Original Article

Variation in patient–provider communication by patient's race and ethnicity, provider type, and continuity in and site of care: An analysis of data from the Connecticut Health Care Survey

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Abstract

Objectives: The purpose of this study is to examine the quality of patient-reported communication with their health care providers using data from a large, statewide survey of patients. We examine the relationship between patient's race and ethnicity, type of health care provider, site of and continuity in care, and the quality of patient–provider communication.

Methods: We analyze data from the Connecticut Health Care Survey, a representative telephone survey of 4608 Connecticut residents conducted between June 2012 and February 2013. Eight measures of patient–provider communication were analyzed using weighted general linear and logistic regression models.

Results: Patients' assessments of the quality of communication with their health care providers were generally positive. Hispanic patients, those who received care in a clinic or hospital setting, and those who did not consistently see the same provider reported significantly poorer communication with their providers.

Conclusion: Our data suggest that improving patient–provider communication for Hispanic patients may be a critical step in achieving health equity. However, increased access to health care delivered outside of physician offices where there may not be consistency in providers across encounters may pose challenges to effective health communication.

There is abundant evidence that the quality of physician–patient communication is associated with better health outcomes and higher levels of patient satisfaction and quality of life.[1–6] The benefits of healthy physician–patient communication is one of the most durable findings in the medical literature. Evidence of its positive impact on patient outcomes goes back almost 50 years and extends to racially and culturally diverse patient populations and those with low health literacy.[7–10]

However, marked differences in the quality of physician–patient communication by patient's race and ethnicity have been observed. Two comprehensive review articles have found extensive evidence of poorer communication between physicians and minority patients.[11,12] Such differences were related in particular to physicians' affective responses or empathy toward patients and in patient assertiveness and involvement in decision-making, especially among non-English speaking patients.[12] Studies have identified similarity or concordance in physicians' and their patients' race and ethnic background as a critical factor influencing physician–patient communication and satisfaction with care, with concordant pairings—for example, where the patients and providers share the same race and/or ethnicity—more beneficial to patients than discordant

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pairings.[13,14] Language barriers, as well as ethnic and cultural barriers, may impair the physician–patient relationship; a recent study examining the impact of language proficiency on patients' interaction with their physicians reported that the quality of communication among Spanish-speaking patients and English-speaking physicians was significantly poorer than among Spanish concordant physician–patient pairs.[15]

There is also a great deal of evidence that interpersonal continuity of care, where patients consistently see the same provider at their usual source of care, is associated with higher levels of patient satisfaction with care, better health outcomes, increased access to preventive services, and lower costs of care.[16–22] There is some inferential evidence that these associations may in part be attributable to the quality of communication in more durable physician–patient relationships. In a large study of veterans treated in primary care clinics at seven Veterans Administration medical centers, self-reported continuity of care was strongly associated with better patient satisfaction, particularly with higher levels of satisfaction with the communication skills and humanistic qualities of providers.[23] There is no evidence, however, bearing on whether this association extends to other patient populations.

In contrast, little is known concerning the impact of provider type (e.g. physician, physician assistant, and nurse practitioner) and the setting in which care is delivered (e.g. physician's office, hospital, and clinic) on patient–provider communication. A review of the literature on nurse practitioners' communication with patients concluded that a more patient-centered or "biopsychosocial" (as opposed to biomedical) communication style was associated with improved patient satisfaction, increased adherence to treatment plans, and better health outcomes, similar to findings observed regarding physician–patient communication.[24] However, there is some limited evidence that patients in the United Kingdom may report better communication with nurse practitioners than with physicians.[25] To date there have been no studies examining the impact of site of care on patient–provider communication.

Our investigation of factors impacting patient–provider communication is timely, given broader changes in access to and the delivery of health care. First, patient-centered medical home (PCMH) initiatives, the nation's fastest growing practice transformation innovation, encourage the provision of primary care that is comprehensive, coordinated, and patient-centered using a team-based approach.[26–28] Improved physician–patient communication and a personal relationship with a physician are hallmarks of the movement toward patient-centered care.[29,30] Second, sweeping changes in law and policy to encourage the provision of culturally competent and appropriate care have recently been enacted. The Affordable Care Act (ACA) includes a number of provisions highlighting the importance of cultural competency that may in part address racial and ethnic disparities in health outcomes. Among the key strategies proposed by the American Medical Association's (AMA's) Commission to End Health Care Disparities were policies promoting continuing medical education (CME) and training to enhance cultural competency.[31] At a minimum, such training would be expected to improve providers' ability to communicate with patients from diverse racial and ethnic backgrounds. These initiatives have also been extended to providers other than physicians: despite the meager research on nurse–patient communication, the importance of communication skills in advanced practice nursing education, particularly in relation to the ability to serve diverse patient populations, has been recognized by multiple professional organizations and is reflected in a number of documents that influence educational and practice competencies.[32]

New contribution

The purpose of this study is to examine the quality of patient-reported communication with their health care providers using data from the Connecticut Health Care Survey (CTHCS), a large, statewide survey of patients. Analyses will examine the degree to which patients' race and ethnicity, the type of provider they see, in what setting, and with what consistency, impact their assessments of patient–provider communication. To our knowledge this is the first US study on the quality of patient–provider communication to jointly examine, in a representative survey, the impact of patients' race and ethnicity, interpersonal continuity of care, provider type, and the setting in which care is delivered.

Methods

We analyzed data from the CTHCS, a statewide telephone survey conducted between June 2012 and February 2013. The overarching goal of this project was to gather information from Connecticut residents relating to their experiences and perspective on their health and the health care system. A random-digit-dial (RDD) telephone interview strategy was employed using a dual frame, probability-based random sample of Connecticut residents.[33] The survey collected information by telephone using both landlines and cell phones from a sample of households across the state. Both cell phone and landline numbers were stratified by county; landline numbers were additionally stratified by whether the telephone number was in a listed versus unlisted block, and whether the city or town of the phone number was classified as urban, manufacturing, or other health reference group.[34] Adult residents of all ages were included in the survey. In all, 4608 adult surveys were completed resulting in a cooperation rate of 66.5% and a response rate of 29.3%. The analysis presented below is restricted to the 3773 participants who had seen a clinician in the past 12 months.

The procedures used to collect these data were approved by the Institutional Review Board of the University of Massachusetts Medical Center (#14519).

Measures

The primary outcome measures in this analysis were eight patient-reported measures of the frequency of patient–provider communication adapted from the Patient Experience Survey of Massachusetts Health Quality Partners (2015).[35] Questions assessed the following dimensions over the past 12 months (with response options in parentheses): "How often did this provider explain things in a way that was easy to understand (never, sometimes, usually, always)?"; "How often did this provider listen carefully to you (never, sometimes, usually, always)?"; "How often did this provider give you easy to understand instructions about taking care of these problems or concerns (never, sometimes, usually, always)?"; "How often were the explanations this provider gave you hard to understand because of an accent or the provider speaking a different language (never, sometimes, usually, always)?"; "How often did this provider show respect for what you had to say (never, sometimes, usually, always)?"; "How often did this provider spend enough time with you (never, sometimes, usually, always)?"; "Did the provider talk about questions/concerns (yes/no),?"; "Did you feel that the provider thought about your values and beliefs regarding treatment (yes, completely; yes, somewhat; no, not at all)?" Responses to this final question were recoded in the analysis to contrast "no, not at all" with the two affirmative response categories.

The primary independent variables consisted of (a) the type of provider patients usually see (physician versus nurse, nurse practitioner, physician assistant, or other provider; (b) whether patients usually see the same provider (yes/no); (c) what their usual source of care is (a doctor's office versus a clinic, health center, an emergency room, or some other place); (d) patients' race and ethnicity (Hispanic, Black versus White). We also included controls for patients' gender, patients' age group (18–24, 25–34, 35–44, 45–54, 65–74, 75+ years), and patients' highest level of education (8th grade or less; some high school; high school graduate or GED; some college or 2-year degree; 4-year college graduate; more than 4-year college degree). Because of their small numbers, Asian respondents (N=62) and those selecting other race (N=86) were omitted from the analysis. Missing values on patient's age and level of education were assigned to the median values for these variables. Missing observations on the eight measures of patient–provider communication were omitted from the analysis, resulting in effective sample sizes ranging between 3324 and 3760 depending on the outcome.

Statistical analysis

We estimated general linear models for the six outcome measures with ordinal response scales, and logistic regression models for the two binary outcome variables using the Complex Samples module for SPSS 22.0. Due to the complex

Table 1. Demographic profile of participants in the Connecticut Health Care Survey (CTHCS).

	Weighted %	Unweighted count
Gender		
Male	56	2392
Female	44	1378
	100	3770
Age (years)		
18–24	11	159
25–34	11	249
35–44	17	415
45–54	22	646
55–64	18	873
65–74	11	787
75 or older	11	617
	100	3746
Race/ethnicity		
Hispanic or Latino	9	250
White, non-Hispanic	79	2981
Black, non-Hispanic	8	331
Asian, non-Hispanic	3	44
Other race or multiracial	2	65
	100	3671
Usual provider type		
Physician	8	288
Other provider	92	3463
	100	3751
Usual care setting		
Physician' Office	18	613
Other Location	82	3157
	100	3770
Continuity in care		
Same provider	11	301
Different provider	89	3460
Different provider	100	3761

Frequencies are presented for participants who had seen a provider at their usual source of care in the past year. Proportions presented above were weighted to adjust for the complex sampling design and differential nonresponse.

sampling design, data were weighted using a two-step process. In the first step, design weights were calculated to account for the complex survey design, with these weights subsequently adjusted in a second step to balance the sample according to the Connecticut population distributions from the 2010 US Census and 2011 American Community Survey and adjusted for survey nonresponse.

Results

The demographic characteristics of participants are presented in Table 1. Consistent with Census data for the Connecticut, CTHCS participants were largely White/non-Hispanic (79%), married (55%), and having a high school

Table 2. Connecticut patients' assessment of patient–provider communication.

In the past 12 months, …	Never	Sometimes	Usually	Always
How often did this provider explain things in a way that was easy to understand?	1.5	6.2	15.8	75.8
How often did this provider listen carefully to you?	1.0	5.3	14.7	78.6
How often did this provider give you easy to understand instructions about taking care of these problems or concerns?	0.6	4.2	15.1	79.7
How often were the explanations this provider gave you hard to understand because of an accent or the provider speaking a different language?	90.9	5.6	0.9	2.4
How often did this provider show respect for what you had to say?	0.8	4.1	8.6	86.0
How often did this provider spend enough time with you?	1.7	7.3	14.7	75.9

	Yes	No		
Did provider talk about questions/concerns?	86.7	12.7		

	Yes, completely	Yes, somewhat	No, not at all	Provider did not recommend any treatments
Did you feel provider thought about your values and beliefs regarding treatment?	70.1	14.5	4.4	3.9

degree or higher (89%). The modal age of survey participants was 55–64 years (22%), and 60% of respondents were women.

Table 1 also provides the distributions for patients' usual provider type, setting in which care is provided, and continuity in care. A total of 92% of participants received their care from a physician as opposed to a nurse, nurse practitioner, or physician assistant; 82% received care in a doctor's office as opposed to other locations; and 90% tended to see the same provider at their usual source of care.

CTHCS participants' assessments of patient–provider communication are presented in Table 2. In general, patients provided very positive assessments of the quality of communication with their providers. Between 75%–86% of participants reported that their usual provider "always" explained things in a way that was easy to understand, that the provider listened carefully to them, that this provider gave them easy to understand instructions about taking care of their problems or concerns, that the provider showed respect for what they had to say, and that their usual provider spent enough time with them. In addition, 91% reported that they "never" had difficulty understanding their usual provider because of an accent or the provider speaking a different language; 87% reported that their usual provider talked to them about their questions and concerns; and 70% responded "yes, completely" to the question of whether their provider thought about their values and beliefs regarding treatment.

Differences in patients' assessments of patient–provider communication by patients' race and ethnicity and provider characteristics are presented in Table 3. This table presents parameter estimates from analyses in which different dimensions of provider communication were regressed on dummy

variables capturing patients' race and ethnicity (Black, Hispanic versus White), provider type, continuity in providers, and care setting, as well as controls for patients' gender, age, and education level. Results for two of the measures of patient–provider communication—whether providers had shown respect for what they had to say, and had spent enough time with them—did not reveal any differences by race and ethnicity or provider type, site of care, or continuity of care, and were omitted from this table. A clear pattern of findings emerged from these analyses. First, patients of Hispanic ethnicity reported significantly fewer occasions on which their provider had explained things in a way that was easy to understand (B=−0.262, standard error (SE)=0.088) than did Whites, and were significantly more likely to report that they had experienced difficulty in understanding their provider because of the provider's accent or language (B=0.249, SE=0.121). Hispanic patients were also more likely than Whites to report that their usual provider had not considered their beliefs and values regarding treatment (B=0.847, SE=0.338). No differences between Black and White patients were observed on these measures.

Second, treatment by a physician, in a physician's office, and by the same provider over time was associated with significantly better patient–provider communication, with one exception. Patients reporting interpersonal continuity in care (i.e., patients who saw the same provider at their usual source of care) were significantly more likely than patients who saw different providers to report that their provider was easy to understand and gave them easy to understand instructions about their problems and concerns. Those who received care in a doctor's office as opposed to a clinic, health center, or hospital were significantly less likely to have had difficulty understanding due to their

Table 3. Results from weighted general linear models and logistic regression equations predicting patient assessments of communication with providers, patients' race and ethnicity, provider type, site of care and continuity in care.

Parameter	How often did this provider explain things in a way that was easy to understand?[a]				How often did this provider listen carefully to you?[a]				How often did this provider give you easy to understand instructions?[a]			
	Est	SE	t	Sig.	Est	SE	t	Sig.	Est	SE	t	Sig.
Intercept	3.243	0.124	26.2	<0.001	3.420	0.115	29.8	<0.001	3.249	0.130	25.0	<0.001
Hispanic/Latino	**−0.262**	**0.088**	**−2.99**	**0.003**	−0.100	0.076	−1.32	0.186	0.074	0.060	1.25	0.213
Black	−0.151	0.085	−1.78	0.074	−0.031	0.072	−0.44	0.662	−0.059	0.081	−0.73	0.465
Tx by physician	0.099	0.072	1.36	0.173	**−0.166**	**0.072**	**2.29**	**0.022**	0.105	0.080	1.30	0.193
Tx by same provider	**0.198**	**0.092**	**2.14**	**0.032**	0.102	0.066	1.55	0.122	**0.216**	**0.094**	**2.30**	**0.021**
Tx in physician office	0.037	0.057	0.66	0.512	0.0064	0.048	0.08	0.937	0.065	0.054	1.19	0.235

Parameter	How often were the explanations this provider gave you hard to understand because of an accent or the provider speaking a different language?[a]				Did provider talk about questions/concerns?[b]				Did you feel provider thought about your values and beliefs regarding treatment?[b]			
	Est	SE	t	Sig.	B	SE	t	Sig.	B	SE	t	Sig.
Intercept	1.454	0.107	13.65	<0.001	−1.019	0.493	−2.07	0.039	2.821	0.706	4.00	<0.001
Hispanic/Latino	**0.249**	**0.121**	**2.06**	**0.040**	0.109	0.301	0.36	0.716	**−0.847**	**0.338**	**−2.51**	**0.012**
Black	0.034	0.048	0.72	0.473	−0.043	0.312	−0.14	0.890	−0.441	0.589	−0.75	0.453
Tx by physician	0.061	0.065	0.94	0.348	**0.757**	**0.348**	**2.18**	**0.029**	0.085	0.396	0.22	0.830
Tx by same provider	−0.111	0.082	−1.35	0.176	−0.503	0.360	−1.40	0.163	−0.089	0.406	−0.22	0.827
Tx in physician office	**−0.164**	**0.065**	**−2.55**	**0.011**	−0.295	0.253	−1.16	0.244	0.413	0.341	1.21	0.226

SE: standard error.
All models control for patients' gender, age, and education.
Cell entries in bold type reflect statistically significant effects at the .05 level.
[a]Results from weighted general linear models.
[b]Results from logistic regression equations.

provider's accent or speaking in a different language. Finally, results for provider type were mixed, with patients treated by physicians as opposed to other health care providers significantly more likely to report that their provider listened to them carefully, but less likely to say that they had talked about their problems and concerns.

To gain a sense of the magnitude of these effects, we present in Table 4 the proportion of patients describing communication difficulties within each significant predictor variable in Table 3. Percentages were derived from the fitted models presented in Table 3 and control for patients' age, gender, and level of education. For ethnic contrasts, 20% of Hispanics said that their providers "never" or only "sometimes" explained things in a way that was easy to understand, compared to less than 5% of Whites. Thirteen percent of Hispanics had difficulty understanding their provider due to an accent or language barrier, compared to only 2.5% of Whites. Hispanics were also roughly 2.5 times more likely than Whites to feel that their provider had not considered their beliefs and values when recommending a particular treatment (e.g. 9.8% versus 3.8%). Differences by provider type were of lesser magnitude, with patients seen by a physician about 50% less likely to say that their providers had listened carefully to them than those typically seen by non-physician providers. In contrast, patients

seen by non-physician providers were more likely than those seen by physicians to report that they talked about their questions and concerns by a similar magnitude. Patients not seen by the same provider were generally two times more likely to have had some difficulties in understanding their provider's explanations and instructions for taking care of problems/concerns. Finally, difficulties in understanding a provider due to the provider's language or accent were 3.5 times more likely to occur for patients treated in hospital, health center, or clinic settings (8.9% versus 2.4%).

Discussion

The CTHCS is, to our knowledge, the first representative statewide survey assessing patient–provider communication among patients covered by both public and private health insurance and receiving health care in diverse settings. Findings indicate that although patients' assessments of the frequency and quality of communication with their providers were generally quite positive, results from this study reveal certain groups of patients for whom communication could be more challenging. The ethnic differences in patient–provider communication observed in this study, while troublesome given the pronounced disparities in mortality due to chronic

Table 4. Significant differences in patient–provider communication by patient's ethnicity, provider type, location, and continuity in care.

	Hispanic	White	Physician	Non-Physician	Same provider	Different provider	Physician's office	Other location
In the past 12 months, …								
How often did this provider explain things in a way that was easy to understand?[a]	19.5%	4.6%			6.0%	12.5%		
How often did this provider listen carefully to you?[a]			4.9%	7.6%				
How often did this provider give you easy to understand instructions about taking care of these problems or concerns?[a]					3.7%	11.8%		
How often were the explanations this provider gave you hard to understand because of an accent or the provider speaking a different language?[b]	13.1%	2.5%					2.4%	8.9%
Did provider talk about questions/concerns?[c]			11.8%	7.0%				
Did you feel provider thought about your values & beliefs regarding treatment?[c]	9.8%	3.8%						

[a]"Never" or "sometimes."
[b]"Always" or "usually."
[c]"No, not at all."

disease among Hispanics in the United States, are not surprising, given findings from a recent survey of Connecticut physicians that identified a number of shortcomings in the care provided to culturally and linguistically diverse patients.[36–38] Only 38% of Connecticut physicians had received formal training in treating culturally diverse patients, and only 34% had completed CME on the subject. The tactics physicians commonly employed to manage language barriers in communicating with patients did not conform to best practices (e.g. using a family member or friend to interpret; "working through" an encounter). In addition, physicians reported that their patients' ethnic or cultural backgrounds did not have much influence on the way they discussed health issues such as diet, exercise, and other health behaviors. This was true despite recent legislation in the state of Connecticut requiring Cultural Diversity as a fifth mandatory domain for medical-license renewal.[39] Clearly, these state requirements, in addition to national efforts embedded in the ACA and in policies adopted by the AMA, have not yet had a substantial impact on the delivery of care to ethnically diverse patients.

Our study also adds to the very limited literature on patient–provider communication across different types of providers and care settings. Findings indicate that interpersonal continuity of care is a significant factor in promoting good patient–provider communication, as is to a lesser extent treatment in a physician's office as opposed to health center or clinic. These findings may be of great importance in light of the dramatic transformation occurring in 21st century US health care. As mentioned in the introduction, PCMH initiatives strongly encourage improved physician–patient communication, and continuity in care is a standard for National Committee for Quality Assurance (NCQA) medical home recognition.[29,27] Connecticut's State Innovation Model (SIM) Plan promotes the adoption of the medical home as a key objective, and the six current state SIM awardees have

included medical home initiatives and improvements related to patient-centered care as elements of their health care transformation strategy.[40,41] Although results from early assessments of the impact of the PCMH model on quality improvement were mixed more recent studies suggest this model of care is associated with improved patient satisfaction and quality of care.[27,42–44]

It is important to acknowledge the limitations of our study. First, the data for this analysis consist entirely of patients' self-reports and may be of limited accuracy and reliability. While findings from Project CHAT (Communicating Health: Analyzing Talk) have demonstrated a high level of congruence between patient and provider assessments of the content of their communications and interactions related to obesity and chronic disease management, there is evidence of misconceptions concerning both the content and quality of communication between physicians and patients.[45] For example, physicians tend to overestimate the extent to which they discussed patients' ability to follow the treatment plan, elicited patients' opinion about the prescribed medication and discussed risks of the medication, and a substantial number of patients left encounters with the sense that they had discussed topics that were not in reality raised at all.[46] Also, the 30% response rate achieved for the CTHCS may limit the generalizability of results. It is important to note, however, that this is typical of RDD surveys conducted over the past decade.[47] A recent study of 114 national, statewide, or regional RDD surveys found little impact of this level of nonresponse on the demographic representativeness of the resulting survey samples.[48] Finally, although our multivariate analyses included controls for patients' age, gender, and education, we could not control for the potential selection of patients into particular care settings or relationships with non-physician providers due to other factors. This raises the possibility that unmeasured patient characteristics, such as levels of health literacy or

mental health comorbidities, might partially or fully explain the impact of care settings or provider type on patient–provider communication.

Despite these limitations, the data presented in this manuscript highlight deficits in patient–provider communication that may jeopardize the health of ethnic minorities and those who do not have a consistent source of medical care. These relationships bear watching as health care reform and the transformation in US health care's delivery system simultaneously moves toward more patient-centered care in traditional settings and more fragmented yet perhaps more accessible and less expensive care in nontraditional settings.

Declaration of Conflicting Interests

Ethical approval

Ethical approval for this study was obtained from the University of Massachusetts Medical Center IRB ID# 14519.

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Informed consent

Verbal informed consent was obtained from all subjects before the study.

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