Race/Ethnicity and Workplace Discrimination: Results of a National Survey of Physicians

Marcella Nunez-Smith, MD, MHS^{1,2}, Nanlesta Pilgrim, MPH³, Matthew Wynia, MD^{4,5}, Mayur M. Desai, PhD, MPH⁶, Beth A. Jones, PhD, MPH⁶, Cedric Bright, MD^{7,8}, Harlan M. Krumholz, MD, SM^{1,2}, and Elizabeth H. Bradley, PhD⁹

¹Robert Wood Johnson Clinical Scholars Program, Yale School of Medicine, New Haven, CT, USA; ²Department of Internal Medicine, Yale School of Medicine, New Haven, CT, USA; ³Department of Population, Family and International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA; ⁴American Medical Association Institute of Ethics, Chicago, IL, USA; ⁵Department of Internal Medicine, University of Chicago School of Medicine, Chicago, IL, USA; ⁶Division of Chronic Disease Epidemiology, Yale School of Public Health, New Haven, CT, USA; ⁷National Medical Association, Washington, DC, USA; ⁸Department of Internal Medicine, Duke University School of Medicine and Durham VA Medical Center, Durham, NC, USA; ⁹Division of Health Policy and Administration, Yale School of Public Health, New Haven, CT, USA.

BACKGROUND: Promoting racial/ethnic diversity within the physician workforce is a national priority. However, the extent of racial/ethnic discrimination reported by physicians from diverse backgrounds in today's health-care workplace is unknown.

OBJECTIVE: To determine the prevalence of physician experiences of perceived racial/ethnic discrimination at work and to explore physician views about race and discussions regarding race/ethnicity in the workplace.

DESIGN: Cross-sectional, national survey conducted in 2006–2007.

PARTICIPANTS: Practicing physicians (total n=529) from diverse racial/ethnic backgrounds in the United States.

MEASUREMENTS AND MAIN RESULTS: We examined physicians' experience of racial/ethnic discrimination over their career course, their experience of discrimination in their current work setting, and their views about race/ethnicity and discrimination at work. The proportion of physicians who reported that they had experienced racial/ethnic discrimination "sometimes, often, or very often" during their medical career was substantial among non-majority physicians (71% of black physicians, 45% of Asian physicians, 63% of "other" race physicians, and 27% of Hispanic/Latino(a) physicians, compared with 7% of white physicians, all $p < 0.05$). Similarly, the proportion of non-majority physicians who reported that they experienced discrimination in their current work setting was substantial (59% of black, 39% of Asian, 35% of "other" race, 24% of Hispanic/Latino(a) physicians, and 21% of white physicians). Physician views about the role of race/ethnicity at work varied significantly by respondent race/ethnicity.

CONCLUSIONS: Many non-majority physicians report experiencing racial/ethnic discrimination in the work-

place. Opportunities exist for health-care organizations and diverse physicians to work together to improve the climate of perceived discrimination where they work.

KEY WORDS: discrimination; race and ethnicity; workforce; health-care workers.

J Gen Intern Med 24(11):1198–204

DOI: 10.1007/s11606-009-1103-9

© Society of General Internal Medicine 2009

INTRODUCTION

Physician surveys conducted in the 1990s established that racial/ethnic discrimination was common in the health-care workplace. A 1995 national study among academic physicians found nearly half of non-majority physicians had experienced racial/ethnic discrimination in the workplace.¹ Another national study, conducted in 1993–1994 among female physicians, found that approximately 60% of non-majority respondents reported racial/ethnic discrimination at work.² Further, physicians from non-majority backgrounds are generally less satisfied with their careers^{1,3} and less likely to be promoted than their majority colleagues with similar academic productivity.^{4,5}

Since the 1990s, however, achieving racial/ethnic diversity within the physician workforce has been a national priority.^{6–8} A number of high profile efforts have sought to increase the number of medical trainees from non-majority backgrounds and to improve the climate for diversity within the medical profession.^{9–16} Today, it is unclear whether these efforts have lessened the prevalence of reported experiences of racial/ethnic discrimination among physicians that was reported more than a decade ago. A 2005 Massachusetts study¹⁷ found that one-third of responding physicians thought racial/ethnic discrimination experienced by physicians was "somewhat" or "very significant," but no recent national studies have been conducted. As a result, the prevalence of racial/ethnic discrimination reported by physicians from diverse backgrounds in today's health-care workplace remains unknown. Determining the prevalence of physician experiences of racial/ethnic discrimination is of critical importance as the US strives to foster

Received January 15, 2009

Revised April 17, 2009

Accepted August 4, 2009

Published online September 1, 2009

physician workforce diversity and eliminate disparities of all kinds from the health-care setting.

In this national survey of physicians conducted in 2006–2007, we examined self-reported physician experiences of perceived racial/ethnic discrimination over their career course. We also assessed physician experiences of perceived discrimination of any type in their current work setting. Lastly, we explored physician views about race and discussions regarding race in the workplace. Based on previous qualitative work,¹⁸ we hypothesized that physician race/ethnicity would be associated with reports of workplace discrimination and with views about race at work. We also tested our hypotheses that other physician characteristics, such as physician age or work setting, would be associated with workplace discrimination outcomes.

METHODS

Study Design and Sample

We conducted a cross-sectional, national survey of physicians in the United States, completed between October 2006 and February 2007, oversampling for physicians of African descent. Physicians in current practice but not in clinical training were eligible. Our sampling frame included 1,500 physicians obtained via simple random sampling from the American Medical Association (AMA) Physician Masterfile, augmented with 250 physicians also obtained via simple random sampling from the National Medical Association (NMA) membership roster. The AMA Physician Masterfile is a database designed to record basic data on all recognized physicians in the US and territories. The AMA Physician Masterfile contains information on all physicians in the US, regardless of whether they are members of the AMA.¹⁹ The NMA is a professional group that aims to promote the collective interests of physicians of African descent, and its membership roster includes active and inactive members of the NMA.²⁰

After an initial mailing to the 1,500 physicians from the AMA Masterfile, 15 inquiries were returned because the respondents were deceased. We attempted to verify the contact information of the 1,485 remaining physicians before subsequent mailings, and 601 physicians were eliminated because of incorrect or unverifiable contact information. Of the remaining 884 physicians, 469 completed the survey after three mailing waves, yielding a AMA Masterfile response rate of 53.1% (469/884). There were no statistically significant differences between AMA Masterfile respondents and non-respondents regarding physician specialty, age, or geographic location. Data on physician race/ethnicity were not available through the AMA Masterfile. Among the NMA sample, 60 physicians responded after the first wave; all self-identified as black. Because the NMA required that mailings to their members be coordinated through a third-party vendor, we could not identify how many non-responses were due to inaccurate contact information. Including NMA respondents and non-respondents in response rate calculations yields a conservative overall response rate of 46.6% (529/1,134). There were no statistically significant differences between the survey responses of the 60 black respondents identified through the NMA compared with the 27 black respondents identified through the AMA Masterfile regarding reported experiences of discrimination or their views about race/ethnicity. We, there-

fore, combined the two samples for our analyses, resulting in a final sample of 529 physician respondents: 469 from the Masterfile and 60 from the NMA membership roster. The study was approved by the Yale School of Medicine Human Investigations Committee.

Data Collection

We adhered to several principles of questionnaire development in order to enhance the validity of our findings.^{21,22} We specifically focused on physician self-reported perceptions of discrimination at work. In general, researchers have found that self-reports of discrimination are accurate and reliable when cross-validated against other data sources.^{23,24} After a review of published workplace discrimination instruments, we concluded that existing questionnaires were not appropriate for use in this project.²⁵ Therefore, we combined analysis of our previous qualitative work¹⁸ and a review of questionnaires used in prior physician workplace discrimination studies^{1,2} to inform development of a new questionnaire. We explicitly defined discrimination on the questionnaire as “the unfavorable or unfair treatment of a person or group of persons in comparison to others who are not members of that group.” Once the questionnaire was drafted, we pilot tested it with 20 physicians-in-training to identify challenges with comprehension and clarity. The final questionnaire included 35 items.

To assess physicians' experience of racial/ethnic discrimination over their career course, we used an item adapted from two prior physician surveys^{1,2}: “Since completing medical training, how often have you personally experienced discrimination because of your race or ethnicity?” We dichotomized Likert responses for analysis (0= never, rarely and 1= sometimes, often, very often) because of small numbers in the often and very often categories. Five participants selected an available “N/A” option and were removed from data analysis. To assess discrimination of any type that physicians experienced in their current work setting, we used an item adapted from a prior single-state physician survey¹⁷: “Have you personally experienced discrimination in your current workplace?” with a yes/no response option. We measured physicians' views about race with a series of statements with response options of strongly agree, agree, neutral, disagree, or strongly disagree (specific items are detailed in Table 4).

We measured respondents' personal and professional characteristics including race (black, Asian, white, other), Hispanic/Latino(a) ethnicity (yes, no), age, nativity (whether born in the US), gender, relationship status, medical school location (US/Canada or international medical graduate), board certification status, annual individual income, primary work setting, self-rated health, sexual orientation, and religious affiliation. We categorized self-identified race/ethnicity for analysis as: white (non-Hispanic white), black (non-Hispanic black), Asian (non-Hispanic Asian), “other” (non-Hispanic other race), and Hispanic/Latino(a) (which included individuals who self-identified as Hispanic/Latino(a) regardless of race). We measured years in practice, time at current work setting, and hours worked per week as continuous variables. Physician specialties were categorized into primary care specialties (including general internal medicine, general pediatrics, family medicine), internal medicine subspecialties, pediatric subspecialties, general surgery, surgical subspecialties, obstetrics and gynecology or obstetrics and

gynecology subspecialties, or other (i.e., specialties for which we received fewer than ten respondents). Respondents were also asked to provide the zip codes of their primary work sites, which were collapsed into four US geographic regions (Northeast, Midwest, South, and West).

Data Analysis

We used standard frequency analyses to describe the characteristics of the sample; the proportion of physicians reporting that they experienced racial/ethnic discrimination in the workplace sometimes, often, or very often during their careers; the proportion of physicians reporting that they experienced discrimination at their current work setting; and views of physicians regarding race/ethnicity at work. We estimated the bivariate associations and their statistical significance using odds ratios and chi-square statistics. Non-Hispanic white race/ethnicity was used as the reference group. We used multivariable logistic regression modeling to estimate adjusted associations. For multivariable models, we included independent variables that we hypothesized a priori to be associated with experienced discrimination (i.e., gender, race/ethnicity) and independent variables that were significantly associated ($p \leq 0.05$) with reported discrimination in bivariate analyses. Additionally, we included longevity at the current work setting in the model in which “discrimination at their current work setting” was the outcome. We tested for interactions between race and the other covariates in multivariable models including gender, but none were significant ($p > 0.05$); thus, interaction terms were dropped from the final models. The Hosmer-Lemeshow technique²⁶ was used to test goodness of fit for the final models. We used a modified Bonferroni correction to adjust for multiple comparisons.²⁷ SAS statistical software, version 9.2 (SAS Institute Inc., Cary, NC) was used for all analyses.

RESULTS

Sample Characteristics

As intended, historically underrepresented racial/ethnic minority physicians were overrepresented in our sample (Table 1) compared with the general physician population; 16.4% versus 3.5% self-identified as non-Hispanic black, and 5.7% versus 5.0% self-identified as Hispanic/Latino(a).²⁸ Approximately 70% of our sample was male, similar to the physician gender distribution (72% male) nationally. Almost one third of our sample was between 50–59 years of age, compared with the roughly one-third of active physicians nationally over age 55. Most respondents were born in the US, and most attended medical school in either the US or Canada. The sample was also diverse by specialty, practice setting, and geographic location.

Racial/Ethnic Discrimination During Medical Career

As shown in Table 2, the proportion of physicians who reported that they experienced racial/ethnic discrimination sometimes, often, or very often during their medical career was substantial among non-majority physicians [71% of black physicians, 45%

of Asian physicians, 63% of “other” race physicians, and 27% of Hispanic/Latino(a) physicians]. In contrast, 7% of white physicians reported having experienced racial/ethnic discrimination sometimes, often, or very often during their medical career.

Unadjusted Associations. In unadjusted analysis, race and ethnicity were significantly associated with the odds of experiencing racial/ethnic discrimination sometimes, often, or very often during the medical career (Table 2). Several other physician characteristics were also significantly associated with increased odds of reporting experiences of racial/ethnic discrimination, including being born outside of the US and Hinduism versus Protestantism. However, several other characteristics such as physician age, number of years in practice, and gender were not significantly associated with reported racial/ethnic discrimination in unadjusted analyses (p -values > 0.05 ; data not shown).

Multivariable-Adjusted Analysis. In the multivariable analysis, the effect of race for non-Hispanic physicians remained significant (black versus white physicians adjusted OR=28.7, 95% CI 13.4, 61.6; Asian versus white physicians adjusted OR=6.0, 95% CI 2.5, 14.7; and “other” race versus white physicians adjusted OR=19.1, 95% CI 5.7, 64.2). Hispanic/Latino(a) ethnicity and the other physician characteristics were no longer statistically significant in adjusted analysis (Table 2).

Discrimination in the Current Work Setting

Many non-majority physicians reported experiencing personal discrimination of any type at their current work setting [59% of black, 39% of Asian, 35% of “other” race, and 24% of Hispanic/Latino(a) physicians] compared with 21% of white physicians (Table 3).

Unadjusted Associations. In unadjusted analyses, race was significantly associated with reporting experiences of discrimination in the current work setting (Table 3). Being female, having been born outside of the US, in fair/poor versus excellent self-rated health, and working in certain work settings (solo practice, in a group/staff member HMO, or hospitalist versus private group practice) were also significantly associated with increased odds of reporting discrimination in their current workplace in unadjusted analysis (p -values < 0.05).

Multivariable-Adjusted Analysis. In the multivariable analysis, black race remained significantly associated with increased odds of reporting discrimination in the current work setting (black versus white adjusted OR=3.9, 95% CI 1.7, 9.0) (Table 3). Female gender, being in fair/poor versus excellent self-rated health, and certain work settings also remained significantly associated with reporting current workplace discrimination in the adjusted analysis.

Physician Views Regarding Race/Ethnicity and Workplace Discrimination and Diversity

Views about the role of race at work varied significantly by respondent race/ethnicity, with particularly large differences noted between black and white physicians (Table 4). Compared

Table 1. Personal and Professional Characteristics of Participating Physicians (N=529)

Personal characteristic	N ^a (%)	Professional characteristic	N ^a (%) or mean ± SD
Race/ethnicity		Medical school location	
Non-Hispanic White	310 (58.6)	US or Canada	430 (81.6)
Non-Hispanic Black	87 (16.4)	Specialty	
Non-Hispanic Asian	74 (14.8)	Primary care specialties	182 (34.5)
Non-Hispanic Other	24 (4.5)	Surgical subspecialties	71 (13.5)
Hispanic/Latino(a)	30 (5.7)	Internal medicine subspecialties	64 (12.1)
Sex		Ob/gyn or ob/gyn subspecialties	36 (6.8)
Male	346 (71.3)	General surgery	15 (2.8)
Nativity		Pediatric subspecialties	10 (1.9)
US born	401 (76.4)	Other	150 (28.4)
Self-rated health		Years in practice	18.9 ± 13.5
Excellent	227 (43.4)	Setting	
Very good	216 (41.3)	Private group practice	174 (33.5)
Good	62 (11.9)	Solo practice	115 (22.2)
Fair/poor	18 (3.4)	Hospital-based practice	78 (15.0)
Age		Academic	74 (14.3)
≤40	105 (20.0)	Group/staff model HMO	21 (4.1)
41–49	137 (26.1)	Community health center	17 (3.3)
50–59	169 (32.2)	Hospitalist	14 (2.7)
60–69	81 (15.4)	Other	26 (4.9)
≥70	33 (6.3)	Years at current setting	12.5 ± 10.7
Religious affiliation		Hours worked per week	49.6 ± 16.3
Protestantism	183 (35.1)	Board certification	
Catholicism	116 (22.2)	Yes	437 (80.3)
No affiliation	88 (16.9)	Income (<US\$200,000)	199 (40.8)
Judaism	55 (10.5)	Total educational debt (<US\$50,000)	373 (71.4)
Hinduism	22 (4.2)	Region of the US	
Islam	16 (3.1)	Northeast	128 (24.7)
Other	42 (8.1)	Midwest	114 (22.0)
Sexual orientation		South	166 (32.1)
Heterosexual	494 (95.0)	West	110 (21.2)
Relationship status			
Married/living as married	427 (81.0)		

^aNumbers may not sum to total n due to missing data

Table 2. Personal and Professional Characteristics Associated with Physician Reports of Racial/Ethnic Discrimination (Sometimes, Often, or Very Often) Over Career Course

Characteristic	n/Na, b(%)	Unadjusted OR (95% CI)	Adjusted OR ^c (95% CI)
Race/ethnicity			
Non-Hispanic White	22/301 (7)	Reference	Reference
Non-Hispanic Black	61/86 (71)	30.94 (16.38, 58.47)	28.74 (13.42, 61.56)
Non-Hispanic Asian	32/73 (44)	9.90 (5.25, 18.66)	6.03 (2.48, 14.65)
Non-Hispanic other	15/24 (63)	21.14 (8.31, 53.75)	19.09 (5.68, 64.15)
Hispanic/Latino(a)	8/30 (27)	4.61 (1.84, 11.55)	3.47 (1.18, 10.21)
Sex			
Male	81/339 (24)	Reference	Reference
Female	45/136 (33)	1.58 (1.02, 2.44)	1.32 (0.73, 2.40)
Nativity			
US born	82/392 (21)	Reference	Reference
Non-US born	56/122 (46)	3.21 (2.08, 4.94)	1.93 (0.80, 4.65)
Setting			
Private group setting	39/173 (23)	Reference	Reference
Solo practice	46/110 (42)	2.47 (1.47, 4.16)	1.57 (0.76, 3.28)
Hospital-based practice	17/77 (22)	0.97 (0.51, 1.86)	0.78 (0.33, 1.83)
Academic	14/71 (20)	0.84 (0.43, 1.67)	1.20 (0.48, 2.97)
Group/staff model HMO	3/19 (16)	0.64 (0.18, 2.33)	0.28 (0.07, 1.21)
Community health center	6/17 (35)	1.87 (0.65, 5.39)	0.41 (0.09, 2.00)
Hospitalist	5/14 (36)	1.91 (0.60, 6.03)	2.87 (0.59, 13.91)
Other	5/21 (24)	1.07 (0.37, 3.12)	1.56 (0.42, 5.81)
Medical school location			
US or Canada	93/413 (23)	Reference	Reference
Outside the US or Canada	44/102 (43)	2.61 (1.66, 4.11)	1.01 (0.43, 2.34)

^aNumbers may not sum to total n due to missing data

^bFive participants selected a "N/A" option and were removed from this analysis

^cAlso adjusted for self-rated health, religious affiliation (data not shown)

Table 3. Personal and Professional Characteristics Associated with Physician Reports of Discrimination of Any Type in Their Current Work Setting

Physician characteristic	n/N ^a (%)	Unadjusted OR (95% CI)	Adjusted OR ^b (95% CI)
Race			
Non-Hispanic White	64/298 (21)	Reference	Reference
Non-Hispanic Black	50/85 (59)	5.22 (3.13, 8.72)	3.86 (1.65, 9.03)
Non-Hispanic Asian	28/72 (39)	2.33 (1.34, 4.03)	2.06 (0.94, 4.53)
Non-Hispanic Other	8/23 (35)	1.95 (0.79, 4.80)	1.60 (0.53, 4.81)
Hispanic/Latino(a)	7/29 (24)	1.16 (0.48, 2.85)	0.75 (0.24, 2.31)
Sex			
Male	90/346 (26)	Reference	Reference
Female	65/139 (47)	2.60 (1.70, 3.90)	3.15 (1.83, 5.42)
Nativity			
US born	116/401 (29)	Reference	Reference
Non-US born	48/124 (39)	1.57 (1.02, 2.42)	1.68 (0.85, 3.32)
Self-rated health			
Excellent	62/227 (27)	Reference	Reference
Very Good	67/216 (31)	1.25 (0.82, 1.91)	1.05 (0.61, 1.80)
Good	24/62 (39)	1.78 (0.97, 3.24)	1.43 (0.64, 3.20)
Fair/poor	12/18 (65)	5.10 (1.80, 14.39)	5.61 (1.30, 24.23)
Setting			
Private group setting	40/174 (23)	Reference	Reference
Solo practice	46/115 (40)	2.20 (1.30, 3.72)	2.29 (1.14, 4.63)
Hospital-based practice	21/78 (26)	1.15 (0.62, 2.14)	1.02 (0.46, 2.25)
Academic	20/74 (27)	1.24 (0.66, 2.31)	1.48 (0.68, 3.22)
Group/staff model HMO	11/21 (50)	3.28 (1.27, 8.43)	3.46 (1.09, 10.99)
Community health center	6/17 (38)	1.97 (0.67, 5.74)	1.16 (0.22, 6.22)
Hospitalist	9/14 (61)	5.24 (1.62, 16.92)	6.54 (1.71, 25.03)
Other	8/26 (31)	1.64 (0.58, 4.64)	2.48 (0.68, 8.99)

^aNumbers may not sum to total due to missing data^bAdjusted for years at current work setting, in addition to all of the other variables listed in the table

with white physicians, black physicians were significantly more likely to agree/strongly agree that race influences relationships at work (p -value=0.0008). Physicians who identified as black, compared with physicians who identified as white, were significantly more likely to agree/strongly agree that they were under greater scrutiny than their colleagues (p -value=0.0001), that they were asked to take on certain responsibilities because of their race/ethnicity (p -value=0.0001), that patients refused their care (p -value=0.0008), and that it was difficult to find a mentor (p -value=0.0008). Additionally, black physicians were less likely to believe issues of discrimination were discussed at work (p -value=0.0008)

and less likely to feel comfortable communicating about race/ethnicity at work (p -value=0.0007) when compared with white physicians. These patterns were also apparent, although less pronounced, among physicians who identified as Hispanic/Latino(a), Asian, and "other" race.

CONCLUSIONS

Despite recent efforts to foster racial/ethnic diversity within the physician workforce, a majority of non-Hispanic black physicians reported experiencing discrimination in their cur-

Table 4. Views on How Race, Ethnicity, and Discrimination Affect Professional Experiences by Physician Race and Ethnicity. (Percentage of Respondents Agreeing or Strongly Agreeing with Statement) [†]

	Non-Hispanic White (N=310)	Non-Hispanic Black (N=87)	Non-Hispanic Asian (N=74)	Non-Hispanic Other (N=24)	Hispanic/Latino (a) (N=30)	Overall P
Race influences relationships with colleagues	12%	66%**	40%**	38%**	30%*	<0.001
Under greater scrutiny than colleagues	21%	81%**	56%**	54%**	37%	<0.001
Asked to take on certain responsibilities because of my race/ethnicity	17%	81%**	82%**	50%**	77%**	<0.001
Patients have refused my care	30%	60%**	33%	42%	17%	<0.001
Difficulty finding mentor(s)	36%	56%**	44%	42%	34%	0.02
Comfortable reporting discrimination	79%	65%*	72%	65%	63%	0.04
Issues of discrimination are discussed at work	67%	44%**	56%	42%*	57%	<0.001
Comfortable communicating about race/ethnicity at work	62%	44%*	37%**	42%	43%	0.001

* $p < 0.01$, ** $p < 0.001$ for pair-wise comparisons with non-Hispanic whites[†]The threshold for significance after adjusting for multiple comparisons was p -value of 0.0125

rent workplace even after adjusting for years in practice, age, gender, specialty, region of the country and other factors. These findings are similar to those from national surveys conducted more than a decade ago,^{1,2} suggesting that significant numbers of non-majority physicians continue to experience discrimination at work. However, the experience of perceived discrimination does not appear to be static over the career course of individual physicians. Although most non-majority physicians in our sample reported having specifically experienced racial/ethnic discrimination at work at least sometimes during their careers, fewer non-majority physicians reported current workplace discrimination than reported career racial/ethnic discrimination. Notably, physician views on how race, ethnicity, and discrimination affect their current professional experiences varied significantly by the respondent's self-identified race/ethnicity. The dramatic racial differences in physician responses suggest that many non-majority physicians encounter a work environment where they perceive specific, discrimination-related challenges.

Our findings are consistent with observations made in the business literature describing the challenges associated with increasing workplace or workforce diversity, such as inter-group conflict and strained communication, without concurrent strategies to counteract these challenges.^{29,30} The business literature further suggests that specific core elements characterize successful diversity initiatives including: (1) recruiting racial/ethnic minorities into the organization, (2) promoting racial/ethnic minorities within the organization, (3) capturing the perspectives of employees regarding the race-related climate, and (4) emphasizing the relevance of diversity to the mission of the organization.³¹ The United Kingdom's response to physician-experienced discrimination may also provide the US medical profession with some guidance. The British Medical Association launched a national campaign to inform National Health System patients and providers that racial harassment would not be tolerated. They further trained all NHS employees, not just racial/ethnic minority providers, regarding the knowledge, new structures, and skills necessary to respond to workplace discrimination.³² Leadership engagement, the development of policies that support professional equity, and physician participation in decision-making are principles that can be generalized to the US medical profession. For example, additional research can focus on addressing differential experiences such as difficulty finding mentors, being asked to take on certain responsibilities because of race/ethnicity, and patient refusal of provider.

To place these findings in perspective, it is important to recognize that they do not set the medical profession apart from the rest of American society. They reflect the fact that racism and discrimination have created a broad-based legacy of vastly differing world views.³³ As organizations aim to recruit and retain a racially/ethnically diverse health-care provider workforce, it is necessary that organization leadership explicitly recognizes that differences in employee experiences and perceptions will inevitably affect the conversations about race within health-care settings,³⁴ and should inform the development of formal and informal mechanisms for communication and conflict resolution.

Our study extends prior work and augments our understanding of the physician workplace experience, but it also has some limitations. First, although our cross-sectional study design demonstrated statistically significant associations be-

tween race and reports of experienced discrimination, caution should be used when drawing conclusions regarding causality. We found trends toward increased reports of discrimination among Hispanic/Latino(a) physicians, but our sample size provided limited power to assess the statistical significance of these associations. Finally, survey non-respondents may have had different views from respondents. However, we found no differences between respondents and non-respondents on observable characteristics such as specialty, age, or geographical region. The inclusion of the NMA membership roster in our sampling frame potentially introduces bias towards increased reports of discrimination if current or former members are more likely than non-members to report discrimination. We did not, however, find that physicians of African descent identified via the NMA were more likely than those identified via the AMA Masterfile to report discrimination, so we believe this potential sampling bias is not substantial. Furthermore, previous data³⁵ have identified a tendency for individuals of African descent to underreport workplace discrimination, suggesting bias towards the null in our sample. Given our research objectives, it was imperative to explicitly recruit practicing physicians of African descent; the NMA membership roster remains the most comprehensive repository of contact information for this group. Despite our inability to describe the NMA membership roster non-responders, our response rates (53.1% from the AMA Masterfile, at worst 46.6% overall) are consistent with other recent national surveys of physicians on potentially sensitive topics (43%–53%).^{36–41}

Non-majority physicians in the US, regardless of specialty, geographic region, gender, years in practice, or age, continue to report high rates of workplace discrimination, comparable to rates reported over a decade ago. These findings suggest that efforts to address workplace discrimination have not been entirely successful, and new initiatives will be needed to achieve the goal of professional equity in medicine. Increasing and successfully supporting physician workforce diversity may reduce existing racial/ethnic health-care inequities and improve the quality of health-care for all patients. It may be cause for optimism that fewer respondents reported current workplace discrimination than reported career discrimination, although job turnover or other undesired factors may account for this finding. Still, opportunities exist for health-care organizations and diverse physicians to work together to improve the climate of racial discrimination where they work. Understanding the different experiences and perceptions of a diverse workforce is fundamental to creating health-care work environments that successfully support diversity.

Acknowledgments: Conception and design (MNS, EHB); data acquisition (MNS, NP, MW, CB); data analysis and interpretation (NP, MMD, MNS, EHB); manuscript drafting (MNS); manuscript revisions (MNS, NP, MW, MMD, CB, EHB, BJ, HMK). MNS had full access to all of the data in the study and takes full responsibility for the integrity of the data and the accuracy of the data analysis. Thank you to Emily Bucholz for her assistance in the data collection phase of this project for which she was reimbursed as a research assistant. EHB is supported by the Patrick and Catherine Weldon Donaghue Medical Research Foundation Investigator Award (grant no. 02–102). MNS was supported, in part, by a grant through the Yale Center for Clinical Investigation. The funders did not contribute to the design and conduct of the study; collection, management, analysis, and interpretation of the data; or preparation, review, or approval of the manuscript.

Conflict of Interest: None of the authors have any conflicts of interest to disclose.

Corresponding Author: Marcella Nunez-Smith, MD, MHS, Robert Wood Johnson Clinical Scholars Program, Yale School of Medicine, New Haven, CT, USA (e-mail: Marcella.Nunez-Smith@yale.edu).

REFERENCES

- Peterson NB, Friedman RH, Ash AS, et al. Faculty self-reported experience with racial and ethnic discrimination in academic medicine. *J Gen Intern Med.* 2004;19:259-65.
- Corbie-Smith G, Frank E, Nickens HW, et al. Prevalences and correlates of ethnic harassment in the U.S. Women Physicians' Health Study. *Acad Med.* 1999;74:695-701.
- Palepu A, Carr PL, Friedman RH, et al. Specialty choices, compensation, and career satisfaction of underrepresented minority faculty in academic medicine. *Acad Med.* 2000;75:157-60.
- Fang D, Moy E, Colburn L, et al. Racial and ethnic disparities in faculty promotion in academic medicine. *JAMA.* 2000;284:1085-92.
- Palepu A, Carr PL, Friedman RH, et al. Minority faculty and academic rank in medicine. *JAMA.* 1998;280:767-71.
- Institute of Medicine. In the Nation's Compelling Interest: Ensuring Diversity in the Healthcare Workforce. In: Smedley BD, Bulter AS, Bristow LR, eds. Washington DC: National Academies Press; 2004.
- Nickens HW, Ready TP, Petersdorf RG. Project 3000 by 2000. Racial and ethnic diversity in US medical schools. *N Engl J Med.* 1994;331:472-6.
- The Sullivan Commission on Diversity in the Healthcare Workforce. Missing Persons: Minorities in the Health Professions. 2004. Available at: http://www.kaisernetwork.org/health_cast/hcast_index.cfm?display=detail&hc=1141. Last accessed July 23, 2009
- Chan L, Ahmad Y. Diversity in Medicine-Diversity and equity issues in medical education. *Univ Tor Med J.* 2005;82:172-4.
- Cohen JJ. Time to shatter the glass ceiling for minority faculty. *JAMA.* 1998;280:821-2.
- Nickens HW. The rationale for minority-targeted programs in medicine in the 1990s. *JAMA.* 1992;267:2390-5.
- Powe NR, Cooper LA. Diversifying the racial and ethnic composition of the physician workforce. *Ann Intern Med.* 2004;141:223-4.
- Smith LH, Bridges K. Minority medical faculty fellows credit program with fostering their academic careers. 1996. Available at: <http://www.rwjf.org/reports/grr/027395s.htm>. Last accessed July 23, 2009
- Tekian A. A thematic review of the literature of underrepresented minorities and medical training, 1981-1995: securing the foundations of the bridge to diversity. *Acad Med.* 1997; 72: S140-6.
- Thomson WA, Denk JP. Promoting diversity in the medical school pipeline: a national overview. *Acad Med.* 1999;74:312-4.
- Price EG, Gozu A, Kern DE, et al. The role of cultural diversity climate in recruitment, promotion, and retention of faculty in academic medicine. *J Gen Intern Med.* 2005;20:565-71.
- Coombs AA, King RK. Workplace discrimination: experiences of practicing physicians. *J Natl Med Assoc.* 2005;97:467-77.
- Nunez-Smith M, Curry LA, Bigby J, et al. Impact of race on the professional lives of physicians of African descent. *Ann Intern Med.* 2007;146:45-51.
- American Medical Association. AMA Physician Masterfile. Available at: <http://www.ama-assn.org/ama/pub/category/2673.html>. Last accessed July 23, 2009
- National Medical Association. Available at: <http://www.nmanet.org/>. Last accessed July 23, 2009
- Cook DA, Beckman TJ. Current concepts in validity and reliability for psychometric instruments: theory and application. *Am J Med.* 2006;119:166 e167-116.
- Krause N. A comprehensive strategy for developing closed-ended survey items for use in studies of older adults. *J Gerontol B Psychol Sci Soc Sci.* 2002;57:S263-74.
- Bobo LD, Suh SA. Surveying racial discrimination: analyses from a multiethnic labor market. In: Bobo LD, Oliver ML, Johnson JHJ, et al, eds. *Prismatic Metropolis: Inequality in Los Angeles*. New York: Russell Sage Foundation; 2000.
- Essed P. Understanding Everyday Racism: an interdisciplinary theory. Thousand Oaks: Sage; 1991.
- Burkard A, Boticki M, Madson M. Workplace Discrimination, Prejudice and Diversity Measures: a review of instrumentation. *J Career Assess.* 2002;10:343-61.
- Hosmer DJ, Lemeshow S. Applied Logistic Regression. New York: John Wiley and Sons Inc.; 1989.
- Austin PC, Mamdani MM, Juurlink DN, et al. Testing multiple statistical hypotheses resulted in spurious associations: a study of astrological signs and health. *J Clin Epidemiol.* 2006;59:964-9.
- American Medical Association. Physician Characteristics and Distribution in the US, 2008 Edition. Available at: <http://www.ama-assn.org/ama/pub/about-ama/our-people/member-groups-sections/minority-affairs-consortium/physician-statistics/total-physicians-raceethnicity-2006.shtml>. Last accessed July 23, 2009
- Alderfer C. An inter-group perspective on group dynamics. In: Lorsch J, ed. *Handbook of Organizational Behavior*. Englewood Cliffs, NJ: Prentice-Hall; 1987.
- Cox TJ. Cultural Diversity in Organizations: Theory, Research, and Practice. San Francisco: Berrett-Koehler; 1994.
- Akinola M, Thomas D. Defining the attributes and processes that enhance the effectiveness of workforce diversity initiatives in knowledge intensive firms. 2008 Working Paper. Available at: <http://www.hbs.edu/research/pdf/07-019.pdf>. Last accessed July 23, 2009
- Coker N. Racism in Medicine: An Agenda for Change. London: King's Fund; 2001.
- Kaiser Family Foundation. National Survey of Physicians Part I: Doctors on Disparities in Medical Care. 2001. Available at: <http://www.kff.org/minorityhealth/20020321a-index.cfm>. Last accessed July 23, 2009
- Nunez-Smith M, Curry LA, Berg D, et al. Healthcare workplace conversations on race and the perspectives of physicians of African descent. *J Gen Intern Med.* 2008;23:1471-6.
- National Research Council, ed. *Measuring Racial Discrimination*. Washington DC: The National Academies Press; 2004.
- Asch DA, Jedrzejewski MK, Christakis NA. Response rates to mail surveys published in medical journals. *J Clin Epidemiol.* 1997;50:1129-36.
- Campbell EG, Gruen RL, Mountford J, et al. A national survey of physician-industry relationships. *N Engl J Med.* 2007;356:1742-50.
- Curlin FA, Lawrence RE, Chin MH, et al. Religion, conscience, and controversial clinical practices. *N Engl J Med.* 2007;356:593-600.
- Gruen RL, Campbell EG, Blumenthal D. Public roles of U.S. physicians: community participation, political involvement, and collective advocacy. *Jama.* 2006;296:2467-75.
- McCormick D, Woolhandler S, Bose-Kolanu A, et al. US physicians' views on financing options to expand health insurance coverage: a national survey. *J Gen Intern Med.* 2009;24:526-31.
- Sharma R, Kostis WJ, Wilson AC, et al. Questionable hospital chart documentation practices by physicians. *J Gen Intern Med.* 2008;23:1865-70.