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Communication About Symptoms in Primary Care: Impact on Patient Outcomes

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ABSTRACT

Background and purpose: Good communication is an integral part of a healing relationship. Our study's purpose was to explore the relationship between patient-doctor communication about physical symptoms and patient outcomes

Methods: Five hundred (500) consecutive adults presenting with physical symptoms were surveyed. Previsit surveys assessed for patient symptom characteristics, illness worry, stress, expectations, functional status (MOS SF-6), and mental disorders (PRIME-MD). Immediately postvisit, patients were asked about their satisfaction (Rand-9), the presence of unmet expectations, and what the clinicians did for them; clinicians were asked what they did for the patients and also completed a 10-item measure of how difficult the encounter was from their perspective (DDPRQ). At 2 weeks, patient surveys assessed symptom outcome, functional status (MOS SF6), and satisfaction.

Results: There was a high degree of agreement between clinician and patient reports about concrete actions during the encounter, such as prescription writing, diagnostic test ordering, or providing referrals. However, there was little agreement about whether clinicians discussed the symptom's diagnosis ($k = 0.18$) or prognosis ($k = 0.27$). Encounters in which patients' reported receiving such information were associated with greater satisfaction (Diagnosis: 2.1, 95% CI: 1.5–3.1; Prognosis: 2.0, 95% CI: 1.4–2.9), fewer unmet expectations (Diagnosis: 0.41, 95% CI: 0.24–0.71; Prognosis: 0.75, 95% CI: 0.52–0.98), less postvisit worry that their symptom(s) could be serious (Diagnosis: 0.41, 95% CI: 0.29–0.64; Prognosis: 0.53, 95% CI: 0.36–0.79), and better 2-week symptom outcomes (Diagnosis: 1.7, 95% CI: 1.1–2.5; Prognosis: 1.9, 95% CI: 1.3–3.0).

Conclusions: Patients and clinicians disagreed about whether or not communication about symptom diagnosis and prognosis occurred during their encounter. Patient reports of receiving such information were associated with greater satisfaction, less worry, fewer unmet expectations, and better 2-week symptom outcomes.

INTRODUCTION

Patient-clinician communication is an important component of the healing relationship. Communication is the medium by which patients and clinicians interact; it provides the foundation for the development of trust and for the exploration of patient's values. Patient-centered care depends on a sophisticated interaction between patients and clinicians in which each share their vision and goals and work together to optimize health.

Donabedian, in his landmark paper inaugurating the era of outcomes research, suggested that outcomes could be thought of as the five Ds: death, disease, disability, dysfunction, and dissatisfaction.[1] Over the subsequent years, outcomes research has expanded to include other outcomes, such as trust, as well as the development of disease-specific

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outcome measures. In addition, for many disease processes, intermediate outcomes, or surrogate makers, such as glycosylated hemoglobin for diabetes, have been developed, because they are easier to measure and usually require less time to occur than "hard" outcomes, such as death or other disease-specific complications.

Previous research has demonstrated a strong relationship between patient-centered patterns of communication and higher levels of satisfaction and trust.[2–4] Clinicians with open communication styles that invite patient participation have been found to have fewer malpractice claims[5] and are more likely to provide preventive services.[6] Better communication also correlates with higher rates of compliance,[4,7] particularly among pediatric patients. Among diabetics, better communication results in lower levels of glycosylated hemoglobin, a surrogate marker for diabetes management.[8,9] Unfortunately, few studies have examined the relationship between communication and "hard" outcomes, such as death, disease progression, or dysfunction. Our study's aim was to explore the relationship between markers of communication about physical symptoms and patient outcomes.

METHODS

Patients

Consecutive adults presenting to the primary care walk-in clinic at Walter Reed Army Medical Center with a physical complaint (excluding upper respiratory infection symptoms, such as cough, coryza, or sore throat) were invited to participate. Upper respiratory infections were excluded because previous studies have shown that over 90% resolve within 2 weeks.[10] This clinic provides primary care to a panel of active duty and retired military beneficiaries and their dependents in the Washington, DC, metropolitan area. We have previously shown that the patient age, gender, and case mix is similar to that seen in nonmilitary, U.S. internal medicine office practices.[11–13] Of 528 patients approached, 500 agreed to participate. Participants were similar to nonparticipants in terms of age, race, gender, and type of complaint. Our Institutional Review Board approved this study.

Previsit assessment

Immediately prior to their clinic visit, subjects were evaluated for mental disorders with the PRIME-MD, a structured psychiatric interview that makes *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV) diagnoses.[14] Subjects also completed surveys that asked about demographics, symptom type, duration, and severity (0 none to 10 unbearable), recent stress, previsit expectations,[15] and functional status (MOS SF-6).[16] The number of "other bothersome" physical symptoms was assessed with the PHQ-15.[17]

Postvisit assessment

Immediately after the visit, patient surveys assessed satisfaction (MOS 9 item satisfaction survey),[18] residual serious illness worry and unmet expectations. In addition, patients' indicated what their clinician did during the visit (provided a prescription, a diagnostic test, a referral, discussed the diagnosis or prognosis of the symptom). Two (2) weeks after the visit, patients completed a mailed follow-up questionnaire that assessed symptom outcome (completely resolved, better, same, or worse), symptom severity, recent stress, functional status (MOS SF6), satisfaction, and unmet expectations. Immediately after the visit, clinicians completed a survey assessing what they did for the patient (provided a prescription, a diagnostic test, a referral, discussed the symptom's diagnosis or prognosis), as well as the Difficult Doctor Patient Relationship questionnaire, a 10-item question survey that assesses encounter difficulty from the clinician's perspective.[19] Patients not responding to two mailed surveys were contacted by telephone.

Analysis

All analyses were done using Stata (Version 8.0, College Station, TX). Inter-rater agreement between clinician and patient reports of specific components of communication was assessed using the kappa statistic. The primary outcomes included postvisit satisfaction, 2-week symptom outcome, and functional status. Satisfaction was analyzed as a continuous variable by summing the components of the Rand-9 instrument with Student's *t* tests. Overall satisfaction was also analyzed as a dichotomous variable with the chi-square statistic by comparing patients who reported themselves to be fully satisfied to all other categories of satisfaction (somewhat satisfied, not sure, somewhat dissatisfied, very dissatisfied). The four-symptom outcome categories (resolved, better, same, worse) were analyzed with either the chi-square or with the nonparametric Kruskall-Wallis statistic, depending on whether the independent variable was categorical or continuous. Multivariable modeling of likelihood of symptom improvement was performed using logistic regression. Functional status was obtained by summing the six questions, yielding a score ranging from 6 to 31. This was assessed using repeat measures analysis of variance (ANOVA) or Student's *t* tests as it met assumptions of normality.

RESULTS

Patient characteristics

Study participants averaged 55 years of age, half were women, 49% were Caucasian, 45% African-American, and 6% other. Patients initially presented with a variety of symptoms and 15% had more than one complaint). Pain of some

type was present in 65% of patients. Musculoskeletal complaints were the largest symptom category, present in 32%. More than half of the patients had experienced their symptom for less than 2 weeks and 68% less than a month. Sixty-four percent (64%) were worried that their symptom could represent a serious illness. Ninety-eight percent (98%) reported a specific expectation for the encounter, averaging 3.3 expectations per visit. The most common expectation was desire for information about their symptom, including both diagnosis (80%) and prognosis (63%). Other common expectations included desire for a prescription (66%), a diagnostic test (65%), or a referral (45%). A depressive or anxiety disorder was present in 146 (29%) of the patients, with 11% having more than one disorder. Major depression was present in 8.4% of patients, dysthymia in 1.4%, minor depression in 10.4%, panic disorder in 1.4%, generalized anxiety disorder in 2%, and anxiety not otherwise specified (NOS) in 11.4%. Patients with mental disorders reported a greater number of physical symptoms (6.2 versus 4.7; $p < 0.0001$), greater symptom severity (6.6 versus 5.0; 0–10 scale; $p < 0.001$), greater stress (69% versus 30%; $p < 0.001$), and more functional impairment ($p < 0.001$).

These patients were seen by 1 of 28 clinicians, with no clinician seeing more than 20 patients. Four (4) of the clinicians were nurse practitioners, 7 were medicine residents, 2 were family practitioners, and the remainder general internists. Clinicians averaged 39 years of age (range, 26–56 years of age), with an average of 11 years experience (range, 0–23), and all but 2 visits were with clinicians the patient had not seen before.

Immediate post-visit results

Immediately after the encounter with the clinician, 32% of patients were worried that their symptom could be due to a serious illness, a decline from the 64% that were worried before the visit. Patients reported receiving a prescription in 77% of visits, a diagnostic test 45% of the time, and a referral in 43%. Doctors reported providing prescriptions, diagnostic tests, and referrals in 74%, 46%, and 43% of visits, respectively. There was a high degree of agreement between clinician and patient reports of these components of the encounters, with kappa's ranging from 0.83 to 0.91 (Table 1). Clinicians reported discussing the diagnosis of the symptom in 93% of visits and the prognosis in 78%. Patients reported receiving such information less frequently; diagnostic information was reported in 63% and prognostic information in 43%. There was a low degree of agreement in patient and clinician reports of communication about diagnosis (kappa = 0.18) and prognosis (kappa = 0.27). The duration of symptoms at the time of presentation was significantly lower among patients who received diagnostic (median 18 versus 14; $p < 0.001$) or prognostic information (median: 14 versus 7 days; $p < 0.01$). While only 11% of patients reported having an unmet expectation for a referral, a diagnostic test, or a prescription, 30% ($n = 147$) reported an unmet expectation for aspects of patient-doctor communication, including unmet needs for information about either the diagnosis or prognosis of their symptom: (prognosis: 54%; diagnosis: 34%).

Table 1. Patient and Clinician Reports of Visit Content

Did the following occur during the visit?	*Doctor's report*	*Patient's report*	*Agreement (kappa)*
A prescription was given	74%	77%	0.83
A test was ordered	46%	45%	0.85
A referral was given	43%	43%	0.91
Discussed diagnosis	93%	63%	0.18
Discussed prognosis	78%	43%	0.27

Eleven percent (11%) of patient encounters were experienced as "difficult" by the clinician. A greater number of physical symptoms (6.5 versus 5.4; $p < 0.001$), greater symptom severity (6.5 versus 5.4; $p < 0.001$), patient worry (RR: 2.1; 95% CI: 1.3–3.5), and the presence of mental disorders (RR: 2.5; 95% CI: 1.7–3.8) were associated with greater encounter difficulty, from the clinician's perspective.

Outcomes

Fifty-two percent (52%) of patients reported themselves to be fully satisfied with the care they had received, 30% were somewhat satisfied, 15% uncertain, 3% somewhat dissatisfied, and 2% very dissatisfied. Patients who reported receiving diagnostic or prognostic information were more satisfied with the care they received (Table 2). Only 39% ($n = 58$) of patients who received neither diagnostic nor prognostic information were fully satisfied, compared to 58% ($n = 200$) of those who did (diagnostic information RR: 2.1; 95% CI: 1.5–3.1; prognostic information RR: 2.0; 95% CI: 1.4–2.9). Patients who reported receiving such information were also less likely to have postvisit unmet expectations. Among patients who received diagnostic information, unmet expectations were reduced from 18% ($n = 31$) among those who did not report receiving this information to 8% ($n = 27$) among those who did (RR: 0.41; 95% CI: 0.29–0.64). Similarly, 47% ($n = 67$) of patients who reported receiving neither diagnostic or prognostic information were worried that their symptom could be potentially serious, compared to only 26% ($n = 90$) who were worried immediately postvisit, when provided such information (RR: 0.56; 95% CI: 0.44–0.72). Finally, patients involved in encounters considered "difficult" by the clinician were less satisfied with their care (19% fully satisfied versus 12%; $p = 0.03$) and were more likely to have an unmet expectation (28% versus 13%; $p < 0.0001$). There was no difference in patient reports of receiving diagnostic or prognostic information from these encounters.

Table 2. Impact of Patient Reports of Receiving Diagnostic and Prognostic Information

Outcome	Patient reports receiving: Diagnostic information RR (95% CI)	Patient reports receiving: Prognostic information RR (95% CI)
Fully satisfied	2.1 (1.5–3.1)	2.0 (1.4–2.9)
Postvisit patient serious illness worry	0.43 (0.29–0.64)	0.53 (0.36–0.79)
Patient unmet expectations	0.41 (0.24–0.71)	0.75 (0.52–0.98)

CI, confidence interval.

By 2 weeks, 18% experienced resolution of the symptom for which they sought medical attention, 52% experienced symptom improvement, 22% reported no change, and 8% had symptom worsening. Overall, patients experienced significant improvement in functional status since the index visit ($p < 0.0001$), and there was a stepwise improvement in functional status with each category of symptom improvement: (2-week symptom outcome: worse: 19.6; same: 22.8; improved: 24.8; resolved: 27.5; $p < 0.0001$). While there was no relationship between patient reports of receiving diagnostic ($p = 0.73$) or prognostic information ($p = 0.08$) and 2-week functional status, there was a stepwise increase in patient reports of receiving diagnostic and prognostic information with each level of 2-week symptom improvement (worse, same, better, resolved; Table 3). In contrast, there was no relationship between clinician reports of providing diagnostic or prognostic information and symptom outcome or 2-week functional status.

On multivariable models of likelihood of symptom improvement at 2 weeks, three variables emerged as independently predictive. Reporting a greater number of other bothersome symptoms (PHQ-15) reduced the likelihood of 2-week improvement (RR: 0.88; 95% CI: 0.82–0.95), while women were more likely to improve (RR: 2.5; 95% CI: 1.6–3.9), as were patients who reported receiving prognostic information (RR: 1.9; 95% CI: 1.3–3.1).

Table 3. Comparison of 2-Week Symptom Outcomes and Patient Reports of Receiving Diagnostic and Prognostic Information

	Patient reports receiving: Explanation of symptom cause (p = 0.04)	Patient reports receiving: Likely duration of symptom (p = 0.03)
Symptom outcome		
Gone	74%	52%
Better	67%	41%
Same	59%	32%
Worse	50%	21%

DISCUSSION

In our study of patients presenting with physical complaints to a walk-in clinic, we found that there was high agreement between patients and clinicians for concrete actions, such as prescription writing, diagnostic test ordering, or providing a referral. However, there was poor agreement between patients and clinicians on communicative aspects of their interaction, such as whether the clinician discussed the symptom's diagnosis or prognosis. When such discussions occurred, patients were more likely to be fully satisfied with the care they had received, were less likely to have postvisit worry that their symptom could be due to something serious, and were less likely to have other unmet expectations. Encounters with such discussion were also associated with greater likelihood of symptom improvement by 2 weeks.

In this study, nearly all patients (93%) had specific expectations for their visit. Immediately after the visit, few patients had any unmet expectations for tests, referrals, or prescriptions, but nearly a third desired more communication about their symptom's diagnosis and prognosis. While most patients were initially concerned their symptom could be due to a serious illness, postvisit only a quarter of the originally worried patients were still worried. For the majority of patients, clinicians succeeded in reducing worry. When patients reported receiving information about diagnosis or prognosis, they were less likely to have other unmet expectations or be worried about their symptom after the visit. Communication appears to be an important component of reducing postvisit unmet expectations and serious illness worry.

From our study, it is impossible to determine the source of discrepancy between patient and doctor perceptions of communicative aspects of their encounter. There are several possibilities including: (1) One or the other could be correct (or incorrect) about whether such communication occurred; (2) Clinician communication about diagnosis or prognosis could be couched in language not easily understood by patients; (3) Utterances intended by clinicians to reflect diagnostic and prognostic information may not be understood by patients to reflect such information; and (4) Clinicians could

be substituting what they write in the medical record for communication with the patient. At any rate, since the ultimate goal of any clinician communication regarding diagnostic and prognostic information is understanding by the patient, if such information is indeed being conveyed by clinicians, it is not being received as such by the patients. Further studies to clarify the nature of this discrepancy in communication are needed.

As with previous studies, we found that "better" communication from the patient's perspective was associated with higher levels of satisfaction. Our finding of markedly increased satisfaction when such communication occurred is not surprising, particularly since previous studies have also found a strong relationship between satisfaction and unmet expectations.[15,20,21] More surprising is the relationship we found between receiving information about diagnosis, and prognosis and improved 2-week symptom outcomes. Particularly striking is the stepwise increase in reports of receiving this information in each successive category of symptom improvement. Patients with worsening of their symptom at 2 weeks had lower levels of reporting receiving information about their symptoms, diagnosis, and prognosis immediately postvisit, with a stepwise increase in receiving either diagnostic or prognostic information over the categories of symptom improvement (same, better, resolved).

There are several possible explanations for this relationship. One is that the healing relationship reflects a mind-body continuum. Patients with fewer unmet expectations, less illness worry, and more generally reassured may be more likely to heal; good communication helps foster patient healing. One possible confounder is that clinicians may be more likely to provide such information for symptoms that are easy to diagnosis and they are confident will be short-lived, such as a viral gastroenteritis. This is suggested by the lower median duration of symptoms at the time of the visit for patients who reported receiving diagnostic and prognostic information. There was no relationship between clinician reports of providing diagnostic or prognostic information and symptom duration, a relationship one would expect to see if this was the entire explanation. Moreover, even when adjusting for the duration of symptom, receiving prognostic information remained predictive of healing at 2 weeks. More research on the possible links between communication and healing are needed.

Our study has several important limitations. First it is limited to a single site, limiting its generalizability. Second, these were new patient-doctor pairs rather than established relationships. Healing communication may require more established trusting relationships to achieve its full potential. Third, we did not measure trust, another important component of patient-doctor interaction, and one that may be even more predictive of healing. While trust and satisfaction have tended to parallel one another in studies that have measured both, they are distinct constructs and likely exert slightly different effects. Fourth, it is possible that the relationship we saw between receiving prognosis and diagnostic information and improved outcomes at 2 weeks could be confounded by clinician uncertainty about the diagnosis and prognosis. For example, if the patient symptom was easily diagnosed and treated and the clinician was confident in the likely outcome, he or she may be more likely to communicate that information. Self-limited, simple problems would be more likely to receive diagnostic and prognostic information. This would have the effect of making it appear that there was a connection between receiving the information and 2-week outcomes. This is likely a partial explanation, since there was a relationship between having the symptom for a shorter duration and receiving prognostic and diagnostic information. Fifth, we explored only a single encounter, those in which the clinician wanted further diagnostic or consults before making a pronouncement regarding diagnosis or therapy would not have been captured by our methods. Finally, it is uncertain how accurate patients are in their reports of clinician communication. Differentiating the source of this discrepancy between clinician and patient reports about the communicative aspects of the encounter and determining how accurate clinicians or patients are will require direct observations of patient-clinician encounters.

CONCLUSIONS

In conclusion, we found that patient and doctors frequently disagree about whether diagnostic and prognostic information were provided during encounters centering on physical symptoms. Clinicians believe they provide diagnostic information in nearly all encounters and prognostic information in most. Patients perceive receiving such information much less frequently. When patients' report receiving such information, they emerge from the visits more satisfied and with fewer unmet expectations and less illness worry and are more likely to experience symptom improvement at 2 weeks.

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