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ABSTRACT

This paper examines the many assertions made in the health communication literature about the importance of communication as an essential process in promoting effective health care. If these assertions are true then researchers should be able to demonstrate the ways that communication influences the accomplishment of health care goals--how communication influences health outcomes. The paper examines the links between health communication and health outcomes, examines the health outcomes literature, and proposes a conceptual model of the role of communication in achieving advantageous outcomes in health care and health promotion based upon the systems transformation model. The paper concludes that the model can serve as a template for both guiding research on communication and health outcomes and for directing the health communication activities of interdependent participants in the modern health care system to promote desired health outcomes in health care/health promotion efforts. Contains 44 references. A table listing specific health outcomes by category (according to the cognitive, behavioral, and psychological effects on individuals) and a figure illustrating the model are included. (Author/RS)

A Conceptual Model of Communication and Health Outcomes

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ABSTRACT

This paper examines the many assertions made in the health communication literature about the importance of communication as an essential process in promoting effective health care. If these assertions are true then researchers should be able to demonstrate the ways that communication influences the accomplishment of health care goals - how communication influences health outcomes. We examine the links between health communication and health outcomes, examine the health outcomes literature, and propose a conceptual model of the role of communication in achieving advantageous outcomes in health care and health promotion based upon the systems transformation model. The model can serve as a template for both guiding research on communication and health outcomes and for directing the health communication activities of interdependent participants in the modern health care system to promote desired health outcomes in health care/health promotion efforts.

A Conceptual Model of Communication and Health Outcomes

INTRODUCTION

Health promotion and maintenance are the primary goals of the modern health care system and an enormous amount of time, energy, and financial resources have been devoted to promoting and maintaining individual and public health in society. Major medical centers have been built and staffed, powerful new health care therapies, technologies, and pharmacological agents have been developed and applied, and a wide range of different health care providers have received intensive specialized training to advance the goals of health promotion and maintenance. Yet, we contend that all of these potent health care resources are of limited utility if the providers and consumers of health care do not communicate effectively in the health care delivery process.

Effective health care and health promotion are guided by relevant health information. Communication is clearly the primary process used in health care to disseminate and gather relevant health information (Kreps, 1988b). For example, relevant health information guides effective diagnosis of health care problems. While medical technologies provide health care professionals with a great deal of diagnostic information, health care providers inevitably depend on gathering information directly from clients and those who are familiar with clients' lifestyles through the use of interviews. Similarly, health care professionals depend upon communication to provide their clients with information about prescribed treatment strategies. How can clients follow prescribed health care regimens if the details of these regimens are not clearly explained to them? Consumers also need to communicate to gather relevant health information from different formal and informal sources to

identify treatment options and to make knowledgeable treatment decisions. Communication is essential in the provision of social support (by health care providers, participants in formal or informal support groups, family members, or friends) to help the afflicted cope with and confront their health problems. Communication is also fundamental in coordinating the health care treatment activities of various interdependent providers and consumers.

COMMUNICATION AND HEALTH CARE

If the assertions made about the importance of communication as an essential process in promoting effective health care are true then we should be able to demonstrate the ways that communication influences the accomplishment of health care goals - how communication influences health outcomes. Before examining the link between health communication and health outcomes, we first must clarify what is meant by health outcomes.

Health outcomes research has taken a number of different paths in recent years. Most of us are familiar with the general health trends that are tracked by public and private agencies. Mortality and morbidity statistics plotted by epidemiologists are regularly reported to various constituencies and to the general public. Although sometimes only indirectly related to specific health outcomes, these trends reflect a general profile of health status that are used for policy making and political maneuvering. For example, the Centers for Disease Control and Prevention, the National Institutes of Health, and the World Health Organization regularly report statistics that profile health outcomes as a strategy for developing policy on Capital Hill or in the White House.

It is understandable that the escalating costs of health care have captured the attention of everyone from the President of the United States (and the first lady) to the medical delivery system, to the consumers of

health care, precipitating a national focus on the efficacy of health care. Effectiveness, efficacy, and value are generally thought to depict the general outcomes of medical care. Yet, it is specific health outcomes that constitute a genuine assessment of health care delivery. As a result, increasing attention is being focused on the relationships among antecedent, process, and outcome variables. Conceptual and operational assessments of health outcomes, therefore, are and will continue to occupy the attention of medical researchers as they seek plausible answers to tough questions regarding the ultimate effects of health care.

Communication strategies among health care professionals, patients and their support groups, and governmental agencies should play a key role in determining and assessing health outcomes. However, with few exceptions (Greenfield, Kaplan, & Ware, 1985; Stewart & Roter, 1989), a focused examination of communication and health outcomes has not been reported in any systematic way. As a critical component of disease prevention, health restoration, and medical recovery processes, communication strategies must command increasing attention among health professionals and scholars as outcomes are examined. It is noted that not all health care delivery (prevention and restoration) is provided by formal means (e.g., paid health care professionals). Spouses, parents and other family members, and advocates such as friends, can play important roles during communication exchanges that lead to productive health outcomes, although the specific impact of these formal and informal communication systems on health outcomes is not clearly understood at this time. The time has come to advance research that illuminates the important relationship between communication and health outcomes.

HEALTH OUTCOMES RESEARCH

A preliminary step toward exploring communication and health outcomes involves a general description of the literature on medical outcomes. Outcomes have been the subject of medical researchers since the early 1800s when a physician named Pierre-Charles-Alexander Louis in Paris examined statistics as a means of assessing the success of certain medical treatments (Cleary, 1990). Since that time, numerous strategies and methodologies have been suggested for determining the quality of health outcomes. Donabedian (1980) is often cited for his work on health outcomes, and suggests three approaches for assessing quality: examining the structure of the delivery system, analyzing the process of medical care, and observing medical outcomes. Most systems for assessing outcomes focus on process (Berwick, 1989; Cleary, 1990), although Donabedian argues for a greater concentration on the relationship between process and outcomes.

One of the more recent programs at the national level in assessing medical outcomes is the Effectiveness Initiative sponsored by the Health Care Financing Administration (HCFA) of the Department of Health and Human Services. This program identified the following objectives as its main thrusts (Heithoff, Lohr, & Rettig, 1990, p. 3):

(a) to assess the merits of alternative health care interventions;

(b) to provide information that would help clinicians in the management of their patients;

(c) to assist and improve the Medicare program's quality assurance efforts; and

(d) to aid policy makers in allocating Medicare resources.

The information collected by HCFA is voluminous and overwhelming, primarily focusing on mortality profiles of hospitals. The success of this initiative

is unknown since hospitals are highly motivated to respond, in kind, to the results of the data reported by HCFA (Berwick, 1989).

Identifying Outcomes

Depending on the perspective taken and the sources cited, health outcomes can be described in various forms. Some researchers prefer to conceptualize outcomes according to temporal effects (short- versus long-term; Stewart & Roter, 1989). Other sources are inclined to characterize outcomes as statistical profiles (see above). Still other experts favor an approach that describes outcomes according to their relationship with the alternatives taken by patients and providers (Mully, 1990) or the processes involved in health care delivery (Eraker, Kirscht, & Becker, 1984; Levine, Green, Deeds, Chwalow, Russell, & Finlay, 1979; Morisky, Levine, Green, Shapiro, Russell, & Smith, 1983). Ultimately, it is the consumer, patient, or health target that benefits from health delivery processes (rather than bureaucrats), and it seems to us that outcomes should be conceptualized according to their impact on the individual. Based on a synthesis of previous research (see above), we propose that health outcomes can be categorized according to the cognitive, behavioral, and physiological effects on individuals. In Table 1 we present those specific outcomes as they are classified by our scheme.

MEASURING OUTCOMES

The measurement of outcomes appear in various forms ranging from assessments at the individual level, to evaluation of outcomes for a particular office or organization, to aggregate outcomes pertaining to a population of patients or health consumers. Common to all targets of outcome assessment are the following parameters (Nelson, 1990, p. 208): valid and reliable measures of outcomes, systematic, repeated assessment of outcomes, convenient administration of assessment procedures, formalized links between

TABLE 1

HEALTH OUTCOMES

Cognitive

Understanding/Knowledge

Diagnostic Information

Commitment to Health

Adjustment of Health Beliefs

Confidence, Satisfaction, and Trust

Self-Efficacy

Managed Expectations, Fears, and Anxieties

Behavioral

Compliance With Regimen

Adoption of Prevention/Health Promoting Behaviors

Communication Competence

Team/Partnership Building

Relational Quality

Partner Competence/Satisfaction

Assertiveness/Motivation

Physiological

Disease Prevention

Recovery and Recuperation Processes

Maintenance of Desired Health

Long-Term Survival

Quality of Life

outcome results and improvement efforts, and comparing results with other providers, organizations, etc.

Problems with validity are often mentioned as serious shortcomings of outcomes research, however, Mully (1990) states that the weaknesses usually cited for this type of research (internal validity) are more than made up for by the strengths and advantages (external validity, practical implications) offered for the ultimate users. According to this perspective, as long as the antecedent, intervention, and outcome processes are similar across trials, the pragmatic results accruing from this type of research can be highly beneficial.

THE RELEVANCE OF COMMUNICATION AND HEALTH OUTCOMES

There is a growing body of research aimed at investigating communication as an important variable in the health care and delivery process (Kreps, 1988; Kreps & Thornton, 1992; Reardon, 1988; Stewart & Roter, 1989). There is much less research to draw upon if the concentration shifts to communication and health outcomes (Pettegrew, 1988). As one of the younger areas within the discipline of communication, health communication research has spent a great deal of time and effort cutting its teeth on the process of medical care delivery, particularly provider-patient relationships and media campaigns, with less attention devoted to actual links between communication and health outcomes. A few exceptions to this claim can be found in studies that examined communication and intentions to comply with treatment regimen (O'Hair, 1986; O'Hair, O'Hair, Southward, & Krayer, 1987) communication and satisfaction (Burgoon, Parrott, Burgoon, Birk, Pfau, & Coker, 1990; Lane, 1983; Street & Wiemann, 1987; Street & Wiemann, 1988), communication and compliance (Bartlett, Grayson, & Barker, 1984; Davis, 1968; Lane, 1982, 1983; Willson & McNamara, 1982), and communication and functional and physical

outcomes (Bass, Buck, Turner, Dickie, Pratt, & Robinson, 1986; Morisky, et al., 1983; Starfield, Wray, Hess, Gross, Birk, D'Lugoff, 1981).

Additional research that focuses on communication and health outcomes is needed for a number of reasons. There are practical reasons for this type of research. Outcomes research provide a tangible means for providing feedback to individuals who use communication to influence health status. For example, outcomes research can help health care practitioners enhance their understanding of how communication processes can influence the effectiveness of their efforts. Similarly, this type of research also is relevant to consumers of health care who can use the information this research generates in strategically directing their own communication to promote their own health and the health of friends and family members seeking health care.

Not only do health care providers and consumers benefit from health outcomes research, but the communication discipline can also benefit from research that focuses on the relationship between theory and practical application that culminates in tangible results (Kreps, Frey, & O'Hair, 1991; O'Hair, Kreps, Frey, 1990). Health outcomes research can validate the relevance of communication research and knowledge. Health care professionals, and other professionals, will be more likely to consult the literature in communication when they discover research findings that are useful for their needs. In summary, research examining the influences of communication on health outcome can enhance both health care practice and health communication inquiry.

A TRANSFORMATION MODEL OF HEALTH OUTCOMES

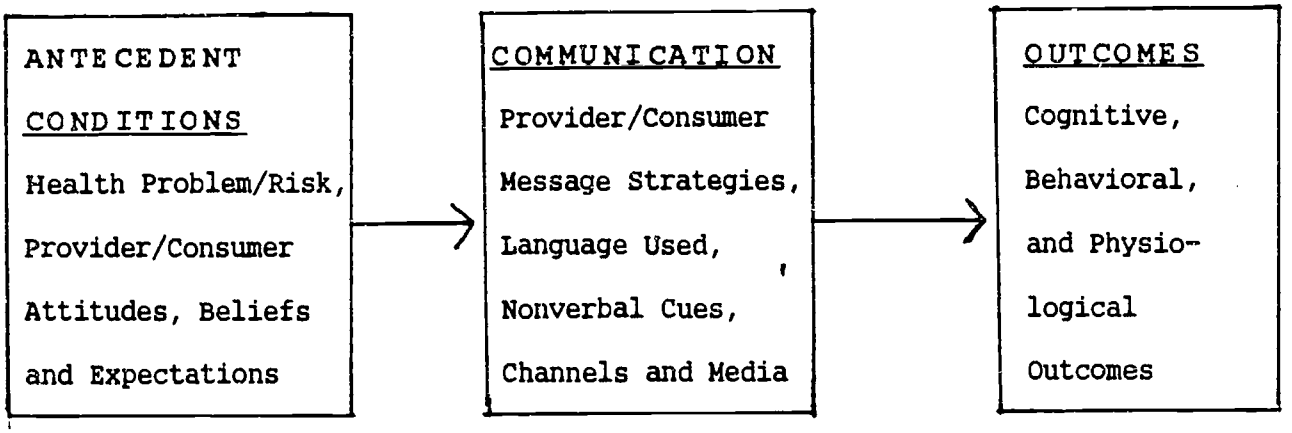
We propose a systems theory based model of health care delivery/health promotion to guide research on communication and health outcomes. See Figure 1 for the "Transformation Model of Communication and Health Outcomes." The

model is based upon the systems theory transformation model of input-process-output (Berrian, 1968; Bertalanffy, 1968). According to the transformation model, inputs are the antecedent conditions that are the raw materials that energize systems activities, processes are the activities performed by functional components of the system to accomplish system goals, and outputs are the actual outcomes of system activities (Kreps, 1990). In our model the antecedents of health care/health promotion efforts are the inputs, the communication activities that consumers and providers of health care engage in are the processes, and the outcomes of health care/health promotion efforts are the outputs. The model suggest that in examining the influences of communication on health outcomes researchers should recognize the ways antecedent conditions, such as the nature of the health problem/risk and provider and consumers attitudes, beliefs, and expectations influence health care delivery. Researchers should examine health communication behaviors, evaluating the ways verbal and nonverbal messages are used to establish provider and consumer roles, develop provider-consumer relationships, and elicit/disseminate relevant health information. In assessing outcomes, researchers should recognize the influences of communication on cognitive, behavioral, and physiological outcomes.

This model derives great explanatory power by building upon general systems theory. It illustrates several important systems theory concepts and principles, such as: multiple hierarchical levels of organization; the pursuit of negative entropy through functional integration and interdependence of systems components; wholeness, nunsummativity, and synergy; and equifinality. Let us examine how these systems concepts apply to the transformation model of health outcomes. The systems principles incorporated in the Transformation Model of Communication and Health Outcomes provide

FIGURE 1

THE TRANSFORMATION MODEL OF COMMUNICATION AND HEALTH OUTCOMES



important perspectives for evaluating the effectiveness of health care/health promotion efforts.

The Transformation Model of Communication and Health Outcomes clearly illustrates the ways communication is used in organizational life to resist the natural degradation and disorganization of entropy (achieving negative entropy) by transforming relevant inputs (antecedent conditions) into advantageous outputs (health outcomes). It is important to recognize that systems processes must be functionally integrated to effectively transform systems inputs into advantageous outputs. In the model this means that communicators in health care/promotion must be able to work interdependently to share relevant information, developing cooperative relationships, and coordinating health care/promoting activities to produce desired health outcomes. Furthermore, the systems concept of nonsummativity suggests that when components of systems are functionally integrated they illustrate wholeness (they are more than the mere sum of their parts) and generate extra energy for the system (synergy). This means that coordination between participants in health care/health promotion efforts can enhance health outcomes through effective communication.

The systems principle of equifinality suggests that when systems confront situations where there are diverse inputs, they need to innovate system processes to accomplish desired outputs. Since the antecedent conditions encountered in health care are based upon the idiosyncratic characteristics of individual health care providers and consumers the inevitably will differ from one health care/promotion situation to another, making it incumbent upon participants in the health care system to adapt their communication strategies (messages, channels, media, etc.) to resist entropy and achieve desired health outcomes. Therefore, there are no golden rules for

effective health communication in every situation. Health communicators must adapt to the specific individuals and situations encountered in health care/promotion.

While one might assume that the model illustrates only one level of health care delivery, such as the interpersonal context of health care, where health care providers and consumers communicate to share relevant health information and develop cooperative relationships, the model can be readily applied to multiple hierarchical levels of health care and health promotion. For example, the model applies equally well to the intrapersonal level of health care, illustrating the communicative processes where individuals gather information to confront, work through, and make relevant decisions about their health problems. It powerfully models the role of communication at the group level of health care, where members of a health care team deliberate to reach important health care treatment decisions. It clearly describes the important functions of communication at the organizational level of health care, where members of modern health care systems share relevant information to coordinate the use of different organizational resources, personnel, and technologies to provide health care services. It also describes the role of communication at the societal level of health promotion, where campaign planners design and disseminate relevant message strategies using strategic communication channels and media to help target audiences resist health threats. The model provides a good template for designing and conducting research that examines the influences of communication on health outcomes at multiple hierarchical levels and for strategically directing the health communication activities of interdependent participants in the modern health care system to promote desired health outcomes in health care/health promotion efforts.

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