Health Plan Effects on Patient Assessments of Medicaid Managed Care Among Racial/Ethnic Minorities

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OBJECTIVE: To examine the extent to which racial/ethnic differences in Consumer Assessment of Health Plans Study (CAHPS) ratings and reports of Medicaid managed care can be attributed to differential treatment by the same health plans (within-plan differences) as opposed to racial/ethnic minorities being disproportionately enrolled in plans with lower quality of care (between-plan differences).

DESIGN: Data are from the National CAHPS Benchmarking Database (NCBD) 3.0. Data were analyzed using linear regression models to determine the overall effects, within-plan effects, and between-plan effects of race/ethnicity and language on patient assessments of care. Standard errors were adjusted for nonresponse weights and the clustered nature of the data.

PATIENTS/PARTICIPANTS: A total of 49,327 adults enrolled in Medicaid managed care plans in 14 states from 1999 to 2000.

MAIN RESULTS: Non-English speakers reported worse experiences compared to those of whites, while Asian non-English speakers had the lowest scores for most reports and ratings of care. An analysis of between-plan effects showed that African Americans, Hispanic-Spanish speakers, American Indian/Whites, and White-Other language were more likely than White-English speakers to be clustered in worse plans as rated by consumers. However, the majority of the observed racial/ethnic differences in CAHPS reports and ratings of care are attributable to within-plan effects. The ratio of between to within variance of racial/ethnic effects ranged from 0.07 (provider communication) to 0.42 (health plan rating).

CONCLUSIONS: The observed racial/ethnic differences in CAHPS ratings and reports of care are more a result of different experiences with care for people enrolled in the same plans than a result of racial/ethnic minorities being enrolled in plans with worse experiences. Health care organizations should engage in quality improvement activities to address the observed racial/ethnic disparities in assessments of care.

KEY WORDS: CAHPS; consumer assessments; Medicaid managed care; racial/ethnic disparities.

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Patient assessments of health care, such as the standardized surveys developed in the Consumer Assessment of Health Plans Study (CAHPS) are increasingly being used as an indicator of the quality of care provided by

health plans and health care providers. These evaluations provide important information about how well health plans and clinicians meet the needs of the people they serve.¹ Studies of racial/ethnic differences in consumer assessments of care are particularly important for Medicaid managed care populations. Increasingly, government is relying on the managed care sector to provide coverage for Medicaid and Medicare populations as a cost-containment mechanism.² As of 2000, 22.1 million people, or 58% of Medicaid recipients, were enrolled in managed care plans. Racial/ethnic minorities are more likely to be publicly insured than whites (21% compared to 12% in 1998).³

As more vulnerable populations are increasingly enrolled in managed care plans, it becomes essential to assess their care. Medicaid managed care has the potential to reduce racial/ethnic variations in access to care given its organizational characteristics, which include service coordination,⁴ greater access to primary care,⁵ and use of administrative mechanisms for quality assurance.⁶ On the other hand, indigent populations may have more difficulties in dealing with the complexities of MCOs.⁵ The introduction of restricted provider networks, utilization review, specialist referrals, and other managed care cost-containment mechanisms may be particularly challenging for vulnerable populations. Furthermore, MCOs may not have the necessary competencies to manage a linguistically and culturally diverse population.^{7,8}

Recent studies have shown that racial/ethnic minorities are less satisfied than whites with certain aspects of managed care.^{7,9} Studies using the CAHPS data show that racial/ethnic minorities tend to have worse reports and ratings of care than whites in Medicaid managed care.^{10,11} Among Hispanics and Asians, language barriers had a larger negative impact on reports of care than race/ethnicity. The observed differences in CAHPS reports and ratings of care may be a combination of racial/ethnic minorities having worse experiences with care than whites within the same plans (within-plan differences) and racial/ethnic minorities being clustered in plans with worse patient experiences (between-plan differences). The extent to which within-plan differences exist may reflect differential treatment by the same providers as opposed to racial/ethnic minorities being disproportionately enrolled in plans with lower quality of care. Schneider et al.¹² found racial disparities between blacks and whites in Medicare managed care on several HEDIS measures (breast cancer screening, β -blocker use after myocardial infarction [MI], and follow-up after hospitalization for mental illness), even after controlling for blacks' disproportionate larger enrollment in low-quality plans. The purpose of this study is to examine the extent to which the observed differences in CAHPS ratings and

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reports of care for patients in Medicaid managed care can be attributed to within- versus between-plan effects.

METHODS

Data

This study analyzes the National CAHPS Benchmarking Database 3.0 (NCBD 3.0) Adult Medicaid Surveys. NCBD is a collaborative initiative of the Quality Measurement Advisory Service (QMAS), The Picker Institute, and Westat. Sponsors of the CAHPS surveys voluntarily participate in the NCBD and include Medicaid agencies, health plans, and employers. The NCBD 3.0 Adult Medicaid data consists of CAHPS 2.0 survey responses from 49,327 adults in 156 Medicaid managed care plans distributed across 14 states (Arizona, California, Colorado, Hawaii, Kansas, Michigan, New York, Ohio, Oklahoma, Pennsylvania, Texas, Utah, Vermont, and Washington) in 2000. Of the 156 plans represented in the NCBD 3.0 Adult Medicaid data, 146 plans were Health Maintenance Organizations (HMOs) and 10 plans were Primary Care Case Management (PCCM).¹³ The sample frame for the CAHPS surveys is drawn from the health plan enrollment records. In addition, respondents are asked in the survey to verify their health plan record information. The data were collected by telephone and mail, and surveys were administered in Spanish and English. Previous research provides support for the equivalence of the telephone and mail responses to the CAHPS survey.¹⁴ The average response rate among all plans was 38% (median = 36%; range = 16% to 53%).

Measures

The dependent variables consist of CAHPS global ratings and reports of care. Ratings consist of the personal evaluation of providers and services; as such, they reflect both personal experiences as well as the standards used in evaluating care.¹⁵ Reports of care capture the specific experiences with care in terms of what did or did not happen from the consumer's perspective. Responses to questions about specific health care experiences are answered with respect to the past 12 months. CAHPS 2.0 includes 4 global rating items: personal doctor or nurse, specialists, health care, and health plan (Appendix 1). The four global rating questions are asked using a 0 to 10 scale, where 10 is the best possible rating. In addition, CAHPS 2.0 contains 17 items (reports) measuring 5 domains of health plan performance: getting needed care (access to care), timeliness of care (promptness of care), provider communication, staff helpfulness, and plan service. The items included in the timeliness of care, provider communication, and staff helpfulness composites are asked using a Never, Sometimes, Usually, or Always response scale, while the items in the getting needed care and plan service composites are asked using a A Big Problem, A Small Problem, or Not a Problem response scale. The composites are calculated in a two-step

process: linearly transforming each item score to a 0 to 100 possible range and then computing the mean score for items within each composite. To facilitate comparison between composites and global ratings, the 0 to 10 ratings were also transformed linearly to a 0 to 100 possible range.

The main independent variables were race/ethnicity, language spoken at home (English, Spanish, Other), and survey language (English or Spanish). Respondents were provided 6 options to the question about race (White, Black/African American, Asian, Pacific Islander, American Indian/Native Alaskan, Other), but could endorse more than 1 option if applicable, creating the possibility for mixed race/ethnicity (American Indian/White, African American/White, Other Multiracial). Survey respondents were assigned to 1 of 9 racial/ethnic categories based on Hispanic ethnicity and race: White, Hispanic/Latino, Black/African American, Asian/Pacific Islanders, American Indian/Alaskan Native, American Indian/White, African American/White, Other Multiracial, or Other Race/Ethnicity.

Whites and Asians were further classified into language subgroups based on the language primarily spoken at home: White-English speaking, White-Other language, Asian-English speaking, and Asian-Other language. Hispanics/Latinos were further classified into language subgroups based on the survey language and based on the language primarily spoken at home. Persons of Hispanic ancestry who completed an English survey and spoke English primarily at home were considered Hispanic-English speakers. Conversely, those who completed an English survey but spoke Spanish primarily at home were classified as Hispanic-bilinguals. Finally, participants who completed a Spanish survey were classified as Hispanic-Spanish speakers.

An additional set of independent variables was used as case-mix adjusters: gender, age, education, and health status. These were characteristics known to be related to systematic differences in survey responses.¹⁶⁻¹⁸ Gender was a dichotomous variable: 0 = female, 1 = male. Age was a categorical variable consisting of 3 levels: 18 to 34; 35 to 54; 55 or older. Education was a categorical variable with 3 levels: less than high school, high school graduate, and 1 or more years of college. Self-rated health was a categorical variable measuring perceived overall health: excellent, very good, good, fair, and poor. Finally, health plan dummies were included as control variables in the within-plan effects model described in the next section.

Analytic Approach

Data were analyzed using linear regression models to determine the overall, within-plan, and between-plan effects of race/ethnicity and language on patient assessments of care.^{19,20} The overall effects regression model consists of: Reports and Ratings of Care = $F(\text{Race/Ethnicity and Language, Age, Gender, Education, Self-Rated Health})$. The within-plan effects model consists of: Reports and Ratings of Care = $F(\text{Race/Ethnicity and Language, Age,}$

Table 1. Distribution of Average CAHPS Reports and Ratings of Care Across Health Plans

Report/Rating	Mean	SD	Minimum	Median	Maximum
Getting care needed	82.4	5.2	68.7	83.1	93.0
Timeliness of care	70.5	6.1	56.4	70.9	88.1
Provider communication	82.2	3.9	74.4	82.4	95.8
Staff helpfulness	84.9	4.0	74.1	85.2	96.1
Plan service	76.5	6.7	54.1	77.4	89.9
Personal doctor	85.1	3.0	76.1	85.1	92.2
Specialist	83.8	4.5	69.0	84.4	95.0
Health care	81.8	3.8	70.4	82.3	88.7
Health plan	78.5	5.4	63.3	79.1	89.3

CAHPS, Consumer Assessment of Health Plans Study; SD, standard deviation.

Gender, Education, Self-Rated Health, Health Plan Dummies). Finally, the magnitude of between-plan effect was measured by the difference between the overall and within-plan β coefficients. Tests of significance for between-plan effects were calculated by regressing each report/rating on the proportions of each racial/ethnic/linguistic group within each plan, controlling for age, gender, education, and self-rated health of each respondent. To determine the relative magnitude of the within- and between-plan effects, we calculated the ratio of the between- to within-plan racial/ethnic variance for each report and rating of care. A small departure from normality was detected for the dependent variables (negative skewness). To correct for this departure, the variables were transformed by dividing the square of the variable by 100, producing an approximately normal distribution. However, because regression results for the transformed and untransformed dependent variables were quite similar, only the results for the untransformed variables are reported here.

Non-response weights, computed as the inverse of health plan response rates,* were used to account for vari-

ation in response rate by plan.²¹ As a result, respondents belonging to a plan with a low response rate received a greater weight than respondents belonging to a plan with a higher response rate, and all respondents within the same plan received the same weight. All regression analyses adjusted standard errors for weighting (using the linearization approach) and for the clustered nature of the data (using the Huber/White correction²²).

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RESULTS

Table 1 presents the distribution of average CAHPS scores across plans, while Table 2 shows the variation in the proportions of the racial/ethnic and language groups across plans. CAHPS scores showed great variation across

*The correlation between the nonweighted and weighted regression coefficients was very high, with a correlation coefficient of 0.90 and higher for four of the report composites and the four ratings. The plan service composite had a correlation coefficient of 0.88.

Table 2. Distribution of the Proportions of the Racial/Ethnic and Language Groups Across Health Plans

Race/Ethnicity and Language	Mean	Minimum	Median	Maximum
White-English	41.1	0.9	39.6	91.9
White-Other	1.7	0.0	1.0	21.1
Hispanic-English	11.0	0.0	9.5	48.6
Hispanic-Bilingual	5.8	0.0	3.6	30.1
Hispanic-Spanish	3.3	0.0	0.0	24.7
Asian-English	2.7	0.0	0.6	51.3
Asian-Other	2.0	0.0	0.7	16.5
American Indian	1.1	0.0	0.7	13.0
American Indian/White	0.8	0.0	0.6	3.7
African American	23.6	0.0	20.0	78.5
White/African American	0.2	0.0	0.0	2.4
Other Multiracial	0.9	0.0	0.5	7.0
Other Race	3.8	0.0	3.1	13.9
Missing Race	1.9	0.0	1.5	8.3

plans, with the plan service composite (36 points) and timeliness of care composite (32 points) exhibiting the greatest variation. There was also wide variation in the proportions of the racial/ethnic and language groups across health plans, with White-English, Blacks, Asian-English, and Hispanic-English showing the greatest variation. Tables 3 and 4 present the regression results for the overall, within-plan, and between-plan effects of race/ethnicity and language on reports and ratings of care. The unstandardized β coefficients shown in Tables 3 and 4 indicate the difference between the scores of White-English speakers and those of the other racial/ethnic subgroups (based on a 0 to 100 possible range). Results indicate that the majority of the observed racial/ethnic differences in CAHPS reports and ratings of care are attributed to within-plan effects. The ratio of between to within variance of racial/ethnic effects ranged from 0.07 (provider communication) to 0.42 (health plan rating). In other words, within-plan differences accounted for between $1/1.42 = 70\%$ of the variance (health plan ratings) and $1/1.07 = 93\%$ of the variance (provider communication) in racial/ethnic/linguistic effects.

An examination of the within-plan effects shows that racial/ethnic and linguistic minorities generally reported worse experiences with care than White-English speakers. However, the impact of language on reports of care was even more pronounced than that of race/ethnicity. Asian-Other language had the lowest reports of care when compared to White-English language, with reports of care that were 6.5 to 11.9 points lower for 4 CAHPS domains of care: getting needed care, timeliness of care, provider communication, and staff helpfulness. Similarly, the Asian-Other language group had lower ratings that were 3.2 to 6.4 points lower than White-English ratings for all 4 global ratings. On the other hand, Asian-English did not differ significantly from White-English on any of the reports and ratings of care.

A different pattern than that of Asians was observed among Hispanics. Hispanics generally had lower scores on the reports of care, but higher ratings of care than White-English speakers. Hispanic-Spanish reported worse experiences than White-English for timeliness of care, provider communication, and staff helpfulness, but ratings 5.5 to 9.0 points higher than White-English for all 4 areas of care. Similarly, Hispanic-bilinguals had lower scores than White-English for timeliness of care and staff helpfulness, but higher scores for plan service, and more positive ratings for personal doctor, health care, and health plan. Hispanic-English had lower scores than White-English for timeliness of care, but higher scores for plan customer service and more positive ratings for health plan.

We also observed the negative impact of not speaking English on reports and ratings of care among non-Hispanic Whites. Compared to White-English speakers, Whites-Other language reported worse experiences with getting needed care (6.5 points), timeliness of care (6.2 points), and staff helpfulness (2.6 points). White-Other also had worse ratings than White-English on 3 global ratings: personal doctor, specialist, and health care.

Among other racial/ethnic groups, American Indian/White reported worse experiences than White-English, with lower scores reported for getting needed care, provider communication, and plan service, and more negative ratings for specialist and health plan. American Indians scored lower than White-English on reports of getting needed care and staff helpfulness as well as on ratings of health care.

African Americans scored somewhat lower than White-English on timeliness of care but somewhat higher on getting needed care, provider communication, and staff helpfulness. They scored 6 points higher on plan service. African Americans also had more favorable ratings than White-English for personal doctor, health care, and health plan. African American/White had more positive ratings than White-English for specialist, but did not differ from White-English on any of the other dimensions of care. The other multiracial group did not differ significantly from White-English on any of the reports and ratings of care. Finally, other race/ethnicity reported worse experiences (by 3.5 to 7.0 points) with care than White-English for getting needed care, timeliness of care, staff helpfulness, and plan service, and had lower ratings of care than White-English for personal doctor.

To further explore the within-plan effects of race/ethnicity on reports and ratings of care, we calculated the standard deviation and range (± 1 standard deviation) of the within-plan β coefficients (Tables 3 and 4). While the β coefficients reflect the average effects of race/ethnicity on ratings and reports across health plans, the standard deviations are an indicator of the variation across plans in the reports and ratings of care. There is great variation across plans in their CAHPS performance, with some plans having higher scores than others.

An analysis of between-plan effects shows that African Americans, Hispanic-Spanish, American Indian/White, and White-Other language were more likely than White-English speakers to be clustered in plans with lower assessments of care. Conversely, Asian-English speakers and White-English speakers were more likely to be enrolled in better plans. African Americans exhibited negative between-plan effects for all reports and ratings of care. These negative between-plan effects for African Americans eroded generally positive within-plan effects to produce smaller overall differences from White-English speakers than would have resulted from within-plan effects alone. Hispanic-Spanish showed negative between-plan effects for most domains of care. Furthermore, the between-plan effects accounted for a substantial portion of the overall effects of Hispanic-Spanish on reports and ratings of care.

American Indian/White exhibited negative between-plan effects for all ratings and reports of care. White-Other showed negative between-plan effects for most dimensions of care. Finally, Asian-English had positive between-plan effects and did not differ significantly from White-English on any of the reports and ratings of care.

Table 3. Overall, Within-Plan, and Between-Plan Effects of Race/Ethnicity and Language on CAHPS Reports of Care

Race/Ethnicity and Language [§]	Getting Care Needed					Timeliness of Care				
	Overall Effects	Within-Plan Effects	SD (β)	β ± 1 SD	Between-Plan Effects	Overall Effects	Within-Plan Effects	SD (β)	β ± 1 SD	Between-Plan Effects
White-Other	-8.46 [‡]	-6.46 [‡]	13.90	(-20.36 to 7.44)	-2.00	-8.34 [‡]	-6.16 [‡]	11.05	(-17.21 to 4.89)	-2.18 [‡]
Hispanic-English	-0.16	0.01	6.91	(-6.90 to 6.92)	-0.17	-3.57 [‡]	-2.19 [‡]	6.35	(-8.55 to 4.16)	-1.38
Hispanic-Bilingual	-1.36	-0.35	10.20	(-10.56 to 9.85)	-1.00	-7.98 [‡]	-5.51 [‡]	10.98	(-16.49 to 5.47)	-2.47*
Hispanic-Spanish	-4.61	-2.48	24.28	(-26.73 to 21.82)	-2.15 [‡]	-11.47 [‡]	-7.98 [‡]	9.24	(-17.21 to 1.26)	-3.49 [‡]
Asian-English	1.43	-1.05	11.18	(-12.23 to 10.13)	2.48	0.24	-1.43	10.04	(-11.46 to 8.61)	1.67
Asian-Other	-8.46 [‡]	-7.77 [‡]	15.22	(-22.99 to 7.45)	-0.69	-12.65 [‡]	-11.87 [‡]	13.78	(-25.64 to 1.91)	-0.78
American Indian	-4.51 [†]	-4.38 [†]	14.44	(-18.88 to 10.06)	-0.12	-4.81*	-4.09	12.26	(-16.35 to 8.17)	-0.72*
American Indian/White	-6.37 [‡]	-5.56 [†]	5.83	(-11.42 to 0.24)	-0.78 [‡]	-1.81	-1.55	5.58	(-7.13 to 4.03)	-0.26 [‡]
African American	0.22	1.73 [‡]	19.44	(-17.71 to 21.16)	-1.51 [‡]	-2.64 [‡]	-1.05*	17.42	(-18.47 to 16.38)	-1.60 [‡]
White/African American	1.53	2.39	13.15	(-10.76 to 15.53)	-0.86	0.06	0.82	10.39	(-9.57 to 11.22)	-0.76
Other Multiracial	-0.65	-1.58	16.40	(-17.99 to 14.82)	0.93	-0.89	-0.98	16.96	(-17.94 to 15.98)	0.09
Other Race	-6.88 [‡]	-6.65 [‡]	15.59	(-22.24 to 8.94)	-0.18	-8.56 [‡]	-6.95 [‡]	15.74	(-22.69 to 8.79)	-1.61
Missing Race	-6.03 [‡]	-5.67 [‡]	11.45	(-17.11 to 5.78)	-0.36*	-6.45 [‡]	-4.90 [‡]	10.53	(-15.43 to 5.64)	-1.55 [‡]
Ratio of Between- to Within-Plan Variance					0.14					0.14
	Provider Communication					Staff Helpfulness				
White-Other	-0.21	1.16	8.42	(-7.26 to 9.59)	-1.38 [‡]	-4.49 [‡]	-2.64*	9.21	(-11.85 to 6.57)	-1.85 [‡]
Hispanic-English	0.04	0.66	6.00	(-5.33 to 6.65)	-0.62	-1.18*	-0.24	6.18	(-6.42 to 5.94)	-0.93*
Hispanic-Bilingual	-0.45	0.37	8.32	(-8.00 to 8.68)	-0.83	-3.26 [†]	-1.91*	8.49	(-10.40 to 6.59)	-1.35
Hispanic-Spanish	-3.58 [‡]	-1.85*	7.02	(-8.87 to 5.17)	-1.72 [‡]	-5.50 [‡]	-3.74 [†]	7.89	(-11.62 to 4.15)	-1.77 [‡]
Asian-English	0.41	-0.32	8.70	(-9.02 to 8.38)	0.73	0.27	-0.56	9.35	(-9.91 to 8.78)	0.83
Asian-Other	-7.16 [‡]	-6.52 [‡]	11.13	(-17.66 to 4.61)	-0.64	-10.27 [‡]	-9.15 [‡]	12.99	(-22.14 to 3.83)	-1.12 [†]
American Indian	-1.93	-1.69	11.96	(-13.64 to 10.27)	-0.25	-3.71*	-3.34*	11.45	(-14.79 to 8.11)	-0.37
American Indian/White	-3.17*	-2.80*	4.47	(-7.27 to 1.67)	-0.37 [†]	-2.27	-1.75	4.58	(-6.33 to 2.83)	-0.52 [‡]
African American	1.72 [‡]	2.41 [‡]	19.35	(-16.94 to 21.76)	-0.69 [†]	-0.20	1.11 [†]	16.79	(-15.68 to 17.89)	-1.31 [‡]
White/African American	2.23	2.84	9.74	(-6.90 to 12.58)	-0.61	2.42	3.41	9.00	(-5.59 to 12.42)	-1.00
Other Multiracial	0.68	0.84	14.72	(-13.88 to 15.55)	-0.16*	-0.22	0.07	12.81	(-12.75 to 12.88)	-0.28 [†]
Other Race	-2.13*	-1.43	13.68	(-15.10 to 12.25)	-0.70	-5.31 [‡]	-4.19 [‡]	14.24	(-18.43 to 10.05)	-1.12
Missing Race	-2.11	-1.59	9.26	(-10.85 to 7.67)	-0.52*	-3.84 [†]	-2.85*	11.26	(-14.12 to 8.41)	-0.99 [‡]
Ratio of Between- to Within-Plan Variance					0.07					0.09
	Plan Service									
White-Other	-1.23	0.83	17.57	(-16.74 to 18.40)	-2.07					
Hispanic-English	4.09 [‡]	3.33 [‡]	11.21	(-7.88 to 14.54)	0.76					
Hispanic-Bilingual	4.40 [†]	4.42 [‡]	13.96	(-9.55 to 18.38)	-0.01					
Hispanic-Spanish	-1.12	-3.06	26.64	(-29.70 to 23.57)	1.94					
Asian-English	5.99 [‡]	1.95	13.98	(-12.04 to 15.93)	4.04					
Asian-Other	-2.17	-3.03	17.57	(-20.60 to 14.53)	0.87					
American Indian	-0.09	0.09	19.29	(-19.20 to 19.38)	-0.18					
American Indian/White	-6.88 [†]	-5.88*	8.23	(-14.11 to 2.35)	-1.01 [‡]					
African American	4.13 [‡]	6.04 [‡]	21.25	(-15.21 to 27.28)	-1.91 [‡]					
White/African American	-2.95	-2.69	14.27	(-16.95 to 11.58)	-0.27					
Other Multiracial	-3.28	-4.38	22.76	(-27.14 to 18.38)	1.10					
Other Race	-2.44*	-3.46 [†]	19.70	(-23.16 to 16.25)	1.02					
Missing Race	-6.29 [†]	-5.25 [†]	16.38	(-21.63 to 11.13)	-1.04 [†]					
Ratio of Between- to Within-Plan Variance					0.20					

* P < .05, † P < .01, ‡ P < .001.

§ Omitted category is White-English speakers.

Table 4. Overall, Within-Plan, and Between-Plan Effects of Race/Ethnicity and Language on CAHPS Ratings of Care

Race/Ethnicity and Language [§]	Getting Care Needed					Timeliness of Care				
	Overall Effects	Within-Plan Effects	SD (β)	β ± 1 SD	Between-Plan Effects	Overall Effects	Within-Plan Effects	SD (β)	β ± 1 SD	Between-Plan Effects
White-Other	-4.20 [‡]	-3.14 [‡]	9.06	(-12.20 to 5.93)	-1.06 [†]	-4.00 [‡]	-2.75*	10.16	(-12.89 to 7.42)	-1.27*
Hispanic-English	0.59	0.52	5.79	(-5.27 to 6.31)	0.07	-0.75	0.37	7.71	(-7.34 to 8.08)	-1.12
Hispanic-Bilingual	2.51 [‡]	2.64 [‡]	7.95	(-5.31 to 10.59)	-0.13	-0.86	1.07	12.65	(-11.58 to 13.71)	-1.92
Hispanic-Spanish	4.89 [‡]	5.47 [‡]	5.76	(-0.29 to 11.23)	-0.57*	3.52 [‡]	5.68 [‡]	7.82	(-2.14 to 13.50)	-2.17*
Asian-English	1.80*	-0.23	8.57	(-8.80 to 8.34)	2.03	-2.43*	-2.82	11.78	(-14.60 to 8.96)	0.39
Asian-Other	-4.68 [‡]	-4.55 [‡]	11.78	(-16.34 to 7.23)	-0.13	-6.79 [‡]	-6.36*	13.68	(-19.99 to 7.27)	-0.43
American Indian	-0.35	0.10	11.69	(-11.58 to 11.79)	-0.46	-1.97	-1.06	15.45	(-16.51 to 14.39)	-0.91*
American Indian/White	-1.83	-1.45	3.99	(-5.43 to 2.54)	-0.38 [†]	-5.19*	-4.81*	7.15	(-11.96 to 2.34)	-0.38 [†]
African American	0.95*	1.58 [‡]	13.22	(-11.64 to 14.80)	-0.63 [†]	0.24	0.97	13.89	(-12.93 to 14.86)	-0.73*
White/African American	0.90	1.46	8.10	(-6.65 to 9.56)	-0.56	7.27 [†]	8.25 [†]	13.30	(-5.05 to 21.55)	-0.99
Other Multiracial	1.99	1.32	11.06	(-9.74 to 12.38)	0.67	-1.00	-0.74	16.19	(-16.93 to 15.45)	-0.26
Other Race	-2.07 [†]	-1.82*	13.16	(-14.98 to 11.34)	-0.25*	-2.98*	-1.42	16.04	(-17.46 to 14.63)	-1.57 [†]
Missing Race	-0.83	-0.87	9.88	(-10.75 to 9.01)	0.03	-2.32	-1.26	12.52	(-13.78 to 11.25)	-1.05 [†]
Ratio of Between- to Within-Plan Variance					0.11					0.09
Health Care										
White-Other	-3.87 [‡]	-2.14*	9.15	(-11.29 to 7.01)	-1.73 [‡]	-2.71*	-0.45	9.65	(-10.10 to 9.20)	-2.26*
Hispanic-English	0.37	0.77	5.05	(-4.28 to 5.82)	-0.39*	3.39 [‡]	2.54 [‡]	5.68	(-3.14 to 8.22)	0.85
Hispanic-Bilingual	0.87	1.54*	7.91	(-6.37 to 9.45)	-0.67	4.86 [‡]	4.40 [‡]	8.37	(-3.97 to 12.77)	0.46
Hispanic-Spanish	4.91 [‡]	6.45 [‡]	5.79	(0.66 to 12.24)	-1.54 [‡]	10.05 [‡]	9.01 [‡]	6.03	(2.98 to 15.04)	1.04
Asian-English	2.15*	-0.07	8.26	(-8.33 to 8.19)	2.22	5.44 [‡]	1.29	8.21	(-6.91 to 9.50)	4.15
Asian-Other	-5.37 [‡]	-4.88 [‡]	12.29	(-17.17 to 7.41)	-0.49	-2.50*	-3.24 [‡]	11.30	(-14.54 to 8.06)	0.74
American Indian	-3.46 [†]	-3.08*	11.00	(-14.07 to 7.91)	-0.38	0.61	0.46	12.12	(-11.65 to 12.58)	0.14
American Indian/White	-2.33	-1.63	4.49	(-6.12 to 2.86)	-0.70 [‡]	-5.48 [‡]	-4.32 [†]	4.51	(-8.83 to 0.20)	-1.17 [‡]
African American	0.20	1.28 [†]	16.83	(-15.55 to 18.11)	-1.08 [‡]	1.67*	2.92 [‡]	19.16	(-16.23 to 22.08)	-1.25 [†]
White/African American	-0.62	0.22	8.71	(-8.49 to 8.92)	-0.84	1.67	0.68	9.53	(-8.84 to 10.21)	0.99
Other Multiracial	-0.36	-0.85	14.35	(-15.20 to 13.50)	0.49	1.67	0.87	13.01	(-12.15 to 13.88)	0.81
Other Race	-2.51 [†]	-1.68	13.43	(-15.12 to 11.75)	-0.83*	1.67	-0.61	11.74	(-12.36 to 11.13)	2.28
Missing Race	-3.08*	-2.58*	10.42	(-13.00 to 7.84)	-0.50 [†]	1.67 [†]	-4.07 [‡]	9.84	(-13.90 to 5.77)	5.74 [‡]
Ratio of Between- to Within-Plan Variance					0.17					0.42

* P < .05, † P < .01, ‡ P < .001.

§ Omitted category is White-English speakers.

CONCLUSIONS

The purpose of this study was to examine the extent to which the observed differences in CAHPS ratings and reports of care for patients in Medicaid managed care can be attributed to within- and between-plan effects. Study findings suggest that the observed racial/ethnic differences in CAHPS ratings and reports of care are the result of different experiences with care for people enrolled in the same plans (within-plan effects) more than racial/ethnic minorities being enrolled in health plans with worse patient experiences (between-plan effects). This suggests that racial/ethnic and linguistic minorities still face access to care barriers and lower quality of care, even after financial access has been assured by Medicaid managed care. Furthermore, our findings suggest that language impacts upon experiences with care among whites, Hispanics, and Asians. Among Asians, English speakers reported experiences with care similar to that of whites, while non-English speakers generally had lower reports and ratings of care. We also found that Asian non-English speakers had the lowest reports and ratings of care of all racial/ethnic groups. The negative impact of language on Asian reports of care (Asian-Other compared to White-English) was comparable to the magnitude of having poor versus excellent health status for timeliness of care (14.3 points) and staff helpfulness (12.5 points). Similarly, among whites, non-English speakers had lower reports and ratings of care than did White-English speakers. Among Hispanics, we observe a gradient effect of language, whereby Spanish speakers had lower reports of care than did both bilinguals or English speakers, while bilinguals had scores in-between those of English and Spanish speakers.

Although within-plan effects accounted for most of the observed racial/ethnic differences in ratings and reports of care, between-plan effects were important for African Americans, Hispanic-Spanish speakers, American Indian/White and White-Other. These groups were more likely than English-speaking whites and Asians to be clustered in plans with lower assessments of care. While African Americans tended to be clustered in worse plans as rated by consumers, they generally had better experiences than White-English speakers in those plans. Hispanic-Spanish, American Indian/White, and White-Other were more likely to be enrolled in worse plans and also reported worse experiences than White-English within those plans. Conversely, White-English speakers and Asian-English speakers were more likely to be enrolled in better plans.

Ultimately, the goal is to reduce health disparities among racial/ethnic and linguistic minorities. This study has shown that racial/ethnic and linguistic minorities report worse experiences with care. These results are consistent with the Commonwealth Fund's 2001 Health Care Quality Survey, which showed that racial/ethnic minorities experience less than desirable interactions with their providers, and that non-English speakers have limited access to interpreter services.²³ Patient assessments of care

are associated with utilization,²⁴ adherence to medical regimens,^{25,26} and health status.²⁷ Therefore, racial/ethnic and linguistic minorities with worse perceptions of care are at increased risk for negative health consequences.²⁸

This study has important policy implications. Traditionally, policymakers have focused on financial access to care as a mechanism to address disparities in care. These study findings suggest that it is necessary to go beyond financial access to address non-financial barriers to care,²⁹ such as the structural or institutional barriers to care.³⁰ Potential fruitful activities for health plans and health care organizations, from primary care to acute care settings, include establishing interpreter services, providing training to its workforce in cultural competency, using community health workers, developing culturally appropriate services, diversifying the workforce, and addressing other non-financial barriers to care, such as clinic locations and hours of operation.³¹ The national standards for culturally and linguistically appropriate services (CLAS) in health care, set forth by the Department of Health and Human Services Office of Minority Health, provide guidelines on policies and practices aimed at developing culturally appropriate health care systems.³² Conversely, health care organizations may be hindered from offering cultural and linguistic appropriate services if they are not properly reimbursed for the additional costs of providing such services. Therefore, it is important that Medicaid programs reimburse health plans adequately for these services, and that health plans, in turn, establish financial incentives for health care providers to engage in these practices.

This study has shown there is great variability in the racial/ethnic assessments of care across health plans, with some plans performing better than others. For example, while Asians-Other language had reports for timeliness of care that were on average 11.9 points lower than White-English speakers, there was great variability in the health plan scores as shown by a standard deviation of 13.8 points and a range of -25.6 to 1.9 points ($\beta \pm 1$ standard deviation). Similarly, while Hispanic-Spanish had scores for timeliness of care that were on average 8 points lower than White-English, the scores vary across plans from -17.2-1.25 points. Health plans should address the observed racial/ethnic disparities in assessments of care as part of their quality improvement efforts.^{33,34} Dissatisfaction with care has been associated with disenrollment from health plans.³⁵ By engaging in quality improvement activities aimed at reducing the observed racial/ethnic disparities in assessments of care, health plans can improve their overall ratings and reports of care and potentially reduce disenrollment. There are ongoing efforts to develop health plan report cards on quality of care (including CAHPS scores) stratified by race/ethnicity.³⁶ This would aid health plans in their benchmarking activities and could provide a market stimulus for health plans to reduce disparities in care.

This study has shown that certain racial/ethnic groups tend to be enrolled in plans with worse patient experiences.

Further research is needed to examine why certain racial/ethnic groups tend to enroll in plans with worse patient experiences, while other racial/ethnic groups tend to cluster in better plans. Geographic concentration of racial/ethnic and linguistic minorities in areas with limited health plan choices may partially explain these differences.

CAHPS survey results can be used to help guide consumer choices among providers and health plans.^{37,38} One of the goals of the second phase of CAHPS, CAHPS II, is to produce culturally appropriate reports of care for linguistic minorities.³⁹ Culturally and linguistically appropriate CAHPS survey reports can potentially help reduce the observed racial/ethnic differences in plan enrollment patterns. However, further research is needed to examine the role of CAHPS survey reports in health plan choice among racial/ethnic minorities. Otherwise, if White-English speakers are more likely to use CAHPS survey reports, then it is possible that the CAHPS survey results could reinforce the concentration of minorities in plans with lower assessments of care.

Our study presents several limitations as well as suggestions for future research. First, participation in the NCBDB is voluntary. As such, the database is neither nationally representative nor necessarily representative of Medicaid managed care organizations. Notwithstanding this limitation, state Medicaid managed care programs represented in the NCBDB 3.0 data constituted 44% of the total number of Medicaid managed care enrollees in the United States in 2000.

Second, the observed differences in evaluations between subgroups may be due to differences in the quality of care received or to response bias. Cultural differences may influence response style in surveys and limit our ability to make comparisons between respondents of different racial/ethnic groups.⁴⁰ The main objective of the Spanish CAHPS project was to assess the cultural and linguistic appropriateness of the Spanish version of CAHPS 2.0.⁴¹ Results from the qualitative and quantitative analyses provide support for the cultural and linguistic appropriateness of the Spanish version of the CAHPS 2.0 survey for most Spanish speakers, regardless of their national origin.⁴²⁻⁴⁵

Third, of the non-English speaking groups, only Spanish speakers had CAHPS surveys available in their native language. Other non-English speaking groups (e.g., Asian-Other language) had to complete an English survey. This may have limited the participation of non-English speakers in the CAHPS survey among non-Hispanic groups, especially those who are not able to read English. Furthermore, this limits the comparisons that can be made between the experiences of Hispanic Spanish speakers and those of other non-English speakers. While we were able to distinguish the cultural from the language effect among Hispanics, this was not fully accounted for among other groups. One of the goals of CAHPS II is to make the CAHPS survey available in other languages, especially Asian languages.

Fourth, future research is needed to examine the role of acculturation on the observed racial/ethnic differences

in patient assessments of care. It is expected that less acculturated patients will have greater difficulties in navigating the US health care system and will have a greater need for culturally and linguistically appropriate services. A widely used acculturation scale (the short acculturation scale) relies on language-related items: language he/she speaks at home, language in which he/she thinks, language in which he/she reads and speaks, and language he/she speaks with friends.⁴⁶ However, this study was limited to language primarily spoken at home and survey language (for Hispanics). Future studies should examine the impact of acculturation on the racial/ethnic differences in CAHPS using acculturation scales, such as the short acculturation scale.

Finally, future research should examine whether health plan organizational characteristics influence racial/ethnic differences in patients' assessments of care. While most of the health plans represented in this study were HMOs, there is great diversity among these plans.

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APPENDIX 1

CAHPS 2.0 Adult Global Ratings and Reports of Care

Ratings/Composite Measure	Survey Items	Response Scale
Personal doctor or nurse rating	How would you rate your personal doctor or nurse now? (AM6)	0 to 10 Scale
Specialist rating	How would you rate the specialist? (AM10)	0 to 10 Scale
Health care rating	How would you rate all your health care? (AM30)	0 to 10 Scale
Health plan rating	How would you rate your health plan now? (AM45)	0 to 10 Scale
Getting needed care (composite): assess access to care	With the choices your health plan gives you, how much of a problem, if any, was it to get a personal doctor or nurse you are happy with? (AM4) In the last 12 months, how much of a problem, if any, was it to get a referral to a specialist that you needed to see? (AM8) In the last 12 months, how much of a problem, if any, was it to get the care you or your doctor believed necessary? (AM20) In the last 12 months, how much of a problem, if any, were delays in health care while you waited for approval from your health plan? (AM21)	1 A big problem 2 A small problem 3 Not a problem
Timeliness of care (composite): assess getting care promptly	In the last 12 months, when you called during regular office hours, how often did you get the help or advice you needed? (AM13) In the last 12 months, how often did you get an appointment for regular or routine care as soon as you wanted? (AM15) In the last 12 months, when you needed care right away for an illness or injury, how often did you get care as soon as you wanted? (AM17) In the last 12 months, how often did you wait in the doctor's office or clinic more than 15 minutes past your appointment time to see the person you went to see? (AM22)	1 Never 2 Sometimes 3 Usually 4 Always
Provider communication (composite): assess communication of provider with patients	In the last 12 months, how often did doctors or other health providers listen carefully to you? (AM25) In the last 12 months, how often did doctors or other health providers explain things in a way you could understand? (AM27) In the last 12 months, how often did doctors or other health providers show respect for what you had to say? (AM28) In the last 12 months, how often did doctors or other health providers spend enough time with you? (AM29)	1 Never 2 Sometimes 3 Usually 4 Always
Staff helpfulness (composite): whether the staff treats the customer with courtesy and respect	In the last 12 months, how often did office staff at a doctor's office or clinic treat you with courtesy and respect? (AM23) In the last 12 months, how often were office staff at a doctor's office or clinic as helpful as you thought they should be? (AM24)	1 Never 2 Sometimes 3 Usually 4 Always
Plan service (composite): assess calls to customer service	In the last 12 months, how much of a problem, if any, was it to find or understand information in the written materials? (AM40) In the last 12 months, how much of a problem, if any, was it to get the help you needed when you called your health plan's customer service? (AM42) In the last 12 months, how much of a problem, if any, did you have with paperwork for your health plan? (AM44)	1 A big problem 2 A small problem 3 Not a problem