



## Perceived discrimination in U.S. healthcare: Charting the effects of key social characteristics within and across racial groups

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### ABSTRACT

This article employs an original empirical analysis to contribute to scientific understandings of the relationship between social characteristics and perceptions of discrimination in healthcare encounters *within* and *across* racial categories in the U.S. Our analysis focuses on a diverse sample of 43,020 adults aged 18 to 85 drawn from the California Health Interview Survey (CHIS). We use a series of weighted descriptive statistics and logistic regression models to parse out factors associated with perceived discrimination and chart how they vary by race and ethnicity. Members of racial minorities were more likely to report perceptions of discrimination, and while the effect was somewhat mitigated by introducing patient and health-care system factors into our models, the race effects remained both statistically significant and of substantial magnitude (particularly for African Americans and Native Americans). Poor self-reported health and communication difficulties in the clinical encounter were associated with increased perceptions of discrimination across all groups. Further, among non-whites, increased education was associated with increased perceptions of discrimination net of other factors. These findings suggest efforts to reduce disparities in medical care should continue to focus on expanding the depth and quality of patient–provider interactions for disadvantaged racial groups, while also being attentive to other factors that affect perceived racial discrimination in healthcare encounters within and across racial groups.

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### Introduction

Medical and social scientific research demonstrates the persistence of substantial racial disparities in health and healthcare outcomes in the United States (Abramson and Sánchez-Jankowski, 2012; Ibrahim et al., 2003; Institute of Medicine, 2003; Freese and Lutfey, 2011; Shavers, 2012; Shuey and Wilson, 2008; Williams and Collins, 1995). Despite efforts to reduce racial disparities in the past decade, salient differences persist on a range of indicators including access to care, the quality of care received, longevity, overall health status and a litany of specific conditions ranging from cardiovascular health to diabetes (Dressler et al., 2005; Bobo, 2001; Dovidio and Gaertner, 1998). Examining, explaining, and addressing these patterns is an important aim of both social science and health policy.

### Conceptual framework

#### Sources of disparities

Understanding the sources of racial disparities in health and health care requires employing a multi-level approach that moves beyond reductionism to provide an account of when and how various micro- and macro-level factors shape health experiences, behaviors and outcomes (Abramson, 2015; Kilbourne et al., 2006). Under such an approach, perceptions of discrimination are but one factor that reflects and can potentially reproduce disparities (Dovidio et al., 2008; Institute of Medicine, 2003; Kilbourne et al., 2006; Shavers et al., 2012). A host of other factors have been empirically demonstrated to be contributors to disparities including “health care system factors” (e.g. the broader structural and cultural organization of care in national contexts and the socio-spatial allocation of risks and health resources); “patient factors” which range from biology to beliefs, preferences and material resources; “provider factors” that include the attitudes, training, organizational demands and biases that shape how physicians and other care providers behave; and the nature of “clinical encounters” and other medical interactions in which key actors (i.e. patients,

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providers, administrators) participate (Dovidio et al., 2008; Freese and Lutfey, 2011; Institute of Medicine, 2003; Kilbourne et al., 2006). While charting the way these factors intersect to shape experiences, behaviors and outcomes related to health and illness for different groups is important for understanding broader inequalities (Abramson, 2015; Freese and Lutfey, 2011), doing so definitively is beyond the purview of any given study. Consequently, in this article we focus on perceptions of racial discrimination and the factors that may produce them.

#### *Perceived discrimination and disparities*

Since the release of the Institute of Medicine's, 2003 report outlining the factors that produce racial and ethnic disparities in healthcare (Institute of Medicine, 2003), health services researchers have increasingly recognized the importance of directly examining the effect of psychosocial pathways—in particular examining the direct and indirect influence of prejudice, stereotyping and discrimination in clinical encounters, experience, health behaviors and health (Anderson, 2013; Borrell et al., 2006; Dovidio et al., 2008; Casagrande et al., 2007; Shavers et al., 2012; Williams and Mohammed, 2009). Negative perceptions of healthcare in general, and perceptions of discrimination in particular, influence when and how people seek care, whether they engage in health protective behaviors, their willingness to follow medical advice and their levels of psychological distress, self-esteem and mental health (National Research Council, 2004; Sorokin et al., 2010; Williams and Mohammed, 2009). There is substantial evidence that perceptions of discrimination even harm physical health (c.f. Anderson, 2013; Williams and Mohammed, 2009).

Following Dovidio et al. (2008), for the purpose of this article, we operationalize discrimination as “an unfair or unjustified group-based difference in behavior that systematically disadvantages members of another group” (p. 479). As with other factors related to disparities in health and healthcare, the sources of perceived discrimination are multi-faceted. These include conscious and unconscious prejudice and stereotyping by providers (Dovidio et al., 2008), the reality that minorities in the United States are likely to receive worse care than their white counterparts (Institute of Medicine, 2003), differences in sensitivity to potential racism and its verbal (and nonverbal) cues (Richeson and Shelton, 2005; Sue et al., 2007), differences in unmet medical needs (Anderson et al., 2003; Keller et al., 2010), prior experiences that shape patients' identities and orientations to health care (Abramson, 2015), and even a sense that “reverse discrimination” against whites may be a factor (Shavers et al., 2012). Any comprehensive account must consider system-level, provider-level, and patient-level factors (including their material and psychosocial elements) that may lead to perceptions of discrimination.

#### *New contribution*

Despite the importance of perceived discrimination as a mechanism for both revealing and reinforcing existing social inequalities in health and healthcare, there is less work examining which factors shape perceived discrimination within racial groups (Brown, 2008). Many studies have focused on showing how these factors can influence perceptions of discrimination in healthcare in aggregate (Blanchard and Lurie, 2004; Bogart and Bird, 2001; Cunningham and Hadley, 2007; Derose and Baker, 2000; Dovidio et al., 2008; Hausmann et al., 2008; Shavers et al., 2012). Generally, studies have paid less attention to how race interacts with other variables to shape perceived discrimination within socio-demographic groups (for an exception see Quach et al., 2012). Further, because of data availability and the magnitude of the black–white health gradient in the U.S., many studies have focused on examining black–white differences (Dovidio et al., 2008). This study contributes to the existing literature by using data from a large, diverse, population-based sample of California residents to assess which individuals within and across racial and ethnic groups are more likely

to perceive discrimination, as well as examining which factors may exacerbate or ameliorate these experiences.

## **Methods**

### *Data set and study sample*

In order to examine perceptions of discrimination and the role of key factors within and across racial groups, we analyzed data from the California Health Interview Survey (CHIS). CHIS is a random digit dial (RDD) telephone survey of the state of California's civilian, non-institutionalized population. It is the largest state health survey in the United States. The CHIS provides population estimates for California's major ethnic and racial demographics along with various public health indicators. Of particular import for this study, CHIS data allow robust comparisons of perceived discrimination within and across diverse racial and ethnic groups. Questionnaires in the CHIS are culturally adapted and administered in five languages—English, Spanish, Chinese, Vietnamese, and Korean. The survey is administered every two years. CHIS survey data are weighted to account for the probability of selection, to reduce possible biases resulting from the differential characteristics of non-respondents compared to respondents, to adjust for under-reporting in the conduct of the survey and to reduce variance of the estimates. This article uses the 2005 Adult Survey Public Use File. For the 2005 CHIS adult sample, the household response rate was 29.5%, which “is comparable to the response rates of other scientific telephone surveys in California” (CHIS 2006, p.7). Our analysis includes all non-institutionalized adults over the age of 18 who had taken the CHIS. Our final sample consisted of 43,020 adults.

### *Response variable*

To examine if respondents perceived discrimination in healthcare, we examined responses to the following question: “Was there ever a time when you would have gotten better medical care if you had belonged to a different race or ethnic group?” The response variable was treated as binary, with a value of 1 indicating that respondents felt this statement to be true and a value of 0 indicating that they did not.

### *Independent variables*

Ethnic and racial group membership was our key independent variable. The ethno-racial groups examined were: Hispanic, Asian/Pacific Islander, Native American, African American, white, and Other/Multiple Race.<sup>1</sup> We also included other variables known to influence experiences of care such as sex, age, health, family structure, employment status, education, income (adjusted in the form of a poverty ratio) and urban/rural residence (Cooper-Patrick et al., 1999; Kirby and Kaneda, 2005; Link and Phelan, 1995; Van Ryn and Burke, 2000), whether the respondent had a usual source of medical care (Keller et al., 2010), difficulty in understanding the doctor (Ferguson and Candib, 2002), US/foreign birth (Lauderdale et al., 2006), insurance status (Stepanikova and Cook, 2008) and exposure to and type of care typically utilized (Institute of Medicine, 2003).

Race/ethnicity was self-reported. Health was reported using a standard 5–point SRH measure, which we recoded so higher values were associated with worse health (1 = excellent health, 5 = poor health). To measure income, we used an adjusted poverty index that was operationalized as the ratio of household income to the poverty line for a household of the size lived in by the respondent. Family structure included dummy variables for marital status and the presence of children.

<sup>1</sup> For a recent historical examination of the complexities of ethno-racial categorization and how Hispanics have been constructed as a central ethno-racial group, see Mora (2014).

Employment status included the 5 CHIS categories, which were used as dummy variables. Usual source of care included the 5 CHIS categories, which were also treated as dummy variables. Number of doctor visits and age were captured using continuous measures. We used a set of dummy variables to examine the effect of different levels of education. We used binary measures of whether the respondent had insurance, was born in the US, visited the ER in the last year, and lived in an urban area during the survey.

### Statistical analysis

We began our analysis by using weighted descriptive statistics to examine basic patterns of perceived discrimination. Since we were interested in the effect of group membership, we disaggregated results by race.

To determine if the independent variables mentioned above could help explain race effects, we then used a series of logistic regression models in which race was inserted as a series of dummy variables. After running a *baseline model* looking only at race effects, we introduced an *adjusted model* that accounted for differences in education and income levels. Finally, to see whether the effect of race on perceived discrimination remained, and which factors influenced perceived discrimination, we introduced a *full model* with a larger number of covariates.

To examine the association between race and other explanatory variables on perceived discrimination within groups, we ran separate logit models for each racial category. Although we employed a strategy that used both the adjusted and full models mentioned above, since we are interested primarily in charting how associations vary within and across groups in this article, we have only included the results of the race-specific full models. All results were weighted in STATA to account for the sample design used by the CHIS.

## Results

### Descriptive statistics

Table 1 displays weighted descriptive statistics that indicate the rates of perceived discrimination among Californians. There are significant

**Table 1**  
Weighted characteristics of respondents, California Health Interview Survey (2005).

Variable	Total (n = 43,020)		Better treatment if different race (n = 1665)	
	Mean (LSE)	%	Mean (LSE)	%
All		100		4.7
Race & ethnicity				
White		51.6		2.3
Hispanic/Latino		25.7		7.5
Asian-Pacific Islander		13.0		5.8
Native American		1.0		8.1
African American		5.8		9.7
Other/mixed		2.9		6.2
Sex				
Male		49.0		4.7
Female		51.0		4.8
Education				
<High school grad		16.5		8.6
High school grad		26.4		4.6
Some college		24.7		4.4
BA		19.8		3.5
>BA		12.6		2.5
Age	44.5 (.13)		41.4 (.51)	
ER visit in past 12 months		18.7		6.9
Poverty index	4.59 (.033)		3.037 (.11)	
Hard time understanding doctor		3.6		21.9
Worse health (1–5)	2.52 (.0078)		3.033 (.041)	

Abbreviations: BA, bachelor of arts; ER, emergency room; LSE, linearized standard error.

differences in perceptions of discrimination by race, with respondents from non-white groups being more likely to report that they believed they would have received better medical care if they were a different race. 9.7% of African Americans, 8.1% of Native Americans and 7.5% of Hispanics believed that they would have received better medical care if they were a different race, while only 2.3% of whites reported the same. Before controls, lower levels of education, having visited the emergency room, lower adjusted income, and being in worse health were each associated with increased perceptions of racial and ethnic discrimination. Table 2 breaks down these factors by race and ethnicity. This table outlines basic differences in socio-economic status and health between groups in California at the time of the survey. It also suggests that differences in these factors may explain some of the aggregate race effects in perceived discrimination.

### Logistic regression models for all racial groups

Table 3 provides a series of logistic regressions examining which factors are associated with perceived discrimination. The baseline model shows that non-white groups are more likely to perceive discrimination than whites, with the most disadvantaged groups (Hispanics, African Americans, and Native Americans) being the most likely to report discrimination.

Model II adjusts for basic socioeconomic characteristics such as education and income. This model demonstrates that associations between perceived discrimination and race remain statistically significant, but are diminished in magnitude, after accounting for socioeconomic factors. Higher levels of education and income are each associated with a decreased likelihood of reporting discrimination net of race in these models.

Model III adds in additional factors as covariates. After accounting for these factors in general, and experiences with providers in particular, the effect of race on perceptions of discrimination diminished. However, the effect of race remains substantial particularly among African Americans (who are still roughly 3.6 times more likely to report discrimination than comparable whites) and Native Americans (who are still approximately 2.7 times more likely). The effect of education becomes indiscernible from chance variation in this model. While income remains statistically significant, the magnitude of the effect becomes trivial. The number of doctor visits, often a common explanation for perceived discrimination in healthcare, had no net effect on the likelihood of individuals from any race reporting feeling that they were discriminated against. Similarly, sex, did not have a statistically significant effect within or across groups net of other factors.

It is important to note that a number of other factors were associated with perceived discrimination. Having a hard time understanding a doctor was associated with perceptions of discrimination across groups. The magnitude of this effect was large. On average, those who reported having a hard time understanding the doctor were roughly 4.5 times more likely to report being the target of racial discrimination. Being in worse health, having visited the emergency room in the past year, going to a public clinic (community or government), foreign birth and being unemployed but looking for work, were associated with higher odds of reporting discrimination. Having insurance was associated with decreased odds of reporting discrimination.

### Logistic regression models stratified by race

Table 4 presents results from the full logistic regression model (model III), calculated separately for each racial group. Although the magnitude of the effect varied by group, having a hard time understanding the doctor and being in worse health were associated with increased likelihood of perceiving discrimination.

Table 4 also reveals how covariates of perceived discrimination vary by race. Education, often a common predictor for differences in health and healthcare, was a powerful factor among the study sample's non-

**Table 2**  
Key covariates of perceived discrimination by race & ethnicity, California Health Interview Survey (2005).

Variable	Poverty index Mean (LSE)	Education					Hard time understanding doctor %	ER visit in past 12 months %	Worse health Mean (LSE)
		<HS %	HS Grad %	Some College %	BA %	>BA %			
Race & ethnicity									
All	4.59 (.033)	16.5	26.4	24.7	19.8	12.6	3.6	18.7	2.52 (.0078)
White	5.69 (.044)	6.0	26	27.3	23.9	16.9	2.4	19.7	2.32 (.0090)
Hispanic/Latino	2.58 (.052)	41.9	28.7	19.0	7.6	2.9	5.8	17.2	2.86 (.018)
Asian-Pacific Islander	4.82 (.10)	10.0	20.2	19.5	32.4	18.0	4.7	12.6	2.61 (.024)
Native American	3.56 (.25)	20.5	32.9	33.2	8.2	5.1	2.5	18.0	2.70 (.061)
African American	3.86 (.12)	8.4	32.3	35.0	15.5	8.7	3.1	26.5	2.55 (.035)
Other/mixed	3.79 (.16)	23.2	26.1	28.8	13	8.9	4.3	23.1	2.59 (.046)

Abbreviations: BA, bachelor of arts; ER, emergency room; HS, high school; LSE, linearized standard error.

white groups, with increasing levels of education associated with an increased perception of discrimination. There was an inverse relationship between education and perceptions of discrimination among whites, with higher educational levels associated with decreased perceptions of discrimination.

Having greater income decreased the probability that a respondent would report discrimination for all groups except for whites and African Americans. Within these groups, income did not make a difference after controlling for the other independent variables. The effect of foreign birth was contingent, as well. Being born in the United States

**Table 3**  
Logistic regression of perceived better treatment if a different race, California Health Interview Survey (2005).

	Total (n = 43,020)					
	Model I (baseline)		Model II (adjusted for SES)		Model III (full)	
	OR (LSE)	95% CI	OR	95% CI	OR	95% CI
Race & ethnicity <sup>a</sup>						
Hispanic/Latino	3.42(.29)***	2.90, 4.03	2.41***	2.00, 2.91	1.57***	1.25, 1.96
Asian-Pacific Islander	2.62(.34)***	2.04, 3.37	2.47***	1.92, 3.17	1.68***	1.26, 2.23
Native American	3.73(.79)***	2.46, 5.66	3.03***	1.97, 4.65	2.72***	1.75, 4.21
African American	4.53(.56)***	3.57, 3.57	4.00***	3.13, 5.10	3.6***	2.78, 4.65
Other/mixed	2.80(.61)***	1.82, 4.30	2.28***	1.48, 3.53	1.77**	1.13, 2.77
Education <sup>b</sup>						
High school grad			0.67***	0.54, 0.84	0.94	0.73, 1.22
Some college			0.71***	0.56, 0.90	1.062	0.81, 1.39
BA			0.66***	0.50, 0.86	1.061	0.78, 1.45
> BA			0.54***	0.40, 0.73	0.92	0.66, 1.29
Poverty index			0.94***	0.91, 0.96	1.00***	0.94, 0.99
Male					0.99	0.85, 1.15
Age					1.00	0.99, 1.00
Hard time understanding doctor					4.54***	3.60, 5.73
Worse health (1–5)					1.33***	1.23, 1.45
Born in United States					0.69***	0.56, 0.86
Dr. visits in past 12 months					0.98	0.95, 1.01
Lives in urban area					1.034	0.83, 1.28
ER visit in past 12 months					1.46***	1.21, 1.77
Has insurance					0.77**	0.62, 0.97
Usual type of care <sup>c</sup>						
Community/gov. clinic					1.31***	1.08, 1.59
Emergency room					1.30	0.71, 2.39
Other					1.60	0.72, 3.55
None					1.033	0.79, 1.35
Employment status <sup>d</sup>						
Part time work					0.84	0.62, 1.12
Employed but not at work					0.31**	0.10, 0.95
Unemployed (looking)					1.18	0.81, 1.73
Unemployed (not looking)					0.84*	0.70, 1.01
Family type <sup>e</sup>						
Married					1.00	0.79, 1.29
Married with children					1.13	0.94, 1.36
Single with children					1.47	1.14, 1.90

Abbreviations: BA, bachelor of arts; CI, confidence interval; ER, emergency room; LSE, linearized standard error; OR, odds ratio; SES, socio-economic status.

\* P value = <.10.

\*\* P value = <.05.

\*\*\* P value <.01.

<sup>a</sup> Reference group: White.

<sup>b</sup> Reference group: No high school degree.

<sup>c</sup> Reference group: Has a regular doctor.

<sup>d</sup> Reference group: Employed full time.

<sup>e</sup> Reference group: Single.

**Table 4**

Race specific logistic regressions of perceived better treatment if a different race (full models only), California Health Interview Survey (2005).

	Total (n = 43,020)					
	White (n = 28,979)		Hispanic/Latino (n = 6369)		Asian-Pacific Islander (n = 4061)	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Education<sup>a</sup></b>						
High school grad	0.79	0.47, 1.33	1.05	0.75, 1.48	0.56	0.28, 1.13
Some college	0.79	0.48, 1.33	1.09	0.71, 1.67	1.24	0.54, 2.81
BA	0.55**	0.31, 0.98	1.46	0.89, 2.40	1.18	0.57, 2.42
> BA	0.53**	0.28, 0.99	2.22**	1.16, 4.23	0.52	0.23, 1.22
Poverty index	0.99	0.96, 1.01	0.95**	0.90, 1.00	0.93*	0.86, 1.00057
Male	0.87	0.68, 1.11	0.95	0.73, 1.24	1.34	0.86, 2.078
Age	0.99	0.98, 1.0020	1.00	0.99, 1.0094	1.00	0.98, 1.019
Hard time understanding doctor	4.71***	3.06, 7.25	5.52***	3.94, 7.75	3.055***	1.57, 5.94
Worse health (1–5)	1.35***	1.20, 1.52	1.37***	1.17, 1.60	1.29**	1.054, 1.57
Born in United States	0.95	0.65, 1.40	0.56***	0.40, 0.81	0.47**	0.23, 0.94
Dr. visits in past 12 months	0.98	0.93, 1.023	0.98	0.93, 1.028	0.98	0.90, 1.068
Lives in urban area	1	0.74, 1.35	1.19	0.79, 1.77	0.96	0.37, 2.45
ER visit in past 12 months	1.5***	1.14, 1.97	1.12	0.80, 1.55	2.89***	1.71, 4.89
Has insurance	0.48***	0.32, 0.71	1.021	0.75, 1.40	0.61	0.32, 1.17
<b>Usual type of care<sup>b</sup></b>						
Community/gov. Clinic	1.43**	1.04, 1.96	1.13	0.84, 1.53	2.033**	1.16, 3.57
Emergency room	0.96	0.39, 2.35	1.74	0.61, 4.95	3.43	0.70, 16.80
Other	1.083	0.32, 3.67	1.72	0.43, 6.85	2.83	0.51, 15.80
None	1.23	0.80, 1.90	0.92	0.61, 1.38	1.19	0.50, 2.86
<b>Employment status<sup>c</sup></b>						
Part time work	0.71	0.45, 1.10	1.057	0.67, 1.67	0.82	0.37, 1.82
Employed but not at work	0.05***	0.01, 0.18	0.40	0.074, 2.19	0.036***	0.0039, 0.34
Unemployed (looking)	1.34	0.74, 2.43	1.25	0.72, 2.17	0.88	0.35, 2.21
Unemployed (not looking)	0.99	0.71, 1.37	0.95	0.69, 1.31	0.43***	0.27, 0.68
<b>Family type<sup>d</sup></b>						
Married	0.95	0.69, 1.32	1.01	0.64, 1.59	1.09	0.48, 2.47
Married with children	1.077	0.77, 1.50	1.079	0.80, 1.46	1.33	0.81, 2.19
Single with children	1.54**	1.03, 2.32	1.31	0.83, 2.076	1.41	0.65, 3.047
<b>Total (n = 43,020)</b>						
	Native American (n = 546)		African American (n = 1954)		Other/mixed (n = 1103)	
	OR	95% CI	OR	95% CI	OR	95% CI
<b>Education<sup>a</sup></b>						
High school grad	1.96	0.63, 6.14	0.5*	0.22, 1.14	3.69	0.65, 20.84
Some college	2.91*	0.93, 9.078	0.57	0.25, 1.27	3.083	0.67, 14.29
BA	8.49**	1.54, 46.88	0.57	0.24, 1.37	1.9	0.39, 9.34
> BA	25.56***	4.49, 145.40	1.012	0.38, 2.68	4.1	0.70, 24.11
Poverty index	0.69***	0.52, 0.90	1	0.95, 1.068	0.9	0.78, 1.036
Male	0.80	0.29, 2.22	1.13	0.74, 1.72	0.89	0.37, 2.15
Age	1.00	0.98, 1.030	0.99	0.97, 1.0025	0.99	0.96, 1.0094
Hard time understanding doctor	6.71**	1.12, 40.12	3.95***	1.66, 9.42	9.47***	2.96, 30.31
Worse health (1–5)	1.45*	0.97, 2.17	1.24*	0.99, 1.55	1.59***	1.15, 2.19
Born in United States	0.50	0.13, 1.97	1.29	0.56, 2.97	0.49	0.14, 1.72
Dr. visits in past 12 months	0.95	0.80, 1.13	1.018	0.95, 1.091	0.91*	0.81, 1.017
lives in urban area	1.22	0.54, 2.74	0.96	0.42, 2.19	1.39	0.47, 4.13
ER visit in past 12 months	0.81	0.31, 2.078	1.2	0.77, 1.88	1.26	0.61, 2.63
Has insurance	0.37*	0.14, 1.012	0.73	0.37, 1.41	0.92	0.31, 2.72
<b>Usual type of care<sup>b</sup></b>						
Community/gov. Clinic	2.85*	0.98, 8.31	0.68	0.41, 1.13	1.11	0.38, 3.23
Emergency room	2.23	0.40, 12.46	0.33	0.086, 1.31	0.53	0.021, 13.85
Other			5.57	0.51, 63.72	0.12	0.0011, 14.50
None	0.72	0.16, 3.16	1.15	0.55, 2.42	0.55	0.12, 2.47
<b>Employment status<sup>c</sup></b>						
Part time work	0.97	0.17, 5.55	0.73	0.30, 1.83	0.74	0.19, 2.87
Employed but not at work			1.66	0.15, 17.89	1.73	0.076, 39.059
Unemployed (looking)	0.49	0.096, 2.50	1.91	0.69, 5.28	0.42	0.12, 1.44
Unemployed (not looking)	0.76	0.24, 2.36	1.29	0.73, 2.28	0.45*	0.18, 1.14
<b>Family type<sup>d</sup></b>						
Married	2.18	0.59, 8.052	0.97	0.52, 1.83	1.52	0.49, 4.68
Married with children	2.94**	1.05, 8.22	1.15	0.64, 2.053	1.12	0.39, 3.23
Single with children	1.38	0.34, 5.57	1.37	0.78, 2.42	4.45***	1.55, 12.78

Abbreviations: BA, bachelor of arts; CI, confidence interval; ER, emergency room; OR, odds ratio.

\* P value = <.10.

\*\* P value = <.05.

\*\*\* P value <.01.

<sup>a</sup> Reference group: No high school degree.

<sup>b</sup> Reference group: Has a regular doctor.

<sup>c</sup> Reference group: Employed full time.

<sup>d</sup> Reference group: Single.

was associated with significant decreases in perceived discrimination for Hispanics and Asian Pacific Islanders, which was not mirrored in other groups. In aggregate, individuals who had emergency room visits in the past year for the full model were more likely to report believing they would receive better treatment if they were a different race. However, this effect was not observed for Hispanics and this effect was reversed among Native Americans.

## Discussion

This article identifies which factors of perceived discrimination shape how individuals from various racial groups perceive discrimination in healthcare encounters. In sum, our analysis demonstrates the following:

1. Racial group membership strongly influences perceived discrimination.
2. While somewhat reduced after implementing controls for individual and system-level factors, the effect of race remains strong (particularly among the most disadvantaged groups).
3. Factors that shape personal experiences and/or suggest negative interactions with providers (e.g. having a hard time understanding the doctor) are powerfully associated with perceived discrimination across all groups.
4. The effect of other key factors, such as education, varies between racial groups.

In addition to the continued power of race, our findings demonstrate that education level, difficulty in understanding healthcare providers and health status each had a significant impact on perceptions of discrimination across all racial groups, but the direction and magnitude of the effect varied by group. For instance, for non-white groups, more education seemed to produce a greater sensitivity to the possibility that they might get better care if they were members of a different racial group. This may reflect the possibility that more educated groups have greater information about the prevalence of racial treatment disparities in the healthcare system (Boulware et al., 2003; Van Ryn and Burke, 2000) or that education fuels existing differences in sensitivity and/or recognition of discrimination (Dovidio et al., 2008; Richeson and Shelton, 2005). This seems plausible given that whites with more education are less likely to feel they would receive better treatment if they were a different race.

Lower income and emergency room visits were also associated with individuals perceiving discrimination in healthcare for some groups but not others. For groups other than African Americans and whites, higher family income decreased the likelihood of individuals reporting perceived discrimination in healthcare, possibly reflecting a belief that increased income empowers individuals in a fee-for-service system. The effect for whites and African Americans was statistically insignificant, pointing to the contingent effect of income.

Visiting the emergency department was positively associated with the likelihood of African Americans, whites and Asians perceiving discrimination. These patterns likely reflect the increased stress and fatigue associated with emergency room visits. Patients who feel that they have been discharged with minimum attention or care may, in turn, feel that more thorough care would have been provided if they had been members of a different race. However, Native Americans had a decreased likelihood of reporting discrimination in their healthcare encounters if they reported visiting the emergency room. Native Americans more positive perceptions of the emergency department may reflect a belief that official government-run Native Health Service emergency departments are more attentive than other settings.

From a health policy perspective it is important to emphasize that factors that were associated with the quality of clinical interactions had a powerful effect within and across all groups. Difficulty understanding doctors in particular had a powerful and positive association with perceptions of discrimination among minorities and “reverse

discrimination” among whites. Members of all racial groups were also significantly more likely to perceive discrimination when in worse health. This potentially reflects beliefs that existing poor health status is the result of receiving inadequate health resources and care because of who they are (Lillie-Blanton et al., 2000), as well as their treatment by medical professionals over the course of their lives (Abramson, 2015). These findings also suggest that it may be fruitful to examine what might be called a “frustration effect;” i.e. when individuals feel poorly, there is a tendency to feel that health professionals are not doing enough. This feeling of frustration may translate into the perception that racial discrimination exists in the healthcare system and that one is the recipient of that discrimination even among majority group members and those with other social advantages. Together, these findings underscore the importance of the quality of clinical encounters and the necessity to be attentive to patients’ past as well as present experiences with inequality.

## Limitations

Like all analyses, this study has limitations. First, our sample was limited to the state of California, which potentially restricts the generalizability of the findings to areas with less racial diversity. Second, our data were cross-sectional and did not allow for a direct longitudinal examination of how various life experiences affected perceptions of discrimination in healthcare over time. Our ability to make causal claims is therefore limited. Third, our data relied solely on patient perceptions of discrimination. Inequalities in healthcare and health outcomes are further confounded by providers’ perceptions of patients that are not measured in this analysis, as well as latent systemic factors that are difficult to measure in CHIS data. Future work should consider the effects of demographics, geography, temporality and provider attitudes and beliefs on perceptions of discrimination in healthcare.

## Conclusion

This article charted which factors were associated with perceived discrimination in health care within and across racial groups in the United States. It highlighted that it is necessary to look at the quality of clinical experience across all groups (Dovidio et al., 2008) and the heterogeneous influence of social factors like levels of education between groups (Abramson and Sánchez-Jankowski, 2012; Brown, 2008). The information obtained from this study can be integrated into our existing knowledge of racial disparities in health to better understand why these disparities exist, how they operate and what can be done to ultimately overcome them. These findings suggest future efforts to reduce disparities in medical care should continue to focus on expanding the depth and quality of patient-provider interactions for disadvantaged racial groups, while also being attentive to other factors that affect negative experiences. Future research should build on this work by exploring patient and provider understandings of the healthcare encounter using both qualitative and quantitative methods. Additional longitudinal research looking at perceptions of discrimination within a broader life-course perspective could also help inform researchers and policy makers about how perceptions of healthcare change over time as people age and go through the healthcare system.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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