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SPECIAL ARTICLE

A Review of the Evidence and Recommendations on Communication Skills and the Patient–Provider Relationship: A Rome Foundation Working Team Report

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BACKGROUND & AIMS: Over several decades, changes in health care have negatively impacted meaningful communication between the patient and provider and adversely affected their relationship. Under increasing time pressure, physicians rely more on technology than face-to-face time gathering data to make clinical decisions. As a result, they find it more challenging to understand the illness context and fully address patient needs. Patients experience dissatisfaction and a diminution of their role in the care process. For patients with disorders of gut–brain interaction, stigma leads to greater care dissatisfaction, as there is no apparent structural basis to legitimize the symptoms. Recent evidence suggests that practical communication skills can improve the patient–provider relationship (PPR) and clinical outcomes, but these data are limited. **METHODS:** The Rome Foundation convened a multidisciplinary working team to review the scientific evidence with the following aims: a) to study the effect of communication skills on patient satisfaction and outcomes by performing an evidence-based review; b) to characterize the influence of sociocultural factors, health care system constraints, patient perspective, and telehealth on the PPR; c) to review the measurement and impact of communication skills training on these outcomes; and d) to make recommendations to improve communication skills training and the PPR. **RESULTS:** Evidence supports the fact that interventions targeting patient–provider interactions improve population health, patient and provider experience, and costs. Communication skills training leads to improved patient satisfaction and outcomes. The following are relevant factors to consider in establishing an effective PPR: addressing health care system constraints; incorporating sociocultural factors and the role of gender, age, and chronic illness; and considering the changing role of telehealth on the PPR. **CONCLUSIONS:** We concluded that effective communication skills can improve the PPR and health outcomes. This is an achievable goal through training and system change. More research is needed to confirm these findings.

Keywords: Patient–Provider Relationship; Communication Skills; Patient-Centered Care; Functional Gastrointestinal Disorders; Patient Care.

Medical care is in a crisis. Physicians spend one-fifth of their time in face-to-face communication during office visits compared to decades ago.[1] They rely more on diagnostic studies enabled by increased reimbursements than the medical interview and physical examination.[2] There is greater time pressure to complete administrative tasks, fulfill certification requirements, and attend to the electronic health record (EHR), leading to a deteriorating patient–provider relationship (PPR).[2] For clinicians, there is less time to gather relevant information, understand the illness context, and address patient needs adequately, leading to frustration, loss of meaningfulness in work, and possible negative attitudes toward patients. In turn, patients experience dissatisfaction due to unmet needs, diminution of their role in the relationship, lack of connection, and a feeling of self-blame and stigmatization.[2–4]

This dilemma is evident in Western medicine due to the concept of mind–body dualism.[4] Patients with structurally based or "organic" diseases are considered real and authentic. In contrast, those with nonstructural (functional) illnesses, such as disorders of gut–brain interaction (DGBIs),

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Abbreviations used in this paper: **DGBI, disorder of gut–brain interaction; EHR, electronic health record; IBS, irritable bowel syndrome; IOM, Institute of Medicine; PPR, patient–provider relationship; PREM, patient-reported experience measures.**

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are considered less legitimate or to have a psychiatric or unexplained disorder.[5] This common misunderstanding can produce frustration among providers, leading to communicating negative attributions toward patients.

Two decades ago, the Institute of Medicine (IOM) of the National Academy of Sciences raised concerns about a “chasm” in American health care relating to effectiveness, use of resources, and poor communication between the patient and provider. The IOM sought to change this by promoting patient-centered care, which they defined as: “Providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions.”[6] Table 1 indicates these 2 types of care—doctor-centered vs patient-centered care. Despite the IOM publication’s exposure, its impact on health care has been limited, and only a few articles have addressed this issue within gastroenterology.[2,7–11] Furthermore, the growing influence of third-party payers’ decisions and time constraints impeded the adoption of these recommendations into practice.

We believe that applying practical communication skills and patient-centered care can reverse this process. However, despite their presumed value for some educators and clinicians, the scientific basis for their benefit has not been established. Therefore, The Rome Foundation created a multidisciplinary Working Team to accomplish the following objectives:

1. review the scientific evidence in medicine, behavioral science, and gastroenterology on the effect of enhanced communication skills and patient-centered care on patient–provider satisfaction, adherence to treatment, and clinical outcomes;

2. review factors that influence the PPR, including sociocultural aspects, health care system constraints, and the patient perspective;

3. review the outcome of communication skills training on learner satisfaction and clinical behaviors; and

4. make recommendations to improve the PPR by providing guidelines to learn and teach communication skills in a time-efficient manner, educational programs for curricula, recertification, and continuing medical education, incentivization for providers and educators who use or teach communication skills, and recommendations for research.

As with previous Working Team reports, study objectives cannot be achieved solely by evidence-based information because often this does not provide sufficient data to answer the questions. Accordingly, when the evidence was not sufficient, the Working Team Committee also used a modified Delphi approach to review targeted scientific studies and arrive at conclusions and recommendations by consensus.

Evidence-Based Review

We updated a previous systematic review of the literature, reporting data from 73 randomized controlled trials and controlled observational studies, examining whether interpersonal interventions could improve the patient and provider experience, reduce costs, and improve the provider connection with patients.[12,13] In the first of these articles,[13] the authors summarized the intervention’s effect on the following 4 outcomes: population health, patient experience, provider experience, and costs. In the second companion article of the original systematic review,[12] the authors focused on identifying approaches that improved physician presence and connection with patients, using a Delphi process to finalize a list of recommended practices. The primary literature search occurred through August 2017, with a “bridge search” up to September 2019. We undertook an updated assessment in the intervening years since the main search, using the same search strategy provided by the authors in their supplementary material.[13] We identified 26 new eligible studies (see details in the Supplementary Material). Two-thirds of interventions were provider-focused, with the other one-third focused on patient and provider. An overview of the various interventions studied on the 4 outcomes of interest mentioned, updated with the studies identified by our search, is provided in Table 2.

Based on the results of all 99 included studies from the Haverfield et al[13] review, augmented by our updated literature search, we concluded the following:

Table 1. Doctor-Centered vs Patient-Centered Care

Doctor-centered care	Patient-centered care[a]
The doctor dominates and controls the interview	The patient is considered the source of information
Patient participation is limited and not expected	Patient participation is active, and doctors respond to patient cues
The doctor does not elicit or respond to psychosocial issues	The doctor attends to psychosocial factors
The doctor does not address the impact of the illness on the patient’s life	Doctors use communication skills and empathy to convey an understanding of the impact of illness
The doctor selects the treatment	Doctors provide options for treatment
The doctor predominantly makes final decisions	Patient and doctor mutually decide on the care plan

[a] In pediatric, impaired, and elderly patients, decisions might relate to the parent or caregiver.

Table 2. Summary of Impact of the Interventions Evaluated in 99 Studies on Outcomes of Interest[a]

Intervention	No. of studies with at least 1 significant result in 1 of the 4 outcomes of interest[b]: Population health	Patient experience	Provider experience	Costs	No significant results for any of the outcomes studied, n
Specific communication technique (n = 29)	5	15	6	0	5
Communication skills (n = 27)	6	14	8	1	6
Patient-centered care (n = 16)	6	7	3	0	3
Shared decision making (n = 6)	0	5	0	0	0
Motivational interviewing (n = 6)	3	2	1	0	1
Health literacy (n = 5)	1	4	1	0	0
PPR (n = 4)	2	2	0	0	1
Psychological or therapeutic interview (n = 3)	0	3	0	0	0
Mindfulness (n = 3)	2	1	1	1	0

[a] Adapted from Haverfield et al[13] and updated with studies identified in our literature search.
[b] In some instances, there is more than the number of studies for each intervention because some studies reported on more than 1 of the 4 outcomes of interest.

- There is evidence that interventions targeting patient–provider interactions improve population health, patient experience, provider experience, and costs.
- In one-third of the interventions, participant time and effort was of low intensity. However, three-quarters of low-intensity interventions had a positive influence on at least 1 of the outcomes of interest.
- Although only 2 cluster randomized trials, of the 19 studies examining the effect of the intervention on costs, demonstrated significant effects, 10 other studies showed no significant increase in costs. In 1 of these 2 trials, longer consultations, relationship continuity, and practitioner and self-management support in multimorbidity patients was cost-effective vs usual care. In the second, enhanced communication skills training for primary care physicians managing lower respiratory tract infections demonstrated costs savings, in terms of antibiotic prescribing, vs usual care.
- Only 11 of the studies measured consultation length in the trials' active intervention arms. Those that led to increased consultation length demonstrated benefits in terms of patient health and patient and provider experience.
- General communication skills training and specific communication techniques were the most common interventions and led to improved communication, satisfaction, and perceived provider friendliness, as assessed by the patient.
- Distillation of all this evidence, followed by a Delphi process,[12] suggested 5 recommended practices to foster meaningful connections with patients: a) preparation with intent before seeing the patient; b) listening intently and entirely, while sitting down; c) formulating an agreed agenda with the patient as to what matters most; d) connecting with the patient's story; and exploring emotional cues by naming and validating the patient's feelings.

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The Provider and Patient Experience

Narrative Medicine

A narrative is the patient's story of their illness experience or journey, presented in an unrestricted fashion. The provider's first and most important entry into the medical record begins with the patient's narrative, "the history of the present illness." When told in the patients' own words, the narrative connects cause and effect, and addresses the relational and psychological dimensions in tandem with the physical illness. Yet, narratives are generally discouraged or even considered irrelevant, disruptive, and interfering with the visit's goals and "efficiency." Not surprisingly, clinicians interrupt their patient's initial statement within 22 seconds.[14] In contrast, experienced clinicians use their patients' narratives to obtain accurate information efficiently. It takes less time when patients have the opportunity to tell their story and answer questions than if they are asked leading questions and interrupted. On average, uninterrupted patients do not talk for more than 2 minutes, even in tertiary referral centers where medical histories can be more complicated.[15]

Expert interviewers remain curious and nonjudgmental, keep track of relevant information, identify metaphors and images, tolerate vagueness and uncertainty, recognize unspoken subtexts, and compare the patient's narrative with others. Experts are empathetic, self-reflect, and stay attuned with the patient.[16] In addition to learning diagnostic and management clues, attention to the narrative reduces the likelihood of last-minute questions, misunderstandings, and conflicts. It is a quick psychological assessment tool that provides a window to the narrator's psychological traits and values.

Narratives from the patient's perspective. Patients who are allowed to share their narrative in a safe setting that helps them feel heard, valued, and more hopeful provide invaluable information on their illness experience.[17] Conversely, suppressing the narrative leaves patients feeling hopeless and frustrated. Patients who are encouraged to describe the impact of illness on their daily life feel valued and are more likely to view the clinician as an empathic partner; this builds trust and correlates with treatment adherence and care effectiveness.[2] For example, patients with diabetes mellitus have reduced hemoglobin A1c levels if their clinician is empathic.[18] Also, patients with a common cold who were permitted to tell their illness narrative thought their doctors were more empathic, and their cold was shortened by almost 1 day.[19]

Narratives from the clinician's perspective. For the health care provider, the narrative provides a balance between scientific data and humanity. It is personal, unique, relatable, and empathy-fostering. It leads to an increased sense of connection, purpose, and job satisfaction, while decreasing clinician burnout.[20,21] When listening to someone's narrative, brain patterns can begin to mirror each other.[22,23] Depending on the type of narrative, there is a measurable increase in plasma levels of cortisol (via increased attention), dopamine (via improved memory and pleasure), and oxytocin (via pro-social, empathic behavior).[24,25] Enabling patients to tell their narrative remains fundamental to clinical practice.

Collaborative case reports. Case reports are forms of medical writing or verbal communication in which medical knowledge is driven by and presented as the patient's narrative or illness experience. It begins with the history of the patient's illness, followed by physical findings and medical data, leading to a discussion on pathophysiology, diagnosis, and treatment. Case reports bridge gaps between patient experience and scientific data.

A recent elaboration is joint case reports in which providers and patients present their perspective on the illness experience. With this method, the provider learns more about the patient's thoughts and feelings surrounding their illness, how they experience their care, what was helpful or not, and why. Similarly, patients can understand the provider's thoughts and rationale for diagnosis and treatment. Two joint provider–patient case reports are available for a patient with functional dyspepsia and irritable bowel syndrome (IBS),[26,27] and another with postinfection IBS.[8,9] This method is used increasingly in case conferences and social media.

Factors That Influence the Patient–Provider Relationship

Health Care System Constraints

Clinicians should continuously balance their ethical obligations to develop and nurture therapeutic relationships with reconciling time-based and organizational factors now imposed within modern health care.

Increasing demands on clinician time. Having adequate time with a patient is essential for quality medical care. Yet, across primary care and specialties, clinicians spend increasing time with the EHR instead of direct patient interaction. Figure 1 compares the time spent during office hours between 2005[28] and 2016.[29–31] Face-to-face time with patients dropped from 55% to 27%, and EHR time tripled to about 50%. During a 15-minute clinical visit, >40% of the time is spent on EHR and administrative tasks (see Figure 2).[30] Growing administrative tasks (including spending 1–2 hours per day after hours responding to patient messages) diminishes job satisfaction and contributes to high burnout rates.[32,33]

Negative impacts of insurance reimbursement rates. Insurance reimbursement rates greatly influence the length of medical encounters in the United States, as do administrators who encourage high daily patient volume to increase revenue.[34,35]

Although the reimbursement structure favors procedure-based patient care, what clinicians do when caring for patients with chronic illnesses, such as DGBIs, is not easily captured by a coding system, despite changes to evaluation and management coding and billing guidelines in 2021.[2] In particular, psychosocial aspects of health and building trust are harder to assign a code or value to and take longer to address.[36]

Patient and provider expectations of time spent. More extended visits are associated with increased patient satisfaction; however, it is not the visit time, but how patient-centered the visit is that affects the outcome.[37] An analysis of 440 videorecorded consultations found no association between the patient's experience and consultation length, and patients sometimes reported good experiences from very short consultations.[38] What patients consider "adequate time" involves dimensions, such as meeting or exceeding previsit time expectations, perceived length of visit, quality of communication, level of empathy, and increased patient participation and education.[39,40]

Patients who have their concerns addressed within a patient-centered interaction tend to overestimate the encounter time.[40,41] Similarly, clinicians perceive time spent by effective communication can be achieved through teachable skills. The minimum essential communication elements for providers to practice under time pressure fall under the mnemonic "I'm late" (see Table 3).

Electronic health record. The EHR is designed to promote quality, safety, and efficiency; reduce health disparities; engage patients and families; improve care coordination; and maintain patient health information privacy and security.[42] There are at least 20 different EHR systems nationally and even more systems internationally.[43,44]

Benefits of using the electronic health record. The primary purpose is to facilitate and enhance patient care. The EHR has advantages for communication.

Access to medical records and ease of clinician-to-clinician communication. The EHR improves communication between health care providers by allowing clinicians to

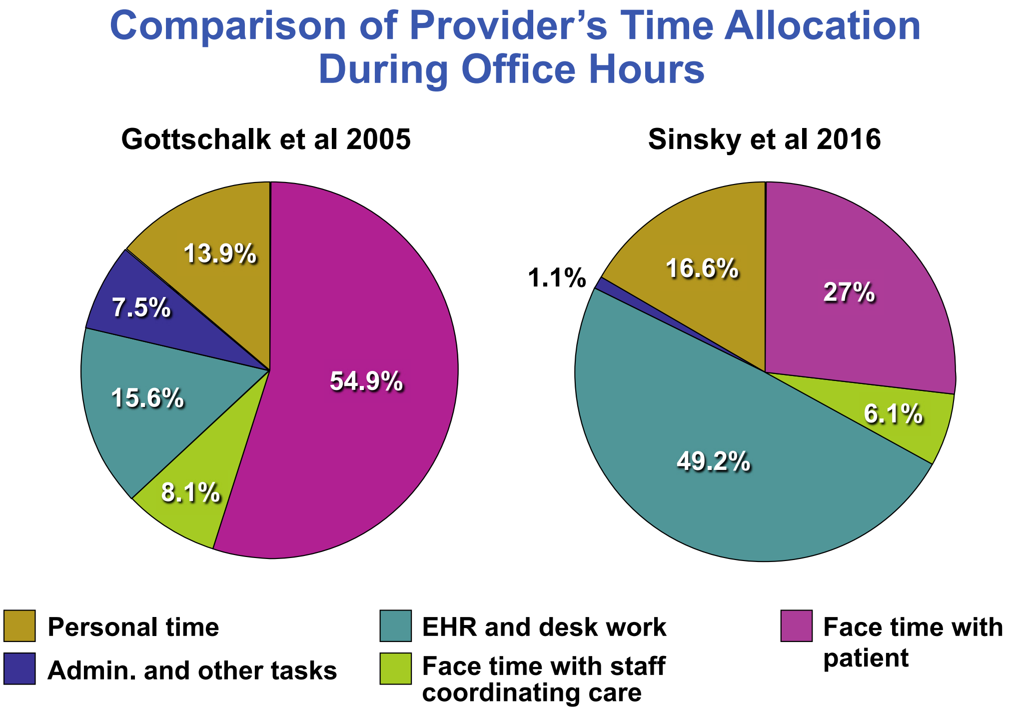

Figure 1. Comparison of the health care provider's time allocation during office hours. When comparing data from Gottschalk and Flocke (2005)[28] to that of Sinsky et al[30] 11 years later (2016), face-to-face time between patient and provider dropped more than half from 54.9% to 27%. This was associated with a more than 3 times increase in the time allocated to the HER and desk work (15.6%–49.2%).

have full access to all documentation about their patients' care. Providers can easily communicate with each other via e-mail "in-basket" messages to collaborate regarding patient care. In addition, some systems allow limited access to view results and notes from providers outside the health care system. However, there can be unrealistic expectations from patients that there is adequate time to review copious records and documentation before a patient visit.

Ease of patient to clinician communication. The ability to access a patient's chart through the EHR fosters open and timely patient–provider communication. Mobile apps give the provider the ability to send messages and test results directly to the patient, and patients can schedule office visits or appointments, pay medical bills, and request medication refills. This ease of access allows patients to feel connected and less anxious about their health and provides a safe space to ask questions about sensitive topics.

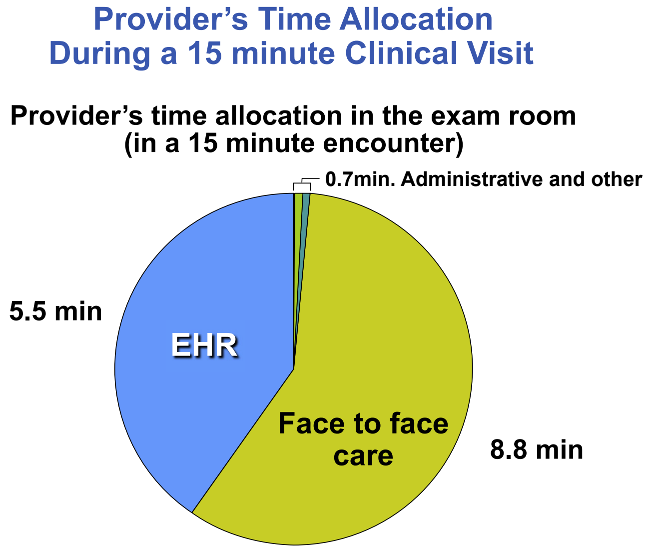

Figure 2. The provider's time allocation during a clinical visit in 2016. For a 15-minute visit, more than 40% (6.2 minutes) is spent on the EHR or administrative tasks and 60% (8.8 minutes) is spent on face-to-face care.[30]

Research opportunities. EHRs can facilitate clinical research, improving the patient's ability to participate in care. Patients who contribute to clinical research might feel a sense of achievement, empowerment, and personal investment, fostering improved communication and clinical outcomes.[35,45]

Limitations of electronic health records. The EHR can also hinder communication.

Barriers to communication. The computer can create a physical barrier between providers and patients. Even when optimally positioned, clinicians divide their attention between computer screens and patients, limiting available time for direct eye contact, limiting nonverbal cues and clinical observation, and disrupting patients' abilities to form therapeutic relationships. An Israeli group reported that using computers in the examination room can diminish dialogue, particularly in the psychosocial and emotional realms.[46] For providers focusing on DGBIs, patient nonverbal cues provide essential information.[3] Frankel et al[47] reported that technological barriers to patient–provider communication lead to decreased visit organization, missed verbal and nonverbal behaviors, lack of computer navigation and mastery, and poor spatial organization of the examination room.

Sociocultural Aspects

Cultural influences affect patients' reporting and interpretation and how they function in and experience the

Table 3. "I'm Late": The Bare Minimum Communication Skills under Time Pressure

"I'm Late" Mnemonic	Communication skill
I: Impression	Invest in the first impression: eye contact, smile, greeting, small talk.
M: Minute of silence	Resist the temptation to interrupt in the first 1–2 min and fully focus on the patient without looking at the computer screen.
L: Listen	Be an active listener. Listen attentively with all your senses, paraphrase, reflect on what is said, and withhold judgment and advice. Use nonverbal signs of listening (nodding, eye contact, leaning in, mirroring).
A: Acknowledge	Acknowledge the role of psychological factors, even if unable to address them. Do not ignore "emotional" openings.
T: Touch	Do not underestimate the therapeutic effect of touch, physical examination, and the role of rituals in medicine.
E: Empathize	Understand another person's experience; attempt to "walk in their shoes." Look for empathic openings and offer verbal or nonverbal expressions of empathy, including reflection, legitimization, respect, support, partnership. Example: "Being sick while going through a divorce must have been very difficult. You have been doing your best to cope. I would like to help by working together on improving your symptoms."

health care system. Kleinman et al[48] noted decades ago that, "Illness behavior is a normative experience governed by cultural rules: we learn 'approved' ways of being ill. It is not surprising then that there can be marked cross-cultural and historical variation in how disorders are defined." When providers come from cultural backgrounds different than their patients, there can be miscommunication leading to relationship difficulties and adverse health outcomes. When patients have symptoms that seem vague and potentially embarrassing, as often occurs in DGBIs, miscommunication increases.[49]

Miscommunication between doctors and patients can be verbal and nonverbal. It can relate to language, greeting style, proxemics, physical contact, eye contact, gender, and sexuality. There are cultural implications to a male doctor examining a female patient and vice versa, interpretation of the meaning and cause of symptoms (explanatory models), attitude to authority, family members' involvement, and communication of bad news, such as a diagnosis of cancer.[50]

Immigrant population migrations have increased the number of multicultural clinics and hospitals, increasing the risk of miscommunication substantially when the patients are not fluent in the local providers language. In 2015, more than 25.9 million people in the United States had limited English proficiency, accounting for 9% of the overall population 5 years and older.[51] Professional medical interpreters (rather than medical translators) and trained medical staff can reduce miscommunication in medical clinics. Ad hoc interpreters (ie, family members, friends, and nontrained staff) are not recommended because of the potential for errors due to personal agendas, providing unsolicited advice, loss of confidentiality, and lack of familiarity with medical terminology.[52] Patients need to be health-literate to communicate in unfamiliar health care systems. When individuals in cultural subgroups do not have these skills, adverse health outcomes can be significant.[53]

Health literacy describes the skills required to function in a specific health care environment.[53] It relates to ". . . people's knowledge, motivation, and competencies to access, understand, appraise and apply health information to make judgments and take decisions in everyday life concerning health care, disease prevention and health promotion to maintain or improve quality of life during the life course."[54] A systematic literature review evaluating the association of low health literacy with health outcomes,[55] found poorer health outcomes in a broad spectrum of medical situations and conditions, including more hospitalizations; greater use of emergency care; reduced use of preventive medicine services, such as mammography and influenza vaccine; poorer ability to take medications appropriately; and problems in interpreting medicine labels and health messages.

Providers not aware of the potential for cross-cultural miscommunication and without training in cross-cultural communication, including collaboration with interpreters, might not be mindful of the cultural perspective through which patients view their illness, and not know how to relate to the patient, potentially compromising the clinical outcome.[56]

Curricula and training programs for medical students, residents, and other health care providers are available, but few interventional studies have assessed their effectiveness. A Cochrane Review[53] found positive but low-quality evidence for their effectiveness among patients from culturally and linguistically diverse backgrounds.

The Rome Foundation has developed training videos addressing these issues and providing doctors with examples of problematic vs improved cross-cultural communication. See examples for a Nigerian patient (https://romedross.video/2FYC6jX), a Russian patient (http://bit.ly/2y0Df6d), and a Hispanic patient (http://bit.ly/2y0Df6d).

Gender, Age, and Chronic Illness

Multiple factors can influence provider and patient behaviors and their relationship. They include age, gender, race and cultural differences, and prior sensitive experiences that are relevant to the medical illness, but difficult to share (eg, traumatic events). A limited number of studies have found that race and ethnicity influence PPR, for example, patient-centered encounters, communication ratings, and trust in the provider, but confounding factors can lead to conflicting study results.[57,58] More research on race and ethnicity is needed.

Gender and diagnosis. Gender can influence the PPR, diagnosis, and management. For women, gender stereotyping often leads to the belief that emotional issues rather than physical causes are responsible for their symptoms, even when diagnostic tests demonstrate a physical cause. Physicians frequently diagnose women with chronic pain incorrectly as having a mental health condition without evidence and prescribe more psychotropic drugs to women than men.[59] Gender stereotyping can also affect men. Although women with IBS are at risk of being belittled, men with IBS are at risk of being unnoticed or undiagnosed because IBS is considered to be a "female health concern."[60]

Chronic illness. Chronic illness can impair a patient's ability to work, perform basic personal tasks, and interact with others. With IBS, men and women's concerns about bowel habits impact dating, intimacy, and sexuality, increasing isolation. However, women are more vulnerable to becoming unnecessarily self-critical and often feel frustrated, angry, and socially isolated when dealing with pain or chronic illness.[4,61] This leads patients to feel stigmatized by family, friends, and coworkers and retreat even more. When providers stigmatize patients who have symptoms, such as DGBIs, the impact is profound. If patients accept the diagnosis from a dualistic perspective, they might develop feelings of guilt and self-blame for having a condition not perceived as "real." This sense of isolation and stigma increases the stress patients feel as they attempt to manage these illnesses independently.[4],[62]

Gender of provider. In the United States, women use general and preventative health care services more than men.[63] Female providers offer more preventive services and psychosocial questioning and counseling, and male providers spend more time on technical practice behaviors, for example, history and physical examination. A systematic review showed that female physicians conduct longer visits, use a more patient-centered approach, and are more likely to discuss emotional issues and actively seek a patient's input.[64] As a result, when addressing sensitive health concerns, patients might prefer female physicians for gynecological, gastroenterological, or psychological care. Studies found that patients of female providers were more satisfied with their interactions.[65,66] However, another study found that the physician's gender was not associated with a male patient's satisfaction.[67] Nevertheless, physicians benefit from communication skills training to improve patient outcomes regardless of gender.

More women reported a same-sex preference for gastroenterology office visits and for colonoscopy (90.8% and 92.3%, respectively) than men (70% and 84.1%, respectively).[68] The most common reason for women was embarrassment, which was associated with higher education levels.[68] Women were significantly more likely to select a female than male endoscopist (42.3% vs 21%). Of those with a gender preference, 92% of women and one-third of men preferred a female endoscopist. Female gender, lower-income level, and a history of physical or emotional abuse were significant factors for gender preference. Both men and women with a history of abuse were significantly more likely to prefer a female endoscopist.[69]

Age. The age of the patient and the health care provider can affect the PPR. Older patients (ie, older than 65 years) were more likely to interact with their physicians in a more patient-centered manner.[57] Younger patients might be more familiar with technology and prefer medical information communicated digitally rather than in person. Although younger women might slightly prefer a female provider, older women care less or even select male providers, possibly due to an implicit bias that male physicians are more competent.[70] Studies examining the effect of the provider's age on the PPR are needed. In the future, there will likely be changes in the PPR due to inclusion of telehealth training for young physicians.

Pediatric Factors

Like adults treated for DGBIs,[16] an effective PPR is crucial to the pediatric treatment process.[71–73] However, with the pediatric population, the provider needs to consider the patient's developmental stage and establish a relationship with the child or adolescent and the parents/caregivers.[74]

Development. Providers must be considerate of the child or adolescent's developmental age when gathering details of the patient's symptom experience, asking questions, and providing explanations. Elementary and school-aged children demonstrate more concrete ways of thinking. Although they value being asked and can answer simple questions about their symptoms, they might exhibit attention difficulties during a lengthy clinic visit.[75] However, adolescents can fully participate in a clinic visit and value discussing symptoms with providers.[76] They are capable of abstract thinking[77] and understand metaphors.[78] Adolescents can understand the biopsychosocial model related to disease onset, maintenance, and exacerbation.[79] They can reference past experiences with providers and treatments when offering thoughts regarding the perceived helpfulness of a recommended intervention.[71]

Patient mental health. Mental health symptoms in pediatric patients can also influence the PPR. Anxiety in particular, is highly prevalent in children and adolescents diagnosed with DGBI.[80–83.] They might present with a higher level of catastrophizing and fear of pain symptoms,[84,85] worries related to the visit itself, or fear that the provider will not provide a diagnosis or will convey that the pain is purely psychological.[71] Symptoms of depression[86,87] are also prevalent and can contribute to feelings of hopelessness related to a clinic visit's effectiveness and symptom improvement. Pediatric providers must recognize patient anxiety and mood symptoms throughout a clinic visit.[74] Avoidance of or dismissal of overt symptoms and signs of anxiety or depression, such as poor eye contact, tearfulness, behavioral regression, or agitation, may reduce patient trust in the provider and significantly impact the development of an effective PPR over time.

Social learning. One of the most influential parental factors for providers to consider is how social learning and parental modeling of illness-related behaviors influence a child's or adolescent's ability to function and cope**.** Children of parents who experience chronic pain and somatic symptoms tend to endorse higher abdominal discomfort levels and higher school absenteeism.[88] Adolescents' observations on their parents' pain-related behaviors impact pain behavior and ability to function beyond parental reinforcement of pain and pain-related behaviors.[89,90]

Parental modeling of pain-related behaviors can be challenging for providers trying to establish relationships with both patients and parents, particularly when feedback regarding the importance of daily functioning, despite pain symptoms, is discussed in the presence of a parent with disability. Children and adolescents might struggle to accept recommendations to increase daily function if they sense parental disagreement or if they observe a parent responding to pain in a counterproductive way.

Parent mental health. The presence of mental health symptoms in parents of children and adolescents diagnosed with DGBIs can also impact the patient–parent–physician relationship. Parents of pediatric patients exhibit higher anxiety, depression, and somatic symptoms.[91–94] In particular, parental anxiety is related to diagnostic uncertainty[95] and the desire to provide effective strategies for pain management.[96] Parental anxiety is also associated with pain-related catastrophizing[97] and solicitous behavior.[98,99] Children and adolescents exposed to this behavior demonstrate increased dysfunction, catastrophizing, and a higher frequency of pain-related symptoms.[100,101]

Finally, for a pediatric gastroenterologist, the presence of an anxious parent in a clinic visit can influence the tone of the visit and how the provider can provide evaluation and feedback.[74,89] Parents might present to the visit with a strong desire to receive a "correct" diagnosis, coupled with feelings of helplessness[71,74,89,102]; consequently, they might present as overly assertive and emotional, which, in turn, can result in a tendency to speak for or over the child. Parents might also struggle to truly hear feedback, given their heightened arousal, particularly if the feedback provided about the diagnosis and treatment is ambiguous or incongruent with visit expectations.[74,95,103]

Explanatory Models of Illness and Diagnosis

Successful communication with patients can have a positive effect on clinical outcomes.[3,104–106] Although some providers are naturally better communicators, training can improve this vital skill in everyone.[107] A large part of successful communication involves understanding the patient's explanatory model of illness: their interpretation of symptoms, their causal attributions, and their expectations from treatment, and reconciling it with the provider's understanding from the evident data.

Patients experience symptoms not diagnoses. Patients go to providers with symptoms, not diagnoses.[108] The provider makes sense of these symptoms within the medical diagnosis framework. However, a significant percentage of patients who consult with providers in primary care or specialist clinics have symptoms that remain unexplained after the diagnostic process is exhausted.[109]

Patients frequently have diagnoses without structure. Within a dualistic health care model, structural diagnoses are considered more legitimate than those labeled "functional." The DGBIs are examples of when there are no structural findings to explain symptoms. As a result, patients might have a "psychological" or "psychosomatic" stigma.[62] Patients might hear counterproductive statements, such as "there's nothing wrong with you," "just learn to live with it," or "there's nothing we can do about it." An implicit message is that the symptoms are "all in your head." Communicating negative test results can be insufficient reassurance and even perceived as dismissive if the message is "Don't worry—everything is normal."[110] Indeed, the effectiveness of diagnostic testing in reassuring patients with persistent symptoms is overestimated and often short-lived.[110,111] Instead, explanatory and prognostic discussions appear more practical. They are more desired by patients.[108,112] The Rome Foundation has created a symptom-based classification to permit gastrointestinal diagnoses without structural findings, thereby legitimizing them.[113]

Impact of a dualistic model of care on the provider. Providers who adhere to a dualistic model can struggle to explain diagnosis and management.

Communicating diagnosis. Linedale et al[114] conducted a review of the records of 108 patients with organic disease and 119 patients with DGBIs to evaluate the diagnostic language used. They found that the provider stated the diagnosis using qualified language (". . . this patient might have . . .") in a significantly higher proportion of patients with DGBIs, and they made a clear statement of diagnosis (". . . the patient has . . .") for those with organic disease.[114] Furthermore, the patients with DGBIs underwent more endoscopic procedures, presumably because of uncertainty in the diagnosis. Hesitant, qualified diagnostic language, as used in patients with DGBIs, can lower confidence in the diagnosis and lead to continued health care–seeking.

Disease labeling. Labeling symptoms and syndromes are challenging. Clinicians can sustain unfavorable or frustrated attitudes around a symptom-based diagnosis, which they attempt to resolve by creating a newly minted disease label.[115] For example, changing from chronic fatigue syndrome to myalgic encephalitis to systemic exertion intolerance disease will not improve patient-centered care if clinician skepticism regarding the reality or impact of the symptoms persists. Similarly, adjectives like somatoform, medically unexplained, psychosomatic, and functional become tainted if clinicians interpret them as code for being imagined, exaggerated, or lacking a well-defined mechanistic explanation. We believe that using scientifically based labels (such as *neuromodulators* instead of *antidepressants* or *disorders of gut–brain interaction* instead of *functional gastrointestinal disorders*) is more satisfying and less stigmatizing.

Patient expectations for immediate relief. Some patients have an acute rather than a chronic illness explanatory model. They expect a rapid diagnosis and cure, leading to a high rate of "doctor shopping" and emergency department visits. They may say "I've been to many doctors before, but I heard a lot about you, and I just know that you will cure me." This statement possibly reflects dissatisfaction with previous health care experiences, and it sets high expectations for relief. In effect, this statement tends to absolve the patient from personal responsibility for care by placing undue expectations on the provider. The provider's response should validate the patient's frustration and communicate shared responsibility: "I understand how difficult it has been for you to get the care you are seeking. But with a chronic illness, treatment takes time. We can work together to identify ways to improve your symptoms and quality of life."

Reconciling the explanatory model between patient and provider. The patient's explanatory model of illness[116] must be reconciled with the provider's knowledge to address the basis for unexplained symptoms and chronic conditions that does not fit into clear diagnostic categories.[117] Patients develop explanatory models even before seeing the provider. They include cultural background and personality, early learning, available sources of information, and other psychosocial factors. Providers should encourage patients to elaborate on their explanatory model to understand the patient's perspective.[116] This information provides a window into the patient's symptom- or disease-related beliefs, concerns, anxieties, and expectations from the health care process.[118] Knowing this information provides a window to frame the diagnostic and treatment plan to optimize care. Providers also have explanatory models of illness, which often differ from that of the patient, so providers need to be aware of their explanatory model, which might be based on the biomedical model as commonly taught in medical schools. However, the most accepted model to achieve reconciliation is the Biopsychosocial Model, which integrates biological and psychosocial factors for illness and disease.[4,119,120] We offer a description of this model in a video (available at: https://romedross.video/Q_ABiopsychosocialmodel).

Measurement of Patient–Provider Relationship, Satisfaction, and Health Outcomes

Patient-reported outcome measures are questionnaires measuring the patients' views of their health status. Patient-reported outcome measures (PROMs) are questionnaires measuring the patients' perceptions of their experience when receiving care.[121] Examples of PROMs include scales that measure symptoms (eg, depression, pain, and sleep), functioning (eg, physical, social, and psychological), and health-related quality of life. Common domains assessed by PREMs include satisfaction with health care, provider communication, and the PPR. PROMs assess and monitor specific health conditions, and PREMs are focused more on provider relational skills that enhance care across all diagnostic conditions. It is useful to distinguish more general patient satisfaction questionnaires covering patient-professional interactions, the physical environment, and internal management processes from PREMs that focus principally on the first domain (ie, patient–provider interactions), which is more directly under the provider's control. This domain is particularly pertinent to training or practice improvement initiatives that target provider communication, empathy, patient trust, and confidence in the provider.

Table 4 provides examples of brief PREMs that measure common domains.[122–128] Recent reports offer a more comprehensive and critical review of available PREMs.[129–134] One key issue when selecting a PREM is whether it is for research or clinical practice. A second key issue is whether a disease-specific or generic PREM is preferable. However, a PREM that has been validated in a disease population can be used generically if the questions do not attribute symptoms or impairment factors to a specific disease.[135] PREMs used in research or in specialty practice settings can accommodate longer measures to facilitate more comprehensive coverage of domains and possibly greater precision and responsiveness. For example, companion measures to assess the PPR and patient satisfaction in DGBIs have been validated.[136–138] Also, observer-rater scales play a role in some research studies,[130] and self-administered scales are far more feasible in most practice settings.

When PREMs are used in clinical settings, several pragmatic decisions or considerations are salient. First, are the results to be reviewed at the patient's level (to enhance the patient-centeredness of care for an individual patient) or aggregated across groups of patients to evaluate overall care delivered by a clinician, a practice, or a health care system? Second, will patients provide honest, even critical feedback if they know that their physicians receive their non-anonymized reports? Third, which items or domains are readily addressed by specific physician training and behaviors? For example, the Interview Satisfaction Questionnaire has patients rate modifiable physician behaviors tested in communication training trials linked to health outcomes.[139] PREM feedback to clinicians is substantially more valuable if factors are identified that the physician can act on to improve the PPR. Fourth, are better scores incentivized through reimbursement, quality metrics (eg, physician scorecards), or improved patient satisfaction and retention?

Guidelines to Improve the Patient–Provider Relationship

Methods and Techniques for the Physician

Applying practical communication skills will improve the PPR. The benefits relate to:

Table 4. Example Measures for Assessing Patient–Provider Communication

Measure	Items	Scoring[a]	Focus (rater)
Brief scales that are not disease-specific			
Consultation and Relational Empathy (CARE)[122]	10	10–**50**	Provider empathy (patient)
Patient–Doctor Relationship Questionnaire (PDRQ-9)[123]	9	9–**45**	Provider–patient relationship (patient)
Difficult Doctor–Patient Relationship Questionnaire (DDPRQ-10)[124]	10	**0**–60	Provider–patient relationship (provider)
Communication Assessment Tool (CAT-15)[125]	15	15–**75**	Provider communication (patient)
Wake Forest Physician Trust Scale Abbreviated (WFPTS-A)[126]	5	5–**25**	Trust in provider (patient)
Patient Enablement Instrument (PEI)[127]	6	0–**12**	Patient empowerment (patient)
Compassion Scale[128]	5	5–**20**	Provider compassion (patient)
Comprehensive scales for gastrointestinal disorders			
Patient–Physician-Relationship Scale for Patients (PPRS-patient)[137]	32	0–**100**	Provider–patient relationship (patient)
Patient-Physician-Relationship Scale for Physicians (PPRS-Physician) scale[138]	35	0–**100**	Provider–patient relationship (provider)
Irritable Bowel Syndrome Satisfaction with Care (SAT-37)[136]	37	0–**185**	Satisfaction with care (patient)

[a] Range of scores, with score in bold type representing best (most favorable) score.

- patients providing more meaningful information leading to enhanced diagnostic accuracy and clinical decision making;
- establishing trust;
- creating a collaboration of care that involves shared decision making;
- improving time efficiency as the dialogue leads to better data acquisition;
- therapeutic effect;
- patient and provider satisfaction; and
- reducing patient requests for additional testing or health care services.[2,3]

The physician also needs to engage with the patient through nonverbal methods to create a partner-like relationship:

- good eye contact;
- head nodding;
- leaning forward ;
- closer interpersonal distance; and
- affirmative nods and gestures.

Table 5 addresses 10 guidelines to use in the clinical visit. Further information is available in a communication guide (available at: https://romedross.video/2YphMDd) and video (available at: https://romedross.video/12Gurus). These techniques are less effective with telemedicine.

Patient Perspective on Improving the Patient–Provider Relationship

Certain recommendations for patients can help optimize communication between patients and providers (Table 6).[7]

Before the clinic visit. Patients can increase the visit's effectiveness by writing down questions and thoughts in advance. Patients can provide precise, concise, and relevant details of medical history, prior diagnostic testing, treatment, and expectations for a visit. This information can help determine the likely diagnosis, testing strategy, and treatment options to maximize patient response and adherence.

During the visit. The patient should openly communicate their perspective of the illness (eg, thoughts, fears, and expectations), the nature of their most bothersome symptoms, including the onset, frequency, duration, and the impact of the illness on quality of life. Patients should be assertive and comfortable asking questions for clarification and further explanation when required. They also need to prioritize questions within time limitations. Ultimately, patients should partner with their physicians to customize a mutually agreed on management plan.

After the visit. Patients should understand that patient-centered care is a collaborative process, and the final decision is theirs. Once a diagnosis and treatment plan are in place, patients need to set realistic management goals to move toward recovery. Sometimes, this means resetting priorities. For example, if symptoms keep a parent from going to a child's sporting events, setting an achievable goal of rest, diet, medication, and stress reduction, when achieved, can lead to attending these sporting events. At times this means saying no to other things to prioritize personal health. The patient should adhere to the management plan but ask any questions about their tests or treatment when unsure.

Communication in the patient–provider relationship is collaborative. Patients also must share the responsibility to foster a therapeutic relationship. One available resource directed toward patients offers detailed guidance on what patients can do to improve the PPR is available at: https://romedross.video/GutFeelingsWebsite.[4]

Pediatric Aspects for Improving the Patient–Provider Relationship

Pediatric patients and their families benefit from the same recommendations for optimizing the PPR as described above. It is, however, imperative for the provider to

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Table 5. Recommendations for Optimizing the Patient–Provider Relationship[3,4,7]

Recommendation	Examples
Listen actively	Listen without interrupting, focus on what is said and construct questions based on what you have heard
Understand the patient's agenda	Several questions can elicit the patient's agenda: What brought you here today? What do you think you have? What worries, or concerns do you have? What do you feel I can do for you?
Empathize	Empathy involves seeing the patient's perspective, being nonjudgmental, understanding the patient's feelings, and communicating that understanding. An empathic statement is "I can understand how difficult it is to manage your pain."
Validate	Validation means you understand the patient's perspective, but you may not necessarily agree. A validating statement would be "I can see you are frustrated when people say this is due to stress, and you know it's real."
Set realistic goals	Chronic illness means symptom management, not cure "I understand how much you want these symptoms to go away, but you've had them for years. If we can reduce your symptoms by 30% over the next several months, would that help?"
Educate	Education is an iterative process: Identify what the patient understands Address any misunderstandings Offer information consistent with the patient's frame of reference Check the patient's understanding
Reassure	Reassurance is provided based on the available data and not prematurely. This involves identifying the patient's concerns, validating them, and responding to the specific concerns
Negotiate	Patient-centered care is a partnership. The physician offers choices, and the patient makes a choice. For example, the physician can suggest treatments "A" and "B," indicating the possible benefits and adverse effects.
Encourage patient responsibility	With chronic illness, the clinical outcome is better when the patient takes responsibility for care. Rather than say "How is your pain"? one can say, "How are you managing with your pain"?
Be there	One cannot always anticipate what will come up in the clinical visit; providing support and a listening ear is indispensable.

understand both the child or adolescent's and parents' expectations and perspectives throughout the evaluation, feedback, and treatment process,[74,89] as outlined in Table 7, and demonstrated effectively in a video available at: https://romedross.video/NurkoPedPain.

The clinic visit. At the start of a visit, providers must establish rapport with pediatric patients by asking questions about their interests, doing so enhances understanding and improves patient perception of the helpfulness of the visit.[73,140] During the evaluation, questions should first be directed toward the child or adolescent and should be asked based on the patient's developmental and cognitive age. Parents should have the opportunity to discuss their child or adolescent's symptoms. Soliciting information from both parties provides validation of voiced concerns, which reduces feelings of being unheard or dismissed.[71,89,141,142] When the parent is overly involved, the provider must ensure that the adolescent has an opportunity to state their views and participate in treatment decisions, as shown in a video available at: https://romedross.video/Comm1015Mom.

Making a diagnosis. Providers working with pediatric patients and their families should explain the biopsychosocial model, the brain–gut connection, and the rationale behind recommended treatments using language that both parties can understand. It helps to provide technical information to parents and supplement this information with metaphors and examples that resonate with children or adolescents.[74,103] This approach allows the provider to enhance the relationship with the family by validating symptoms and reducing diagnostic uncertainty,[95] anxiety, and isolation. In doing so, patients and parents know that the provider believes the symptoms are real and that other children have been diagnosed with the condition.[74,103]

Concluding the visit. It is important to emphasize a multidimensional treatment approach at the end of the visit, including pain modulation and psychological interventions. As with a rehabilitation model, emphasize that improvement in functioning will occur before pain control.[74] Patients and families should ask questions and give feedback on recommendations. Greater satisfaction with care occurs when

Table 6. Guidance for Patients to Improve Patient–Provider Communication During a Health Care Visit

Variable	Guidance
Before the visit	Provide relevant details of your medical history, prior diagnostic evaluation, previous and preferred treatments, expectations. Consider asking a family member or friend to accompany you.
During the visit	Communicate your perspective of the symptom experience and impact on quality of life openly and honestly. Convey the most bothersome symptoms and what you would like to get out of the visit. Tell the provider your preferences and willingness to undergo certain tests if recommended Discuss the treatment options with the provider and mutually determine what is best for you Communicate any concerns and worries about your condition. Ask questions (there are no “dumb” questions), but prioritize them and take notes. Work together with the provider to personalize a management plan.
After the visit	Prioritize your health (this may mean saying “no” to others). Set realistic management goals to move toward recovery. Read or watch the educational information and resources your provider gave you. Ask questions to clarify information only if needed. Make sure you have a follow-up visit. Appropriate use of patient portal to communicate with provider and staff.

Table 7. Guidelines to Improve the Patient–Provider Relationship: Pediatric Aspects[a]

Guidelines	Examples
Elicit parent and child’s expectations at the outset	Direct questions to the child Consider the thoughts of both the child and parent Take time to establish rapport with both the child and parent Be mindful of verbal and nonverbal methods of communication Offer empathy, provide reassurance, and listen
Validate symptoms	Acknowledge that symptoms are real
Provide a positive diagnosis	Emphasize that you have reviewed the chart and all previous testing Explain that pain is the illness Confirm the prevalence of DGBI in pediatrics and that the child/adolescent is not a “mystery.” Ensure understanding that this is not a diagnosis of exclusion.
Provide education	Provide the pathophysiology framework. Use metaphors: software vs hardware (pain is a software problem; the system needs a “reboot”); false alarm (real sounds although there is no fire); pain is hurtful but not harmful Discuss the biopsychosocial model as it relates to DGBI
Emphasize a multidisciplinary intervention plan	Provide the analogy to a tricycle: all tires must work for it to be able to move Treatment components: pain modulation (identify triggers and tone down the pain), psychological techniques, physical activity and gradual, paced return to function (including school attendance and social activities) Frame treatment as a rehabilitation model Discuss treatment recommendations and solicit feedback from both Ensure that the child patient and parent understand what their roles are (child as an active participant; parent as a coach)
Staying connected	Assures families that they are not being dismissed Allows detection of changes in symptoms Appropriate use of patient portal to communicate with provider and staff
Offer an optimistic outlook	Reference literature on resiliency in children and adolescents

[a] Modified from Schechter et al.[74]

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Table 8. Recommendations to Reduce Health Care System Constraints

Suggested action	Intended benefit
Train providers in communication skills	To optimize the PPR and improve satisfaction, treatment adherence, and clinical outcome
Train providers in how to use the EHR	To reduce provider time spent documenting and charting on the computer
Lobbying of insurance companies, for example, regarding increasing reimbursement for time spent during an office visit	To incentivize patient education, focus on the PPR, and reduce provider burnout
Development of unified software systems to allow providers to communicate with patients and with each other	To reduce the time spent on tasks that do not benefit the PPR directly
Reassignment of precharting and data entry tasks to medical assistants	To reduce provider time spent on secretarial tasks and equip the provider with valuable information about a patient before the encounter
Employ scribes or dictation software	To reduce provider time spent in front of a computer, allowing the provider's focus to shift back to the patient
Optimize the arrangement of office space	To create a collaborative environment where the patient feels they can ask questions and provide meaningful input on treatment plans

patients and families play a role in treatment decision making.[71,143] Finally, it is essential to offer a positive outlook, emphasizing children's resiliency and recovery capabilities. This provides hope, which becomes a critical construct for recovery.[74]

Reconciling Health Care System Constraints

It is necessary to reconcile health care system constraints to establish meaningful use of time (Table 8).

Optimize time spent. Although perceived and actual time spent are not directly correlated,[40,41] when available visit time is limited the PPR can be impaired. The patient and provider should initially establish goals, answer questions, make diagnoses, and offer treatments within time constraints. Communication skills training can optimize verbal and nonverbal messages to build the PPR and mitigate impediments caused by health care system constraints.

Improve insurance reimbursements for clinic visits. To increase the meaningful time spent during visits, providers must lobby insurance companies to reimburse for time spent during a clinic visit. The 2021 guidance on billing for evaluation and management visits allows providers to incorporate patient education and time spent during the pre-and post-encounter visit toward reimbursements; we believe this change is likely to improve the PPR and reduce provider burnout. A unified system needs to be developed that allows providers to communicate with patients and with each other. This makes communication with patients more efficient and improves the PPR.

Reallocation of administrative tasks. Pre-charting and data entry tasks, such as inputting questionnaire data, can be assigned to medical assistants or other office staff, for the provider to review before meeting a new patient. Furthermore, within a visit, scribes or dictation software can be used to reduce time spent in front of a computer. This can improve the PPR by redirecting the provider's focus away from the computer to the patient.

Rearrangement of office space. Placing the computer and desk beside the patient and provider rather than across from each other creates a collaborative environment. It allows for screen sharing where the patient feels they can ask questions and provide meaningful input on treatment plans.

Telehealth and Communication

With the emergence of the EHR, telemedicine and telecommunication have increased among providers and patients. Previously, specialists were not accessible to remote or rural patients. Recently, because COVID-19 restricted patients' access to providers, telehealth and telecommunication has been adopted universally for continuity of care. One study showed that telecommunication decreases hospital utilization, improves patient adherence to treatment, and improves patient satisfaction and quality of life.[144] In addition, telecommunication enables creative dissemination of electronic education and learning tools.

However, telemedicine may have inherent barriers to effective communication. As the COVID-19 pandemic continues, more data will become available regarding this platform's benefits and limitations. In a recent survey, 67% of respondents rated telemedicine visit quality "as good/better" than face-to-face, and 96% reported being somewhat/very satisfied with medical care and 80% would

Table 9. Recommendations to Improve Provider Communication Skills to Enhance the Patient–Provider Relationship

Recommendations
Training for trainees and providers
Establish skills-based communication training in medical and health care professional schools
Develop continuing medical education programs on communication skills for practicing providers
Develop a curriculum for communication competencies
Set up certification for participants in advanced training programs (eg, “train the trainer”)
Include cross-cultural communication competence
Teach clinicians how to communicate sensitive issues verbally and in writing
Institute collaborative (patient–provider) modeling of clinical experience in articles and teaching
System change (curricula, incentivizing, continuing medical education prioritization)
Ensure parity in reimbursements for face-to-face communication time (eg, medical interview and patient education) vis-à-vis procedural time
Provide financial incentives for providers with high patient ratings on communication skills
Set up “communication report cards” for providers, health care practices and the public
Set up integrated clinical programs with mental health, dietary, and medical providers
Ensure flexibility in scheduling and minimize clinic administrative inefficiencies
Evaluate recent changes, such as increased reimbursement for review and documentation time and sharing of records with patients
Research
Study outcome of provider training that empower patients to be proactive in eliciting patient-centered care
Evaluate provider training programs on satisfaction, adherence, outcome, quality of life, and costs
Study patient satisfaction/outcome from their provider’s care pre and post provider training
Conduct further research on the impact of culture, race, and ethnicity on the PPR

choose to use telemedicine again if available.[145] Not surprisingly, patients feel they can more easily access their providers via telemedicine. However, there are limitations. A recent study of gastroenterologists during the coronavirus pandemic revealed that 67% of providers felt that technical issues with the electronic platform, Wi-Fi, or internet connectivity posed a barrier to effective communication, and 42.1% of providers felt that patients were unprepared for their telehealth visits.[146] Another survey found that the lack of physical examination posed a significant barrier to both patients and providers.[145] To overcome these limitations, a new curriculum is being developed to train providers in “web-side manner.”[147]

In general, telemedicine does not facilitate high-quality communication between patients and providers. Nonverbal cues can be missed, including facial expressions hidden by masks.[148]

The opportunity to bring a third party into the telemedicine session, such as a language interpreter or family member, may be necessary to improve clear communication, however, screen sharing, and other technological challenges can impede effective and concise communication.

Although telemedicine is well established in clinics, and its use is increasing in inpatient settings. It limits patient and provider exposure to coronavirus. However, it also significantly limits communication, eliminates the physical examination, and reduces ongoing monitoring during the hospital stay. Ultimately, determining the best form of communication is critical for high-quality patient care.

Recommendations

In Table 9, we provide we provide recommendations to improve communication skills and the PPR, based on literature review and consensus.

Supplementary Material

Note: To access the supplementary material accompanying this article, visit the online version of *Gastroenterology* at www.gastrojournal.org, and at http://doi.org/10.1053/j.gastro.2021.07.037.

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Conflicts of interest
The authors disclose no conflicts.

Evidence-Based Review

We identified a previous systematic review of the literature examining whether interpersonal interventions can improve the patient and provider experience, reduce costs, and improve physician connection with patients. This systematic review was published as 2 separate articles[12,13] reporting data from 73 randomized controlled trials and controlled observational studies.

In the first of these articles,[13] the effect of patient–provider interpersonal intervention on 4 outcomes, which included population health outcomes, patient experience, provider experience, and costs, was summarized. The clinical settings varied and included primary care, oncology, gastroenterology, surgery, emergency care, gynecology, geriatrics, psychiatry, and intensive care. Half of the eligible studies focused on either improving general communication skills (eg, using verbal or nonverbal skills) or learning a specific communication technique (eg, phraseology used during the consultation). One-third of these interventions were of low time intensity in terms of the time required on the part of the participant. Two-thirds of interventions studied were provider-focused, with the other one-third being dyadic as the intervention was directed at both the patient and the provider. Evidence suggested that moderate- to high-demand interventions (in terms of the required time and effort), focused on a specific communication technique, partnered with an education–practice–tool intervention, had a positive influence on physical function and mental health. Most interventions designed to target the patient experience were provider-focused and had evidence of improved patient satisfaction and comprehension. However, only 3 of 19 studies that examined the effect of the intervention on costs demonstrated significant savings, although 10 other studies demonstrated no significant increase in costs with the intervention. Of 11 studies that measured the effect on the length of the consultation, only 4 reported a significant increase in the active intervention arms of the trials, but all of these studies demonstrated benefits in terms of patient health, and patient and provider experience. In studies examining effects on the provider experience, general communication training was the most common intervention, and this led to improved communication, satisfaction, and perceived provider friendliness, as assessed by the patient.

Only 4 of the eligible studies were conducted in gastroenterology patients, and 7 studies were conducted in patients with functional nongastrointestinal disorders, such as fibromyalgia or chronic low back pain. Six studies reported the effect of the intervention on an objective physiological measure, which included blood pressure, serum lipids, body mass index, hemoglobin A1c, and HIV viral load. Only 1 of these studies demonstrated any improvement in the physiological end point of interest, a reduction in HIV viral load, after an intervention that consisted of training on motivational interviewing techniques, with the aim being to improve adherence to antiretroviral therapy among patients with HIV in Argentina. Only 2 studies examined the impact of an intervention on physician stress or burnout, and none assessed impact on malpractice outcomes.

Although this systematic review was published in 2020, the main search of the medical literature to inform it was conducted up to August 2017, with a subsequent “bridge search” up to September 2019. We therefore undertook an updated search of the literature in the intervening years since the date of the main search, up to March 11, 2020, using the exact same search strategy, which was provided by the authors in their supplementary material.[13] Our updated search identified an additional 4086 citations. The titles and abstracts of these citations were examined for potentially relevant studies, and 38 appeared to be potentially relevant and were retrieved for further evaluation. Of these, 3 were already identified and included in the review by Haverfield et al,[13] and 11 were ineligible based on their eligibility criteria. This left 24 articles eligible for inclusion, and we were also aware of 2 earlier eligible studies conducted specifically in patients with gastrointestinal symptoms, which were therefore included.

The characteristics and results of these 26 articles are summarized in Supplementary Table 1. The majority ($n = 21$) were randomized controlled trials. The median sample size was 147 (range, 25–805). Interventions were delivered in the hospital inpatient or emergency department setting ($n = 5$), pre- or postoperative setting ($n = 5$), oncology/radiation therapy ($n = 4$), primary care ($n = 4$), medical or surgical specialty settings ($n = 6$), or the general population ($n = 2$). The most common control group was usual care ($n = 21$). The intervention focused on the patient in 13 studies, the provider in 7 studies, and both the patient and provider in 6 studies. Two-thirds of the studies ($n = 17$) had a positive effect on at least 1 outcome. An overview of the effect of the various interventions studied on the 4 outcomes of interest (ie, population health outcomes, patient experience, provider experience, and costs) found in Haverfield et al[13] and updated with the 26 new studies identified by our search is provided in Table 2. This presents the number of studies that reported at least 1 positive result for the 4 outcomes of interest, according to the intervention used, as well as the number of studies with no positive results across any of the outcomes studied.

In the second companion article of the original systematic review,[12] the authors focused on identifying practices that improved physician presence and connection with patients. The evidence from the 73 studies was distilled into 31 separate practices, which were then further refined after observations of encounters in various health care settings, as well as qualitative interviews with physicians, patients, and nonmedical professionals whose jobs involved relational care and with intense interpersonal interactions (eg, firefighters, chaplains, or social workers). A Delphi process was then used to finalize a list of recommended practices. The final list included 5 recommended practices to foster meaningful connections with patients. These included preparation with intent before seeing the patient, listening intently and completely to the patient while sitting down, formulating an agreed agenda with the patient as to what matters most, connecting with the patient's story, and exploring emotional cues by naming and validating the patient's feelings.

In summary, based on the results of the original systematic review, combined with our updated search:

- There is evidence that interventions targeting patient–provider interpersonal interactions can improve measurable outcomes, including population health, patient experience, provider experience, and costs.
- One-third of these interventions were of low time intensity, in terms of the time required on the part of the participant, but even moderate- to high-demand interventions had a positive influence.
- Two-thirds of interventions studied were provider-focused, with the other one-third directed at both the patient and the provider.
- Although few studies examining the effect of the intervention on costs demonstrated significant savings, many of the studies demonstrated no significant increase in costs.
- Few studies reported a significant increase in the length of consultation in the active intervention arms of the trials, but those that did demonstrated benefits in terms of patient health, and patient and provider experience.
- General communication training was the most common intervention, and led to improved communication, satisfaction, and perceived provider friendliness, as assessed by the patient.
- Distillation of all this evidence, followed by a Delphi process, suggested 5 recommended practices to foster meaningful connections with patients.

These included preparation with intent before seeing the patient, listening intently and completely while sitting down, formulating an agreed agenda with the patient as to what matters most, connecting with the patient's story, and exploring emotional cues by naming and validating the patient's feelings.

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Supplementary Table 1. Characteristics, Interventions, and Outcomes for the 26 New Studies Identified by the Literature Search

Study, year	Design	No. of participants	Setting	Intervention	Control	Recipient of intervention		Intervention effect[a]	Findings
						Provider	Patient		
Pare, 2010[e1]	RCT	135	Primary care	Comprehensive counseling to patients with heartburn	Usual care		X	–	No difference in health-related quality of life scores, symptom scores, or patient satisfaction
Catapani, 2015[e2]	**RCT**	**131**	**Gastroenterology**	**Enhanced therapeutic patient relationship in patients with functional dyspepsia**	**Usual care**		**X**	+	**Higher proportion of patients achieving a ≥50% reduction in functional dyspepsia symptom scores**
Awdish, 2017[e3]	**Controlled observational**	**31**	**Intensive care unit**	**Communication skills bundle**	**Usual care**	**X**		+	**Higher patient satisfaction**
Dillon, 2017[e4]	RCT	40	Primary care	Physician coaching and/or a patient activation tool	Usual care	X	X	-	No difference in eliciting or integrating patient preferences, presenting options, or discussing pros and cons
Eggly, 2017[e5]	**RCT**	**114**	**Oncology**	**Question prompt list only or question prompt list plus a coach**	**Usual care**		**X**	+	**Question prompt list only increased active patient participation in the question prompt list arm, but no change in visit length or physician communication**
Howe, 2017[e6]	**RCT**	**164**	**General population, histamine-induced skin reaction**	**Physician training in “high warmth,” “high competence,” and positive expectations about placebo effect**	**Physician training in “low warmth,” “low competence,” and negative expectations about placebo effect**	**X**		+	**Smaller wheal size associated with higher warmth, higher competence, and positive expectations about the placebo**

Supplementary Table 1. Continued

Study, year	Design	No. of participants	Setting	Intervention	Control	Recipient of intervention		Intervention effect[a]	Findings
						Provider	Patient		
McClintock, 2017[e7]	**RCT**	**79**	**Psychotherapy**	**Feedback to therapist on client ratings**	**Usual care**	**X**	**X**	+	**Greater client-rated empathy, alliance, and satisfaction, no difference in clinical outcomes**
Pace, 2017[e8]	**RCT**	**25**	**Inpatients**	**BATHE interview**	**Usual care**	**X**		+	**Increased patient satisfaction, especially with physician “genuine interest in the patient as a person”**
Qiao, 2017[e9]	**Controlled observational**	**769**	**Surgery and medical clinics**	**Feedback of patient satisfaction to the physician**	**Usual care (no feedback)**	**X**	**X**	+	**Better patient satisfaction including physician communication and other subscales**
Sanguansak, 2017[e10]	**Controlled observational**	**98**	**Preoperative**	**Postoperative social media messaging**	**Usual care**	**X**	**X**	+	**Improved medication adherence and satisfaction, no difference in clinical (visual) outcomes**
Farag, 2018[e11]	**RCT**	**320**	**Pulmonary**	**Asthma “action plan”**	**Usual care**	**X**	**X**	+	**Better asthma control and reduced health care use and sick days**
Gould, 2018[e12]	RCT	805	Care of the elderly wards	Intervention to support delivery of compassionate care	Usual care	X		–	No difference in quality of interaction scores, patient-reported evaluations of emotional care, or nursing empathy
Huei-Yu Wang, 2018[e13]	RCT	479	Primary care	Physician communication training	Usual care	X		–	No increase in colorectal screening rates

Supplementary Table 1. Continued

Study, year	Design	No. of participants	Setting	Intervention	Control	Recipient of intervention		Intervention effect[a]	Findings
						Provider	Patient		
Leibowitz, 2018[112]	**RCT**	**77**	**General population, histamine-induced skin reaction**	**Reassurance regarding the skin reaction**	**No reassurance regarding the skin reaction**		**X**	+	**Faster decline in itchiness and irritation**
Leydon, 2018[e14]	RCT	320	Primary care	Communication skills training	Usual care	X		–	No increase in visit length or patient satisfaction
Pallett, 2018[e15]	**RCT**	**116**	**Gynecology**	**Video explaining procedure**	**Usual care**		**X**	+	**Better patient knowledge, and reduced time spent counseling by the physician**
Parker, 2018[e16]	**RCT**	**240**	**Oncology**	**Communication skills training**	**Usual care**	**X**		+	**Better patient knowledge, and improved patient adherence**
Shuen, 2018[e17]	RCT	251	Emergency department	Text or telephone call 48 hours after discharge	Usual care		X	–	No difference in subsequent attendances or patient satisfaction
Brand, 2019[e18]	**RCT**	**121**	**Coronary angiography**	**Graphic comic aid to informed consent**	**Usual informed consent**		**X**	+	**Better comprehension and satisfaction, reduced anxiety**
Campbell, 2019[e19]	**RCT**	**159**	**Postoperative**	**Automated text messages**	**Usual perioperative education**		**X**	+	**Better exercise adherence and mood** **Reduced phone calls and opioid use**
Dyer, 2019[e20]	RCT	54	Radiation therapy	In-depth individualized radiation therapy plan	Generic radiation therapy plan	X	X	–	Negative study in terms of patient-rated physician communication, competence, trust, and satisfaction

Supplementary Table 1. Continued

Study, year	Design	No. of participants	Setting	Intervention	Control	Recipient of intervention		Intervention effect[a]	Findings
						Provider	Patient		
Purcell-Jones, 2019[e21]	**Controlled observational**	**175**	**Preoperative**	**Video explaining procedure in patient's language and verbal information**	**Verbal information only**		**X**	+	**Reduced preoperative anxiety in subgroup** **No difference in patient satisfaction**
Stankowski-Drengler, 2019[e22]	RCT	201	Oncology	Decision aid	Website information		X	-	No difference in patient-rated information conveyed, preferences honored, or satisfaction
Sustersic, 2019[e23]	**Controlled observational**	**324**	**Emergency department**	**Patient instructional leaflet**	**Usual care**		**X**	+	**Improved physician–patient communication and patient satisfaction, and reduced revisits for the same problem**
Wilkens, 2019[e24]	**RCT**	**90**	**Preoperative (hand surgery)**	**Web-based decision aid**	**Usual care (brochure)**		**X**	+	**Less decision conflict, no change in pain, disability, patient satisfaction, or rating of physician empathy**
Schwarze, 2020[e25]	RCT	446	Preoperative	Question prompt list	Usual care		X	–	Negative study in terms of questions asked, communication ratings, and well-being

NOTE. Studies in bold type demonstrated a significant effect on at least 1 of the 4 outcomes of interest.
BATHE, background, affect, trouble, handling, and empathy; RCT, randomized controlled trial.
[a] +, positive study; –, negative study.