Patient-Physician Racial Concordance and the Perceived Quality and Use of Health Care

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Background: Patients from racial and ethnic minority groups use fewer health care services and are less satisfied with their care than patients from the majority white population. These disparities may be attributable in part to racial or cultural differences between patients and their physicians.

Objective: To determine whether racial concordance between patients and physicians affects patients' satisfaction with and use of health care.

Methods: We analyzed data from the 1994 Commonwealth Fund's Minority Health Survey, a nationwide, telephone survey of noninstitutionalized adults. For the 2201 white, black, and Hispanic respondents who reported having a regular physician, we examined the association between patient-physician racial concordance and patients' ratings of their physicians, satisfaction with health care, reported receipt of preventive care, and reported receipt of needed medical care.

Results: Black respondents with black physicians were more likely than those with nonblack physicians to rate their physicians as excellent (adjusted odds ratio [OR], 2.40; 95% confidence interval [CI], 1.55-3.72) and to report receiving preventive care (adjusted OR, 1.74; 95% CI, 1.01-2.98) and all needed medical care (adjusted OR, 2.94; 95% CI, 1.10-7.87) during the previous year. Hispanics with Hispanic physicians were more likely than those with non-Hispanic physicians to be very satisfied with their health care overall (adjusted OR, 1.74; 95% CI, 1.01-2.99).

Conclusions: Our findings confirm the importance of racial and cultural factors in the patient-physician relationship and reaffirm the role of black and Hispanic physicians in caring for black and Hispanic patients. Improving cultural competence among physicians may enhance the quality of health care for minority populations. In the meantime, by reducing the number of underrepresented minorities entering the US physician workforce, the reversal of affirmative action policies may adversely affect the delivery of health care to black and Hispanic Americans.

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NUMEROUS studies have demonstrated racial inequalities in health care in the United States. Specifically, minority populations have less access to care,[1-6] use fewer health care resources,[6-8] and are less satisfied with the care they receive,[3,5] than the majority white population. Differences in health insurance coverage do not fully explain these disparities.[1,4,8]

Racial inequalities in health care may be partly attributable to racial, cultural, and communication barriers between minority patients and white health care providers.[9-12] Such barriers might arise from cultural or linguistic incongruity between patient and physician, from lack of mutual trust, or from racial discrimination. If these barriers existed, one might expect patients and physicians of similar racial or ethnic background to have better communication and more salubrious relationships than those of dissimilar background. Better relations might in turn lead to greater patient satisfaction and more effective use of the health care system. While this reasoning seems plausible, little empirical evidence exists to support it. We therefore sought to determine the extent to which racial concordance between patient and physician affects patients' ratings and reported use of health care.

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RESULTS

CHARACTERISTICS OF RESPONDENTS

A total of 3120 white, black, and Hispanic individuals completed the survey. Nine percent of black respondents were

METHODS

DATA SOURCE

We analyzed data from the Commonwealth Fund's Minority Health Survey, a telephone survey of noninstitutionalized adults in the 48 contiguous United States. Interviews were conducted between May and July 1994 in 6 different languages, using an interviewer-administered, computer-assisted telephone interviewing system. Data from this survey contained information regarding individuals' health care access and utilization, regular physicians, health status, and demographics.

Sampling was designed to obtain approximately 1000 white, 1000 black, and 1000 Hispanic subjects. Random digit dialing using a 3-stage, stratified-sampling process was used to ensure proper representation of households in different regions of the country and in central-city, suburban, and rural areas. After achieving the desired number of white respondents in initial cross-sections, oversamples of black and Hispanic Americans were obtained by screening additional national cross-sections and interviewing only members of those minority groups, until the desired sample sizes had been achieved. Additionally, interviews were conducted with Chinese, Vietnamese, and Korean Americans drawn from list samples, based on surnames listed in telephone directories.[13]

Of 10 576 individuals contacted, 5776 (55%) agreed to participate. The eligibility status and characteristics of nonparticipants were not known. Of those agreeing to participate, 1684 (29%) were ineligible either because they were not among the targeted racial groups or because the quota for their racial groups had been filled. Of 4092 respondents known to be eligible, 3789 (93%) completed interviews.

The 626 Asian respondents consisted, by sampling design, almost exclusively of Chinese, Vietnamese, and Korean Americans, and were not representative of Asian Americans in general. They were therefore excluded from analysis, as were the 19 American Indians and 24 respondents who did not identify their race.

PREDICTOR VARIABLE

Racial Concordance

After classifying themselves as Hispanic or non-Hispanic, respondents were asked to indicate their race as well as their national origin. Respondents were also asked if they had a regular physician to whom they usually went when they needed health care. Those who responded affirmatively identified their physicians' race. Based on these responses, we categorized individuals and their physicians into the following groups: non-Hispanic white, non-Hispanic black, and Hispanic. We considered racial concordance to be present when respondent and physician were in the same group.

Response Variables

We examined the association of racial concordance with responses to questions in the following 4 categories: ratings of physician, satisfaction with health care, receipt of preventive care, and receipt of needed medical care (**Table 1**).

Covariates

We examined potential confounding variables in 4 domains: sociodemographic factors, access to care, sources of care, and health and well-being. Sociodemographic variables included age, sex, marital status, urbanicity, geographic region, education, employment status, household

of Caribbean heritage. Hispanics were primarily of Mexican (53%) and Puerto Rican (16%) descent.

A total of 2331 respondents (75%) had a regular physician. Whites were more likely than nonwhites to have a regular physician (82% vs 71%; $P<.001$). Among the 2201 respondents who were able to identify their physician's race, whites were much more likely than non whites to have a racially concordant physician (88% vs 22%; $P<.001$) (**Figure**). Nonconcordant physicians for blacks and Hispanics were primarily white (82%) and Asian (14%).

Within each racial group, respondents with racially concordant and nonconcordant physicians were similar with regard to most of our covariates (**Table 2**). We used multivariate analysis to adjust for differences.

SATISFACTION WITH PHYSICIANS AND HEALTH CARE

In unadjusted comparisons, blacks with racially concordant as opposed to nonconcordant physicians more often rated their physicians as excellent in providing health care, in treating them with respect, in explaining their medical problems, in listening to their concerns, and in being accessible (**Table 3**). Similar results were seen for other measures of satisfaction with physician. White respondents gave higher ratings to white physicians than to nonwhite physicians on treating them with respect, explaining medical problems, and listening to their concerns. Hispanics with Hispanic physicians were found not to differ significantly from those with non-Hispanic physicians in rating their physicians, but were more likely to be very satisfied with their health care overall. Multivariate analyses revealed similar patterns, although after adjusting for confounders, racial concordance among whites was no longer significantly associated with excellent ratings of physicians in treating patients with respect or in explaining patients' medical problems (**Table 4**).

REPORTED USE OF HEALTH CARE

In unadjusted analyses, blacks with racially concordant physicians were more likely than those with nonconcordant physicians to report receiving preventive care and always receiving needed medical care (Table 3). These findings persisted after adjusting for confounders (Table 4). Racial concordance was not significantly associated with differences in delaying care seeking for any of the racial groups.

income, home ownership, receipt of public assistance, primary language (English vs other), birthplace (United States vs other), and number of years in the United States (for immigrants). Access variables included health insurance type, convenience of physician's office hours and location, and major barriers faced when seeking medical care: transportation, cost, waiting time, difficulty getting an appointment, and poor access to specialty care. Variables related to sources of care included usual care site, ability to choose one's care site, health maintenance organization membership, number of physicians seen over the last year, physician specialty (generalist vs other), ability to choose one's regular physician, physician sex, and patient-physician sex concordance. Variables related to health and well-being included self-perceived health status, number of health care visits during the last year, hospitalization within the last year, and a psychological score derived from 5 questions measuring psychological distress and well-being.[14]

DATA ANALYSIS

For bivariate comparisons of respondents with racially concordant vs nonconcordant physicians, we used t tests for continuous variables and Pearson χ^2 test for binary and categorical variables. Ordered response variables were dichotomized between the highest rating and all other ratings (eg, excellent vs other).

To adjust for covariates we used logistic regression analysis. We selected a uniform set of covariates for all responses within a given category (eg, ratings of physician) through the following model-building strategy. We built regression models for the association between racial concordance and each response variable within each racial group. All models included age, sex, insurance type, primary care site, and self-perceived health status. Other covariates were included if their elimination from a model containing other variables in the same covariate domain (eg, sociodemographic factors) changed the odds ratio (OR) estimate for the association being examined by 10% or more. Covariates that changed the OR estimate for one response variable within a category were used in the final models for all response variables in that category, and covariates that changed the estimate for one racial group were used for all racial groups. Interactions of racial concordance with respondents' education, income, language, and nationality were examined. All analyses were stratified by respondents' race.

We also conducted further analyses to explore potential reasons for observed associations. We first repeated all our analyses while adjusting for respondents' reported experience of racial discrimination within and outside medical care settings. Next, we repeated our analyses after excluding those respondents who stated that their choice of regular physician was influenced by the physician's race or ethnicity. We conducted these analyses to determine whether respondents who were "race-conscious," and who therefore might be expected to have better relationships with physicians of their own race, accounted for observed associations between racial concordance and our response variables.

To address the possibility that any observed associations were confounded by differences in health plans or in physicians' office staffs, we repeated our analyses adjusting for respondents' satisfaction with their health plans and with the helpfulness of their physician's office staff.

Finally, to address the concern that significant associations between racial concordance and our ordered response variables might be a result of our dichotomizations, we used linear regression analysis to test the relationship between racial concordance and our ordered measures modeled as continuous variables. All data were analyzed using SPSS for Windows (Release 7.0; SPSS Inc, Chicago, Ill).

SECONDARY ANALYSES

Restricting the sample to respondents who said that their choice of regular physician was not influenced by the physician's race or ethnicity altered our results in 2 ways. The effect of racial concordance among whites on rating physicians as excellent in listening to concerns was substantially reduced (OR, 1.34; 95% confidence interval [CI], 0.80-2.24), as was the effect among blacks on receiving preventive care (OR, 1.21; 95% CI, 0.65-2.25). Adjusting for respondents' reported experience of discrimination did not materially change our results.

Adjusting for respondents' satisfaction with their health plans also had little effect on our results. However, adjusting for satisfaction with the helpfulness of physicians' office staffs reduced the magnitude of the effect of racial concordance on satisfaction with health care among Hispanics (OR, 1.40; 95% CI, 0.78-2.51).

When we used linear regression to model our ordered response variables as continuous measures, the results of significance tests were generally similar to those obtained in our logistic regression analyses (data not shown). The only differences were that (1) among whites, the association between racial concordance and ratings of physicians on listening to concerns was not significant; and (2) among blacks, the associations between concordance and ratings of physicians on explaining problems and on listening to concerns were also no longer significant.

No significant interactions were found between racial concordance and education, income, language, or nationality.

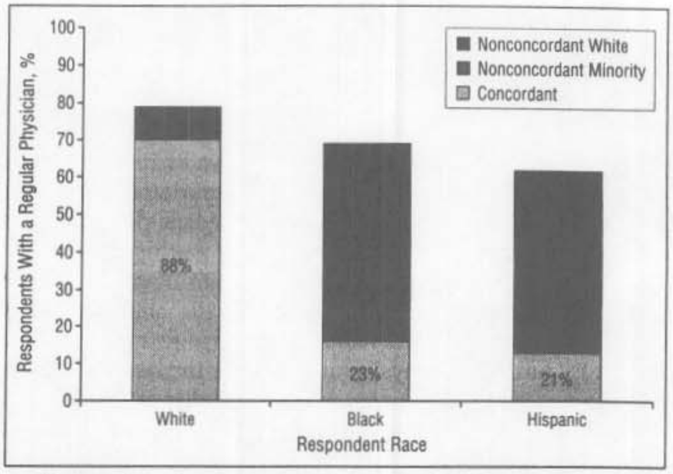
COMMENT

Our findings indicate the importance of racial and cultural factors in the patient-physician relationship. They also suggest that the importance of these factors differs across racial groups. We found that blacks were more satisfied with the care they received from black, as opposed to nonblack physicians. This finding was consistent across several measures of satisfaction. In addition, blacks with black physicians were more likely to report receiving preventive care and necessary medical care than blacks with other-race physicians. Whites rated white physicians more often than nonwhite physicians as excellent in listening to patients' concerns, but not in the overall provision of health care. Finally, Hispanic individuals with Hispanic, as opposed to non-Hispanic, physicians

Table 1. Questions Assessing Patient Satisfaction and Use of Health Care

Ratings of Physician
How would you rate your regular physician on the job he/she is doing in
Providing you with good health care overall?*
Treating you with dignity and respect?*
Making sure you understand what you have been told about your medical problems or medication?*
Listening to your health concerns and taking them seriously?*
Being accessible either by telephone or in person?*
Overall, how satisfied are you with your regular physician?†
All things considered, would you recommend your physician to a friend?‡
Satisfaction with health care
Overall, how satisfied are you with the quality of your health care services?†
Receipt of preventive care
In past 12 mo, have you received preventive care (such as blood pressure tests, Papanicolaou smears, or cholesterol level readings)?§
Receipt of needed medical care
In past 12 mo
Was there a time when you needed medical care but did not get it?§
Have you ever put off or postponed seeking health care which you felt you needed?§

Excellent, good, fair, or poor.
†Very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied.
‡Very strongly, somewhat strongly, or not at all.
§Yes or no.



Racial concordance between respondents and their regular physicians. Percentages shown within bars indicate proportions of regular physicians who are racially concordant with respondents.

were more likely to be very satisfied with their health care overall, but not with their physicians. All these findings persisted after controlling for sociodemographic characteristics and factors related to health care access, sources of care, and health status.

Prior studies[15-18] have demonstrated that minority populations receive a disproportionately large amount of their care from racially concordant physicians. Our data corroborate this finding. For instance, although black physicians account for less than 5% of the total US physician workforce,[19] they served as regular health care providers for 23% of black individuals in our sample (Figure). While this observation may simply reflect the fact that many black individuals live in areas with high concentrations of black physicians,[17] our findings suggest that black patients prefer the care they receive from black physicians. Racial matching between minority patients and physicians may result, therefore, not only from the geographic distribution of minority physicians but also from the nature of the care they provide as well.

We believe that our findings reflect important differences in health care quality and access for individuals with racially concordant vs nonconcordant physicians. Patient satisfaction with interpersonal care as assessed in our study is an important aspect of health care quality that influences whether a patient continues to see a particular physician or remains enrolled in a health care plan.[20-22] Use of preventive services and the ability to obtain needed care are recognized indicators of access to health care.[23,24] While self-reported preventive care probably overestimates actual use,[25] unless the reports of respondents with racially concordant physicians were more or less accurate than those with nonconcordant physicians, our results are likely to represent conservative estimates of true differences in utilization.[26]

We dichotomized our satisfaction variables between the highest and all other ratings. This raises the concern that our findings may reflect differences of subtle, perhaps unimportant, degrees of patient satisfaction. However, we believe our dichotomizations were appropriate for several reasons. First, most survey respondents, including ours, express high levels of satisfaction with their health care, possibly because those who are not satisfied tend to shop around for different physicians or health plans until they are satisfied.[27] Most detectable differences in satisfaction, therefore, fall between the highest rating and all others. Second, differences between excellent and lower ratings of health care are associated with important patient behaviors, such as remaining with one's physician.[28] Finally, we repeated our analyses using linear regression to eliminate the effects of dichotomization, and the results were largely unchanged.

To add further perspective to our statistically significant results, we compared unadjusted estimates of the effect of racial concordance on some of our response variables to the effect of other predictors within our data set. Among blacks, the effect of racial concordance on ratings of physicians as excellent overall was similar to the effect of respondents' ability to choose their physician (absolute difference [AD], 16% vs 19%; OR, 1.94 vs 2.14), a factor associated with high levels of patient satisfaction.[29] The effect among blacks of racial concordance on receiving preventive care was similar to the effect of uninterrupted health insurance coverage during the previous 2 years (AD, 7% vs 6%; OR, 1.64 vs 1.75). The effect of racial concordance for blacks on receiving needed care was similar to the effect of having any health insurance at all (AD, 5% vs 6%; OR, 2.23 vs 2.56). Among Hispanics, the effect of racial concordance on overall satisfaction with health care was also similar to the effect of having any health insurance (AD, 10% vs 11%; OR, 1.56 vs 1.56).

Why might racial concordance between patients and physicians affect patients' assessments of their health care? Our analyses provide some insight. Among blacks, the

Table 2. Characteristics of Respondents by Racial Concordance With Physician*

	White		Black		Hispanic	
Characteristics	Yes (n = 779)	No (n = 102)	Yes (n = 162)	No (n = 534)	Yes (n = 133)	No (n = 491)
Mean age, y	49.1	52.4	43.8	46.3	40.7	40.7
Male	50	46	45	46	38	47†
Married/live with partner	64	58	47	48	59	64
High school graduate	91	87	83	85	79	87†
Household income ≤$15 000	17	19	20	24	24	18
Homeowner	77	77	56	58	59	63
On public assistance	4	7	7	10	9	8
Unemployed	2	3	4	4	5	6
Region						
West	19	27	7	11	26	43†
Midwest	26	29	15	15	2	9
South	32	20	47	50	56	28
Northeast	23	25	31	23	17	20
Urbanicity						
Urban	30	23	64	48†	64	48†
Suburban	44	52	24	29	25	39
Rural	26	26	12	23	11	14
English as primary language	99	99	98	98	52	75†
Born in United States	97	95	93	93	57	70†
In United States <10 y	0	0	1	1	3	2
Insurance type						
Private	69	62	70	66	68	76
Medicare	25	30	20	22	9	9
Medicaid	7	11	10	15	11	8
None	5	3	7	6	17	9†
Physician's office hours/location very convenient	70	64	75	68	73	67
Major access barriers						
Transportation	3	5	3	5	5	6
Cost	21	19	19	27	33	28
Waiting time	13	13	17	17	24	20
Getting appointments	7	7	6	10	12	13
Poor access to specialists	6	9	9	9	13	14
Primary care site						
Physician's office or HMO	88	84	81	78	84	83
Hospital OPD or public clinic	9	8	11	13	13	13
Emergency department	4	8	8	9	4	4
Chose primary care site	88	88	82	77	78	83
HMO member	23	39†	39	29†	20	36†
No. of physicians seen, last 12 mo, mean	2.2	2.3	2.0	2.0	2.1	2.0
Chose regular physician	94	90	92	88	93	88
Choice influenced by physician's race/ethnicity	3	5	25	10†	21	5†
Female physician	13	18	20	17	13	19
Patient-physician gender concordance	55	50	50	53	46	57†
Generalist physician‡	82	86	83	83	77	81
Fair/poor health status	16	24†	18	24	25	19
Health care visits, last 12 mo, mean	5.5	5.8	4.8	6.0†	4.4	5.7
Hospitalized, last 12 mo	16	16	11	15	12	11
Psychological distress§						
Low	33	36	33	37	32	30
Medium	38	33	41	31	31	36
High	29	30	27	32	38	35

**Values are percentages, unless otherwise indicated; HMO, health maintenance organization; OPD, outpatient department.*

†$P \leq .05$ for comparison between race-specific concordant and nonconcordant groups.

‡Internal medicine, family practice, or obstetrics/gynecology.

§Possible scores from responses to 5 items ranged from 0 (low distress, high sense of well-being) to 25 (high distress, low sense of well-being). Cutoff points for low, medium, and high distress categories were determined by tertiles of score for the entire sample.

strongest association between racial concordance and the several response variables measuring patient satisfaction was with respondents' ratings of their physicians in treating them with respect. This finding suggests that black physicians may have more harmonious interpersonal relationships with their black patients than do physicians of other races. Better relations may be a product of cultural and experiential similarities that promote mutual understanding and trust.[30] Alternatively, since many black physicians see large numbers of black patients, it is pos-

Table 3. Unadjusted Association of Patient-Physician Racial Concordance With Patient Satisfaction and Use of Health Care*

	Concordance With Physician								
	White			Black			Hispanic		
Variable	Yes (n = 779)	No (n = 102)	*P*	Yes (n = 162)	No (n = 534)	*P*	Yes (n = 133)	No (n = 491)	*P*
Patient satisfaction									
Excellent rating of physician									
Overall	60	57	.59	67	51	<.001	58	54	.33
Treating with respect	73	63	.04	78	61	<.001	71	67	.41
Explaining problems	68	56	.02	70	61	.04	63	59	.44
Listening	64	51	.008	70	54	<.001	62	60	.65
Being accessible	53	47	.20	57	42	.001	52	45	.13
Very satisfied with physician	81	78	.53	87	76	.005	78	72	.17
Very strongly recommend physician	68	69	.80	81	71	.02	71	65	.17
Very satisfied with health care	69	64	.29	61	58	.48	66	55	.03
Use of health care									
Received preventive care	79	87	.09	87	80	.05	69	75	.19
Received all needed care	90	92	.56	95	90	.04	90	87	.43
Never delayed seeking care	72	73	.78	72	72	.96	71	70	.73

Values are percentages.

Table 4. Multivariate Association of Patient-Physician Racial Concordance With Patient Satisfaction and Use of Health Care

	Odds Ratio (95% CI)*		
Variable	White	Black	Hispanic
Patient satisfaction			
Excellent rating of physician†			
Overall	1.11 (0.69-1.78)	2.40 (1.55-3.72)	0.91 (0.57-1.45)
Treating with respect	1.53 (0.93-2.52)	2.75 (1.70-4.46)	1.09 (0.65-1.83)
Explaining problems	1.47 (0.91-2.42)	1.62 (1.05-2.51)	1.08 (0.67-1.75)
Listening	1.63 (1.01-2.62)	1.95 (1.27-3.00)	0.91 (0.56-1.46)
Being accessible	1.28 (0.80-2.04)	1.66 (1.11-2.47)	1.21 (0.77-1.93)
Very satisfied with physician†	1.02 (0.56-1.86)	2.62 (1.44-4.76)	1.34 (0.76-2.37)
Very strongly recommend physician†	0.94 (0.56-1.56)	1.97 (1.19-3.28)	1.43 (0.85-2.40)
Very satisfied with health care‡	1.49 (0.89-2.51)	1.04 (0.67-1.62)	1.74 (1.01-2.99)
Use of health care			
Received preventive care§	0.76 (0.39-1.46)	1.74 (1.01-2.98)	0.90 (0.54-1.50)
Received all needed care‖	0.62 (0.25-1.55)	2.94 (1.10-7.87)	1.11 (0.52-2.36)
Never delayed seeking care‖	0.78 (0.45-1.34)	1.01 (0.64-1.61)	0.98 (0.59-1.61)

**Odds ratios represent odds of given response among respondents with racially concordant physicians vs respondents with racially nonconcordant physicians. CI indicates confidence interval.*

†Odds ratios adjusted for age, sex, education level, insurance type, primary care site, health maintenance organization membership, ability to choose physician, number of physicians seen, health status, and psychological score.

‡Odds ratio adjusted for age, sex, language, insurance type, difficulty with access to specialty care, difficulty with waiting for medical care, satisfaction with physician's office hours/location, number of physicians seen, primary care site, health status, and psychological score.

§Odds ratio adjusted for age, sex, language, education level, household income, insurance type, primary care site, number of health care visits, number of physicians seen, physician gender, and health status.

‖Odds ratio adjusted for age, sex, household income, region, insurance type, difficulty getting appointments, convenience of physician's office hours/location, primary care site, and health status.

sible that better relationships are due to cultural competence acquired through practice rather than to factors more directly attributable to racial concordance.

The effect of black patient-physician racial concordance on reported use of preventive care diminished after the exclusion of respondents whose choice of physician was influenced by physician race. This suggests that for the majority of blacks, physician race did not appear to influence the likelihood of receiving preventive care. However, for a substantial minority of blacks, race was important, affecting not only their choice of physician but perhaps also their likelihood of using physician services.

Our findings among Hispanic respondents were more difficult to explain. It is puzzling that patient-physician racial concordance affected patients' satisfaction with health care without affecting their satisfaction with physicians. However, it is noteworthy that adjustment for satisfaction with the physician's office staff significantly reduced this effect. It is possible that Hispanics are more satisfied with their health care when the office staff, including the physician, provide a more culturally and linguistically congruent setting. Future studies should address this possibility.

Our results should be viewed in light of several limitations. First, participation in the survey was incomplete, raising the concern of selection bias. However, for our results to be biased in this respect, the effects of self-selection would have to be unevenly distributed between those with racially concordant and nonconcordant physicians.[31] Second, nonparticipation resulted in a sample of subjects with higher levels of education, income, and insurance coverage than the population from which it was drawn (Table 2).[32] Also, the Hispanic group had few recent immigrants, limiting the generalizability of our results. Third, we did not have detailed information on the ethnicity, or nationality, of physicians. We were therefore not able to test the effects of finer degrees of patient-physician ethnic concordance on our response variables. This may explain the paucity of observed associations among Hispanics, who were more ethnically diverse than the black respondents in our sample. It is possible, for instance, that Hispanic individuals of Puerto Rican heritage are more satisfied with physicians who are also Puerto Rican, but not necessarily with physicians who are Mexican American. We could not address this hypothesis with our data. Fourth, we relied on respondents' assessments of physician race, which may not always accurately reflect the physician's true race. However, it is likely that the mechanisms by which racial concordance affects patient satisfaction and use of health care depend more on patients' perceptions of the physician's race than on the physician's true race.

Finally, because of the observational nature of our study, the possibility exists that our findings do not reflect true associations but are the result of confounding. We adjusted for numerous variables associated with satisfaction and use of health care, including age, sex, education, income, insurance, language, primary care site, physician sex, access barriers, and psychological distress.[20,33-40] Furthermore, we attempted to adjust for illness severity through variables in our data set, including health status, number of health care visits, and hospitalization. It remains possible, however, that unmeasured differences across our comparison groups in illness severity or other factors may have partially accounted for our findings.

These limitations notwithstanding, we believe our results confirm the importance of racial and cultural factors in the patient-physician relationship. The finding that racial concordance affected patients' perceptions of their health care in measurable ways suggests that there is room for improvement in the relationships that physicians have with patients of nonconcordant backgrounds and supports efforts to increase cultural competence among physicians caring for diverse populations.

Our findings may also help predict the likely effects of policies influencing the recruitment of minorities into the US physician workforce. In the wake of recent trends in policies regarding affirmative action and international medical graduates, a decline in the proportion of physicians from racial and ethnic minorities is expected.[41,42] Studies[15-18] showing that minority physicians provide care for a large proportion of the rapidly growing minority communities in the United States suggest that with fewer minority physicians, the physician supply for many already underserved communities may diminish even further. Selectively admitting medical students with an interest in primary care of underserved communities may mitigate this problem. However, in light of our finding that physician race may affect black and Hispanic patients' satisfaction with and use of health care, such admissions policies, without the specific aim of recruiting black and Hispanic students, would serve as only a partial solution.

Our findings point to unique benefits that black and Hispanic individuals may experience when receiving health care from black and Hispanic physicians. When considering policy changes likely to reduce the number of underrepresented minorities in the physician workforce, governments and educational institutions should be mindful of the detrimental impact that such changes may have on health care for minority populations.

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