

THE SCOPE OF HEALTH BEHAVIOR

The Editors

In the past few years, wearable tracking devices have become commonplace in the United States. These devices enable users to count steps, track calories burned and miles covered, be reminded when they have been sitting too long, share data with others, and examine trends over time. More and more, consumers have accessible tools to assess their own health behaviors and health risks in ways that once were available only through health providers. For example, researchers at the Massachusetts Institute of Technology have produced sensor-infused bands that send alerts when a person may be about to suffer an epileptic seizure (Poh et al., 2012). This is an example of how the frontiers of communication and behavior have expanded far beyond what we imagined twenty-five years ago, when we wrote the first edition of this book.

It is an exciting time to contemplate behavior change. Perhaps never before have there been so many demands on those who aim to facilitate positive changes in health behaviors and so many potential strategies from which to choose. Whether it is the need to reduce the rate of hospital readmissions in order to avoid costly penalties from Medicare or communities faced with increased rates of childhood obesity, there is growing recognition that health behavior changes are needed across the world if population health is to improve. Where professionals once might have seen their roles as working at a particular level of intervention (such as changing organizational or individual health behaviors) or employing a specific type of behavior change strategy (such as group interventions or individual counseling), we now realize that multiple

kinds of interventions at different levels often are needed to initiate and sustain behavior change effectively. Once, health behavior experts might have relied on intuition, experience, and their knowledge of the literature. Increasingly, however, professionals are expected to act on the basis of evidence. In the time since the first edition of this book in 1990, the evidence base for health behavior change has grown dramatically. Along with the evidence base on behavior change interventions is growing interest in using and assessing the impact of theories of behavior change.

Many systematic reviews have examined whether using theory in crafting interventions can lead to more powerful effects than interventions developed without theory (Glanz & Bishop, 2010; Michie, West, Campbell, Brown, & Gainforth, 2014). Reviews have varied in how they code theory use and specific theories, and how they interpret findings related to the theory use–impact question. Some reviews found that using theoretical foundations for interventions was associated with better outcomes (Albada, Ausems, Bensing, & van Dulmen, 2009; Ammerman, Lindquist, Lohr, & Hersey, 2002; Legler et al., 2002; Noar, Benac, & Harris, 2007; Noar, Black, & Pierce, 2009; Taylor, Conner, & Lawton, 2011). Some reviews found no association or mixed results (Gardner, Wardle, Poston, & Croker, 2011; Prestwich et al., 2013).

As the body of literature of systematic reviews and meta-analyses of interventions that examine theory use grows, the picture becomes more complex. Our interpretation from a “review of reviews” to date suggests that outcomes are better when theory is applied or more thoroughly applied. But this is not a simple, strong, or unequivocal conclusion. Nonetheless, there are many reasons for both researchers and practitioners to be well versed in the theoretical foundations of health behavior and facile with applying them in their work. It is even more important to become skilled at using and testing theories, because some equivocal results may be due to failures in theory specification and testing.

Today we have many tools and strategies for improving our understanding of the role that health behavior theories can play in producing effective, sustained behavior changes. These tools and strategies are more and more accessible from web-based repositories. Furthermore, the stage for health behavior change research and practice has changed from one that was primarily local and country-specific to one that is *both* global and local, in a world that is increasingly interconnected.

These exciting opportunities are occurring at a propitious time. The positive and rapid changes in medical innovations, a strong evidence base, and increasingly accessible tools for health promotion are buffeted by countercurrents of increasing globalization, urbanization, industrialization, and inequalities that may deter us from fulfilling the promise of advances in medicine and health promotion. Major challenges include the billions of dollars spent yearly across the world on the promotion of unhealthy lifestyles, such as tobacco use and sugary beverage consumption, and also the challenges of physical inactivity, increasing pollution, and health problems associated with poverty, including overcrowding, lack of safe drinking water, unsafe neighborhoods, and limited access to health care.

Unhealthy behaviors continue to account for a disproportionate share of deaths in countries around the world. And the rise of noncommunicable diseases globally is a major threat to

world health, pushing many below the poverty line (Choi, 2012; Lueddeke, 2015). National and global health policies must encourage and enable people to practice healthy habits (Lueddeke, 2015). Improved health is not dependent on medicine or health care alone; it is the sum of multiple factors at multiple levels of societies.

The topics on which health professionals and health behavior specialists focus have grown and evolved as health problems have changed around the world (Fisher et al., 2011). Professionals may counsel people at risk for AIDS about safe sex; help children avoid tobacco, alcohol, and drugs; assist adults to stop smoking; teach patients to manage and cope with their chronic illnesses; and organize communities and advocate policy changes aimed at fostering health improvement. Health professionals also may address environmental concerns, such as safe, accessible water and healthy air. Over the next decade, more behavior change interventions around the world will be directed at changing individual and community behaviors related to basic hygiene and clean water consumption (Briscoe & Aboud, 2012) while also trying to reduce noncommunicable diseases around the world. The former problems are often a result of poverty and poor living conditions while the latter stem, in part, from growing influence of the developed world on developing nations.

Public health professionals work all over the world and in a variety of settings, including schools, worksites, nongovernmental organizations (including voluntary health organizations), medical settings, and communities. And professional fields other than health may also influence health behavior.

Since the time of the first edition of this book, there has been increased recognition that what happens in one part of the world affects us all, wherever we may be. Rapid changes in communication technologies have made the world a much smaller place and have accelerated the pace of sharing information and ideas. To the extent that public health is global health, and global health is local, we are committed in this volume to explore the use of health behavior theories around the world and to discuss the potential relevance of what is learned in one setting to other areas. While many of our examples are from research conducted in the United States, our perspective is decidedly global.

Since the fourth edition of this book was published seven years ago, the growth of new information and communication technologies has opened up an unprecedented range of strategies for health behavior change programs. Through the Internet, mobile devices, and wearables, health behavior change interventions are accessible to people all over the world, regardless of location. The result could be positive changes in health behaviors and health on a scale never before imagined, potentially reaching millions of people rather than hundreds or thousands.

There also is increased recognition that the fruits of research take too long to reach people who could benefit from them (Glasgow & Emmons, 2007; Viswanath, 2006). This has led to an increased emphasis on the dissemination of evidence-based interventions and attention to how interventions are implemented and scaled and to the growing field of implementation science. Part of the rationale for this book is to speed the dissemination of knowledge about how to use theory, so that theory can inform those who develop and use health behavior interventions around the world.

Health experts 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: Theory, Research, and Practice* is that a dynamic exchange among theory, research, and practice is most likely to produce positive health behaviors. The editors believe, fundamentally, that theory and practice should coexist in a healthy dialectic; they are not dichotomies. The best theory is likely to be grounded in real lessons from practice. Similarly, best practices should be grounded in theory.

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 has grown rapidly over the past two and a half decades, and health behavior change is increasingly recognized as critical to meeting public health objectives of the United States and improving the success of public health and medical interventions around the world. While this expanding body of literature improves the science base of health behavior, knowledge management is becoming both a growing challenge and an imperative.

The science and art of health behavior and health behavior change are eclectic, are rapidly evolving, and reflect an amalgamation of approaches, methods, and strategies from the social and health sciences. They draw on the theoretical perspectives, research, and practice tools of such diverse disciplines as psychology, sociology, anthropology, communications, nursing, economics, and marketing. Health behavior research and practice are also dependent on epidemiology, statistics, and medicine. Big data are now a tool of health behavior and other fields. There is greater emphasis on developing and testing evidence-based interventions and disseminating them widely (Rimer, Glanz, & Rasband, 2001). Evidence-based groups like the Cochrane Collaboration (<http://www.cochrane.org>) and the CDC’s Guide to Community Preventive Services (<http://www.thecommunityguide.org>) offer regular syntheses of behavioral interventions, some of which include theoretical constructs as variables in analyses of effectiveness.

Many kinds of professionals contribute to and conduct health behavior research and intervention programs. Ultimately, their 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. New emphases on interprofessional education may provide the educational foundation to achieve better collaboration across disciplines. While health behavior professionals often have worked this way, there is an increasing emphasis on an interdisciplinary or even a transdisciplinary focus (Turkkan, Kaufman, & Rimer, 2000). Psychology brings to health education a rich legacy of over one hundred years of research and practice on individual differences, motivation, learning, persuasion, and attitude and behavior change (Matarazzo, Weiss, Herd, Miller, & Weiss, 1984), as well as the perspectives of organizational and community psychology. Physicians are important collaborators and are in key roles for effecting change in health behaviors (Grol, Bosch, Hulscher, Eccles, & Wensing, 2007). Likewise nurses and social workers contribute 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, along with those in

the information sciences and related fields. Increasingly, there are partnerships with genetic counselors, neuroscientists, and other specialists in this rapidly developing field.

Health, Disease, and Health Behavior: The Changing Context

The greatest causes of death in the United States and globally are chronic diseases, including heart disease, cancer, lung diseases, and diabetes (Lozano et al., 2012). Behavioral factors, particularly tobacco use, diet and activity patterns, alcohol consumption, sexual behavior, and avoidable injuries, are among the most prominent contributors to mortality (Fisher et al., 2011). Projections of the global burden of disease for the next two decades include increases in noncommunicable diseases, high rates of tobacco-related deaths, and a dramatic rise in deaths from HIV/AIDS (Abegunde, Mathers, Adam, Ortegon, & Strong, 2007; Mathers & Loncar, 2006). Worldwide, the major causes of death by 2030 are expected to be HIV/AIDS, depressive disorders, and heart disease (Mathers & Loncar, 2006).

At the same time, in many parts of the world, infectious diseases pose grim threats, especially for the very young, the old, and those with compromised immune systems. Malaria, diarrheal diseases, and other infectious diseases, such as Ebola, SARS (severe acute respiratory syndrome), MERS (Middle East respiratory syndrome), and tuberculosis, in addition to AIDS, are increasing health threats to the poorest people around the world (The *PLoS Medicine* Editors, 2007). And as with chronic diseases, their trajectory may be influenced by the application of effective health behavior interventions as well as by social determinants that influence health and illness. Substantial suffering, premature mortality, and medical costs can be avoided by positive changes in behavior at multiple levels.

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. Country and global population health goals are an essential part of the strategy (e.g., U.S. Healthy People goals and WHO goals). 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 global population, rapidly escalating health care costs, and data linking individual behaviors to increased risk of morbidity and mortality. The evidence that early detection can save lives from highly prevalent conditions such as breast and colorectal cancer has also been influential. The AIDS epidemic has also contributed. Moreover, around the world, communicable diseases and malnutrition exist alongside increasing problems such as obesity among the middle class (Abegunde et al., 2007).

Landmark reports in Canada and the United States during the 1970s and 1980s heralded the commitment of governments to health education and promotion (Epp, 1986; Lalonde, 1974; U.S. Department of Health, Education, and Welfare, 1979). In the United States, federal initiatives for public health education and monitoring population-wide behavior patterns were spurred by the development of the *Health Objectives for the Nation* (U.S. Department of Health and Human Services [DHHS], 1980) and their successors, *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* (DHHS, 1991), *Healthy People*

2010 (DHHS, 2000), and *Healthy People 2020* (DHHS, 2014b). Similarly, international agencies are drawing attention to the global burden of diseases and health inequalities (World Health Organization [WHO], 2014b). Increased interest in behavioral and social determinants of health behavior change has spawned numerous training programs and public and commercial service programs.

Data systems and surveillance initiatives now make it feasible to track trends in risk factors, health behaviors, and healthy environments and policies in the United States and developed countries and, in some cases, to tie these changes to disease incidence and mortality (WHO, 2014a). Indeed, positive change has occurred in several areas. Deaths from coronary heart disease and cancer have declined in the United States, though disparities between racial and economic groups persist. Blood pressure control has improved and mean population blood cholesterol levels have declined. Alcohol-related motor vehicle deaths and overall deaths due to automobile crashes and also deaths from drowning have continued to decrease. Following major litigation against the tobacco industry and a multistate settlement, there are increased restrictions on tobacco advertising and enforcement of laws against selling tobacco to minors (Glanz, Jarrette, Wilson, O'Riordan, & Jacob Arriola, 2007). In the United States, fewer adults are using tobacco products—the reduction in adult smoking from 42.4 percent to 18.1 percent between 1965 and 2012 (Centers for Disease Control and Prevention, 2014) is hailed as one of the top public health achievements of the past century. Rates of HIV/AIDS in the United States have leveled off and transfusion-related HIV infections have decreased markedly. The proportion of women aged forty and older who have had mammograms within the previous two years reached 67.1 percent in 2010 (DHHS, 2013). The collective efforts of those in health care, health education, and public health have made a difference.

While this progress is encouraging, much work remains to be done in the United States and other countries. More adults and children are overweight. Diabetes is increasing to near-epidemic proportions. More adolescents are sexually active. Ten percent of children under three years old have not received a basic series of vaccinations for polio, measles, diphtheria, and other diseases. The proportion of adults under sixty-five years of age with no health insurance coverage has declined recently but still exceeds 15 percent. Ethnic minorities and those in poverty still experience a disproportionate burden of preventable disease and disability, and the gap persists between disadvantaged and affluent groups in the use of preventive services (National Commission on Prevention Priorities, 2007).

Reducing the global disease burden is critical to the future of the planet. Data from Popkin (2007) and others show that, like the tobacco epidemic, the obesity epidemic has taken on global proportions. One study of the burden of chronic diseases in twenty-three low- and middle-income countries posits that chronic disease is responsible for 50 percent of the disease burden in 2005, and estimates an economic loss of almost US\$84 billion between 2006 and 2015 if nothing is done to address this burden (Mathers & Loncar, 2006).

Changes in health care systems are providing new supports and opportunities for health behavior change. Respect for patients' rights and more participatory, patient-centered communications can lead to improved health outcomes (Arora, 2003; Epstein & Street, 2007). The U.S. Patient Protection and Affordable Care Act included expectations for health care systems

to increase patients' engagement and to measure their success in achieving this outcome. Increasingly, patients are driving their own searches for health information by using the Internet (see, e.g., Hesse et al., 2005; Rimer et al., 2005), though disparities remain in information seeking between those of higher and lower socioeconomic status (Ramanadhan & Viswanath, 2006). Clinical prevention and behavioral interventions are often considered cost effective but are neither universally available nor equally accessible across racial and socioeconomic groups (Gostin & Powers, 2006; Schroeder, 2007).

The rapid emergence of new communication technologies and new models of use for older technologies, such as the telephone, also provide new opportunities and dilemmas. Just a few years ago, "new" electronic media for interactive health communications consisted mainly of the Internet, CD-ROMs, and personal digital assistants. Today, social media, tablets, wireless communications, and personal monitoring devices are widespread. They can serve as sources of individualized health information, reminders, and social support for health behavior change (see Chapter Seventeen). These new technologies also may connect individuals with similar health concerns around the world (Bukachi & Pakenham-Walsh, 2007). This may be especially important for people with rare or stigmatized health conditions. However, the new products of the communication revolution have not reached affluent and disadvantaged populations equally (Viswanath, 2006).

E-health and m-health strategies are becoming important behavior change strategies. Internet and computer-based applications—along with wireless technologies—support many of the strategies based on theories presented in this book. Use of new technologies should be based on theories of health behavior and evaluated (Webb, Joseph, Yardley, & Michie, 2010). In the end, emphasis should be on desired health outcomes. Technology can enable behavior change and measurement of change but should not be an end in itself.

At the same time, 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, although the empirical evidence on harms remains to be documented. Interactive health communications provide new options for behavioral medicine and preventive medicine, and are altering the context of health behavior and health education as they unfold and as their effects are studied (Hesse et al., 2005). Viswanath, Finnegan, and Gollust (Chapter Seventeen in this book) also have cautioned about the potential for new technologies to exacerbate health disparities.

Health Behavior and Health Behavior Change

Health Behaviors

Positive, informed changes in health behaviors are typically the ultimate aims of health behavior change 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/or 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 (Rimer, Briss, Zeller, Chan, & Woolf, 2004). Likewise, environmental or structural interventions to change presumed social environmental determinants of health behaviors are intended to improve health by changing behavior (Smedley & Syme, 2000; Story, Kaphingst, Robinson-O'Brien, & Glanz, 2008). Thus efforts to improve environments, policies, and other outcomes should ultimately be evaluated for their effects on health behaviors and health. If a policy changes but does not lead to measurable changes in behavior, the change may be either too weak, too short-lived, ineffectively implemented, or only a limited determinant of behavior.

In its broadest sense, *health behavior* refers to the actions of individuals, groups, and organizations as well as those actions' determinants, correlates, and consequences, including social change, policy development and implementation, improved coping skills, and enhanced quality of life (Parkerson et al., 1993). This is similar to the working definition of *health behavior* that Gochman proposed (although 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. Gochman 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, 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 defined three categories of health behavior:

Preventive health behavior: any activity undertaken by an individual who believes himself (or herself) 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 & 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 & Cobb, 1966b).

Disciplinary Influences on Health Behavior Change over Time

Health behavior change has been the focus of multiple fields and professions, including health education, public health, psychology, social work, and various health and medical specialties. Clinical psychologists have traditionally focused on changing individuals, and social work tends to address individuals within their social and family contexts. In the field of health education, 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; also see Chapter Three). These calls for moving health education toward social action heralded a tighter connection to the broad field of public health. They are consistent with the longstanding concern of public health with the impact of social, economic, and political forces on health. Thus the idea that focusing on downstream (individual) causes of poor health to the exclusion of the upstream causes risks missing important opportunities to improve health (McKinlay & Marceau, 2000) is not new in public health and health education and promotion, but continues to receive increasing attention.

The view of health behavior change strategies as instruments 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 & 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 addition to the individual-level theories (McLeroy, Bibeau, Steckler, & Glanz, 1988; also see Chapter Three).

Settings and Audiences for Health Behavior Change

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

Settings: Where Are Health Behavior Change Strategies Provided?

Seven major settings are particularly relevant to contemporary health behavior: schools, communities, worksites, health care settings, homes, the consumer marketplace, and the communication environment.

Schools

Health behavior change programs in schools include classroom teaching, teacher training, and changes in school environments that support healthy behaviors (A. Franks et al., 2007; Luepker et al., 1996). To support long-term health enhancement initiatives, theories of dissemination and implementation can be used to encourage adoption of comprehensive smoking control programs in schools. Diffusion of Innovations 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, & Parcel, 1995).

Communities

Community-based health promotion draws on social relationships and organizations to reach large populations with media and interpersonal strategies. Models of community engagement

and community mobilization enable program planners both to gain support for and to design suitable health messages and delivery mechanisms (see Chapter Fifteen). Community interventions in churches, clubs, recreation centers, and neighborhoods have been used to encourage healthful nutrition, reduce risk of cardiovascular disease, and use peer influences to promote breast cancer detection among minority women.

Worksites

Since its emergence in the mid-1970s, worksite health promotion has grown and has spawned new tools for health behavior change. Because people spend so much time at work, the workplace is a source of both stress and social support (Israel & 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. The U.S. Affordable Care Act provides incentives for employees to alter health behaviors, further advancing worksite health behavior change initiatives (see Chapter Twenty). Both high-risk and population-wide strategies have been used in worksite health behavior change programs to reduce chronic disease risk factors. Systematic reviews of worksite programs to prevent or reduce obesity have shown success using a variety of strategies (Anderson et al., 2009).

Health Care Settings

Health behavior change programs for high-risk individuals, patients, their families, and the surrounding community and in-service training for health care providers are all part of health care today. The changing nature of health service delivery has stimulated greater emphasis on implementing health behavior change and provider-focused quality improvement strategies in physicians' offices and medical homes, health maintenance organizations, public health clinics, and hospitals (Grol et al., 2007; Powell et al., 2012). Primary care settings, in particular, provide an opportunity to reach a substantial number of people (Campbell et al., 1994) and to achieve goals of improved population health. The use of community health workers for patients discharged from hospitals is increasingly considered a strategy for reducing readmission rates (Kangovi et al., 2014).

Homes

Health behavior change interventions can be 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 calls, and mail (McBride & Rimer, 1999). Strategies, such as mailed tailored messages (Glanz, Schoenfeld, & Steffen, 2010) and motivational interviewing by telephone (Emmons & Rollnick, 2001), make it possible to reach larger groups and high-risk groups in a convenient way that reduces barriers to their receiving motivational messages. In-home coaching that helps people improve their home health environments to support health behavior change has also shown promise (Kegler et al., 2012).

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 for health education but also means of misleading consumers about the potential health effects of items they can purchase (Glanz et al., 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 Twenty-One). Health information policies intended to support informed consumer decision making, such as policies that encourage adding calorie information to menus (Swartz, Braxton, & Viera, 2011) and require graphic warning labels on cigarette packs (Huang, Chaloupka, & Fong, 2014), have emerged prominently in the past few years.

The Communication Environment

There have been striking and rapid changes in the availability and use of new information and communication technologies (ICTs), ranging from mass media changes (e.g., online versions of newspapers and podcasts of radio programs) to personalized, mobile, and interactive media and a host of wireless tools in homes, businesses, and communities (see Chapter Seventeen). These channels can be used in any of the settings described above. Yet they are unique, increasingly prominent and specialized, and provide opportunities for intervention as well as requiring evaluation of their reach and impact on health behaviors (Ahern, Phalen, Le, & Goldman, 2007).

Audiences: Who Are the Recipients of Health Behavior Change Interventions?

For health behavior change interventions to be effective, strategies should be designed with an understanding of the recipients, or target audiences; their health, cultural context, and social characteristics; and 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 approaches. They may be health professionals, clients, people at risk for disease, or patients. This section discusses four dimensions along which potential audiences can be characterized: sociodemographic characteristics, ethnic or racial background, life cycle stage, and disease or at-risk status.

Sociodemographic Characteristics and Ethnic/Racial Background

Socioeconomic status has been linked with both health status and health behavior, with less affluent persons consistently experiencing higher morbidity and mortality (Berkman & Kawachi, 2000). Recognition of differences in disease and mortality rates across socioeconomic and ethnic or racial groups has led to increased efforts to reduce or eliminate health disparities (Smedley, Stith, & Nelson, 2003; World Health Organization, Commission on Social Determinants of Health, 2007). For example, it has long been known that African Americans die at

earlier ages than whites. Life expectancy for African American males is almost seven years less than for white males. The difference of five years for African American versus white women is smaller but still alarmingly discrepant. The gaps have grown over the past three decades and are even greater for those with lower levels of education and income (P. Franks, Muennig, Lubetkin, & Jia, 2006).

A variety of sociodemographic characteristics, such as gender, age, race, marital status, place of residence, and employment, characterize audiences for changes in health behaviors. The United States has experienced a rapid influx of new immigrant populations, especially from Africa and Europe, and the proportion of nonwhite minority residents continues to climb. These factors, while generally not *modifiable* within the bounds of health education programs, are important to understand in order to guide the targeting of strategies and educational materials, and to identify channels and media through which to reach consumers. Health behavior interventions should be appropriate to the educational and reading levels of particular target audiences and be compatible with their ethnic and cultural backgrounds (Resnicow, Braithwaite, DiIorio, & Glanz, 2002), and their access to and facility with technology.

Life Cycle Stage

Health education is provided for people at every stage of the life cycle, from childbirth education whose beneficiaries are not yet born to self-care education and rehabilitation for the very old. Developmental perspectives help to guide the choice of intervention and research methods. Children may have misperceptions about health and illness, such as thinking that illnesses are a punishment for bad behavior (Armsden & Lewis, 1993). Knowledge of children's cognitive 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 Five) is a useful framework for understanding the factors that may predispose youth to engage in unsafe sexual practices. Healthy People 2020 goals stress reaching people in every stage of life, with a special focus on vulnerabilities that may affect people at various life cycle stages (DHHS, 2014b).

Disease and At-Risk Status

People who are diagnosed with life-threatening diseases often experience not only symptoms but also the distress associated with their prognosis and having to make decisions about medical care (see Chapter Twelve). Illness may compromise their ability to attend to new information or develop new skills at critical points. Because of this, timing, channels, and audiences for patient education should be carefully considered. Successful patient education depends on a sound understanding of the patient's view of the world (Glanz & 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 (Weinstein, Sandman, & Blalock, 2008). Even so, strategies used to enable initial changes in behavior, such as quitting smoking, may be insufficient to maintain behavior change over the long term, even in these people. Models and theories of health behavior can suggest strategies to

prevent relapse and enhance maintenance of recommended practices for high-risk individuals (Glanz & Oldenburg, 2001).

Progress in Health Behavior Research and Practice

Over the past three decades, many studies, large and small, have been conducted to identify and test the most effective methods to achieve health behavior change (e.g., Carleton, Lasater, Assaf, Feldman, & McKinlay, 1995; Farquhar et al., 1990; Glasgow, Terborg, Hollis, Severson, & Boles, 1995; Luepker et al., 1994; Sorensen et al., 1996; Winkleby, 1994). More precise quantification of personal health behaviors and improved health outcomes have grown from partnerships among behavioral scientists, biomedical experts, and people from other fields, including education and the information sciences.

Although many large studies were disappointing in the lack of significant results or smaller results than expected, several behavior change campaigns produced behavior changes conducive to health (Hornik, 2002). These experiences suggest that health education interventions must be carefully planned, developed from strong formative research, and theory-based (Randolph & Viswanath, 2004; also see Chapter Nineteen). While randomized controlled trials provide the most rigorous test of health behavior interventions, the past two decades have been marked by an increase in carefully designed evaluation research in health education, which combines quantitative and qualitative methods. Evaluations of community-based AIDS prevention projects (Janz et al., 1996) and coalitions for prevention of alcohol, tobacco, and other drug abuse (Butterfoss, Goodman, & Wandersman, 1996) exemplify applications of community research methodologies that offer in-depth process information across multiple programs in diverse settings. Similarly, new statistical methods and adaptive trials may ultimately permit faster answers and the capacity to answer more questions through more efficient trial design.

Overall, there has been a growing recognition of the importance of building an evidence base in the domain of health-related behavior change interventions (Rimer, Glanz, & Rasband, 2001). Today, systematic reviews and meta-analyses of health behavior change studies are both common and expected to guide future work. It has been nearly twenty years since the uptick in quantitative synthesis began to grow. A review of health education research between 1994 and 2003 found a significant increase in use of quantitative statistics, while also finding that the most common types of articles were those that addressed cross-sectional studies and review articles (Merrill, Lindsay, Shields, & Stoddard, 2007). That review was limited to three health education journals. Other reviews of research design and statistics also found a preponderance of correlational and descriptive studies (Noar & Zimmerman, 2005; Painter, Borba, Hynes, Mays, & Glanz, 2008; Weinstein, 2007). As the research literature grows, it is critical that the evidence base and the methods behind the evidence are accessible to both researchers and practitioners around the world (Von Elm et al., 2007). Evidence reviews are defined as those using formalized methods to collect, prioritize, and weigh the findings of intervention research. Important progress has been made over the past ten to fifteen years in improving the process of and guidance for conducting systematic reviews and meta-analyses (Hoffman et al., 2014; Moher, Liberati, Tetzlaff, Altman, & the PRISMA Group, 2009). The U.S. Task Force on

Community Preventive Services is defining, categorizing, summarizing, and rating the quality of evidence on the effectiveness of population-based interventions for disease prevention and control; providing recommendations on these interventions and methods for their delivery based on the evidence; and identifying and summarizing research gaps (Briss et al., 2000; DHHS, 2014a). Parallel efforts are underway in other countries as well, such as the work in England being conducted by the National Institute for Health and Clinical Excellence (NICE) (2014).

Observations by McGinnis (1994) are still relevant today: the challenge of understanding and improving health behavior 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. A coordinated and focused effort is essential to resolve many of the most vexing health issues facing our society (Smedley & Syme, 2000). Integration of the best available knowledge from theory, research, and behavior change practice can advance that agenda in the years ahead.

Health Behavior Foundations for Theory, Research, and Practice

This chapter has discussed the dynamic nature of health behavior today in the context of changing patterns of disease and trends in social interaction and communication, health care, health education, and disease prevention in the United States and globally. It has provided definitions of health behavior and described the broad and diverse parameters of this maturing field. Although thousands more studies of health behavior change have been conducted and reported since the last edition of this book, their variable and sometimes disappointing results raise new questions and pose methodological, theoretical, and substantive challenges. The importance of theory, research, and practice and the interrelationships among them are set against the backdrop of the urgent, growing, and complex imperative to improve the health of populations around the world and to do so in a context that recognizes that health services are only some of the forces that influence health status. Today’s students, researchers, and practitioners can make a difference in the burden of illness and in the potential to develop effective, scalable interventions to improve health.

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