer, Glanz, and Rasband, 2001). As the research literature grows, it is increasingly important that the evidence base become accessible to both researchers and practitioners.

Evidence reviews have come to be defined as reviews using a formalized method of assembling and weighing the findings of intervention research. Important progress has been made over the past decade to improve the process of systematic reviews and meta-analysis (Mulrow, Cook, and Davidoff, 1997). However, in reality, literature reviews cut across a continuum of scientific rigor in their methodologies for selecting, evaluating, and reporting the evidence. They may exclude all but the most rigorous studies or be all-inclusive, may provide detailed information on methodology or only report on findings, and may be highly quantitative in drawing conclusions or rely heavily on an expert judgment base (Rimer, Glanz, and Rasband, 2001). An important effort under way in the United States promises to significantly advance the evidence base in HEHB in the next few years. The U.S. Task Force on Community Preventive Services aims to define, categorize, summarize, and rate the quality of evidence on the effectiveness of population-based interventions for disease prevention and control; to provide recommendations on these interventions and methods for their delivery based on

the evidence; and to identify and summarize research gaps (Briss and others, 2000; www.thecommunityguide.org).

The challenge of understanding and improving health behavior is a central challenge for health policy today, and is "one of the most complex tasks yet confronted by science. To competently address that challenge, the . . . research community must simply do more and do it better" in certain key areas of behavioral research (McGinnis, 1994). A coordinated and focused effort will be essential to resolving many of the most vexing health issues facing our society (Smedley and Syme, 2000). The integration of the best available knowledge from theory, research, and health promotion and education practice can help advance that agenda in the next decade.

Health Behavior and Health Education Foundations and the Importance of Theory, Research, and Practice

This chapter has discussed the dynamic nature of health education and health behavior today in the context of changing patterns of disease and trends in health care, health education, and disease prevention. It has provided definitions of health education, health promotion, and health behavior and has described the broad and diverse parameters of this maturing field. Health behavior research has experienced great progress, but mixed findings raise new questions and pose methodological, theoretical, and substantive challenges. The interrelationships and importance of theory, research, and practice are set against a backdrop of the important, growing, and complex challenges in health education and health behavior.

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