

Racial and Ethnic Differences in Parents' Assessments of Pediatric Care in Medicaid Managed Care

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Objective. This study examines whether parents' reports and ratings of pediatric health care vary by race/ethnicity and language in Medicaid managed care.

Data Sources. The data analyzed are from the National Consumer Assessment of Health Plans (CAHPS®) Benchmarking Database 1.0 and consist of 9,540 children enrolled in Medicaid managed care plans in Arkansas, Kansas, Minnesota, Oklahoma, Vermont, and Washington state from 1997 to 1998.

Data Collection. The data were collected by telephone and mail, and surveys were administered in Spanish and English. The mean response rate for all plans was 42.1 percent.

Study Design. Data were analyzed using multiple regression models. The dependent variables are CAHPS 1.0 ratings (personal doctor, specialist, health care, health plan) and reports of care (getting needed care, timeliness of care, provider communication, staff helpfulness, plan service). The independent variables are race/ethnicity (white, African American, American Indian, Asian, and Hispanic), Hispanic language (English or Spanish), and Asian language (English or other), controlling for gender, age, education, and health status.

Principal Findings. Racial/ethnic minorities had worse reports of care than whites. Among Hispanics and Asians language barriers had a larger negative effect on reports of care than race/ethnicity. For example, while Asian non-English-speakers had lower scores than whites for staff helpfulness ($\beta = -20.10$), timeliness of care ($\beta = -18.65$), provider communication ($\beta = -17.19$), plan service ($\beta = -10.95$), and getting needed care ($\beta = -8.11$), Asian English speakers did not differ significantly from whites on any of the reports of care. However, lower reports of care for racial/ethnic groups did not translate necessarily into lower ratings of care.

Conclusions. Health plans need to pay increased attention to racial/ethnic differences in assessments of care. This study's finding that language barriers are largely responsible for racial/ethnic disparities in care suggests that linguistically appropriate health care services are needed to address these gaps.

Key Words. CAHPS, patient satisfaction, race/ethnicity, reports and ratings of care

BACKGROUND AND SIGNIFICANCE

Consumer assessments of health care are increasingly being used as an indicator of the quality of care provided by health plans and providers. In 1999 the results of the Consumer Assessment of Health Plans (CAHPS®) survey were made available to 90 million Americans enrolled in Medicare and private health plans (Cleary 1999). These evaluations provide important information about how well health plans and clinicians meet the needs of the people they serve (Crofton, Lubalin, and Darby 1999). Patient evaluations of care have been associated with utilization (Zastowny, Roghmann, and Cafferata 1989) and compliance with medical regimens (Hall and Dornan 1990; David and Rhee 1998). In addition dissatisfaction with care has been linked with doctor shopping and disenrollment from health plans (Rossiter et al. 1989; Newcomer, Preston, and Harrington 1996; Kerr et al. 1998).

The extent to which consumer assessments of health care vary by race/ethnicity is of significance in evaluations of health plan performance. Health care organizations will increasingly face a more diverse patient population. As of 1999 28 percent of the U.S. population were members of a racial or ethnic minority group (African American, American Indian, Asian, or Hispanic), and it is projected that by 2030 40 percent of the U.S. population will be members of a racial or ethnic minority group (U.S. Census Bureau 1999). Cultural differences across groups can serve as a communication barrier and result in less satisfaction with health care. In a review of the literature on access to care in Hispanic communities Valdez, Giachello, Rodriguez-Trias, et al. (1993) found that poor patient-provider communication and lack of cultural competency are significant barriers to high-quality care.

The study of racial/ethnic differences in consumer assessments of care is particularly important for Medicaid managed care populations. Increasingly,

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government is relying on the managed care sector to provide coverage for Medicaid and Medicare populations as a cost-containment mechanism (Halstead and Becherer 1998). As of 1997, 16,600,000 people, or 54 percent of Medicaid recipients, were enrolled in managed care plans.

As more vulnerable populations are enrolled in managed care plans it becomes essential to develop assessments of their care. Indigent populations may have more difficulties in dealing with the complexities of managed care organizations (Sisk, Gorman, Reisinger, et al. 1996). 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, African Americans and Hispanics are disproportionately represented in the low-income groups. Managed care organizations may not have the necessary competencies to manage a linguistically and culturally diverse population. Indeed managed care organizations often restructure services, moving patient populations away from community-based, traditional providers that are more familiar with the culture and language of racial/ethnic groups (Leigh et al. 1999). There may also be a clash between the belief systems and attitudes of cultural subgroups and those of the managed care culture because managed care values and principles focus on a healthy and young population (Lavizzo-Mourey and Mackenzie 1996).

Most recent studies examining the effect of managed care on racial/ethnic minorities' assessments of care have shown that minorities are less satisfied with certain aspects of managed care than whites. Phillips, Mayer, and Aday (1999) showed that racial/ethnic minorities enrolled in managed care plans generally report greater continuity of care but less satisfaction with the care received. Similarly, Leigh et al. (1999), in a study comparing managed care enrollees with fee-for-service (FFS) enrollees in Florida, Tennessee, and Texas found that African Americans enrolled in managed care plans are more likely to report problems with access to care than African Americans in FFS, and Hispanic managed care enrollees are more likely to be dissatisfied with the provider-patient relationship than Hispanics in FFS.

RACE/ETHNICITY AND CONSUMER ASSESSMENTS OF HEALTH CARE

Relatively few studies have examined the effect of race/ethnicity on consumer assessments of care (satisfaction) with health care. A meta-analysis of the

relationship of patient sociodemographic characteristics and patient satisfaction with medical care found no significant relationship between patients' race/ethnicity and satisfaction with care (Hall and Dornan 1990). However, more recent studies have shown differences in satisfaction across racial and ethnic groups. Meredith and Siu (1995); Taira, Safran, Seto, et al. (1997); and Murray-Garcia, Selby, Schmittiel, et al. (2000) found Asians to be less satisfied than other racial/ethnic groups with the care received in outpatient settings. Similarly, in a study by Snyder et al. (2000), Asians and Pacific Islanders reported worse access to care than other racial/ethnic groups. Harpole, Orav, Hickey, et al. (1996) examined patient dissatisfaction with outpatient clinics and found African Americans to be more dissatisfied with the timeliness of care than whites or Hispanics. Gross, Zyzanski, Borawski, et al. (1998) reported that nonwhites are less satisfied than whites with the amount of time spent with their family physicians. Finally, a study by Morales, Cunningham, Brown, et al. (1999) found Hispanics to be less satisfied than whites with provider communication in medical group practices.

A study using the 1996 Medical Expenditure Panel Survey showed that racial/ethnic minorities, especially Hispanics and Asians, face greater barriers to care than whites (Phillips, Mayer, and Aday 1999). Hispanics are twice as likely as other groups to have long waits and to perceive that their provider failed to listen and provide the needed information. Asians report more difficulties in getting appointments, dissatisfaction with the care received, and lack of confidence in the provider's abilities.

Language has been documented as a barrier to care among racial/ethnic minorities, especially for Spanish-speaking Hispanics. Hu and Covell (1986) found that outpatients whose primary language is English are more satisfied with their care in general than patients whose primary language is Spanish. Carrasquillo et al. (1999) examined patient satisfaction with emergency departments (EDs) at five urban teaching hospitals and showed that non-English-speaking patients are less satisfied than English-speaking patients with the care provided by the ED and less likely to visit the same ED if they need care in the future. Non-English speakers are particularly dissatisfied with the overall care, courtesy and respect, and discharge instructions. Furthermore, language barriers have been found to affect satisfaction with care beyond cultural barriers. Studies contrasting Spanish-speaking and English-speaking Hispanics have also found Spanish speakers to be less satisfied with the care received and with provider communication (David and Rhee 1998; Morales, Cunningham, Brown et al. 1999).

METHODOLOGY

The research questions investigated in this study are:

1. Do parents' reports and ratings of pediatric care vary by race/ethnicity in Medicaid managed care?
2. Do parents' reports and ratings of pediatric care vary by primary language for Hispanics and Asians?

Data

CAHPS was established by the Agency for Healthcare Research and Quality in 1995 through cooperative agreements with consortia headed by Harvard Medical School, RAND, and the Research Triangle Institute. The primary purpose of CAHPS was to produce a set of standardized surveys and report templates that would yield comparative information about the experiences of enrollees with their health plans and health care providers. CAHPS 1.0 was developed and tested from 1995 to 1997. The CAHPS Child Survey includes questions about the issues covered by the adult survey and some additional issues pertinent to children's care (Shaul, Fowler, Zaslavsky, et al. 1999).

This study analyzes the National CAHPS Benchmarking Database (NCBD) 1.0 Child Surveys. NCBD is a collaborative initiative of the Quality Measurement Advisory Service, The Picker Institute, and Westat. Sponsors of CAHPS voluntarily participate in the NCBD and include Medicaid agencies, health plans, and employers. The purpose of this database is to facilitate comparisons among various users of CAHPS.

The NCBD 1.0 Child data include CAHPS 1.0 responses from seven Medicaid sponsors comprising 33 HMOs from Arkansas, Kansas, Minnesota, Oklahoma, Vermont, and Washington state. None of the commercial sponsors contributed child survey data to the NCBD CAHPS 1.0. The data were collected by telephone and mail, and surveys were administered in Spanish and English. Previous research has shown the equivalence of the telephone and mail responses to CAHPS (Fowler, Gallagher, and Nederend 1999). Limitations in the NCBD CAHPS 1.0 data did not allow us to identify surveys administered either in English or Spanish. The mean response rate for all plans was 42.1 percent, with a median of 42.4 percent and a range of 30.1 percent to 57.1 percent. The original data consist of 9,540 children (< 18 years of age) enrolled in Medicaid managed care, and the distribution of the sample by sex, age, and state is shown in Table 1. The field period covers 1997 to 1998.

Table 1: Distribution of Sample by Child's Gender, Child's Age, and State

	<i>No. of Responses</i>
Child's Gender	
Male	4,823
Female	4,525
Missing sex	192
Child's Age (y)	
0-5	4,127
6-11	3,124
12-17	2,289
State	
Arkansas	491
Kansas	862
Minnesota	2,278
Oklahoma	1,580
Vermont	623
Washington	3,706

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 (Davies and Ware 1988). Reports of care capture the specific experiences with care in terms of what did or did not happen from the consumer's perspective. The survey uses a fixed time interval of the previous six months in framing the questions on the experiences with health care.

CAHPS 1.0 includes four global rating items: personal doctor or nurse, specialists, health care, and health plan. In addition it contains 17 items (reports) measuring five domains of health plan performance, or composite reports: getting needed care, timeliness of care, provider communication, staff helpfulness, and plan service (see Table 2). The four global rating questions are asked using a 0-10 scale where ten is the best possible rating. All of the items included in the composites are asked using a never, sometimes, usually, always response scale, except for two items in the "getting needed care" composite where a yes/no response format was used. The composite reports are calculated in a two-step process by adding the items within a scale and then linearly transforming the total to a scale of 0 to 100. Internal

consistency reliability for each of the five scales for the composite reports of care was estimated using Cronbach (1951) alpha coefficients: getting needed care (access) $\alpha = 0.60$; timeliness of care $\alpha = 0.73$; provider communication $\alpha = 0.82$; staff helpfulness $\alpha = 0.77$; and plan service $\alpha = 0.67$. To facilitate comparison between the composite reports and the global ratings the 0–10 ratings were linearly transformed to a scale of 0 to 100.

The independent variables consist of parent's race/ethnicity, Hispanic and Asian parents' language, and case-mix adjusters. Race/ethnicity constitutes a categorical variable representing the racial or Hispanic ethnicity of the respondent: Hispanic/Latino, black/African American, Asian/Pacific Islander, Native American/Alaskan native, white, other race/ethnicity, or missing race/ethnicity. Respondents were assigned to racial/ethnic categories based on their answers to the following questions (both questions were asked of all respondents):

1. Are you of Hispanic or Spanish family background?
 - Yes
 - No
2. How would you describe your race?
 - American Indian or Alaskan native
 - Asian or Pacific Islander
 - Black/African American
 - White
 - Another race or multiracial (write in)

Survey respondents who answered yes to question one were categorized as Hispanic regardless of race. Respondents who answered no to question one were categorized into a racial/ethnic group according to their response to question two. Respondents who wrote in a response to question two were placed in the category that most closely matched the specified race or ethnicity. Respondents who did not answer question one or two or who answered no to question one but did not indicate a race were placed in the "missing race/ethnicity" category. Respondents who only answered question two were assumed to be non-Hispanic.

Hispanic and Asian parents were further classified based on the language he or she primarily speaks at home: Hispanic English speaking, Hispanic Spanish speaking, Asian English speaking, Asian other language, or Asian missing language. Hispanics missing language information were dropped from the analysis because they constituted only 26 cases.

Table 2: CAHPS 1.0 Child Global Ratings and Reports of Care

Rating/Composite Measure	Survey Item	Response Scale
Personal doctor or nurse rating	How would you rate your child's personal doctor or nurse now? (C8)	0-10 scale
Specialist rating	How would you rate your child's specialist? (C13)	0-10 scale
Health care rating	How would you rate all your child's health care? (C42)	0-10 scale
Health plan rating	How would you rate your child's health insurance plan now? (C64)	0-10 scale
Getting needed care (composite): assess access to care	Was it easy to find a personal doctor or nurse for your child you are happy with? (C3) Was it always easy to get a referral when your child needed one? (C12)	1 = yes, 0 = no
Timeliness of care (composite): assess getting care promptly	How often did your child get the tests or treatment you thought your child needed? (C41) How often did your child's health insurance plan deal with approvals or payments without taking a lot of your time and energy? (C59) How often did you get the medical help or advice you needed for your child when you phoned the doctor's office or clinic during the day on Monday to Friday? (C15) When you tried to have your child seen for an illness or injury, how often did you see a doctor or other health professional as soon as you wanted? (C18) When your child needed regular or routine health care, how often did your child get an appointment as soon as you wanted? (C20) How often did your child wait in the doctor's office or clinic for more than 30 minutes past the appointment time to see the person you went to see? (C24)	1 = never, 2 = sometimes, 3 = usually, 4 = always
Timeliness of care (composite): assess getting care promptly	How often did you get the medical help or advice you needed for your child when you phoned the doctor's office or clinic during the day on Monday to Friday? (C15) When you tried to have your child seen for an illness or injury, how often did you see a doctor or other health professional as soon as you wanted? (C18) When your child needed regular or routine health care, how often did your child get an appointment as soon as you wanted? (C20) How often did your child wait in the doctor's office or clinic for more than 30 minutes past the appointment time to see the person you went to see? (C24)	1 = never, 2 = sometimes, 3 = usually, 4 = always

<p>Provider communication (composite): assess communication of provider with patients</p>	<p>How often did your child's doctors or other health professionals listen carefully to you? (C27)</p> <p>How often did your child's doctors or other health professionals explain things in a way you could understand? (C29)</p> <p>How often did your child's doctors or other health professionals show respect for what you had to say? (C30)</p> <p>How often did your child's doctors or other health professionals spend enough time with your child? (C36)</p>	<p>1 = never, 2 = sometimes, 3 = usually, 4 = always</p>
<p>Staff helpfulness (composite): whether the staff treats the customer with courtesy and respect</p>	<p>How often did office staff at your child's doctor's office or clinic treat you and your child with courtesy and respect? (C25)</p> <p>How often were office staff at your child's doctor's office or clinic as helpful as you thought they should be? (C26)</p>	<p>1 = never, 2 = sometimes, 3 = usually, 4 = always</p>
<p>Plan service (composite): assess calls to customer service</p>	<p>How often did you have more forms to fill out for your child's health insurance plan than you thought was reasonable? (C57)</p> <p>How often did you get all the information or other help you needed when you called the health insurance plan's customer service? (C62)</p> <p>How often were the people at the health insurance plan's customer service as helpful as you thought they should be? (C63)</p>	<p>1 = never, 2 = sometimes, 3 = usually, 4 = always</p>

An additional set of variables is used as case-mix adjusters: parent's gender, parent's age, parent's education, and child's health status. These are patient characteristics known to be related to systematic biases in survey responses (Aharony and Strasser 1993; Cleary and McNeil 1988; Elliot et al. 2000). Parent's gender is a dichotomous variable: 0 = female, 1 = male. Parent's age is a categorical variable consisting of three categories: 18–34, 35–54, 55 or older. Parent's education is a categorical variable with three categories: less than high school, high school graduate, and one or more years of college. Child's health status is a categorical variable measuring how parents rate their child's overall health: excellent, very good, good, fair, poor.

Analysis Plan

Bivariate statistics (chi-square) were used to examine differences in age, gender, education, and health status among the racial/ethnic subgroups. Ordinary least squares regression was used to model the effect of race/ethnicity, Hispanic language, and Asian language on CAHPS ratings and reports, controlling for parent's age, parent's gender, parent's education, and child's health status. Standard errors for all regressions were adjusted for correlation within health plans using the Huber/White correction (White 1980).

A small departure from normality was detected for the dependent variables (negatively skewed). As a result the variables were transformed by dividing the square of the variable by 100 to produce an approximately normal distribution. However, given similar regression results for both the transformed and untransformed dependent variables, only the results for the untransformed variables are reported here.

Given that response rates varied across health plans, nonresponse weights were computed. A weight proportional to the inverse of the response rate was computed for each plan (Brick and Kalton 1996). 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.

RESULTS

Table 3 presents descriptive statistics for all dependent variables used in the study. Chi-square statistics indicate that there are significant differences across racial/ethnic groups in terms of the case-mix adjusters parent's age, parent's gender, parent's education, and child's health status (see Table 4). Asian

(except Asian-missing) and Hispanic parents are younger, with a greater proportion in the 18–34 years category. The majority of respondents are female. However, the Asian-other and Asian-missing groups had a greater proportion of male parents than other racial/ethnic groups, with 43.3 percent and 35 percent being males, respectively. Asian-English parents are the most educated racial/ethnic group, whereas Hispanic-Spanish parents are the least educated. Finally, Hispanic-Spanish parents are the group with the highest proportion who rated their children’s health as fair or poor (14.5 percent).

Table 5 presents the results for the regression results on the reports of care. In general racial/ethnic minorities reported more negative experiences with care than whites.

More specifically, compared to whites: Asian-other had worse reports than whites across all domains measured by CAHPS: getting needed care ($p < .05$), timeliness of care ($p < .001$), provider communication ($p < .001$), staff helpfulness ($p < .001$), and plan service ($p < .001$). In addition Asian-other reports of care were the lowest of all subgroups except for getting needed care. Asian-missing scores were lower than whites’ on reports of timeliness of care ($p < .001$), provider communication ($p < .001$), and staff helpfulness ($p < .001$). However, Asian-English did not differ significantly from whites on any of the reports of care.

Hispanic-Spanish had more negative reports than whites for timeliness of care ($p < .01$), provider communication ($p < .05$), staff helpfulness ($p < .05$), and plan service ($p < .001$). However, Hispanic-English did not differ from whites on any of the reports of care.

African Americans scored lower than whites on reports of getting needed care ($p < .01$), timeliness of care ($p < .01$), and plan service ($p < .001$). American Indians had worse reports than whites for getting needed

Table 3: Descriptive Statistics for the Dependent Variables

<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>
Personal doctor or nurse rating	85.79	19.80
Specialist rating	79.15	27.10
Health care rating	84.35	19.72
Health plan rating	81.57	22.22
Getting needed care	80.85	30.66
Timeliness of care	76.56	24.21
Provider communication	83.82	20.79
Staff helpfulness	85.25	22.07
Plan service	86.40	23.03

Table 4: Case-Mix Adjusters by Race/Ethnicity

	Hispanic- English	Hispanic- Spanish	Black	Asian- English	Asian- Other	Asian- Missing	American Indian	White	Other	Missing	Chi- square	P-value*
<i>N</i>	389	453	1,344	93	118	80	330	6,328	111	266		
Parent's age (%)												
18-34 y	63.6	65.9	57.6	64.5	69.1	42.1	51.7	55.4	51.4	54.6	94.15	.001
35-54 y	32.7	32.5	34.8	31.2	29.1	55.3	39.1	39.6	38.7	42.3		
55+ y	3.6	1.6	7.7	4.3	1.8	2.6	9.2	5.0	9.9	3.2		
Parent's gender (%)												
Female	94.9	82.1	94.7	81.5	56.5	65.4	91.8	92.2	83.6	90.6	340.08	.001
Male	5.2	17.9	5.3	18.5	43.5	34.6	8.2	7.8	16.4	9.4		
Parent's education (%)												
< high school	29.3	66.6	24.9	9.9	38.4	28.6	29.8	16.1	17.3	17.5	735.60	.001
High school	40.2	23.0	42.2	46.2	30.4	20.8	33.7	43.0	31.8	35.9		
College	30.6	10.4	32.8	44.0	31.3	50.7	36.5	40.9	50.9	46.7		
Child's health status												
Excellent	44.2	33.0	36.6	51.1	29.3	28.6	38.5	43.0	39.1	46.2	214.83	.001
Very good	30.7	28.6	32.9	26.1	33.6	45.5	33.6	34.7	27.3	33.6		
Good	17.9	23.3	21.4	16.3	30.2	22.1	19.0	18.0	24.6	16.8		
Fair	6.0	14.4	9.6	5.4	6.9	3.9	8.3	3.9	9.1	3.1		
Poor	1.3	.7	.5	1.1	0	0	.6	.4	0	.4		

care ($p < .05$), timeliness of care ($p < .01$), provider communication ($p < .05$), and plan service ($p < .01$). Other race/ethnicity respondents had more negative reports of care than whites for timeliness of care ($p < .05$). Missing race/ethnicity respondents had worse reports of care than whites for getting needed care ($p < .001$), timeliness of care ($p < .001$), provider communication ($p < .01$), and plan service ($p < .01$).

Regression results for ratings of care show less variation in global ratings of care (see Table 6). More specifically, compared to whites Hispanic-Spanish had more positive ratings than whites for personal doctor ($p < .01$), specialist ($p < .05$), and plan service ($p < .001$). However, Hispanic-English did not differ significantly from whites on their ratings of care.

Asian-other had more negative ratings than whites for health care ($p < .05$). However, Asian-English had more positive ratings than whites for specialist ($p < .05$) and plan service ($p < .05$). Asian-missing did not differ significantly from whites on any of the ratings of care.

American Indians had lower ratings than whites for personal doctor ($p < .05$) and plan service ($p < .05$). Other race/ethnicity respondents had more negative ratings than whites for plan service ($p < .05$). Missing race/ethnicity respondents had worse ratings than whites for plan service ($p < .01$).

CONCLUSIONS AND IMPLICATIONS

Despite significant advances in medical care in recent decades, racial and ethnic disparities in health status and quality of care still persist. Inadequate financial access to care among minorities has been commonly cited as one of the major reasons for these continued disparities in care (Andrulis 1998). However, this study suggests that racial and ethnic minorities still face barriers in health care even after financial access has been ensured by Medicaid. In addition the study documents that language is an important barrier to care for Hispanics and Asians, perhaps more important than race/ethnicity.

The report for getting needed care evaluates access to medical services such as specialists and recommended treatments. Asian-other, African Americans, and American Indians scored lower than whites on getting needed health care. Similarly, racial/ethnic minorities fared more poorly in other dimensions of access such as timeliness of care and health plan service. Hispanic-Spanish, Asian-other, African Americans, and American Indians reported lower scores for timeliness of care and plan service than whites. The results of this study also suggest that racial and ethnic minorities face problems

Table 5: Regression Results for Reports of Care by Race/Ethnicity and Language, in Beta Coefficient (Standard Error)

	<i>Getting Care Needed</i>	<i>Timeliness of Care</i>	<i>Provider Communication</i>	<i>Staff Helpfulness</i>	<i>Plan Service</i>
Parent's race/ethnicity (reference white)					
Hispanic-English	-2.04 (2.24)	-4.52 (2.30)	-1.06 (1.22)	-2.48 (1.27)	-.78 (1.31)
Hispanic-Spanish	-5.39 (2.95)	-9.24** (3.19)	-4.37* (1.71)	-6.09* (2.31)	-6.93*** (1.87)
Asian-English	1.12 (3.10)	-5.56 (3.33)	-5.12 (2.90)	-5.81 (2.98)	-4.47 (2.67)
Asian-other	-8.11* (3.47)	-18.65*** (3.05)	-17.19*** (3.59)	-20.10*** (3.88)	-10.95*** (2.81)
Asian-missing	3.92 (3.89)	-18.68*** (4.14)	-14.16*** (3.02)	-17.00*** (3.03)	-.33 (1.65)
Black	-3.52** (1.08)	-4.53** (1.31)	.51 (.92)	-.98 (.77)	-4.29*** (.81)
American Indian	-9.12* (3.87)	-3.52** (1.29)	-3.27* (1.24)	-1.20 (1.33)	-4.12** (1.48)
Other	-4.96 (4.17)	-3.29* (1.40)	.23 (2.24)	.10 (2.01)	-6.70 (3.42)
Missing	-9.13*** (2.55)	-8.80*** (2.10)	-4.20** (1.54)	-1.62 (1.56)	-7.17** (2.21)
Parent's age (reference 18-34 y)†					
35-54 y	-.13 (.82)	2.64*** (.70)	2.17** (.64)	3.94*** (.58)	2.19*** (.45)
55+ y	-1.21 (1.36)	5.69*** (1.20)	6.16*** (1.48)	8.10*** (1.49)	6.80*** (.93)
Parent's gender (reference female)					
Male	-.47 (1.51)	-2.37 (1.37)	-1.55 (1.34)	-1.65 (1.21)	-3.57** (1.03)
Parent's education (reference high school)†					
< high school	-2.46* (.94)	-3.31*** (.80)	-2.78*** (.74)	-2.76** (.81)	-1.24 (.73)
College	-1.40 (.77)	-.37 (.61)	-1.70** (.53)	-2.55*** (.60)	-1.17 (.61)
Child's health status (reference excellent)					
Very good	-4.22*** (.75)	-3.71*** (.63)	-4.61*** (.52)	-4.01*** (.55)	-3.00*** (.49)
Good	-8.70*** (1.03)	-8.51*** (.93)	-9.38*** (.90)	-7.99*** (.99)	-6.48*** (.74)
Fair	-18.95*** (1.74)	-15.60*** (1.65)	-13.34*** (1.37)	-10.42*** (1.52)	-9.20*** (.84)
Poor	-28.66*** (6.14)	-19.20** (5.68)	-17.49*** (4.29)	-23.10** (7.25)	-16.87*** (3.03)
R ²	.04	.07	.06	.06	.04

*p < .05; **p < .01; ***p < .001.

†Regression results were not sensitive to the addition of more categories.

with respect to provider communication and staff helpfulness. Hispanic-Spanish, Asian-other, Asian-missing, and American Indians reported lower scores for provider communication than whites, and Hispanic-Spanish, Asian-other, and Asian-missing had lower scores for staff helpfulness than whites.

Language barriers account for a large degree of the negative effect of race/ethnicity on reports and ratings of care for Hispanics. While Hispanic-Spanish had lower scores than whites for the four reports of care, Hispanic English speakers did not differ significantly from whites on any of the reports of care. These findings are consistent with previous research on Hispanics showing that Spanish speakers are less satisfied with care than English speakers (David and Rhee 1998; Morales, Cunningham, Brown, et al. 1999).

Asian non-English speakers had the lowest reports of care of all racial/ethnic groups. Furthermore, an examination of the beta coefficients indicates that the negative effect of language on Asian reports of care was comparable to that of poor health status for four of the reports (timeliness of care, provider communication, staff helpfulness, and plan service; see Table 5). This finding is consistent with previous research showing that Asians have lower satisfaction with care than other racial/ethnic groups (Meredith and Siu 1995; Taira, Safran, Seto, et al. 1997). However, these studies did not account for the language effect. In our study after controlling for language differences, Asian English speakers did not differ significantly from whites on four of the reports of care. This indicates that language barriers may account for a large degree of the observed negative effect of race/ethnicity on assessments of care among Asians.

The lower scores on the reports of care of racial/ethnic minorities did not translate necessarily into lower ratings of care. Compared to whites, American Indians had lower ratings for personal doctor and health plan and Asian-other had lower ratings for health care. On the other hand, Asian-English had higher ratings than whites for specialist care and Hispanic-Spanish had higher ratings than whites for personal doctor, specialist, and health plan. Prior research has shown that Spanish-speaking Hispanics have a bias toward more favorable responses in patient satisfaction surveys (Hayes and Baker 1998).

With the increased diversity in the population, health plans need to pay increased attention to assessments of care from racial and ethnic minorities. Consumer surveys are increasingly being used as a tool in quality assessment and improvement (Cleary 1999). Satisfaction assessment can provide data for quality-improvement efforts such as total quality management (Halstead and Becherer 1998). It will become more important in quality-improvement efforts to examine subpopulation differences among ethnic groups so that

Table 6: Regression Results for Ratings by Race/Ethnicity and Language, in Beta Coefficient (Standard Error)

	<i>Personal Doctor</i>	<i>Specialist</i>	<i>Health Care</i>	<i>Health Plan</i>
Parent's race/ethnicity (reference white)				
Hispanic-English	.90 (1.27)	2.74 (3.91)	1.41 (1.42)	.11 (1.37)
Hispanic-Spanish	3.76** (1.20)	10.62* (4.73)	2.58 (1.30)	8.18*** (1.26)
Asian-English	-.91 (2.82)	11.92* (4.66)	-1.79 (2.14)	3.79* (1.62)
Asian-other	-2.49 (3.70)	3.88 (6.50)	-3.83* (1.62)	1.24 (1.40)
Asian-missing	-3.35 (3.36)	-7.69 (13.53)	-5.51 (3.04)	-1.10 (3.71)
Black	.30 (1.07)	-2.20 (1.69)	-.10 (.93)	-.41 (1.32)
American Indian	-3.39* (1.32)	-10.00 (7.84)	-1.69 (1.16)	-4.67* (1.83)
Other	.65 (2.42)	1.11 (2.87)	-1.41 (2.21)	-5.27* (2.37)
Missing	-1.60 (1.64)	1.07 (4.17)	-1.62 (1.59)	-5.62** (1.85)
Parent's age (reference 18-34 y)†				
35-54 y	.53 (.52)	.30 (1.13)	1.23* (.49)	1.17 (.58)
55+ y	2.63* (1.09)	4.41 (3.65)	6.13*** (.89)	5.87*** (1.26)
Parent's gender (reference female)				
Male	-2.61** (.95)	2.64 (3.03)	-2.78* (1.23)	-1.92 (1.02)
Parent's education (reference high school)†				
< high school	-.80 (.85)	.56 (2.60)	-2.11* (.82)	-.47 (.45)
College	-1.18 (.65)	1.32 (1.23)	-2.22*** (.52)	-3.21*** (.62)
Child's health status (reference excellent)				
Very good	-3.15*** (.70)	-2.22 (1.45)	-4.52*** (.46)	-4.63*** (.53)
Good	-6.38*** (.83)	-6.63** (1.92)	-9.32*** (.94)	-8.75*** (1.31)
Fair	-8.24*** (1.82)	-11.85* (4.41)	-15.26*** (2.06)	-12.77*** (1.68)
Poor	-15.28 (7.68)	-12.74 (7.20)	-23.18** (8.14)	-23.92*** (6.53)
R ²	.02	.04	.06	.05

p* < .05; *p* < .01; ****p* < .001.

†Regression results were not sensitive to the addition of more categories.

quality-improvement initiatives can be more focused and efficient (Taira, Safran, Seto, et al. 1997).

This study has important policy implications. It suggests the importance for health care organizations to provide culturally and linguistically competent health care services. Understanding the determinants of positive health care experiences in different racial and ethnic groups will facilitate the development of more culturally appropriate health care services. This will include acquiring knowledge of the health-related beliefs, attitudes, and communication patterns of the different racial/ethnic groups to improve services and programs (HRSA 1999). Linguistically appropriate services should include bilingual providers and competent interpreter services. Previous studies have shown the importance of patient-provider language concordance for adherence to medical regimens (Manson 1988) and patient outcomes (Perez-Stable, Napoles-Springer, and Miramontes 1997).

Further research is needed to examine why the lower scores on the reports of care do not necessarily translate into lower ratings of care among racial/ethnic groups. A possible explanation is that reports of care are more objective and may capture real differences in care, whereas ratings miss the differences because they are more subjective and influenced by expectations; racial/ethnic minorities may have lower expectations. Expectations are beliefs and attitudes with respect to the medical encounter that are shaped by previous experience with care, culture, social class, and health status (Kravitz 1996; Handler et al. 1998).

This study included parent's age, parent's sex, parent's education, and child's health status as case-mix adjusters because these variables have been found to be related to systematic biases in survey responses. However, there may be other socioeconomic characteristics, such as family income, occupational status, or the educational attainment of the nonrespondent parent, that may explain some of the observed racial/ethnic differences in care. Data limitations preclude us from examining the effect of socioeconomic confounders in this study. However, given that the sample in this study was limited to Medicaid children, we expect greater homogeneity among respondents in terms of socioeconomic characteristics. Future studies should assess the effect of a wider range of socioeconomic characteristics on the observed racial/ethnic differences in assessments of care, perhaps by examining both Medicaid and commercial managed care enrollees.

Relatively little is known about persons who indicate multiple races. In CAHPS 1.0 respondents were instructed to choose one racial/ethnic category. However, recent changes in the census and CAHPS 2.0 allow respondents to

indicate multiple races. Future research should assess the effect of multiracial identities on consumer assessments of care.

Future research should also examine the clinical meaningfulness of observed racial/ethnic differences in reports and ratings of care. For example, one might be interested in determining the effect of differences in care on consumer behavior such as plan disenrollment or changing medical providers.

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