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Contributors to patients' ratings of quality of care among ethnically diverse patients with type 2 diabetes

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Abstract

We examined racial/ethnic differences in patients' ratings of components of interpersonal quality (participatory decision making [PDM] style, being treated as an equal partner, and feelings of trust), and evaluated the association between each of these components and patients' ratings of overall healthcare quality among non-Hispanic white (NHW), Vietnamese American, and Mexican American patients with type 2 diabetes. The findings indicated that although all three components were significantly associated with ratings of overall healthcare quality, the significant interactions between race/ethnicity and both PDM style ($\beta = -0.09$, $p < 0.01$) and equal partner ($\beta = -0.06$, $p < 0.05$) for the Vietnamese American patients suggested that the relationship between these components and patients' ratings of healthcare quality were less strong among Vietnamese American patients than among the NHW patients. Understanding racial/ethnic differences in the components of interpersonal quality that are associated with patients' ratings of overall healthcare quality is an important step for improving patients' experiences of their own care.

Keywords

quality of care; interpersonal quality of care; participatory decision making; trust; race/ethnicity

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Introduction

As outlined by the Affordable Care Act, the ‘Triple Aim’ of improving the U.S. health care system requires simultaneous pursuit of three aims: improving the experience of care, improving the health of populations, and reducing per capita costs of health care [1]. Central to improving the individual patients’ experience of care is understanding and increasing patients’ ratings of their satisfaction with their overall quality of care.

Among patients with chronic diseases such as diabetes, previous studies have shown that the quality of the patient-physician interpersonal relationship has an independent effect on patient ratings’ of their overall quality of care, including patient satisfaction with health care [2, 3], patient adherence to treatment recommendations [4–6], health-related outcomes, including glycemic control [7–10, 11, 12], and activities of self-management [7, 9, 13]. However, compared with non-Hispanic white patients, racial/ethnic minority patients consistently report lower quality interactions with their physicians, and provide lower ratings of their overall quality of care [9, 13, 14]. For example, in one study, ratings of quality of patient-physician interactions were lower among Hispanic and Asian respondents than among Blacks and white patients, and, in turn, these lower ratings were associated with lower overall satisfaction with the overall quality health care received among Hispanics and Asians [15–17]. In another study, ethnicity was shown to be a significant factor associated with overall satisfaction, whereas other factors such as age, sex, duration of diabetes, and presence of complications were not [10]. The same study [10], as well as others [11, 12] have also demonstrated an association between patients’ ratings of overall satisfaction with care and glycemic control, highlighting the importance of considering components of the patient-physician relationship that are not only likely to influence patient ratings’ of overall satisfaction, but also may have important implications for patient health outcomes. The low ratings of the patient-physician relationship among minorities is a particular concern in diabetes care in light of higher prevalence rates of diabetes among minorities, and the potentially negative impact on adherence with providers’ recommendations for adherence to treatment recommendations and health-related outcomes.

The literature suggests that the components of a high quality patient-physician relationship include the extent to which patients report sharing in decision making [18–21], feeling like an equal partner [22, 23], and trusting their physician [10, 24–27]. Shared decision making, or participatory decision-making (PDM) style, describes physicians’ efforts to actively engage patients in medical care decision-making. While studies have shown that these three components are among the potentially important domains of interpersonal care [18, 23, 24], research to date has yet to evaluate the extent to which each of these components contributes to patients’ ratings of overall quality of care among patients from diverse different racial/ethnic backgrounds. Studies that have examined racial/ethnic differences in components of a high quality patient-physician relationship have generally focused on describing group differences. For example, studies have revealed that non-Hispanic white patients report higher levels of trust in their physicians than non-white (e.g. African American and Hispanic) patients [24, 28]. Similarly, non-Hispanic white patients have been shown to desire participating in medical decision making more than non-white patients (e.g. African American, Hispanic, Asian) and to self-initiate more active participation than non-white

patients [23, 29]. Less well understood is the contribution of these components to patient ratings of overall quality of care for patients with diverse racial/ethnic backgrounds.

The aim of the current study is to explore the following: (1) racial/ethnic differences in the three components of the interpersonal quality of patient- physician relationship (PDM style, being treated as an equal partner, and feelings of trust) among Vietnamese American, Mexican American, and non-Hispanic white patients with type 2 diabetes, and (2) racial/ethnic differences in the association between these three components of the interpersonal quality of the doctor-patient relationship and patients' overall ratings of quality of care.

Methods

Setting and Participants

Data for this study derived from the Reducing Racial/Ethnic Disparities in Diabetes: The Coached Care (R2D2C2) Project [30, 31]. Patients were recruited from seven outpatient primary care clinics affiliated with an academic medical center in Southern California where they received their primary diabetes care. Patients were consented to the study when they presented to the clinics for their appointments. Seventy-six percent of eligible patients who were approached consented to complete the baseline study survey and agreed to allow access to their medical record information, laboratory, and administrative data. Patients were given a questionnaire in English, Spanish, or Vietnamese (depending on individual preference) to be completed at home and returned in a stamped, addressed envelope. A detailed description of the R2D2C2 study design, sample, and recruitment procedures is available elsewhere [30, 32, 33]. Study procedures were approved by the University of California, Irvine Institutional Review Board. The sample for the study included 1,361 patients who completed the survey; however we excluded 41 respondents who did not provide a rating of the overall quality of care, for a final analytic sample of 1,320 patients.

Measures

Outcome measure—Patients' evaluation of their overall quality of care was assessed using a single item that asked them to rate the quality of care they received in the past 12 months. Rating were made on a 5-point scale (1=*Poor*5=*Excellent*). This measure was then transformed from its original scoring to range from 0–100.

Interpersonal components of the doctor-patient relationship—The patients' level of involvement in decision-making related to their diabetes treatment was assessed using a measure of participatory decision making (PDM-7) [20, 34]. Ratings were made on a 5-point Likert scale (1=*never/ none of the time*5=*very often/all of the time*). A sample item included "How often do the doctors that take care of your diabetes offer you choices in your medical care?" Items were averaged to create a composite variable (Cronbach's α for non-Hispanic white, Hispanic, and Vietnamese patients were adequate; 0.97, 0.96, 0.95 respectively). Principle component factor analysis with varimax rotation was conducted to confirm equivalence of items across race/ethnicity. For all three ethnic/racial groups, one significant factor emerged which explained between 77.1% to 83.3 % of the variance.

Five questions assessed patients' trust in their provider [27]. A sample item included "How often do you feel that you trust your doctor's judgments about your medical care." Rating were made on a 5-point scale (1=*never* 5=*always*). Items were averaged to form a composite measure (Cronbach's α for non-Hispanic white, Hispanic American, and Vietnamese American patients were adequate; 0.92, 0.90, 0.76 respectively). Again, principle component factor analysis with varimax rotation was conducted to confirm equivalence of items across race/ethnicity. For all three ethnic/racial groups, one significant factor emerged which explained between 60.0% to 78.9 % of the variance.

A single item assessed the degree to which patients felt the doctor who cared for their diabetes made an effort to treat them like an equal partner (1=*Definitely no* 5= *Definitely yes*). All scales were transformed from original scoring to range from 0–100.

Covariates—Standard demographic characteristics were assessed to include as covariates in the analyses, such as age, gender (*male, female*), marital status (not currently married, currently married or in a marital-like relationship), and education (less than a high school education, at least a high school education). Chronic health conditions were assessed using a modified Charlson to provide a weighted count of 14 chronic health conditions (e.g. coronary artery disease, congestive heart failure, chronic lung disease, cancer, kidney disease) [35]. Depressive symptoms were measured using an 11-item version of the Center for Epidemiological Studies Depression (CES-D) scale [36]. Duration of diabetes was reported by patients as the number of years they have had diabetes. Health insurance status (1= *Uninsured* 2=*Commercial* 3=*Medicare* 4=*Medicaid*) also was derived from administrative data. Duration of relationship with the patient's provider was determined by asking patients how long they had been seeing their current physician (1=*less than one year* 2=*1–2 years* 3=*3–4 years* 4=*5 or more years*). Provider-patient language discordance was assessed by asking patients how often in the last 12 months they had difficulty speaking with or understanding the doctor because they spoke a different language. Ratings were made on a 5-point Likert scale (1=*never*; 2=*rarely* 3=*sometimes* 4=*often* 5=*always*).

Statistical Analysis

All data were analyzed using SPSS release 17.0 (SPSS Inc., Chicago). All derived multi-item measures were tested for reliability using Cronbach's alpha. We examined the sociodemographic and health characteristics of patients by race/ethnicity using ANOVA. We then used ANCOVA to examine racial/ethnic differences in the components of the interpersonal quality of the doctor-provider relationship, adjusting for age, gender, marital status, education, number of chronic conditions, depressive symptoms, duration of diabetes, insurance status, length of relationship with provider, and provider-patient language discordance. To examine racial/ethnic differences in the association between components of the interpersonal quality of the doctor-patient relationship and patient overall ratings' of quality of care, we conducted three linear regressions, testing the interaction of race/ethnicity by each interpersonal component of the physician-patient relationship. In order to evaluate the direction of the interaction effects, means of patient reports' of their overall quality of care were calculated separately for Vietnamese patients versus non-Hispanic white patients' low (–1SD below the mean) versus high (+1SD above the mean) in PDM

style. Age, gender, marital status, education, number of chronic conditions, depressive symptoms, duration of diabetes, insurance status, length of relationship with provider, and provider-patient language discordance also were included as covariates in all models.

Results

Sample Characteristics

Socio-demographic and health characteristics for the final study sample ($n=1,320$; 353 non-Hispanic white, 725 Hispanic American, and 242 Vietnamese American) is presented in Table 1. Latino patients tended to be female, younger, not currently married, and diagnosed with diabetes for a longer length of time compared to non-Hispanic white and Vietnamese American patients. Vietnamese American patients reported having the greatest number of depressive symptoms. Most of the non-Hispanic white patients were insured either through commercial insurance (42.2%) or Medicare (44.1%), whereas Mexican American patients were more likely to be uninsured (36.3%) or insured through Medicaid (41.2%). The majority of Vietnamese American patients were insured through Medicare (68.3%). Many Mexican American patients (43.1%) reported seeing their current doctor less than one year, compared to most Vietnamese American patients who reporting having a long relationship with their doctor (56.1% five or more years). Provider-patient language discordance occurred rarely; however, Mexican American patients and Vietnamese American patients were more likely to report provider-patient language discordance compared to their non-Hispanic white counterparts.

Patient Ratings of Interpersonal and Overall Quality of Care

Differences in patient ratings of the components of the interpersonal quality of the doctor-patient relationship by race/ethnicity are presented in Table 2. Both non-Hispanic white and Mexican American patients gave significantly higher ratings of participatory decision making compared to their Vietnamese American counterparts (Adjusted means = 52.1 and 52.6 compared to 50.9, $p=0.01$). Non-Hispanic white patients, however, gave significantly lower ratings of trust in their provider compared to both Mexican American and Vietnamese American patients (Adjusted means = 84.0 compared to 87.9 and 88.5, $p=0.01$). Furthermore, Non-Hispanic white patients also gave significantly lower ratings of equal treatment by their provider compared to both Mexican American and Vietnamese American patients (Estimated marginal means = 86.8 compared to 92.5 and 94.0, $p<0.001$).

Vietnamese American patient generally gave significantly lower ratings of their overall quality of care compared to non-Hispanic white and Mexican American patients, respectively (Adjusted means = 77.1 compared to 79.3 and 82.8, $p=0.01$; data not shown here). Results from three separate linear regression analyses run to evaluate the influence of race on the association between the three components of interpersonal quality of care and ratings' of overall quality of care are presented in Table 3. As shown by three significant main effects, all three components of the interpersonal quality of the doctor-patient relationship were significantly associated with patient ratings' of their overall quality of care (Table 3). However, there was a significant interaction between race/ethnicity and PDM style ($\beta = -0.09$, $p<0.01$) and race/ethnicity and treated as an equal partner ($\beta = -0.06$, $p<$

0.05) for Vietnamese American patients. As shown in Figure 1, non-Hispanic white patients' high ratings of PDM style were strongly associated with high ratings of overall quality of care, whereas this relationship was less strong among Vietnamese American patients. The pattern for the significant interaction between race/ethnicity and treated as an equal partner for the Vietnamese American versus non-Hispanic white patients mirrored that illustrated in Figure 1 (not shown, but available upon request from first author).

Discussion and Conclusion

Patients' experience with physicians and their ratings of interpersonal quality of care is increasingly being recognized as a core element of health care quality. The Affordable Care Act has mandated measures of the quality of health care from the patient's perspective and the Work Group on Patient and Family Engagement has specifically identified widespread implementation of the Clinical/Group-level Consumer Assessment of Healthcare Providers and Systems survey (CG-CAHPS) in ambulatory setting as its top priority [37, 38]. The patient experience is also increasingly tied to financial incentives. A growing number of public and private payers have begun to incorporate CG-CAHPS scores into their compensation structures [37], and the Centers for Medicare and Medicaid Services is considering including patient experience survey results as part of pay-for-performance programs under Affordable Care Act [39, 40]. With this changing health care landscape in mind, our study examined contributors to patients' ratings of overall interpersonal quality of care among racially/ethnically diverse patients with type 2 diabetes, a chronic condition for which patients' interpersonal care experiences have been shown to correlate with important clinical quality processes and outcomes [6–8, 11, 12].

Our results showed that the patients' ratings of overall quality of care and the contribution of components of the quality of interpersonal care may differ for individuals from diverse racial/ethnic groups. Consistent with findings from existing studies that indicate that minority patients generally provide lower ratings of both the interpersonal quality of the patient-provider relationship and overall ratings of the quality of care received [13, 41], and Asians provide lower ratings than other ethnic minorities [15–17], Vietnamese American patients in our study reported significantly lower ratings on participation in shared decision-making and on overall interpersonal quality of care compared to non-Hispanic white or Mexican American patients. Research examining ethnic/racial differences in ratings of quality of physician-patient relationship suggested that multiple variables, such as language and communication barriers [42, 43], different levels of trust in physicians and/or the health care system [40], language and ethnicity concordance [9, 14], disrespect [9], and being looked down [15, 45] are possible explanations for the low ratings among patients with diverse racial/ethnic backgrounds compared to non-Hispanic whites. In this study, however, most Vietnamese American patients were concordant with their provider in both ethnicity and language, and yet these patients still reported significantly lower ratings of PDM style and of overall quality of care, after controlling for any language barriers. Barriers other than language or culture between the physician and these patients may contribute to their ratings of both interpersonal and overall quality of care.

Interestingly, Mexican American patients in the current study rated PDM level significantly higher than the non-Hispanic white patients. This may be related to demographic characteristics of the Mexican American sample in the current study, i.e., Mexican American patients tended to be younger and more were female compared to Vietnamese American and non-Hispanic white patients. In a previous study of Hispanic adults, female patients were found to prefer a more patient-directed approach to their healthcare, while older patients preferred a physician-directed approach [29]. Non-Hispanic white patients gave the lowest ratings of trust and being treated as an equal partner by their provider. The reasons for this finding are not clear. There is some evidence that expectations for trust and equal partnership may be higher among non-Hispanic whites than other minority groups [23, 24].

No previous study has examined the association of these interpersonal components with overall quality of healthcare ratings in an Asian sample as measured. The findings in the current study suggest that not only do Vietnamese American patients rate low on PDM style, but also this variable may not be an essential component of ratings of overall quality of care. All three components of the interpersonal quality of the doctor-patient relationship (PDM style, being treated as an equal partner, and feelings of trust) were significantly associated with patient ratings of their overall quality of care in all three race/ethnic groups. However, the degree to which each of these components contributed patient ratings of overall quality of care significantly differed by race/ethnicity. Specifically, for Vietnamese American patients, PDM style and being treated as an equal partner were less heavily weighted in their ratings of overall quality of care compared to non-Hispanic whites and Mexican Americans. PDM style and equal partnership with the physician may not be congruent with Vietnamese cultural norms, and they may prefer to follow their physician's recommendations unquestioningly, rather than discussing and making decisions together. To improve the physician-patient relationship and, in turn, the rating of healthcare quality, physicians may need to employ culturally appropriate and tailored approaches for their Vietnamese American and other Asian American patients [46, 47]. However, evidence for such an approach is still limited; future efforts to improve quality of care in Vietnamese American and other Asian American minorities by improving the physician-patient relationship should explore components of the healthcare interaction beyond PDM style and equal partnership. Perhaps for Vietnamese American and Asian American patients, factors other than PDM and equal partnership are critical for improving quality of care.

This study has several limitations. First, the study was cross-sectional and thus can only suggest associations and not causality. Although patients' interactions with their physicians are likely to influence their overall ratings of their healthcare experience, it is also plausible that other components of their overall healthcare experience influence the patient-physician relationship. Understanding the causal relationships among these processes is an important next step to guide efforts to meet the 'Triple Aim' in diverse populations. Second, the current study focused on patient-reported characteristics only. Physician characteristics that may influence on patient ratings of interpersonal care and overall quality of care, such as gender, specialty, years in practice, and communication skills of the provider, were not explicitly examined. Third, patients with diabetes often receive care from several health professionals (e.g., specialty physicians, nurse practitioners, pharmacists, nutritionists, etc.),

and the patients' ratings of overall quality of care may have been influenced by experiences with these other health professionals. Fourth, findings from other studies suggest that Asian American patients' may systematically provide lower rates of their healthcare experiences when compared with other racial ethnic groups [13]. This difference may explain the ethnic/racial variations in the mean differences reported for the provider-patient relationship. However, these reporting differences do not explain lack of association between Vietnamese American patients' ratings of PDM style and being treated as an equal partner and their ratings of overall quality of care. Fifth, the unequal gender distribution across the racial/ethnic groups may have influenced the reported mean levels of patients' ratings of components of interpersonal quality (PDM style, being treated as an equal partner, and feelings of trust), and thus, may limit the generalizability of these study findings. Nonetheless, since gender was included as a covariate in all study models, the reported associations are unlikely to have been attributable to gender imbalances. Lastly, the data for this study was collected in a geographic area that includes high concentrations of Mexican Americans and Vietnamese Americans, and thus, findings may not be generalizable to other regions of the country where these racial/ethnic groups are more likely to less access to physicians who share a linguistic and cultural background.

Our study showed that the importance of components of the physician-patient interpersonal relationship may be different among specific ethnic groups and suggest that the differences should be considered in tailoring approaches to improve patients' assessments of overall quality of care among different racial/ethnic groups. Our findings may also help clinicians increase their awareness of ethnic differences in components of interpersonal quality of the physician-patient relationship and help improve their interpersonal style (i.e., the quality of patient communication or shared decision making) to better meet the ethnic minority patients' overall patient satisfaction needs. Future studies should focus on exploring possible explanations for racial/ethnic differences in ratings of quality of care and the modifiable components of quality of the physician-patient interpersonal relationships that may be associated with improved healthcare and improved outcomes.

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Figure 1. Ethnic/racial differences in the association between participatory decision making style (PDM) and patients' ratings of overall quality of care

Note. The means of patient ratings' of their overall interpersonal quality of care was calculated separately for Vietnamese American patients versus non-Hispanic white patients' low ($-1SD$ below the mean) versus high ($+1SD$ above the mean) in PDM style.

Table 1

Demographic and Utilization Characteristics by Race and Ethnicity (N=1,320)

	Non-Hispanic white (n=353)	Mexican American (n=725)	Vietnamese American (n=242)	p-value ^a
Gender, % male	55.6 ^a	32.8 ^b	41.3 ^c	< 0.001
Age, years	60.7 ^a	55.5 ^b	66.4 ^c	< 0.001
Marital status, % married	60.7	56.1 ^a	67.7 ^b	0.004
Education, % high school or more	75.1 ^a	11.5 ^b	20.9 ^c	< 0.001
Duration with diabetes, year	8.5 ^a	9.6 ^b	8.5 ^a	0.02
Chronic conditions, count	2.2 ^a	1.9 ^b	1.9 ^b	< 0.001
Depressive symptoms, count	10.8 ^a	12.7 ^b	14.7 ^c	< 0.001
Insurance status, %				< 0.001
Uninsured	3.1	36.3	0.4	
Commercial	42.2	6.3	2.7	
Medicare	44.1	27.5	68.3	
Medicaid	12.8	41.2	34.0	
Duration of doctor-patient relationship, %				< 0.001
Less than 1 year	33.0	43.1	12.7	
1–2 years	25.2	23.7	9.0	
3–4 years	16.0	20.6	22.2	
5 or more years	25.8	12.6	56.1	
Language discordance ^b , mean	1.2 ^a	2.1 ^b	1.8 ^c	< 0.001

^a Analyses were conducted using either χ^2 or ANOVA where appropriate.

^b Provider-patient language discordance was assessed by asking patients how often in the last 12 months they had difficulty speaking with or understanding the doctor or nurse because they spoke a different language. Ratings were made on a 5-point Likert scale (1=Never; 5=Always).

Superscripts that differ in the same row indicate significant differences between means. Two means with a same superscript are different from the other with a different superscript, but not different from one another.

Table 2

Racial/ethnic differences in three components of interpersonal quality of doctor-patient relationship

	Non-Hispanic white (n=353)	Mexican American (n=725)	Vietnamese American (n=242)	F	p-value ^a
Participatory decision making (PDM) ¹	52.2 (0.4) ^a	52.5 (0.3) ^a	50.9 (0.5) ^b	4.2	0.01
Trust ²	83.4 (1.2) ^a	88.1 (0.8) ^b	88.7 (1.3) ^b	5.3	0.005
Equal partner ³	86.8 (1.1) ^a	92.5 (0.7) ^b	94.0 (1.2) ^b	10.3	< 0.001

Note. Analyses were conducted using ANCOVA, and included adjustment for age, gender, marital status, level of education, number of chronic conditions, depressive symptoms, duration of diabetes, insurance status, length of relationship with provider, and provider-patient language discordance. Table values are adjusted means with standard errors.

Superscripts that differ in the same row indicate significant differences between means.

¹ Ratings were made on a 5-point Likert scale (1=*never/ none of the time*, 5=*very often/all of the time*). The 7-item PDM scale was transformed from original scoring to range from 0–100.

² Ratings were made on a 5-point Likert scale (1=*never*, 5=*always*). The 5-item trust scale was transformed from original scoring to range from 0–100.

³ The single item rating was made on a 5-point Likert scale (1=*never*, 5=*always*). The scale was then transformed from original scoring to range from 0–100.

Association between Race/Ethnicity and the Features of the Doctor-Patient Relationship and Overall Quality of Care: Results Testing Three Models using Linear Regression

Table 3

	Overall Quality of Care (Outcome Measure)					
	Model 1: Race/ethnicity by PDM style		Model 2: Race/ethnicity by Trust in physician		Model 3: Race/ethnicity by Treated as Equal Partner	
	β	p	β	p	β	p
Main Effects:						
Feature of doctor-patient relationship	0.28	<0.0001	0.63	<0.0001	0.32	<0.0001
Race/Ethnicity						
Hispanic American (ref=NHW)	0.07	0.10	-0.01	0.88	0.03	0.52
Vietnamese American (ref=NHW)	-0.03	0.42	-0.09	0.004	-0.07	0.04
Interactions:						
Feature of doctor-patient relationship for Hispanic American patients	-0.05	0.39	-0.02	0.68	0.07	0.06
Feature of doctor-patient relationship for Vietnamese American patients	-0.08	0.01	-0.04	0.12	-0.06	0.04
R ² (p-value)	0.18	<0.001	0.45	<0.0001	0.24	<0.0001

Ref=reference group. NHW=Non-Hispanic white

Note. Analyses included adjustment for patient age, gender, marital status, level of education, number of chronic conditions, depressive symptoms, duration of diabetes, insurance status, length of relationship with provider, and provider-patient language discordance.