

How does communication heal? Pathways linking clinician–patient communication to health outcomes

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ABSTRACT

Objective: Although prior research indicates that features of clinician–patient communication can predict health outcomes weeks and months after the consultation, the mechanisms accounting for these findings are poorly understood. While talk itself can be therapeutic (e.g., lessening the patient's anxiety, providing comfort), more often clinician–patient communication influences health outcomes via a more indirect route. Proximal outcomes of the interaction include patient understanding, trust, and clinician–patient agreement. These affect intermediate outcomes (e.g., increased adherence, better self-care skills) which, in turn, affect health and well-being. Seven pathways through which communication can lead to better health include increased access to care, greater patient knowledge and shared understanding, higher quality medical decisions, enhanced therapeutic alliances, increased social support, patient agency and empowerment, and better management of emotions.

Conclusion: Future research should hypothesize pathways connecting communication to health outcomes and select measures specific to that pathway.

Practice implications: Clinicians and patients should maximize the therapeutic effects of communication by explicitly orienting communication to achieve intermediate outcomes (e.g., trust, mutual understanding, adherence, social support, self-efficacy) associated with improved health.

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1. Introduction

One of the most interesting, but least understood findings in health communication is provided by studies that have established an association between clinician–patient communication and patient health outcomes [1–6]. Yet, researchers seldom try to test hypotheses explaining how communication might impact patient health.

The purpose of this article is three-fold. First, we offer a brief critique of current approaches to the study of communication and health outcomes. Second, we identify specific pathways through which communication can lead to better health. Finally, we propose a research agenda to discover mechanisms that can explain and influence ways in which communication affects health. Relevant health outcomes include disease markers (e.g.,

blood pressure, tumor markers), survival, and quality of life (e.g., functioning and well-being in physical, psychological and social domains).

2. Clinician–patient communication and outcomes: the state of the science

Research linking communication to improved health outcomes typically falls into two categories. First, a number of RCTs have examined the effects of interventions designed to alter clinician and patient communication and decision-making in medical encounters [7,8]. In a review of these studies, Griffin et al. [8] demonstrated that communication interventions generally promoted physician and/or patient communication behaviors thought to be desirable and effective (e.g., patients asking more questions; physicians using more patient-centered communication), but less than half (44%) of the studies were associated with improved outcomes. Moreover, similar interventions had different effects across studies, likely because the outcomes were measured differently and were associated with small sample sizes.

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The second group consists of cross-sectional, descriptive studies that have reported correlations between physician and patient communication behaviors and different health outcomes. For example, various features of patient-centered communication – physicians' clear explanations, physician compassion, active patient participation, and patient involvement in decision-making – have correlated with lower blood pressure [9], less patient anxiety [10], less organ damage among patients with systemic lupus erythematosus [11], and higher quality of life among breast cancer patients [12]. However, other studies have found null to mixed results regarding relationships between communication and health outcomes [12–14].

The inconsistency of these findings from both RCT and cross-sectional studies is likely due to a number of factors. First, research to date has failed to explicate processes and fundamental pathways linking communication to outcomes. As most of the research is correlational, causal explanation can only be inferred. For example, in one of our own early studies [15], patients with diabetes had poorer metabolic control after consultations with nurses who used more controlling communication (e.g., interruptions, directives, disagreement). One might infer that the nurses' dominance prevented patient involvement in decision-making which in turn led to less adherence and understanding of the treatment regimen. However, an alternative explanation may be that nurses were more controlling with less cooperative and adherent patients (i.e., patients at higher risk of poor control). Thus, it is not clear which came first, patient lack of follow-through or nurse's controlling behavior, or whether this represented a cycle of escalating dysfunctional communication.

Second, it remains unclear what elements of communication are associated with specific outcomes. Several researchers have identified key functions of patient-centered communication including information exchange, managing uncertainty, enabling patient self-management, responding to emotions, fostering the clinician–patient relationship, and making decisions [3,16,17]. However, the manner in which a particular communication function might or might not lead to improved health remains untested. For example, in a RCT of a clinician communication intervention to promote physician active listening and negotiation skills with their patients with diabetes, patients in the intervention group reported greater satisfaction with communication and greater well-being. However there was no effect on metabolic control, and these patients tended to gain more weight than the control group [18]. In short, the intervention led to patients having better feelings about their health, but no improvement in clinical markers of disease and poorer management of risk factors. Thus, a general statement that better outcomes are associated with better communication would be uninformative because it fails to specify which elements of communication are associated with which health outcomes.

Third, researchers rarely address, if even acknowledge, the need to situate clinician–patient communication within the broader context of physiological, personal, and social determinants of health. Once the patient leaves the consultation any number of factors may affect subsequent health. The communication that led to a decision to undergo chemotherapy would be associated with a positive health outcome if the patient had transportation to receive the treatment, could afford the treatment, was able to tolerate the treatment, and the treatment was effective in curing the cancer. Yet, that same communication might not lead to a good outcome if the patient terminated treatment because of side effects, had unreliable transportation, substituted questionable herbal remedies for chemotherapy, or the cancer did not respond to treatment. Research to date has not adequately examined how the relationship between communication and health may be mediated through the effects of communication on behavior change,

adherence, and self-efficacy or how communication might moderate the relationship of well known social determinants of health, the nature of which will depend on the clinical context.

Fourth, measurement matters. At the most basic level, different operational and conceptual definitions of the variables to be measured are problematic. For instance, two recent reviews revealed that there is no shared definition of shared decision-making [19,20]. Further, different methods of measuring communication (e.g., self-report vs. observer coding) may generate very different assessment of the behavior [21]. For example, even though an observer coding system indicated that the clinician provided treatment information, it may not have been understood by the patient, or perceived as having been informative [22]. Similarly, patient reports of involvement in decision-making may not correspond with observers' judgments about whether participation had occurred [23].

Explaining how and why communication contributes to health outcomes requires a deeper understanding of how specific, well-defined aspects of communication are linked to specific outcomes, as well as an understanding of how contextual factors – within the clinical setting as well as family and social factors extrinsic to the clinical setting – moderate or mediate the effects of communication on health. This requires that investigators move beyond descriptive conceptual frameworks to formulate theoretical explanations linking communication to health. Moreover, researchers must also recognize and try to account for the fact that outcomes, especially those related to cancer and chronic disease, are likely less influenced by a single clinician–patient encounter, and more by the cumulative effect of the patient's communication over time with their physicians, others on the health care team, families, and friends.

3. Linking communication to improved health

3.1. What improves physical health?

Physical health status includes pain and other symptoms, disease markers (e.g., hemoglobin A1C, blood pressure, weight, prostate-specific antigen), functional capacity (e.g., ability to walk) and subjective self-ratings of health. There are essentially four types of therapeutic regimens that lead to improved physical health—chemical (e.g., medication), mechanical (e.g., surgery), behavioral (e.g., smoking cessation, diet) and psychological (e.g., placebo effects, cognitive therapy). For example, a patient could experience improved physical health because he or she received medication that controlled the disease, received necessary surgical intervention (e.g., a stent), adopted healthier exercise routines, or believed that the treatment was effective [24,25]. Thus, communication could lead to better physical health if conversation between clinician and patient helped to identify the correct diagnosis and appropriate treatment plan, led to following through with treatment or self-care, and/or affected patients' health beliefs.

3.2. What improves psychosocial aspects of health?

Psychosocial health is a function of the degree to which an individual has more positive beliefs and feelings, harbors fewer negative beliefs and feelings (e.g., worry, anger, anxiety, fear, despair), and has a well-functioning social network. Psychological well-being, vitality, self-efficacy, and social functioning [26] are typically measured by patient (sometimes family) self-report. Positive psychosocial outcomes can be the direct result of communicative encounters (including those with clinicians) from which patients feel known, validated, hope, worthy, reassured, and comforted [27,28] and indirectly through diagnosis and treatment

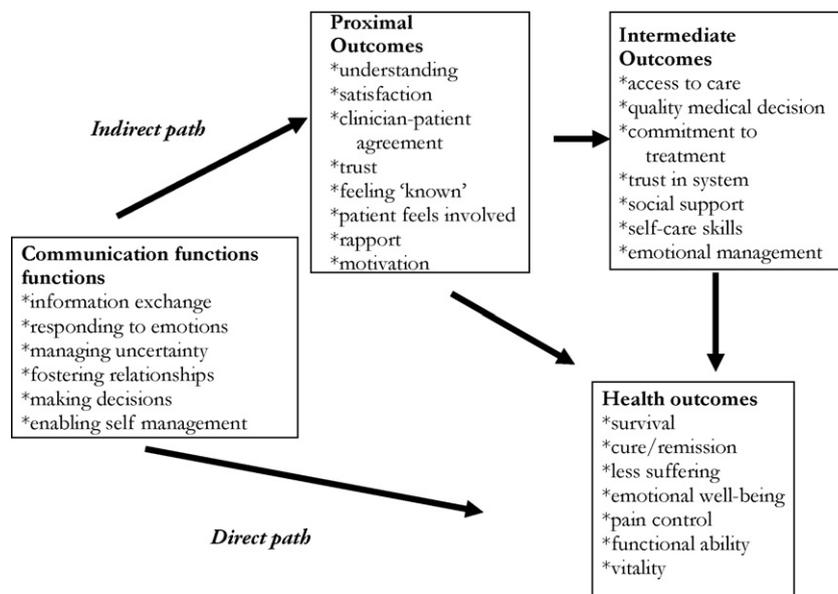


Fig. 1. Direct and indirect pathways from communication to health outcomes.

of mental disorders (e.g., depression) and reinforcing social support.

4. Communication pathways to improved health outcomes

To understand why communication may lead to better or worse health outcomes, researchers must identify the pathway through which communication influences health and well-being. As shown in Fig. 1, the pathways through which clinician–patient/family communication can influence health outcomes may be direct. For example, talk can be therapeutic in that a physician who validates the patient’s perspective or expresses empathy may help a patient experience improved psychological well-being—fewer negative emotions (e.g., fear, anxiety) and more positive ones (e.g., hope, optimism, and self-worth) [10,29,30]. Talk may affect physical symptoms as well. In one study, for example, empathic communication lowered physiological arousal and pain in patients with irritable bowel symptoms [31]. Finally, nonverbal behaviors, such as touch or tone of voice, may directly enhance well-being by lessening anxiety or providing comfort [32–34].

However, in most cases, communication affects health through a more indirect or mediated route through proximal outcomes of the interaction (e.g., satisfaction with care, motivation to adhere, trust in the clinician and system, self-efficacy in self-care, clinician–patient agreement, and shared understanding) that could then affect health or that could contribute to the intermediate outcomes (e.g., adherence, self-management skills, social support) that lead to better health (see Fig. 1) [1,3]. For example, a clinician’s clear explanations and expressions of support could lead to greater patient trust and understanding of treatment options (proximal outcomes). This in turn may facilitate patient follow-through with recommended therapy (an intermediate outcome), which in turn improves a particular health outcome (e.g., disease control, emotional well-being). Or, patient participation in the consultation could help the physician better understand the patient’s needs and preferences as well as discover possible misconceptions the patient might have about treatment options. The physician can then communicate risk information in a way the patient understands which in turn could lead to a mutually agreed upon, higher quality decision that best matches the patient’s circumstances.

In a recent National Cancer Institute monograph [3], we proposed that clinician–patient communication can contribute to improved

health through at least seven ‘pathways’—access to needed care, increased patient knowledge and shared understanding, enhancing therapeutic alliances (among clinicians, patient, and family), enhancing emotional self-management, activating social support and advocacy resources, increasing the quality of medical decisions (e.g., informed, clinically sound, concordant with patient values, and mutually endorsed), and enabling patient agency (self-efficacy and empowerment). Although these pathways were explored with respect to cancer care, they are certainly applicable to other health conditions as well.

4.1. Access to care

In the USA, access to care is poor for many patients, particularly for poorer, less health literate, and uninsured patients [35]. While barriers to care often are economic, they also involve other factors. For example, many patients may not be aware that a problem requires medical attention. Many more may need assistance navigating a complex health system. Clinicians can contribute to improved access to care by not only communicating the need for a test or treatment, but also providing information about where to get specific health services, facilitating collaboration among health professionals, and advocating on behalf of the patient for needed clinical and community services [35–37]. Patients, in turn, may need coaching to disclose barriers to access (e.g., lack of transportation, family resistance) and engage with clinicians in suggesting potential solutions.

4.2. Patient knowledge and shared understanding

Patients must have an understanding of illness, risks, and benefits of various treatment options in order to make informed decisions about medical care [38]. Clinicians also need to understand a patient’s values, preferences, and beliefs about health. However, achieving a shared understanding can be difficult because clinicians and patients often understand health and illness through different lenses [39,40]. Clinical evidence is typically in the form of probabilities applicable to populations, not individual patients [41]. Patients’ understandings are idiosyncratic and based on the combination of personal experiences, interpretation of scientific evidence (e.g., acquired through the mass media or internet), and ‘common sense’ understandings of

health and illness [42] (e.g., hypertension medicines are taken when feeling tense [43]; surgery can spread cancer [44]). Similarly, clinicians' 'truths' are a mixture of personal experience, unexamined heuristics, and clinical evidence.

Both clinicians and patients need the skill to present their own frame-of-reference, and see the others' point of view, as well as the ability to explore their own health beliefs, understand relevant clinical evidence, and articulate their values and preferences [45]. When successful, effective management of information can increase satisfaction [46], facilitate participation in the consultation [47], increase the patient's ability to cope with illness [48], promote greater trust in their clinicians [49], all of which could increase the patient's commitment to treatment [50].

4.3. Enhancing the therapeutic alliance

The therapeutic alliance includes the interrelationships among the patient and multiple health care professionals, friends, family members, and caregivers [51,52]. Indicators of a strong therapeutic alliance include mutual trust among all parties, coordinated and continuous health care, and the patient's perception of feeling respected and cared for [3]. These alliances are 'therapeutic' because the quality of these relationships can affect health outcomes in two respects. First, a patient's perception that he or she has good care, will not be abandoned, and is understood can promote emotional well-being [53–55], especially when facing serious and life-threatening illness [56]. Second, a patient's trust in his or her clinicians and the health care system can have an indirect effect through better continuity of care, patient satisfaction with decisions, and patient commitment to treatment plans [57–60]. The clinician–patient alliance is enhanced when clinicians are optimally informative and show empathy with the patient's circumstances, when patients have an opportunity to express their concerns, and when the patient receives consistent messages and coordinated care from the clinical team [3].

4.4. Enhancing patients' ability to manage emotions

A patient's concerns about health may elicit a number of negative emotions (anger, sadness, fear, worry) that can threaten emotional well-being and even physical health [61,62]. Clinicians can help patients manage these emotions in ways that directly or indirectly attenuate or alleviate suffering. First, providing clear and thorough explanations about health and treatment options can help patients gain a greater sense of control, be more hopeful, and manage uncertainty [30]. Second, eliciting, exploring, and validating patients' emotions can reduce patient anxiety and depression [10,63–65]. Third, communication that enhances the patient's sense of worth, confidence, and hope may confer meaning, motivation, and energy needed to pursue work or leisure activities, and allow the patient to enjoy greater quality of life despite the disease [66]. Success in helping patients manage negative emotions is often difficult because clinicians are not particularly good judges of the emotions patients are experiencing [61,62,67,68], patients often try to hide or mask their distress, and some patients think the discussion of negative feelings fall outside the boundaries of clinician–patient relationships [69–71]. Clinicians can facilitate the patient's ability to manage emotions by presenting diagnostic and treatment information clearly and honestly [72], by showing interest in the patient's life [73], by attentive listening, and by validating patient's expressions of feelings [65,74].

4.5. Improving family and social support

Social support consists of patient's access to emotional, fiscal, and tangible resources within their social network [75]. Social

support can affect physical health and quality of life in several ways. First, the perception of having social support may directly affect physiological processes such as lowering arousal and reversing the effects of overactivation of hypothalamic-pituitary axis and psychologically induced immunomodulation [76,77]. Social support can enhance a patient's emotional well-being by providing a sense of connectedness with others and opportunities to discuss difficult situations [78]. Social support networks can also provide instrumental help (e.g., transportation), financial resources, encouragement, and advocacy in gaining access to needed health services [79,80].

Although social support typically is treated as a resource external to clinical settings, clinician–patient communication can contribute to social support in several ways. First, the clinician's communication itself is a form of support that can offer encouragement, praise, reassurance, advice, and advocacy [3]. Second, clinicians can talk with patients about ways to strengthen existing social networks to provide tangible help, emotional support; they can also suggest new sources of support such as online support networks [81]. Finally, clinicians could potentially counter, or at least help address the effects of 'negative' social support (e.g., peer pressure to engage in unhealthy behaviors; well-intentioned nagging) [82].

4.6. Enhancing patient empowerment and agency

Clinician–patient communication also can improve health by empowering patients to be active, capable agents in managing their health. Patient 'agency' requires skills across the spectrum of participation in care, ranging from active participation in medical encounters and decision-making to self-care skills for managing everyday health-related activities [83]. Patient involvement can lead to higher quality decisions that are better suited to the patient's unique needs and circumstances. Clinicians can facilitate patient involvement in the decision-making process by helping patients actively seek information, clarify treatment goals [84,85], and express concerns and feelings [86]. Topics discussed during the clinician–patient conversation could focus on autonomy, self-efficacy, specific skills in managing one's health, and where to get access to self-care resources (e.g., websites, community groups) that in turn lead to greater ability and motivation to solve health-related problems, cope with complications, and follow-through with treatment [87–90]. The importance of enhanced patient agency has been demonstrated in several studies. For example, cancer patients' sense of control over disease has been linked to emotional well-being and coping during survivorship [12,91]. In diabetes, more effective self-management has led to better metabolic control and improved functioning [92].

4.7. Higher quality decisions

Patients will more likely experience better health when they and clinicians reach decisions that are based on the best clinical evidence, are consistent with patient values, are mutually agreed upon, and are feasible to implement [3,93,94]. Charles et al. [47] propose that medical decision-making proceeds through three stages—information exchange, deliberation, and making the decision. Information exchange consists of sharing clinician and patient perspectives, such as the clinical evidence pertinent to the patient's condition and the patient's expression of beliefs, values, preferences and expectations. Deliberation involves discussion focused on finding common ground, reconciling differences of opinion and beliefs, addressing uncertainty, and achieving a shared understanding of the patient's health status and the risks and benefits of different treatment options. The final stage is making the decision. Although Charles et al. contend that these three

stages are distinctively different with respect to paternalistic, informed, and shared decision-making styles, we [3] argue that there can be considerable flexibility as one proceeds through these stages. For example, some patients may be actively involved in information exchange and deliberating, but choose to defer the decision to the clinician; other patients may be relatively passive by listening to the clinician's information and opinions, but choose to make the decision themselves.

Clinician and patient efforts to achieve high quality decisions often face challenges. First, many decisions are complicated by the lack of clinical evidence or evidence that is ambiguous or inconsistent [45]. For example, different experts may give conflicting recommendations (e.g., surgeons favor surgery for prostate cancer, while radiation oncologists favor radiation therapy), and patients may be forced to choose among different sources of authority. Second, many patients have difficulty in understanding clinical information, and clinicians may struggle to place that information in the context of the patient's unique health situation. Finally, clinicians and patients often understand risk differently. Clinicians typically approach risk analytically by focusing on epidemiological evidence, while patients may perceive risk based on personal experience and associational meanings [95]. Lack of shared understanding of risks and benefits associated with different treatments and how the treatment options fit within the patient's values and life circumstances may lead to medical errors, treatment plans that are not feasible, and lower patient commitment to treatment [96].

Thus, the decision quality pathway to better health requires clinical encounters where patients (and families) and clinicians present and understand one another's perspectives, find common ground, reconcile differences, achieve consensus on treatment and, when differences cannot be reconciled, negotiate a mutually acceptable plan.

5. Directions for future research

Future research on the relationship between communication and outcomes should strive to identify the particular pathways through which the events of the consultation can affect subsequent health and well-being. In fact, researchers might be advised to identify the outcome of interest first, then work backwards to ascertain the relevant proximal and intermediate outcomes which should be measured, and finally determine what aspects of clinician–patient communication should be analyzed to predict the success of that pathway. Consider examples of how this might be done.

5.1. Hypertension control

In a study of hypertensive patients, researchers might assume that hypertension medications taken appropriately effectively lower blood pressure to normal levels thereby reducing the patient's risk of cardiovascular mortality and morbidity. One pathway through which clinician–patient communication could lead to this health outcome is patient adherence to the appropriate medication regimen. To test this pathway, researchers would determine the key proximal outcomes that influence adherence such as clinician–patient agreement on the patient's risk and the medication as well as patient understanding of the treatment plan. Clinician–patient communication that enhances the likelihood of achieving these proximal outcomes might be physician-specific communication behaviors such as nonverbal attentiveness to signal interest in the patient's perspective and clear, jargon free explanations about clinical risk, the need for treatment, treatment goals, and side effects. Important patient communication behaviors might be sharing beliefs about hypertension, expressing

concerns about side effects, and being actively involved in the decision-making. Other communication responses of importance for both interactants might be periodic checks for understanding, negotiating a specific treatment plan, and explicit statements of agreement on the plan.

5.2. Pain management in cancer care

Patients with cancer often experience pain that has a negative effect on quality of life. Thus, the primary health outcomes a researcher might be interested in would be the patient's self-report on pain control and the degree to which pain interferes with functioning. An intermediate outcome would be the patient's skills for managing pain. Proximal outcomes of the consultation that could lead to pain management skills might be the patient's confidence in his/her ability to use pain medication effectively (e.g., without worry of dependency), understanding the dosage and how to titrate dosage to avoid over medicating, and learning strategies to minimize or cope with constipation (e.g., use of laxatives). With respect to the clinician, proximal outcomes might include understanding of the patient's beliefs about pain, the patient's concerns about pain medication (fear of addiction, unwanted side effects), and confidence in the patient's ability to use pain medication appropriately. Clinician–patient communication behaviors that could accomplish these proximal outcomes include discussing the severity of the patient's pain, eliciting the patient's beliefs (and possible misconceptions) about cancer pain (e.g., 'just have to live with it as part of having cancer') and medications ('I do not want to get addicted'), clear explanation of what to expect from pain medication and possible side effects, clinician support and encouragement, active patient participation in formulating the treatment plan, and communication that confirms mutual agreement on treatment plan.

5.3. End-of-life care

The decision to change focus from disease-modifying treatment to comfort care places considerable stress on patients and their families. Health outcomes pertinent to end-of-life care include the emotional well-being of the family as well as the comfort of the patient. Two pathways that can contribute to these outcomes are (a) an enhanced therapeutic alliance of physicians, skilled nurses, hospice workers, pastoral care, and family and (b) activating the social support system of the patient and family. Proximal outcomes of the consultation that can contribute to these outcomes include trust in the clinicians and health care facilities, patient and family 'feeling heard and known' regarding fears and concerns, and patients feeling reassured about not being abandoned. The communication that contributes to these proximal outcomes would include responding and validating patient/family emotions, describing the coordination of care the patient will receive, attentive listening, addressing the uncertainty of prognostic information in terms of time left, and discussing social support resources with the patient/families social network.

6. Conclusion

In this article, we focus on the relationship between communication and health outcomes. We have tried to illustrate ways in which theory can inform communication practice and assist with the design of studies that examine the relationship between specific communication behaviors and proximal and intermediate outcomes that contribute to health outcomes that are meaningful to patients. We have proposed a simple, pragmatic model that can inform hypotheses to guide future research; specifically, communication can influence health outcomes by direct and indirect

pathways, and there are relevant intrinsic and extrinsic contextual modifiers of these relationships. Although we have proposed a number of pathways through which communication can lead to improved health, we also recognize that the relative importance of a particular pathway will depend on the outcome of interest, the health condition, where the patient is in the illness trajectory, and the patient's life circumstances. Yet, these factors must be taken into account when hypothesizing the means through which communication can contribute to improved health and well-being. More rigorous approaches to integrating theory, context, and measurement are needed if we are to make significant gains in our understanding of how clinician–patient communication contributes to healing and well-being.

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Conflict of interest

The authors have no conflict of interest in the authoring of this manuscript.

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