

# Is Racial Discrimination an Equal Opportunity Health Risk? Racial Discrimination, Social Class and Health Status Among Black and White Adults.

Jenifer L. Bratter & Bridget K. Gorman\*

*Rice University*

## **Abstract**

Racial differences in health have only begun to account for the influence of discriminatory treatment. Prior studies show that perceiving treatment as racist has a deleterious effect on health for racial minorities, possibly representing the missing link in racial health disparities.

Using data from the 2004 wave of the Behavioral Risk Factor Surveillance System, we assess whether perceived racial discrimination explain Black-White racial disparities in self-rated health. We find that measures discrimination in combination of social class variables explain disparities, however, does this reflect the influence of discrimination has for Blacks?

Surprisingly, analyses reveal that the effect of discrimination appears to be more detrimental to the health of Whites than to Blacks. Our analyses reveal this arises due to complicated relationship between race, social class and racial discrimination where Whites report more discrimination at the lower end of the socioeconomic spectrum while Blacks report more discrimination at the higher end.

\*Authors listed alphabetically, contribution is equal.

# Is Racial Discrimination an Equal Opportunity Health Risk? Racial Experiences, Social Class and Health Status Among Black and White Adults."

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*Rice University*

## **Introduction**

Long-standing racial disparities in across a variety health outcomes provide compelling evidence of the ways race continues to matter to quality of life. The relationship is clear, as Krieger (2000) aptly argues, "Inequality hurts. Discrimination harms health."(p. 36). Many argue that racial discrimination is an important, though often overlooked, risk factor for poor health on a variety of dimensions (Krieger 2000; Williams and Neighbors 2002; Brondolo et al 2003). According to Krieger (2000), "...[discrimination] refers to all means of expressing and institutionalizing social relationships of dominance and oppression." (p. 40). The nature of discrimination can be understood in macro-terms, as institutional bias that limits access to social and economic resources that are protective for health. Therefore, disparities in social class resources across racial groups that contribute to poorer health of blacks relative to whites points is evidence of ways racial discrimination operates to affect health. However, social class differences, while important, do not entirely close the racial gap in health outcomes (Crimmins, Hayward and Seeman 2004). An emerging literature has explored ways perceiving micro-level interactions as racially discriminatory behaviors may also harm health (e.g. Williams, Yu, Jackson, and Anderson 1997; Krieger 2000; Paradies 2006; Williams and Neighbors 2001; Brondolo, Rieppi, Kelly, and Gerin 2003; Schultz, Israel, Williams et al 2000). In the context of race-based disparities, several scholars argue that racial discrimination's impact on health can explain

differences in health that social class cannot (Williams and Neighbors 2002; Kreiger 2000). Ultimately, perceiving interactions as racially-charged or racial discrimination may be the “missing link” in race-based disparities.

We test this relationship using a multi-state sample provided by the 2004 Behavioral Risk Factor Surveillance System (BRFSS), assessing the connections between self-reported health and several aspects of race-based experiences. The 2004 installment of the BRFSS provides unique opportunity for assessing the influence of racial discrimination and health. The survey asks questions on a range of “racial experiences” that include perceived discrimination in multiple settings (i.e. at work and when receiving health care), the frequency of thinking about one’s own race, and whether or not the respondent attributes race-based treatment to their physical and emotional health. These measures include issues of discriminatory treatment, but also offer broader set of information on the role of race on the health of the individual.

We advance three research goals to address the connections made in prior studies with small-scale or single site samples. First, we examine racial differences in health and the potential explanatory contribution of racial discrimination. Several studies employing community-based studies identify a positive association between perceived racial bias and poor self rated health (see Williams, Neighbors and Jackson 2003, Paradies 2006 for review). However, fewer studies have established whether racial discrimination can explain racial disparities in health, independent of social class. Kessler and colleagues (1999) find experiences of discrimination is highly prevalent among disadvantaged groups, with only 8.8% of African Americans reporting they never experienced any discrimination. Krieger and Sydney (1996) and Williams et al (1997) find that adjusting for experiences of unfair treatment can serve close gaps in self-reported health

and systolic blood pressure (see also Schultz et al 2000, Ren, Amick and Williams 1999), however not necessarily explaining differentials in mental health in a national sample (Kessler et al. 1999). We begin here by first observing to whether racial discrimination experiences can close the gaps in Black-White differences in health, beyond what can be captured with social class. A unique contribution of the current work is to compare the ways various forms of discrimination experienced across different contexts (treatment at work vs. treatment by a health care provider) impact health.

Second, we interrogate the degree to which racial discrimination has an “independent influence” on health. The guiding premise of racial discrimination explaining race-based health disparities is that racial discrimination is an experience that is particularly prevalent among African Americans and results from a historical condition of racial stratification. Therefore, accounting for its influence works because of its particularly deleterious effects on African American health and presumably null or little effects on health of Whites. There is some evidence that racial discrimination’s impact on health is exclusively due to its impact on Blacks (e.g. Schultz et al 2000), but the level of discrimination is generally so small, larger samples are required to fully test whether racial discrimination experienced by Whites has a more modest impact on health compared to Blacks. Williams, Yu, Jackson, and Anderson (1997) find an intriguing interaction between race and race-related stress using the data from the Detroit Area Study. Their results show that race-related stress has a greater impact on psychological distress of whites compared to blacks. We use this findings as a starting point to explore whether the same relationship occurs using more recently collected data based on a larger sample.

Third, we interrogate the potential interplay of racial discrimination and social class. As

we discussed, the impact of racial discrimination on health has been largely conceptualized as a “non-economic” source of stress. Although we do not challenge this assertion, we question whether all persons at each level of social class status is equally vulnerable to racial discrimination. For example, studies of racial discrimination experienced by Blacks in organized settings such as work and school (Feagin and Sykes 1994) demonstrate that social class privileges are not necessarily a buffer against experiencing racism. Other work, focusing on poor whites, argues this group experiences uniquely confronts a unique set of racial divisions as they are conceptualized as “white trash” (i.e. Wray 2006, Morris 2005). Kriger and Sydney (1996)’s analysis find greater Black-White differences in systolic blood pressure among working class respondents and virtually none among professionally employed respondents, holding reports of racial discrimination constant. By contrast, Ren, Amick, and Williams (1999) using data from a national survey find that discrimination due to race as well as social class influence health, however, reports of discrimination increase with education, suggesting that the impact of discrimination may be *greater* for persons with higher social class. We examine, the relevance of discrimination for health along the social class spectrum for blacks and whites separately.

## **DATA AND METHODS**

### **Data**

Our analysis of racial identity, racial discrimination, and self-rated health is based on data from the 2004 wave of the Behavioral Risk Factor Surveillance System (BRFSS), an ongoing collaborative project between U.S. states and territories and the Centers for Disease Control and Prevention (CDC). The BRFSS is designed to assess behavioral risk factors and preventive health practices that are linked to chronic diseases, injuries, and preventable infectious diseases

in the adult population (aged 18 and older). Households with telephones in each state were selected via a disproportionate stratified sample design, based on areas with a high or low density of telephone numbers. Respondents were then selected based on a random sample of one adult per household, using a computer-assisted telephone interviewing (CATI) system.

We utilize information from two parts of the BRFSS questionnaire: the core component and the optional modules. The core component asks a standard set of questions of respondents in all U.S. states and territories, and includes demographic measures in addition to current health-related perceptions, conditions, and behaviors (e.g., health insurance, tobacco use, disability). The optional modules are sets of questions focused on specific topics that states can elect to use on their questionnaires. Twenty optional modules were included in the 2004 BRFSS, and we draw upon information from the “reactions to race” module. Eight states asked these questions in 2004 -- including Arkansas, Colorado, Delaware, Washington DC, Mississippi, Rhode Island, South Carolina, and Wisconsin – totaling 37,663 respondents. We limit this sample based on two criteria. First, we restrict the same to non-Hispanic White and Black adults ( $n = 34,201$ ), since these are the two racial groups large enough to support a stratified analysis.<sup>1</sup> Second, we limit the sample to valid cases on included measures ( $n = 27,541$ ).

## **Measures**

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<sup>1</sup> While there are enough cases to also including Hispanic adults, we removed them from the analysis because of the lack of information regarding nativity in the BRFSS. This is problematic not only because of the strong differences in health status documented between foreign- and native-born Hispanics, but also because studies have shown that the manner in which Hispanic adults evaluate their self-rated health differs by acculturation level (Finch et al. 2002). Since the BRFSS did not collection information on nativity or acculturation, we regrettably removed Hispanic respondents from our analysis.

Our main outcomes measure in this paper is self-rated health. All respondents were asked to rate their general health on a five-point scale, where 1 = poor, 2 = fair, 3 = good, 4 = very good, and 5 = excellent. This is a powerful measure of health, as studies have consistently found it to be an independent predictor of mortality and morbidity (Benyamini and Idler 1999; Idler and Benyamini 1997). We recode this measure into two categories that contrasts bad health (1 = poor or fair self-rated health) against good health (0 = good, very good, or excellent health). We examine this dichotomous version so we can examine the conditions which result in the most problematic outcome from a health standpoint – and this is especially relevant for understanding racial disparities, given the strong differences in health outcomes seen between White and Black adults.

### ***Measures of Racial Discrimination***

Our main independent measures of interest are a dichotomous measure of racial identity (where 1 = Black and 0 = White), along with five measures that tap aspects of respondent's experiences with race and racial discrimination. For clarity, we describe this group of variables as measures of racial discrimination, although we acknowledge that they do not all directly assess mis-treatment based on an individual's race. First, we include a measure of how often respondent's think about their race, where 1 = at least once a day, and 0 = less than once a day. Next, we include two dichotomous measures that measure whether respondents feel they are treated worse than member of other racial groups at work (1 = yes, 0 = no) and when seeking health care (1 = yes, 0 = no).<sup>2</sup> We also include two variables that measure respondent's

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<sup>2</sup> The percent missing on most measures was quite low, with the exception of perceptions of racial treatment at the doctor's office (11.1%) and annual household income (10.4%). As a result, we did not remove cases with missing information on these variables. For both measures we included a dichotomous measure that flagged missing cases,

emotional and physical reactions to race-based treatment during the last 30 days: (1) whether respondents felt emotionally upset because of how they were treated, based on their race (1 = got upset, 0 = did not get upset), and (2) whether respondents experienced any physical symptoms (e.g., headache, upset stomach, pounding heart) as a result of how they were treated, based on their race (1 = experienced physical symptoms, 0 = no symptoms).

Our control measures are clustered into four groups: demographic characteristics, socioeconomic status, health behaviors, and health problems. We control for five demographic characteristics in our analysis. In addition to gender (1 = female, 0 = male) and a continuous measure of age at interview, we include a three-level categorical measure of the number of adults living in the home: none (reference), one, and two or more. We also include a dichotomous measure of whether any children under the age of 18 are living in the home (1 = yes, 0 = no). Last, we control for a categorical measure of marital status, which identifies married (reference), divorced or separated, widowed, and never married adults.

We also include six measures of socioeconomic status, including a categorical measure of the highest grade of school completed: less than a high school diploma (reference); high school graduate; attended college or technical school but did not graduate; and graduated from college or technical school. Annual household income is added as an ordinal measure with five categories: less than \$1=25,000 (reference); \$25,000 to \$49,999; \$50,000 to \$74,999; \$75,000 and above; and missing on income (see Footnote #2). Current employment status is added as a categorical measure that contrasts persons who are currently working for wages or are self-

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and include these as controls in all models (not shown).



employed (reference), with persons who are unemployed, homemakers, students, retired, or are unable to work. We also include three measures that are related to medical care access: whether or not respondents currently have medical insurance (1 = yes, 0 = no); whether or not they have one person who they think of as their personal doctor or health care provider (1 = yes, 0 = no); and whether they skipped needed medical care during the last year because of the financial cost (1 = yes, 0 = no).

Four measures of health behaviors are also included. First, we use a categorical measure of current smoking status, contrasting respondents who do not smoke (reference) with former smokers, persons who smoke on some days, and persons who smoke every day. Second, we include a dichotomous measure of whether respondents drink heavily on a daily basis (1 = yes, 0 = no), with heavy drinking defined as men who drink more than two drinks per day, and women who drink more than one drink per day. Third, we include a categorical measure of body weight: overweight, obese, and neither overweight nor obese (which we refer to as “normal” weight, and treat as the reference category). Fourth, we include a dichotomous measure of whether or not respondents participated in any physical activities or exercises outside of their job during the past month (1 = yes, 0 = no).

Our last set of control measures capture two aspects of health problems – both of which vary strongly between Black and White adults (CDC 2003; NHIS 2003), and likely contribute to racial disparities in self-rated health. First, we construct a measure of current asthma where 1 = respondent has ever been told by a doctor, nurse, or other health professional that they have asthma, and they report that they still have it now, and 0 = does not currently have asthma.

Second, we include a measure of whether or not respondents have ever been told by a doctor that they have diabetes (1 = yes, 0 = no).

## **Analysis**

All analyses are run using the STATA software package (StataCorp 2003). We utilize Taylor-series-approximate methods with SVY commands to adjust for the complex sample design of the BRFSS. All analyses in this paper are also weighted with the final sampling weight (that accounts for differences in the basic probability of selection among strata, and includes an adjustment for the number of adults and telephone lines within a household, in addition to poststratification and nonresponse adjustments), and control for state of residence given that this analysis includes respondents living in only eight U.S. states.

## **RESULTS**

### **Descriptive Statistics**

Table 1 present sample characteristics for the BRFSS adults included in this analysis, separately for White and Black adults. Looking at the first row, we see that White adults report a significantly lower rate of poor-to-fair self-rated health than Black adults (13.4% vs. 21.0%, respectively). Although these rates somewhat higher than estimates derived from national samples (see National Center for Health statistics 2007), the racial disparity in SRH is similar to what occurs nationwide.

— Table 1 about here —

In terms of racial discrimination, Table 1 shows strong differences between Black and White adults. Not surprisingly, Blacks report that they think about their race significantly more

often than Whites, and a greater proportion believe that they have been treated more poorly than other racial groups. For example, while 1.9 percent of White adults report that they have been treated worse than persons from other racial groups when seeking health care, this rises to 10.5 percent of Black adults. A significantly higher proportion of Blacks also report physical and emotional reactions to race-based treatment during the past month. For example, while only 3.5 percent of White adults report feeling upset because of how they were treated based on their race, almost one-in-five Black adults (19.2%) report these feelings.

For the remaining measures in Table 1, the patterns reflect known disparities between Blacks and Whites. White adults are significantly more likely to be married, but a lower proportion report having children living in their household. Whites also are on firmer economic footing, as they report significantly higher education levels, greater household income and health insurance, and about half as many Whites than Blacks report that they skipped a medical visit in the last year because of the cost (10.8% vs. 20.9%, respectively). While Blacks report higher rates of health problems, the pattern of health behaviors is more mixed. White adults report significantly more exercise and low levels of obesity, but Black adults report significantly less heavy drinking and smoking (although, among smokers, an equal proportion of Black and White adults report that they smoke every day, and fewer Blacks report that they have quit smoking).

### **Self-Rated Health Models**

Table 2 shows the racial disparity in SRH by displaying the odds of reporting fair-to-poor SRH for Black adults relative to Whites. The first column presents models for each predictor

that adjust only for age and state of residence. We then assess whether the Black-White disparity in SRH is independent of racial discrimination (Model 1), demographic background (Model 2), socioeconomic factors (Model 3), and health behaviors and problems (Model 4), and we present our full model, which simultaneously controls for all these measures, in Model 5.

— Table 2 about here —

Looking at the age-adjusted models, we see that Black adults are 1.9 times as likely to report poor-to-fair SRH than White adults. Furthermore, each measure of racial discrimination is significant: the odds of reporting poor-to-fair SRH is significantly higher if adults (a) think about their own race at least daily; (b) if they believe have been treated worse than members of other racial groups at work or in a health care setting; and (c) if they report getting emotionally upset, or having a physical reaction, to race-based treatment during the last month. Model 1 simultaneously controls for each measure of racial discrimination, and the odds ratio for Black-White differences in SRH is reduced by 21 percent (odds ratio = 1.50). Three measures of racial discrimination also remain significant: worse treatment at a doctor's office, and having had an emotional or physical reaction to perceived race-based treatment during the last month.

Models 2 through 4 sequentially test whether adjusting for demographic, socioeconomic, and health behaviors/problems can account for the relationship between poor-to-fair SRH and race, as well as racial discrimination. Looking at Model 2, we see that adjusting for demographic characteristics has only a small effect on the Black-White disparity in SRH (odds ratio = 1.41), and the odds ratios for the measures of racial discrimination change slightly. Model 3, however, shows that socioeconomic status differences between White and Black adults are much more

important – all are significant predictors of poor-to-fair SRH (with the exception of medical insurance). Indeed, adjusting for socioeconomic status in addition to racial discrimination explains the remaining racial disparity in SRH (odds ratio = 1.08). This reduction is not driven by SES alone; additional modeling (not shown) revealed that the odds ratio for Black race remains significant when adjusting for only socioeconomic measures; it is the combination of racial discrimination and socioeconomic status that explains-away the effect of Black race on poor-to-fair SRH. Model 3 also shows that while adjusting for socioeconomic status reduces the odds ratio for racial discrimination measures (especially perceived treatment in health care settings), all remain significant predictors of poor-to-fair SRH.

Model 4 adds measures of health behaviors and problems to Model 1. All are significant predictors of poor-to-fair self-rated health (with the exception of heavy drinking), and the odds ratio for Black-White disparity is reduced, but it remains significant (odds ratio = 1.25). In Model 5 we simultaneously adjust for all measures listed in Table 2. In the fully adjusted model racial differences in SRH are no longer significant (odds ratio = .97), although the measures of racial experience remain significant. Indeed, independent of racial identity, adults who report being treated worse than other races when seeking healthcare are 1.83 times as likely as adults who make no such claim to report fair-to-poor SRH, and adults who report getting emotionally upset, or having physical symptoms, because of race-based treatment are 41 and 42 percent more likely respectively, to report fair-to-poor SRH than adults whose health is not affected by race-based treatment.

### **Interactions between Race and Discrimination**

Thus far we have established that perceived racial discrimination and social class explain a large portion of the differences between Blacks and White in their SRH. Prior studies suggest this is the case because of the unique implications of racial discrimination for the health of the African Americans, however few have tested whether discrimination matters for the health of Whites. The independent influence of racial discrimination lead us to test whether the influence of racial discrimination differed between Whites and Blacks. As we stated earlier, Williams et al (1997) uncovered the intriguing interaction between race and discrimination using the Detroit Area study where the effect of racial discrimination was actually *worse* for the health of Whites than for Blacks. We take a similar approach in our data. Specifically, we tested interactions between race and each measure of racial discrimination listed in Table 2.<sup>3</sup> Only one measure – worse treatment at doctor – was significant when added to Model 1. For ease of interpretation, we graph this interaction with predicted probabilities (see Figure 1).

Looking at the graph, we see that the probability of reporting poor-to-fair SRH is higher for both Black and White adults when they report receiving worse health care treatment than other races. However, the impact of this experience is significantly *greater* for White adults. For Whites, there is a 16-point gap in the probability of reporting poor-to-fair SRH when comparing adults who have and have not been treated worse when seeking health care (11% vs. 27%), compared to a 5-point gap for Blacks (16% vs. 21%). Looking across the models, we see that adjusting for socioeconomic status (in Model 3) causes the interaction term to become non-significant (along with the main effect for the Black-White disparity, as discussed above). Thus,

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<sup>3</sup> Following Hosmer and Lemeshow (2000), we tested for significant interaction terms by first adding each interaction term, one a time, to Model 1 in Table 2. All significant interaction terms were added as a group to the model, and those that remained statistically significant, and improved the model fit, are discussed in the text.

it appears that socioeconomic status also explains the elevated reaction of White adults to perceived mistreatment, based on their race, when seeking health care.

— Figure 1 about here —

### **Racial Discrimination Models**

The patterns we uncover thus far point to a complex interplay between race, discrimination, and socioeconomic status in assessing health. In the previous analyses, we show that racial discrimination makes a larger difference in the self-rated health of Whites as compared to Blacks (see Figure 1). However, this interaction becomes null once social class background is controlled (see above), suggesting that deleterious effects of discriminatory experiences are strongly linked to class background. To disentangle these relationships, we first ask the following question: how does class condition reports of racial discrimination for Blacks as opposed to Whites? In the forthcoming analyses, we explore the relationship between race, socioeconomic status, and racial discrimination in more detail to try and get a better sense of the findings described above. Specifically, in Table 3 we regress each measure of racial discrimination on race and socioeconomic status, and simultaneously test for significant interactions between the two.

— Table 3 about here —

Looking at Table 3 we see several significant interactions, although the specific terms vary by outcome. For three measures the interaction between Black \* annual household income is significant. As the interpretation is very similar across all three measures, we only present the graph for one measure, feeling upset because of race treatment, in Figure 2. Looking at the graph

we see that while the probability of feeling upset due to racially based treatment is slightly elevated among the poorest White adults, it increases with income level for Black adults. Indeed, the Black-White gap is smallest among the poorest adults (4% among Whites and 11% among Blacks), and largest among the richest adults (2% among Whites and 22% among Blacks). Overall, it appears that with rising income, Black adults are increasingly likely to report emotional upset (as well as physical symptoms and thinking daily about their race) due to perceived race-based treatment, while among Whites, their probability of reporting these experiences declines somewhat.

— Figure 2 about here —

Table 3 also shows a significant interaction between Black \* education for two measures: perceived worse treatment at work, and when seeking health care, compared to other races. Again, as the interpretation for both interactions is very similar, we only graph the interaction for perceived worse treatment when seeking health care in Figure 3. What is immediately apparent is how similar the race pattern is with that described for the interactions between race and income. As education rises, the probability of perceiving worse treatment declines for White adults, but increases for Black adults. The decline for Whites is more pronounced, and linear, than it was for income, but again we see that the biggest increase in perceived mistreatment occurs among the most high-status Blacks – in other words, among those who have graduated from college.

— Figure 3 about here —



The final interaction seen in Table 3 is between Black \* ever skipped needed medical care last year because of the financial cost. This interaction is only significant in the model predicting whether adults perceive that they have been treated worse when seeking health care than other races. Looking at Figure 4, we see that the probability of perceiving worse treatment is higher when adults have had to skip needed medical care because of the cost compared to when they have not. However, the size of the increase is higher among Whites (whose probability is about three times greater) than among Blacks (whose probability is about two times greater).

— Figure 4 about here —

## **CONCLUSIONS AND PROPOSED ANALYSES**

The analysis uncovers the following findings. The findings described in Table 2 indicate a prominent role of socioeconomic status in shaping the relationship between racial experiences and self-rated health status, and that adjusting for both racial experiences and socioeconomic status explains the Black-White disparities in self-rated health. Furthermore, while Table 1 demonstrates that Black adults report more racial experiences than White adults, Figure 1 suggests that the impact of racial experiences may be more detrimental to Whites – at least in terms of self-reported health. However, adjusting for these measures (+ SES) explains the racial disparity in SRH. because Blacks report far more discriminatory treatment.

Our models also shows that, after adjustment for background characteristics and other controls, perceived mistreatment because of race remains harmful to health. The effects of three measures (worse treatment by doc, upset because of treatment, physical symptoms because of treatment) remain significant predictors of SRH – indicating that regardless of one’s own race,

these experiences hurt perceived health status. Yet, we also find some evidence that the magnitude of this harmful effect on health is worse for whites. Adjusting for these measures reduced the Black-White SRH gap because Blacks report more of these experiences than Whites – but when Whites feel they have been mistreated, the size of the effect on SRH is larger. What is notable is that this effect becomes null once we adjust for socioeconomic status. We wish to reiterate that among those who do NOT report worse treatment, the probability of reporting poor-to-fair SRH is higher among Blacks. Ultimately, health is poorer among this sub-population even though the addition “hit” of being treated in a racially biased way at doctor’s office is less harmful. It is unclear, however why this experience is so harmful for whites.

The final set of analyses presented here examine the interplay of race, social class and discrimination. Our analyses show that the impact of socioeconomic class on perceived racial discrimination differs sharply between Whites and Blacks. Social class indicators, such as education and income, are negatively related to reports of perceived discrimination for whites while being positively associated to perceived discrimination among Blacks. This class dimension suggests that racial discrimination reports from Whites come from primarily poor Whites while reports of racial discrimination from Blacks come from those who are well educated and upper-income Blacks.

#### *PROPOSED ANALYSES*

The final stage of this analysis is to assess the meaning of this inter-play for self-rated health. We will explore how the impact of racial discrimination on health varies across social class for

Whites and Blacks separately. We anticipate that the influence of racial discrimination on health is both class-based as well as race-based.

## REFERENCES

- Benyamini, Yael and Ellen L. Idler. 1999. "Community Studies Reporting Association Between Self-Rated Health and Mortality: Additional Studies, 1995-1998." *Research on Aging* 21(3): 392-401.
- Brondolo, Elizabeth, Ricardo Rieppi and Kim P. Kelly and William Gerin. 2003. "Perceived Racism and Blood Pressure: a Review of the Literature and Conceptual and Methodological Critique". *Annual Review of Behavior Medicine* 25: 55-65
- Crimmins, Eileen M. Mark D. Harward, and Teresa Seeman. 2004. "Race/Ethnicity, Socioeconomic Status and Health" In *Critical Perspectives on Racial and Ethnic Differences in Health in Later Life*. Washington, DC : National Academy Press.
- Feagin, Joseph and Melvin Sykes. 1994. *Living with Racism: the Black Middle Class Experience*. Beacon Press: Boston
- Finch, Brian Karl, Robert A. Hummer, Maureen Reindl, and William A. Vega. 2002. "Validity of Self-Rated Health among Latino(a)s." *American Journal of Epidemiology* 155(8): 755-9.
- Hosmer David W. and Stanley Lemeshow. 2000. *Applied Logistic Regression, Second Edition*. New York: John Wiley & Sons, Inc.
- Idler, Ellen L. and Yael Benyamini. 1997. "Self-Rated Health and Mortality: A Review of Twenty-Seven Community Studies." *Journal of Health and Social Behavior* 38(1): 21-37.
- Kessler, Ronald C., Mickelson, and David Williams. 1999. "The Prevalence Distribution and Mental Health Correlates of Perceived Discrimination in the United States" *Journal of Health and Social Behavior* 40: 208-230.
- Krieger, Nancy 2000. "Discrimination and Health" Pp 36-75 in *Social Epidemiology*. Lisa Berkman and Ichiro Kawachi (editors) Oxford University Press: Oxford.
- , and Stephen Sidney 1996. "Racial Discrimination and Blood Pressure: The CARDIA Study of Young Black and White Adults". *American Journal of Public Health* 86: 1370-1378.

Morris, Edward. 2005. "From 'Middle Class' to 'Trailer Trash' Teachers Perceptions of White Students in a Predominately Minority School" *Sociology of Education* 78: 99-121

Paradies, Yin. 2006. "A systematic Review of empirical research on self-reported racism and health". *Ethnicity and Health* 35: 888-901.

Ren, Xinhua S. Benjamin Amick, David Williams. 1999. "Racial/ethnic Disparities in health; the interplay between discrimination and socioeconomic status" *Ethnicity and Disease* 9: 151-165.

Schultz, A. B. Israel, D. Williams, E. Parker, A. Becker, and S. James. 2000. "Social Inequalities stressors, and self-reported health status among African Americans and white women in Detroit Metropolitan Area" *Social Science and Medicine* 51: 1639-1653

StataCorp. 2003. *Stata Statistical Software: Release 8.0*. College Station, TX: Stata Corporation.

Williams, David R. And Harold Neighbors. 2001. "Racism, Discrimination, and Hypertension: Evidence and Needed Research" *Ethnicity and Disease* 11: 800-816.

----- Harold Neighbors, and Jackson 2003. "Race/Ethnic Discrimination and Health: Findings from Community Studies" *American Journal of Public Health*. 93: 200-208.

----- Yan Yu, James S. Jackson, and Norman B. Anderson. 1997. "Racial Differences in Physical Mental Health: Socioeconomic Status, Stress, and Discrimination" *Journal of Health Psychology* 2: 335-351.

Wray, Matt 2006. Not Quite White: White Trash and the Boundaries of Whiteness. Duke University Press: Durham.

**Table 1. Sample Characteristics**

	White	Black
<b><i>Dependent Measure</i></b>		
Poor-to-fair self-rated health, %	13.4	21.0***
<b><i>Racial Discrimination</i></b>		
Thinks about own race at least once a day, %	5.1	33.8***
At work, worse treatment compared to other races, %	2.3	13.5***
At doctor, worse treatment compared to other races, %	1.9	10.5***
Felt upset because of treatment based on own race, %	3.5	19.2***
Physical symptoms because of treatment based own race, %	1.5	10.1***
<b><i>Demographic Measures</i></b>		
Age, mean (SD)	46.4 (17.3)	41.2 (17.9)***
Female, %	51.1	55.0***
Marital status, %		
Married	64.6	37.8***
Divorced or separated	10.3	16.4***
Widowed	6.5	6.7
Never married	18.6	39.0***
Other adults in household, %		
None	16.8	24.0***
One	62.7	45.4***
Two or more	20.5	30.6***
Any children in household, %	38.2	50.8***
<b><i>Socioeconomic Measures</i></b>		
Completed education, %		
< HS	7.1	16.9***
High school graduate	31.1	38.0***
Some college	27.0	26.2
College graduate	34.7	18.8***
Annual household income, %		
<\$25,000	19.6	44.4***
\$25,000 - \$49,999	29.5	29.1
\$50,000 - \$74,999	17.8	9.0***
\$75,000 and above	22.8	6.8***
Missing	10.3	10.7

**Table 1. Sample Characteristics**

	White	Black
Employment status, %		
Employed	64.1	60.4**
Unemployed	4.8	9.9***
Homemaker	5.8	3.0***
Student	3.6	5.9***
Retired	17.2	11.0***
Unable to work	4.5	9.8***
No medical insurance, %	11.4	23.0***
No doctor last year because of cost, %	10.8	20.9***
Has a personal doctor, %	83.9	76.7***
<b><i>Health Behaviors</i></b>		
Smoking status, %		
Non-smoker	51.9	63.6***
Former smoker	25.8	13.6***
Smoke some days	5.3	7.6***
Smoke every day	17.0	15.3
Heavy drinker, %	6.1	3.6***
Body Mass Index, %		
Normal	42.1	28.6***
Overweight	36.9	35.0
Obese	21.0	36.4***
Any exercise, %	81.1	68.3***
<b><i>Health Problems</i></b>		
Asthma	7.9	9.0
Diabetes	6.8	11.6***
Sample Size	23,262	4,279

\*\*\*p ≤ .001, \*\*p ≤ .01, \*p ≤ .05 (two-tailed t-test, relative to White adults).

**Table 2. Odds Ratios from Logistic Regression Models: Poor-to-Fair Self-Rated Health among Adults (n = 27,541)**

	Age- Adjusted	Model 1	Model 2	Model 3	Model 4	Model 5
Black	1.90***	1.50***	1.41***	1.08	1.25**	.97
<b><i>Racial Discrimination</i></b>						
Thinks about own race at least once a day	1.53***	1.04	1.03	1.02	1.05	1.01
At work, treated worse than other races <sup>a</sup>	2.12***	1.23	1.21	1.17	1.11	1.09
At doctor, treated worse than other races	3.79***	2.98***	2.88***	1.92***	2.56***	1.83***
Felt upset because of race treatment	2.73***	1.41**	1.40*	1.38*	1.44**	1.41*
Physical symptoms because of race treatment	3.74***	1.87***	1.86***	1.48*	1.66**	1.42*
Black * worse treatment at doctor		.46**	.48**	.73	.56*	.78
<b><i>Demographic Measures</i></b>						
Age	1.04***	1.04***	1.04***	1.04***	1.04***	1.04***
Female	1.15**		.95			.94
Marital status (reference: married)						
Divorced or separated	2.10***		1.84***			1.27*
Widowed	1.42***		1.30**			1.02
Never married	1.78***		1.25*			1.18
Other adults in household (reference: none)						
One	.71***		1.10			1.10
Two or more	.99		1.29**			1.24*
Any children in household	.83**		.93			.81**
<b><i>Socioeconomic Measures</i></b>						
Completed education (reference: < HS)						
High school graduate	.44***			.58***		.63***
Some college	.33***			.51***		.59***
College graduate	.15***			.31***		.42***
Annual household income (ref: <\$25,000)						
\$25,000 - \$49,999	.39***			.70***		.73***
\$50,000 - \$74,999	.23***			.53***		.59***
\$75,000 and above	.14***			.40***		.47***
Employment status (reference: employed)						
Unemployed	2.54***			1.52***		1.53***
Homemaker	1.72***			1.39**		1.63***
Student	3.65***			2.76***		2.78***
Retired	1.42***			1.24**		1.37***
Unable to work	14.99***			9.08***		7.61***
No medical insurance	1.94***			1.03		.99



**Table 2. Odds Ratios from Logistic Regression Models: Poor-to-Fair Self-Rated Health among Adults (n = 27,541)**

	Age- Adjusted	Model 1	Model 2	Model 3	Model 4	Model 5
No doctor last year because of cost	3.63***			2.24***		2.03***
Has a personal doctor	1.08			1.33***		1.24*
<b>Health Behaviors</b>						
Smoking status (reference: non-smoker)						
Former smoker	1.30***				1.28***	1.24***
Smoke some days	1.87***				1.68***	1.40*
Smoke every day	2.48***				2.40***	1.86***
Heavy drinker	.90				.94	.92
Body Mass Index (reference: normal)						
Overweight	1.12				1.12	1.10
Obese	2.33***				1.82***	1.74***
Any exercise	.31***				.45***	.51***
<b>Health Problems</b>						
Asthma	2.90***				2.06***	1.91***
Diabetes	4.29***				3.28***	3.10***
Pseudo R <sup>2</sup>		.18	.18	.22	.25	.27

NOTE: All models adjust for age and state of residence.

<sup>a</sup>When included, model is also adjusted for employment status.

\*\*\*p ≤ .001, \*\*p ≤ .01, \*p ≤ .05 (two-tailed t-test).

**Table 3. Odds Ratios from Logistic Regression Models Predicting Individual Racial Experiences**

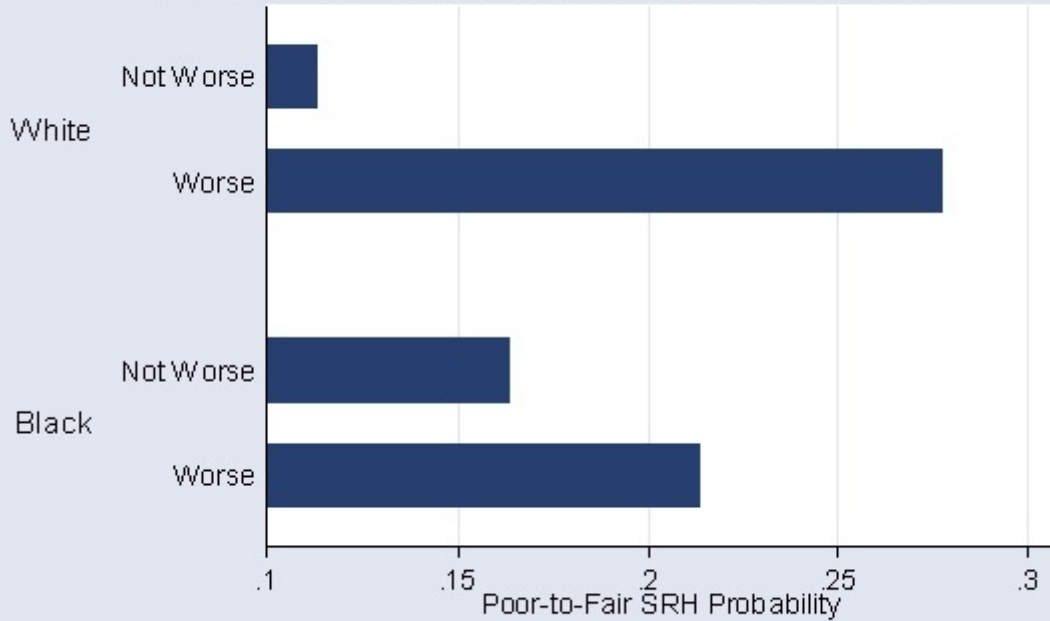
	Thinks about own race at least daily	Treated worse at work than other races <sup>a</sup>	Treated worse at doctor than other races	Felt upset because of race treatment	Physical symptoms b/c race treatment
Black	4.96***	3.54***	3.42***	2.71***	2.76***
<b><i>Socioeconomic Status</i></b>					
Completed education (reference: < HS)					
High school graduate	1.01	.74	.83	.99	.87
Some college	1.05	.78	.57*	1.06	.94
College graduate	1.37**	.33***	.34***	1.09	.89
Annual household income (reference: <\$25k)					
\$25,000 - \$49,999	.58***	1.02	.71**	.59***	.59*
\$50,000 - \$74,999	.48***	.94	.57**	.58***	.50**
\$75,000 and above	.45***	.80	.85	.50***	.43***
Employment status (reference: employed)					
Unemployed	1.23		1.23	1.78***	1.77**
Homemaker	.87		.98	1.05	1.04
Student	1.12		1.35	1.33	1.17
Retired	.62***		.95	.47***	.40***
Unable to work	1.01		2.00***	1.34*	1.64**
No medical insurance	1.05	.89	1.11	.69***	.79
No doctor last year because of cost	1.57***	2.26***	5.86***	3.01***	3.93***
Has a personal doctor	.83*	1.20	.79	.94	1.17
<b><i>Interaction Terms</i></b>					
Black * income \$25,000-\$49,000	1.91***			2.12***	2.15**
Black * income \$50,000-\$74,999	2.88***			2.18***	2.39**
Black * income \$75,000 and above	3.49***			4.50***	3.27***
Black * High school graduate		1.47	1.46		
Black * Some college		1.10	1.91*		
Black * College graduate		3.87***	4.80***		
Black * No doctor last year because of cost			.39***		
Pseudo R <sup>2</sup>	.17	.13	.17	.14	.17
Sample Size	27,541	17,106	24,147	27,541	27,541

NOTE: Models control for state of residence and all measures listed in Table 1. \*\*\*p ≤ .001, \*\*p ≤ .01, \*p ≤ .05 (two-tailed t-test).

<sup>a</sup>Limited to persons who are working or who were employed sometime during the last year.

**Figure 1. Predicted Probability of Poor-to-Fair SRH**

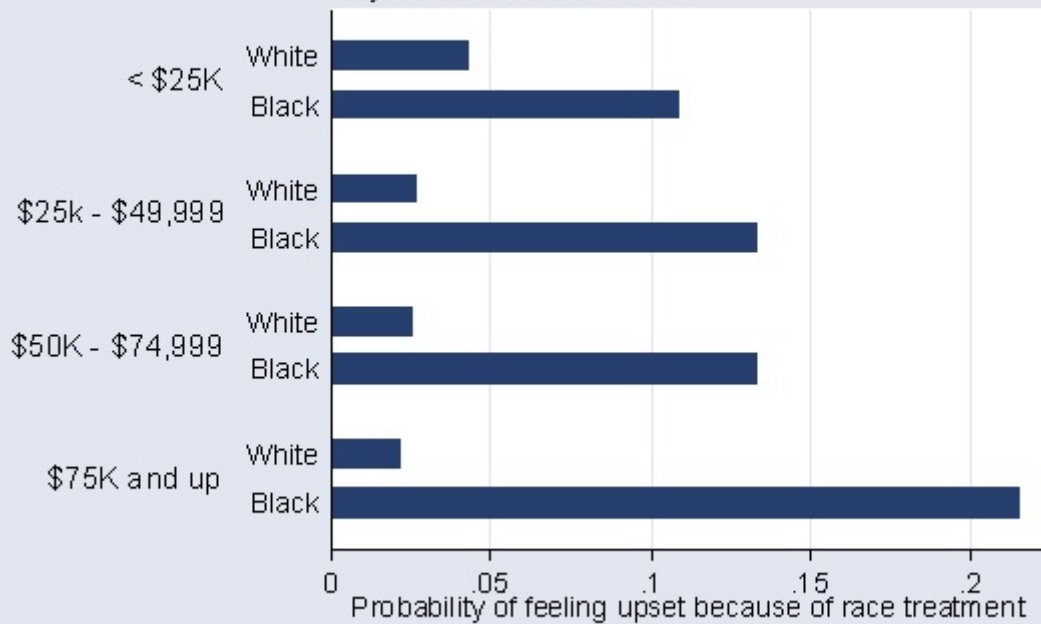
By Race and Treatment at Doctor Compared to Other Races



Note: Based on Table 2, Model 1

**Figure 2. Adjusted Probability of Feeling Upset**

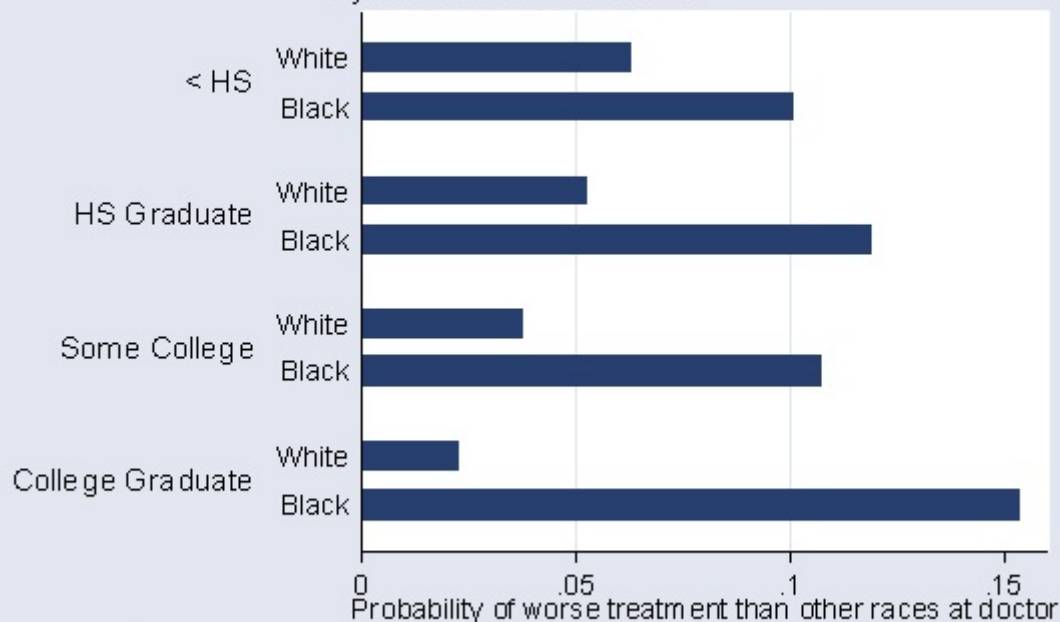
By Race & Income Level



Note: Based on Table 3

**Figure 3. Adjusted Probability of Worse Treatment at Doctor**

By Race & Education Level



Note: Based on Table 3

**Figure 4. Adjusted Probability of Worse Treatment at Doctor**

By Race & No Doctor Last Year Because of \$\$ Cost



Note: Based on Table 3

