

# Health Communication Inquiry and Health Promotion: A State of the Art Review

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**Health communication is a young, relevant, and promising applied field of study that examines the influences of human and mediated communication on the delivery of health care and the promotion of health. Health communication inquiry is typically problem-based, identifying serious communication issues that threaten the quality of health care and health promotion, as well as suggesting evidence-based health communication interventions, programs, policies, and practices for improving health outcomes. Intrapersonal, interpersonal, group, organizational, and societal levels of communication perform central roles in promoting health across the continuum of care: prevention, early detection, diagnosis, treatment, survivorship, and end of life care. Health communication scholars have developed a rich body of research and theory that identifies critical communication factors that influence health care and health promotion, suggesting key communication strategies for improving health outcomes. This article reviews the development of the field of health communication, examines relevant health communication research and theory, identifies important topics for health communication research, describes implications of the best health communication research findings, evaluates the applications of health communication research, and suggests fruitful directions for expanding future health communication scholarship to enhance the delivery of care and the promotion of public health. *Journal of Nature and Science*, 1(2):e35, 2015.**

Health Communication | Health Promotion | Health Care

## Health Communication Inquiry

Health communication is an important applied field of study that examines the influences of human and mediated communication on the delivery of health care and the promotion of health [1-3]. Health communication inquiry has had many starting points, triggered by scholars in academic disciplines such as sociology, psychology, public health, and medicine [4-6]. Their research spurred communication scholars to carefully examine the role of communication in promoting health, establishing health care relationships, and other important health-related processes and practices. By the mid-1970s a Health Communication Division had formed in the International Communication Association, followed in 1985 by a similar health communication division established at the National Communication Association [7]. In 1985, the *Journal of Applied Communication Research*, which already had included a dozen or more broadly defined health communication articles, published a special issue on "Doctor-Patient Communication" [8], and in 1989, the journal *Health Communication* began publishing articles, followed, in 1996, by the *Journal of Health Communication* [5].

*Health communication inquiry*, today, is concerned with the important influences on people's health of both face-to-face interpersonal communication (in activities such as health care interviews, counseling sessions, health-education efforts, care coordination, and the provision of social support) and mediated communication (including the many uses of print media, television, film, radio, computers, and other technologies) [9]. In broad terms, two areas of health communication inquiry can be identified: *Health care-focused communication research* typically examines issues associated with the influence of communication on enhancing the quality, accuracy, and effectiveness of diagnoses, treatment decision making, treatment follow-up care, support, and end-of-life care; *health-promotion-focused communication*

*research* most often focuses on the design and evaluation of health-education and promotion campaigns through analysis of message design, communication channels, and other campaign strategies and practices.

Given its relevance to preserving life and reducing suffering, health communication research tends to be problem based, concerned with identifying and proposing strategies to manage significant health care and health-promotion problems. Although not all health communication research is applied, as some studies focus only on developing or refining theoretical constructs or are solely descriptive without proposing practical suggestions, as required in recent years for publication in the *Journal of Applied Communication Research* [10-11], most health communication research is problem-solution oriented and offers recommendations for practice (or studies interventions), and, hence, constitutes applied communication scholarship. For example, health communication scholars have examined such important communication problems or issues as, and offered practical recommendations about, managing interactional difficulties and promoting high-quality communication between health care providers and patients/consumers [12-28], meeting people's health social support needs [29-39]; decreasing gaps and disparities in access to health facilities, personnel, and information [40-49]; preventing information errors by and within health care entities/systems [50-55]; assessing the nature and accuracy of health information presented by the media [56-60]; and conducting health communication campaigns [61-80].

Within health communication inquiry, scholars view communication as *the* central social process influencing people's conceptualization of health and well-being, the provision of health care services (both formal and informal delivery), and the promotion of personal and public health. This centrality is based on the pervasive role that communication performs in creating, gathering, and sharing health information [81-84], which is among the most important resources that guide strategic health-promoting and preserving behaviors, treatments, and decisions, both in personal and professional health care settings [85]. Health information includes the critical knowledge gleaned from health care providers' interviews with patients and from laboratory tests used to diagnose health problems; findings from clinical research and practice (as well as from long-standing culturally based traditions) conducted about the best available treatment strategies for specific health threats; analysis of data gathered in check-ups to assess the efficacy of health care treatments and to guide the introduction of new treatment strategies to manage difficult bioethical issues and weigh the consequences involved in making complex health care decisions; and the recognition of critical warning signs that detect imminent health risks and direct responsive behaviors designed to minimize these risks. *Health care providers* - a term which includes the wide range of formal and informal caregivers who deliver health care and those who promote health through education efforts and information dissemination - and *health care consumers* - a term which includes both active

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seekers of health care services (patients and members of their personal support systems) who interface with the health care system and those who seek information to guide their health decisions and behaviors—communicate to generate, access, and exchange such information for making important health-promotion and treatment decisions, adjusting to changing health conditions, and coordinating health-preserving activities. Communication also enables health-promotion specialists (such as health educators, providers, public officials, and advocacy group representatives) to develop and disseminate messages to influence key audiences' health beliefs, attitudes, values, and behaviors.

Health communication inquiry, thus, is conducted to understand the powerful role of communication in health care, with applied health communication inquiry designed to help people to use communication strategically to achieve health and health care. As explained below, the breadth and depth of applied health communication scholarship is reflected in the multiple levels of interaction investigated, the numerous and diverse communication channels covered, the many health care settings studied, and the variety of methodologies that scholars employ to understand the complex role that communication plays in health care and promotion.

### **The Breadth and Depth of Health Communication Inquiry**

One way of understanding health communication scholarship is with respect to the level of interaction at which such research is directed.

#### **Levels of Health Communication Inquiry**

The primary levels of interaction often studied include intrapersonal, interpersonal, group, organizational, and societal health communication.

*Intrapersonal health communication inquiry* examines the symbolic processes that people use to conceptualize health and health care, such as the development of people's beliefs, attitudes, and values that predispose their health care behaviors and decisions. Given that symbols shape people's perspectives on health, health care, and health promotion [86- 88], the intrapersonal level has become critical for examining how communication influences people's cognitive, emotional, and attitudinal interpretations of health and health behaviors. For example, Gibbs and Franks (2002) [89] showed how metaphors used by women in stories told about their experiences with cancer (e.g., "life is a journey" and "cancer is war") helped them to make sense of and cope with their illness.

*Interpersonal health communication inquiry* focuses on the role of communication—such as information exchange, education, and social support—in dyadic relationships—such as in the provider–consumer relationship. Interpersonal communication between health care providers and consumers has become a central area of inquiry because of the profound influence of such interaction on the delivery of health care and the promotion of health. Indeed, Arora's (2003) [90] review of the literature showed that physicians' communicative behavior (specifically, establishing interpersonal relationships, facilitating information exchange, and facilitating patient involvement in decision making) had a positive impact on patient health outcomes, although Thorne (2006) [91] warned that "we know that communication between chronically ill patients and their healthcare providers has tremendous potential to be instrumental in facilitating coping, self-care management, and optimal quality of life, or conversely, in being toxic and damaging those ideals" (p. 58). Thorne emphasized the need for health care providers to advance a different approach to care from one in which patients depend on providers to one of self-care management that creates a patient-provider relationship "within which attitudes are conveyed, information exchanged, and problems articulated" (p. 108). Such an approach, however, may not be easy to enact, as physicians and patients do not always engage in the most effective communicative behaviors. Morgan and Krone (2001) [92], for example, examined difficulties that health care providers have in

expressing their emotions with patients and encouraging patients to express their emotions, difficulties that limited the effectiveness of their communication with patients and that suggested the need for communication education to help providers better express and manage emotions when delivering health care.

Patients, of course, also demonstrate difficulties interacting with health care providers, but research conducted by Greenfield, Kaplan, and Ware (1985) [93] showed that patients can be trained to interact more effectively with their physicians. In a 20-minute session immediately preceding an office visit, a clinic assistant reviewed the patient's most recent visit and talked with him or her about care and management issues that warranted discussion with the physician. The findings demonstrated the positive influences of increased patient–provider communication involvement in achieving more positive health outcomes (e.g., fewer role and physical limitations, such as pain) compared to patients not taught to interact with their physician (see also the study of health communication training by Harrington, Norling, Witte, Taylor, & Andrews, 2007) [94].

Another focus of interpersonal health communication inquiry is on how other relationships affect health outcomes for those who are ill. Brashers et al. (2004) [32], for instance, conducted focus groups with adults with HIV or AIDS to determine their viewpoints of social support and uncertainty management, finding that peer support was particularly useful for "managing personal, social, and medical forms of uncertainty for individuals living with HIV" (p. 234). Recognizing the role that interpersonal relationships play in helping people to cope with illness becomes even more important as significant others take on the role of health care provider. Polk's (2005) [95] research showed how caregivers rely on both verbal and nonverbal communication to reduce their ambiguity and gain perceived control in providing care, and Beach and Good's (2004, p. 8) [96] investigation of dyadic family members' phone calls revealed how family cancer journeys are "interactionally-organized events" comprised of communicative practices designed to manage the dilemmas associated with the disease.

*Group health communication inquiry* examines health communication in small-group settings, such as families, health care teams, and support groups, with a particular emphasis on identifying effective and ineffective communication among group members and the factors affecting that communication. Ellingson's (2003) [97] long-term ethnography of an interdisciplinary geriatric oncology team at a cancer center, for instance, revealed how communication that occurred in the "backstage," outside of team meetings—specifically, informal impression and information sharing, checking clinic progress, relationship building, space management, training students, handling interruptions, and formal reporting—affected "both internal team functioning and communication with patients and companions in the front stage of health care delivery" (p. 114). Apker, Propp, and Ford's (2005) [98] study of nurses' role contradictions in health care teams found three factors that affected nurses' communication in those teams—hierarchy, status, and professional identity—that were related to health care professionals not being trained to understand the work or importance of other members on the health care team. Other group health communication studies focus on the instrumental role of communication in social support groups in enhancing the quality of people's life and assisting them and their significant other, family members, and friends to cope with illness and death. Shaw, McTavish, Hawkins, Gustafson, and Pingree (2000) [99], for example, studied how a computer-mediated support group empowered women with breast cancer to communicate freely with and to gain support from the other participants, which helped them to make decisions; and Toller (2005) [100] examined how caregivers—parents in a support group for those who had experienced the death of a child—took control of their interactions, often by engaging in selective communication, to negotiate the dialectical tensions they experienced.

*Organizational health communication inquiry* examines how people communicate as they negotiate the health care system,

coordinate interdependent health care groups, mobilize various health specialists, and share information to enable effective multidisciplinary provision of health care and the prevention of health risks. Because clinics, hospitals, and medical centers have evolved as central sites for health care delivery, scholars examine how organizational communication in those sites supports or impedes achieving key health care and promotion goals. For instance, in a revealing study, Gillespie (2001) [101] examined how routine administrative and treatment procedures required of asthmatic Medicaid patients in a managed care system routinely disenfranchised those patients, and suggested system-wide communication policy changes to empower patients with asthma. Work by Thorne (2006) [91] and Von Koroff, Gruman, Schafer, Curry, and Wagner (1997) [102] also points to the importance of studying communication in health care organizations to change these systems to better meet patients' needs, for as people live longer and have to manage chronic illnesses, they need to be served by a health care system that teaches them how to maneuver through that system to manage their care. As Von Koroff et al. (p. 1099) [102] stated, "As yet, no grand strategies exist for reorganizing health care systems to improve collaborative management...[but] health care leaders, providers, and consumers have roles to play" in creating such change.

Different organizational delivery systems slowly are emerging to meet consumers' health care needs. Anderson (2004) [103], for instance, studied the delivery of health care in a faith-based organization, showing how parish nurses provide health care that includes both emotional and spiritual dimensions, and Schuster's (2006) [104] study showed how an alternative medical organization, a birthing center, created a climate that provides a safe and private experience that helps women to resist thinking of birth as a medical experience.

*Societal health communication inquiry* examines the generation, dissemination, and utilization of information communicated via diverse media to a broad range of professional and lay audiences to educate them about health care practices and policies. Dutta-Bergman (2004) [105], for instance, found that broadcast outlets with an entertainment orientation are better suited for health communication campaigns, whereas print media, interpersonal networks, and the internet are best for communicating health information to health-active consumers.

Societal health communication inquiry also examines how cultural communication systems influence people's health, health care, and health-promotion perspectives and practices. Basu and Dutta (2007) [106], for instance, showed how the context in which tribal people in India lived, particularly their marginalization and exploitation, influenced their understandings of health and their desire for structural changes in the resources that were available to them.

Societal health communication inquiry also examines how communication can be employed to affect public health policies and practices. Conrad and Millay (2001) [107], for example, studied how political and rhetorical communication strategies were used by the members of the Texas legislature, particularly the communication of involving narratives (regarding the role of narrative in health, see, e.g., Charon, 2006 [108]; Eisenberg, Baglia, & Pynes, 2006; Frank, 1995 [109]; the essays in Harter, Japp, & Beck, 2005 [110]; Mehl-Madrona; Petraglia, 2007 [111]; SunWolf, Frey, & Lesko, 2008 [112], to enact the first Patient's Bill of Rights, and they discussed implications for the effective use of communication strategies to introduce new public health policies elsewhere.

#### **Communication Channels in Health Communication Inquiry**

As much of the extant research shows, face-to-face communication between providers and consumers, family members, health care team members, and support group members is the focus of many health communication studies. Face-to-face communication is encouraged in accessing the health care system, even for primary health care concerns. Indeed, Rimer (2000) [113] concluded that

"one-to-one, in-person communication...is important" and that research on breast cancer shows "that a simple physician recommendation to a woman is the single most important motivator of mammography" (p. 2). This channel of communication undoubtedly will remain important as long as access to health care primarily is controlled by providers and third-party payers, with providers reimbursed based on face-to-face patient visits, although reimbursement strategies might change as a result of increased demand by consumers to use new communication technologies to provide care.

The telephone also continues to be an important channel studied by health communication scholars. For example, Shaw and Kitlinger (2007) [114] examined 80 calls to a home birth helpline, focusing on the role of memory in the interactions, and Beach and Good's (2004) [96] study was based on the analysis of telephone calls between family members coping with cancer.

New communication technologies, however, are being employed increasingly in health communication [115-126]. Neville, Greene, and Lewis (2006) [127] reported that patients now expect general practitioners (GPs) to adopt new technologies that will put "less pressure on and demand on traditional means of contacting GPs: telephone and face-to-face contact" (p. 14). For instance, many patients prefer providers to use e-mail as an additional means of communication, especially for routine matters, although Masters's (2008) [128] review suggested that few physicians do. Neville et al. also warned that new technologies should be used to "supplement, not supplant, face-to-face consultations between doctors and patients" (p. 11).

One important communication setting where new health information technologies have had a significant impact on health communication is in online support groups. As Wright's [129-134] research program and many other studies clearly have shown, a significant number of people have joined online support groups and report receiving many benefits from them.

A broad range of media undoubtedly will continue to be explored in health communication research, with new communication technologies examined as they emerge. As Rimer (2000) [135] concluded, however, there is no need to encourage one channel over another, for "as the communications menu grows, we need not view the options as dichotomous choices but instead pick and choose among them to meet the needs of different people at different times for different topics" (p. 113).

#### **Settings for Health Communication Inquiry**

The settings for health communication inquiry are quite diverse and include all of the places where health information is generated and exchanged, such as homes, offices, schools, clinics, and hospitals. Not surprisingly, many studies have been conducted in hospitals or health care clinics. Apker et al. (2005) [98], for instance, conducted interviews at a 348-bed tertiary hospital with 2,848 employees, and Ellingson (2007) [136] studied the communication performances enacted by dialysis staff members—including registered nurses, patient care technicians, technical aids, a social worker, and a dietician—in a dialysis unit of a treatment center. Others have studied long-term care facilities, such as Adelman and Frey's [137-138] studies of how people living with AIDS in a residential facility create and sustain healthy community (see also Carpiac-Claver & Levy-Storm, 2007; [139]). Other scholars interview people in their home, such as Baxter, Braithwaite, Golish, and Olson's (2002) [140] study of wives whose elderly husbands experience Alzheimer's disease and related disorders.

Although it is often convenient for health communication researchers to conduct studies in academic settings where they generally have the freedom to pursue their interests with relatively little interference, the diversity of health care settings creates significant challenges for field-based researchers [141]. It is important to study communication issues in the wide range of health care and health promotion settings where they occur [142-145]. Legal, bureaucratic, and privacy issues often are paramount when researchers try to negotiate entry to health care

settings. Communication researchers often have opportunities, and resultant responsibilities, to enter private health care settings and gain access to confidential information. The organizational challenges of studying health care delivery without impeding the quality of care or intruding on people's privacy must be carefully negotiated [146-147]. General regulations have been developed to protect research participants (such as the research guidelines established by Institutional Review Boards) and there are additional specific guidelines to protect the privacy of health care consumers (such as the rules covered by the Health Insurance Portability and Accountability Act; HIPPA); these regulations guide health communication research so that it does not unfairly impinge on the rights of individuals [148]. It is imperative that health care consumers and providers be treated with respect and dignity, given that researchers often intrude on very sensitive, private, and emotional aspects of life and death.

### Research Methods in Health Communication Inquiry

Health communication inquiry employs a broad range of research methods [142-144]. Although the standard for biomedical research has long been the use of randomized clinical trial experiments to promote precision, control, and prediction, a number of other research methods are used effectively in health communication scholarship [142]. For instance, scholars often use the survey method to understand people's health communication beliefs and behaviors, such as the recently established Health Information National Trends (HINTS) survey administered by the Health Communication and Informatics Research Branch at the National Cancer Institute (NCI), which provides representative national data every 2 years about the U.S. public's access to, preference for, and use of information to promote health [149-151]. There also is a growing tradition of studying health communication using ethnography, employing participant observation and in-depth interviews to enrich understanding of the lived health communication experience [144]. Textual analysis of language use in medical encounters also has a long history in health communication inquiry [142, 152]. Recent research has expanded on language analysis to study the interdependent use of both verbal and nonverbal messages in health provider-consumer interactions [153]. In addition, as more health communication research is conducted on the same topic, meta-analysis is being used to synthesize research findings [154-156].

Multimethodological designs, which are becoming increasingly popular, have helped researchers to capture many of the complexities of health communication through triangulation of data [142, 157-159]. Such designs often are employed because health communication inquiry has become a multidisciplinary enterprise, with scholars from many disciplines, besides communication—such as allied health, dentistry, economics, health anthropology, health education, health informatics, health psychology, medical sociology, medicine, nursing, pharmacy, public health, and social work—contributing to the growing health communication research literature. Moreover, courses and programs in health communication recently have been included in many schools of medicine, nursing, pharmacy, and public health [160]. The National Institutes of Health (NIH) and other federal agencies now bring together leading experts from numerous disciplines to evaluate the status of proposed health communication inquiry and to chart the course for future work. For example, important interdisciplinary meetings on health communication inquiry sponsored by the NCI include the 2002 Consumer-Provider Communication Research Symposium (see <http://dcccps.nci.nih.gov/hcirb/consumer.html>), 2007 HINTS data users conference (see <http://hints.cancer.gov/presentations.jsp>), and the Critical Issues in e-Health Research Conferences. Furthermore, contemporary federal funding initiatives strongly encourage multidisciplinary collaborations in health communication research, such as the NCI funded Centers for Excellence in Cancer Communication Research (see <http://dcccps.nci.nih.gov/hcirb/ceccr/>) and the NIH Understanding

and Promoting Health Literacy research program announcement (see <http://grants.nih.gov/grants/guide/pa-files/PAR-04-116.html>). Scholars from a variety of disciplinary perspectives are now working together to understand and improve health communication [160].

### Parallel Perspectives in Health Communication Inquiry

As previously mentioned, two major interdependent and parallel branches of inquiry have developed in the field of health communication. The first branch focuses on health care delivery, both the formal delivery of health care by physicians, nurses, and other providers, as well as the informal delivery of health care and social support by people's significant other, family members, and friends. Scholars working from this perspective primarily examine how communication influences the delivery and outcomes of health care. The second branch focuses on the role of communication in health promotion, which includes both formal public health-education programs and the informal diffusion of folk-health wisdom and practices. Health-promotion scholars primarily study the persuasive use of messages and media to promote public health and influence people's health behaviors.

These two branches of the health communication field seem to parallel a long-standing, but artificial division found within the communication discipline between interpersonal and mediated communication [161]. Accordingly, the health care delivery branch has attracted scholars with a primary interest in how interpersonal and group communication influence health care delivery, focusing on issues such as the provider-consumer relationship, therapeutic communication, social support, health care teams, and health care decision making. The health-promotion branch, in contrast, has attracted media scholars concerned with the development, implementation, and evaluation of communication campaigns to prevent major health risks and promote public health. For example, scholars have been involved with campaigns to prevent public risks for contracting HIV, heart disease, and cancer. Many health-promotion scholars also evaluate the use of media to disseminate health information, as well as examine how health and health care are portrayed by popular media.

Although these two major approaches to health communication inquiry have taken parallel paths, there are many areas where their paths intersect. For example, the provider-patient interaction is a prime setting for studying health promotion, as some of the most influential health-education activities occur during clinical visits between providers and consumers; consequently, health care providers now are being trained to provide risk-prevention and health-promotion advice to patients during office visits and clinical interviews [162-163]. In addition, many multichannel health-promotion campaigns employ interpersonal communication interventions, sometimes between health care providers and consumers, to connect these aspects of health communication [72-73]. Given that health communication operates across multiple communication channels, the separation of interpersonal and mediated aspects is limiting and artificial; consequently, many scholars have begun to study the differential and combined effects of interpersonal and mediated communication on people's health practices [164-165]. More collaboration of this type between the health care delivery and health-promotion branches significantly enhances the quality of health communication inquiry.

### Contributions of Health Communication Research to Public Health

Communication scholarship has made major contributions to promoting public health over the last 50 years. A large and developing body of scholarship powerfully illustrates the centrality of communication processes in achieving important health care and health-promotion goals. For example, Kreps and O'Hair (1995) [166] reported a series of studies showing the influences of communication strategies and programs (introduced at individual, dyadic, group, organizational, and societal levels) on people's

health knowledge, behaviors, and outcomes. Dearing et al. (1996) [167] illustrated the positive influences of social marketing and diffusion-based communication campaign strategies in encouraging at-risk populations to adopt important health risk-prevention behaviors. Large-scale, longitudinal communication intervention programs, such as the Stanford Five City Heart Health Program [168-169], one of the first studies to integrate interpersonal and media communication in the health context, and the Minnesota Heart Health Program [170], also have promoted adoption of lifestyle changes to prevent cardiovascular disease and reduce gaps in public health knowledge. Thus, there is great potential in using strategic communication programs to provide health care consumers and providers with needed information to address important public health needs.

Perhaps the greatest positive impact that health communication research has had on society is in the development and implementation of health-promotion campaigns [171]. Promoting public health and preventing the spread of dangerous health risks is a significant goal of applied health communication scholarship. Whether focused on the prevention and control of HIV and AIDS, cancer, or heart disease, a combination of communication theory, research, and practice has guided health-promotion campaign efforts. These campaigns involve a broad set of communication strategies and activities that health-promotion specialists engage in to disseminate needed information to help people resist health threats.

Typically, health communication campaigns have been designed to educate target audiences about important health threats and risky behaviors that might harm them, and, thereby, to raise their consciousness about such issues. Health campaigns also are designed to move target audiences to action in support of public health. For example, communication campaigns often encourage target audiences to engage in healthy behaviors to resist serious health threats, such as adopting healthy lifestyles (e.g., exercise, nutrition, and stress reduction), avoiding dangerous situations and substances (e.g., poisons, carcinogens, or other toxic substances), engaging in early screening and diagnosis for serious health problems, and availing themselves of health care services, when appropriate, to minimize harm.

Health communication campaigns have been instrumental in promoting public health in several important domains. Four examples illustrate the successes of such campaigns in the United States:

1. *Helping to curtail the use of tobacco products.* Tobacco use has been identified as the single-most preventable cause of morbidity and mortality within society. Health communication campaigns have educated the public about the dangers of tobacco use and how to break the tobacco habit, as well as affected many public policies, such as (e.g., no-smoking laws) [172]. As a result of the many concerted tobacco-control communication efforts, tobacco use has declined across the United States, extending many lives [173].
2. *Encouraging the use of safer sexual practices to decrease sexually transmitted diseases (STDs).* In response to serious STDs, such as HIV, communication campaigns have encouraged the use of condoms to reduce their transmission. Similar campaigns have discouraged the sharing of intravenous needles by drug users. These communication efforts have prevented the spread of HIV within high-risk populations, again, undoubtedly saving many lives [167].
3. *Promoting healthy dietary and exercise behaviors.* Many campaigns have encouraged the consumption of a low-fat, high-fiber diet that is rich in fruits and vegetables. For example, the 5-A-Day Program has been very successful at increasing people's awareness of the importance, and consumption, of fruits and vegetables in daily diets [174]. Similarly, campaigns to increase physical activity have improved public health and increased resistance to a host of diseases, including heart disease, diabetes, and many cancers [169-170].

4. *Promoting child immunization.* Very effective campaigns have encouraged public support for vaccination of children, which now is supported by federal, state, and local health departments across the United States. These campaign efforts have protected children from a host of diseases, and virtually eliminated widespread incidences of serious health threats, such as diphtheria, tetanus, measles, polio, and smallpox, in the United States [175].

#### **Advances in Health Communication Inquiry**

Because health communication scholarship is a relatively new area of inquiry, many fruitful directions are available for future research to improve health care policies and practices. As explained below, one exciting new direction for such research involves the study of emerging communication technologies for disseminating health information. Research also is needed to design and evaluate sophisticated health communication campaigns to influence people's health beliefs, attitudes, values, and behaviors [176].

#### **New Communication Technologies and Health Communication Inquiry**

Many scholars have called for concerted study of the ways in which new media and information technologies can advance health care delivery and public health-promotion goals [177-180]. *Health informatics* (sometimes referred to as *eHealth* or *e-Health*), which involves using computer-based communication technologies to process and disseminate health information, has emerged as an important and quickly growing new area of inquiry; its growth has mirrored that of the internet as a primary source for health information and the rapid adoption of computerized tools and information systems within the modern health care system [181-182].

The use of new information technologies appears to be particularly relevant to health consumers and providers confronting serious life-threatening diseases, such as cancer, heart disease, and AIDS, where the demand for accurate and up-to-date health information is especially crucial [183-185]. As mentioned previously, research has shown that online support groups and communities provide individuals confronting serious health problems with relevant and timely information for managing their condition [186-189]. Online information systems, thus, have great potential to provide people with quick and easy access to relevant health information.

Researchers, however, still have many questions that need to be answered about the best ways to use e-Health applications. For instance, a question has been raised regarding the accuracy and currency of the health information available via the internet. Eysenbach, Powell, Kuss, and Sa (2002) [186] argued that existing research on this topic is questionable due to the various methodological frameworks used by researchers to determine the accuracy and quality of health information. As Eysenbach et al. (2002) [186] concluded, "Studies are urgently needed to help in the organizing process to develop methods and instruments to guide consumers to quality information and to identify factors that can be accessed to predict favorable patient outcomes" (p. 2698). Another question concerns who has access to this health information and who is left out. A report by the National Telecommunications and Information Administration (1995) [182] showed that socioeconomic background, race, age, and level of education are predictors of telephone, computer, and computer-household modem penetration. Another question concerns what strategies can be used to provide health information to those who do not have such access. Moreover, it is unclear what impact this information has on health outcomes, although Stoddard et al. (2005) [189] provided evidence that e-Health communication can improve behavioral outcomes; specifically, participants in their online smoking cessation program reported making serious attempts to quit smoking based on the program. A final question is how the positive influences of health information available via the internet and other new communication technologies can be maximized. Programmatic

health communication research certainly is needed to answer these and other important questions.

### **Sophisticated Health Communication Campaign Designs**

The effectiveness of health communication campaigns has been shown to be influenced by numerous variables, beginning with audience members' perceptions of targeted health behaviors, the design of campaign communication messages and strategies, the employment of appropriate communication channels, the acquisition of data from formative and summative evaluation research, and the use of guiding theories of communication and social influence [70, 190-191]. Planners often are guided by exemplars of effective health communication campaigns that suggest the value of employing particular message strategies [192-193]. However, too many campaigns have not had strong and lasting health-promotion influences on target audiences (see the meta-analysis by Snyder et al., 2004 [155]). The most sophisticated campaigns are guided by powerful explanatory theories that identify key factors for campaign design and implementation [194-195]. For example, the stages-of-change model [196] has long been used by health communication campaign planners to incorporate the readiness of audience members to accept campaign messages [197]. The health belief model (regarding its historical origins, see Rosenstock, 1974 [198]) also has been successfully employed by campaign researchers to identify health beliefs to design the best message strategies for encouraging health behavior change [199-201]. The social cognitive model [202] has been widely used by health communication campaign planners to analyze the social diffusion of new health behaviors in terms of the psychosocial factors governing their acquisition and adoption and the social networks through which they spread and are supported [203-204]. The PRECEDE Model (predisposing, reinforcing, and enabling causes in educational diagnosis and evaluation introduced by Green, Kreuter, Deeds, & Partridge, 1980 [205] continues to offer valuable information for researchers and practitioners in designing, implementing, and evaluating health communication campaigns [206-207]. Relevant theoretical frameworks, thus, help researchers working with health communication campaigns to identify salient individual and community characteristics that motivate or support positive or negative health behaviors. Consequently, campaigns have begun to integrate multiple theoretical perspectives to guide health communication efforts [76, 208-209].

Advances in health communication campaign research have resulted in a greater understanding of the importance of audience segmentation, pilot-testing messages and strategies with target audience focus groups, and the strategic placement of messages to reach intended audiences [210]. Health communication interventions increasingly have become more refined in the development of messages to influence target audiences, narrowing the scope of audiences from broad populations to highly segmented and homogenous audiences [210]. Early health communication interventions were developed with general message strategies that appealed to a broad audience, whereas more sophisticated studies now first carefully segment target audiences based on shared demographics, personality predispositions, beliefs and attitudes [211], media use [212], and other factors, and then create effective messages to appeal to those segmented audiences. Tailored message strategies now even identify key individual factors to design specific health-promotion messages. As Kreuter, Farrell, Olevitch, and Brennan (2000) [214] noted, "For example, if a participant expressed doubt about her ability to get regular physical activity (i.e., low self-efficacy for exercise), and the materials included information designed to enhance self-efficacy, that would be a match" (p. S230).

Growing evidence suggests the efficacy of tailoring communication to promote behavior changes, especially cancer-prevention and control behaviors [215-218]. In fact, Krishna, Balas, Spencer, Griffin, and Boren (1997) [219] found that tailored, interactive computer-based educational programs

about various clinical conditions produced a significant positive effect in improved health status in several major areas of care, including diabetes mellitus, asthma, rheumatoid arthritis, and hypertension. Rimer and Glassman (1998) [217] described the process of creating tailored print communication and found that such messages facilitated positive patient-provider interactions, fostered behavioral changes conducive to health, enhanced health-evaluation processes (by requiring collection of patient-specific information), and offered opportunities to expand the reach of health professionals, especially by sending personalized, individualized messages to patients. Advances in the use of tailored messages for health promotion, however, have raised issues about the gathering or accessing of information that identifies the specific health behaviors of an individual, leading to questions about the appropriate level of analysis for audience segmentation in health communication campaigns [220-221]. Future research can help to indicate when it is best to target campaign messages to individuals or to well-segmented target audiences.

Salmon and Atkin (2003) [78] pointed out that health communication campaigns vary according to the dose of health information given, duration of message exposure, degree of media richness, vertical integration of communication channels, and the horizontal integration of approaches to social change. Health communication campaigns also can be viewed in terms of various stages. For instance, the four health communication campaign phases (precampaign, campaign/message development, postcampaign, and ongoing/ad hoc) that guided the "America Responds to AIDS" campaign remain an important planning tool for future campaigns [222]. Included in these phases are strategic planning, needs assessment, target-audience analysis, formative and summative evaluation, and message efficacy. Moreover, new planning strategies have been identified by several researchers to improve the design, implementation, and evaluation of health communication campaigns. For example, Parrott and Steiner (2003) [223] recommended that campaigns be planned jointly with health communication researchers and public health practitioners, as "more linkages between academic health communicators and public health professionals, as well as other health professionals, afford one means of increasing the validity associated with efforts to identify, understand, and replicate these successful endeavors" (p. 647).

### **The Future of Health Communication Inquiry**

The extant research reviewed in this article clearly documents the powerful influence of communication on health practices and outcomes. Moreover, health communication inquiry increasingly has become more sophisticated as it has addressed more complex issues. Given the sophistication of recent scholarship, there is growing interdisciplinary and institutional credibility for health communication researchers. As one sign of that increased credibility, health communication scholars now, more than ever, attract federal research funding. Federal agencies—such as the Centers for Disease Control (CDC); National Cancer Institute; National Heart, Lung, and Blood Institute (NHLBI); and the National Institute for Drug Abuse (NIDA)—increasingly have become more familiar with and receptive to the field of health communication. The CDC, for example, has established an Office of Communications, with a Division of Health Communication that develops message-based interventions across the many important health risk-prevention initiatives it sponsors. Similarly, the federal agency for Health Care Research and Quality (AHRQ) now emphasizes the importance of health communication research and interventions in its many publications, conferences, and outreach programs. Health communication scholars need to continue to take advantage of the growing research opportunities offered by the federal government, learning how to compete successfully for federal research grants and contracts, maintaining contacts with key members of federal agencies, and participating actively in federal research activities.

There also is a growing emphasis on public advocacy, consumerism, and empowerment in health communication research that will revolutionize health care systems by equalizing (as much as possible) power between providers and consumers and by relieving a great deal of strain on the system through disease prevention, self-care, and making consumers partners in the health care enterprise [224-227]. Consequently, communication research increasingly is being conducted to identify consumers' information needs and to suggest strategies for encouraging them to take control of their health and health care. Ideally, health communication research should identify appropriate sources of information available to consumers and gather data from them about the challenges and constraints they face within health care systems, as well as develop and field test educational media programs for enhancing consumers' medical literacy [228-229]. Such research will help people to negotiate their ways through health care bureaucracies and to develop communication skills for interacting effectively with health care providers.

Health communication research, of course, will continue to focus on the effective dissemination of information to promote public health. However, health-promotion efforts must recognize the multidimensional nature of health communication, identify communication strategies that incorporate multiple levels and channels of human communication, and implement a wide range of prevention messages and campaign strategies targeted or tailored to specific (well-segmented) audiences. Health communication campaigns, however, must become even more sophisticated, drawing on relevant theories, methods, and communication technologies and integrating multiple communication channels—including interpersonal, group, organizational, and societal communication—to effectively target well-segmented, at-risk, and marginalized populations. Such campaigns will be even more successful in delivering messages that encourage health risk prevention and promote better health. The need to measure accurately the effectiveness of health communication campaigns also will continue to be an important area of study. New areas

should include creating campaigns with community partners, as well as understanding how campaigns can influence public policy. Health communication inquiry also increasingly is becoming concerned with the role of culture on health and health care [230]. For instance, significant disparities exist in health outcomes between majority and minority populations in the United States that have been linked to the quality of health communication experienced and to access to health information [231-234]. Future research, therefore, needs to examine the health communication needs of marginalized cultural groups and to identify strategies for enhancing their health communication.

### Conclusion

The field of health communication has moved toward a sophisticated, multidimensional agenda for applied research that integrates face-to-face and mediated communication in the delivery of health care and the promotion of public health. Scholars have examined the multifaceted influence of communication on health at multiple levels (intrapersonal, interpersonal, group, organizational, and societal) and across a wide range of health care contexts. They also have evaluated the use of a broad and evolving range of communication strategies and channels, and assessed the influence of communication on important health outcomes. Such inquiry has provided important information about the development of cooperative relationships between interdependent participants in the modern health care system, encouraged the use of sensitive and appropriate communication in health care and health promotion, empowered those affected by illness to work collaboratively with caregivers to make the best health decisions, enhanced the dissemination of relevant health information and the use of strategic communication campaigns to promote public health, facilitated the development of sensitive multicultural relations in health care, and suggested adaptive strategies for using communication to accomplish desired health outcomes. Health communication, thus, is and will continue to be a highly relevant and significant area of applied communication inquiry.

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