Racial Discrimination and Health Among Asian Americans: Evidence, Assessment, and Directions for Future Research

Gilbert C. Gee, Annie Ro, Salma Shariff-Marco, and David Chae

Accepted for publication August 18, 2009.

Research shows that racial discrimination is related to illness among diverse racial and ethnic populations. Studies of racial discrimination and health among Asian Americans, however, remain underdeveloped. In this paper, the authors review evidence on racial discrimination and health among Asian Americans, identify gaps in the literature, and provide suggestions for future research. They identified 62 empirical articles assessing the relationship between discrimination and health among Asian Americans. The majority of articles focused on mental health problems, followed by physical and behavioral problems. Most studies find that discrimination was associated with poorer health, although the most consistent findings were for mental health problems. This review suggests that future studies should continue to investigate the following: 1) the measurement of discrimination among Asian Americans, whose experiences may be qualitatively different from those of other racial minority groups; 2) the heterogeneity among Asian Americans, including those factors that are particularly salient in this population, such as ethnic ancestry and immigration history; and 3) the health implications of discrimination at multiple ecologic levels, ranging from the individual level to the structural level.

Asian Americans; ethnic groups; health status disparities; minority health; population dynamics; prejudice; residence characteristics; stress, psychological

INTRODUCTION

Racial discrimination may influence the life circumstances of racial minorities through multiple pathways, such as by determining one’s residence, economic opportunities, stress, and experiences with health care (1–5). Accordingly, racial discrimination has gained attention as a potential explanation of health disparities. Relatively few studies, however, have examined discrimination and health among Asian Americans. In fact, 5 recent reviews noted the limited research on discrimination among Asian Americans (3, 6–8). The review by Kressin et al. called this shortage an “obvious gap in the literature” (9, p. 727). Our paper narrows the gap by providing the following: 1) an overview of discrimination encountered by Asian Americans; 2) a review of the literature on discrimination and health; and 3) suggestions for future research.

DEFINITIONS AND THE ICEBERG METAPHOR

Racism can be defined as “a set of institutional conditions of group inequality and an ideology of racial domination, in which the latter is characterized by a set of beliefs holding that the subordinate group is biologically or culturally inferior to the dominant racial group” (10, p. 319). Discrimination is defined as the 1) “differential treatment on the basis of race that disadvantages a racial group” and 2) “treatment on the basis of inadequately justified factors other than race that disadvantages a racial group” (6, pp. 4 and 39). Accordingly, racism is a broad construct that reflects the processes, norms, ideologies, and behaviors that perpetuate racial inequality. Discrimination is viewed as the component of racism focused on behaviors.

Carmichael and Hamilton (11) argued that racism exists at the individual and institutional levels. More recent scholarship has delineated other levels (3, 12, 13). The basic idea is that racism is not merely the actions and prejudices of individuals against individuals. More importantly, racism may be perpetuated by social organizations. Hence, institutional racism represents the processes built into social entities—such as governments, bureaucracies, and culture—that reinforce the racial hierarchy.
Discrimination may also exist at multiple levels, as described with the iceberg metaphor shown in Figure 1 (14). Hate crimes and other overt acts of racial bias sit at the tip of the iceberg. In 2006, the Federal Bureau of Investigation recorded 239 anti-Asian hate crimes, representing about 4.8% of all race-related hate crimes (15). These overt actions, however, are far less prevalent than more subtle, symbolic, and mundane types of discrimination, such as being treated with less respect. Although less dramatic, these mundane actions may be as damaging as more overt ones (16–18).

The base of the iceberg, however, is often more hazardous than the tip. What lies below the surface determines the direction and velocity of the iceberg and, when unrecognized, can cause catastrophes. The bottom of the iceberg represents institutionalized discrimination, which may be considered a fundamental cause of health and health disparities. Addressing the tip of the iceberg through protective legislation and cultural competency efforts is important. The metaphor, however, highlights the need to change the structural base beneath the surface in order to change the course of health disparities. For Asian Americans, this base may include processes such as residential segregation and immigration policy.

**EVIDENCE FOR DISCRIMINATION AGAINST ASIAN AMERICANS**

We begin with a brief review of historic discrimination against Asian Americans to set the context (although a full accounting is beyond our scope) (19–21). Beginning in the late 1800s, individuals, organizations, and the government systematically undermined the human rights of Asians in the United States. Some actions included outright violence. For example, Chan (19) documents how a mob in 1908 drove Asian-Indian workers from their camp and set it on fire. These actions also included laws excluding Asians from citizenship, suffrage, and land ownership (22, 23). Congressional legislation (e.g., the Chinese Exclusion Law of 1882), Presidential declarations (e.g., Roosevelt’s Executive Order for the Internment of Japanese Americans), and Supreme Court interpretations (United States v Bhagat Singh Thind) institutionalized and affirmed discrimination at the federal level (22, 24). These policies were supported by pseudoscientific “studies” suggesting that specific races themselves were the cause of certain illnesses and arguments that social control of these races would prevent the spread of communicable diseases (14, 25). In Great Britain, James Cantile, founder of the Royal Society of Tropical Medicine and Hygiene, asserted, “There seems but one way to prevent [the spread of leprosy] and that is the exclusion or the right control of all Chinese coolies” (26, p. 126). Similar arguments were raised that deportation of groups like Filipinos from the United States would serve the public’s health (27). Given this historic backdrop, it is not surprising that one of the first empirical studies of prejudice for any population, published by LaPiere in 1934, was on the experiences of a Chinese couple (28).

Bogardus (29) documented considerable anti-Asian sentiment beginning years earlier, in 1926. His study asked 1,700 college students across the United States to evaluate 30 groups on social distance, the degree to which a respondent felt affinity or animosity toward a given group. Students felt the least social distance to the English and ranked them first. By comparison, the Irish were fifth, and “Negros” were 26th. Chinese, Koreans, and Asian Indians were ranked 28th, 29th, and 30th, respectively.

Public sentiment and policy began to shift in the middle of the 20th century. Explicitly discriminatory policies began to erode during the civil rights movement leading to the 1960s. In 1966, an article in the New York Times Magazine began to popularize the idea of Asian Americans as a “model minority” (30, p. 180). This view portrays Asian Americans as having overcome the barriers of minority status and successfully integrating into mainstream US society. Superficially, this stereotype appears positive, but it is criticized for masking the socioeconomic difficulties faced by many Asian Americans (31, 32). Further, an underlying assumption of the model minority stereotype is that Asian Americans have overcome racial bias (21, 32–34). Sue et al. argue that this stereotype has been a “reason to ignore the problem of discrimination against Asian Americans and can be used as a convenient rationale to neglect them in research and intervention programs” (35, p. 78).

Public opinion polls show that Americans continue to express mixed feelings toward Asian Americans. On some metrics, Americans feel positively toward Asian Americans, particularly in comparison with African Americans. Nevertheless, these positive feelings are still not on par with the positive feelings that Americans have for whites. For instance, respondents to the General Social Survey (GSS) in 1990 were most likely to rank African Americans as “violent” or “unintelligent,” followed by Asians and then whites (36). Respondents also ranked Asians as the most unpatriotic of these groups. In 2005, Parillo and Donoghue (37) replicated Bogardus’ study and found that African Americans were ranked ninth, while Chinese were ranked 17th, Koreans 24th, and Asian Indians 26th. At the bottom
Several studies have found that Asian adolescents report seeing friends being treated unfairly because they were Asian time, and 62% reported being disliked, treated unfairly, or experiencing some form of routine unfair treatment in their lifetime. The 2002–2003 National Latino and Asian-American Study (NLAAS) found that 74% of Asian Americans reported experiencing racial discrimination because of their accents, “nerdiness,” small stature, and foreign status (40). Polls from the 1990s found that between 43% and 63% of Asian Americans reported racial discrimination (39). In 2003, the California Health Interview Survey (CHIS) found that 65% of Asian Americans overall reported being unfairly treated because of their race in their lifetime. However, this rate ranges from 42% among Vietnamese to 75% among Japanese (38). In the United Kingdom, 7% of Bangladeshis, 12% of Asian Indians, and 16% of Pakistanis were insulted based on their race, religion, or language in the past year (40).

Some of the negative attitudes that Americans have for Asian Americans relate to immigration. Respondents in the GSS 1990 ranked Asians as more unpatriotic than blacks or whites (36). Other polls show similar feelings. A survey conducted in 2001 found that 32% of Americans thought that Chinese Americans were more loyal to China than to the United States, 24% thought that Chinese Americans were taking away too many jobs from other Americans, and 28% felt that the increase in Asian immigration was bad for America (38).

Moreover, Asian Americans themselves report experiencing racial bias (16, 17). A 1987 survey of Filipino, Chinese, and Japanese Americans found that more than 60% stated that racism was a significant barrier to upward mobility (39). Polls from the 1990s found that between 43% and 63% of Asian Americans reported racial discrimination (40).

More recent surveys echo these findings. For example, the 2002–2003 National Latino and Asian-American Study (NLAAS) found that 74% of Asian Americans reported experiencing some form of routine unfair treatment in their lifetime, and 62% reported being disliked, treated unfairly, or seeing friends being treated unfairly because they were Asian (41). Several studies have found that Asian adolescents report more discrimination from their peers than adolescents from other ethnic groups (42–44). Asian students may encounter discrimination because of their accents, “nerdiness,” small stature, and foreign status (42, 44).

Reports of discrimination vary by subgroup. For instance, 38% of Vietnamese in the National Latino and Asian-American Study reported unfair treatment compared with 61% of Chinese (14). Similarly, the 2003 California Health Interview Survey (CHIS) found that 65% of Asian Americans overall reported being unfairly treated because of their race in their lifetime. However, this rate ranges from 42% among Vietnamese to 75% among Japanese (14). Among participants of the Study of Women’s Health Across the Nation (SWAN), 36% of Japanese women reported discrimination compared with 60% of Chinese (45). In the United Kingdom, 7% of Bangladeshis, 12% of Asian Indians, and 16% of Pakistanis were insulted based on their race, religion, or language in the past year (46).

As suggested by the iceberg metaphor, reports of discrimination should be less common for overt bias and more common for subtle, symbolic, and structural discrimination. Consistent with this idea, Beiser et al. (47) found that, overall, 26% of Southeast Asian refugees in Vancouver, Canada, reported discrimination. Among those reporting discrimination, 4.8% reported overt threats, 4.8% reported racial graffiti on their personal property, and 4.2% reported physical abuse. In contrast, more subtle experiences were more prevalent: 83% reported being looked down upon, and 74.4% reported being unfairly treated.

Table 2 shows the reporting of racial discrimination from adult respondents to the 2007 California Health Interview Survey. Threats and harassment in the past year were the least commonly reported type of discrimination, ranging from 12% among Japanese to 19% among Filipinos. Discrimination based on accent or speech was more common, ranging from 18% among Japanese to 39% among South Asians. Finally, disrespect due to race in the past year was reported by a third of the Japanese and by half of all other respondents. Participants were also asked about settings associated with racial bias (16, 17). A 1987 survey of Filipino, Chinese, and Japanese Americans found that more than 60% stated that racism was a significant barrier to upward mobility (39).
where discrimination occurred within their lifetime. Because most individuals spend more of their time in educational or work settings than in other settings (e.g., in courts), it is not surprising that discrimination at school and work was cited most often.

Direct evidence for discrimination against Asian Americans comes from a study by the Department of Housing and Urban Development (HUD) published in 2003 (48). In this study, a paired-testing method was used, whereby 2 individuals are provided with identical background characteristics (e.g., income, housing preferences), except for their race. These pairs are then instructed to systematically document their home-buying process. This study found that 20% of Asian Americans experienced discrimination in home buying across the nation, a level equivalent to that of African Americans.

In summary, recent evidence shows that Asian Americans experience considerable racial discrimination. Taken together, these data indicate that experiences of discrimination fall along a gradient, with the most common being subtle signs of disrespect. Polls show that many Americans report a high degree of social distance to Asian Americans and view Asian Americans as unpatriotic. When asked about their own experiences, many Asian Americans cite discrimination based on race/ethnicity, speech, and nativity.

### DISCRIMINATION AND HEALTH

#### Empirical associations between self-reported discrimination and health

Table 3 summarizes the articles on self-reported discrimination among Asians or Pacific Islanders. These articles were obtained through a search on PubMed, Web of Science, and Google Scholar with the following keywords: racism, discrimination, unfair treatment, racial bias, Asian, Pacific Islander. The search gathered peer-reviewed articles published from January 1960 to January 2009, yielding 183 articles. This search was supplemented by reviewing the work of scholars publishing in this area (e.g., Samuel Noh), from recommendations by referees, and from bibliographies of other review articles (4, 5, 7, 8). These efforts yielded an additional 11 articles, for a total of 194. We reviewed the abstracts, titles, and tables of these articles and excluded those not assessing empirical associations between self-reported discrimination and a health or behavioral outcome among our target population. Sixty-two articles met our review criteria.

#### Table 2. Percent Reporting Racial Discrimination, by Asian Ethnic Group, California Health Interview Survey, 2007

<table>
<thead>
<tr>
<th></th>
<th>Chinese (n = 320)</th>
<th>Japanese (n = 174)</th>
<th>Filipino (n = 227)</th>
<th>South Asian (n = 140)</th>
<th>Other Asian or Pacific Islander (n = 222)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experienced discrimination in the past 12 months, %</td>
<td>Threatened/harassed</td>
<td>16</td>
<td>12</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>Criticized accent/speech</td>
<td>32</td>
<td>18</td>
<td>41</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Less respect</td>
<td>49</td>
<td>36</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Settings where discrimination occurs, lifetime, %</td>
<td>School</td>
<td>65</td>
<td>57</td>
<td>50</td>
<td>51</td>
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<tr>
<td></td>
<td>Work</td>
<td>59</td>
<td>47</td>
<td>55</td>
<td>55</td>
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<tr>
<td></td>
<td>Police/courts</td>
<td>24</td>
<td>19</td>
<td>19</td>
<td>31</td>
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<tr>
<td></td>
<td>Medical care</td>
<td>17</td>
<td>20</td>
<td>21</td>
<td>19</td>
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<tr>
<td></td>
<td>Other</td>
<td>52</td>
<td>52</td>
<td>39</td>
<td>45</td>
</tr>
</tbody>
</table>

* Data come from a restricted California Health Interview Survey data file; these data are not publically available.

Sixteen studies focused on physical health outcomes, with most (n = 10) focused on global markers of physical health (52, 54–56, 75, 76, 86–89). Five of 7 articles on physical functioning and cardiovascular health reported the hypothesized association (45, 45–56, 76, 90, 91). Discrimination was also associated with increased risk for diabetes and breathing problems, glycemic control, cholesterol, diabetes, and obesity (91, 92). The only study of birth weight did not find the hypothesized relation (93). However, this study did not disaggregate Asian respondents from other respondents and, further, the measure of discrimination was embedded into a broader index of social adversity.

Another 20 studies examined health behaviors, including substance use and help seeking (41, 53, 55, 56, 58, 71, 82, 88, 94–105). Eight studies reported that discrimination was
Table 3. Empirical Articles on Self-reported Discrimination Among Asians or Pacific Islanders

<table>
<thead>
<tr>
<th>First Author, Year</th>
<th>Discrimination Measure</th>
<th>Population</th>
<th>Outcomes</th>
<th>Results</th>
<th>Moderation</th>
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</thead>
<tbody>
<tr>
<td>Noh, 1996 (64)</td>
<td>Two items on social discrimination and sense of marginalization in a 31-item scale measuring chronic strains</td>
<td>Korean Mental Health Study—community sample of Korean immigrants in Toronto (n = 800)</td>
<td>CES-D (168)—depressive symptoms</td>
<td>Hypothesized association</td>
<td>Social and psychological resources—no significant interaction with discrimination</td>
</tr>
<tr>
<td>Pernice, 1996 (68)</td>
<td>Three items on discrimination in the health-care setting, workplace discrimination, and negative stereotypes in a 16-item scale of postmigration experiences</td>
<td>Nonrandom sample of immigrants to New Zealand (N = 219). Analysis not stratified, not controlled by race (Pacific Islanders = 57)</td>
<td>HSCL 25 (169)—depressive symptoms and anxiety</td>
<td>Hypothesized association</td>
<td></td>
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<tr>
<td>Noh, 1999 (65)</td>
<td>One item, “In Canada, have you been discriminated against because of your race?”</td>
<td>Refugee Resettlement Project: second wave, sample of Southeast Asian refugees in Vancouver (N = 647). Analysis not stratified, not controlled for Asian ethnicity (Chinese = 281, Vietnamese and Laotian = 366)</td>
<td>Depressive affect measure (170)—depressive symptoms</td>
<td>Hypothesized association</td>
<td>Forbearance—significant interaction with discrimination; ethnic identity—significant 3-way interaction with forbearance and discrimination</td>
</tr>
<tr>
<td>Liebkind, 2000 (59)</td>
<td>18 items of discrimination and racism (e.g., applying for a job, atmosphere at work, renting or buying housing, treatment in health-care setting)</td>
<td>Community sample of immigrants in Helsinki, Finland (N = 1,146). Analysis stratified by ethnicity (Vietnamese = 109)</td>
<td>HSCL 25—depressive and anxiety symptoms</td>
<td>No significant relation for Vietnamese</td>
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<tr>
<td>Ying, 2000 (78)</td>
<td>One item about the extent to which respondents “felt they were subject to racial discrimination”</td>
<td>US- and foreign-born Chinese-American college students (n = 353)</td>
<td>Sense of Coherence Questionnaire (171)</td>
<td>Hypothesized association</td>
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<tr>
<td>Abouguendia, 2001 (49)</td>
<td>Two items on out-group hassles (“deciding whether certain actions are made because of my ethnic origin” and “my fluency in English being underestimated”) in a 29-item measure on hassles</td>
<td>Canadian South Asian university students (n = 74)</td>
<td>Zung Self-Rating Depression Scale (172)—depressive symptoms</td>
<td>Hypothesized association</td>
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<tr>
<td>Loo, 2001 (60)</td>
<td>Race-related Stressor Scale—3-item scale based on race-related experiences of Asian-American Vietnam War veterans (e.g., racial slurs, treated unfairly, treated as inferior)</td>
<td>Asian-American Vietnam veterans (N = 300). Analysis not stratified, not controlled for Asian ethnicity (Chinese = 42, Korean = 9, Japanese/Okinawan = 63, Filipino = 36, Chamorro = 39, mixed Asian other = 111)</td>
<td>1) Brief Symptom Inventory—general psychiatric symptoms; 2) Mississippi Scale for PTSD</td>
<td>Hypothesized association</td>
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<tr>
<td>Mak, 2001 (61)</td>
<td>Two items on the frequency of being “teased or insulted” or “threatened or attacked” because of race</td>
<td>Community sample of Chinese immigrants to Australia (n = 372)</td>
<td>GHQ 12—psychological distress</td>
<td>Hypothesized association</td>
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<tr>
<td>Study</td>
<td>Design/Measurements</td>
<td>Sample Description</td>
<td>Health Outcomes</td>
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<tr>
<td>Karlsen, 2002 (76)</td>
<td>Two items (experience of racism within the last year and employment discrimination)</td>
<td>Fourth National Survey of Ethnic Minorities—United Kingdom nationally representative sample (N = 5,197). Analysis stratified by ethnicity (Indian = 973, Pakistani and Bangladeshi = 848, Chinese = 104)</td>
<td>Self-assessed health; disability; high blood pressure; diabetes; heart attack; breathing problems; depression; psychosis</td>
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<td>Gee, 2002 (54)</td>
<td>Two items (&quot;Thinking back on your life, have you ever been treated unfairly or badly because of 1) race or ethnicity; 2) speaking a different language or your accent?&quot;)</td>
<td>Chinese-American Psychiatric Epidemiological Study—community sample of Chinese Americans in Los Angeles (n = 1,503)</td>
<td>SCL-90-R—general psychological distress; SF 36—global markers of physical health and functioning</td>
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<td>Utsey, 2002 (69)</td>
<td>Index of Race-related Stress—Brief Version (173) (22-item measure evaluating racist situations and their effect); 3 dimensions: institutional, individual, cultural</td>
<td>Community sample of African Americans, Asians, and Latinos living in the Northeast (N = 160). Sample controlled for race (Asian = 45)</td>
<td>WHO QOL Brief—quality of life</td>
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<td>Barry, 2003 (77)</td>
<td>Two items assessing perceptions of personal and group discrimination (&quot;I find that Americans treat me as an equal&quot; and &quot;People from my ethnic group are discriminated against&quot;)</td>
<td>Community sample of East Asian immigrants (n = 170)</td>
<td>1) Rosenberg Self-Esteem Scale (174)—global personal self-esteem; 2) collective self-esteem measure (175)—group self-esteem</td>
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<tr>
<td>Mossakowski, 2003</td>
<td>Everyday Discrimination Scale (131) (9-item scale of frequency of chronic and routine unfair treatment (e.g., being treated with less respect, treated with less courtesy, worse service at restaurants)) and Lifetime Discrimination Scale (single item, &quot;Have you ever been treated badly because of your race or ethnicity?&quot;)</td>
<td>Filipino-American Community Epidemiological Study—community sample of Filipino Americans in Honolulu and San Francisco (n = 2,241)</td>
<td>SCL-90-R—general psychological distress</td>
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<tr>
<td>Noh, 2003 (66)</td>
<td>Eight items measuring frequency of personal experiences with discrimination, such as being hit or handled roughly, insulted or called names, treated rudely, or treated unfairly</td>
<td>Growing Up Canadian Project—community sample of Korean immigrant households in Toronto (n = 180)</td>
<td>Korean version of CES-D—depressive symptoms</td>
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</tbody>
</table>

Hypothesized association for mental health outcomes only

Hypothesized association for cultural racism

Hypothesized association for both personal and group discrimination

Hypothesized association for both types of discrimination; lifetime becomes nonsignificant when everyday discrimination is included

Ethnic identity—significant interaction with lifetime racism, not everyday discrimination

Coping styles—significant interaction with discrimination; acculturation—significant 3-way interaction with coping and discrimination
<table>
<thead>
<tr>
<th>First Author, Year (Reference No.)</th>
<th>Discrimination Measure</th>
<th>Population</th>
<th>Outcomes</th>
<th>Results</th>
<th>Moderation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoshikawa, 2004 (71)</td>
<td>Three scales of discrimination experiences—racism (5 items, “How often have you had trouble finding lover relationships or boyfriends because of your race or ethnicity?”); homophobia (3 items, “As you were growing up, how often did you hear that homosexuals are not normal?”); and antiimmigrant (3 items, “As an adult, how often were you disrespected because of how you wrote or spoke English?”)</td>
<td>Community sample of Asian and Pacific Islander gay men $(N = 192)$. Analysis controlled for Asian ethnicities (East Asian = 102, Southeast Asian = 46, South Asian = 21, Pacific Islander = 4, mixed = 19)</td>
<td>CES-D—depressive symptoms; HIV risk behavior</td>
<td>Hypothesized association of racism with depressive symptoms, antiimmigrant discrimination associated with HIV risk behavior</td>
<td>Family communication—significant interaction with discrimination</td>
</tr>
<tr>
<td>Bhui, 2005 (46)</td>
<td>Three items on job-related racial discrimination and general perceived racism (e.g., “In the last 12 months has anyone insulted you for reasons having to do with your ethnicity?”)</td>
<td>Ethnic Minority Psychiatric Illness Rates in the Community Study—representative sample of workers in the United Kingdom $(N = 2,054)$. Sample stratified by ethnicity (Pakistani = 248, Bangladeshi = 141, Indian = 375)</td>
<td>Revised clinical interview schedule—presence of mental disorders 2 weeks before interview</td>
<td>Hypothesized association for Asian Indians and Bangladeshis reporting racial insults</td>
<td>Hypothesized association</td>
</tr>
<tr>
<td>Karlsen, 2005 (84)</td>
<td>Three items on job-related racial discrimination and general perceived racism (e.g., “In the last 12 months has anyone insulted you for reasons having to do with your ethnicity?”)</td>
<td>Ethnic Minority Psychiatric Illness Rates in the Community Study—representative sample of workers in the United Kingdom $(N = 2,054)$. Sample stratified by ethnicity (Pakistani = 248, Bangladeshi = 141, Indian = 375)</td>
<td>Revised clinical interview schedule—risk of psychosis</td>
<td>Hypothesized association</td>
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<tr>
<td>Loo, 2005 (85)</td>
<td>Impact of Race-related Events, a scale used to assess PTSD symptoms associated with the presence of a race-related event</td>
<td>Asian-American Vietnam veterans $(N = 300)$. Sample not stratified, not controlled for Asian ethnicity (Japanese = 64, Chinese = 43, Korean = 9, Filipino = 36, Chamorro = 40, Hawaiian = 35, mixed Asian = 73)</td>
<td>Mississippi Scale for PTSD</td>
<td>Hypothesized association</td>
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<tr>
<td>Yoo, 2005 (73)</td>
<td>Asian-American Perceived Racial Discrimination Scale, a 10-item measure of perceived encounters of discrimination (e.g., treated differently because Asian)</td>
<td>Asian-American college students in a Midwest college $(N = 155)$. Population not stratified, not controlled for Asian ethnicity (Korean = 37, Chinese = 16, Hmong = 51, Vietnamese = 14, other Asian = 37)</td>
<td>PANAS (176)—satisfaction with life, positive and negative affect</td>
<td>Direct effect not reported, moderation effect only</td>
<td>Ethnic identity—no significant 2-way interaction with discrimination; significant 3-way interaction with 1) problem solving and discrimination and 2) cognitive restructuring and discrimination</td>
</tr>
<tr>
<td>Beiser, 2006 (51)</td>
<td>One item, “In Canada, have you been discriminated against because of your race?”</td>
<td>Refugee Resettlement Project—sample of adult “boat people” in Vancouver in 1981 $(N = 647)$. Analysis controlled for Asian ethnicities (Chinese = 281, Vietnamese = 265, Filipino = 442)</td>
<td>Depressive affect measure (170)—depressive symptoms</td>
<td>Hypothesized association</td>
<td>Ethnic identity—significant interaction with all 3 discrimination items</td>
</tr>
<tr>
<td>Author(s), Year</td>
<td>Description</td>
<td>Sample</td>
<td>Measures</td>
<td>Hypothesized Association</td>
<td>Notes</td>
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<td>Greene, 2006 (43)</td>
<td>Seven items about experiences of racial discrimination by adults (&quot;How often are you treated unfairly by adults because of your race or ethnicity?&quot;); 7 items about experiences of racial discrimination by peers (&quot;How often are you called names or insulted by other teenagers because of your race or ethnicity?&quot;)</td>
<td>School sample of high school students (N = 136). Analysis controlled for race (Asians = 57)</td>
<td>Children's Depression Inventory (177)—depressive symptoms; Rosenberg Self-Esteem Scale (174)—personal global self-esteem</td>
<td>Ethnic identity—significant interaction with peer discrimination on self-esteem only</td>
<td>-</td>
</tr>
<tr>
<td>Landrine, 2006 (58)</td>
<td>General Ethnic Discrimination Scale (58) (reported frequency of 18 types of discrimination experiences (e.g., work, public places, health care, and school))</td>
<td>Sample of community members and university students (N = 1,369). Analysis controlled for Asian ethnicity (Chinese = 587, Vietnamese = 265, Filipino = 441, and other Asian = 752)</td>
<td>HSCL 58—psychiatric symptoms; cigarette smoking</td>
<td>Hypothesized association</td>
<td>-</td>
</tr>
<tr>
<td>Gee, 2007 (83)</td>
<td>Everyday Discrimination Scale (131)</td>
<td>National Latino and Asian-American Study—national sample of Asian Americans (N = 2,047). Analysis controlled for Asian ethnicity (Chinese = 587, Vietnamese = 265, Filipino = 441, and other Asian = 752)</td>
<td>WHO CIDI—past-year depressive and anxiety disorders</td>
<td>Hypothesized association</td>
<td>-</td>
</tr>
<tr>
<td>Lam, 2007 (57)</td>
<td>One item, “Racism affects the lives of people and their racial group”</td>
<td>Vietnamese-American undergraduates (n = 122)</td>
<td>Depression; anxiety; sense of coherence</td>
<td>Hypothesized association for depression and sense of coherence</td>
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<tr>
<td>Mossakowski, 2007 (63)</td>
<td>Three items on being treated badly in one’s lifetime because of race/ethnicity, because of speaking another language, and because of speaking with an accent</td>
<td>Filipino-American Community Epidemiological Study—community sample of Filipino Americans in Honolulu and San Francisco (n = 2,129)</td>
<td>SCL-90-R—depressive symptoms</td>
<td>Hypothesized association</td>
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<td>Noh, 2007 (67)</td>
<td>Eight items measuring frequency of personal experiences with discrimination (e.g., being hit or handled roughly, insulted or called names, treated rudely, or treated unfairly)</td>
<td>Korean Mental Health Study—community sample of Korean immigrant households in Toronto (n = 180)</td>
<td>Korean version of CES-D—positive affect and depressive symptoms</td>
<td>Hypothesized association for subtle discrimination and depressive symptoms; overt discrimination and positive affect</td>
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<td>Poyrazli, 2007 (50)</td>
<td>One item, “I feel that I receive unequal treatment because of my race or ethnicity”</td>
<td>American (N = 241, Asian = 9) and international (N = 198, Asian = 129) college students from a university. Analysis controls for race</td>
<td>Homesickness</td>
<td>Hypothesized association</td>
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<td>Wadsworth, 2007 (70)</td>
<td>One item about discrimination experiences at work (&quot;Have you had any experience of discrimination at work?&quot;)</td>
<td>United Kingdom community sample of employed adults (N = 626). Sample stratified by ethnic groups (Bangladeshi = 206)</td>
<td>Work stress; psychological distress</td>
<td>Hypothesized association for both outcomes</td>
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<td>Asakura, 2008 (52)</td>
<td>10 items of discrimination experiences at work (&quot;I feel uncomfortable when others make jokes about people of my ethnic background,&quot; and &quot;I sometimes feel that my ethnicity is a limitation&quot;)</td>
<td>Convenience sample of Japanese-Brazilian workers in Japan ($n = 313$)</td>
<td>GHQ 12—mental health symptoms; self-rated health, checklist of somatic symptoms</td>
<td>Hypothesized association</td>
<td>Education—no significant interaction with discrimination</td>
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<td>Hwang, 2008 (81)</td>
<td>General Ethnic Discrimination Scale (58)</td>
<td>Asian-American ($n = 107$) and Latino ($n = 79$) college students from a university located in the Rocky Mountain region of the United States</td>
<td>Suicidal ideation; psychological distress; state anxiety; trait anxiety; clinical depression</td>
<td>Hypothesized association</td>
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<td>Liang, 2008 (79)</td>
<td>Asian-American Racism-related Stress Index (134)—29 items assessing stress associated with race-specific events Asian Americans experience (e.g., “You learn that Asian Americans were historically targets of racist actions” and “You are told that you speak English so well”)</td>
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<td>College Adjustment Scale (178)—self-esteem problems</td>
<td>Hypothesized association</td>
<td>Collective self-esteem—no significant interaction with racism-related stress, although it was a partial mediator for racism-related stress and self-esteem</td>
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<td>Yip, 2008 (72)</td>
<td>Three items assessing the frequency of racial discrimination</td>
<td>National Latino and Asian-American Study—national sample of Asian Americans ($N = 2,047$). Analysis controlled for Asian ethnicity (Chinese = 586, Vietnamese = 508, Filipino = 491, and other Asian = 462)</td>
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<td>Yoo, 2008 (74)</td>
<td>Two vignettes of hypothetical racially motivated scenarios</td>
<td>Asian-American college students ($n = 128$)</td>
<td>PANAS—positive and negative affect</td>
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<td>Ethnic identity—significant 2-way interaction with discrimination for positive affect, significant 3-way interaction with generation and discrimination for positive and negative affect</td>
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<tr>
<td>Lee, 2005 (80)</td>
<td>Perceived Discrimination Scale (&quot;People treat you badly because they think you do not speak English well&quot;; &quot;You think it will be difficult to find work because you are of Korean descent&quot;; and &quot;You feel unaccepted by others because of your Korean culture&quot;)</td>
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<td>Yen, 1999 (105)</td>
<td>Four items, &quot;Considering your job, have you experienced discrimination because of gender, race, or color in the following: in dealing with passengers? Public other than passengers? Promotions? Disciplinary actions?&quot;</td>
<td>Community sample of bus drivers ($N = 1,542$). Analysis controlled for race (Asians = 137)</td>
<td>Alcohol consumption</td>
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<tr>
<td>Yen, 1999 (104)</td>
<td>Two sets of questions: 1) reactions to racial discrimination and 2) lifetime experiences</td>
<td>Community sample of bus drivers ($N = 1,542$). Analysis controlled for race (Asians = 137)</td>
<td>Alcohol consumption</td>
<td>Hypothesized association for those with high reports of discrimination</td>
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<td>Iyer, 2003 (99)</td>
<td>Racial Teasing Scale (180)—8 items of perceived frequency and impact of racial/ethnic teasing, including name-calling, behavior related; stereotyping, appearance related; and social exclusion</td>
<td>American undergraduate women of South-Asian descent ($n = 122$)</td>
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<td>Blanchard, 2004 (94)</td>
<td>Five items rating interactions with providers based on race</td>
<td>Commonwealth Fund 2001 Health-Care Quality Survey—nationally representative sample of adults ($N = 6,722$). Analysis not stratified, not controlled by race (Asians = 669)</td>
<td>Health-care utilization</td>
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<td>Wilson, 2004 (103)</td>
<td>Qualitative study</td>
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<td>Those who attributed discrimination to themselves engaged in more risky behavior</td>
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<td>Spencer, 2004 (101)</td>
<td>Two items, &quot;Thinking back on your life, have you ever been treated unfairly or badly because of 1) race or ethnicity or 2) speaking a different language or your accent?&quot;</td>
<td>Chinese-American Psychiatric Epidemiological Study—community sample of Chinese Americans in Los Angeles ($n = 1,503$)</td>
<td>Utilization of mental health services (formal, informal, friends/family support)</td>
<td>Hypothesized association for language discrimination and informal use and friends/family support. Hypothesized association between racial discrimination and formal use</td>
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<td>Choi, 2006 (96)</td>
<td>Two items of unfair treatment in the neighborhood and at school because of ethnicity</td>
<td>Community sample of adolescents in 4 high schools in Seattle ($N = 2,305$). Analysis controlled for race (Asian = 493)</td>
<td>Substance use</td>
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<td>Jang, 2005 (88)</td>
<td>One item on the experience of disrespect in a health-care setting</td>
<td>Community sample of Korean elderly living in 2 Florida cities ($n = 230$)</td>
<td>Self-rated health; hospital visits; satisfaction with health care</td>
<td>Hypothesized association with satisfaction with health care only</td>
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<td>Trivedi, 2006 (102)</td>
<td>Two items, “Thinking of your experiences with receiving health care in the past 12 months, have you felt you were discriminated against?” “What do you think was the reason for the discrimination?”</td>
<td>California Health Interview Survey, a statewide sample of adult Californians ($n = 54,968$). Analysis stratified by race (no report of unweighted sample size)</td>
<td>Use of 6 preventive health services</td>
<td>Hypothesized association for 4 out of the 6 services</td>
<td>Ethnic identity—significant interaction with discrimination; nativity—significant interaction with discrimination; age—no significant interaction; gender—no significant interaction</td>
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<td>Gee, 2007 (98)</td>
<td>Everyday Discrimination Scale (131) and Unfair Events Scale—count of respondents' endorsements to being treated “unfairly or badly” because of race</td>
<td>Filipino-American Community Epidemiological Study—community sample of Filipino Americans in Honolulu and San Francisco ($n = 2,217$)</td>
<td>Illicit drug use; prescription drug use; alcohol dependence</td>
<td>Hypothesized association</td>
<td>Ethnic identity—significant interaction with discrimination</td>
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<td>Reddy, 2007 (100)</td>
<td>Measure of Ethnic Teasing—26-item scale across 4 areas of ethnic teasing: hair, dress, skin color, and facial features</td>
<td>South Asian women between 18 and 30 years of age, living in the United States ($n = 74$)</td>
<td>Body esteem; eating attitudes</td>
<td>Hypothesized association, mediated by cultural conflict</td>
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<td>Burgess, 2008 (95)</td>
<td>Experience of discrimination (181)—6-item scale of experiences of discrimination in getting a job, being at work, getting housing, getting a mortgage, applying for social services, and dealing with the police</td>
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<td>Mental health-care utilization</td>
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<td>Chae, 2008 (53)</td>
<td>Collective Self-Esteem Scale (175)—4-item scale assessing perceptions of whether white gay men “respect” or consider Asian gay men “good,” “unworthy,” or “less desirable”</td>
<td>Community sample of Asian and Pacific Islander gay men ($N = 192$). Analysis controlled for Asian ethnicities (East Asian = 100, Southeast Asian = 25, South Asian = 20, Filipino = 29, other = 18)</td>
<td>CES-D—depressive symptoms; UAI</td>
<td>Hypothesized association for depressive symptoms only</td>
<td>Racial attraction—significant interaction with group devaluation and UAI; racial identity—significant interaction with group devaluation and UAI; racial group membership—significant interaction with group devaluation and UAI</td>
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<td>Crawley, 2008 (97)</td>
<td>Two items, “Was there ever a time when you would have gotten better medical care if you had belonged to a different racial or ethnic group?” “Think about the last time this happened. How long ago was that?”</td>
<td>California Health Interview Survey—statewide sample of adult Californians (N = 11,245). Analysis controlled for race (Asian = 3,875, Pacific Islander = 1,257)</td>
<td>Endoscopy and mammography screening</td>
<td>Hypothesized association for women only</td>
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<td>Shiono, 1997 (93)</td>
<td>One item, “Did you experience one or more incidents of racial discrimination during pregnancy?”</td>
<td>Women’s Lifestyle in Pregnancy Study—pregnant women who received prenatal care in Chicago and New York City clinics (N = 1,150). Analysis controlled for race (Chinese = 144)</td>
<td>Birth weight</td>
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<tr>
<td>Karlsen, 2004 (89)</td>
<td>One item, “Do you worry about being racially harassed?”</td>
<td>Fourth National Survey of Ethnic Minorities—United Kingdom nationally representative sample, ethnic minorities only (N = 2,351). Analysis not stratified, not controlled by race (Indian = 973, Pakistani and Bangladeshi = 848, Chinese = 104)</td>
<td>Self-rated health</td>
<td>Hypothesized association</td>
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<tr>
<td>Harris, 2006 (55)</td>
<td>Five items across 2 dimensions: experience of ethnically motivated attack, or unfair treatment because of ethnicity in health setting, work, or gaining housing</td>
<td>New Zealand Health Survey—sample of whites and Maoris only (N = 10,377). Analysis stratified by race (Maori = 4,108)</td>
<td>SF 36—self-rated health, physical functioning, mental health, cardiovascular disease, smoking</td>
<td>Hypothesized association</td>
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<tr>
<td>Harris, 2006 (56)</td>
<td>Five items: experience of ethnically motivated attack, or unfair treatment because of ethnicity in health setting, work, or gaining housing</td>
<td>New Zealand Health Survey—nationally representative sample (N = 12,500). Analysis controlled for race (Asian = 1,169, Maori = 4,108, Pacific Islander = 900)</td>
<td>SF 36—self-rated health, physical functioning, mental health, cardiovascular disease, smoking</td>
<td>Hypothesized association for all outcomes; Maori have highest odds for reporting discrimination</td>
<td></td>
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<tr>
<td>Gee, 2006 (106)</td>
<td>Everyday Discrimination Scale (131) and Unfair Events Scale—3 items of unfair events based on race, language, and accent</td>
<td>Filipino-American Community Epidemiological Study—community sample of Filipino Americans in Honolulu and San Francisco (n = 2,241)</td>
<td>Current health conditions</td>
<td>Hypothesized association</td>
<td>Social support—significant 2-way interaction with discrimination; significant 3-way interaction with region and discrimination</td>
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<tr>
<td>Piette, 2006 (91)</td>
<td>Five items about perceived discrimination in a health-care setting on the basis of race or ethnicity, education or income, age, and gender (for women only)</td>
<td>Adults with diabetes treated in county health-care system, a university-based health-care system, and 3 Department of Veterans Affairs systems (N = 848). Analysis controlled for race (Asian and Pacific Islander and “other” = 147)</td>
<td>Glycemic control; cholesterol levels; diabetes symptoms; physical functioning</td>
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<td>de Castro, 2008 (90)</td>
<td>Two items of work discrimination, “Since I am Filipino, I’m expected to work harder” and “Since I’m Filipino, it is hard to get promotions/raises”</td>
<td>Filipino-American Community Epidemiological Study—community sample of Filipino Americans in Honolulu and San Francisco (n = 1,652)</td>
<td>Cardiovascular conditions</td>
<td>Hypothesized association</td>
<td>Duration in the United States—significant interaction with discrimination</td>
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<td>Sohn, 2008 (86)</td>
<td>Two items for experience of discrimination during military service and health-care provider sensitivity toward racial/ethnic background</td>
<td>2001 Veteran Identify Program Survey—national sample of military veterans, nonwhite respondents only (N = 1,737). Analysis controlled for race (Asian and Pacific Islander = 208)</td>
<td>SF 12—general health status</td>
<td>Hypothesized association for health-care discrimination only</td>
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<td>Yoo, 2009 (75)</td>
<td>Two items of unfair treatment by doctors or medical staff due to 1) race/ethnicity or 2) English ability</td>
<td>Commonwealth Fund 2001 Health-Care Quality Survey, Asian supplement—nonrandom sample of Asians living in the United States (N = 888). Analysis controlled for Asian ethnicity (Korean = 267, Chinese = 376, Vietnamese = 245)</td>
<td>Chronic health conditions, both physical and mental health</td>
<td>Hypothesized relation, racial discrimination becomes nonsignificant after adding language discrimination</td>
<td>Time in the United States—no significant 3-way interaction with racial discrimination and nativity; significant 3-way interaction with language discrimination and nativity</td>
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Abbreviations: CES-D, Center for Epidemiologic Studies Depression; CIDI, Composite Diagnostics Interview; GHQ, General Health Questionnaire; HIV, human immunodeficiency virus; HSCL, Hopkins Symptoms Checklist; PANAS, Positive Affect Negative Affect Schedule; PTSD, posttraumatic stress disorder; QOL, quality of life; SCL-90-R, Revised Symptoms Checklist 90; SF 36, Short Form 36; UAI, unprotected anal intercourse; WHO, World Health Organization.

* For scales with numbers (e.g., GHQ 12), the numerals refer to the number of items on the questionnaire.
related to increased risk of alcohol or tobacco use (41, 55, 56, 58, 82, 98, 104, 105). One study found positive associations between discrimination and marijuana, inhalants, crack/cocaine, or other drug use (96). Another study reported positive associations between discrimination and use of illicit drugs and prescription medications (98). Three articles found that discrimination was associated with increased human immunodeficiency virus risk behaviors (e.g., unprotected anal intercourse) among gay Asian-American men (53, 71, 103).

There were mixed findings for preventive behaviors (88, 94, 95, 97, 101, 102). One study reported that discrimination was associated with decreased likelihood of preventive health behaviors, including cholesterol testing, foot examination, hemoglobin (HbA1c) testing, and a flu shot, but the same study found no association between discrimination and aspirin use or prostate-specific antigen testing (102). Another study discovered an association between discrimination and decreased likelihood of endoscopy and mammography screening, but only among women (97). Two studies found that utilization of mental health services was negatively associated with discrimination, although one of the studies found that discrimination was associated with increased use of informal mental health services (95, 101).

Several studies investigated whether the effects of discrimination on health were tempered by protective factors. For instance, the associations between discrimination and health are buffered by social support and education (52, 66, 71, 106).

Ethnic identity was also evaluated as a moderator of discrimination. Six articles found that a strong identity buffers the associations between discrimination and health outcomes (41, 53, 62, 65, 82, 98). In contrast, 4 articles indicated that a strong identity exacerbates this association (43, 65, 74, 80). Four articles found that ethnic identity at times buffered discrimination, while at other times it exacerbated discrimination (51, 53, 65, 72). Another article indicated that high ethnic identification exacerbated the effect of discrimination on depressive affect among the unemployed but buffered the effect among those with poor English language skills (51). Chae and Yoshikawa (53) measured racial identity in 3 ways: as group membership, collective self-esteem, and preference for nonwhite partners. The interaction between identity and discrimination on unprotected anal intercourse varied by the measure of identity. Finally, other studies find that the potential amplification or buffering of identity varies by age and generation (72). Noh and Kaspar (66) have raised questions, worthy of continued study, about whether the buffering of discrimination varies by culture or other dimensions of social context.

Immigration-related factors may also moderate discrimination. One study found that the relation between discrimination and substance use was stronger among immigrants compared with nonimmigrants (98). Another reported that the association between racial discrimination and health outcomes strengthened with increasing years in the United States (92). One study did not find any interactions between discrimination and percentage of life in the United States (107). Yet another study reported that the interaction between discrimination and years in the United States applied only for language discrimination but not racial discrimination (75). Acculturative stress (e.g., social isolation, socioeconomic adjustment) appeared to moderate the effect of discrimination and coping response in one study (66).

As indicated by Table 3, many Asian subgroups have been included. Most articles focused on Chinese and Filipinos and, to a lesser extent, Vietnamese and Koreans. These populations generally follow the distribution of Asian populations in the United States. In the year 2000, the 5 largest Asian and Pacific Islander populations were Chinese (24%), followed by Filipinos (18%), Asian Indians (16%), Vietnamese (11%), and Koreans (11%) (108).

Yet, we could find only 2 studies that focused on discrimination and health among South Asians in the United States, a surprise since Asian Indians are the third largest subgroup. Both studies investigated racial teasing and eating disorders among women (99, 100). One additional study assessed discriminatory distress among 15 South Asian students, but it did not provide a clear connection to a health outcome (42). Population-based studies of discrimination among South Asians have emerged in the United Kingdom. The survey by Bhui et al. (46) was one of the few to distinguish among South Asians in the United Kingdom (Indian, Pakistani, and Bangladeshi).

Similarly, no articles have systematically examined Pacific Islanders in the United States, although several studies of Pacific Islanders have been conducted in New Zealand (55, 56, 68).

Finally, the studies represent diverse geographic areas in both the United States and other countries. There do not appear to be any systematic differences in findings between studies using local populations and those using national samples. However, the reporting of discrimination appears to vary by location. For instance, one study indicated that reports of discrimination among Chinese in Los Angeles differed by neighborhood (54), while another study found that reports of discrimination and the associations between discrimination and health varied between Filipinos living in San Francisco and those living in Honolulu (106).

Self-reported discrimination and health: pathways

Several mechanisms may explain the association between self-reported discrimination and illness, the predominant being stress (65, 109, 110). Stressors can be defined as “conditions of threat, demands, or structural constrains that … call into question the operating integrity of the organism” (111, p. 177). Stressors are appraised and counterbalanced by coping resources. Illness results when stressors overcome these resources (112). Further, stressors activate the sympathetic and parasympathetic nervous system and rally the body’s defenses, including mobilization of the immune, cardiovascular, and other body systems. According to McEwen (113), chronic exposure to stress may lead to the dysregulation of the body’s homeostasis and the accumulation of allostatic load, the “wear and tear” of body systems due to stress.

Because stressors activate numerous body systems, it is not surprising that discrimination is related to a variety of
health outcomes. Hence, the diversity of outcomes investigated in the literature—ranging from depression (66) to cardiovascular problems (87) to obesity (92)—is not a random assortment of illnesses but an assortment all tied to the stress pathway. Moreover, it implies that studies focusing on just one health outcome may underestimate the potential problems related to racial discrimination (114, 115). One limitation of the literature on Asian Americans, however, is that nearly all studies have involved outcomes that are based on self-reports. Investigations of discrimination among African Americans have included objectively measured outcomes, including blood pressure, coronary calcification, and mortality (116–118). Asian-American studies could include similarly objective outcomes.

Individuals may activate coping resources to mitigate discrimination (79, 110). Accordingly, 2 streams of research have emerged. The first stream studies how experiences of interpersonal discrimination may increase the risk of engaging in maladaptive behaviors as a way to manage stress (119, 120). Evidence for this perspective has been found for smoking and alcohol disorders among Asian Americans (41, 98, 121). Self-reported racial discrimination also was associated with higher odds of engaging in human immunodeficiency virus risk behavior among gay Asian men (53, 71).

The second stream investigates how coping resources, such as social support and ethnic identity, may buffer discrimination. The association between discrimination and health problems was weaker for individuals with high levels of social support (66, 71, 106). As noted earlier, although most studies find that ethnic identity buffers discrimination (41, 53, 62, 82, 98), some studies show the opposite effect (43, 53, 65, 74). A possible reason for this inconsistency may be related to the operationalization of racial identity (53). Further, the associations between identity and discrimination vary by culture, generation, and age (65, 72). Taken together, this suggests that context matters when considering coping and discrimination (66, 106).

Stress is not the only pathway whereby discrimination may influence health. Direct pathways include mortality and morbidity from hate crimes. Indirect pathways include mediation through socioeconomic position, neighborhoods, or social evaluation (8, 122). For instance, discrimination may diminish educational achievement or the accumulation of wealth. Discrimination may also contribute to exposures to unsafe environments, as when residential segregation leads to exposure to air pollution (123). In addition, social evaluation and symbolic interaction theories suggest that individuals derive their self-concept from the social values attached to their membership in groups and their experiences within these groups (124–126). Experiencing discrimination on the basis of racial group membership may be associated with poorer self-evaluation and subsequent poorer mental health. Alvarez and colleagues (109, 127) find that racial socialization (information about race from society) and identity schemas (perceptions of oneself as a racial being) predict the reporting of discrimination among Asian-American students, which in turn may increase the risk of mental health problems.

These alternative pathways remain understudied among Asian Americans. For example, although it is intuitively appealing that socioeconomic position mediates discrimination, we are aware of no studies that have directly investigated this phenomenon. In fact, most studies find an association between discrimination and health even after controlling for socioeconomic position. Moreover, occupational discrimination may operate independently of more general experiences of discrimination (128). Several other studies among African Americans and among Japanese Brazilians have found that socioeconomic position moderates the association between discrimination and health (52, 129). Taken together, these findings suggest that discrimination and socioeconomic position may both influence health independently and may also amplify the effects of one with the other. Future studies should evaluate these propositions more fully.

Measures of self-reported discrimination

A number of tools assess self-reported racial/ethnic discrimination among Asian Americans. Some studies use individual items or single items, but these measures tend to be unreliable and may underestimate the extent of discrimination (54, 130). Both of these problems would tend to bias associations between self-reported discrimination and health toward the null (i.e., type II error).

No multitem scale predominates, but the Everyday Discrimination Scale is the one most commonly used in large population-based studies (131). Developed initially to examine routine and mundane experiences of discrimination among African Americans, the Everyday Discrimination Scale has been adapted for studies of Filipino Americans, Chinese Americans, Vietnamese Americans, and other Asian Americans (62, 83). Items focus on general experiences with discrimination, such as being harassed, being treated with less respect, and receiving poorer service in restaurants. This scale has been associated with health problems among Asian Americans (62, 83, 87, 131).

Another instrument, the General Ethnic Discrimination (GED) Scale, is designed to be applicable to diverse populations, including Asian Americans (58). The GED Scale was based on the Schedule of Racist Events, with one change: The phrase, “because you are Black,” in the Schedule of Racist Events was changed to “because of your race/ethnic group” in the GED Scale. We are aware of only one study using this scale (81) among Asian Americans.

These general population instruments may be insufficient. Qualitative studies suggest that Asian Americans face many of the same issues as other ethnic groups do, but Asian Americans also face unique types of discrimination (35). For example, a study using key-informant interviews found that Hmong adults experience the same types of discrimination faced by African Americans, such as discrimination due to police mistreatment and verbal harassment. However, this study also found that Hmong adults encountered discrimination based on nativity and English proficiency (132). Another qualitative study of Japanese-American youth suggested that language discrimination was encountered as commonly as racial discrimination (133). Neither the GED Scale nor the Everyday Discrimination Scale includes questions on discrimination based on language or nativity.
Hence, these instruments may underreport the experiences of Asian Americans.

Instruments developed for Asian Americans, not surprisingly, do include questions on nativity and language discrimination, as well as other issues, such as being a model minority. For instance, the Asian-American Racism-related Stress Inventory (AARRSI), developed by Liang et al., includes such items as the following: “You are asked where you are really from” (nativism) and “you are told that ‘you speak English so well’” (language proficiency) (134, p. 107). Some additional items are noteworthy. One item is related to being seen as a model minority, as in being told, “There is a gene that makes Asians smart” (134, p. 107). A second item relates to stereotypes about passivity, such as, “You are told Asians have assertiveness problems.” The most poignant was one item asked of Asian-American Vietnam veterans in another study: “[you were] pointed out as an example of what the enemy looked like” (60, p. 509).

Self-report measures of discrimination face several limitations, including response biases. Some biases may prompt overreporting, for instance, if respondents experience psychological paranoia or some trait negativity (135). In addition, individuals may misclassify behavior that is rude, but not related to race, as being racially motivated. Response biases may also understate experiences with discrimination. One such bias may be social desirability, the tendency to present oneself favorably. Social desirability may also be related to the inclination among Asian Americans to avoid “losing face” or shaming oneself or their families (136, 137). Asian respondents who score high on social desirability are less likely to report racial discrimination (83), a finding also seen in black and Latino populations (130). In addition, individuals may avoid reporting racism because they are challenged by others to prove that discrimination exists (83, 128, 138, 139). Finally, some experiences with discrimination may be unrecognized or simply forgotten.

**Institutional discrimination**

Most studies have focused on self-reported discrimination, but other dimensions and levels of discrimination should be acknowledged. At an intermediate level, the phenomenon of being the “token” minority appears to be stressful for African Americans (140). At a more macro level, residential segregation is also associated with health problems among African Americans (141, 142). Among African Americans, segregation is associated with increasing risk for adult and infant mortality (143).

Less research has focused on Asian Americans. However, an important study by Morello-Frosch and Jesdale (123) found that segregation among Asian Americans was associated with increased risk of exposure to carcinogenic agents. Additionally, Pacific Islanders and Asian Americans are more likely than other racial groups to reside in counties that violate the Environmental Protection Agency’s safety standards for small (<2.5 μm) air particles (144).

The iceberg analogy suggests that multiple levels of discrimination operate simultaneously. With the development of multileveling modeling techniques, researchers may design studies that examine both individual and institutional discrimination. One of the first studies to use this approach examined 2 levels among Chinese Americans (54). Individual-level discrimination was measured with self-reported discrimination. Institutional-level discrimination was assessed with residential segregation and redlining (the practice of mortgage-lending discrimination). A few other studies have subsequently emerged that use a similar approach among other populations (121, 145). This multilevel approach may be an important path for future research (146).

Another novel approach has been developed by Yip (147), who used PalmPilot devices to prompt Chinese-American students to report the racial composition of their surroundings, their feelings of ethnic identity, and their mental health. These prompts occurred at random times during the day. Yip found that ethnic identity and mental health varied as a function of the racial composition of where the subjects were located. Her method could be used to examine how the microcontext is related to the reporting of discrimination and health outcomes.

**DISCUSSION AND FUTURE DIRECTIONS**

Data from public opinion polls, field studies, and surveys of Asian Americans themselves converge on the finding that Asian Americans continue to experience discrimination. Further, our review of 62 studies shows that Asian Americans who report discrimination are more likely than not to also experience morbidity. Most research has focused on mental health, and the majority of these studies find associations in the hypothesized direction. Although less consistent, the literature also finds that reports of discrimination are related to physical illness and health behaviors.

The discrimination literature has expanded our understanding of population health in 2 major ways. First, discrimination may itself be a key risk factor for illness. Second, discrimination prompts a reinterpretation of existing risk factors. For example, studies often find that immigrants are healthier than nonimmigrants but, further, that this “immigrant advantage” erodes with time in the United States. This erosion effect is often attributed to acculturation, or cultural change (148). Yet, the literature on discrimination suggests that another interpretation is possible: With increasing years in the United States comes increasing exposure to discrimination. As suggested by Takeuchi et al., “Changing cultural patterns of ethnic minority groups are inextricably linked to the structural limitations they encounter as the result of discrimination” (149, p. 560). Consistent with this idea, studies find that the association between discrimination and health strengthens with years in the United States among Asian immigrants (75, 92), as well as among Latino and black immigrants (150). Hence, discrimination may “weather” (151) away the immigrant health advantage.

This research has also emphasized within-group heterogeneity, a key characteristic of the Asian population. This heterogeneity is based on not only culture but also socioeconomic position and experiences with discrimination. Estimates that aggregate across Asian populations may lose information about high-risk groups and lead to missed
opportunities for intervention. Hence, studies should oversample Asian subgroups and disaggregate their data.

Within the United States, most studies of discrimination have focused on Chinese, Filipino, Vietnamese, and Korean populations. Little is known about other populations, such as South Asians and Pacific Islanders. Studies that involve Southeast Asians in the United States tend to have small samples; all but one study had samples of less than 250 participants. Hence, future research should focus on these populations and strive for large and probability-based samples.

Future scholarship should also build the theoretical foundation for understanding heterogeneity. Although it is generally acknowledged that Asian subgroups should be disaggregated, the literature should provide greater guidance on how groups may differ. For instance, theories suggesting that skin color is a primary determinant of racial bias may lead to the hypothesis that, on average, Asian groups with darker skin (e.g., Asian Indians) may experience greater discrimination than those with lighter skin (e.g., Chinese). Alternatively, theories related to group contact, as with the psychological principle that *familiarity breeds liking* (152), inform the hypothesis that less common groups (e.g., Thai and Indonesians) would encounter more discrimination than more common groups (e.g., Chinese and Asian Indians). Another perspective from the *group threat hypothesis* (153) suggests that Asian groups, once over a certain threshold in terms of proportional population (i.e., above a tipping point), would be seen as a threat and subsequently encounter discrimination. Finally, the phenomenon, *they all look alike* (154–156), suggests that non-Asians are unable to distinguish among Asian subgroups and, hence, subgroups would encounter equal levels of discrimination.

Research on Asians also suggests that the broader literature on discrimination may be expanded to incorporate additional domains (17). Language, accent, nativity, and positive stereotypes (i.e., the model minority) are important dimensions whereby Asian Americans experience discrimination (71, 101, 134, 157). Although these factors are often omitted from the general literature on discrimination, they may be relevant to many other populations.

These conceptual issues are also related to measurement. A primary concern is the lack of standard measures of discrimination, which may account for some of the discrepant findings in the literature. Existing scales suffer from 2 interrelated problems.

The first problem is that scales initially developed for African Americans and subsequently adapted for more general populations may not adequately measure the Asian-American experience. For instance, the Everyday Discrimination Scale, the Experiences of Discrimination Scale, and the General Ethnic Discrimination Scale do not ask about discrimination based on one’s accent, being cast as a model minority, citizenship, or being assumed to be a foreigner (58, 130, 131). Failure to measure these issues would likely underestimate the prevalence of self-reported discrimination and possibly lead to type II error (failure to detect associations between discrimination and health problems among Asian Americans if these associations were in fact true).

The second is that some scales are too narrowly focused on one population to be applicable to multiple populations. For instance, the Asian-American Race-related Stress Inventory (134), developed specifically for Asian Americans, appears to be a promising tool for examining the heterogeneity within Asian-American populations. Yet, it is too focused to be of use for non-Asian populations and, hence, not suitable for comparative research.

Future scales can balance these 2 problems by amending general population scales to include questions on discrimination based on accent/language, citizenship, and positive stereotypes. Respondents of all backgrounds could answer these questions about language and citizenship, even if it is expected that few would encounter such discrimination. Similarly, all groups can answer questions about encountering discrimination based on so-called “positive” stereotypes. For instance, questionnaires might develop a broad question asking, “People assume that I am better at sports, math, or some other activity simply because of my race/ethnicity.”

Adding these dimensions will provide new directions for research. For instance, some have speculated that positive stereotypes may cause stress and diminish mental health among Asian Americans (158). Indirect evidence comes from research on “stereotype threat,” which refers to minorities fearing to act in ways that confirm a stereotype. The stereotype threat of being a model minority may at times impair (159), and at other times promote (160), cognitive performance among Asian-American female students. Shih et al. (161) find that subtly presented positive stereotypes enhance academic performance, while blatantly presented stereotypes diminish academic performance among Asian-Americans students. This suggests the possibility that blatantly presented *positive* stereotypes may influence health through both stress and educational disadvantage.

Another limitation is that nearly all studies of Asian Americans and discrimination are based on cross-sectional data. One exception was a study of Asian high school students that found that discrimination was associated with decreased mental health over 3 years (43). Other studies with African Americans have also found that reports of discrimination are associated prospectively with illness (116, 118, 162, 163). In addition, some studies have found that, while discrimination prospectively predicts illness, illness does not predict the reporting of racial discrimination (164, 165). Nonetheless, the reliance on cross-sectional designs prevents the evaluation of causal relations and the study of the potential cumulative adverse effects of self-reported discrimination. Hence, there is a serious need for longitudinal studies of Asian Americans.

Finally, there is a shortage of studies that have examined discrimination at the base of the “iceberg” and at multiple levels. Self-reported experiences with discrimination constitute one important level of analysis, but segregation, redlining, and other forms of structural discrimination are equally important (54, 141, 146). Future research should develop new methods to assess structural discrimination and to study discrimination at multiple levels. These multiple levels include variation based on geographic scale (e.g., neighborhoods, cities), stage within the life course (e.g.,

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youth, younger adulthood, older adulthood), and across different contexts (e.g., work, school). Moreover, although we focus on racial discrimination, future research should also examine discrimination based on sexual orientation, gender, and social class (71, 166).

In closing, the literature suggests that Asian Americans appear to encounter racial discrimination in the present day and that these encounters may be related to a variety of health problems. Most of these studies focus on self-reported discrimination. Research on discrimination at other ecologic levels, however, remains a noticeable gap. Future studies should also focus on factors that may reduce discrimination or its impact. This could include individual-level factors, such as participation on civil rights activities, or macro-level factors, such as civil rights legislation. Such studies would greatly extend the current body of research and provide ways to improve the public health.

ACKNOWLEDGMENTS

Author affiliations: School of Public Health, University of California, Los Angeles, California (Gilbert C. Gee); School of Public Health, University of Michigan, Ann Arbor, Michigan (Annie Ro); Division of Cancer Control and Population Sciences, National Cancer Institute, Rockville, Maryland (Salma Sharrif-Marco); and Rollins School of Public Health, Emory University, Atlanta, Georgia (David Chae).

The authors thank Nancy Breen, Stephen C. Meersman, and Rachel Ballard-Barbash for their helpful comments with earlier drafts of this manuscript.

Conflict of interest: none declared.

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Epidemiol Rev 2009;31:130–151


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