

# Access to Medical Care, Dental Care, and Prescription Drugs: The Roles of Race/Ethnicity, Health Insurance, and Income

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**Background:** After accounting for socioeconomic factors and other demographic characteristics, racial/ethnic disparities in access to care were examined.

**Methods:** Using nationally representative data on 34,403 individuals from the 2004 Medical Expenditure Panel Survey (MEPS), multiple logistic regression analyses for five outcome measures were conducted: self-reports of being unable to get medical care, dental care, or prescriptions in the past year; and having no doctor or dentist visits in the past year. The main independent variables were race/ethnicity, income, and insurance status.

**Results:** Blacks and Hispanics were less likely to report difficulties in accessing medical care, dental care, and prescriptions as compared to whites. These disparities occurred primarily among the uninsured and Medicaid insured. More objective measures of utilization (ie, no doctor visit or dental visit during the past year) showed that minorities experienced less access than whites.

**Conclusions:** Racial/ethnic disparities in access to care persist, and cannot be entirely explained by socioeconomic differences. In addition, the nature of these disparities depends on the socioeconomic position of racial/ethnic groups as well as the access measure used.

**Key Words:** access, income, insurance, race/ethnicity

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Disparities in access to health care persist in the United States (US), and the effects of various socioeconomic and demographic factors on access to care have been widely documented. In particular, race/ethnicity, insurance status, and socioeconomic position feature prominently in the scientific and public policy literature.<sup>1,2</sup>

Numerous studies have explored racial/ethnic disparities in access to care. In general, minorities have less access to care than whites, and such racial/ethnic disparities cannot be entirely accounted for by socioeconomic factors.<sup>3-11</sup> In addition, the magnitude of disparities depends on additional factors, such as the specific racial/ethnic group under consideration or the outcome measure being studied.<sup>12</sup> On the other hand, data also suggest that minorities may in fact have better access to care relative to whites. Some studies have shown that blacks and Hispanics are as likely, or more likely than whites to receive preventive services such as cholesterol testing, blood pressure testing, Pap tests, and mammograms.<sup>13-16</sup> The apparent mixed findings in the literature may be due to the impact of other factors such as insurance coverage and income, which differ across racial/ethnic groups.

## Key Points

- Disentangling the roles of race/ethnicity, health insurance coverage, and income is critical to understanding the nature of health care disparities in the United States (US).
- Blacks and Hispanics report fewer perceived barriers to medical care, dental care, and prescription drugs, compared to whites, even after accounting for socioeconomic factors; however, minorities also report fewer annual doctor and dentist visits compared to whites.
- The nature of racial/ethnic disparities differs across insurance coverage groups, with disparities occurring mostly among the uninsured and the Medicaid insured.
- The choice of access indicators may influence conclusions about racial/ethnic disparities in health care.

The impact of health insurance on access to care is less ambiguous than the relationship between race/ethnicity and access. There is ample evidence showing that compared to individuals with health insurance coverage, those who are uninsured have greater access problems.<sup>17–20</sup> Having health insurance is also associated with receipt of various preventive care services.<sup>15–16,18,21</sup> In addition, several evaluations of state child health insurance programs have provided evidence that uninsured children experience more barriers to care and utilize fewer services compared to insured children.<sup>22–26</sup> The effect of income on access to care has also been thoroughly investigated. Lower income has been consistently linked with increased difficulty in obtaining medical services and having more unmet health care needs.<sup>15–16,23,27–28</sup>

The objective of this study was to assess racial/ethnic disparities in access to health care and to clarify the influence of health insurance and income on these disparities. We hypothesized that we would find disparities based on all three main independent variables of interest, and that racial/ethnic disparities would persist even after accounting for insurance and income. Results of this study provide evidence regarding the nature of racial/ethnic disparities in access to care in the US after controlling for socioeconomic and demographic factors. We also examined potential interaction effects between race/ethnicity and insurance status.

## Methods

### Data Sources

We analyzed records from the Household Component of the 2004 Medical Expenditure Panel Survey (MEPS).<sup>29</sup> The MEPS Household Component is a nationally representative survey of American families and individuals, conducted annually by the Agency for Healthcare Research and Quality since 1996. The survey employs an overlapping panel design, with data collected for each panel of households over a 2-year period. Computer-assisted personal interviewing methods were used to collect data from 34,403 individuals in 2004. We restricted our analyses to participants under the age of 65 years.

### Study Variables

The outcome measures of interest were selected because they are commonly used indicators of access to care in the literature and also because of their availability in the MEPS dataset. The five dependent measures included self-reported (a) inability to get medical care, (b) inability to get prescription medicines, (c) inability to get dental care, (d) no office-based physician visit, and (e) no dentist visit, all in the past year. The first three indicators were considered to be subjective measures of perceived lack of access to care, while the last two indicators provided more objective measures of health care utilization.

The main independent variables of interest were race/ethnicity, insurance status, and income. Participants reported their own race and ethnicity, and responses were coded as non-Hispanic white, non-Hispanic black, Hispanic, Asian, and American Indian. (Due to small sample sizes for Asians and American Indians, results for these racial/ethnic groups are not presented in this paper.) Insurance was categorized into three groups: private insurance, uninsured, and Medicaid. Household income was categorized into three groups: less than \$20,000, \$20,000–\$39,999, and \$40,000 or higher.

Other covariates included in the analyses were informed by Aday and Andersen's model of access to care.<sup>30</sup> They included age, marital status, education, employment, health status, emergency room visits, and urban/rural location. Age was grouped into two categories to distinguish children from adults: less than 18 years and 18 to 64 years. Marital status was dichotomized into married and not married (including widowed, divorced, separated, and never married). Highest level of education attained was categorized into three groups: less than high school diploma, high school diploma or GED, and college degree or higher. Employment status was dichotomized into employed and not employed. To account for participants' health status, which influences health care need and utilization, we included a measure of self-reported general health status, dichotomized into excellent/very good/good versus fair/poor, as well as a measure indicating any functional limitations. A variable was included to account for any emergency room visits, which might substitute for primary care settings and a regular source of care. Finally, a variable for Metropolitan Statistical Areas (MSA) indicated whether participants' residence was urban (MSA) or rural (non-MSA).

### Statistical Analysis

We first generated descriptive statistics for the study variables in order to compare access to care among the various racial/ethnic, insurance, and income groups. We conducted bivariate analyses using chi-square tests to compare the categorical variables. We then built logistic regression models for each of five health care access indicators. To assess the independent effects of race/ethnicity, insurance status, and income on access to care, we conducted multiple logistic regressions by including all three independent variables of interest in adjusted models. Correlations between the three primary variables of interest were low enough not to worry about multicollinearity across variables ( $P$  ranging from  $-0.205$  to  $0.115$ ), so we simultaneously modeled all of them. We also adjusted for other sociodemographic factors, specifically age, marital status, education, employment, health status and functional limitations, emergency room visits, and MSA region. Adjusted odds ratios and 95% confidence intervals were calculated.

In addition, we performed stratified analyses in order to explore possible explanations for racial/ethnic disparities in

access to care. Specifically, we compared access to medical care, dental care, and prescription drugs, as well as doctor and dental visits, among the racial/ethnic groups after stratifying by insurance status.

All data analyses were performed using SAS version 9, including SAS-callable SUDAAN, which employed statistical methods to account for the complex sampling design. Two-tailed *P* values less than or equal to 0.05 were considered statistically significant.

## Results

### Descriptive and Comparative Statistics

Table 1 shows the unadjusted proportions of individuals in the sample who reported being unable to access medical care, dental care, and prescription drugs, as well as those who reported having no doctor or dentist visit in the past year. About 3.2% of individuals were unable to get medical care in the previous year. In addition, about 2.4% of individuals were unable to get prescription medicines in the previous year, and about 4.6% of individuals were unable to get dental care in the previous year. The proportion of individuals reporting no health care visit in the previous year was much higher, with about 40% of people reporting no doctor visit and 63% of people reporting no dentist visit.

There are also statistically significant differences in access to health care by categories of race/ethnicity, insurance status, and household income. Similar proportions of whites, blacks, and Hispanics had self-reported problems obtaining medical care, prescription drugs, and dental care. Racial/ethnic disparities were more evident in doctor and dentist visits. Specifically, blacks and Hispanics had higher rates of having no doctor and dentist visits in the previous year, compared to whites.

Those who were uninsured most frequently reported being unable to get medical and dental care and prescription drugs, followed by those covered by Medicaid; privately insured individuals reported the least access problems. The pattern was similar for doctor and dentist visits in the previous year, except that the same proportion of Medicaid recipients and privately insured individuals reported having no doctor visit in the previous year.

Finally, there was a dose-response relationship between household income and difficulty obtaining care. Individuals within households earning less than \$20,000 per year most frequently reported difficulty accessing medical care, dental care, and prescription drugs, as well as having no doctor or dentist visit in the previous year. At the other end of the spectrum, individuals within households earning \$40,000 per year or more had the least problems accessing care.

### Logistic Regressions

Table 2 presents the results of five multiple logistic regressions for the various measures of access to care. Multi-

**Table 1. Race/ethnicity, insurance, income, and access to care for the population under age 65: Medical Expenditure Panel Survey (MEPS), 2004**

	Unable to get medical care (%)	Unable to get prescription (%)	Unable to get dental care (%)	No doctor visit last year (%)	No dentist visit last year (%)
Race/ethnicity	(n = 29,328) <sup>a</sup>	(n = 28,250) <sup>b</sup>	(n = 29,305) <sup>b</sup>	(n = 30,054) <sup>b</sup>	(n = 30,054) <sup>b</sup>
Total	3.28 (n = 963)	2.44 (n = 688)	4.59 (n = 1,346)	40.48 (n = 12,167)	63.73 (n = 19,152)
White, non-Hispanic	3.53 (n = 509)	2.81 (n = 390)	4.79 (n = 690)	32.78 (n = 4,847)	54.38 (n = 8,040)
Black, non-Hispanic	3.24 (n = 153)	2.70 (n = 123)	4.81 (n = 227)	44.34 (n = 2,160)	72.43 (n = 3,528)
Hispanic	3.13 (n = 274)	1.96 (n = 165)	4.54 (n = 397)	50.33 (n = 4,452)	75.03 (n = 6,726)
Insurance	(n = 28,890) <sup>b</sup>	(n = 27,852) <sup>b</sup>	(n = 28,868) <sup>b</sup>	(n = 29,520) <sup>b</sup>	(n = 29,520) <sup>b</sup>
Total	3.17 (n = 916)	2.27 (n = 633)	4.42 (n = 1,275)	40.46 (n = 11,944)	63.13 (n = 18,637)
Uninsured	8.05 (n = 439)	4.68 (n = 236)	9.64 (n = 524)	68.83 (n = 3,918)	85.52 (n = 4,868)
Private	1.72 (n = 296)	1.62 (n = 274)	2.57 (n = 444)	33.76 (n = 5,900)	53.22 (n = 9,300)
Medicaid	2.93 (n = 181)	2.08 (n = 123)	4.96 (n = 307)	33.47 (n = 2,126)	70.36 (n = 4,469)
Income	(n = 29,977) <sup>b</sup>	(n = 28,865) <sup>b</sup>	(n = 29,954) <sup>b</sup>	(n = 30,720) <sup>b</sup>	(n = 30,720) <sup>b</sup>
Total	3.33 (n = 997)	2.48 (n = 716)	4.64 (n = 1,391)	40.38 (n = 12,404)	63.73 (n = 19,579)
<\$20,000	3.80 (n = 771)	2.73 (n = 530)	5.26 (n = 1,066)	41.95 (n = 8,768)	67.93 (n = 14,197)
\$20,000-\$39,999	2.87 (n = 152)	2.57 (n = 131)	4.89 (n = 259)	41.64 (n = 2,238)	62.96 (n = 3,384)
≥\$40,000	1.68 (n = 74)	1.26 (n = 55)	1.50 (n = 66)	31.44 (n = 1,398)	44.94 (n = 1,998)

<sup>a</sup>*P* < 0.001, based on  $\chi^2$  test of independence.

<sup>b</sup>*P* < 0.0001, based on  $\chi^2$  test of independence.

**Table 2. Multiple logistic regressions of sociodemographics on access to medical care for the population under age 65: Medical Expenditure Panel Survey (MEPS), 2004**

	Odds ratio (95% confidence interval)				
	Unable to get medical care	Unable to get prescription	Unable to get dental care	No doctor visit last year	No dental visit last year
<b>Race/ethnicity</b>					
White, non-Hispanic (reference)	1.00	1.00	1.00	1.00	1.00
Black, non-Hispanic	0.691 <sup>b</sup> (0.547, 0.872)	0.833 (0.643, 1.079)	0.834 (0.688, 1.011)	1.374 <sup>c</sup> (1.243, 1.519)	1.867 <sup>c</sup> (1.682, 2.074)
Hispanic	0.651 <sup>c</sup> (0.529, 0.802)	0.709 <sup>b</sup> (0.554, 0.908)	0.686 <sup>c</sup> (0.573, 0.821)	1.532 <sup>c</sup> (1.401, 1.675)	1.773 <sup>c</sup> (1.615, 1.947)
<b>Insurance</b>					
Private (reference)	1.00	1.00	1.00	1.00	1.00
Uninsured	4.337 <sup>c</sup> (3.560, 5.283)	2.540 <sup>c</sup> (2.024, 3.189)	3.478 <sup>c</sup> (2.938, 4.119)	3.416 <sup>c</sup> (3.123, 3.737)	3.338 <sup>c</sup> (3.007, 3.707)
Medicaid	1.285 (0.981, 1.683)	0.947 (0.700, 1.281)	1.844 <sup>c</sup> (1.473, 2.307)	0.867 <sup>c</sup> (0.765, 0.982)	1.643 <sup>c</sup> (1.446, 1.867)
<b>Income</b>					
\$20,000–\$39,999 (reference)	1.00	1.00	1.00	1.00	1.00
<\$20,000	1.493 <sup>d</sup> (1.191, 1.871)	1.221 (0.948, 1.572)	1.083 (0.906, 1.294)	1.105 <sup>c</sup> (1.010, 1.208)	1.101 <sup>c</sup> (1.005, 1.207)
≥\$40,000	0.757 (0.550, 1.043)	0.591 <sup>b</sup> (0.412, 0.848)	0.324 <sup>c</sup> (0.235, 0.447)	0.827 <sup>d</sup> (0.748, 0.914)	0.681 <sup>c</sup> (0.620, 0.749)
<b>Age (yr)</b>					
<18 yr (reference)	1.00	1.00	1.00	1.00	1.00
18–64 yr	1.084 (0.542, 2.169)	2.337 (0.731, 7.473)	1.525 (0.837, 2.778)	1.329 <sup>c</sup> (1.054, 1.675)	1.827 <sup>c</sup> (1.440, 2.318)
<b>Education</b>					
High school diploma/GED (reference)	1.00	1.00	1.00	1.00	1.00
Less than high school diploma	1.104 (0.918, 1.327)	0.983 (0.790, 1.222)	1.088 (0.929, 1.275)	1.228 <sup>c</sup> (1.124, 1.342)	1.388 <sup>c</sup> (1.259, 1.529)
Bachelor's degree and higher	1.262 (0.970, 1.642)	1.019 (0.752, 1.382)	0.869 (0.679, 1.113)	0.692 <sup>c</sup> (0.630, 0.761)	0.604 <sup>c</sup> (0.553, 0.659)
<b>Marital status</b>					
Married (reference)	1.00	1.00	1.00	1.00	1.00
Not married	1.274 <sup>b</sup> (1.079, 1.504)	1.139 (0.940, 1.381)	1.393 <sup>c</sup> (1.205, 1.610)	1.361 <sup>c</sup> (1.267, 1.460)	1.069 (0.994, 1.148)
<b>Employment status</b>					
Employed (reference)	1.00	1.00	1.00	1.00	1.00
Not employed	0.777 <sup>b</sup> (0.642, 0.941)	0.960 (0.767, 1.201)	0.690 <sup>c</sup> (0.582, 0.818)	0.742 <sup>c</sup> (0.676, 0.814)	0.838 <sup>c</sup> (0.760, 0.923)
<b>Health status</b>					
Excellent/very good/good (reference)	1.00	1.00	1.00	1.00	1.00
Fair/poor	3.221 <sup>c</sup> (2.676, 3.877)	2.825 <sup>c</sup> (2.281, 3.499)	1.496 <sup>c</sup> (1.255, 1.784)	0.436 <sup>c</sup> (0.386, 0.492)	1.190 <sup>b</sup> (1.060, 1.335)
<b>Functional limitation</b>					
No (reference)	1.00	1.00	1.00	1.00	1.00
Yes	2.949 <sup>c</sup> (2.462, 3.531)	3.418 <sup>b</sup> (2.773, 4.214)	2.568 <sup>c</sup> (2.192, 3.008)	0.459 <sup>c</sup> (0.417, 0.506)	0.904 <sup>c</sup> (0.825, 0.990)
<b>Emergency room visit</b>					
No (reference)	1.00	1.00	1.00	1.00	1.00
Yes	1.363 <sup>b</sup> (1.122, 1.656)	1.828 <sup>b</sup> (1.481, 2.256)	1.552 <sup>c</sup> (1.311, 1.836)	0.449 <sup>c</sup> (0.402, 0.501)	1.012 (0.915, 1.120)
<b>Metropolitan statistical area</b>					
Yes (reference)	1.00	1.00	1.00	1.00	1.00
No	0.745 <sup>b</sup> (0.607, 0.914)	0.817 (0.649, 1.029)	0.767 <sup>b</sup> (0.641, 0.917)	1.066 (0.974, 1.168)	1.321 <sup>c</sup> (1.206, 1.448)

<sup>a</sup>GED, general educational development test.

<sup>b</sup>P < 0.01.

<sup>c</sup>P < 0.0001.

<sup>d</sup>P < 0.05.

<sup>e</sup>P < 0.001.

variable analyses were conducted to examine the unique effects of race/ethnicity, insurance status, and household income on access to care after accounting for additional sociodemographic and health factors.

### Access to Medical Care

After accounting for sociodemographic and health characteristics, blacks and Hispanics had 31% and 35% lower odds, respectively, of reporting being unable to get medical care, as compared to whites. Compared to privately insured individuals, those who were uninsured had over 4 times greater odds of reporting inability to get medical care. There were no differences in access to medical care between those who were privately insured and those who were on Medicaid. Households in the lowest income category (< \$20,000) had about 50% greater odds of reporting being unable to get medical care, compared to the middle-income group (\$20,000-\$39,999). No statistically significant difference was found between the middle-income group and the high-income group ( $\geq$  \$40,000).

### Access to Prescription Medicines

Compared to whites, Hispanics had 29% reduced odds of not getting prescriptions. Compared to people with private insurance, those who were uninsured had about 2.5 times greater odds of reporting being unable to get prescriptions. Individuals in households with the highest income category had 40% reduced odds of difficulties getting prescriptions, compared to the middle-income group.

### Access to Dental Care

Hispanics had 31% reduced odds of reporting being unable to get dental care compared to whites. Compared to people with private insurance, those who were uninsured had about 3.5 times greater odds of being unable to get dental care; those with Medicaid coverage had 84% greater odds of not being able to get dental care. Households in the highest income category had almost 70% reduced odds of not getting dental care, compared to the middle-income group.

### Doctor Visits

Blacks and Hispanics had higher odds (37% and 53%, respectively) of reporting no doctor visits in the past year, compared to whites. Disparities by insurance status were also evident, with uninsured individuals having 3.4 times greater odds of reporting no doctor visits in the past year, and Medicaid beneficiaries having 13% decreased odds of reporting no doctor visits, compared to individuals with private insurance. Lower-income individuals had slightly higher odds of reporting no doctor visits in the previous year, and higher-income individuals had reduced odds of reporting no doctor visits, compared to middle-income individuals.

### Dentist Visits

Blacks and Hispanics had higher odds (87% and 77%, respectively) of reporting no dentist visits in the previous year, compared to whites. Both uninsured individuals and Medicaid-insured individuals had higher odds of reporting no dentist visits, compared to privately insured individuals. Individuals with lower household incomes had slightly higher odds of no dentist visits in the previous year, and those with higher household incomes had lower odds of no dentist visits in the previous year, compared to individuals with middle-level household incomes.

### Stratified Analyses

Table 3 shows the results of stratified analyses, indicating racial/ethnic differences in access to care for each category of insurance coverage. Among individuals in lower socioeconomic positions (ie, uninsured, Medicaid), more whites tend to report difficulties accessing care, compared to their minority counterparts. For instance, among the uninsured, almost 11% of whites report being unable to get medical care, compared to 7.5% of blacks and 6.2% of Hispanics. In addition, about 5% of whites on Medicaid report being unable to get medical care, compared to 2.5% of blacks and 1.8% of Hispanics on Medicaid. Similar patterns are found for dental care and prescription medicine. The racial/ethnic differences in access to medical care, dental care, and prescription drugs are much less pronounced among individuals with private insurance.

Looking at doctor visits and dentist visits in the previous year, different racial/ethnic patterns were observed across insurance categories. These more objective indicators of health care utilization show that minorities report less utilization than whites. Among the uninsured, 68% of blacks and 74% of Hispanics reported no doctor visits in the previous year, compared to 61% of whites. In addition, 91% of uninsured blacks and 88% of uninsured Hispanics reported no dentist visits in the previous year, compared to 79% of whites. A similar pattern existed among Medicaid recipients, with more blacks and Hispanics reporting no doctor or dentist visits in the previous year, compared to whites. Among the privately insured, the racial/ethnic disparities in doctor and dentist visits are more apparent than for the three subjective measures of perceived access to care described above. Here, blacks and Hispanics more frequently reported having no doctor or dentist visits in the previous year, compared to whites.

### Discussion

Racial/ethnic disparities in access to health care do indeed exist, even after accounting for socioeconomic factors such as income and insurance status, as well as other sociodemographic and health characteristics. This suggests that race/ethnicity cannot merely be considered a proxy for so-

**Table 3. Race/ethnicity distribution of access to care among different insurance groups for the population under age 65: Medical Expenditure Panel Survey (MEPS), 2004**

	Unable to get medical care (%)	Unable to get prescription (%)	Unable to get dental care (%)	No doctor visit last year (%)	No dental visit last year (%)
Private	(n = 16,892) <sup>a</sup>	(n = 16,532) <sup>a</sup>	(n = 16,885) <sup>a</sup>	(n = 17,111) <sup>b</sup>	(n = 17,111) <sup>b</sup>
Total	1.70 (n = 288)	1.62 (n = 267)	2.55 (n = 431)	33.77 (n = 5,778)	53.15 (n = 9,095)
White, non-Hispanic	1.88 (n = 201)	1.76 (n = 184)	2.67 (n = 285)	28.95 (n = 3,140)	47.23 (n = 5,123)
Black, non-Hispanic	2.09 (n = 46)	2.01 (n = 43)	3.46 (n = 76)	41.63 (n = 928)	65.72 (n = 1,465)
Hispanic	1.20 (n = 36)	1.29 (n = 38)	1.93 (n = 58)	43.12 (n = 1,309)	65.18 (n = 1,979)
Uninsured	(n = 5,358) <sup>b</sup>	(n = 4,958) <sup>b</sup>	(n = 5,343) <sup>b</sup>	(n = 5,595) <sup>b</sup>	(n = 5,595) <sup>b</sup>
Total	7.93 (n = 425)	4.60 (n = 228)	9.56 (n = 511)	69.06 (n = 3,864)	85.79 (n = 4,800)
White, non-Hispanic	10.92 (n = 185)	7.00 (n = 107)	13.14 (n = 222)	60.92 (n = 1,085)	78.61 (n = 1,400)
Black, non-Hispanic	7.50 (n = 55)	4.97 (n = 34)	8.23 (n = 60)	68.00 (n = 527)	90.97 (n = 705)
Hispanic	6.24 (n = 171)	3.16 (n = 81)	8.01 (n = 219)	74.23 (n = 2,111)	88.15 (n = 2,527)
Medicaid	(n = 6,026) <sup>b</sup>	(n = 5,778) <sup>b</sup>	(n = 6,026) <sup>b</sup>	(n = 6,187) <sup>b</sup>	(n = 6,187) <sup>b</sup>
Total	2.84 (n = 171)	1.97 (n = 114)	4.86 (n = 293)	33.59 (n = 2,078)	70.28 (n = 4,348)
White, non-Hispanic	4.95 (n = 82)	3.55 (n = 55)	7.84 (n = 130)	27.56 (n = 473)	68.36 (n = 1,173)
Black, non-Hispanic	2.50 (n = 40)	2.01 (n = 31)	4.26 (n = 68)	38.16 (n = 625)	72.04 (n = 1,180)
Hispanic	1.75 (n = 45)	1.12 (n = 28)	3.46 (n = 89)	34.11 (n = 898)	70.68 (n = 1,861)

<sup>a</sup>*p* < 0.001, based on  $\chi^2$  test of independence.

<sup>b</sup>*p* < 0.0001, based on  $\chi^2$  test of independence.

cioeconomic factors, but that it has an independent role in influencing individuals' ability to obtain access to care.

However, the nature of these disparities is more nuanced than is typically described in the literature. We found that blacks and Hispanics were in fact less likely to report difficulties obtaining medical care, dental care, or prescription medicines in the past 12 months, compared to whites. These differences were statistically significant, even after adjusting for insurance status, household income, age, education, marital status, employment status, health status, functional limitations, emergency room visits, and MSA regions. These results are in contrast with many previous studies reporting that minorities have greater difficulties accessing health care; however, they are in agreement with a few studies which have found that minorities may not in fact be burdened with disproportionate barriers to health care, compared to whites.<sup>13-16</sup>

Examining two more objective measures of service utilization revealed racial/ethnic disparities consistent with the direction typically reported in the literature: compared to whites, blacks and Hispanics were more likely to report having no doctor or dentist visit in the previous year.

Our analyses of racial/ethnic disparities stratified by insurance coverage highlight the complex nature of these disparities, showing that the direction of disparities depends on the category of insurance coverage (a proxy for socioeconomic status) as well as the outcome measure used. Specifically, among the uninsured and Medicaid insured, whites appeared to face more barriers than minorities when looking at more subjective measures of access to care (ie, self-reports of inability to get medical care, dental care, and prescriptions). The disparities were less apparent for the privately insured group when examining these outcome measures. However, when looking at more objective measures of health care utilization (ie, doctor or dentist visit in past year), the disparities were reversed across all insurance categories, with more minorities reporting no visits to the doctor or dentist, compared to whites.

One possible explanation for these seemingly disparate results may be that whites have different perceptions of their own health needs and higher expectations from medical care, making them more likely to report unmet needs. On the other hand, minorities may have lower expectations due to negative prior experiences, discrimination, and poorer quality of care, and thus are less likely to report unmet health care needs.<sup>31-34</sup> Questioning individuals about more objective measures of access to care, such as whether they had any doctor visits or dentist visits, may help reduce potential reporting biases due to differential expectations of medical care.

There were some limitations with this study. First, these data are cross-sectional so conclusions cannot be made about the causal effect of race/ethnicity on access to health care. In addition, due to the secondary nature of this analysis, we were unable to consider other important factors, such as service availability, which may have an impact on access to care and

which may have helped explain the racial/ethnic disparities found. Finally, using doctor and dentist visits as indicators of access to care may confound the concepts of service use and need. However, we attempted to control for this concern by adding model covariates to capture general health status and functional limitations, which influence the need for health care services.

## Conclusion

Our study examined the relationship between race/ethnicity and access to health care while accounting for the potential effects of socioeconomic factors in a nationally representative sample. Despite the limitations, our findings have important implications for health services research and policy. Racial/ethnic disparities in access to care may not always manifest themselves in the expected direction, and socioeconomic factors (such as insurance status), while not fully accounting for these disparities, still play an important role. The choice of access measure, whether capturing perceived barriers versus actual health care utilization, may also influence conclusions about the nature of racial/ethnic disparities in health care. Further research is needed to understand why racial/ethnic disparities in access to care present in this complex fashion. In particular, future efforts should seek to better understand racial/ethnic differences in perceptions and expectations of medical care, which may influence the direction of documented disparities.

Policymakers seeking to reduce health care disparities should make use of more objective measures of access to care, rather than measures which rely on subjective perceptions of access. In addition to increasing insurance coverage, which will obviously improve access to care, special efforts may be warranted to remove barriers to care among uninsured and Medicaid-insured whites, who report more unmet needs than their minority counterparts. Finally, primary care and preventive services should be promoted among blacks and Hispanics in order to encourage annual visits to doctors and dentists among these populations.

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