Dimensions of Patient-provider Communication and Diabetes Self-care in an Ethnically Diverse Population
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BACKGROUND: Patient-provider communication is essential for effective care of diabetes and other chronic illnesses. However, the relative impact of general versus disease-specific communication on self-management is poorly understood, as are the determinants of these 2 communication dimensions.

DESIGN: Cross-sectional survey.

SETTING: Three VA health care systems, 1 county health care system, and 1 university-based health care system.

PATIENTS: Seven hundred fifty-two diabetes patients were enrolled. Fifty-two percent were nonwhite, 18% had less than a high-school education, and 6% were primarily Spanish-speaking.

MEASUREMENTS AND MAIN RESULTS: Patients’ assessments of providers’ general and diabetes-specific communication were measured using validated scales. Self-reported foot care; and adherence to hypoglycemic medications, dietary recommendations, and exercise were measured using standard items. General and diabetes-specific communication reports were only moderately correlated ($r = .35$) and had differing predictors. In multivariate probit analyses, both dimensions of communication were independently associated with self-care in each of the 4 areas examined. Sociodemographically vulnerable patients (racial and language minorities and those with less education) reported communication that was as good or better than that reported by other patients. Patients receiving most of their diabetes care from their primary provider and patients with a longer primary care relationship reported better general communication. VA and county clinic patients reported better diabetes-specific communication than did university clinic patients.

CONCLUSIONS: General and diabetes-specific communication are related but unique facets of patient-provider interactions, and improving either one may improve self-management. Providers in these sites are communicating successfully with vulnerable patients. These findings reinforce the potential importance of continuity and differences among VA, county, and university health care systems as determinants of patient-provider communication.

KEY WORDS: diabetes mellitus; self-care; communication barriers; access to care; chronic disease management; quality of care.


Although technical processes of diabetes management such as glycosylated hemoglobin (A1c) monitoring have improved in many health care systems, outcomes for large numbers of patients remain suboptimal.¹,² This discordance reflects the central role that diabetes patients themselves play in determining their health status and the challenges associated with supporting their efforts to manage the complexities of their self-care.³ Patients with diabetes must modify long-standing lifestyle behaviors such as their diet and physical activity levels, maintain vigilance to identify symptoms of emerging health crises, and adhere to often complex hypoglycemic medication schedules. Not surprisingly, many patients have difficulty meeting the demands of their illness and experience poorer outcomes as a result.

When diabetes patients play central roles in setting their own self-care goals, they are more likely to adhere to treatment plans.⁴−⁶ Clinicians can contribute to this process by: providing patients with the information they need for priority setting and problem solving, assisting them in identifying realistic targets for behavior changes, and providing ongoing emotional support and encouragement. Through these efforts, clinicians can improve patients’ long-term ability to maintain an effective self-management regimen and help them avoid the emotional burnout that is common among diabetes patients.⁷,⁸ More effective patient-provider communication can lead to better self-care behavior as well as improvements in health outcomes.⁹−¹⁵ One critical dimension of the communication process is the diabetes-specific content or information transfer that occurs during medical encounters, often considered under the broad rubric of “patient education.” Alternatively, general communication reflects more global aspects of the interaction, such as the extent to which patients have the opportunity to articulate their self-care problems, patients’ preferences are considered in developing treatment plans, physicians provide clear explanations about treatments and test results, and patients receive emotional support for efforts to cope with their illness. No prior studies have examined the extent to which patients’ perceptions regarding diabetes-specific and general communication are correlated or the relative influence of these 2 communication dimensions on self-care behaviors.

Regardless of which dimension of communication is considered, characteristics of patients, providers, and health systems may influence the quality of patient-provider interactions. Race and ethnicity may constitute barriers to communication with potentially deleterious effects on patients’ willingness to receive necessary services and follow treatment plans. Female physicians often engage in more patient-centered communication than their male counterparts,¹⁶ and many patients are more satisfied with female providers.¹⁷−²⁰ Continuity of care has been associated with
better communication among asthma patients\textsuperscript{21} and greater patient satisfaction and quality in general.\textsuperscript{22,23} No studies have examined the role these factors or health system differences may play in determining the communication dynamics between providers and patients with diabetes.

The purpose of this study was to examine general communication processes and diabetes-specific communication within an ethnically diverse population of diabetes patients treated in 3 different systems of care. Specifically, we asked: 1) to what extent do patient characteristics, provider characteristics, and system of care differences influence the process of general and diabetes-specific communication? and 2) how important are each of these dimensions of communication as influences on diabetes patients’ self-care behaviors?

**METHODS**

**Participants**

Adults with diabetes treated in 3 VA health care systems, 1 county health care system, and 1 university-based health care system were identified as part of a study evaluating automated telephone assessments as an adjunct to diabetes management. In each system of care, we identified diabetes patients via electronic appointment lists and screened them for eligibility at the time of outpatient primary care visits (i.e., to general internal medicine and family practice clinics) and diabetes-related specialty visits (i.e., to endocrinology, diabetes education, podiatry, and ophthalmology clinics). Patients with a diagnosis of diabetes were eligible for participation if they had a fixed residence, were at least 21 years of age, and spoke either English or Spanish as their primary language. We excluded patients who were visually or hearing impaired, seriously mentally ill, had another life-threatening condition (e.g., breast cancer, HIV disease, or renal failure requiring dialysis), or planned to change health care systems in the coming year.

A total of 1,221 known eligible patients were identified. Of these, 1,015 completed the informed consent for enrollment; 167 patients later were either lost to follow-up or refused participation prior to completing their baseline telephone interview, leaving the actual response rate at 848 (70%). There were no differences between enrollees and non-enrollees with regard to primary language, gender, type of diabetes management (insulin only, pills only, or both treatments), or age when first diagnosed. Similar proportions of patients were enrolled in VA, county, and university-based clinics (72%, 70%, and 67%, respectively; $P = .23$). Similar proportions of whites, African Americans, and Hispanics enrolled in the study; although Asian patients and those identifying as “other race/ethnicity” were less likely to enroll (57% and 66%, respectively, $P = .001$). Enrollees and non-enrollees also differed somewhat by education level ($P = .03$), with 58% of enrollees having some college education as compared to 52% of non-enrollees. Eleven patients without baseline A1c values were excluded from the current analyses along with 85 participants who reported in their baseline interview that they had no primary care provider. These latter patients were similar to those with a primary provider in terms of their demographic characteristics and diabetes treatment, although Spanish-speakers were less likely than English-speakers to report having a primary care provider (82% vs 94%, $P = .0002$). The study was approved by each facility’s human subjects committee, and all participants provided written informed consent.

**Measures**

Data for the current study were taken from the detailed telephone interview conducted with patients soon after enrollment. All interviews were conducted by trained interviewers, and participants were given the option of completing the survey in either English or Spanish.

**General Communication Style.** Patients’ perceptions regarding the general communication process were elicited using items from the Interpersonal Processes of Care (IPC) questionnaire.\textsuperscript{24} The IPC was designed to measure multiple facets of patient-provider communication such as general clarity, explanations of conditions and prognoses, and elicitation of patients’ preferences for various treatment options. Items in the IPC were selected from a larger pool generated through extensive focus groups with sociodemographically diverse patients. All items focus on treatment over the prior 12 months, and patients report the frequency of specific behaviors using a 5-point Likert scale, ranging from “always” to “never.” As in prior studies using IPC items, patients’ responses in the current study were highly skewed toward positive ratings. To simplify the measure and clarify the meaning of patients’ scores, we re-coded each item as a binary indicator of whether the participant selected the best possible response option or something else, and then summed the indicators to create the overall general communication scale. Analyses comparing the summary scale based on recoded items to one based on items using the original metric did not indicate any loss of reliability associated with collapsing the item responses. For example, the $\alpha$ reliability for the revised scale was 0.91 as compared to 0.89 using the original response set.

Although the IPC questionnaire includes 41 items and 14 suggested subscales, we found no empirical evidence that the subscales tapped unique facets of the communication experience. Consequently, we selected a subset of the original items in order to represent the overall domain as parsimoniously as possible. In so doing, we chose to maintain the integrity of the subscales, rather than sample randomly from the overall set of potential items. The subscale items that we included represent the foundational aspects of patient-provider communication: \textit{communication with patients regarding tests and procedures} (3 items, e.g., “did doctors at [usual source] explain why a test was being done?”): \textit{general explanations of self-care} (7 items,