

Patient–Physician Relationships and Racial Disparities in the Quality of Health Care

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Numerous studies have demonstrated that the quality of health care in the United States varies according to patients' race and ethnicity.^{1–5} These studies have consistently found that Blacks and Hispanics receive lower-quality care than the majority White population. Fewer studies have assessed quality of care of other minority groups, including Asians and Native Americans, but those that have done so have generally revealed similar trends.^{1,5} Although some of the observed disparities can be explained by lack of insurance coverage and other impediments to accessing health care services, others persist even in the absence of financial barriers.¹

The root causes of these disparities are not entirely clear. Recently, studies have begun to explore whether barriers in cross-cultural patient–physician relationships may be a contributing factor. These studies have generally found that when compared with White patients, minority patients report lower-quality interactions with their physicians.^{6–9} These differences in the quality of patient–physician relationships appear to be influenced in part by the physicians' race/ethnicity. Several studies have demonstrated that minority patients, particularly Blacks, tend to prefer physicians of their own race/ethnicity and to rate those physicians as providing better interpersonal care than other-race physicians.^{6,10,11} Although these studies have demonstrated the impact of patients' and physicians' race/ethnicity on the quality of doctor–patient relationships, they have not adequately addressed whether racial differences in the quality of these relationships contribute to other observed disparities in health care quality and ultimately to disparities in health outcomes.^{12,13}

To further explore the contribution of the patient–physician relationship to racial disparities in the quality of care, we used data from a national survey to assess the effect of race/ethnicity on patients' satisfaction with their health care and use of recommended

Objectives. This study explored whether racial differences in patient–physician relationships contribute to disparities in the quality of health care.

Methods. We analyzed data from The Commonwealth Fund's 2001 Health Care Quality Survey to determine whether racial differences in patients' satisfaction with health care and use of basic health services were explained by differences in quality of patient–physician interactions, physicians' cultural sensitivity, or patient–physician racial concordance.

Results. Both satisfaction with and use of health services were lower for Hispanics and Asians than for Blacks and Whites. Racial differences in the quality of patient–physician interactions helped explain the observed disparities in satisfaction, but not in the use of health services.

Conclusions. Barriers in the patient–physician relationship contribute to racial disparities in the experience of health care. (*Am J Public Health.* 2003;93:1713–1719)

health care services and to determine the degree to which disparities in these measures of health care quality were explained by patient–physician interactions, physicians' cultural sensitivity, and physicians' race/ethnicity.

METHODS

Data Source

The Commonwealth Fund's Health Care Quality Survey was a random-digit-dial telephone survey of adults in the continental United States conducted between April and November 2001. Communities with high proportions of Black, Hispanic, and Asian households were oversampled. Up to 20 attempts were made to contact each household. The overall response rate was 54.3%. Data were weighted post hoc to correct for disproportionate sampling and nonresponses and to make the final results representative of all US adults aged 18 years and older. The survey included questions on usual source of care, patient–physician interactions, satisfaction, use of basic health services, demographics, and health status. Interviews were conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, or Korean, according to the respondent's preference.

Analytic Variables

The primary independent variable for our analyses was race/ethnicity. Survey respon-

dents reported their own race/ethnicity as Black, Asian, Native Hawaiian/Pacific Islander, American Indian/Alaska Native, White, or Other/Mixed Race. Respondents also reported whether they were of Latino or Hispanic descent. Any respondent self-identifying as Latino or Hispanic was categorized as Hispanic. Other respondents were categorized according to their self-reported race/ethnicity. We included respondents categorized as Black, Hispanic, Asian, or White; other racial/ethnic groups had too few respondents for analysis.

Dependent variables included respondents' global satisfaction with health care and use of health care services. Satisfaction was assessed with a single scaled question about the quality of respondents' medical care over the past 2 years: "Overall, how satisfied or dissatisfied are you with the quality of health care you have received during the last 2 years? (very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied)" Respondents were asked about their receipt of several age-, gender-, and disease-appropriate health care services. The total number of appropriate services was counted for each respondent according to age, gender, and self-reported disease status, as follows: Papanicolaou testing within the past 3 years (all women); mammography within the past 2 years (women aged 50 years and older); any history of colorectal cancer screening (respondents aged 50 years and older); choles-

terol testing within the past 5 years (men aged 35 years and older and women aged 45 years and older); cholesterol testing within the past 2 years and blood pressure checks at least every 6 months (respondents with diabetes, hypertension, or heart disease); and glycohemoglobin testing within the past 6 months and eye examinations within the past year (respondents with diabetes).^{14–16}

Three variables relating to the patient–physician relationship—quality of patient–physician interactions, physician cultural sensitivity, and patient–physician racial/ethnic concordance—were defined as “explanatory” variables (i.e., variables hypothesized to explain associations between the patient’s race/ethnicity and the dependent variables). Respondents were asked 5 questions about specific physician behaviors indicative of the quality of their most recent patient–physician interaction: (1) “The last time you visited a doctor, did the doctor listen to everything you had to say, to most, to some, or to only a little? (*listening*)” (2) “Did you understand everything the doctor said, most, some, or only a little? (*explaining*)” (3) “Did the doctor involve you in decisions about your care as much as you wanted, almost as much as you wanted, less than you wanted, or a lot less than you wanted? (*participatory decisionmaking*)” (4) “Did the doctor spend as much time with you as you wanted, almost as much as you wanted, less than you wanted, or a lot less than you wanted? (*time*)” and (5) “Did the doctor treat you with a great deal of respect and dignity, a fair amount, not too much, or none at all? (*respect*)” To measure the overall quality of patient–physician interactions, we combined the 5 items to create a patient–physician interaction index, with internal consistency that was reasonably high for all racial/ethnic groups (Cronbach’s $\alpha=0.79$, range 0.75–0.80).

Respondents rated their physicians’ cultural sensitivity using 2 items: (1) “I feel that my doctor understands my background and values. (strongly agree, somewhat agree, somewhat disagree, or strongly disagree)” and (2) “I often feel as if my doctor looks down on me and the way I live my life. (strongly agree, somewhat agree, somewhat disagree, or strongly disagree)” These items were not combined.

Respondents reported whether they had a regular physician or other health care profes-

sional and were asked to classify that person into 1 of the racial/ethnic categories. We categorized physicians whose race/ethnicity classification was the same as the respondent’s as being “race concordant.” Respondents were also asked whether they preferred seeing a physician of their own race/ethnicity.

All multivariate analyses were adjusted for age, gender, and self-rated health status. Other covariates were grouped by category, including demographic variables: marital status, locale of residence (urban, suburban, rural), and geographic region; variables on sources of health care: health insurance coverage, having a regular physician, primary care site (physician’s office vs other), and physician’s gender; and variables associated with socioeconomic status (SES) and degree of acculturation: household income (below 100% poverty level, 100%–199%, 200% and above), education (less than high school, high school graduate, some college, college graduate or higher), primary language (English vs other), language barrier (frequency of difficulty communicating with physician because of language), birthplace (United States vs other), years in the United States (for immigrants), and health literacy (reflected by 2 survey items measuring difficulty with reading and understanding prescriptions and health-related information).

Statistical Analysis

We compared characteristics of respondents by race/ethnicity using *t* tests or χ^2 tests as appropriate. We also compared our patient–physician interaction index across racial groups. We conducted exploratory analyses to determine whether any observed differences in patient–physician interaction quality were attributable to racial differences in health literacy, primary language, English proficiency, physician’s cultural sensitivity, or physician’s race/ethnicity.

We dichotomized our scaled measure of satisfaction between the highest rating and all others (i.e., very satisfied with health care vs less than very satisfied) on the basis of the positively skewed distribution of responses to this item. We then examined racial differences in patients’ satisfaction with and use of health care services. All pairwise comparisons were adjusted for multiple comparisons with the Bonferroni method.

To assess the independent effect of race/ethnicity on each of our outcome measures, we created logistic (for satisfaction) and linear (for health care service use) regression models. The base model (model 1) for both outcome variables included race/ethnicity, age, gender, and self-rated health status. For use of health care services, the base model additionally included presence or absence of diabetes, hypertension, and heart disease, to account for the greater number of services considered appropriate for respondents with those conditions. Other covariates were added to each model sequentially by category: model 2 included demographic characteristics; model 3, demographic characteristics plus sources of care; and model 4, demographic characteristics, sources of care, plus SES/acculturation. After all covariates were included, we added the patient–physician interaction index (model 5), physician cultural sensitivity (model 6), and patient–physician race concordance (model 7), and all 3 together (model 8).

The purpose of this sequential modeling strategy was to determine the degree to which racial disparities in satisfaction and health care service use were explained by each group of variables. We repeated our models of health care service use, using as the dependent variable those services typically not conducted during the patient–physician encounter but rather requiring a physician’s order or referral and the patient’s active participation (colorectal cancer screening, mammography, cholesterol testing, glycohemoglobin testing, and eye examinations). We used this alternative definition of health care service use to address the hypothesis that patient–physician interactions may best account for differences in the use of services whose completion requires a physician’s order and a patient’s adherence.¹⁷ We also repeated our models with each health care service used individually as the dependent variable.

To examine whether the relative importance of specific physician behaviors varied by race/ethnicity, we repeated our fully adjusted analyses (model 8), with the 5 patient–physician interaction items included as individual (continuous) variables rather than as a composite index and stratified these analyses by respondents’ race/ethnicity. We conducted all analyses with Stata 6.0 software (Stata Corp, College Station,

TABLE 1—Respondents' Characteristics and Quality of Care, by Race/Ethnicity: Commonwealth Fund's Health Care Quality Survey, April–November, 2001

	Respondent's Race/Ethnicity				
	Black (n = 1037)	Hispanic (n = 1153)	Asian (n = 621)	White (n = 3488)	All (n = 6299)
Mean age, y ^a	42.5	38.9	40.1	47.1	45.4
Female, %	58.1	54.1	50.4	54.9	55.0
Education ≤ high school degree, % ^a	55.8	68.2	26.0	43.8	47.2
Income ≤ 200% poverty level, % ^a	50.6	59.5	31.4	30.3	35.7
Diabetes, % ^a	12.6	9.9	8.6	8.1	8.8
Hypertension, % ^a	32.5	20.2	12.3	23.2	23.5
Heart disease, %	6.5	3.4	5.9	7.2	6.7
Fair/poor health status, % ^a	17.2	22.0	12.5	14.4	15.5
Primary language English, % ^a	99.6	59.4	90.4	100	95.1
Born in US, % ^a	91.3	46.6	17.7	95.9	86.9
Living in US ≤ 10 years, % ^a	2.5	18.0	27.1	1.1	4.1
Locale of residence, %					
Urban ^a	49.4	52.1	34.7	25.2	29.6
Suburban ^a	36.1	38.9	63.2	50.3	49.4
Rural ^a	14.5	9.0	2.1	24.5	21.0
Region, %					
Northeast ^a	16.1	15.3	18.3	19.7	18.8
Midwest ^a	16.2	6.9	10.2	26.3	22.3
South ^a	58.1	34.3	22.5	34.8	37.0
West ^a	9.7	43.5	48.9	19.4	22.0
Insurance, %					
Medicare ^a	9.8	7.7	4.7	14.2	12.6
Medicaid ^a	8.6	5.8	2.4	2.4	3.5
Private/other ^a	61.0	53.6	79.5	72.8	69.6
Uninsured ^a	20.6	32.8	13.4	10.6	14.3
Usual site of care, %					
Doctor's office ^a	67.6	64.2	76.5	83.2	79.1
Community health center ^a	10.0	21.8	7.5	6.9	8.8
Emergency department ^a	11.1	7.2	4.2	4.3	5.4
Regular physician, % ^a	71.9	59.0	68.6	81.2	77.2
Race-concordant physician, % ^{a,b}	24.5	27.6	45.3	85.0	72.4
Quality of last patient–physician interaction, %					
Doctor listened to everything I had to say ^a	69.3	57.7	47.1	69.1	67.2
Understood everything doctor said ^a	61.6	56.3	47.3	68.9	66.0
Involved in decisions as much as I wanted ^a	75.1	66.9	59.4	79.7	77.2
Doctor spent as much time as I wanted ^a	70.7	57.8	50.4	72.5	70.1
Doctor treated me with great deal of respect ^a	75.5	76.1	59.4	77.0	76.1
All of the above ^a	36.1	28.5	15.6	41.3	38.5
Cultural sensitivity, %					
Doctor understands my background/values (strongly agree) ^a	59.6	64.1	48.6	61.0	60.7
Doctor looks down on me and my lifestyle (strongly disagree) ^a	73.1	66.4	57.5	76.6	74.4
Satisfaction, %					
Very satisfied with care over past 2 years ^a	61.0	57.0	43.8	65.3	63.2

Continued

Tex), using special commands developed to account for complex survey design effects.

RESULTS

Subjects included 1037 Black, 1153 Hispanic, 621 Asian, and 3488 White survey respondents. Ten percent of Black respondents were of Caribbean heritage. Hispanics self-identified as predominantly Mexican (57%), Puerto Rican (8%), or Central American (10%). Asian respondents represented a wide range of ethnic subgroups, including Chinese (24%), South Asian (17%), Filipino (13%), Japanese (10%), Vietnamese (11%) and other Southeast Asian (6%), and Korean (4%).

Reflecting the demographics of the United States, Blacks and Hispanics in our sample had lower levels of education, income, private health insurance, and health status than did Whites and Asians (Table 1). Consistent with prior studies, respondents disproportionately sought care from physicians of their own race/ethnicity; approximately one quarter of Blacks and Hispanics and nearly one half of Asians had race-concordant regular physicians. Despite the disproportionate racial matching of patients and physicians, only 10% of respondents reported a preference for a physician of their own race/ethnicity. Blacks were least likely (5.6%) and Hispanics most likely (13.7%) to state such a preference.

Quality of Patient–Physician Interactions

Ratings of specific physician behaviors and of overall quality of patient–physician interactions were generally lower among Hispanic and Asian respondents than among Blacks or Whites (Table 1). Asians, and to a lesser degree Hispanics, also reported lower levels of cultural sensitivity among their physicians. There was a positive correlation between measures of cultural sensitivity and overall quality of patient–physician interactions ($P < .001$). Adjustment for cultural sensitivity diminished the Hispanic–White difference in interaction quality by about 10% and the Asian–White difference by about 20%, but both differences remained significant ($P < .001$) (data not shown). Adjustment for health literacy reduced the Hispanic–White difference by one third and the Asian–White difference by one fifth. Differences in English proficiency accounted

TABLE 1—Continued

Preventive care, % ^c					
Cholesterol checked in past 5 years ^a	92.2	82.9	87.9	88.3	88.2
Ever had colorectal cancer screening ^a	71.4	55.8	58.3	69.4	68.4
Papanicolaou test in past 3 years ^a	88.3	81.7	80.3	79.6	80.9
Mammogram in past 2 years	91.0	89.8	87.1	89.0	89.2
Cardiovascular care (%) ^d					
Cholesterol checked in past 2 years ^a	89.2	76.1	94.8	89.8	88.6
Blood pressure checked every 6 months ^a	89.7	75.3	85.5	80.3	81.4
Diabetes care, % ^e					
Glycohemoglobin in past year	93.9	89.2	69.2	90.4	90.0
Eye exam in past year	84.3	65.8	61.1	73.4	73.8
Cholesterol checked in past 2 years	97.3	87.9	90.2	91.9	92.3
Blood pressure checked every 6 months ^a	98.2	80.2	62.2	88.0	87.9
All of the above ^a	74.1	52.0	31.2	59.8	60.1

^aDifference across respondent racial groups significant at $P < .05$, after Bonferroni correction for multiple comparisons.

^bDenominator includes respondents with a regular physician.

^cDenominator for preventive care measures includes men > 35 years and women > 45 years for cholesterol test; men and women > 50 years for colorectal cancer screening; all women for Papanicolaou test; and women > 50 years for mammogram.

^dDenominator includes all respondents reporting a diagnosis of hypertension or heart disease.

^eDenominator includes all respondents reporting a diagnosis of diabetes.

for approximately 14% of the Hispanic–White difference in interaction quality but did not affect the Asian–White difference. Patient–physician race concordance was not associated with better patient–physician interactions or with greater physician cultural sensitivity.

Satisfaction

Non-White respondents expressed lower levels of satisfaction with health care than did Whites, although this difference was not significant for Blacks (Table 1). Adjustment for differences in demographic factors and health status eliminated this difference for Blacks and Hispanics (Table 2). Adjustment for racial differences in the quality of patient–physician interactions resulted in an increase in satisfaction among Hispanics (odds ratio [OR]=1.43, 95% confidence interval [CI]=1.00, 2.05) and a reduction in the Asian–White difference in satisfaction, which was no longer significant (OR=0.69, 95% CI=0.46, 1.03). Differences in cultural sensitivity did not appear to affect the association between race/ethnicity and satisfaction. Adjustment for patient–physician race concordance increased satisfaction relative to Whites for all 3 minority groups. However, subgroup analysis revealed that this finding was driven primarily by a positive association between race con-

cordance and satisfaction among Whites (adjusted OR=1.84, 95% CI=1.32, 2.56); race concordance was not associated with satisfaction for any of the minority groups individually or for non-Whites as a whole.

Among the specific physician behaviors indicative of the quality of patient–physician interactions, treating patients with respect was the strongest predictor of overall satisfaction with health care among Blacks, Whites, and Asians, whereas for Hispanics, spending adequate time with patients was the only significant predictor of satisfaction (Table 3). The importance of adequate listening and participatory decisionmaking varied by race/ethnicity, but these qualities appeared most relevant for Blacks.

Use of Health Care Services

Racial differences in the use of health care varied across services (Table 1). In general, Blacks were more likely than others to receive appropriate health services, particularly Papanicolaou tests, blood pressure monitoring, and examinations aimed at preventing complications of diabetes. Among patients with hypertension or heart disease, Hispanics were generally less likely than others to receive routine testing and monitoring. Among patients with diabetes, Asians were least likely to receive appropriate services.

After adjustment for demographic factors and health-related variables, Blacks received on average more services, and Hispanics and Asians fewer services, than did Whites (Table 4). Adjustment for sources of care eliminated the difference between Hispanics and Whites, and additional adjustment for SES and acculturation variables, particularly health literacy, resulted in greater use of services among Hispanics. Adjustment for quality of patient–physician interactions, physician cultural sensitivity, and patient–physician race concordance only minimally affected the association between race/ethnicity and health service use across all groups. Our findings were not substantively different when we examined only services requiring a physician's order and active patient participation and when we examined each health care service individually. When we included patient–physician interaction items as individual variables, only 1 significant factor emerged: participatory decisionmaking was positively associated with use of appropriate services among Hispanics ($\beta = 0.26$, $P < .001$).

DISCUSSION

In this nationally representative survey, we found that the quality of patient–physician interactions was generally lower among non-White patients, particularly Hispanics and Asians. This difference was not trivial. The mean difference in reported quality of patient–physician interactions between Asians and Whites was greater than the difference between respondents with and without health insurance (data not shown). The finding of lower patient–physician interaction quality among Hispanics and Asians was explained in part by differences in physicians' cultural sensitivity and in patients' health literacy. Race discordance between patients and physicians did not explain racial differences in quality of interactions.

Not surprisingly, lower-quality patient–physician interactions among Hispanics and Asians were associated with lower global satisfaction with health care. After adjustment for racial differences in the quality of interactions, Hispanics appeared more satisfied with their health care than did Whites. Accounting for these differences, however, did not explain ra-

TABLE 2—Sequential Models of Racial/Ethnic Differences in Patient Satisfaction^a

Model (Variables) ^b	Comparison Groups		
	Black vs White, OR (95% CI)	Hispanic vs White, OR (95% CI)	Asian vs White, OR (95% CI)
1 (age, sex, health status)	0.99 (0.80, 1.24)	0.90 (0.72, 1.14)	0.46 (0.34, 0.62)*
2 (model 1 + demographics)	1.01 (0.80, 1.27)	0.99 (0.8, 1.26)	0.50 (0.37, 0.68)*
3 (model 2 + sources of care)	1.06 (0.84, 1.35)	1.16 (0.90, 1.49)	0.53 (0.39, 0.73)*
4 (model 3 + SES/acclturation)	1.09 (0.85, 1.39)	1.14 (0.85, 1.39)	0.53 (0.37, 0.78)*
5 (model 4 + interaction quality)	1.05 (0.80, 1.38)	1.43 (1.00, 2.05)*	0.69 (0.46, 1.03)
6 (model 4 + cultural sensitivity)	0.98 (0.75, 1.28)	1.06 (0.76, 1.50)	0.51 (0.35, 0.75)*
7 (model 4 + race concordance)	1.31 (1.00, 1.71)*	1.40 (1.02, 1.94)*	0.62 (0.43, 0.91)*
8 (all above variables)	1.16 (0.85, 1.57)	1.66 (1.10, 2.52)*	0.75 (0.49, 1.14)

Note. OR = odds ratio; CI = confidence interval; SES = socioeconomic status.

^aResults represent odds ratios (95% confidence intervals) for the association between race and being very satisfied with health care (vs less than very satisfied).

^bDemographic variables include marital status, locale of residence (urban, suburban, rural), and geographic region. Source-of-care variables include health insurance coverage, having a regular physician, primary care site (physician's office vs other), and physician's gender. SES/acclturation variables include household income (<100% poverty level, 100%–199%, ≥200%), education (<high school, high school graduate, some college, ≥college graduate), primary language (English vs other), language barrier (frequency of difficulty communicating with physician due to language), birthplace (United States vs other), years in the United States (for immigrants), and health literacy (difficulty with reading and understanding prescriptions and health-related information).

*Statistically significant at $P < .05$.

cial differences in the use of basic health services, which were attributable primarily to differences in access to care, SES, and health literacy for Hispanics, and which for Asians persisted in all of our multivariate models. Differences in cultural sensitivity and in physicians' race/ethnicity contributed minimally, if at

all, to explaining racial differences in health service use.

The results of our comparisons of health service use between Blacks and Whites contradict prior observations that Blacks generally receive fewer services than Whites.^{1,4,9,18–23} There are several possible explanations for this inconsis-

tency. First, increased awareness of disparities in health and health care in recent years—and targeted programs developed to address these disparities—may have improved access and utilization for Blacks. Other recent studies demonstrating that preventive care use among Blacks is equal to or greater than that among Whites corroborate this possibility.^{24–27} Second, many studies that have demonstrated Black–White disparities in prevention and diabetes care have examined the Medicare population, which includes primarily elderly persons.^{4,5,19,28–30} Black–White disparities may be less prevalent among younger persons. Finally, our results come from a survey with incomplete participation. If Black nonrespondents have less access to adequate health care than do Black respondents, our results may represent biased estimates of true utilization rates.

Our findings related to patient–physician race concordance also differed from those of previous studies. In previous surveys, we found that Blacks, on average, preferred Black physicians and rated them as being superior to non-Black physicians at listening, communicating, involving patients in decisionmaking, treating patients with respect, and being accessible.^{6,10,11} We also found that Hispanics with Hispanic physicians reported greater satisfaction with their health care overall.¹¹ In the present study, Blacks were the least likely of any group to state an overt preference for race-concordant physicians, and concordance was not associated with satisfaction or use of health care for Blacks, Hispanics, or Asians. This inconsistency with previous studies may reflect the fact that the current survey asked respondents about interactions with the last physician they saw, which may or may not have been their usual physician, whose race/ethnicity formed the basis of our race concordance variable. This potential misclassification was not present in our previous studies. It is also possible that increased awareness of racial disparities and of potential physician bias against minority patients has made physicians more sensitive in their interactions with minority patients.

Several other limitations of our study are worth noting. Our measures of health care use were based on self-report and may not have been accurate. The fact that there were few recent immigrants in our survey limits the generalizability of our results for immigrant and refu-

TABLE 3—Association of Specific Physician Behaviors With Patient Satisfaction, by Race/Ethnicity^a

Physician Behaviors	Respondent's Race/Ethnicity			
	Black, OR (95% CI)	Hispanic, OR (95% CI)	Asian, OR (95% CI)	White, OR (95% CI)
Listening	1.77 (1.17, 2.68)*	1.33 (0.94, 1.67)	1.45 (0.82, 2.58)	1.31 (1.02, 1.68)*
Explaining	1.07 (0.69, 1.65)	1.21 (0.87, 1.68)	1.36 (0.73, 2.51)	1.13 (0.86, 1.50)
Participatory decisionmaking	1.81 (1.05, 3.13)*	1.22 (0.82, 1.81)	1.85 (0.90, 3.83)	1.34 (0.98, 1.84)
Time spent	1.03 (0.67, 1.57)	1.71 (1.15, 2.54)*	2.47 (1.25, 4.90)*	1.89 (1.51, 2.38)*
Respect	2.83 (1.65, 4.83)*	0.98 (0.53, 1.80)	3.33 (1.52, 7.28)*	2.14 (1.50, 3.05)*

^aResults represent odds ratios (95% confidence intervals) for association between indicated physician's behavior (rated on 4-point scales, modeled as continuous variables) and being very satisfied with health care (vs less than very satisfied), adjusted for age, gender, health status, marital status, locale of residence (urban, suburban, rural), geographic region, health insurance coverage, having a regular physician, primary care site (physician's office vs other), physician's gender, household income (<100% poverty level, 100%–199%, ≥200%), education (<high school, high school graduate, some college, ≥college graduate), primary language (English vs other), language barrier (frequency of difficulty communicating with physician due to language), birthplace (United States vs other), years in the United States (for immigrants), health literacy (difficulty with reading and understanding prescriptions and health-related information), physician's cultural sensitivity, and patient–physician race concordance.

*Statistically significant at $P \leq .05$.

TABLE 4—Sequential Models of Racial/Ethnic Differences in the Use of Health Care Services

Model (Variables) ^a	Comparison Groups		
	Black vs White, β coefficients (95% CI)	Hispanic vs White, β coefficients (95% CI)	Asian vs White, β coefficients (95% CI)
1 (age, sex, health status, diabetes, hypertension, heart disease)	0.16 (0.08, 0.24)*	-0.07 (-0.15, 0.02)	-0.12 (-0.23, -0.02)*
2 (model 1 + demographics)	0.19 (0.11, 0.27)*	-0.10 (-0.18, -0.01)*	-0.17 (-0.28, -0.06)*
3 (model 2 + sources of care)	0.22 (0.14, 0.30)*	0.02 (-0.06, 0.11)	-0.14 (-0.24, -0.03)*
4 (model 3 + SES/acculturation)	0.23 (0.15, 0.32)*	0.14 (0.04, 0.24)*	-0.13 (-0.25, -0.01)*
5 (model 4 + interaction quality)	0.21 (0.13, 0.30)*	0.12 (0.01, 0.22)*	-0.13 (-0.26, 0.01)
6 (model 4 + cultural sensitivity)	0.23 (0.15, 0.31)*	0.09 (-0.01, 0.19)	-0.13 (-0.26, -0.004)*
7 (model 4 + race concordance)	0.23 (0.14, 0.32)*	0.13 (0.03, 0.24)*	-0.14 (-0.27, -0.01)*
8 (all above variables)	0.21 (0.12, 0.30)*	0.08 (-0.04, 0.20)	-0.12 (-0.27, 0.02)

Note. Results represent β coefficients (95% confidence intervals) for association between race and number of age-, sex-, and disease-appropriate health care services used. Appropriate services included Papanicolaou testing within the past 3 years (all women); mammography within the past 2 years (women ≥ 50 years); any history of colorectal cancer screening (respondents ≥ 50 years); cholesterol testing within the past 5 years (men ≥ 35 years and women ≥ 45 years); cholesterol testing within the past 2 years, blood pressure checks at least every 6 months (respondents with diabetes, hypertension, or heart disease); glycohemoglobin testing within the past 6 months, eye examination within the past year (respondents with diabetes). CI = confidence interval; SES = socioeconomic status.

^aDemographic variables include marital status, locale of residence (urban, suburban, rural), and geographic region. Source of care variables include health insurance coverage, having a regular physician, primary care site (physician's office vs other), and physician's gender. SES/acculturation variables include household income (< 100% poverty level, 100%–199%, ≥ 200%), education (< high school, high school graduate, some college, ≥ college graduate), primary language (English vs other), language barrier (frequency of difficulty communicating with physician due to language), birthplace (United States vs other), years in the United States (for immigrants), and health literacy (difficulty with reading and understanding prescriptions and health-related information).

*Statistically significant at $P \leq .05$.

gee communities, for whom cultural barriers are probably most pertinent. We grouped respondents into large racial categories, which may have obscured differences between smaller ethnic groups. Our survey contained only 2 items addressing cultural sensitivity, and these items may not have adequately captured this complex construct. Finally, we were not able to account for the possibility that our results were influenced by cultural differences in response tendencies. Previous studies have suggested that Asians in particular may respond with lower ratings than other groups on scaled measures, even when their experience is the same.³¹ The low ratings observed among Asians may have reflected this response tendency rather than an actual experience of lower-quality patient–physician interactions or lower satisfaction. However, this phenomenon would not account for the observed differences in health care use.

Acknowledging these limitations, we believe our findings hold important lessons for future research and for efforts to improve

health care delivery for racial/ethnic minority populations. Recommendations for reducing racial disparities in the quality of health care typically include training health care professionals to be more “culturally competent.”³² Concern has been expressed, however, about educational programs that focus primarily on increasing physicians' knowledge of the customs, behaviors, and values of different ethnic groups, a focus which may exacerbate rather than reduce negative stereotyping of other groups.^{33,34} Experts in cross-cultural education have cautioned that the essence of cultural competence is not mastery of “facts” about different ethnic groups, but rather a patient-centered approach that incorporates fundamental skills and attitudes that may be applicable across ethnic boundaries.^{33,34} This assertion is corroborated by our finding that racial differences in patient satisfaction disappeared or were reversed after adjustment for the quality of “generic” physician behaviors, such as spending adequate time with and showing respect for patients. However, the

fact that these physician behaviors were reported more frequently by White patients than by non-White patients—and that the individual physician behaviors associated with patient satisfaction varied by patients' race/ethnicity—indicates that efforts to improve physicians' interpersonal skills must not ignore the important influence of race, ethnicity, and culture.

We found that health literacy had a significant influence on quality of patient–physician interactions, satisfaction with health care, and use of health services. This finding suggests that the path to reducing cross-cultural barriers between patients and physicians may be a 2-way street. Increasing patients' ability to understand the language and culture of health care may be as important as improving the interpersonal skills and cultural competence of physicians.

Contrary to our hypothesis, we found that racial disparities in health care use were generally not attributable to differences in the quality of patient–physician relationships. This finding may be because of the relatively simple and noninvasive nature of the services we examined. Previous research examining racial variation in preventive care and chronic disease management has similarly found that disparities in the use of these basic services are explained largely by differences in financial access to care.^{4,24–27} It is likely that patient–physician relationships are of greater importance in explaining disparities in the use of surgical or other invasive interventions, in which trust and effective communication play a larger role in decisionmaking. Future research should explore this possibility.

Future studies should also control for the complex nature of racial disparities in health care. Our findings suggest that socioeconomic, linguistic, and cultural factors probably all contribute to racial disparities in health care quality. Research that does not control for the multifactorial structure of race and ethnicity will continue to fall short in explaining disparities. Finally, it will be important for future research to expand the scope of examination beyond Black–White comparisons to include Hispanics and Asians, who in our study appeared to be the least well served, and whom census data have shown to be the nation's most rapidly growing populations.³⁵

Primary care providers are the gatekeepers of health care systems. For this reason, differences in the quality of patients' relationships with primary care providers warrant concern as potential contributors to disparities in access to care. Further research is needed to fully explicate the contribution of the patient–physician relationship to disparities in health care. In the meantime, efforts to improve cross-cultural patient–physician interactions, including interventions to increase patients' health literacy and physicians' interpersonal skills and cultural sensitivity, should be undertaken. Without such efforts, the goal of providing all Americans equitable access to health care will be difficult to achieve. ■

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S. Saha was responsible for study conception and design, data analysis and interpretation, and article writing and editing. J.J. Arbelaez contributed to the study design and data analysis. L.A. Cooper contributed to the study conception and design, data interpretation, and article editing.

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Human Participant Protection

This study received an exemption from review by the human subjects committee of the Portland VA Medical Center.

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