Who Is at Risk of Racial Discrimination?
Perceived Race and Health Disparities in the United States

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Recent scholarship argues that the experience of discrimination is an important cause of racial disparities in health. Yet standard methods of measuring race in surveys rely on the respondents' racial identification – how they choose to describe themselves – rather than a measure (presumably) more directly connected to discrimination: how they are perceived racially by others. This study draws on data from the Behavioral Risk Factor Surveillance System and explores whether adding perceived race to an analysis of health disparities provides more insight than self-identification alone. The results – that perceived race matters but not necessarily in the ways we might expect – raise important questions about how racial discrimination operates and what we are measuring (or want to measure) when we measure "race."

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One of the first lessons demographers learn is to calculate rates relative to the population that is at risk of experiencing the event of interest. For example, only women of childbearing age are at risk of giving birth, one has to first marry before one can divorce, and so on. In terms of studying racial disparities and discrimination, in particular, this common caution presents an intriguing measurement dilemma: just who is at risk of experiencing racial discrimination in the United States? On its face the question seems almost silly; the history of oppression and racial domination of African Americans, Native Americans, Asian Americans and Latinos is well-documented and well-known (e.g., Takaki 1994). The current legacy of implicit prejudice and stereotyping has also received significant attention in recent years (e.g., Greenwald et al. 1998, Brubaker et al. 2004, Dovidio et al. 2008). Yet, recent research has also revealed that the measurement of race (and ethnicity) is not nearly as straightforward as most people assume (e.g., Hahn et al. 1992, Goldstein and Morning 2000, Mays et al. 2003, Snipp 2003, Saperstein 2006).

This study explores the measurement dilemma in the specific context of racial disparities in health. Attention to the social determinants of health and to the attendant racial disparities has increased dramatically in the past decade or so, and a recent focus has emerged on the role of racial discrimination, both in health care settings and in everyday life, in perpetuating health inequality (e.g., Krieger et al. 1998, Malat 2006, Smedley et al. 2003). Many large survey projects have been turned to the task of demonstrating the links between experiences of discrimination and host of health outcomes and behaviors. Though circumstantial evidence for discrimination abounds, evidence of the direct effect of experiencing racial discrimination on health is as mixed as the methods by which it has been studied (see Paradies 2006 for a review).

In an attempt to introduce additional conceptual clarity to this promising area of research, I draw on recent data from the Behavioral Risk Factor Surveillance System, an annual survey conducted in the United States and supervised by the Centers for Disease Control. Unlike previous studies of racial disparities in health, including those that rely on the same data, I use measures of both how people identify themselves racially and how they are typically classified by others. By holding self-identification constant, I aim to uncover previously hidden variation by perceived race that might be the missing link in studies of racial discrimination and health. My analyses answer the question: Is being seen as black or Hispanic associated with worse health, and being seen as white with better health, all else being equal?

As is often the case, the results ultimately raise more questions about the relationships between perceived race, discrimination and health. I find that being seen as black or Hispanic is sometimes associated with additional health disadvantages and sometimes not, while being seen as white can be associated with advantages, disadvantages or no differences depending on the outcome and population in question. This suggests that researchers need to continue to revisit measures of "race" and refine theories about how discrimination operates to perpetuate inequalities in health in the United States.

Analytic Approach

I have outlined the case for including both perceived race (how other people classify you) and self-identified race (how you identify yourself) in detail elsewhere (Saperstein 2006, 2008). Below I break the logic of this study down into four premises, each grounded in and supported by the existing literature.

Premise 1

Racial discrimination is one of the causes of disparities in health in the United States either directly through receiving unequal treatments options (e.g., vanRyn et al. 2006) and/or lower quality care (e.g., Franks et al. 2005), or indirectly through the toll that experiences of discrimination and prejudice in everyday life takes on an individual's physical and mental health (e.g., Geronimus et al. 2007, Williams and Williams-Morris 2000).

Premise 2

Racial discrimination is presumed to be triggered by one's appearance or demeanor. That is, people look at you and determine whether you should be considered member of a different race. This cognitive categorization is often automatic and unconscious (e.g., Montepare and Opeyo 2002), though it nevertheless reflects social context and patterns of socialization (e.g., Eberhardt 2005). People who are seen as members of certain races are thought be subject to unequal treatment because of a combination of stereotypes, implicit prejudice, institutionalized racism and the accumulated disadvantage of past oppression (e.g., Wilson 1987, Kirschenman and Neckerman 1991, Tilly 1998, Quillian 2006, Massey 2007).

Premise 3

There is a significant gap between our theories about racial discrimination and our measurement of "race." Most research on racial disparities and on racial discrimination, in particular, is conducted using self-identified measures of race. This poses conceptual or theoretical problems if Premise 2 is true that discrimination is triggered primarily by other ascription. It poses

methodological problems to the extent that measures of self-identified and other perceived race do not match for the same individuals at the same point in time.[1]

Indeed, recent research suggests that self-identified and other perceived measures of race cannot be considered equivalent, perhaps especially for studies of interracial inequality (Telles and Lim 1998, Telles 2002, Saperstein 2006). Thus, if racial discrimination is thought to be caused by having a particular racialized appearance then it would be best studied using a measure of other-perceived, rather than self-identified, race.

Premise 4

Of course, owing in part to commonsense definitions of race as rooted in biology or descent, the two measures of race are expected to be concordant for the vast majority of Americans (Nagel 1994, Hirschman 2004). This means a change in the measure of race will not affect our broader understanding of the positioning of racial populations in society. Nevertheless, cases in which the two measures do not match should provide the necessary analytical leverage to pinpoint how racial disparities maintained. Put another way (in terms of ethnomethodology), when social norms become taken for granted, one has to study cases of rule-breaking to begin to identify the causal processes involved in maintaining the "normal" state of affairs (Slattery 2003).

Thus, I expect that examining differences in perceived race when self-identification is held constant will tell us something about whether and how "whiteness" and "blackness" when used to describe bodies also describe differences in health.

[1] Each measure is expected to vary by context and over time because of the socially constructed nature of racial divisions (Omi and Winant 1994, Davis 2001); nevertheless this variation does not affect single-country studies of a cross-sectional nature.

Data and Methods

The BRFSS is an annual telephone survey designed by the Center for Disease Control and conducted at the state-level.[2] It samples both men and women, ages 18 to 99, and asks a range of questions about the respondent's health conditions and behaviors, their frequency of care and other demographic characteristics. In 2002, the Measures of Racism Working Group at the CDC designed a pilot module to incorporate experiences of discrimination into the survey, based on theoretical models that link discrimination to higher levels of stress and poorer health outcomes (e.g., Jones 2000). The module includes questions about how often the respondent thinks of his or her race, whether they have been discriminated against at work or in a health care setting and how other people typically classify the respondent by race (BRFSS 2006). Unfortunately, the module is considered optional and has been used by a limited number of states. Also, it is only available in the public-use data files beginning in 2004.

Ten states used the "Reactions to Race" module in 2004, 2005 or 2006: Arkansas, Colorado, Delaware, Michigan (2006), Mississippi, Ohio (2005), Rhode Island, South Carolina, Washington D.C., and Wisconsin (all three years). To ensure the largest number of inconsistently classified cases, I pool data from all three years. This provides a sample of nearly 60,000 individuals, of whom 3,448 (0.6%) report that they are perceived as a different race than the one they prefer for self-identification.

Measures of race

As part of the core survey, the BRFSS asks respondents to self-identify their race or ethnicity in response to three questions:

[2] For more details on the survey and to download the public-use data, see http://www.cdc.gov/BRFSS/technical_infodata/surveydata.htm

1) "*Are you Hispanic/Latino?*" (yes, no)

2) "*Which one or more of the following would you say is your race?*" (mark all that apply, using standard OMB 1997 categories) and, if the person chose more than one category in this question,

3) "*Which one of these groups would you say best represents your race?*"

I code respondents as "Hispanic" if they answered "Yes" to the first question, regardless of their answers to the remaining questions. I also code respondents according to their preferred single race category (i.e., Question 3), but maintain an indicator for whether they initially identified with multiple races. So respondents can be both Hispanic and white; Hispanic, black and multiracial, etc.

The measure of perceived race comes from the optional "Reactions to Race" module. The question asks: "*How do other people usually classify you in this country? Would you say White, Black or African American, Hispanic or Latino, Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native or some other group?*"

Table 1 shows the cross-tabulation of the respondents' self-identified race/ethnicity and how they report they are perceived by other people in the United States. Of particular interest for this study are the off diagonal cells, where the respondent's self-identification and the perceptions of others do not match. Table 1 presents percentages to depict the relative rates of "consistency" in racial reporting for different groups. Consistency, or concordance, between self-identified and perceived race is highest among "whites" and "blacks" and lowest among Native Hawaiians, American Indians and people who do not identify with any of the major race categories. In terms of frequencies, the largest inconsistent populations are people who identify and white but are seen as Hispanic (N=605) and people who identify as Hispanic but are seen as

white (N=598). Interestingly, the people who identify as black but are seen as white and the people who identify as white but are seen as black are also close in number (N=65 and 69, respectively).

Primary measure of health[3]

Self-reported health is one of the most commonly studied health outcomes and it is available as a core question in the BRFSS in 2004, 2005 and 2006. Previous studies have shown that self-reported health is a predictor of later health and mortality, independent of other health conditions and behaviors (Benyamini and Idler 1999). Thus, in addition to serving as a proxy for objective measures of health in most surveys, self-reported health is deserving of study in its own right. In general, (self-identified) blacks and Hispanics are more likely report worse health than whites, even after controlling for a host of factors including socioeconomic status, access to health care and reported health conditions (Boardman 2004, Borrell and Crawford 2006).

The BRFSS uses a typical formulation to inquire about the respondent's perception of their health: "*Would you say that in general your health is … Excellent, Very Good, Good, Fair, Poor?"* On average, respondents say their health is "Good" or better (i.e., the mean is generally at 3 or above on a 5-point scale) and studies of self-reported health generally collapse these five categories into a dichotomy between "Good" or better and "Fair" or "Poor." I do the same here and refer to the two sides as reporting "good health" or "bad health," respectively.

Table 2 provides the same cross-tabulation as Table 1, but this time the figures in the cells represent the percentage of people who reported they were in good health. It is here that the puzzle for theories of discrimination emerges: The expectation that people who are seen as white

[3] My analysis centers on racial differences in self-reported health. However, I examine several other measures related to specific health conditions as a counterpoint in my discussion of the self-reported health results below.

will be more advantaged – in this case, by reporting better health – compared to people who are seen as nonwhite, and "Black" in particular, is not clearly supported by this data. In general, people who are most likely to report good health identify as Asian or Native Hawaiian or Pacific Islander (NHOPI). However, among these two populations being seen as white is not necessarily related to high proportions reporting good health. Among self-identified Asians, those who are seen as white are more likely to report bad health than those who say they are seen as Asian, Hispanic or some other group. At the same time, among self-identified Native Hawaiians, those who are seen as white are the most likely to report being in good health (see Table 2).

Of course, the number of cases underlying these percentages is relatively small and so caution is necessary in interpreting the patterns of self-reported health. Yet, even among the larger groups there is weak evidence for white advantage (according to appearance). Among self-identified whites, as we might expect, those who are seen as black are less likely to report good health (74%) compared to those who are seen as white (85%). But among self-identified blacks and Hispanics, there is little or no difference in the proportion reporting good health between those who are seen and white and those who are seen as black. And among people who self-identified as more than one race (most often American Indian and either white or black), a higher proportion report good health if they are seen as black.

Controls

Of course, the comparison in Table 2 doesn't take into account differences in age structure, socioeconomic status, state of residence or other factors that might influence the

respondent's self-reported health.[4] Previous studies have shown that the patterns of self-reported health vary by age, and there are well-known health gradients by income and educational attainment (Schnittker 2004). Age differences in reported health could affect the comparisons in Table 2 because (self-identified) black and Hispanic populations have higher proportions of young people, who typically report better health all else being equal. Of course, highly educated people and those with higher incomes also have better health, which would work in the opposite direction of the age effect for the more disadvantaged populations. In the multivariate models below, I include age, years of education and annual household income as continuous measures, along with interaction terms to account for the de-coupling of self-reported health and objective health among the elderly and nonlinearity in the relationship between age and educational attainment (Lynch 2003).[5] In addition, I include a categorical measure of employment, identifying whether the respondent is currently employed, has been out of work for more than a year, is retired or disabled.

Obesity, smoking and lack of exercise are among the most important predictors of (ill) health, so I control for each of these "health behaviors" in the models below. I use the BRFSS calculated variable for the respondents' body mass index, which is divided into three categories for "obese," "overweight" and normal weight for height. I include a dichotomous variable for whether the respondents are overweight (including "obese") or not. Smoking behavior is captured with two variables for whether the respondent currently smokes and whether they have

[4] Many of these characteristics might also influence the respondent's racial/ethnic identification and how they are perceived by others, as well (Penner and Saperstein 2008, Saperstein 2006). However, given the cross-sectional nature of the BRFSS, I cannot untangle those effects here.

[5] The data for income and education are captured categorically in the BRFSS (i.e., less than $7,500 a year, $50,000 and up, high school graduate, some college, etc.). I coded the income categories to their mid-points and the education categories to their analogous years of education and estimated models with both continuous variables and categorical ones. The latter required more parameters and did not provide significantly improved fit to the data, so I use the continuous coding in the models below.

ever smoked. Respondents are coded as having "exercised" if they report participating in any physical activity outside of their job in the past month.

I also include measures of reported health conditions, specifically whether the respondent has ever been diagnosed with asthma or diabetes, both because the presence of such conditions likely affects the respondent's assessment of their health and because the prevalence of these conditions is known to vary by race. Also included are measures of access to health care, such as whether the respondent has any form of health insurance, has been to the doctor in the past year, or has not sought medical care in the past year because of the cost. Finally, I include controls for how many days in the past month the respondent reported being physically or mentally unwell.

Models

To assess whether perceived race is related to self-reported health, I estimate a series of logistic regressions which predict the log odds of reporting "good health." Thus, coefficients that are positive predict better health, or the reporting of better health, while coefficients that are negative identify characteristics that are harmful to the respondent's health or are related to reporting worse health. I estimate the models separately by self-identified race in order to examine the relationship between perceived race and health net of the relationship between self-identification and health. Put another way, the models answer the question: Among self-identified whites (or blacks), does being seen as black (or white) have an affect on one's health?

Limitations

Unfortunately, because of the small number of cases in many of the cells, I am forced to restrict my multivariate analysis to respondents who identified as either white or black and

reported they were perceived as white, black or Hispanic. This results in a sample of 57,072 individuals. Recall that these individuals could also have identified themselves as Hispanic and/or multiracial; I retain this information and control for these differences in the models below.

It is also important to note that the measure of perceived race is only a proxy in these data (because it is a telephone survey). Further, it is not known to what extent people are accurate in their reports of how others might classify them racially. Also, because the optional BRFSS module was used by just 10 states, the estimates below cannot be generalized to the entire U.S. population. However, it is not clear how one might gather a representative sample of people who are seen as a different race than the one with which they identify even if one wanted to do so.

In its favor, the BRFSS does draw from a wide age range and includes both men and women, which is unusual for studies that include multiple measures of race. Most data with both self-identified and interviewer-classified measures of race focus on particular cohorts (e.g., the National Longitudinal Survey of Youth, the National Longitudinal Study Adolescent Health) or sub-populations (e.g., women of childbearing age in the National Survey of Family Growth and first-generation immigrants in the New Immigrant Survey). Thus, while the BRFSS is not the ideal data to study the relationship between perceived race and health disparities in the United States, it is among the best data available.

Results

I begin by presenting the models for self-identified whites to examine whether being seen as either black or Hispanic is related to reporting worse health, net of all other (measured) factors. The models for self-identified blacks follow, though they are estimated separately by gender because of significant differences that emerged in the modeling process. There were no

significant differences between men and women in the relationship between perceived race and self-reported health among self-identified whites.

Self-identified whites

Table 3 shows a series of four models, each with increasingly stringent controls. The first model is a "race only" model that estimates the effects of being seen as black or Hispanic, net of identifying as Hispanic or multiracial. All models also control for age, gender, state of residence and whether or not the survey was administered in Spanish (English is the reference category). Model 2 adds controls for socioeconomic status and access to health care. Model 3 adds health behaviors (e.g., smoking). Model 4, the "full" model, also include controls for reported health conditions (e.g., diabetes). Because the focus of the analysis is on the effects of perceived race, Table 3 shows only the coefficients for the race-related variables. The story lies in whether or how the estimates associated with perceived race change across models.

The "race only" model shows the relationship we would expect from theories of discrimination (and from the percentages in Table 2) – that people who are seen as black or Hispanic are significantly less likely to report good health net of their other demographic characteristics. The negative relationship between being seen as black and reporting good health does not stand up to the increasingly stringent controls, however (see Table 3). Differences in socioeconomic status and access to health care among self-identified whites appear to explain a large portion of the effect of being seen as black, as the coefficient is cut nearly in half between Model 1 (ß= -.848) and Model 2 (ß= -.515). Taking into account differences in health behaviors and conditions reduces the effect of being seen as black further until it is neither substantively nor significantly different from zero (Model 4). This suggests that among people of similar

socioeconomic and health status, self-identified whites who are seen as black are just as likely to report they are in good health as self-identified whites who are seen as white. One way to interpret this result is that, for self-identified whites, there is no additional health disadvantage associated with being seen as black. Thus, previous findings that "blacks" report significantly worse health than "whites" might be better described as applying to people who self-identify as black. I discuss other possible interpretations below.

Interestingly, these models reveal a significant interaction effect between being seen as Hispanic and identifying as Hispanic (ß= .951, Model 1) which moderates the two main effects (ß= –1.233 and -.306).[6] So, among people who identify as white, people who do not identify as Hispanic (the reference group) are significantly more likely to report good health, followed by people who identify as Hispanic but are seen as white and people who are both seen as and identify as Hispanic. However, among self-identified whites, people who are seen as Hispanic but do not identify as Hispanic are the least likely to report being in good health. This basic pattern holds throughout all four models, though the effect of identifying as Hispanic drops to substantive and statistical insignificance (see Table 3).

The finding that being seen as Hispanic is associated with reporting worse health even in the most stringent model is important because of the independent effect of self-reported health on later health and life expectancy. However, its interpretation is not entirely clear. As Boardman (2004) notes, the effect might describe "health pessimism" rather than poor health, per se; that is, people who are seen as Hispanic perceive their health to be worse than similarly situated people who are seen as white even though they report similar health conditions and behaviors. I return to this issue in greater detail in the discussion.

[6] I also tested other interaction effects, such as between identifying as multiracial and being seen as black, or between being seen as Hispanic and being given the survey in Spanish, but these were not significant and are not included in the final models.

Self-identified blacks

Table 4 shows a similar progression of models to those for self-identified whites, though it is separated into two panels: one for self-identified black women (top panel) and one for self-identified black men (bottom).

The models for self-identified black women are striking in the similarity of their estimates. Perceived race has no effect on self-reported health either before or after introducing the various sets of controls. Indeed, as shown in Model 5, removing all race-related variables, including whether the respondents identified as Hispanic or multiracial, does not significantly worsen the model fit. Differences in socioeconomic status (Model 2) and reported health conditions (Model 4) account for the most variation; knowing how a self-identified black woman appears to others does nothing to improve our understanding of her self-reported health.

The findings for self-identified black men are quite different, both from those of self-identified black women and from what one might expect based on traditional theories of discrimination. In all four models, being seen as white is related to reporting significantly worse health among self-identified black men. Indeed, adding more controls only increases the negative relationship. Thus, the apparent equivalence in health by perceived race among self-identified blacks depicted in Table 2 holds only for black women (who outnumber men in this sample by more than 2 to 1). For self-identified black men, it seems that those who are seen as white not only have worse health than their counterparts who are seen as black and they are also more pessimistic about their health, in Boardman's (2004) sense, even when all else is equal. So, in this case, being seen as white is not an advantage, as one might expect, but a disadvantage. Meanwhile, the effect of being seen as Hispanic on self-reported health is negative but not

significant in all four models while the effect of identifying as Hispanic (among self-identified black men) is positive and marginally significant.

Discussion

These findings do little to clear up the puzzle of the effects of perceived race on self-reported health raised by the raw percentages in Table 2. Being seen as black is not related to significantly worse health among self-identified whites, all else being equal, but being seen as white is related to significantly worse health among self-identified blacks – though only among men. Among self-identified black women, appearance matters little if at all. Further, being seen as Hispanic is associated with worse health among self-identified whites, but has little or no relationship (positive or negative) to self-reported health among blacks.

At this point, one might be tempted to blame the limitations of the data for producing such helter-skelter results. Or, if one thought highly of the data, one might be tempted to advocate chucking the traditional assumptions of racial discrimination in the United States out the proverbial window. However, a few additional issues should be raised before attempting anything resembling a conclusion based on these results. First, is whether the final models actually over control for differences between “blacks” and “whites” artificially equalizing populations that are not equal in practice. Second, is what the results would look like if we tried another way of controlling for experiences of discrimination by using self-reported discrimination (also available in the BRFSS). Third, is the difference between perceptions of one’s health and specific diagnosis of a health condition. I address each of these issues in turn.

To control or not to control?

That is the question, indeed. If we are interested in racial differences in health (or any other outcome) is it appropriate to add controls for everything including the kitchen sink? The reason for doing so comes from concerns about "spuriousness" that the cause of B only appears to be A because one did not control for C. There have been a number of critiques of the language of causality when studying racial differences in general (e.g., Zuberi 2000), but because both the perceptions of a person's race and the person's self-identification can and do change over time and across contexts the warning that causal variables need to vary is less applicable here. Of more concern is the possible criticism that if racial discrimination does exist in schools and workplaces and health care settings, then controlling for educational attainment and achievement, or earnings and employment, or access to health care and the presence of certain conditions in order to compare whites and blacks "all else being equal" results in a statistical exercise that has limited applicability to everyday life (cf. Stewart 2008). That is, whether A causes B or A causes C and C causes B may not matter in practical terms for people who are concerned about inequalities in the end.

Certainly the point that once one controls for the presence of health conditions, such as diabetes or asthma, then the study of disparities in self-reported health becomes a study of health "pessimism" (Boardman 2004) is also well taken. This would again suggest that one was controlling away the very disparities (this time in "actual" health) in which one purported to be interested. Of course, differences in objective health and perceptions of health could both be caused by experiences of discrimination and the resulting lack of trust in the health care system. Nevertheless, neither of these critiques of over-controlling can explain the lack of an effect for

perceived race among self-identified black women, nor the effect in the opposite direction of what one would expect among self-identified black men (that also holds across all models).

Self-reported discrimination

Another recent paper uses data from the 2004 BRFSS to address the question of whether or not reporting an experience with racial discrimination helps to explain racial disparities in self-rated health (Bratter and Gorman 2009).[7] In preliminary analyses, the authors find that while perceived racial discrimination is significantly related to self-rated health, who experiences discrimination and who does not cannot help to explain why (self-identified) blacks report worse health than whites. Not only do whites also report experiencing racial discrimination, the effect of reporting an experience of discrimination has a larger (negative) effect on the self-rated health of whites than it does on the health of blacks. However, the authors use only one measure of the respondent's race (presumably self-identification, though they do not specify) so it remains an open question whether one's perceived race is related to reporting experiences of racial discrimination.

Table 5 shows the cross-tabulation of the percentage of respondents who reported being treated "worse than other races" either at work or in a health care setting in the past year by the race in which they reported they are typically classified.[8] The comparisons are shown separately for self-identified whites and blacks. There is little difference in the perceived race distribution between people who do and do not say they experienced racial discrimination in the past year.

[7] Another study, conducted by Crawford et al. (2008), uses the 2004 BRFSS data to study the effect of reporting discrimination on the likelihood of getting a preventative health screening, such as a mammogram. After controlling for socioeconomic status, access to health care and other factors, they find no relationship perceived discrimination and use of health services. See also Hausmann et al. (2008).

[8] The distribution of reported discrimination by perceived race differs little between whether the discrimination occurred at work or in a health care setting, so I combine the two in a single measure of reported discrimination in the past year.

The most notable difference occurs among self-identified whites, where people who are seen as Hispanic are overrepresented among people who self-report discrimination (they make up 5 percent of the people who do and 1 percent of those who do not). But when perceived discrimination is entered as a control into the final models shown above it does not improve the fit of the model or change the size or the sign of the perceived race coefficients. In fact, models with self-reported discrimination but not perceived race and models with perceived race but not discrimination describe a similar proportion of the variation in self-reported health but with slightly different interpretations and implications (not shown). Among self-identified blacks, reporting discrimination in the past year is related to reporting significantly worse health among women but not men, but in neither case does it alter the relationship (or lack thereof) between perceived race and self-reported health (not shown).

Objective and subjective health

A third possible explanation for the lack of expected effects of perceived race on self-reported health is precisely that the measure of health is self-reported. Perhaps the relationship between the perception of one's health and one's perceived race is not the same as the effect of one's perceived race on the likelihood that one is actually in poor health – in the sense that one has any of a number of debilitating health conditions. The models shown in Table 6 address this possibility by predicting the likelihood that the respondent had (ever) been diagnosed with diabetes or heart disease.[9] In addition to perceived race (and self-reported discrimination), the models control for other background characteristics, socioeconomic status, access to health care and health behaviors (much like the "full" models presented earlier).

[9] In 2004, several states that used the "Reactions to Race" module did not ask about the respondents' history of heart disease so the numbers of cases differs between the diabetes and heart disease models.

Both sets of estimates in Table 6 support the expectation, based on theories of discrimination, that being seen as white is associated with better health (i.e., being less likely to have the given condition) and being seen as black is associated with worse health. Because the models control for (current) socioeconomic status and access to health care, the presumed mechanism for this difference is either the general process of "weathering" associated with being a member of a disadvantaged population (e.g., Geronimus et al. 2007) or receiving lower quality care prior to the condition being diagnosed. It should be noted, however, that I also estimated models predicting the likelihood of having been diagnosed with asthma and found no significant differences by perceived race (results not shown).

Conclusion

Taken together, the results above demonstrate that there is a significant relationship between perceived race and health, but it does not have the straightforward effects one might expect based on the typical assumptions of how racial discrimination operates. Being seen as black or Hispanic, net of one's self-identification, is associated with average health outcomes at best and sometimes below average ones, though that varies both by outcome (asthma and self-rated health vs. diabetes and heart disease) and possibly by gender (e.g., diabetes). On the flip side, being seen as white does not always provide an advantage – in the sense of attaining better than average outcomes compared to other people who identify the same way – and may even be a disadvantage in some cases (e.g., self-rated health among self-identified black men).

The implications one can draw from these findings are simply that there is a lot more work to be done in understanding the links between perceived race, self-identification, discrimination and health (or any other life outcome, for that matter). More data needs to be

collected using multiple measures of race to either validate or improve upon these results. At the same time, researchers should give serious thought to the specific pathways that lead from "racial" differences to various health disparities and develop survey instruments and studies that examine them directly. Certainly, how one is perceived racially by others and how one self-identifies are linked, but the task remains to untangle how both are linked to experiences of discrimination and how each of these factors combine to shape people's life chances.[10] Further, the results above serve as an important reminder that race – however it may be defined or measured – does not exist in a vacuum and often interacts with other axes of difference, such as gender, to produce unequal outcomes.

[10] For example, how one is perceived by others should predict experiences of discrimination, but may also be a reflection of disadvantage or discrimination in the past (Penner and Saperstein 2008), while both having experienced stereotyping and discrimination and seeking to avoid such experiences, may be related to an individual's self-identification (Golash-Boza 2006, Basler 2008).

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Table 1. Cross-tabulation of self-identified and perceived race

	How do others typically classify you?							
	White	Black	Asian	NHOPI	AIAN	Other	Hispanic	Total
Self-id								
White only	**98%**	0.1%	0.04%	0.01%	0.1%	0.4%	1%	100%
Black only	1%	**97%**	0.05%	0.1%	0.3%	1%	1%	100%
Asian only	6%	1%	**83%**	1%	0.2%	4%	5%	100%
NHOPI only	21%	8%	10%	**27%**	8%	2%	24%	100%
AIAN only	40%	6%	1%	2%	**32%**	1%	18%	100%
Other only	31%	9%	2%	1%	1%	**10%**	47%	100%
Multiracial	59%	24%	2%	1%	4%	3%	7%	100%
Hispanic	32%	5%	1%	0.4%	1%	3%	**58%**	100%

Source: BRFSS 2004-06. N=59,090. Does not include cases that are missing for perceived race. Self-identification as Hispanic was asked in a separate question and is shown separately here because respondents could be "Hispanic or Latino" and any of the self-identified racial categories listed above.

Table 2. Percentage of people who report being in good health, by self-identified and perceived race

	Perceived race						
	White	Black	Asian	NHOPI	AIAN	Other	Hispanic
Self-id							
White	85%	74%	84%	-	84%	87%	80%
Black	76%	76%	-	-	55%	80%	84%
Asian	87%	-	93%	-	-	100%	93%
NHOPI	97%	-	-	89%	-	-	81%
AIAN	72%	64%	-	64%	71%	-	70%
Other	80%	77%	88%	-	79%	73%	74%
Multiracial	62%	78%	-	-	-	-	-
Column Total	84%	76%	92%	82%	73%	82%	77%
Hispanic	80%	78%	92%	-	78%	65%	77%

Source: BRFSS 2004-06. Cells without percentages contained fewer than 10 cases.

Table 3. Log odds of reporting good health among self-identified whites

	Self-identified whites			
	Race only	+ SES and access to care	+ health behaviors	+ health conditions
Seen as Black	-0.848**	-0.515 †	-0.399	0
	(0.285)	(0.309)	(0.316)	(0.366)
Seen as Hispanic	-1.233**	-1.020**	-0.953**	-1.008**
	(0.223)	(0.240)	(0.243)	(0.260)
Identifies as Hispanic	-0.306*	0.085	0.056	-0.116
	(0.121)	(0.136)	(0.137)	(0.150)
Hispanic Concordant	0.951**	0.826**	0.812**	0.816*
	(0.285)	(0.310)	(0.312)	(0.335)
Constant	3.804**	3.114**	2.812**	3.124**
	(0.148)	(0.158)	(0.165)	(0.183)
Pseudo R-squared	7%	21%	24%	38%

Note: N=48,245. Standard errors in parentheses. † p<.10 * p <.05 ** p<.01. All models also control for self-identifying as multiracial, being given the survey in Spanish, age, age-squared, gender, marital status and state of residence, along with indicators for having missing data on key variables. "Hispanic concordant" refers to an interaction effect between being seen as Hispanic and identifying as Hispanic.

Table 4. Log odds of reporting good health among self-identified blacks, by gender

Self-identified black women					
	Race only	+ SES and access to care	+ health behaviors	+ health conditions	Reduced model
Seen as White	0.393	0.533	0.531	0.332	
	(0.369)	(0.402)	(0.405)	(0.443)	
Seen as Hispanic	0.376	0.149	0.119	0.091	
	(0.319)	(0.342)	(0.350)	(0.375)	
Identifies as Hispanic	-0.516 †	-0.265	-0.31	-0.288	
	(0.291)	(0.329)	(0.332)	(0.364)	
Constant	3.708**	3.519**	3.364**	3.312**	3.310**
	(0.326)	(0.360)	(0.366)	(0.396)	(0.395)
Pseudo R-squared	9%	21%	22%	32%	32%
Self-identified black men					
	Race only	+ SES and access to care	+ health behaviors	+ health conditions	
Seen as White	-1.094*	-1.426*	-1.343*	-1.257*	
	(0.518)	(0.562)	(0.559)	(0.606)	
Seen as Hispanic	-0.555	-0.773	-0.821	-0.682	
	(0.597)	(0.613)	(0.613)	(0.656)	
Identifies as Hispanic	0.775	0.914 †	0.906 †	0.915	
	(0.527)	(0.552)	(0.545)	(0.604)	
Constant	3.702**	3.204**	2.854**	2.750**	
	(0.529)	(0.565)	(0.578)	(0.604)	
Pseudo R-squared	9%	19%	20%	29%	

Note: N=5,779 for women and 2,548 for men. Standard errors in parentheses. † p<.10 * p <.05 ** p<.01. All models also control for self-identifying as multiracial, age, age-squared, gender and state of residence, along with indicators for having missing data on key variables.

Table 5. Percentage of people reporting an experience of racial discrimination in the past year, by self-identified and perceived race

	Self-identified whites		*Self-identified blacks*	
	Discriminated against		Discriminated against	
	No	Yes	No	Yes
Seen as White	98.5%	94.2%	0.8%	0.6%
Seen as Black	0.1%	0.7%	97.5%	97.8%
Seen as Hispanic	1.3%	5.1%	1.7%	1.6%
Total	100%	100%	100%	100%

Source: BRFSS 2004-06. Note: N=29,262 for self-identified whites; 4,848 for self-identified blacks. "Discriminated against" is a composite of responses to two questions about whether the R was treated differently than other races at work and in a health care setting. Does not include cases that were missing on either variable. Missing cases were not differentially distribution by perceived race (not shown). Percentages may not sum to 100 due to rounding.

Table 6. Log odds of reporting certain health conditions, by self-identified race and gender

	Diabetes				Heart Disease			
	Self-identified whites		Self-identified blacks		Self-identified whites		Self-identified blacks	
	Women	Men	Women	Men	Women	Men	Women	Men
Seen as Black	0.489	1.292**			1.291*	1.793*		
	(0.472)	(0.486)			(0.615)	(0.698)		
Seen as White			-2.234*	0.011			-16.997**	-17.748**
			(1.029)	(0.811)			(0.641)	(0.799)
Seen as Hispanic	0.496 †	0.149	0.251	-0.639	0.696	1.421*	1.578*	--
	(0.285)	(0.401)	(0.406)	(1.115)	(0.610)	(0.679)	(0.667)	
Identifies as Hispanic	-0.349	0.031	-0.569	-0.831	-0.207	-0.638	-0.684	0.766
	(0.233)	(0.269)	(0.505)	(0.820)	(0.412)	(0.509)	(0.909)	(1.133)
Constant	-8.098**	-8.691**	-7.358**	-9.651**	-9.871**	-11.596**	-11.044**	-10.548**
	(0.393)	(0.481)	(0.578)	(1.041)	(0.852)	(0.944)	(1.687)	(2.762)
N	29340	18905	5779	2532	17236	11153	3099	1295

Note: Standard errors in parentheses. † p<.10 * p <.05 ** p<.01. All models also control for self-identifying as multiracial, age, state of residence, socioeconomic status, access to health care and health behaviors, along with indicators for having missing data on key variables.