

Published in final edited form as:

*Soc Sci Med.* 2009 February ; 68(4): 726–732. doi:10.1016/j.socscimed.2008.11.013.

## Discrimination and health among Asian American immigrants: Disentangling racial from language discrimination

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### Abstract

We examined whether self-reported discrimination based on race and language was associated with the number of chronic health conditions among Asian American immigrants. We also examined whether these relationships were moderated by years in the United States. Data are from adults participating in an Asian American supplement to the 2001 Health Care Quality Survey. Language and racial discrimination in seeking health care were independently associated with increased number of chronic health conditions after controlling for age, sex, education, family income, health insurance, primary language, nativity, and ethnicity. Language discrimination was significantly associated with health conditions even with the presence of racial discrimination in the statistical model. Racial discrimination did not show a significant association in the full analytic model. The relationship between language discrimination and chronic conditions was stronger for Asian immigrants living in the USA 10 years or more compared to more recently arrived immigrants. Language discrimination may be an understudied type of discrimination associated with chronic illness among Asian Americans.

### Keywords

Racial discrimination; Language discrimination; Asian American; Immigrants; USA; Chronic conditions

Racism is pervasive in many countries across the world and may be a significant risk factor for illness among ethnic and racial minorities (World Health Organization, 2001). A growing body of scientific literature provides the empirical foundation for such observations (Krieger, 1999; Paradies, 2006; Williams, Neighbors, & Jackson, 2003; Williams & Williams-Morris, 2000). Scholars have noted that discrimination occurs along many dimensions that are not exclusive to race. For example, discrimination based on language and accent occurs in the workplace, at school, and on the street (Lippi-Green, 1997). While relatively little work has focused on language or accent discrimination, some recent studies find that language discrimination may be more closely associated with outcomes for immigrants than racial discrimination (Spencer & Chen, 2004). Accordingly, the present study examined the association between language and racial discrimination in health care settings with health conditions among Asian American immigrants. Given that greater

potential exposure to discrimination may confer greater risk of illness, we also examine the interaction between years in the U.S. and reports of discrimination.

## Racism and health

Racism refers to the beliefs, attitudes, and practices that harm individuals or groups of people simply because of their race (Jones, 1997). According to the biopsychosocial model of health disparities (Myers, Lewis, & Parker-Dominguez, 2003), encounters with discrimination can be extremely stressful, lead to allostatic load (the “wear and tear” on organ systems resulting from stress), and contribute to illness. In a recent review of 138 studies, Paradies (2006) reported that 72% of the studies found a significant relationship between self-reported racism and mental health outcomes. Although examined in fewer studies, 62% of the studies found a significant relationship between self-reported racism and physical health outcomes, including increased risk of hypertension, diabetes, and obesity. Among Asian Americans, perceived racial discrimination has been linked with increased risk of mental disorders and depressive symptoms (Gee, Spencer, Chen, Yip, & Takeuchi, 2007b), higher negative affect (Yoo & Lee, 2008), and lowered sense of coherence (Ying, Lee, & Tsai, 2000), self-esteem (Barry & Grillo, 2003; Lee, 2003), satisfaction with life (Yoo & Lee, 2005), and sense of community and social connectedness (Lee, 2003). Also, consistent with research that finds that stressors have non-specific effects on the body, Gee, Spencer, Chen, Yip, and Takeuchi (2007a) found Asian Americans’ perceptions of discrimination are also associated with increased risk of encountering a variety of chronic conditions (e.g. heart disease, pain, respiratory illness). These patterns of relationships extended to Asian community samples in Canada (Beiser & Hou, 2006; Noh, Beiser, Kaspar, Hou, & Rummens, 1999; Noh, Kaspar, & Wickrama, 2007), United Kingdom (Karlsen & Nazroo, 2002a, 2002b; Kelahe et al., 2008), Finland (Liebkind & Jasinskaja-Lahti, 2000), and Australia (Mak & Nesdale, 2001).

Previous research on discrimination has primarily focused on unfair or biased treatment based on race. While focusing on race is important, other facets of discrimination may be equally critical. An emerging set of findings suggest that the manifestation and meaning of discrimination may vary by group. Among Asian Americans, numerous studies suggest that discrimination often takes the form of being seen as a perpetual foreigner (Devos & Banaji, 2005; Rosenbloom & Way, 2004; Sue, Bucceri, Lin, Nadal, & Torino, 2007). For example, errant headlines such as “American Beats Out [US Olympic figure skater Michele] Kwan” remind Asians that they might be “forever foreign.” In a series of experimental studies, Devos and Banaji (2005) found White Americans perceived Asian Americans as less “American” than White Americans or even (non-American) White Europeans. This phenomenon is summarized in the words of a corporate executive to U.S. Congressional Representative Norman Mineta, “My you speak English well. How long have you been in this country?” (Zia, 2000, p. 24).

Language is often a contested ground evidenced by the enactment of “English only” policies in some workplaces and conflicts over use of Asian and other languages in storefront and other signage (Lippi-Green, 1997; Ong & Azores, 1994). Indeed, Sue et al. (2007) found that “pathologizing of communication styles” was one of the major forms of discrimination experienced by Asian Americans. Discrimination based on language and the theme of being forever foreign is rooted in the history of anti-Asian racism. This history includes immigration restrictions (e.g. the 1924 Immigration Act) based on fears of an unassimilable and unintelligible “yellow peril” taking over America (Chan, 1991).

Although race and language are intertwined, language discrimination is conceptually distinct from racial discrimination. Racial groups are falsely presumed to possess traits that are

biologically or culturally innate (Omi & Winant, 1992). By corollary, this essentialist perspective presumes that one's race does not change. In contrast, language is a skill that can be learned over time. The common theme, of course, is that certain races and certain languages hold prestige and power (e.g. the "Queen's English") over other races and other languages (e.g. "pidgin English"). From this perspective, racial and language discrimination can be viewed as examples of unfair treatment based on immutable vs. mutable social categories. It may be the case that racial discrimination is more important than language discrimination because one cannot change their race, but can improve their language skills. Alternatively, language may be a more salient characteristic because it may invoke racial stereotypes and biases that lead to unfair treatment.

Despite the theoretical importance of language discrimination, many of the leading scales of self-reported discrimination (e.g. Racism and Life Experiences Scales-Revised, Experiences of discrimination, The Schedule of Racist Events, and The Perceived Racism Scale) exclude this dimension (Harrell, 1997; Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005; Landrine & Klonoff, 1996; McNeilly et al., 1996). One new scale does include several items on language discrimination, but it does not provide a language discrimination subscale (Liang, Li, & Kim, 2004). In one of the few studies to explicitly consider language discrimination, Spencer and Chen (2004) found that Chinese Americans perceiving language discrimination were more likely to use informal mental health services than those perceiving racial discrimination or no discrimination. Many prior studies of discrimination among Asian Americans have focused solely on race, but have acknowledged the missing dimension of language (e.g. Chae, Takeuchi, Barbeau, Bennett, Lindsey, et al., 2008; Gee et al., 2007a, 2007b; Mossakowski, 2003). Accordingly, a goal of the present study is to examine whether language discrimination is associated with illness, independent of racial discrimination.

In addition to missing language discrimination, most studies also focus on global experiences, but do not specify specific settings where discrimination may occur (e.g., housing). Yet, the focus on a specific setting may be important for the design of interventions. One emergent setting is in health care. Studies on African Americans, in particular, have identified that discrimination in care may contribute to disparities (LaVeist, Rolley, & Diala, 2003; Smedley, Stith, & Nelson, 2003). Although studies often find that Asian Americans report higher dissatisfaction with health care than other ethnic groups (Haviland, Morales, Reise, & Hays, 2003; Meredith & Siu, 1995; Murray-Garcia, Selby, Schmittiel, Grumbach, & Quesenberry, 2000; Ngo-Metzger, Legedza, & Phillips, 2004), few studies have explicitly examined health care discrimination among this population.

## Time in the U.S. differences

A key feature of the biopsychosocial model of health (Myers et al., 2003) is the link between stressors and health is often moderated by other characteristics. Immigration status is an especially salient among Asian Americans, many of whom are immigrants. Asian immigrants in the U.S. are generally healthier than non-immigrants, and increasing time in the U.S. is often associated with increase in health problems (Takeuchi, Chun, Gong, & Shen, 2002). In addition, Asian Americans who have lived in the U.S. longer tend to experience more racial discrimination (Goto, Gee, & Takeuchi, 2002). The biopsychosocial model stresses that individuals experiencing recurring instances of chronic racial discrimination are more likely to heighten their intergroup vigilance and increase their risk of physical health problems (Myers et al., 2003). The negative effects of perceived racism on health of Asian Americans may be related to individual's time in the U.S. and exposure to racism. In other words, the negative association between perceived racism and health may be stronger for Asian American immigrants who have resided in the U.S. longer. This

moderation effect on mental health status was recently found in a community sample of Black and Latino immigrant population (Gee, Ryan, Laflamme, & Holt, 2006). Another study found an interaction between discrimination and years for body mass index (BMI) among Asian Americans (Gee, Ro, Gavin, & Takeuchi, 2008). Specifically, the strength of association between racial discrimination and BMI increased with more years in the U.S.

## Present study

Our study examines whether discrimination in health care based on race (racial discrimination) and based on language (language discrimination) are associated with the physical health of Asian American immigrants. We also examine whether these relationships are moderated by their number of years in the U.S. We examine a variety of health conditions as research suggests that stressors can impact the immune, cardiovascular, and other somatic systems (Gee et al., 2007a; Myers et al., 2003). We hypothesize that Asian American immigrants reporting racial discrimination will have increased numbers of chronic health conditions. We hypothesize a similar relationship with language discrimination. Moreover, if time in the U.S. reflects longer period of exposure to discrimination for Asian American immigrants, we hypothesize the relationship between racial discrimination and physical health will be stronger for immigrants who have lived in the U.S. longer compared to more recent immigrants. We hypothesize a similar moderation effect with language discrimination.

## Method

### Sample

In 2001, the Commonwealth Fund sponsored the Health Care Quality Survey, a national telephone survey that has been extensively reported (Collins et al., 2002; Johnson, Saha, Arbelaez, Beach, & Cooper, 2004; Ngo-Metzger et al., 2004; Saha, Arbelaez, & Cooper, 2003). The present study focuses on a supplementary survey of Asian Americans, previously unreported, that was conducted in parallel to the main survey. The supplement is identical to the main survey except that the supplement was sampled using a listing of Asian surnames. Survey Sampling, Incorporated, provided the telephone sampling list from which random telephone numbers were drawn. Although limited in not being random, the use of Asian American surnames has been shown to be an acceptable method of increasing the sample size of proportionally small populations (Choi, Hanley, Holowaty, & Dale, 1993; Ponce & Gatchell, 2006). A total of 888 Asian Americans, representing 376 Chinese, 245 Vietnamese and 267 Korean Americans, responded to a 25-min telephone survey. Surveys were conducted in English, Korean, Cantonese, Mandarin or Vietnamese. The response rate was 44%, comparable to other telephone surveys (California Health Interview Survey, 2002). For the purpose of our paper, we focused on the subsample of 717 respondents who visited a doctor, clinic, or were admitted to the hospital in the last 2 years, because our measures of perceived health care discrimination were based on the past 2 years experience.

### Measures

**Chronic health conditions**—Chronic health conditions were assessed by asking individuals if they had any of the following diagnoses from a doctor in the last five years: high blood pressure, heart attack or any other heart disease, cancer, diabetes or sugar diabetes, anxiety or depression, obesity, and asthma. The items were summed to create our dependent variable. Similar measures of chronic health conditions have been used in prior studies of Asian Americans and Latinos (Finch, Hummer, Kolody, & Vega, 2001; Gee et al., 2007a).

**Perceived discrimination**—Perceived discrimination was assessed using two items based on the stem: “Thinking about all of the experiences you have had with health care visits in the last two years, have you ever felt that the doctor or medical staff you saw judged you unfairly or treated you with disrespect because of: 1) your race or ethnic background; 2) how well you speak English.” Hence, one item measures discrimination based on race/ethnicity while the other measures discrimination based on language. Each item was coded (0 = no; 1 = yes).

**Nativity status and years in the U.S.**—Nativity status was coded into 2 categories (0 = U.S.-born; 1 = foreign-born). Years in the U.S. for foreign-born was measured as “less than 5 years”, “5–10 years,” and “more than 10 years.” Due to small samples for the most recent immigrants ( $n = 73$ ), we combine the first two categories (i.e., 0 = zero to ten years in the U.S.; 1 = more than ten years in the U.S.).

**Demographic variables**—Gender (0 = male; 1 = female), age (continuous), education (1 = high school incomplete; 2 = high school diploma, no college; 3 = some college or technical; 4 = college graduate or more), income (1 = under \$20,000; 2 = \$20,000–\$34,999; 3 = \$35,000–\$49,999; 4 = \$50,000–\$74,999; 5 = \$75,000 and over), health insurance (0 = no; 1 = yes), and whether English was their primary language or not (0 = other, 1 = English) were included as demographic control variables. We also covaried ethnicity in our analyses with Vietnamese as the reference group.

## Analyses

To test our hypotheses that perceived racial and language discriminations were associated with increased chronic health conditions while controlling for covariates, we utilized Poisson regression (no over dispersion was detected). Continuous predictor variables were centered to reduce multicollinearity (Aiken & West, 1991). Our second hypothesis was that years in the U.S. would moderate perceived discrimination. One issue that arises is that years in the U.S. is not relevant for the native-born (i.e. years is equivalent to age). Rather than drop the native-born from the analyses, we employed the technique of conditionally relevant variables (Gee et al., 2008; Noh et al., 1999; Ross & Mirowski, 1992). This approach allows for the inclusion of the full sample to test the interaction between years in the U.S. and discrimination, but also allows for the interaction to be relevant only for the immigrants.

## Results

Table 1 displays the descriptive statistics of our sample stratified by nativity status and years in the U.S. Participants reported 0.46 chronic conditions on average with less recent immigrants reporting the most chronic health conditions ( $M = 0.50$ ), followed by more recent immigrants ( $M = 0.39$ ), and then U.S.-born individuals ( $M = 0.29$ ). About 7% and 12% total reported racial and language discrimination, respectively. Recent immigrants reported the highest racial and language discrimination (9% and 19%, respectively), followed by less recent immigrants (8% and 11%, respectively), and then U.S.-born individuals (4% and 0%, respectively). About 88% were foreign-born, and among them, 31% had been in the U.S. less than 10 years, with the remainder having been in the U.S. more than 10 years. About 43% total spoke a primary language other than English with the largest percentage by more recent immigrants (56.7%) and smallest percentage by U.S.-born individuals (2%). About 56% of the respondents were female and 82% had health insurance. U.S.-born individuals were most likely to have health insurance (91%) with more recent immigrants least likely (74%). Fifty-two percent had completed college and 28% had family incomes over \$75,000. U.S.-born individuals were most likely to have completed college



(65%) and have family incomes over \$75,000 (40%). However, 17% total did not finish college and 21% had family incomes under \$20,000. U.S.-born individuals were most likely not to finish college (20.7%), while most recent immigrant had family incomes under \$20,000 (34%). Average age was 42 years, with less recent immigrants being oldest ( $M = 45$ ), followed by more recent immigrants ( $M = 37$ ), and then U.S.-born individuals ( $M = 35$ ).

Table 2 shows the associations between racial and language discrimination with chronic health conditions. Model 1 shows that racial discrimination was associated with increased chronic conditions ( $RR = 2.21$ ;  $p < .05$ ) after adjusting for covariates. Model 2 finds a similar result for language discrimination ( $RR = 2.05$ ;  $p < .05$ ). Model 3 includes both racial and language discrimination. Language discrimination ( $RR = 1.68$ ;  $p < .05$ ) is still associated with increased conditions. Racial discrimination is still in the expected direction ( $RR = 1.52$ ;  $p > .05$ ), but is no longer statistically significant with the inclusion of language discrimination. Likelihood ratio tests found that Model 2 provides the best fit for the data than the other models. This finding suggests that the addition of racial discrimination does not improve the model fit for language discrimination.

Table 3 shows whether years in the U.S. moderates the association between discrimination and chronic health conditions. Model 1 shows that years in the U.S. did not interact with racial discrimination on chronic health conditions for immigrants ( $RR = 1.16$ ;  $p > .05$ ) after adjusting for covariates. However, Model 2 shows that years in the U.S. did interact with language discrimination on chronic health conditions for immigrants ( $RR = 3.77$ ;  $p < .05$ ). Model 3 includes both racial and language discrimination by years in the U.S. among immigrants simultaneously. Similar to the previous two models, years in the U.S. by language discrimination is the only significant interaction on chronic health conditions for immigrants, after adjusting for covariates and racial discrimination ( $RR = 4.65$ ;  $p < .05$ ). Specifically, report of language discrimination was associated with increased chronic conditions among Asian American immigrants who have resided in the U.S. for more than 10 years. However, there was no association between language discrimination and health conditions among those who have resided in the U.S. for 0–10 years (see Fig. 1).

We performed several sensitivity analyses. We replicated our main effects analyses, but stratified the sample by ethnicity (i.e. Korean, Chinese, and Vietnamese). The findings for discrimination were in a similar direction, but did not approach statistical significance for all groups, possibly a function of reduced power. Further, we examined whether the association between discrimination and physical health changed if “anxiety or depression” was excluded from the dependent variable. The rate ratios for discrimination were similar ( $RR = 1.68$  with anxiety/depression and  $RR = 1.63$  without), although in the respecified analyses, the  $p$ -value was of marginal significance ( $p = .06$ ).

## Discussion

The purpose of our study was to examine the association between self-reported discrimination and physical health. Although numerous studies have examined the relationship between self-reported discrimination and health outcomes, our study includes two unique features. First, we distinguish between language and racial discrimination. This is an important development because language discrimination has shown some association with health especially relevant for immigrant populations (Goto et al., 2002; Lippi-Green, 1997; Spencer & Chen, 2004). Second, our study examines whether years in the U.S. interacts with discrimination for Asian American immigrants. To the extent that years in the U.S. marks greater potential for exposure to discrimination, it was expected that the relationship between discrimination and illness would be strengthened among those with a longer duration in the U.S.

Both racial and language discrimination were associated with increased chronic conditions among Asian Americans even after accounting for age, sex, education, family income, health insurance, primary language, nativity status, and ethnicity. However, when we considered both types of discrimination simultaneously, only language discrimination remained statistically significant. In other words, language discrimination was associated with health above and beyond the effects of racial discrimination. The demographic correlates of each type of discrimination differ. For example, education was associated with the reporting of racial, but not language discrimination among Chinese Americans (Goto et al., 2002). Further, language discrimination was associated with the use of informal mental health services among Chinese Americans, but not racial discrimination (Spencer & Chen, 2004). Our present findings raise the possibility that language discrimination may be particularly relevant among immigrant populations. Hence, future studies should consider discrimination based on language and accent as distinct from discrimination based on race and ethnicity in order to better understand the more nuanced relations between racism and health among Asian Americans.

That said, it is still important to continually examine racial discrimination among Asian Americans as well. The null finding for racial discrimination should not lead to the conclusion that racial discrimination is unimportant. When tested independently, the rate ratios are actually higher for racial discrimination than for language discrimination. When modeled simultaneously, the rate ratios are higher for language discrimination. These findings suggest that part of the effect of racial discrimination may be captured by language discrimination. Given the history that racial discrimination for Asians means the closing of borders and loss of citizenship rights (Chan, 1991), it is perhaps not surprising that a measure of discrimination that touches on those themes is particularly important.

Given a perspective that language and racial discrimination represent two elements of a common concept, it is possible that we are actually measuring a single construct. With only two items, we were unable to perform factor analyses which may have determined whether we had one (i.e. discrimination) or two latent factors (i.e. language and racial discrimination). One benefit in distinguishing racial from language discrimination was to highlight the need for future studies to investigate language discrimination, but future work remains to determine whether we indeed have one or multiple dimensions. What is clear, however, is that language should be included in scales of discrimination.

As hypothesized, the association between language discrimination and chronic health conditions was stronger for Asian American immigrants who lived in the U.S. for 10 years or longer compared to those that lived in the U.S. for less than 10 years. Another study found that the association between racial discrimination and obesity also strengthened with years in the U.S. among Asian American immigrants (Gee et al., 2008). A study among African and Latino immigrants found a similar interaction between discrimination, years in the U.S. and mental health (Gee et al., 2006). Although cross-sectional, these findings suggest that the accumulation of discrimination over time may contribute to allostatic load (the “wear and tear” on body systems due to stress).

However, the interpretation of this interaction may be more complex than initially conceptualized because the data also showed that the reporting of discrimination decreased by number of years in the U.S. (i.e., most common among more recent immigrants, followed by less recent immigrants, and then U.S.-born Asians). Therefore, perceived discrimination decreases with length of residency in the U.S., although discrimination is more harmful to one’s health with increased time in the U.S.

One possibility in this pattern of finding is the role of ethnic identity salience. For instance, Yoo and Lee (2008) found that ethnic identity exacerbated the relationship between racial discrimination and psychological distress in a sample of U.S.-born Asian American college students, but not for foreign-born Asian American college students. They speculated that coping with racial discrimination becomes more difficult as time in the U.S. increase for Asian Americans. Perhaps Asian American immigrants who have lived in the U.S. for more than 10 years have greater stake of their group membership in American society. Consequently, discrimination by other Americans is a direct challenge of this group membership, which exacerbates their physical health. In contrast, Asian American immigrants who have lived in the U.S. for less than 10 years may be less affected by discrimination because their psychological connection and pride to their country of origin provides a resource to buffer discrimination. Thus, even though more recent Asian Americans report higher levels of discrimination, the effects of discrimination on health may be more pernicious for Asian Americans who have lived in the U.S. longer.

Another possibility in this pattern of finding is the role of specific types of discrimination experienced. Our measure specifically addressed discrimination in health care rather than discrimination in general. Therefore, the decrease in discrimination over time in the U.S. is specific to health care settings rather than general settings where there seems to be an inverse relationship (Goto et al., 2002). It may be that over time Asian Americans are more likely to find culturally competent and sensitive doctors who are less likely to discriminate.

Several study limitations should be acknowledged and provide directions for future research. First, this study recruited participants based on surnames. While participants were surveyed across the nation, the use of surname lists prevents the weighing of the data and therefore our results are not national population estimates. This recruitment method is further limited because it misses individuals who do not have an Asian surnames, potentially resulting in sampling bias. However, these concerns were balanced against the difficulties of conducting a nationwide survey of a rare population. Asian Americans represent approximately 5% of the U.S. population and it would be less efficient to conduct a random sample. In addition, surname sampling is often used in large population-based surveys, such as the California Health Interview Survey (CHIS). Analyses of Asians sampled via surnames compared to Asians sampled via random-digit dialing in CHIS suggest that surnames samples tended to overstate socioeconomic advantage, but notably that health conditions were similar between groups (Ponce & Gatchell, 2001). Accordingly, it was important that our study controlled for socioeconomic status, but it is still imperative to recognize the limits of this sampling method, especially with regards to generalizability to Asian Americans who do not have an Asian surname. Additionally, the response rate was 44%. While this response rate compare favorably to other telephone surveys – for example, the response rate for the 2001 California Health Interview Survey (California Health Interview Survey, 2002) was 38% – low rates raise questions about sampling bias and generalizability.

Second, although our theoretical framework specifies that racial discrimination should contribute to illness, our analyses do not permit this causal inference. This limitation results from the cross-sectional nature of our data. It also comes from the fact that discrimination was based on the individual's perceptions of their experiences within the past two years while chronic conditions were based on the past five years. Hence future studies using experimental and longitudinal designs examining the effects of racism on the health of Asian Americans are warranted. Several longitudinal studies, however, do suggest that the causal direction is as theorized (Brody et al., 2006; Pavalko, Mossakowski, & Hamilton, 2003; Schulz et al., 2006). For example, Pavalko et al. (2003) found that reports of discrimination preceded illness, and further, illness did not predict reports of discrimination.



Third, Asian Americans are a diverse group who vary linguistically, culturally and historically (Okazaki & Hall, 2002). Because of sample constraints, we were not able to explore between-group differences among the Vietnamese, Chinese and Korean respondents. Future studies need to understand both the common experiences shared by Asian Americans, as well as the differences between Asian Americans subgroups that can alter the relationship between racism and health.

Finally, our analyses were based on single-item discrete measures. In particular, our discrimination measures were based on explicit questions of being “judged unfairly or treated with disrespect” in health care. We were limited by the measures available in this datafile and note that these items do not capture discrimination in other settings, such as at school or on the street (Lippi-Green, 1997). That said, our findings are similar to other studies that have used more global measures of racial discrimination (Gee et al., 2007a; Krieger, 1999; Schulz et al., 2006). Nonetheless, future studies are encouraged to employ more comprehensive measures of both racial and language discrimination.

Despite the myth that Asian Americans do not struggle with discrimination, our study joins the growing literature that highlights the relationship between unfair treatment and illness among Asian Americans (Barry & Grillo, 2003; Gee et al., 2007a, 2007b; Lee, 2003; Ying et al., 2000; Yoo & Lee, 2005, 2008). Contributions of our study lie in showing that language discrimination is associated with health, independent of racial discrimination, and in examining how the association between discrimination and health varies by length of residency in the U.S. Future research needs to continue to disentangle the ecological and individual factors that shape the experience and health correlates of discrimination among Asian Americans.

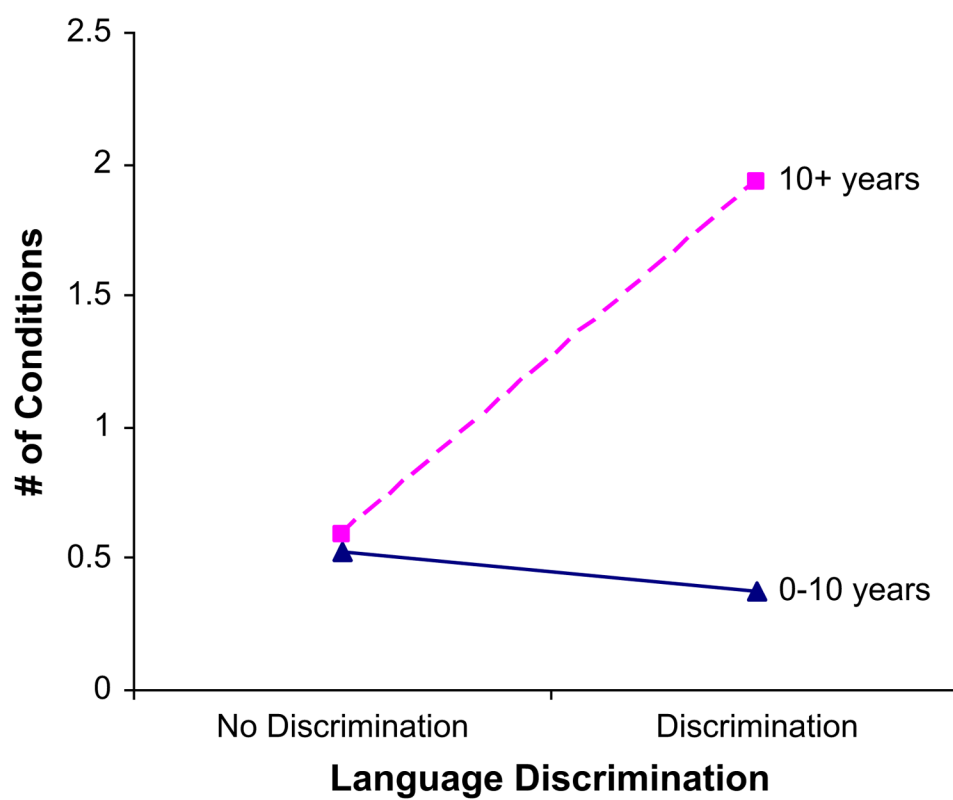
## References

- Aiken, LS.; West, SG. Multiple regression: Testing and interpreting interactions. Newbury Park, CA: Sage; 1991.
- Barry DT, Grillo CM. Cultural, self-esteem, and demographic correlates of perception of personal and group discrimination among East Asian immigrants. *American Journal of Orthopsychiatry*. 2003; 73:223–229. [PubMed: 12769243]
- Beiser M, Hou F. Ethnic identity, resettlement stress and depressive affect among Southeast Asian refugees in Canada. *Social Science & Medicine*. 2006; 63:137–150. [PubMed: 16436309]
- Brody G, Chen Y, Murry VM, Ge X, Simons RL, Gibbons FX, et al. Perceived discrimination and the adjustment of African American youths: a five-year longitudinal analysis with contextual moderation effects. *Child Development*. 2006; 77:1170–1189. [PubMed: 16999791]
- California Health Interview Survey. CHIS 2001 methodology series: Report 4 –Response rates. Los Angeles, CA: UCLA Center for Health Policy Research; 2002.
- Chae DH, Takeuchi DT, Barbeau EM, Bennett GG, Lindsey J, Krieger N. Unfair treatment, racial/ethnic discrimination, ethnic identification, and smoking among Asian Americans in the national Latino and Asian American study. *American Journal of Public Health*. 2008; 98:485–492. [PubMed: 18235073]
- Chan, S. Asian Americans: An interpretive history. Boston: Twayne Publishers; 1991.
- Choi BC, Hanley AJ, Holowaty EJ, Dale D. Use of surnames to identify individuals of Chinese ancestry. *American Journal of Epidemiology*. 1993; 138:723–734. [PubMed: 8237987]
- Collins, KS.; Hughes, D.; Doty, MS.; Ives, BL.; Edwards, JN.; Tenny, K. Diverse communities common concerns: Assessing the health quality for minority Americans. New York: The Commonwealth Fund; 2002.
- Devos T, Banaji MR. American = White? *Journal of Personality and Social Psychology*. 2005; 88:447–466. [PubMed: 15740439]

- Finch BA, Hummer RA, Kolody B, Vega WA. The role of discrimination and acculturative stress in Mexican-origin adults' physical health. *Hispanic Journal of Behavioral Sciences*. 2001; 23:399–429.
- Gee GC, Ro A, Gavin A, Takeuchi DT. Disentangling the effects of racial and weight discrimination on body mass index and obesity among Asian Americans. *American Journal of Public Health*. 2008; 98:493–500. [PubMed: 18235065]
- Gee GC, Ryan A, Laflamme DJ, Holt J. Self-reported discrimination and mental health status among African descendants, Mexican Americans, and other Latinos in the New Hampshire REACH 2010 Initiative: the added dimension of immigration. *American Journal of Public Health*. 2006; 96:1821–1828. [PubMed: 17008579]
- Gee GC, Spencer M, Chen J, Yip T, Takeuchi DT. A nationwide study of discrimination and chronic health conditions among Asian Americans. *American Journal of Public Health*. 2007a; 97:1275–1282. [PubMed: 17538055]
- Gee GC, Spencer M, Chen J, Yip T, Takeuchi DT. The association between self-reported discrimination and 12-month DSM-IV mental disorders among Asian Americans nationwide. *Social Science & Medicine*. 2007b; 64:1984–1996. [PubMed: 17374553]
- Goto SG, Gee GC, Takeuchi DT. Strangers still? The experience of discrimination among Chinese Americans. *Journal of Community Psychology*. 2002; 32:211–224.
- Harrell, SP. Unpublished document. 1997. Racism and Life Experiences Scales-Revised.
- Haviland MG, Morales LS, Reise SP, Hays RD. Do health care ratings differ by race or ethnicity? *Joint Commission Journal on Quality and Patient Safety*. 2003; 29:134–145.
- Johnson RL, Saha S, Arbelaez JJ, Beach MC, Cooper LA. Racial and ethnic differences in patient perceptions of bias and cultural competence in health care. *Journal of General Internal Medicine*. 2004; 19:101–110. [PubMed: 15009789]
- Jones, JM. Prejudice and racism. 2. New York: McGraw-Hill; 1997.
- Karlsen S, Nazroo JY. Relation between racial discrimination, social class, and health among ethnic minority groups. *American Journal of Public Health*. 2002a; 92:624–631. [PubMed: 11919063]
- Karlsen S, Nazroo JY. Agency and structure: the impact of ethnic identity and racism on the health of ethnic minority people. *Sociology of Health Illness*. 2002b; 24:1–20.
- Kelaher M, Paul S, Lambert H, Ahmad W, Paradies Y, Smith GD. Discrimination and health in an English study. *Social Science & Medicine*. 2008; 66:1627–1636. [PubMed: 18242810]
- Krieger N. Embodying inequality: a review of concepts, measures, and methods for studying health consequences of discrimination. *International Journal of Health Services*. 1999; 29:295–352. [PubMed: 10379455]
- Krieger N, Smith K, Naishadham D, Hartman C, Barbeau EM. Experiences of discrimination: validity and reliability of a self-report measure for population health research on racism and health. *Social Science & Medicine*. 2005; 61:1576–1596. [PubMed: 16005789]
- Landrine H, Klonoff EA. The schedule of racist events: a measure of discrimination and a study of its negative physical and mental health consequences. *Journal of Black Psychology*. 1996; 22:144–168.
- LaVeist TA, Rolley NC, Diala C. Prevalence and patterns of discrimination among U.S. health care consumers. *International Journal of Health Services*. 2003; 33:331–344. [PubMed: 12800890]
- Lee RM. Do ethnic identity and other-group orientation protect against discrimination for Asian Americans? *Journal of Counseling Psychology*. 2003; 50:133–141.
- Liang CTH, Li L, Kim BSK. The Asian American racism-related stress inventory: development, factor analysis, reliability, and validity. *Journal of Counseling Psychology*. 2004; 51:103–114.
- Liebkink K, Jasinskaja-Lahti I. The influence of experiences of discrimination on psychological stress: a comparison of seven immigrant groups. *Journal of Community Applied Social Psychology*. 2000; 10:1–16.
- Lippi-Green, R. English with an accent. New York: Routledge; 1997.
- Mak AS, Nesdale D. Migrant distress: the role of perceived racial discrimination and coping resources. *Journal of Applied Social Psychology*. 2001; 31:2632–2647.

- McNeilly MD, Anderson NB, Armstead CA, Clark R, Corbett M, Robinson EL, et al. The Perceived Racism Scale: a multidimensional assessment of the experience of White racism among African Americans. *Ethnicity and Disease*. 1996; 6:154–166. [PubMed: 8882844]
- Meredith LS, Siu AL. Variation and quality of self-report health data: Asians and Pacific Islanders compared with other ethnic groups. *Medical Care*. 1995; 33:1120–1131. [PubMed: 7475421]
- Mossakowski K. Coping with perceived discrimination: Does ethnic identity protect mental health? *Journal of Health and Social Behavior*. 2003; 44:318–331. [PubMed: 14582311]
- Murray-Garcia JL, Selby JV, Schmittiel J, Grumbach K, Quesenberry CP Jr. Racial and ethnic differences in a patient survey: patients' values, ratings, and reports regarding physician primary care performance in a large health maintenance organization. *Medical Care*. 2000; 38:300–310. [PubMed: 10718355]
- Myers, HF.; Lewis, TT.; Parker-Dominguez, T. Stress, coping, and minority health: biopsychosocial perspective on ethnic health disparities. In: Bernal, G.; Trimble, J.; Burlew, AK.; Leong, FT., editors. *Handbook of racial and ethnic minority psychology*. Thousand Oaks, CA: Sage; 2003. p. 377-400.
- Ngo-Metzger Q, Legedza AT, Phillips RS. Asian Americans' reports of their health care experiences. Results of a national survey. *Journal of General Internal Medicine*. 2004; 19:111–119. [PubMed: 15009790]
- Noh S, Beiser M, Kaspar V, Hou F, Rummens J. Perceived racial discrimination, depression, and coping: a study of Southeast Asian refugees in Canada. *Journal of Health Social Behavior*. 1999; 40:193–207. [PubMed: 10513144]
- Noh S, Kaspar V, Wickrama KAS. Overt and subtle racial discrimination and mental health: preliminary findings for Korean immigrants. *American Journal of Public Health*. 2007; 97:1269–1274. [PubMed: 17538066]
- Okazaki, S.; Hall, GC. Introduction: the who, what, and how of Asian American psychology. In: Hall, GC.; Okazaki, S., editors. *Asian American psychology: The science of lives in context*. Washington, DC: American Psychological Association; 2002. p. 3-11.
- Omi, M.; Winant, H. *Racial formation in the United States: From the 1960s to the 1990s*. 2. New York and London: Routledge; 1992.
- Ong, P.; Azores, T. The migration and incorporation of Filipino nurses. In: Ong, P.; Bonacich, E.; Cheng, L., editors. *The new Asian immigration in Los Angeles and global restructuring*. Philadelphia: Temple University Press; 1994. p. 164-195.
- Paradies Y. A systematic review of empirical research on self-reported racism and health. *International Journal of Epidemiology*. 2006; 35:888–901. [PubMed: 16585055]
- Pavalko E, Mossakowski KN, Hamilton VJ. Does perceived discrimination affect health? Longitudinal relationships between work discrimination and women's physical and emotional health. *Journal of Health and Social Behavior*. 2003; 44:18–34. [PubMed: 12751308]
- Ponce NA, Gatchell M. Singhs, Watanabes, Parks and Nguyens: a comparison of surname-list samples to probability samples using the California Health Interview Survey. *AAPI Nexus*. 2001; 4:61–80.
- Ponce NA, Gatchell M. Singhs, Watanabes, Parks and Nguyens: a comparison of surname-list samples to probability samples using the California Health Interview Survey. *AAPI Nexus*. 2006; 4:61–79.
- Rosenbloom SR, Way N. Experiences of discrimination among African American, Asian American, and Latino adolescents in an urban high school. *Youth & Society*. 2004; 35:420–451.
- Ross CE, Mirowski J. Households, employment, and the sense of control. *Social Psychology Quarterly*. 1992; 55:216–235.
- Saha S, Arbelaez JJ, Cooper LA. Patient-physician relationships and racial disparities in the quality of health care. *American Journal of Public Health*. 2003; 93:1713–1719. [PubMed: 14534227]
- Schulz AJ, Gravelle CC, Williams DR, Israel B, Mentz G, Rowe Z. Discrimination, symptoms of depression, and self-rated health among African American women in Detroit: results from a longitudinal analysis. *American Journal of Public Health*. 2006; 96:1265–1270. [PubMed: 16735638]
- Smedley, BD.; Stith, AY.; Nelson, AR. *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academics Press; 2003.

- Spencer MS, Chen J. Effect of discrimination on mental health service utilization of among Chinese Americans. *American Journal of Public Health*. 2004; 94:809–814. [PubMed: 15117705]
- Sue DW, Bucceri J, Lin AI, Nadal KL, Torino GC. Racial micro-aggressions and the Asian American experience. *Cultural Diversity and Ethnic Minority Psychology*. 2007; 13:72–81. [PubMed: 17227179]
- Takeuchi DT, Chun C, Gong F, Shen H. Cultural expressions of distress. *Health*. 2002; 6:221–236.
- Williams DR, Neighbors HW, Jackson JS. Racial/ethnic discrimination and health: findings from community studies. *American Journal of Public Health*. 2003; 93:200–208. [PubMed: 12554570]
- Williams DR, Williams-Morris R. Racism and mental health: the African American experience. *Ethnic Health*. 2000; 5:243–268.
- World Health Organization. The world health report 2001 – Mental health: New understanding, new hope. Geneva: World Health Organization; 2001.
- Ying YW, Lee PA, Tsai JL. Cultural orientation and racial discrimination: predictors of coherence in Chinese American young adults. *Journal of Community Psychology*. 2000; 28:427–442.
- Yoo HC, Lee RM. Ethnic identity and approach-type coping as moderators of the racial discrimination/well-being relation in Asian Americans. *Journal of Counseling Psychology*. 2005; 52:497–506.
- Yoo HC, Lee RM. Does ethnic identity buffer or exacerbate the effects of frequent racial discrimination on situational well-being of Asian Americans? *Journal of Counseling Psychology*. 2008; 55:63–74.
- Zia, H. Asian American dreams: The emergence of an American people. New York: Farrar, Straus, and Giroux; 2000.



**Fig. 1.** Association between language discrimination and chronic health conditions, by years in the U.S. among Asian American immigrants.



**Table 1**

Descriptive characteristics stratified by nativity status and years in the U.S.

Variables	Total (N = 717)	Foreign-born, less than 10 years (n = 215; 30.9%)	Foreign-born, greater than 10 years (n = 398; 57.3%)	U.S.-born (n = 82; 11.8%)
<b>Chronic health conditions, mean (SD)</b>	0.46 (0.94)	0.39 (0.91)	0.50 (0.89)	0.29 (0.55)
<b>Health care discrimination</b>				
Racial Discrimination, n (%)				
Yes	52 (7.3%)	19 (9.1%)	29 (7.5%)	3 (3.7%)
No	643 (92.5%)	188 (90.9%)	357 (92.5%)	78 (96.3%)
Language Discrimination, n (%)				
Yes	80 (11.7%)	36 (18.7%)	42 (11.0%)	0 (0.0%)
No	604 (88.3%)	162 (81.3%)	341 (89.0%)	82 (100.0%)
<b>Demographic</b>				
Sex, n (%)				
Male	314 (43.8%)	88 (40.6%)	167 (42.0%)	47 (57.3%)
Female	403 (56.2%)	127 (59.4%)	231 (58.0%)	35 (42.7%)
Age, mean (SD)	41.5 (15.2)	37.3 (11.9)	44.7 (15.3)	35.2 (17.2)
Education, n (%)				
High school incomplete	90 (13.1%)	40 (18.9%)	47 (12.1%)	1 (1.2%)
High school diploma, no college	118 (17.1%)	44 (19.4%)	62 (15.9%)	11 (13.4%)
Some college or technical	120 (17.4%)	31 (14.5%)	69 (17.7%)	17 (20.7%)
College graduate or more	361 (52.4%)	90 (47.2%)	212 (53.3%)	53 (64.6%)
Family income, n (%)				
Under \$20K	112 (20.6%)	56 (33.8%)	50 (16.2%)	6 (9.5%)
\$20K–\$34,999	96 (17.7%)	45 (24.7%)	40 (12.9%)	10 (15.9%)
\$35K–\$49,999	86 (15.8%)	20 (11.9%)	60 (19.4%)	6 (9.5%)
\$50K–\$74,999	96 (17.7%)	22 (13.8%)	58 (18.8%)	16 (25.4%)
\$75K and over	177 (28.2%)	26 (16.0%)	101 (32.7%)	25 (39.7%)
Health insurance, n (%)				
Yes	588 (83.2%)	156 (73.5%)	344 (87.5%)	73 (91.3%)
No	119 (16.8%)	58 (26.6%)	49 (12.5%)	7 (8.8%)
Primary language, n (%)				
English	407 (56.8%)	88 (43.3%)	234 (58.8%)	80 (97.6%)
Other	310 (43.2%)	127 (56.7%)	164 (41.2%)	2 (2.4%)

Note. Twenty-two participants are missing from the stratified by nativity status and years in the U.S. subsamples.

**Table 2**

Poisson regression analyses testing associations between racial and language discrimination with chronic health conditions.

	<b>Model 1: Racial Discrimination, RR (CI)</b>	<b>Model 2: Language Discrimination, RR (CI)</b>	<b>Model 3: Racial and Language Discrimination, RR (CI)</b>
Intercept	0.38 (−1.69, −0.24) **	0.36 (−1.76, −0.31) **	0.39 (−1.68, −0.21) **
Age	1.62 (0.35, 0.62) ***	1.63 (0.35, 0.63) ***	1.61 (0.34, 0.62) ***
Female (vs. male)	1.16 (−0.13, 0.41)	1.14 (−0.14, 0.41)	1.15 (−0.14, 0.42)
Education	1.13 (−0.03, 0.27)	1.14 (−0.02, 0.29)	1.14 (−0.03, 0.29)
Family Income	0.75 (−0.45, −0.12) **	0.74 (−0.47, −0.14) ***	0.75 (−0.46, −0.12) ***
Health insurance (vs. none)	0.90 (−0.47, 0.26)	0.94 (−0.43, 0.31)	0.93 (−0.45, 0.31)
English (vs. non-English)	0.78 (−0.60, 0.10)	0.80 (−0.58, 0.13)	0.74 (−0.66, 0.06)
Foreign-Born (vs. US born)	1.32 (−0.28, 0.84)	1.27 (−0.32, 0.80)	1.24 (−0.35, 0.77)
Ethnicity (Vietnamese = ref.)			
Chinese	0.83 (−0.51, 0.15)	0.85 (−0.50, 0.17)	0.83 (−0.52, 0.15)
Korean	0.59 (−0.89, −0.16) **	0.61 (−0.86, −0.13) **	0.59 (−0.89, −0.16) **
Racial discrimination	2.21 (0.39, 1.20) ***	–	1.52 (−0.11, 0.95)
Language discrimination	–	2.05 (0.37, 1.06) ***	1.68 (0.07, 0.97) *

Note. RR = rate ratio; CI = 95% confidence interval.

\*  
p < .05;

\*\*  
p < .01;

\*\*\*  
p < .001.

**Table 3**

Poisson regression analyses testing time in the U.S. as a moderator of racial and language discrimination on chronic health conditions.

	<b>Model 1: racial discrimination, RR (CI)</b>	<b>Model 2: language discrimination, RR (CI)</b>	<b>Model 3: racial and language discrimination, RR (CI)</b>
Intercept	0.45 (−1.55, −0.06)*	0.45 (−1.55, −0.05)*	0.48 (−1.50, 0.01)*
Age	1.55 (0.30, 0.59)***	1.59 (0.32, 0.61)***	1.60 (0.32, 0.62)***
Female (vs. male)	1.15 (−0.13, 0.41)	1.16 (−0.12, 0.42)	1.18 (0.00, 0.32)
Education	1.13 (−0.03, 0.27)	1.19 (0.02, 0.33)*	1.18 (0.00, 0.32)*
Family income	0.73 (−0.48, −0.14)***	0.72 (−0.50, −0.16)***	0.73 (−0.48, −0.14)***
Health insurance (vs. none)	0.83 (−0.57, 0.19)	0.85 (−0.54, 0.22)	0.83 (−0.57, 0.20)
English (vs. non-English)	0.75 (−0.64, 0.06)	0.76 (−0.64, 0.08)	0.72 (−0.69, 0.03)
Foreign-born (vs. US born)	1.03 (−0.60, 0.67)	1.12 (−0.53, 0.76)	0.76 (−0.61, 0.07)
Ethnicity (Vietnamese = ref.)			
Chinese	0.83 (−0.51, 0.14)	0.78 (−0.59, 0.09)	0.51 (−1.06, −0.30)
Korean	0.57 (−0.93, −0.20)**	0.53 (−1.01, −0.27)**	0.70 (−1.18, 0.47)***
Racial discrimination	1.95 (−0.12, 1.46)	–	2.30 (−0.09, 1.76)
Language discrimination	–	0.81 (−0.96, 0.55)	1.11 (−0.54, 0.75)*
Foreign-born × years in U.S.	1.32 (−0.08, 0.64)	1.10 (−0.28, 0.47)	1.12 (−0.26, 0.49)
Racial discrimination × foreign-born × years in U.S.	1.16 (−0.77, 1.06)	–	0.36 (−2.15, 0.14)
Language discrimination × foreign-born × years in U.S.	–	3.77 (0.48, 2.17)**	4.65 (0.53, 2.54)**

Note. RR = rate ratio. CI = 95% confidence interval.

\*  
 $p < .05$ ;

\*\*  
 $p < .01$ ;

\*\*\*  
 $p < .001$ .