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The Role of Coping in Moderating the Relationship between Racism-Related Stress and Self-Reported General Health among Asians and Latinas/os in the United States

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by

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ABSTRACT

The Role of Coping in Moderating the Relationship between Racism-Related Stress and Self-Reported General Health among Asians and Latinas/os in the United States

by

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Previous research has shown an association between racism-related stress and negative health outcomes among African Americans and the moderating effect of coping strategies on this relationship. Yet, scant attention has been paid to this relationship for two of the largest minority groups in the United States: Asians and Latinos/as. Using the 2009 California Health Interview Survey (CHIS) and a framework derived from stress process and biopsychosocial models, this study examines the relationship between self-reported racism-related stress, coping strategies, and self-rated general health among Asians and Latinas/os in the U.S. Findings demonstrate that racism-related stress has a negative effect on the general health of Asians and Latinas/os; however, and contrary to research to prior research, coping strategies do not moderate this relationship. This study contributes to health disparities research by documenting racism as a stressor that negatively impacts the health of Asians and Latinos/as and the limits of coping strategies to moderate this relationship.

INTRODUCTION

Social science research has demonstrated convincingly that racism affects the life chances of racial minorities, from employment (Fix and Struyk 1993; Braddock and McPartland 1987; Pager and Shepherd 2008) and educational opportunities (Anderson 1988; Howe 1997; Nora, Amaury and Alberto 1996) to housing (Gee 2002; Massey 2001) and wealth (Blau and Graham 1989; Oliver 2006). Racism is defined as the "beliefs, attitudes, institutional arrangements, and acts that tend to denigrate individuals or groups" based on their racial classification, as determined by phenotype, ancestry, and ethnic group affiliation (Clark, Clark and Williams 1999:805). Research focusing on health disparities suggests that perceptions of racism, or the subjective experience of racism (Clark, Clark, and Williams 1999), contribute to negative health outcomes including depression (Banks et al. 2006; Umaña-Taylor and Updegraff 2007; Noh et al. 2007; Karlsen and Nazroo 2002; Guthrie et al. 2002), anxiety (Banks et al. 2006), psychological distress (Kessler, Mickelson and Williams 1999; Taylor and Turner 2002), high blood pressure and hypertension (Williams and Mohammed 2009), and respiratory illness (Karlsen and Nazroo 2002).

One explanation for the relationship between racism and negative physical and mental health outcomes is related to increases in stress (Pearlin 1989), or racism-related stress. However, many studies do not directly investigate how racism-related stress affects health outcomes. Instead studies have focused on racism as an independent variable that directly influences health outcomes such as depression and anxiety (Banks et al. 2006). This study focuses on racism-related stress as an independent variable that affects health outcomes. A consideration of racism-related stress is essential to understand the multifaceted relationship between racism and health because the magnitude of racism-related stress can intensify adverse health outcomes.

Moreover, much of this research has focused on observed health disparities between African Americans and Whites (Krieger and Sidney 1996; Yen et al. 1999; Williams, Jackson, and Anderson 1997; Williams and Williams-Morris 2000; Taylor and Turner 2002; Guthrie et al 2002; Seller and Shelton 2003; Seller et. al 2003; Seller et al. 2006; Feagin 2004; Williams and Mohammed 2009). Despite the contributions this body of literature has made to understanding the broad impact of racism on health, there is limited research on this relationship for non-Black groups or comparisons between non-Black racial minority groups (e.g., Asians compared to Latinas/os). This study focuses on Asians and Latinos/as because these minority groups experience racism in myriad ways, from being perceived and treated as perpetual foreigners who are assumed to speak a language other than English or possess limited English language skills (Gee et al. 2009; Shariff-Marco et al. 2009; Miller et al., 2012; Liang, Li, and Kim 2004), to experiencing discrimination in public places like work, hospitals, or schools (Hwang and Goto 2008); yet, the impact of racism-related stress on the health outcomes of these groups is unclear.

This project uses the 2009 California Health Interview Survey (CHIS) to examine how racism-related stress affects the self-reported general health outcomes of Asians and Latinas/os in the United States, and how coping strategies may moderate this relationship. This study asks: "How does racism-related stress impact the self-reported general health of Asians and Latinas/os in the United States?" And, "To what extent do coping strategies moderate the effect of racism-related stress on self-reported general health?"

Coping strategies examined include (1) *problem-focused coping*, or active coping, like talking to someone; (2) *emotion-focused coping*, i.e., passive coping, like accepting racism as a fact of life; (3) *prayer or meditation as a coping strategy* and (4) *anger as a coping strategy*, like getting into a physical fight or argument.

LITERATURE REVIEW

Racism, Racism-Related Stress, and Health

Clark, Clark and Williams (1999) employ a biopsychosocial model to examine the way perceived racism impacts various health outcomes. They contend that the "psychological and physiological stress responses to perception of racism" may eventually and cumulatively affect health outcomes (806). For example, they explain that when African Americans experience racism in a given environment or context it initiates a psychological stress response. Once the psychological stress response arises it "may increase susceptibility for an array of health outcomes" (Clark, Clark and Williams 1999:811).

Another way to understand the process by which racism impacts health outcomes is through the stress process (Pearlin 1989). The stress process identifies three components: social stressors, stress mediators, and stress outcomes (Pearlin 1989). These stressors arise from the larger social structure in which people are embedded and their social location (Pearlin 1989), such as their racial group affiliation, within that structure.

Pearlin (1989) defines social stressors as "experiential circumstances that give rise to stress" (243). By definition, stressors produce stress (Selye 1956; Pearlin 1989). Social stressors include initial, primary stressors and secondary stressors that arise as a consequence of the primary stressors (Pearlin 1989). The literature on stressors has focused on life events and chronic life strains (Pearlin 1989; Aneshensel 1992). Life-event stressors are stressors that change people's usual routine, whereas undesirable life-events "are the most psychologically distressing" (Aneshensel 1992: 17). Aneshensel (1992) adds that a few people who experience life-event stressors can suffer ill health, however, most life events are of "modest magnitude" (Aneshensel 1992: 17). In contrast, chronic strains are enduring stressors that affects people's daily life for an extended period of time (Ong, Fuller-Rowell, Burrow 2009; Pearlin 1989).

Stress mediators alter the effects of stressors; "they are mediators in the sense that they have been shown to govern (or mediate) the effects of stressors on stress outcomes" (Pearlin 1981: 249-250). People usually attempt to alter stress proactively by using behaviors, perceptions, and cognitions to mediate the impact of stress (Pearlin 1981). Some coping behaviors may successfully relieve stress while other coping behaviors can exacerbate stress (Pearlin 1989). Pearlin and Schooler (1978) define coping as "actions that people take in their own behalf as they attempt to avoid or lessen the impact of life problems" (250). Coping is rooted in clinical work and is thought of as unique to individuals but Pearlin (1989) explains that coping is actually shared and normative. Pearlin (1989) adds that coping "is of sociological interest because important elements of coping may be learned from one's membership and reference groups in the same ways as other behaviors are learned and internalized" (250).

The third domain is the stress outcome/health outcomes. The stress process has been used to study several health outcomes: physical health problems (Jackson et al.

1995), psychological distress (Ong, Fuller-Rowell, Burrow 2009), depressive symptoms (Pearlin 1981; Turner and Lloyd 1999; Turner, Wheaton and Lloyd 1995) and well-being (Perry, Harp, and Oser 2013). In this study, I will investigate how racism-related stress affects self-reported general health, which is associated with a respondent's health, i.e., physical health (Brondolo et al 2011).

Perceived Racism Experienced by Asians and Latinas/os

Some research suggests that Asians may experience racism differently from other groups, such as African Americans and Latinos (Iwamoto and Liu 2010). Such differences are rooted in the unique experiences of Asians in the United States, including different patterns of migration and settlement. Additionally, Miller and colleagues (2012) explain that "stereotypes of Asian Americans as academically achieving, economically successful model minorities (Lee, Wong, and Alvarez, 2009) are distinct from the stereotypes of other racial groups" (54). Miller and colleagues (2012) conclude that perceived racism among Asian Americans is unique because it includes the model minority myth.

Research on the relationship between racism and stress among Latinas/os in the United States has suggested that they are likely to experience racism differently from other minority groups, including their "model minority" Asian counterparts. For example, Latinas/os may experience more instances of institutional racism (Fisher, Wallace and Fenton 2000) or criminalization, such as being accused of a crime (e.g., stealing or cheating) compared to Asians (Hwang and Goto 2008). Latinas/os may also experience more racism from authority figures such as police (Fisher, Wallace, and Fenton 2000), judges (Lopez 2009), and educators (Romero and Roberts 2003).

Racism-Related Stress Experienced by Asians and Latinas/os

Research on racism-related stress among Asians and Latinas/os is limited when compared to the case of African Americans (Davis et al. 2005; Guthrie at al. 2002). Harrell's (2000) review of research on racism-related stress indicated that "racism-related stress [among African Americans] has been associated with health-related and physiological outcomes such as hypertension (Anderson, 1989; Jackson et al, 1996; Krieger, 1990), cardiovascular reactivity (Anderson, 1989), cigarette smoking (Landrine & Klonoff, 1996), and physiological arousal (Jones, Harrell, Morris-Prather, Thomas, & Omowale, 1996)" (47-48).

Research on the relationship between racism and racism-related stress among Asians has found that racism significantly predicts racism-related stress among Asian men and women (Liang, Li, and Kim 2004). Much of the research on racism and stress for Latinas/os has focused on acculturation stress (Finch and Vega 2003; Finch et al. 2001; Chavez et al. 1997; DeGarmo and Martinez 2006; Hovey and King 1996) rather than racism-related stress (Kulis, Marsiglia and Nieri 2009). Although some studies find that perceived racism and stress independently affect depressive symptoms (Romero and Roberts 2003) and self-esteem (Romero and Roberts 2003; Edward and Romero 2008) among Latinos, fewer studies consider the effect of racism-related stress on Latino health.

Racism and Self-Reported General Health among Asians and Latinas/os

Various studies find that racism directly impacts the self-rated health of ethnic and racial minority groups (Schulz et al. 2006; Krieger et al. 2001; Brondolo et al. 2011). Self-reported health is the "overall appraisal of one's physical health status" (Brondolo et al 2011:1). Studies have found that self-reported health has a "strong association with objective indices of physical health" (Brondolo et al 2011:1). Harris and colleagues (2006) find that perceived racism is associated with poor or fair self-rated health. Brondolo and colleagues (2011) find that racism in the form of social exclusion and harassment affects Asians, Latinas/os, and Blacks self-reported health. Karlsen and Nazroo (2002) use cross-sectional data from the Fourth National Survey of Ethnic Minorities in Britain to show that racism independently leads to negative health consequences for racial and ethnic minorities. Specifically, they found that verbal abuse, physical attacks, and perceptions of discrimination separately or in combination conditioned poor self-reported health including high blood pressure, myocardial infraction risk, repertory illness, psychosis, and depression (Karlsen and Nazroo 2002). Together these studies indicate that perceived racism affects general health, although the "mechanisms through which perceived discrimination influences self-reported health are not fully understood" (Brondolo et al 2011:1). It is likely that the relationship between racism and health is moderated by stress (Pearlin 1989). For instance, Davis and colleagues (2005) find that, among African Americans who experienced perceived racism, only those individuals that reported higher levels of stress were associated with an increased risk of hypertension, concluding that stress is a critical determinant of poorer physical health. Building on this research, this study examines how racism-related stress affects the self-reported general health outcomes of Asians and Latinas/os who report experiences of perceived racism.

Coping

In addition to examining the relationship between racism-related stress and self-reported health, this study assesses the effect of coping strategies on moderating self-rated health among Asians and Latinas/os, including problem-focused coping (i.e., challenging perceived racism), and emotion-focused coping (i.e., avoiding, ignoring, keeping quiet, or accepting perceived racism), prayer or meditation as a coping strategy, and anger as a coping strategy.

Problem-Focused Coping and Emotion-Focused Coping

Coping strategies can incorporate emotion-focused coping and problem-focused coping (Noh and Kaspar 2003; Edwards and Romero 2008; Krieger and Sidney 1996). Regarding perceived racism, problem-focused coping takes the form of individuals who confront offenders about discrimination (i.e., personal confrontation) (Noh and Kaspar 2003), take legal actions against offenders (i.e., reported to authorities) (Noh and Kaspar 2003), and seek social support (i.e., talked to family or friends) (Noh and Kaspar 2003; Krieger and Sidney 1996; Edward and Romero 2008). Similarly, Edward and Romero (2008) suggest individuals may cope with a stressor by problem solving or talking with someone. Emotion-focused coping takes the form of passive acceptance, or individuals who accept racism as a fact of life, ignore it (Noh and Kaspar 2003; Krieger and Sidney

1996), or distract themselves (Edward and Romero 2008; Noh and Kaspar 2003). Individuals that engage in emotion-focused coping may perceive that nothing can be done to change the stressful situation (Lazarus and Folkman 1984). They may appraise that they do not have the abilities or resources to change the taxing situation (Lazarus and Folkman 1984).

Research on coping with racism has also focused on the case of African Americans (Krieger and Sidney 1996; Ellison, Musick, and Henderson 2008; Lewis-Coles and Constantine 2006; Pittman 2011) and to a lesser extent Asians (Noh and Kaspar 2003; Liang et al. 2007) and Latinas/os (Romero and Roberts 2003; Edward and Romero 2008). Noh and Kaspar (2003) found that problem-focused coping reduced distress associated with perceived discrimination and emotion-focused coping was associated with higher levels of depressive symptoms and negative mental health outcomes among a sample of Korean immigrant adults in Canada. Similarly, Edward and Romero's (2008) study of Mexican youth found that problem-focused coping reduced stress associated with discrimination and protected the youth's self-esteem.

Prayer or Mediation as a Coping Strategy

People who cope with stressors by using religion (i.e., church attendance or praying) report greater self-esteem, lower depression, and lower anxiety (Maltby et al. 1999). Researchers have found that religion can benefit the health of Latinas/os through church attendance (Hovey 2000), religious support networks (García 2005); and wellness promotion interventions (Guinn and Vincent 2002). Religion as a coping strategy may benefit the health of Latinas/os, however, limited studies to my knowledge have examined the role of prayer or meditation in promoting the health of Asians and Latinas/os who experience racism-related stress.

Most of the research on racism-related stress and religion (i.e., church attendance or praying) has focused on African Americans. Cooper, Thayer, Waldstein (2013) find that praying during exposure to racism-related stress results in decreased stress, diastolic blood pressure (DBP), and heart rate variability (HRV) among African Americans. Lewis-Coles and Constantine (2006) explain that African Americans "who perceive being restricted or denied access, mobility, or privileges by institutional policies and practices based on race feel they have less ability to control such stressors" (Lewis-Coles and Constantine 2006: 440) and as a result use collective support, spiritual supports, and spiritual-centered coping to deal with stressors (Lewis-Coles and Constantine 2006). This research suggests that coping strategies may provide relief from racism-related stress among African Americans; however, as Pascoe and Richman (2009) point out, more research is needed on the relationship between racism and stress among non-Black racial minority groups.

Anger as a Coping Strategy

Anger is a common response when perceiving racism because anger may allow a release of frustration and stress (Pittman 2011). Anger as a coping strategy may serve to alter the behavior of others (Swim et al. 2003) or to manage difficult feelings (Brondolo 2009). Most of the research on anger as a coping strategy when experiencing racism has focused on African Americans (Pittman 2011; Dorr et al. 2007; Steffen et al. 2003;

Armstead et al. 1989; Gee 2006; Eftekhari, Turner, and Larimer 2004; Brondolo et al. 2009; Krieger 1990; Krieger and Sidney 1996), and there is little to no research on Latinos/as (Gee 2006; Eftekhari, Turner, and Larimer 2004; Brondolo et al. 2009) and Asians (Eftekhari, Turner, and Larimer 2004).

Anger as a coping strategy is not always productive, as it may lessen experiences with prejudice but affect social relationships (Brondolo 2012). Maan Diong and colleagues (2005) find anger expression to be directly associated with lower levels of perceived support. Anger expression was also directly linked to higher stress levels for African Americans (Maan Diong et al. 2005) and Latinas/os (Edward and Romero 2008). In addition, anger suppression when experiencing discrimination was found to be predictive of high blood pressure and worsened cardiovascular recovery for African Americans (Dorr et al. 2007; Steffen et al. 2003; Armstead et al. 1989). Gee (2006) also finds that anger was negatively associated with declined mental health for Mexican Americans and African descendants. In sum, research on anger as a coping strategy suggests that it may adversely affect Latino (Edward and Romero 2008) and Asian health (Gee 2006).

THEORETICAL FRAMEWORK

This study builds on previous research by examining the relationship between racism-related stress and self-reported general health among Asians and Latinas/os in the United States. Because most of the literature has focused on the relationship between perceived racism and health outcomes, it is critical to identify how racism-related stress affects health outcomes. This study uses the biopsychosocial model (Clark, Clark and Williams 1999), which contends that perceived racism results in psychological and physiological stress responses that influence health outcomes (Clark, Clark and Williams 1999). The study also uses the stress process model (Pearlin 1999; Pearlin 1989) which indicates that stressors (i.e., racism) influence health outcomes (i.e., self-reported general health) and mediators (i.e., coping strategies) may mitigate their impact. Most studies on racism and health argue that social stressors (i.e., racism) impact health outcomes because stressors are inheritably stressful (Pearlin 1999; Pearlin 1989); however, they do not test racism-related stress directly by include racism-related stress in their analysis. Studies that have included racism-related stress have found that racism-related stress moderates or mediates the relationship between racism and health (Davis et al. 2005; Guthrie at al. This study will assess racism-related stress as an independent variable that directly predicts self-reported general health. This study argues that racism is a stressor (Clark, Clark and Williams 1999) for Asians and Latinas/os that produces racism-related stress with consequential effects on their health.

RESEARCH QUESTIONS AND HYPOTHESES

I ask two research questions:

1) Does racism-related stress affect self-reported general health? And 2) Do coping strategies moderate this relationship?

In keeping with the literature, I predict the following two hypotheses:

Hypothesis 1: Asians and Latinas/os who report higher levels of racism-related stress will report worse self-reported general health.

Hypothesis 2: Coping will moderate the relationship between racism-related stress and self-reported general health among Asians and Latinas/os

(A) Asians and Latinas/os who use problem-focused coping will report better self-rated health.
(B) Asians and Latinas/os who use emotion-focused coping will report declined self-rated health.
(C) Asians and Latinas/os who use prayer or meditation as a coping strategy will report better self-rated health.
(D) Asian and Latino/a who use anger as a coping strategy will report poorer self-rated health.

RESEARCH DESIGN

Methods:

Data

The California Health Interview Survey is one of the largest health surveys in the state of California. The CHIS is a random-dial telephone survey conducted in all 58 counties in California and covers several health topics. The CHIS is conducted by the UCLA Center for Health Policy Research. This study uses the Multicultural Discrimination Module (DM) that consists of self-reported perceived racism questions answered by adults (18+) on the 2009 California Health Interview Survey (CHIS). A total of 4,908 adults participated in the DM phone survey and 4,744 completed the survey (Shariff-Marco et al., 2009). The phone survey was available in English, Spanish, Korean, Vietnamese, Cantonese, and Mandarin (Shariff-Marco et al., 2009). A stratified simple random sampling design was used across Latinas/os, Chinese, Korean, and Vietnamese participants (Shariff-Marco et al., 2009). Participants were randomly assigned to 1-stage or 2-stage of the DM; Version A (1-stage) asked about unfair treatment related to race and ethnicity, gender, age, and sexual orientation (Shariff-Marco et al., 2009). Version B (2-stage) focuses on unfair treatment related to race and ethnicity (Shariff-Marco et al., 2009).

The CHIS Discrimination Module (DM) captures perceived racism in the past 12-months, perceived racism-related stress, and coping responses to perceived racism (Shariff-Marco et al., 2009). Respondents were asked about recent experiences of racism (i.e., chronic or routine racism) and answered attributions to perceived racism. Attributions to perceived racism in Version B includes race and ethnicity and Version A incorporates race and ethnicity, gender, age, and sexual orientation. Respondents were asked to appraise the stressful situation and how they responded to racism (i.e., coping).

Measures

Dependent Variables: Self-Reported General Health

The dependent variable is self-reported general health, which is predictive of objective physical health measures (Brondolo et al. 2011). In addition, Idler and Benyamini (1997) review of twenty-seven studies conclude that self-rated health is consistently predictive of mortality. Participants were asked to rate their general health in a 5-point Likert scale (1 = excellent, 2 = very good, 3= good, 4 = fair, and 5 = poor).

Independent Variables: Racism-Related Stress

The independent variable in the study is the stress appraisal of perceived racism, or racism-related stress. The question capturing racism-related stress is: during the past 12 months, "how stressful have these experiences of unfair treatment usually been for you?" (Shariff-Marco et al., 2009). Participants responded using a 4-point Likert response scale (1= "not at all stressful", 2= "a little stressful", 3= "somewhat stressful", to 4= "extremely stressful"). Respondents that reported "don't know" and "refuse," were dropped (n=1,495).

Moderating Variables: Coping Responses to Perceived Racism

Coping strategies were operationalized using the questions in the Discrimination Module that assessed responses to racism (Shariff-Marco et al., 2009). To determine the impact of coping strategies, I created dummy variable for each to distinguish among people who use and do not use given coping strategies. This study operationalizes four coping strategies using respondent's responses to perceived racism, in keeping with previous research (Noh and Kaspar 2003; Krieger and Sidney 1996; Renae Stancil et al., 2000): (1) problem-focused (2) emotion-focused (3) prayer or meditation, and (4) anger. I operationalize three forms of problem-focused coping to determine the independent effect of each problem-focused coping strategy. The first form of problem-focused coping is resisting racism by proving others wrong: "did you work hard to prove other wrong." The second form of problem-focused coping is challenging racism by taking drastic steps: "did you take drastic steps, such as filling a grievance or a lawsuit, quitting your job, moving away." The third form of problem-focused coping is talking to others: "did you talk to someone about how you were feeling." Emotion-focused coping strategies include ignoring, keeping quiet, and accepting racism (Krieger and Sidney 1996; Noh and Kaspar 2003; Pascoe and Richman 2009); I operationalize emotion-focused coping with the question: "did you accept it as a fact of life." I conceptualized prayer or meditation as a coping strategy with the question "did you pray or meditate about the situation." Lastly, I operationalized anger as a coping strategy with the question "did you get angry or get into an argument or physical fight?"

Table 1: Coping Index

Coping Strategies	Survey Questions	Response
Problem-focused coping (3 forms)	(1) "Did you work hard to prove others wrong?" (2) "Did you take drastic steps, such as filling a grievance or a lawsuit, quitting your job, moving away" (3) "Did you talk to someone about how you were feeling?"	Yes or No
Emotion-focused coping	"Did you accept it as a fact of life?"	Yes or No
Prayer or Meditation	"Did you pray or meditate about the situation?"	Yes or No
Anger as a coping strategy	"Did you get angry or get into an argument or physical fight?"	Yes or No

Control Variables

This study controls for gender, age, socioeconomic status, and citizenship, as informed by previous studies (Arber 1997; House et al. 1990; Phelan et al. 2004; Kawachi 1999; Gee 2002; Zsembik and Fennell 2005). Gender is a dichotomous variable (1 = female and 0 = male) because research has found health inequalities by gender (Arber 1997). I control for respondent's age because research has found differences related to aging and health (House et al. 1990). I restricted the sample to working-age respondents between the ages of 18 and 64 because self-reported health differs as people grow older and retire (House et al. 1990). I control for socioeconomic status (i.e., annual household income and education attainment) because research has found variation in health by class. For instance, people with higher socioeconomic status have greater health advantages (Kawachi 1999). Markers for socioeconomic status includes a categorical variable for educational attainment (i.e., no formal education to some high school, high school diploma, some college, college degree, some graduate school, and advanced degree), and annual household income, recoded to the midpoints of available categories (from no income to greater than $99,000), in keeping with prior health research (Umberson 1992; Kawaci et al. 1999). I control for citizenship status because research has found variations in health by immigration status among U.S. citizens (coded as "1"), naturalized citizens (coded as "2"), and non-citizens (coded as "3") (Torres and Young 2016).

Data Analysis

Racism-Related Stress and Self-Reported General Health

I conduct ordinal logistic regression models for the effect of racism-related stress on self-reported general health for Asians and for Latinas/os separately (Table 4 and Table 5, respectively). In both tables, Model 1 is the base model and Models 2 – 6 add controls for sociodemographic characteristics.

Predicted probabilities are used to determine whether high levels of racism-related stress and low levels of racism-related stress affect self-reported general health for Asians (Figure 1) and for Latinas/os (Figure 2).

Racism-Related Stress, Self-Reported General Health, and Coping

Tables 6 and 7 examine whether the effect of racism-related stress on self-rated general health is attenuated by the various coping strategies (Models 2 through 6). The study also assessed if the relationship between racism-related stress and self-reported general health is dependent on mediators (coping strategies). Six interaction terms (racism-related stress x coping) were analyzed, constructed using the racism-related stress scale (range: 1 - 4) multiplied by each coping binary variable. The interaction terms range from to 0 – 4. This measure will be 1-4 for respondents who cope and experience stress with 1 indicating low stress and 4 indicating high stress. Respondents will receive a score of 0 if they do not cope, do not experience stress, or neither cope nor experience stress. For ease of interpretation, only significant interactions are included in the presentation in Table 6 and Table 7. Predicted probabilities are also included to assess if coping strategies moderates the impact of high levels of racism-related stress and low levels of racism-related stress on self-reported general health for Asians (Figure 3) and Latinas/os (Figure 4).

RESULTS

Demographic Characteristics

The mean age of the respondents in the sample is 42 years old (see Table 2). The gender composition of the participants in the sample is 59 percent female and 41 percent male. The racial composition of the sample is evenly split (49% Latinas/os (n=1,157), 51% Asian (n=1,212). The mean household income is $64,726, with income ranging from $0-$300,000. Three-quarters of the participants are either naturalized citizens (44%) or non-citizens (30%).

Respondents report their health as “good” (34%), “very good” (24%), and “fair” (22%) (see Table 2). The majority of the respondents report that experiences of racism in the past 12 months are “not at all stressful” (53%) or “a little stressful” (30%). In addition, most respondents use coping strategies to deal with racism: 75 percent of respondents used emotion-focused coping, 22 percent of respondents used prayer or meditation as a coping strategy, and 51 percent used anger as a coping strategy. Among respondents that used problem-focused coping strategies, 59 percent “worked hard to prove others wrong”, 14 percent filled “a grievance or a lawsuit, quitting your job, moving away” and 62 percent “talked to someone about how [they] were feelings”.

Characteristics of Latinas/os and Asians

Asians in the sample are more likely to be older and naturalized citizens compared to Latinas/os, who are younger and more likely to be U.S.-citizens. Asians report significantly higher levels of educational attainment and higher household incomes compared to Latinas/os in the sample.

Asians are also significantly more likely to report their health as “excellent” or “very good,” when compared to Latinas/os, who are more likely to report “fair” self-rated

health than Asians. Latinas/os who experience racism are more likely to characterize the experience as “extremely stressful” or “a little stressful” compared to Asians; Asians on the other hand are more likely to report experiences as being “somewhat stressful.”

The most common coping strategy for Asians and Latinas/os in response to racism is emotion-focused coping. Fully 78 percent of Latinos/as and 73 percent of Asians use emotion-focused coping. Problem-focused coping is the second most common coping strategy used, as 58 percent of Latinos/as and 60 percent of Asians reported that they “worked harder to prove others wrong,” 58 percent of Latinos/as and 67 percent of Asians “talked to someone about how [they] were feeling,” and 16 percent of Latinos/as and 12 percent of Asians “took drastic steps and filled a grievance or a lawsuit, quit their job, or moved away.” In the sample, Latinas/os are more likely to use using anger as a coping strategy compared to Asians, yet, both groups report high likelihood of using anger as a coping strategy (57% of Latinos/as and 45% of Asians). Approximately one-quarter of Latinos/as and Asians used prayed or meditated as a coping strategy (25% to 23%, respectively).

Table 2: 2009 California Health Interview Survey (CHIS) Descriptive Statistics, Means and Standard Deviations (*N* = 2,369)

		Full (100%)	Latinas/os (49%)	Asians (51%)
	Range	*M (SD)*	*M (SD)*	*M (SD)*
Age (years)	18 - 65	42 (12.27)	41 (12.25)	43*** (12.25)
Women (1=yes)	-	0.59	0.62	0.56
Educational Attainment	0-5	2.07	1.34	2.77***
Household income expressed in dollars	$0 – $300,000	$64,726 ($61,052)	$46,935 ($48,557)	$81,710*** ($66,684)
U.S. Citizens (1=yes)	-	0.26	0.39***	0.14
Naturalized Citizens (1=yes)	-	0.44	0.22	0.64***
Non-citizens (1=yes)	-	0.30	0.39***	0.21
Excellent Self-Rated Health (1=yes)	-	0.14	0.13	0.15**
Very Good Self-Rated Health (1=yes)	-	0.24	0.22	0.27***
Good Self-Rated Health (1=yes)	-	0.34	0.34	0.34
Fair Self-Rated Health (1=yes)	-	0.22	0.26***	0.19
Poor Self-Rated Health (1=yes)	-	0.06	0.06	0.05
Racism-Related Stress "Not at all stressful" (1=yes)	-	0.53	0.52	0.53
Racism-Related Stress "A little stressful" (1=yes)	-	0.30	0.15*	0.12
Racism-Related Stress "Somewhat stressful" (1=yes)	-	0.13	0.28	0.31**
Racism-Related Stress "Extremely stressful" (1=yes)	-	0.04	0.05***	0.03
Problem-focused coping: "Work hard to prove others wrong" (1=yes)	-	0.59	0.58	0.60
Problem-focused coping: "Filling a grievance or a lawsuit, quitting your job, moving away" (1=yes)	-	0.14	0.16***	0.12
Problem-focused coping: "Talked to someone" (1=yes)	-	0.62	0.58	0.67***
Emotion-focused coping: "Accept it as a fact of life" (1=yes)	-	0.75	0.78**	0.73
Prayer or meditation as a coping strategy (1=yes)	-	0.22	0.22	0.23
Anger as a coping strategy (1=yes)	-	0.51	0.57***	0.45
N		2,369	1,157	1,212

*** p<0.05, ** p<0.01, * p<0.001

MULTIVARIATE RESULTS

Does racism-related stress affect self-reported general health?

Asians

The results in Table 4 indicate that Asians who report higher levels of racism-related stress do not report poorer self-reported general health compared to Asians who report lower levels of racism-related stress. In other words, racism-related stress does not markedly affect the self-reported general health of Asians, evidence against the hypothesis that higher levels of racism-related stress predict worse self-rated health for Asians. Predicted probabilities confirm that Asians who report their experiences of racism as "extremely stressful" and "not at all stressful" have identical probabilities of reporting "excellent," "very good," "good," "fair," and "poor" self-rated health (Figure 1), controlling for all the covariates. These findings suggest there is limited variation in self-reported general health among Asians; which may explain why high levels of racism-related stress do not correspond to worse self-rated health.

Regarding the controls, findings show that Asians who are younger, have higher levels of education, or high household income are significantly more likely to report better self-rated health (Tables 4 and 5). Moreover, Asians who are naturalized citizens and non-citizens have greater odds of reporting deteriorated self-rated health compared to U.S.-citizens, 59 percent to 21percent, respectively. Thus, within the hierarchy of citizenship status, U.S.-citizenship is protective of health for Asians.

Table 4: Ordinal Logistic Regression of Racism-Related Stress on Self-Reported General Health for Asians (*N* = 1,212)

	Model 1 OR (SE)	Model 2 OR (SE)	Model 3 OR (SE)	Model 4 OR (SE)	Model 5 OR (SE)
Racism-Related Stress (4-point Likert Scale)	1.115	1.095	1.093	1.080	1.059
	(0.072)	(0.072)	(0.072)	(0.071)	(0.071)
Women		1.282***	1.257***	1.212	1.174
		(0.135)	(0.133)	(0.128)	(0.127)
Age (years)			1.032***	1.031***	1.042***
			(0.004)	(0.005)	(0.005)
Citizenship Status (U.S.-citizen omitted) Naturalized citizen				1.673***	1.590***
				(0.270)	(0.261)
Non-citizen				2.444***	2.115***
				(0.439)	(0.389)
Educational Attainment (No high school diploma omitted) High school diploma					1.045
					(0.251)
Some college					0.667
					(0.164)
B.A. or B.S. degree					0.469***
					(0.108)
Some graduate school					0.334***
					(0.158)
M.A. or M.S. or Ph.D. degree					0.374***
					(0.092)
Household Income (Less than 9,999 omitted) >$9,999 to <$19,999					1.098
					(0.327)
>$19,999 to <$29,999					0.622
					(0.194)
>$29,999 to <$39,999					0.682
					(0.209)
>$39,999 to <$49,999					0.551
					(0.175)
>$49,999 to <$59,999					0.427***
					(0.134)
>$59,999 to <$69,999					0.495***
					(0.160)
>$69,999 to <$79,999					0.381***
					(0.130)
>$79,999 to <$89,999					0.443***
					(0.146)
>$89,999 to <$99,999					0.249***
					(0.089)

>$99,999					0.249***
					(0.068)
Cutting point 1	0.208***	0.231***	0.844	1.253	0.365***
	(0.027)	(0.032)	(0.187)	(0.298)	(0.139)
Cutting point 2	0.856	0.955	3.590***	5.458***	1.770
	(0.103)	(0.123)	(0.793)	(1.308)	(0.674)
Cutting point 3	3.756***	4.216***	16.66***	25.91***	10.37***
	(0.477)	(0.575)	(3.880)	(6.550)	(4.019)
Cutting point 4	20.48***	23.08***	95.13***	148.7***	70.85***
	(3.403)	(4.016)	(24.94)	(41.66)	(28.64)
Observations	1,212	1,212	1,212	1,212	1,212
Log likelihood	-1788	-1785	-1757	-1745	-1647
DF	1	2	3	5	20
BIC	3611	3613	3564	3553	3464

Notes: Coefficient is presented as an odds ratio. Standard errors in parenthesis.
*** p<0.05, ** p<0.01, * p<0.001

Figure 1: Predicted Probability of Self-Reported General Health for Asians who report Extreme Racism-Related Stress (N = 654 of 1,212) and No Racism-Related Stress (N = 35 of 1,212)

Latinas/os

The base model of perceived racism-related stress on self-reported general health demonstrates that Latinas/os who report higher levels of racism-related stress are 32 percent more likely to report worse self-reported general health (Table 5, Model 1). When the covariates are included the odds decrease slightly, however, the effect of racism-related stress on self-reported general health remains significant (Table 5, Model 5). These findings support the study's hypothesis that higher levels of racism-related stress correspond with poorer self-rated health among Latinas/os. The predicted probabilities (Figure 1) verify that Latinas/os who report experiences of racism as "extremely stressful" are more likely to report "fair" self-rated health and less likely to report "very good" self-rated health when compared to Latinas/os who report encounters of racism as "not at all stressful."

The logistic regression models and predicted probability results demonstrate that the relationship between racism-related stress and health is distinct for Asians and Latinas/os because Asians self-rated health is not markedly affected by racism-related stress, whereas Latinas'/os' self-rated health is affected by higher levels of racism-related stress.

Latinas/os self-reported general health is also influenced by age, socioeconomic status, and citizenship status (Table 5, Model 5). As predicted, Latinas/os who are older report worse self-reported health than younger Latinas/os, and those with higher socioeconomic status report enhanced health compared to Latinas/os with lower socioeconomic status. Moreover, Latinas/os who are non-citizens and naturalized citizens have increased odds of reporting worse health than their citizen counterparts (Model 4). Net of the controls, however, the protective benefits of U.S. citizenship disappears (Model 5). Latinas/os regardless of citizenship status have comparable odds of reporting poor self-rated health.

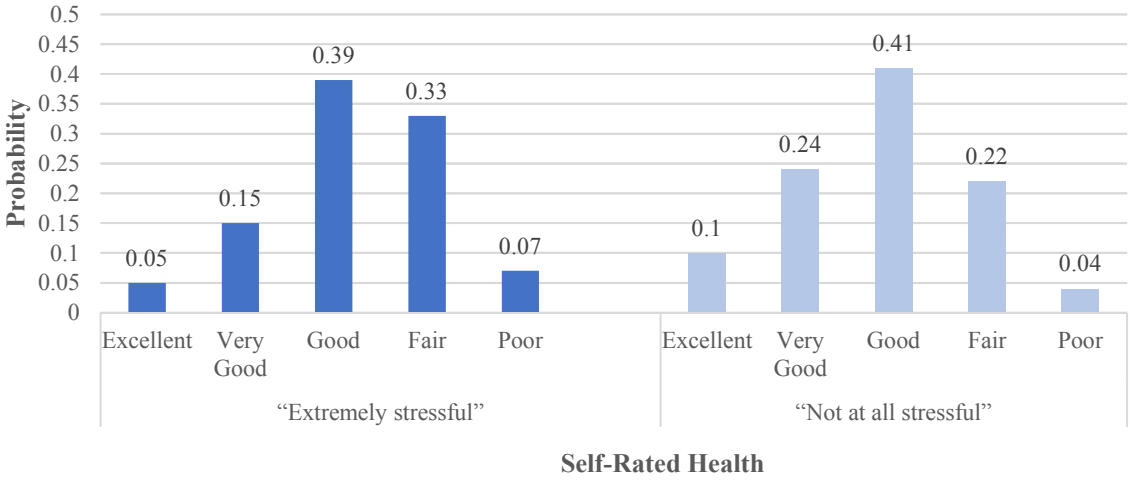
Table 5: Ordinal Logistic Regression of Racism-Related Stress on Self-Reported General Health for Latinas/os (*N* =1,157)

	Model 1 OR (SE)	Model 2 OR (SE)	Model 3 OR (SE)	Model 4 OR (SE)	Model 5 OR (SE)
Racism-Related Stress (4-point Likert Scale "Not at all stressful" omitted)	1.325***	1.324***	1.310***	1.262***	1.230***
	(0.081)	(0.081)	(0.081)	(0.078)	(0.077)
Women		1.033	0.998	0.962	0.949
		(0.112)	(0.109)	(0.105)	(0.106)
Age (years)			1.031***	1.036***	1.039***
			(0.005)	(0.005)	(0.005)
Citizenship Status (U.S. citizen omitted) Naturalized citizen				1.421***	0.900
				(0.210)	(0.139)
Non-citizen				3.048***	1.183
				(0.381)	(0.172)
Educational Attainment (No high school diploma omitted) High school diploma					0.559***
					(0.084)
Some college					0.404***
					(0.068)
B.A. or B.S. degree					0.252***
					(0.053)
Some graduate school					0.098***
					(0.079)
M.A. or M.S. or Ph.D. degree					0.207***
					(0.060)
Household Income (Less than 9,999 omitted) >$9,999 to <$19,999					0.736
					(0.166)
>$19,999 to <$29,999					0.553***
					(0.132)
>$29,999 to <$39,999					0.409***
					(0.106)
>$39,999 to <$49,999					0.525***
					(0.145)
>$49,999 to <$59,999					0.302***
					(0.095)
>$59,999 to <$69,999					0.350***
					(0.108)
>$69,999 to <$79,999					0.273***
					(0.095)
>$79,999 to <$89,999					0.134***
					(0.048)
>$89,999 to <$99,999					0.257***
					(0.112)
>$99,999					0.171***
					(0.049)
Cutting point 1	0.227***	0.231***	0.738	1.234	0.156***
	(0.030)	(0.034)	(0.163)	(0.283)	(0.054)
Cutting point 2	0.825	0.840	2.744***	4.917***	0.715
	(0.098)	(0.111)	(0.595)	(1.125)	(0.242)
Cutting point 3	3.435***	3.499***	11.94***	23.45***	4.284***

	(0.424)	(0.482)	(2.716)	(5.694)	(1.459)
Cutting point 4	24.38***	24.83***	88.62***	182.9***	39.28***
	(4.029)	(4.374)	(22.95)	(50.35)	(14.05)
Observations	1,157	1,157	1,157	1,157	1,157
Log likelihood	-1705	-1705	-1681	-1638	-1539
DF	1	2	3	5	20
BIC	3445	3452	3411	3340	3248

Notes: Coefficient is presented as an odds ratio. Standard errors in parenthesis.
*** p<0.05, ** p<0.01, * p<0.001

Figure 1: Predicted Probability of Self-Reported General Health for Latinas/os who report ExtremeRacism-Related Stress (N = 602 of 1,157) and No Racism-Related Stress (N = 59 of 1,157)



Do coping strategies moderate the relationship between racism-related stress and health?
Asians

The addition of coping strategies does not alter the non-significant relationship between racism-related stress and health outcomes for Asians (Table 6). That said, the only coping strategy that benefits the health of Asians is problem-focused coping defined as "work hard to prove others wrong" (Table 6, Model 1). Asian who "work hard to prove others wrong" are 72.2% less likely to report poor self-rated health. The other coping strategies are not statistically significant.

None of the interactions terms are statistically significant in predicting poor self-rated health, which indicates, that none of the coping strategies benefit the self-rated health of Asians who experience high levels of racism-related stress (results not included in Table 6).

Predicted probabilities (Figure 3) show that Asians who report experiences of racism as "extremely stressful" and use problem-focused coping strategies, emotion-focused coping strategies, and anger as a coping strategy (except prayer or mediation as a coping strategy) are more likely to report "poor" self-rated health, compared to those that do not use these coping strategies holding all controls at their mean. In contrast, at low levels of racism-related stress ("not at all stressful") none of the coping strategies significantly decrease or increase the likelihood of reporting "poor" self-rated health. These results demonstrate that coping strategies are neither beneficial at high or low levels of racism-related stress for Asians.

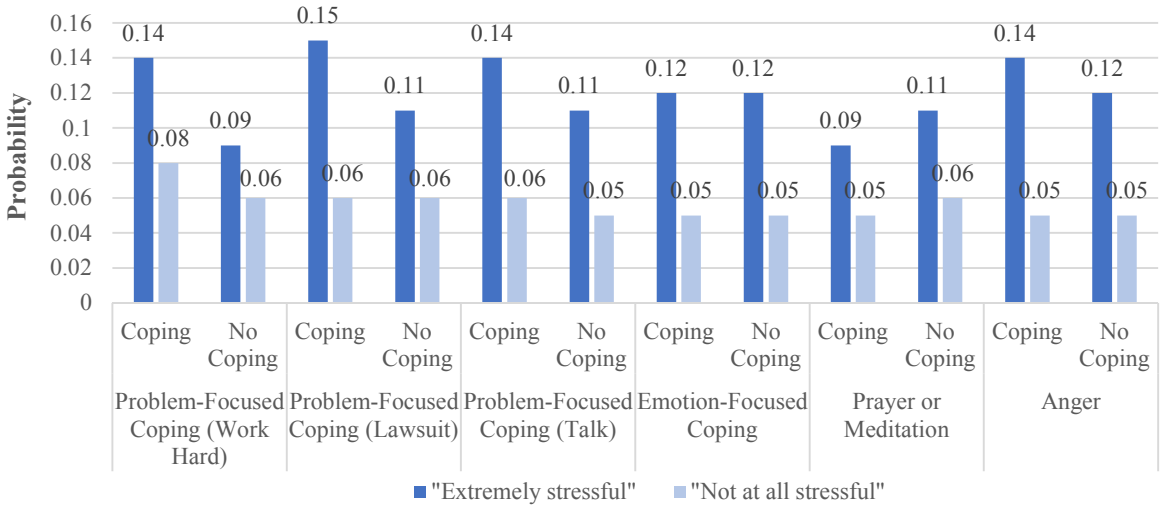
Table 6: Ordinal Logistic Regression of Racism-Related Stress on Self-Reported General Health and Coping and in the Past 12 months for Asians (N = 1,212)

	Problem-Focused Coping			Emotion-focused coping	Prayer or Meditation as a Coping Strategy	Anger as a Coping Strategy
	Model 1 Work hard to prove others wrong OR (SE)	Model 2 Filling a grievance or a lawsuit OR (SE)	Model 3 Talk to others OR (SE)	Model 4 Base Model OR (SE)	Model 1 Work hard to prove others wrong OR (SE)	Model 2 Filling a grievance or a lawsuit OR (SE)
Racism-Related Stress (4-point Likert Scale "Not at all stressful" omitted)	1.099	1.063	1.066	1.051	1.052	1.055
	(0.075)	(0.072)	(0.072)	(0.071)	(0.071)	(0.071)
Coping Strategy	0.722***	0.952	0.927	1.135	1.083	1.061
	(0.0796)	(0.165)	(0.109)	(0.136)	(0.137)	(0.117)
Women	1.176	1.174	1.186	1.176	1.175	1.170
	(0.127)	(0.127)	(0.130)	(0.127)	(0.127)	(0.127)
Age (years)	1.042***	1.043***	1.042***	1.042***	1.043***	1.042***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Citizenship Status (U.S. citizen omitted) Naturalized citizen	1.589***	1.588***	1.590***	1.596***	1.598***	1.578***
	(0.261)	(0.261)	(0.261)	(0.262)	(0.263)	(0.260)
Non-citizen	2.076***	2.115***	2.135***	2.142***	2.137***	2.095***
	(0.382)	(0.389)	(0.394)	(0.395)	(0.395)	(0.387)
Educational Attainment (No high school diploma omitted) High school diploma	1.044	1.041	1.050	1.032	1.050	1.046
	(0.251)	(0.251)	(0.252)	(0.248)	(0.252)	(0.251)
Some college	0.678	0.664	0.674	0.654	0.668	0.670
	(0.167)	(0.164)	(0.167)	(0.162)	(0.165)	(0.165)
B.A. or B.S. degree	0.464***	0.468***	0.472***	0.465***	0.471***	0.472***
	(0.107)	(0.107)	(0.108)	(0.107)	(0.108)	(0.108)
Some graduate school	0.346***	0.333***	0.333***	0.322***	0.336***	0.333***

	(0.164)	(0.157)	(0.157)	(0.153)	(0.159)	(0.157)
M.A. or M.S. or Ph.D.	0.363***	0.374***	0.377***	0.371***	0.372***	0.374***
	(0.089)	(0.092)	(0.093)	(0.091)	(0.091)	(0.092)
Household Income (Less than 9,999 omitted)	1.094	1.103	1.106	1.103	1.097	1.104
>$9,999 to <$19,999						
	(0.325)	(0.329)	(0.329)	(0.328)	(0.327)	(0.329)
>$19,999 to <$29,999	0.646	0.625	0.628	0.619	0.624	0.620
	(0.202)	(0.195)	(0.196)	(0.193)	(0.195)	(0.194)
>$29,999 to <$39,999	0.689	0.681	0.690	0.680	0.682	0.684
	(0.211)	(0.209)	(0.212)	(0.208)	(0.209)	(0.209)
>$39,999 to <$49,999	0.582	0.553	0.562	0.549	0.550	0.554
	(0.185)	(0.176)	(0.179)	(0.174)	(0.175)	(0.176)
>$49,999 to <$59,999	0.444***	0.428***	0.429***	0.427***	0.426***	0.429***
	(0.139)	(0.135)	(0.135)	(0.134)	(0.134)	(0.135)
>$59,999 to <$69,999	0.520***	0.496***	0.503***	0.491***	0.494***	0.495***
	(0.168)	(0.160)	(0.163)	(0.159)	(0.160)	(0.160)
>$69,999 to <$79,999	0.391***	0.383***	0.387***	0.379***	0.380***	0.382***
	(0.133)	(0.131)	(0.132)	(0.129)	(0.130)	(0.130)
>$79,999 to <$89,999	0.464***	0.446***	0.449***	0.440***	0.444***	0.446***
	(0.153)	(0.148)	(0.149)	(0.146)	(0.147)	(0.148)
>$89,999 to <$99,999	0.258***	0.250***	0.253***	0.245***	0.247***	0.250***
	(0.092)	(0.090)	(0.091)	(0.088)	(0.0887)	(0.090)
>$99,999	0.260***	0.249***	0.252***	0.246***	0.248***	0.252***
	(0.071)	(0.068)	(0.069)	(0.067)	(0.068)	(0.069)
Cutting point 1	0.318***	0.367***	0.360***	0.382***	0.372***	0.368***
	(0.122)	(0.140)	(0.138)	(0.147)	(0.143)	(0.141)
Cutting point 2	1.556	1.779	1.743	1.852	1.807	1.784
	(0.596)	(0.678)	(0.665)	(0.709)	(0.691)	(0.680)
Cutting point 3	9.169***	10.42***	10.21***	10.87***	10.58***	10.46***
	(3.570)	(4.042)	(3.967)	(4.240)	(4.118)	(4.058)
Cutting point 4	63.06***	71.19***	69.87***	74.51***	72.28***	71.55***
	(25.58)	(28.80)	(28.29)	(30.33)	(29.32)	(28.96)
Observations	1,212	1,212	1,212	1,212	1,212	1,212
Log likelihood	-1643	-1647	-1647	-1646	-1647	-1647
DF	21	21	21	21	21	21
BIC	3463	3471	3471	3470	3471	3471

Notes: Coefficient is presented as an odds ratio. Standard errors in parenthesis.
*** p<0.05, ** p<0.01, * p<0.001

Figure 3: Predicted Probabilities of Reporting "Poor" Self-Rated Health among Asians who Report High Levels of Racism-Related Stress (N = 654 of 1,212) and Low Levels of Racism-Related Stress (N = 35 of 1,212)



Latinas/os

The addition of coping strategies in Table 7 show that higher levels of racism-related stress continue to predict poor self-rated health for Latinas/os. Problem-focused coping defined as "filling a grievance or a lawsuit, quitting your job, moving away," increases Latinas/os odds of reporting worse self-reported general health. Latinas/os who use this form of problem-focused coping are 45.4% more likely to report poor self-reported general health. All other coping strategies (other forms of problem-focused coping, emotion-focused coping, and prayer or meditation) do not statistically decrease Latinas/os odds of reporting poorer self-rated general health.

None of the interactions terms were significant in predicting poor self-rated health. Thus, at high levels of racism-related stress none of the coping strategies decrease Latinas/os odds of reporting poor self-rated general health. Predicted probabilities results also demonstrate none of the coping strategies are effective in improving the self-rated health of Latinas/os who report being "extremely stressful" or "not at all stressful" (Figure 4).

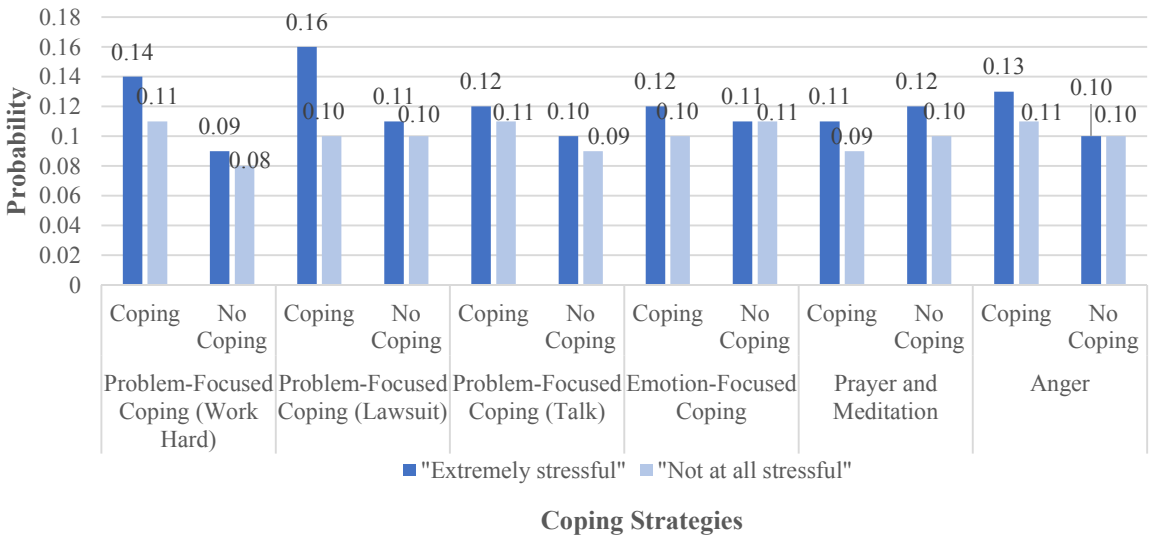
Table 7: Ordinal Logistic Regression of Racism-Related Stress on Self-Reported General Health and Coping and in the Past 12 months for Latinas/os (N = 1,157)

	Problem-Focused Coping			Emotion-focused coping	Prayer or Meditation as a Coping Strategy	Anger as a Coping Strategy
VARIABLES	Model 1 Work hard to prove others wrong OR (SE)	Model 2 Filling a grievance or a lawsuit OR (SE)	Model 3 Talk to others OR (SE)	Model 4 Base Model OR (SE)	Model 1 Work hard to prove others wrong OR (SE)	Model 2 Filling a grievance or a lawsuit OR (SE)
Racism-Related Stress (4-point Likert Scale "Not at all stressful" omitted)	1.228***	1.199***	1.236***	1.230***	1.218***	1.254***
	(0.078)	(0.076)	(0.079)	(0.077)	(0.077)	(0.080)
Coping Strategy	1.021	1.454***	0.960	0.980	1.226	0.851
	(0.115)	(0.224)	(0.110)	(0.128)	(0.166)	(0.0975)
Women	0.951	0.958	0.950	0.949	0.959	0.962
	(0.107)	(0.107)	(0.107)	(0.106)	(0.108)	(0.108)
Age (years)	1.039***	1.038***	1.039***	1.039***	1.039***	1.039***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Citizenship Status (U.S. citizen omitted) Naturalized citizen	0.900	0.881	0.898	0.900	0.918	0.921
	(0.139)	(0.136)	(0.138)	(0.139)	(0.142)	(0.143)
Non-citizen	1.186	1.190	1.178	1.183	1.215	1.206
	(0.174)	(0.174)	(0.172)	(0.173)	(0.179)	(0.177)
Educational Attainment (No high school diploma omitted) High school diploma	0.559***	0.560***	0.562***	0.559***	0.555***	0.562***
	(0.084)	(0.084)	(0.085)	(0.084)	(0.084)	(0.084)
Some college	0.403***	0.394***	0.406***	0.404***	0.403***	0.413***
	(0.068)	(0.066)	(0.068)	(0.068)	(0.068)	(0.069)
B.A. or B.S. degree	0.251***	0.247***	0.254***	0.252***	0.250***	0.253***
	(0.053)	(0.052)	(0.054)	(0.053)	(0.052)	(0.053)
Some graduate school	0.098***	0.095***	0.099***	0.097***	0.097***	0.100***
	(0.079)	(0.077)	(0.080)	(0.078)	(0.078)	(0.080)

M.A. or M.S. or Ph.D.	0.206***	0.210***	0.208***	0.207***	0.206***	0.207***
	(0.060)	(0.061)	(0.061)	(0.060)	(0.060)	(0.060)
Household Income (Less than 9,999 omitted)	0.736	0.743	0.738	0.735	0.734	0.735
>$9,999 to <$19,999						
	(0.166)	(0.167)	(0.167)	(0.166)	(0.166)	(0.166)
>$19,999 to <$29,999	0.554***	0.560***	0.555***	0.553***	0.542***	0.559***
	(0.132)	(0.134)	(0.133)	(0.132)	(0.130)	(0.134)
>$29,999 to <$39,999	0.409***	0.421***	0.411***	0.409***	0.406***	0.414***
	(0.106)	(0.109)	(0.106)	(0.106)	(0.105)	(0.107)
>$39,999 to <$49,999	0.525***	0.523***	0.528***	0.524***	0.519***	0.521***
	(0.146)	(0.145)	(0.146)	(0.145)	(0.144)	(0.144)
>$49,999 to <$59,999	0.302***	0.311***	0.302***	0.302***	0.305***	0.298***
	(0.095)	(0.098)	(0.095)	(0.095)	(0.096)	(0.094)
>$59,999 to <$69,999	0.350***	0.341***	0.352***	0.350***	0.348***	0.348***
	(0.108)	(0.105)	(0.109)	(0.108)	(0.107)	(0.107)
>$69,999 to <$79,999	0.273***	0.275***	0.275***	0.273***	0.276***	0.268***
	(0.095)	(0.096)	(0.100)	(0.095)	(0.096)	(0.094)
>$79,999 to <$89,999	0.134***	0.139***	0.135***	0.133***	0.131***	0.131***
	(0.048)	(0.050)	(0.050)	(0.048)	(0.047)	(0.047)
>$89,999 to <$99,999	0.257***	0.274***	0.258***	0.256***	0.257***	0.254***
	(0.112)	(0.120)	(0.112)	(0.112)	(0.112)	(0.111)
>$99,999	0.171***	0.177***	0.171***	0.171***	0.171***	0.168***
	(0.049)	(0.050)	(0.050)	(0.049)	(0.049)	(0.048)
Cutting point 1	0.158***	0.155***	0.155***	0.154***	0.163***	0.153***
	(0.055)	(0.053)	(0.053)	(0.055)	(0.056)	(0.053)
Cutting point 2	0.723	0.713	0.709	0.705	0.746	0.705
	(0.249)	(0.241)	(0.241)	(0.248)	(0.254)	(0.239)
Cutting point 3	4.330***	4.305***	4.249***	4.223***	4.477***	4.234***
	(1.497)	(1.466)	(1.450)	(1.492)	(1.531)	(1.443)
Cutting point 4	39.72***	39.82***	38.94***	38.72***	41.26***	38.83***
	(14.42)	(14.24)	(13.96)	(14.32)	(14.83)	(13.90)
Observations	1,157	1,157	1,157	1,157	1,157	1,157
Log likelihood	-1539	-1536	-1539	-1539	-1538	-1538
DF	21	21	21	21	21	21
BIC	3255	3249	3255	3255	3253	3253

Notes: Coefficient is presented as an odds ratio. Standard errors in parenthesis.
*** p<0.05, ** p<0.01, * p<0.001

Figure 4: Predicted Probabilities of Reporting "Poor" Self-Rated Health among Latinas/os who Report High Levels of Racism-Related Stress (N = 602 of 1,065) and Low Levels of Racism-Related Stress (N = 59 of 1,212)



DISCUSSION

This study used the 2009 California Health Interview Survey to examine the relationship between racism-related stress, self-reported general health, and coping strategies among Asians and Latinas/os in the United States. Drawing from the biopsychosocial model (Clark, Clark and Williams 1999) and social stress framework (Pearlin 1981) this study argues that racism is a stressor that impacts the health of Asians and Latinas/os because racism produces racism-related stress which leads to adverse health outcomes. In addition, the stress process model (Pearlin 1981) is used to understand the pathways between perceived racism and self-reported general health

This study predicted that perceived racism-related stress would directly impact the self-reported general health of Asians and Latinas/os. Findings reveal that higher levels of racism-related stress only increase the odds of reporting poor general health for Latinas/os. Latinos/as who report higher levels of racism-related stress are significantly more likely to report poorer self-rated health, all things being equal. Predicted probabilities confirm that high levels of racism-related stress increased Latinos/as likelihood of reporting their self-reported health as “fair” rather than “good” or “excellent” health.

On the other hand, higher levels of racism-related stress for Asians does not result in markedly different self-rated health from Asians with lower levels of racism-related stress. One explanation for the non-significant effect of racism-related stress on health may be less variation among Asians in reports of racism-related stress and self-reported general health. For instance, Asians are less likely to report variations in their experiences of racism-related stress (e.g. “extremely stressful” versus “at little stressful”) compared to Latinas/os. Moreover, Asians are significantly more likely to report their health as

"excellent" and "very good" compared to Latinas/os. The limited variation in Asian responses to racism-related stress and self-reported general health might explain the non-significant findings for Asians.

Additionally, this study predicted that coping strategies would attenuate the effect of racism-related stress on health for Asians and Latinas/os. In general, coping strategies did not lessen the impact of racism-related stress for these groups. The only coping strategy that decreased Asians' odds of reporting poor self-rated health was one form of problem-focused coping, "work hard to prove others wrong" (Table 6, Model 1). This coping strategy may potentially benefit the health of Asians. That said, this variable is dichotomous, allowing respondents to answer "yes" or "no" only and does not ask about the frequency (i.e., number of times) nor the duration (i.e., length) of this coping strategy in the past 12 months. It may be that this form of coping over the life-course may deteriorate health outcomes; a similar negative relationship has been observed in such prolonged high coping efforts. Specifically, James's (1994) found that African American participants who engaged in prolonged high-effort coping experienced a greater risk of hypertension and even death. He concluded that prolonged high effort coping impacts health outcomes through the accumulation of prolonged stress and physical and mental exhaustion, which he labeled John Henryism (James 1994). Although "working hard to prove others wrong" may benefit the health of Asians in the short term, but over the life course this form of coping may be detrimental. For Latinas/os, one form of problem-focused coping, specifically, "filing a grievance or a lawsuit, quitting your job, moving away" was shown to increase the odds of reporting worse self-rated health. In other words, Latinas/os who used this form of problem-focused coping reported a decline in their health, likely because this form of coping is itself stressful.

Finally, this study considered a series of interaction terms to assess if the relationship between racism-related stress and self-reported general health was moderated by coping strategies. Findings revealed that none of the coping strategies decreased the relationship between high levels of racism-related stress and poor self-reported general health.

Finally, predicted probabilities were calculated to further investigate the relationship between racism-related stress, self-rated health, and coping strategies. The results demonstrated that problem-focused coping, emotion-focused coping, and anger as a coping strategy slightly increased Asians' and Latinas'/os' probability of reporting worse health outcomes. The predicted probabilities also indicated that Asians and Latinas/os who use prayer or meditation and experience high levels racism-related stress are slightly less likely to report "poor" self-rated health compared to those who do not use prayer or mediation, although these findings are marginal suggesting further research is necessary.

To conclude, this study demonstrated that the stress response associated with racism negatively affects the self-reported general health of Asians and Latinas/os; a consideration of coping strategies did not alter this relationship.

CONCLUSION

Research demonstrates that the subjective experience of racism contributes to negative health outcomes (Banks et al. 2006; Umaña-Taylor and Updegraff 2007; Noh et

al., 2007; Karlsen and Nazroo 2002; Kessler, Mickelson and Williams 1999). This study suggests one mechanism that explains how experiences of racism lead to harmful health is stress. Experiences of racism are stressful and invoke a stress response that is damaging to health (Clark, Clark and Williams 1999). Using the biopsychosocial model (Clark, Clark and Williams 1999) and stress process model (Pearlin 1989; Aneshensel 1992), this study interrogated the relationship between perceived racism-related stress, self-reported general health, and coping among Asians and Latinas/os in the United States.

The study finds that high levels of racism-related stress predict worsened self-rated health for Latinas/os; however, this relationship is not found for Asians. Findings suggest that the relationship between racism-related stress and health is distinct for Asians and Latinas/os. The insignificant results for Asians may be due to data limitations, namely, limited variation in Asian participants' responses to experiences of racism-related stress and self-reported general health. Moreover, this study finds that problem-focused coping, specifically, "working hard to prove others wrong" can alleviate the odds of reporting declined health for Asians. In contrast, "problem-focused coping, specifically, "filling a grievance or a lawsuit, quitting your job, moving away" increased Latinas'/os' odds of indicating poor health. Yet, these results do not account for racism-related stress. All in all, individual coping strategies fall short of moderating the effects of racism on self-reported health outcomes for Asians and Latinas/os.

Ultimately, this study contributes to health disparities research by documenting racism as a stressor that impacts the health of Asians and Latinas/os, and finding that coping strategies did not alleviate the impact of racism-related stress on self-reported general health for these groups. The study's findings differ from previous studies, which suggest that coping can reduce negative health outcomes associated with perceived racism (Renae Stancil et al., 2000; William et al., 1997; Ellison, Musick, and Henderson 2008; Noh and Kaspar 2003; Edward and Romero 2008). However, whereas prior studies focused on the effects of racism on health, this study considered racism-related stress on self-rated health. The differences in focus -- racism versus racism-related stress -- may explain differences in results. In addition, and despite the finding that coping strategies are ineffective in moderating the impact of racism-related stress on self-rated health, this study does not dismiss the possibility that other coping strategies might benefit the health of Asians and Latinas/os. For instance, psychological and public health research has found that a variety of coping mechanisms reduce the negative effect of perceived discrimination on health, including religious involvement (Bierman 2006), ethnic identity i.e., ethnic pride and ethnic practices (Mossakowski 2003; Taylor and Updegraff 2007), and self-esteem (Taylor and Updegraff 2007). Asians and Latinas/os may engage in group-specific coping strategies (i.e., ethnic pride and ethnic practices) that can improve their health; however, questions that would allow for such measures were not included in the survey. Identifying effective coping strategies that alleviate racism-related stress is critical to protect the health of racial and ethnic groups. Finally, although coping strategies may help alleviate the negative health outcomes associated with racism-related stress, it is important to note that coping should not only be "placed on the shoulders" (Brondolo et al., 2009:65) of the victims who experience racism. Laws, policies, and

practices need to address racism as a public health issue that negatively impacts the health of racial and ethnic groups.

LIMITATIONS AND FUTURE RESEARCH

This quantitative study employs regression methods and predicted probabilities to address the relationship between racism-related stress and self-reported general health, thus, it is unable to establish a cause and effect relationship between racism-related stress and self-rated health, or differentiate between mental and physical health. Because racism-related stress may impact health differently over the life-course, in future research I will consider this relationship. In addition, racism-related stress may impact mental and physical health differently depending on the frequency and the magnitude of racism-related stress. As Grollman (2012:210) suggests, "…the accumulation of forms and chronicity of discrimination" may contribute to negative health outcomes to a greater degree than experiences with discrimination alone. Finally, future research should determine specialized coping strategies specific to Asians and Latinas/os (e.g., ethnic identity, ethnic pride and ethnic practices) and how such coping strategies might benefit health outcomes or mitigate the impact of racism-related stress on mental and physical health outcomes.

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