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**Health Communication**

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Health communication has grown into an increasingly significant specialty at the forefront of research and instruction in the field of communication. This area of study formally originated in the mid-1970s when members of an International Communication Association (ICA) interest group adopted the label “health communication,” although the interdisciplinary marriage between health and communication was “certainly a common-law relationship” long before that (Finnegan, 1989, p. 9). This specialization has developed rapidly in response to growing pragmatic and policy interests, particularly in federal public health agencies and among private sector health care providers. Pressing needs to address problems such as smoking, substance abuse, obesity, AIDS, and poor nutritional habits have given a strong impetus (and expanded fundability) to the systematic investigation of health communication processes and effects, as the area provides a ripe context for testing and advancing communication theory.

The area’s popularity and legitimacy are evinced by rising membership in health communication divisions of both ICA and the National Communication Association, the wide readership of two major journals (*Health Communication* and *Journal of Health Communication*), the publication of the *Handbook of Health Communication* (Thompson, Dorsey, Miller, & Parrott, 2003), and the explosion of health communication curricula across the country, including a health emphasis in 28 communication doctoral programs.

*Healthy People 2010*, a government document that sets goals to improve the nation's health, now includes objectives specific to health communication.

Health communication research often focuses on the development of effective health messages, the dissemination of health-related information through broadcast, print and electronic media, and the role of interpersonal relationships in individual health communication (particularly provider-patient communication and the effects of social support on health and illness). The common thread weaving these diverse areas together is the emphasis on "health" as the desired outcome of communication. Whether investigating patient-centered communication behaviors exhibited by physicians on patient satisfaction, or the examination of public health campaign effectiveness on individuals engaging in safer sex, the ultimate goal has been to identify effective communication strategies for improving society's overall health.

## **HISTORY**

Although communication scholars have been applying their expertise to health promotion and disease prevention only in recent decades, there have been sporadic efforts to use communication to improve public health for almost three centuries. According to Paisley (2001), the history of American communication campaigns has several notable examples involving health-related problems. The earliest case occurred in 1721, when religious and political leader Cotton Mather utilized pamphlets and speeches to successfully promote inoculation during Boston's serious smallpox epidemic.

Nineteenth century social and health problems associated with alcohol misuse resulted in the mobilization of a major movement led by the Women's Christian Temperance Union. With a deft combination of grassroots organizing, legislative

testimony, mass communication via newspapers and emerging magazines, and occasional confrontational incidents, charismatic leaders were able to promote anti-alcohol reforms at both the societal and individual level. Although the prohibitionists achieved little direct impact in persuading drinkers to give up their “vice,” the temperance movement eventually produced the ultimate form of environmental engineering: a constitutional amendment banning the production and distribution of alcoholic beverages. As with many attempts to change unhealthy but pleasurable lifestyles, the effort unraveled when many drinkers evaded the law and public opinion shifted.

Early in the 1900s, “muckraker” reformers targeted a number of health-related problems, such as impure food and inadequate health care for the poor. The print media disseminated alarming stories that raised these issues higher on the public agenda, and eventually government agencies were created to address these public health problems.

Theory and research played a minimal role in early efforts, which occurred prior to the ascendance of social science methodology and the articulation of communication principles. Campaign leaders and allied journalists relied on intuition and conventional wisdom to formulate strategies and advocate solutions. It was not until the mid-20th century that researchers began working in an uneasy tandem with strategists and creative personnel to advance sophisticated campaign design and implementation. The relationship has evolved into a partnership with a higher degree of cooperation and mutual appreciation, particularly at the formative stage of campaign development. A critical turning point for the systematization of the health and communication relationship followed World War II, when the private medical sector and the public health sector began focusing on the behavioral aspects of health. As epidemiologists discovered

connections between chronic diseases and culturally reinforced and induced behaviors, professionals and the public alike turned to the issues of prevention, particularly to identify strategies to effectively disseminate health-related information to the public. Critical communication processes such as persuasion and information dissemination were seen as playing a central role in an individual's health.

The prevalence of health campaigning increased steadily over the last half of the 20<sup>th</sup> century. Very few campaigns were disseminated via media channels in the 1950s. The major campaign topic of the 1960s was smoking, with extensive news media publicity in the mid-60s and a major national PSA campaign on television later in the decade. In the 1970s to early 80s, heart disease campaigns were tested in several locales. Substantial national campaigns increased during the 1980s, emphasizing drunk driving, safety belts, drugs, and AIDS. Due to diminishing free media placements, the 1990s were characterized by paid messages about drugs, smoking, AIDS, and alcohol.

Neal (1962) was among the first to acknowledge the equally important role interpersonal communication played when he identified the communication between practitioners and patients as vital to study in the health field. The study of doctor-patient relationships emerged out of dissatisfaction among patients with the communication, or "bedside manner," of their health care providers. Korsch and her colleagues identified the effects of various communicative behaviors exhibited by physicians during the medical encounter on outcomes such as patient satisfaction and compliance (Korsch, Gozzi, & Francis, 1968). Their landmark findings regarding the importance of physician expression of positive affect, respect, friendliness, and empathy have stood the test of time in both academic and practitioner circles (Korsch, 1989; Roter, 1977). As the study of the health

and communication relationship in both public and private domains has matured, so too has the use of more sophisticated research methodology and theory development.

### **Classic Case**

The leading cause of premature death in Western society is heart disease, and a significant portion of this health problem is due to lifestyle factors such as smoking, lack of exercise, high-fat diet, and chronic stress. Because these risk factors are partially preventable, communication researchers became interested in strategies for influencing the community environment and individual decisions that contribute to heart disease. The preeminent research program investigating this problem has been Stanford University's Three Community Study (TCS) and Five City Project (FCP). Combining expertise from the medical school and communication department, the Stanford program began in the early 1970s with a simple experimental design comparing media vs. interpersonal interventions, a sophisticated theoretical conceptualization of processes to change knowledge, attitudes, and practices, and elaborate applied implementation in the communities.

It has become the most influential and frequently-cited health campaign in history; indeed, it is recognized by Rogers (1994) as the most significant turning point in the development of health communication. At the behavioral level, the campaigns sought to reduce intake of saturated fat, cholesterol, salt, and excessive calories; to eliminate tobacco use; to increase physical activity; and to promote blood pressure checks and adherence to hypertension control medication.

The original TCS combined various theoretical perspectives such as social learning, innovation diffusion, learning hierarchies, inoculation, social comparison, and

reasoned action to form a Communication-Behavior Change model (Farquhar, Maccoby, & Solomon, 1984). The key audience of middle-age males was targeted directly and indirectly with a heavy flow of messages including TV and radio spots, newspaper columns, cookbooks, booklets, and bus cards that were developed through formative evaluation. The summative evaluation research featured a quasi-experimental design in three comparable sites: a media-only community, a second community where the same basic media campaign was supplemented by face-to-face communication, and a no-intervention control community.

The results showed that knowledge-gain impact occurred to a similar degree in both intervention communities, but that actual behavioral change was greater in the media-plus-interpersonal treatment site after the first year of the campaign. The key outcome measure was a heart disease risk score composed of plasma cholesterol, systolic blood pressure, and relative weight. After a second year of message dissemination, the sample in the media-only town caught up with those experiencing the more intensive intervention. The subsequent Five City Project sought to increase the exportability of the campaign by reducing the scope of the externally-introduced intervention; the Stanford team relied more heavily on local community mobilization to sustain the campaign. A similar quasi-experimental design was used to isolate the effects of the communication effort over a far longer period, and more bottom-line outcomes such as morbidity and mortality were added to the study; significant reductions were demonstrated in treatment communities (Farquhar et al., 1990).

## THEORY DEVELOPMENT

Communication as a discipline has been criticized for its limited and unsystematic theory development, particularly in the applied areas such as health communication (Berger, 1991). Berger notes that communication phenomena occurring within health and other applied contexts might be so distinctive that they may merit their own context-specific theories; Sharf (1993) observes that “applied research can be complementary rather than antithetical to theory generation” (p. 39). For example, Rice and Atkin (1989) note: “While health campaigns are typically viewed as merely applied communication research, the most effective campaigns carefully review and apply relevant theories; further, campaign results can be used to extend and improve theories about media effects and social change” (p. 9).

Health communication scholars have drawn upon a wide range of theoretical perspectives from communication, social psychology, public health, and anthropology. A popular persuasion framework for guiding campaign efforts is McGuire’s (2001) input-output model and classification of psychological theories. Communication variables such as source credibility and message organization constitute the laundry list of input factors, while the 12 output response steps proceed from exposure to post-behavioral consolidation. McGuire also discusses variants to the straightforward communication/persuasion model, including the peripheral route posited in the elaboration likelihood model (Petty & Cacioppo, 1986) and reversal of certain sequences proposed in dissonance and self-perception theories. Several theories and frameworks have been particularly popular among health communication researchers and practitioners. Social learning theory (Bandura, 1986) directs attention to the importance

of modeling healthy behaviors and rewarding consequences. Bandura also emphasizes self-efficacy of performance as a key factor in the success of health persuasion. The theory of reasoned action (Ajzen & Fishbein, 1980) focuses on the combination of the individual's belief expectancies about outcomes related to health practices and evaluation of those outcomes; it also accentuates the role of social norms in behavioral intentions. Subsequent variations were introduced by Ajzen (2002) in his influential theory of planned behavior, which specifies key health behavior predictors such as perceived behavioral control and self-efficacy.

From the public health discipline, similar theoretical perspectives have made significant contributions to the understanding of the persuasion process. According to the Health Belief Model advanced by Janz and Becker (1984) and Strecher and Rosenstock (1997), major components of health behavior are perceived susceptibility and severity along with benefits and barriers. Protection Motivation Theory includes similar elements encompassing threat and efficacy (Rogers and Prentice-Dunn, 1997). Prochaska and Velicer (1997) developed the Transtheoretical Model that features stages of change in the precaution adoption process.

A complementary framework is social marketing (Kotler, Roberto, and Lee, 2002), which is based on the fundamental principle of exchange theory. Social marketing applies practical techniques from commercial marketing such as packaging and positioning the health practice as an attractive product, minimizing the monetary (and social, psychological, and effort) costs, skillfully segmenting the audience according to demographic and risk profiles, and strategically mixing personal and media channels for promoting the product. The Diffusion of Innovation concepts articulated by Rogers

(1983) have also helped guide strategies of health campaign designers. Techniques of media advocacy have been refined and applied in health campaign contexts (Wallack, Dorfman, Jenigan, & Themba, 1994). Finally, scholars interested in the interpersonal aspects of health communication are embracing a broader range of theoretical approaches. For example, Sharf (1993) points to the merits of narrative theory to examine the discourse between health care providers and patients, and Lupton (1994) calls for the adoption of a more critical approach that allows for recognition and explicit examination of the inherent power differential and asymmetry of knowledge between health care providers and patients.

### **Features of Mediated and Interpersonal Channels**

Health information can be communicated through almost any of the remarkably diverse array of channels available in the modern communication system. The still-central medium of television disseminates messages in varied forms, such as public service announcements [PSAs], hard news items, feature stories, paid spots, talk show discussions, full-length educational programs, and entertainment program plot inserts. The internet has rapidly become a central mode of health communication, particularly the featuring of information-rich website pages, interactive messages, and experience-sharing blogs that are primarily utilized by motivated health information seekers. For example, screening questionnaires on websites can assess each individual's readiness stage, knowledge levels, and current beliefs, and then direct them to narrowly-targeted customized messages that are precisely designed to address their needs and predispositions.

The other key mass media are radio (e.g., announcer commentary, PSA's), and newspapers and magazines (e.g., news, features, advice columns, editorials, ads). In addition, pamphlets and direct mail materials are distributed to individuals, slide shows and videos are shown to groups, and posters and billboards are seen by passersby. Among newer technologies, entertaining interactive formats such as games are particularly well suited as vehicles for health information aimed at youthful audience segments.

Finally, interpersonal communication takes the form of interactions between patients and health care providers, contacts by health organization workers and volunteers, and informal discussions and support-giving among family members and friends.

In assessing each option for channeling health messages, myriad advantages and disadvantages can be taken into consideration along basic communicative dimensions such as *reach* (proportion of community exposed to the message); *specialization* (targetability for reaching specific subgroups); *intrusiveness* (capability for overcoming selectivity and commanding attention); *safeness* (minimizing risk of boomerang or irritation); *participation* (active receiver involvement while processing stimuli); *meaning modalities* (array of senses employed in conveying meaning); *personalization* (human relational nature of source-receiver interaction); *decodability* (mental effort required for processing stimulus); *depth* (channel capacity for conveying detailed and complex content); *credibility* (believability of material conveyed); *agenda-setting* (potency of channel for raising salience priority of issues); *accessibility* (ease of placing messages in channel); *economy* (low cost for producing and disseminating stimuli); *efficiency* (simplicity of arranging for production and dissemination). There are substantial

differences among channels on these dimensions, which can be illustrated by comparisons among three leading forms of communicating health information: *interpersonal* communication is superior for specialization, intrusiveness, participation, modalities, credibility, and safeness; *PSAs* have greater reach, intrusiveness, decodability, agenda potency; and *websites* are advantageous on specialization, safeness, participation, depth, accessibility, economy, and efficiency. Thus, there are distinct roles for various channels and modes; the optimum mix depends on the nature of the health topic, the target audience characteristics, and the communication objectives.

## **RESEARCH METHODS**

Health communication researchers typically borrow standard methodological techniques from the mainstream social sciences rather than develop new methods. Despite a general acceptance and valuing of both quantitative and qualitative methodologies, the preponderance of health communication research to date has relied on quantitative approaches. The distinctive feature of health communication research is the way that certain methods have been applied to investigations. In particular, evaluation research approaches have been given greater emphasis in health-related studies than other domains of communication research. This section will describe the basic elements of health campaign evaluation methods, and then briefly illustrate the application of other techniques such as experiments and doctor-patient interaction analysis.

### **Formative and Summative Evaluation**

Evaluation research seeks to answer practical questions about audiences via collection of background information prior to message production and the measurement of effectiveness after dissemination. *Formative research* occurs both before campaigns

are designed and during the development of messages. At the preproduction phase, Atkin and Freimuth (2001) describe how evaluation data are useful in identifying target audience characteristics and predispositions, specifying the crucial intermediate response variables and behavioral outcomes, ascertaining channel exposure patterns, and determining receptivity to potential message components. The primary research techniques are focus group discussions and formal surveys conducted with audience members.

For example, survey interviews with representative samples are typically used to segment the population along a number of dimensions defined in terms of demographic and psychographic characteristics, social role position, behavioral risk profile, beliefs and attitudes, and communication patterns. Ratings on a checklist of potential sources and arguments might also be measured. By contrast, focus group moderators elicit qualitative information to guide the development and refinement of message themes and appeals; the participants' in-depth comments yield insights into audience predispositions and provide feedback about substantive and stylistic message ideas that are under consideration.

The second phase of formative evaluation research focuses on message pretesting. Investigators solicit audience reactions to preliminary versions of message executions to determine which alternatives are most promising. This may involve either focus group comments following exposure to message components and rough executions, or systematic paper-and-pencil (or physiological) measures with larger samples of individuals. The purpose is to ascertain the amount of attention, extent of comprehension, degree of personal relevance, and level of persuasiveness. Strong and weak points are also identified, along with suggestions for improvements.

Federal health agencies created the “Health Message Testing Service,” a standardized system to pretest radio and television spots (U.S. Department of Health and Human Services, 2003). It employed a “theater testing” approach, where groups are exposed to test messages realistically embedded in entertainment programming. Researchers measure evaluation of message qualities as well as recall, comprehension, and learning,

*Summative research* encompasses an array of techniques that are designed to ascertain campaign outcomes. This form of post-campaign evaluation is widely practiced in the health domain because of the pragmatic results-oriented goals of health campaigns and the need for accountability. Summative research measures size and characteristics of the audience reached, the influence of the campaign on attitudes and health behavior. Investigators also seek to isolate causal pathways and to determine if any lack of effect is attributable to theory failure or program failure. Flay and Cook (1989) describe three summative evaluation models employed. The superficial “advertising” model sensitively measures the early stages of audience response such as exposure, recall, and subjectively-perceived effectiveness; sample surveys are most often used for this type of research. Second, the “impact-monitoring” model typically examines overt behavioral or aggregate societal outcomes, usually via secondary analyses of archival data. Finally, the “experimental” model focuses on large-scale tests of causal influences via controlled manipulation of treatments, typically at the community level; additional comparisons may be made between individuals with higher versus lower exposure to messages within experimental communities.

### **Other Interpersonal and Mass Communication Methods**

**Content analysis** is one of the most widely-used techniques in mass communication. Although systematic measurement of health-related message features does not permit inferences about the impact of the content, it does provide a basis for predicting likely effects as well as exploring the motives of media gatekeepers. For example, researchers track media health portrayals such as smoking, drinking, or breast cancer in news, entertainment, and advertising and then they may relate the content to health outcomes, media policies, or external pressures.

**Laboratory experiments** are frequently conducted to examine the impact of health messages. The most basic design is a simple after-only comparison between experimental and control groups that are exposed or not exposed to a particular health PSA, program, or news item. More sophisticated designs have been used to compare content manipulations featuring two or three versions of the same message (e.g., high versus medium versus low fear, or celebrity versus ordinary source), or factorial designs (e.g., level of fear by type of source).

**Time series analyses** have been computed with archival data collected on a regular basis. For example, researchers may track fluctuations of health related products or practices and relate these trends to variations in the frequency or nature of messages disseminated over a period of months or years.

Relatively few research studies have employed the true field experiment featuring a manipulated set of messages disseminated to randomly assigned treatment groups under naturalistic conditions; the high cost and difficulty of controlling dissemination seldom permits the application of this elaborate but rigorous technique.

In the interpersonal domain of health communication, the vast majority of studies have relied on interaction analysis to systematically examine doctor-patient interaction. Korsch and her colleagues were the first to adapt Bales' (1950) "Interaction Process Analysis" scheme to categorize both physicians' and patients' statements (Korsch, et al., 1968). Numerous other coding schemes have subsequently been developed relying on Bales' scheme as a foundation, most notably Roter's "Modified Interaction Process Analysis" (Roter, 1977). This has produced a plethora of studies that provide a numerical accounting of types of utterances present during typical medical encounters. Despite their descriptive utility and continued existence, such studies have faced criticism for their limited ability to definitively describe the complex process of physician-patient interaction (i.e., Wasserman & Inui, 1983).

## **RESEARCH FINDINGS AND APPLICATIONS**

Given the inherent applied nature of health communication, researchers are interested in discovering which approaches work the best to provide useful advice to practitioners. Those practicing on the front lines, such as doctors, health agency officials, and PSA campaign designers need to know what to say and how to say it. Communication skills training programs and the campaign design contexts are two key areas for practical applications of communication research.

### **Communication Skills**

With respect to interpersonal health communication, the most fundamental application rests in the development and implementation of training programs for health care providers (HCPs) (e.g., physicians, nurses, public health professionals) as well as patients to improve the effectiveness of their interactions. Due to the diverse ethnic and

racial composition of patient populations, increasing the cultural competence of HCPs has been a primary focus of training programs. In 1999, the Accreditation Council for Graduate Medical Education (ACGME) included interpersonal and communication skills in the six areas of general competencies for medical students. In response to the new communication competencies required for medical residents to become certified, medical schools have made communication training classes a required part of their curricula. Interdisciplinary teams across the country have designed, and now deliver and evaluate communication skills training programs, incorporating many of the early fundamental findings of researchers such as Korsch and her colleagues.

Outside of the United States, programs like the *Cascade Communication Skills Teaching Project*, have been developed and implemented to deliver evidence-based communication skills training to general practitioners (GPs) in the East Anglia Deanery (Draper, et al., 2002). GPs can continue their own professional development as well as train other GPs. The implications of these programs suggest that fundamental communication skills are teachable, and that these communicative behaviors significantly affect the relationship that develops between HCPs and patients. Additionally, both nonverbal and verbal communication behaviors have been found to lead to improved patient outcomes like greater patient satisfaction, recall, adherence, symptom resolution, and overall quality of health (Beck, Dautridge, & Sloane, 2002). Along with the strong focus on HCP training, improving patient communication skills has also been a priority, with many hospitals and public health programs offering training and educational materials to patients. For example, *The Infant Feeding Study (TIFS)*, a curriculum developed for low-income mothers to delay the introduction of solid foods into infants'

diets, devoted one of its 7 lessons to training mothers on how to communicate with HCPs (Horodynski et al., in press). The clear emphasis on improving communication skills across multiple populations demonstrates the important role that effective communication plays in patient health outcomes.

### **Campaign Research Applications**

There are numerous practical implications of the burgeoning public health campaigns research. The central questions examined in the theoretically-based lab experiments and in the more applied pretesting research involve the relative effectiveness of health message appeals. For example, researchers are seeking to determine whether the public will be more effectively motivated by positive versus negative messages: promises of wellness or safety versus threats of illness or death. They are also examining which dimensions of persuasive incentives are most influential: physical health versus economic (e.g., saving money, losing a job) versus psychological (e.g., achievement, anxiety, regret, self-esteem) versus cognitive (consistency, ignorance, rationality) versus moral (e.g., propriety, guilt, fairness) versus social (e.g., acceptance, embarrassment, altruism, deviance). Furthermore, research is useful in isolating the most effective types of sources, channels, evidence, organization of material, and styles of presentation.

At a more macro level, summative evaluation research provides answers to questions about the overall impact of large-scale campaigns. Although it is difficult to isolate the relative contribution of various components of lengthy multi-faceted efforts to disseminate health information (e.g., community-wide heart disease prevention campaign or national AIDS program), investigators attempt to ascertain the extent to which these comprehensive campaigns influence the knowledge, attitudes, and behaviors of the

public. The following sections describe some of the key concepts that have been investigated, present some principles that have been developed, and summarize the overall impact of health communication campaigns.

### **Guidelines for Designing Effective Health Messages**

Based on the array of theoretical perspectives advanced by the academic community and the increasing body of lessons learned by practitioners, a basic set of principles for devising communication strategies has emerged in recent years (Salmon and Atkin, 2003). The listing below provides a useful summary of some key conclusions from the research literature, beginning with substantive material in message development and proceeding to mechanical and stylistic presentational factors.

**Selection of incentive appeals:** Messages should feature persuasive reasons for adopting the recommended behavior. In health campaigns, there has been an over-reliance on fear appeals that threaten physical harm; these should be supplemented with positive arguments and with economic, social, or psychological incentives (e.g., rather than focusing on overdose death, anti-drug messages should engender concerns about corporate drug-testing or portray a drug-free lifestyle as normal, healthy, and satisfying). It is preferable to use multiple rather than single appeals, within a typical length message, and particularly across a series of messages in a campaign.

**Evidence:** In conveying an incentive appeal, it is usually more effective to provide dramatized case examples rather than statistical documentation supporting claims made in the message (e.g., the tragedy of a car crash victim or the triumph of person who has successfully quit smoking). In processing health information, audiences tend to be

more responsive to depictions of other people's experiences rather than complex and often unimpressive facts and figures.

**One-sided versus two-sided message content:** A two-sided strategy that refutes, downplays, or concedes disadvantages of the target response is generally more influential. This strategy is superior when the drawbacks are familiar and the audience is resistant to change, as is the case with many health topics.

**Source featured in message:** The source is the manifest messenger appearing in messages. Eight types of source presenters are used in health messages: celebrity (e.g., famous athlete, entertainer); public official (government leader, agency director); expert specialist (doctor, researcher); organization leader (hospital administrator, corporate executive); professional performer (standard spokesperson, attractive model, actor); average person (blue-collar male, middle class female); specially-experienced person (victim, survivor, successful role model); and unique character (animated, anthropomorphic, costumed). The effectiveness of each type depends on topic and audience; the relative contribution of source credibility (expertise and trustworthiness), similarity, and likeability vary according to the situation, so selection of the messengers should be guided by formative evaluation research.

**Realism and personalization:** Messages should depict situations and models that enable audiences to connect the material to own experiences; increasing perceived relevance is particularly important in reaching those who do not feel that health messages apply to them.

**Attractiveness and vividness:** Entertaining styles generally enhance message impact; cleverness is an effective feature, but humor produces diverse responses and must

be used carefully. Messages should use lively language, striking statements, fascinating facts, and vibrant visuals (and alluring alliteration).

### **IMPACT OF HEALTH CAMPAIGNS**

Several hundred health campaigns have been evaluated and reported in the research literature over the past three decades. A review by Atkin and Schiller (2002) summarizes the key findings for all major media-based campaigns from 1990-2002. Snyder et al. (2001) performed a meta-analysis of the degree of behavioral impact across a set of 48 media health campaigns (measuring responses of almost 170,000 participants), typically comparing treatment communities with control communities or exposed vs. non-exposed audiences. On the average, behavior change occurs among approximately 7% to 10% more of the people in the campaign sites than those in control communities.

The effects are stronger for adoption of a new behavior (average of 12% adopting practices such as exercise, condom use, and dental care) than cessation of current habits (average 5% ceasing practices such as smoking, binge drinking, and risky sex). Campaigns promoting health services achieve modest impact (average 7% for using services such as cancer screening or hypertension treatment). Across all of these campaigns, the level of exposure to media messages averages about 40% of the target audiences. The size of effects is much greater in communities where higher exposure is achieved.

In assessing health campaign effects, the key determinants are the degree of audience receptivity, the quality and quantity of messages, the dissemination channels, and the larger communication environment. Audiences are more readily influenced on certain topics and target responses (e.g., the designated driver to prevent drunk driving),

while they are resistant in other cases (e.g., reducing binge drinking). Some segments of the audience are much more receptive than others (e.g., casual versus hard core drug users, or children versus teenagers).

Quantitative potency of campaign stimuli is necessary but not sufficient for success. Both the total volume of messages and the prominence of message placement are crucial. Multiplicity of channels, appeals, and executions increases impact, providing there is some uniformity of elements across the various messages in a campaign.

Qualitative potency factors are also important, particularly the incentive appeals featured in the persuasive strategy. Incentives are needed to change attitudes and motivate action; both promises of rewards to be gained or threats of punishment are effective. Credibility plays a significant role in convincing people that the arguments are valid through the use of evidence and credible source presenters. Relevance is another quality that is essential in actively involving the audience and demonstrating how the target response and incentives are pertinent to their own situation. Attractive styles of presentation help attract audience attention, especially when subject matter is dull or distant topics and when quantity is limited.

Media channel effectiveness varies, depending on the target audience and the type of message. Televised PSA spots and newscast/newspaper publicity tend to be most influential, but other channels are effective in certain situations. Interpersonal communication usually augments the impact of media messages, especially via normative and personal influences on attitudes and practices.

The effects of health campaigns are often undermined by counter-messages such as commercial advertising that glamorizes alcohol and tobacco, or entertainment

programming that portrays the pleasures of sex or cocaine use. Occasionally, a consonant message environment will increase impact by reinforcing the campaign messages (e.g., ads for low-fat foods, entertainment depicting the designated driver, or news stories about AIDS deaths).

In conclusion, the overall magnitude of behavioral effects is modest in most campaigns; while a few health campaigns have achieved substantial impact, others have been notably weak. This may be partly due to the difficulty in accounting for effects that occur over lengthy periods of time (e.g., cumulative level of media exposure and developmental issues), which decreases the likelihood of definitively detecting existing effects (Hornik, 2002). It is important to note that the most successful campaigns (e.g., drugs, drunk driving, and smoking) involve receptive sub-audiences, employ compelling rewards and punishments, and high quantities of message dissemination over a sustained period of time. Ineffective campaigns (e.g., safety belts, cancer, safe sex, and responsible drinking) tend to suffer from widespread audience resistance resulting from large immediate sacrifices relative to distant benefits; poor presentation of incentives; low prominence of message placement; lack of relevant message content; unattractive stylistic quality; and counteracting media environment.

### **FUTURE DIRECTIONS**

On the positive side, the health communication field can be currently characterized by a rapidly expanding research literature and increasingly sophisticated conceptual frameworks. However, researchers have a long way to go in advancing both theoretical knowledge and practical applications (Atkin & Arkin, 1990).

One area of interest that resonates for health communication is health literacy, defined as “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions” (U.S. Department of Health & Human Services, 2000). While there is great interest in improving the health literacy of individuals, measurement of health literacy as a construct needs further refinement as current measurement is limited to word recognition tests, reading ability, spelling, fill-in-the-blank, and some arithmetic questions (Davis et al., 1998), which are typically only partially reflective of the conceptual definition of health literacy. A related dimension of health literacy deserving further study is numeracy, particularly as it pertains to the effective presentation of statistical evidence to the lay public and its role in patient decision-making and compliance. With the overwhelming amount of health information available to individuals via the Internet and other media sources, it is essential that researchers determine how to best communicate statistical information to large subgroups lacking numeracy skills.

In many ways, health communication serves as an excellent umbrella to merge researchers across disciplines with community advocates and the lay public at large. When one considers that significant behavior change is a complex process that requires a readiness to change among a target audience, theoretically-driven campaigns and interventions, and environmental support, it is critical for multiple stakeholders to participate in the process. The breast cancer and environment research centers (BCERC), provide one example of a transdisciplinary model where researchers from biology, epidemiology, and communication backgrounds have partnered with breast cancer

advocates to investigate environmental links to cancer (Breast Cancer and Environment Research Centers, 2007). Ultimately, the project will develop health messages designed to inform the lay public about the state of the evidence for breast cancer prevention using communication theory and principles. Alternative models for conducting research and implementing campaigns are becoming increasingly necessary to be able to address complex problems, and communication researchers can serve as the integrating glue for large scale projects.

Perhaps the biggest criticism facing researchers engaged primarily in interpersonal health communication work is that the majority of studies have been conducted in a formal health care or medical setting; most investigations have been restricted to the relationship between physician and patient. When one considers the array of health care workers with whom patients interact (e.g., radiologists, lab technicians, receptionists, etc.), the paucity of interpersonal communication research outside of the physician-patient interaction is revealed. Researchers should also systematically examine health-related interactions between family members, friends, peers, and coworkers, because Americans spend the majority of their time talking about health-related issues and learning health-related information in non-medical settings (e.g. at home, work). Rootman and Hershfield (1994) call on health communication researchers to expand their scope of investigation to recognize the critical role such settings play in the arena of health communication. Research should examine more closely the extent to which health-related communication activities are occurring in health care settings versus social or work-related settings. Moreover, investigators should extend this examination to

encompass the ultimate effects of these context-specific health communication messages on individual behavior.

Health communication researchers should continue in their efforts to identify effective mass and interpersonal communication strategies for motivating individuals to engage in desirable health behaviors. In particular, researchers should be encouraged to isolate potentially unique strategies necessary to motivate individuals that have been disenfranchised in society (e.g., the homeless, individuals living in poverty, individuals of color, members of the gay and lesbian communities). Media-oriented scholars and practitioners should widen their focus beyond the personal level to encompass strategies designed to change societal-level environmental conditions within which individuals make health decisions. Wallack *et al.* (1993) pioneered the “media advocacy” approach for using mass communication to apply pressure for changes in policies that will promote public health goals. Finally, the intersection between technology and health has only begun to be investigated with telehealth applications in health care, health information seeking and provision on the Internet, and health education gaming opportunities.

In conclusion, despite health communication’s applied focus and warnings voiced concerning the uniqueness of the context rather than phenomena, health communication researchers should generate theories about the nature and process of health communication. Only through such consideration and reflection will health communication scholars understand the inextricable link between communication and health.

### **Key Resource Books**

A large number of monographs, textbooks, and readers have been published on the subject of health communication, primarily by scholars in the areas of mass communication, interpersonal communication, social psychology, and public health. This section briefly identifies the basic content of 16 key books published since 1990: Atkin and Wallack (1990) examine the intersection of mass communication and public health; Backer, Rogers, and Sopory (1992) provide guidelines for designing health campaigns; Crano and Burgoon (2002) assemble a series of theoretical perspectives and research studies focusing of the role of the media in drug abuse prevention; Edgar, Noar and Freimuth (2007) focus on public and private communication about HIV/AIDS in the US and other countries; Hornik (2002) assembles 16 major studies using various methods to investigate health communication programs in many nations; Kotler et al. (2002) discuss social marketing approaches to health; Kreuter et al. (1999) describe how media technologies enable production of tailored health messages; Maibach and Parrott (1995) address theoretical and practical approaches to health message design; Ray (2005) covers a wide variety of practical case studies in healthcare, family, and societal settings; Rice and Atkin (2001) feature many health-related chapters in a general communication campaign book; Rice and Katz (2000) analyze changes in health care, information seeking, and support resulting from the internet technologies; Singhal et al. (2004) trace the history and review international cases of the expanding practice of entertainment-education to promote health. Thompson, Dorsey, Miller, and Parrott (2003) present a comprehensive handbook with sections on patient-provider interaction, the mass media, and community and organizational issues; Tones and Green (2004) present an

international perspective on the complexities of health promotion strategies; Witte, Meyer and Martell (2001) provide a detailed blueprint for constructing effective health messages. In addition, there is an elaborate manual presenting useful guidance on the design of health programs published by the federal government (U.S. Department of Health and Human Services, 2003).

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