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Perceived Discrimination and Psychological Distress Among Asian Americans: Does Education Matter?

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Abstract

Using data from the National Latino and Asian American Study, this work examines if and how perceived everyday discrimination is associated with psychological distress among Asian Americans and whether this association varies by important structural factors as education and place of education. Findings reveal that perception of discrimination is associated with increased levels of psychological distress. Most importantly, education moderates the discrimination-distress association such that the detrimental effect of discrimination is stronger for Asian Americans with college or more levels of education than for Asian Americans with less than college levels of education. Place of education further conditions the moderating effect of education: The foreign-educated Asian Americans with higher levels of education are affected most negatively by discrimination compared to others. This study highlights (1) the significant joint role of education and place of education in conditioning the relationship between perceived discrimination and psychological distress, and (2) unique features of education in improving our understanding of Asian Americans' mental health.

Keywords

Perceived discrimination; Education; Place of education; Psychological distress; Asian Americans

Introduction

Numerous studies suggest that stress hurts individual health. For Asian minorities in the United States, perceived discrimination contributes to one of the major sources of stress that may hinder their life opportunities, reinforce their perpetual foreigner status and erode their well-being [8]. There is a growing body of literature suggesting that discrimination is associated with mental health for Americans [6, 13, 29]. A few studies also address this relationship among Asian Americans in particular [8, 22, 42]. Despite these limited efforts, studies on discrimination and mental health among Asian Americans remain underdeveloped, primarily due to reasons such as inconsistent measures of discrimination and the neglect of within-group heterogeneity [9].

Accordingly, when examining the discrimination and mental health association, it is essential to take into account the within-group heterogeneity by considering factors that

might modify the association among Asian Americans. For instance, are some Asian Americans affected very strongly by discrimination whereas other Asian Americans appear to experience no or only small changes in psychological distress? This study primarily focuses on the moderating role of education, an important indicator of socioeconomic status (SES) that is particularly relevant to one's health and well-being [21]. In the following sections, we will illustrate in detail how perceived discrimination is related to mental health and how education and place of education modify the association between discrimination and mental health among Asian Americans.

Perceived Discrimination and Mental Health

A recent review by [9] found that exposure to discrimination is an important feature of life for Asian Americans and it is manifested at different stages in American history, including the undermined human rights of Asian Americans towards the end of the 19th century, a considerable anti-Asian sentiment in the 1920s, a "Model minority" [26]: 30) myth in the 1960s, and mixed public feelings and negative attitudes towards Asian Americans in various polls, and Asian Americans' self-reporting of perceived discrimination in recent surveys.

Perceived discrimination is considered as a type of stressor because it contains both daily hassles and a series of minor or major events that are associated with one's minority status [3]. For instance, unfair treatment (a proxy of perceived everyday discrimination), as Kessler et al. [13] argued, is one of the most critical stressors for socially disadvantaged groups in the U.S. such as women and racial/ethnic minorities. There is considerable evidence in the U.S. revealing that subjective perception of discrimination, whether due to race or not, is adversely related to mental health [13, 29, 39, 41]. For Asian Americans, a limited but growing number of studies have started to reveal that perceived discrimination is significantly related to mental disorders [8] and psychological distress [42].

Possible Moderators Linking the Discrimination and Mental Health Association

While the association between perceived discrimination and mental health started to be established, scholars have now begun to explore subgroup variations within this association by focusing on the moderating roles of ethnic identity [22, 32, 33, 42], social support [1, 23], religion [2, 24], and immigration-related factors [6].

What is not fully clear so far is how both experiences of discrimination and the relationships of those experiences to mental health may vary by aspects of individuals' social arrangements. Hahm et al. [11] are among the handful scholars who have examined the role of structural factors and found a gendered relationship between discrimination and health among Asian Americans such that women reported more negative mental and physical health consequences of discrimination compared to men. To the best of our knowledge, no studies have examined the moderating role of education and other SES factors (e.g. income and employment) among Asian Americans.

Are disadvantaged Asian Americans such as individuals with lower levels of education (compared to individuals with higher levels of education) more likely or less likely to (1) perceive discrimination, and (2) report negative mental health consequences as a result of such negative experiences? This study examines the effect of perceived discrimination on

mental health, and most importantly, variations of this relationship by levels of education and further by place of education.

Education as a Stress Modifier

Structural arrangements, as Pearlin [25] pointed out, are particularly important because they greatly influence the components of the stress process—stressor, stress moderator and stress outcome. How might education, an important structural factor, modify the discrimination and mental health association? On one hand, education may be considered as a stress buffer against the detrimental effect of discrimination for Asian Americans. As an important indicator of SES, education precedes and shapes other aspects of SES such as income and occupation. It indicates permanent human capital that cannot be easily taken away by others [20, 28]. It also suggests promoted economic and psychosocial resources [21, 27, 30]. All these advantages associated with education can be used by individuals to effectively cope with life stressors such as perceived discrimination and alleviate their harmful health consequences. Although no empirical studies have explicitly examined the stress buffering role of education in the discrimination and mental health association, one study by Mandemakers and Monden [18] reported that education does help to buffer the impact of the onset of disability (one type of stressor) on psychological distress.

On the other hand, education may become a stress risk factor for Asian Americans because the meanings and implications of education may be different for Asian Americans compared to others because most Asian Americans are immigrants who have often received their primary education outside the United States [35]. As a result, education, a foreign education in particular, may not lead to the same high levels of economic and health payoffs as U.S. education for Asian Americans [35, 43]. Besides, the better-educated Asian Americans with excellent/good English proficiency may perceive and report more episodes of discrimination because of increased contact with American society and a greater awareness. When a strong sense of inequality and relative deprivation (i.e., feelings of less well-off compared to others) arises because of repeated perceptions of discrimination and the mismatch between the harsh reality and high expectation (associated with higher levels of education), the health may be at jeopardy for some Asian Americans.

Specifically, several theories may be put forth to explain why mental health of Asian Americans with higher levels of education might be affected more negatively by discrimination. The first theory is related to social contacts. The better-educated Asian Americans may have more social contacts compared to those less-educated through employment and more frequent utilization of English. More social contacts may increase the odds of encountering discriminations and the subsequent negative health consequences. The second theory is called sensitization theory [34]. According to this theory, if a person is sensitized to stress (due to cumulative exposure to prior stressors and depressive episodes), he or she will be more responsive to lower levels of stress after repeated recurrences because of a vulnerable neurobiological system. Accordingly, if a person is exposed to disproportionately more and repeated discrimination, his/her physiological tolerance to discrimination will be greatly undermined, thus that person may become more vulnerable toward a low threshold of discrimination. As a result, if the highly educated Asian

Americans encounter more and repeated episodes of discrimination, they may be more sensitive and responsive to lower levels of discrimination and affected by them more. The third theory is the relative deprivation theory that summarizes the negative association between income inequality and health [37]. Compared to the less-educated, the highly-educated Asian Americans may be more likely to develop feeling of relative deprivation by comparing their current socioeconomic standing with their reference groups (i.e., individuals with similar high levels of education either in their home countries or in the United States). Repeated perception of discrimination may trigger or reinforce a sense of relative deprivation and inequality, thus affect health more for the highly educated.

In sum, given the unique characteristics of education among Asian Americans, we first propose that education may serve as a stress risk factor for Asian Americans such that the detrimental effect of perceived discrimination on psychological distress may be more for Asian Americans with higher levels of education than for Asian Americans with lower levels of education. However, we should also recognize the aforementioned possible stress buffering role of education.

Place of Education

If education is a stress risk factor, the highly-educated Asian Americans receiving primary education (i.e., education before age 16) in a foreign country may be subject to double jeopardy in health because a foreign education is often related to limited English proficiency and limited psychosocial resources. For instance, Walton et al. [35] found that a foreign education does not result in the same health payoffs for increasing educational attainment compared to the U.S. schooling because a foreign education is related to fewer economic opportunities, fewer positive social interactions, and lower levels of English proficiency. Similarly, Zeng and Xie [43] revealed that place of education plays a consequential role in the social stratification of Asian Americans. According to them, foreign-educated Asian immigrants earn approximately 16 % less than U.S.-born whites, U.S.-born Asian Americans, and U.S.-educated Asian immigrants. Therefore, when examining the moderating role of education among Asian Americans, we then propose to also consider place of education, which may work together with education to jointly affect the discrimination and mental health association. If education is found to be a stress risk factor for Asian Americans, its detrimental effect may be even stronger for those foreign-educated Asian Americans.

In sum, we examine how perceived everyday discrimination contributes to variations in mental health indicated by psychological distress among Asian Americans. Given that most Asian Americans are immigrants and have received their primary education in foreign countries, we explore the within-group heterogeneity by examining if education and place of education jointly affect the discrimination-distress relationship. The conceptual model of this study is described in Fig. 1.

Methods

Sample

Our data are drawn from the 2002 to 2003 National Latino and Asian American Study (NLAAS), a nationally representative household survey of Latino and Asian Americans. This survey used a stratified area probability sample design and involves three major steps of sampling [12]. The first step was the core sampling: city or contiguous census blocks were selected according to population density; then, housing units were sampled within each block and then one adult was sampled within each selected housing unit. The second step was the supplementary sampling: census blocks with greater than 5 % of the target population (e.g. Asian households) were over-sampled. In order to further enlarge the sample size, the third step was applied to recruit the secondary respondents from previously sampled households. The face to face interview was administered by bilingual lay interviewers, and respondents were allowed to choose among available languages such as English, Chinese, Vietnamese, or Tagalog.

This study focused on Asian Americans with three major national origins (Chinese, Filipino, and Vietnamese) and “Other Asian Americans” such as South Asians, Japanese, Koreans, and others. A total of 2,095 Asian Americans were recruited, including 1,611 primary respondents and 484 secondary respondents. The weighted response rates for both primary and secondary respondents were over 69 %. Slightly over 1 % of the cases were excluded due to missing values, resulting in a final analytical sample of size 2,085.

Sample weights were applied to adjust for demographic variables and the complex sampling design. For the entire sample (Table 1), more than half of the respondents were female (52.6 %) and most of them were married (68.8 %) and employed (64.0 %). Slightly less than one-fourth of the respondents (23.7 %) were U.S.-born and 67.0 % of the respondents reported to speak good or excellent English. In terms of education and income, 42.8 % of the respondents reported having at least college level of education and over 40 % reported having an annual household income of at least $75,000. Almost 29 % of the respondents were Chinese, 12.9 % Vietnamese, 21.5 % Filipino, and 36.6 % other Asian Americans.

Table 1 also provides descriptions on the sociodemographic differences between the highly-educated and less-educated Asian Americans. There are some differences in the percentages of individuals in each ethnic group. The highly-educated have significantly lower percentages of Vietnamese and higher percentages of other Asian Americans compared to the less-educated. The highly-educated are slightly younger and more likely to be males and married than the less-educated. There are also differences in place of education such that the highly- educated are more likely to get education in foreign countries compared to the less-educated. The highly-educated report higher income, higher proportions of being employed and foreign-born, and speak English more proficiently than the less-educated. Finally, the highly-educated reported slightly more everyday discriminations but similar levels of psychological distress compared to the less- educated.

Dependent Variable

The Kessler Psychological Distress Scale (K10) was used to measure psychological distress. The K10, consisted of 10 questions, is considered a simple and valid measure of mental health [7] and has been used to gauge the mental health of Asian Americans in previous studies [36, 42]. Respondents were asked to indicate the frequency (1 = *all of the time*, 2 = *most of the time*, 3 = *some of the time*, 4 = *a little of the time*, and 5 = *none of the time*) in the past 30 days with which they had experienced feelings of depression and anxiety (e.g., tiring out, nervousness, hopelessness, restlessness, depression, sadness, worth lessness, and everything takes effort). All items were reverse-coded to have high scores reflect higher levels of psychological distress. The average index of psychological distress demonstrates a strong internal consistency, as the α reliability is .88 for this Asian American sample.

Independent Variables

The major independent variable is perceived everyday discrimination, assessed using a 9-item index adopted from the Detroit Area Study [39]. The items measure the frequency (1 = *never* to 6 = *almost everyday*) of chronic, routine, and minor experiences of unfair treatment. The nine items include: (1) “You are treated with less courtesy than other people,” (2) “You are treated with less respect than other people,” (3) “You receive poorer service than other people at restaurants or stores,” (4) “People act as if they think that you are not smart,” (5) “People act as if they are afraid of you,” (6) “People act as if they think that you are dishonest,” (7) “People act as if you are not as good as they are,” (8) “You are called names or insulted,” and (9) “You are threatened or harassed.” An average index (α = .91) was computed with higher values indicating a higher levels of perceived everyday discrimination.

Moderating Variables

This study examines the moderating effects of education and place of education. We collapsed years of schooling into two categories: less than college levels of education (<16 years) and college or more levels of education (>=16 years). The respondent’s place of education was also assessed as a dichotomous variable—foreign education (coded 0) versus U.S. education (coded 1). To measure place of education, respondents were asked, “In what country did you receive most of your education before age 16?”

Control Variables

This study controlled for sociodemographic characteristics such as gender (*female* = 1), annual household income (< $15,000, $15,000–$34,999.9, $35,000–$74,999.9, and $75,000 and more), employment status (*employed*, unemployed, not in the labor force), nativity (*U.S.-born* = 1), age (in years), marital status (*married/cohabiting, divorced/separated/widowed, and never married*), and Asian ethnicity (*Vietnamese, Chinese, Filipino, and Other Asian Americans*). English proficiency (*excellent or good* = 1), another control variable, was assessed by the question, “How well do you speak English?”

Analytical Strategies

SPSS 20.0 was used to analyze the data. The weighted descriptive statistics for the whole sample and for the sub-samples stratified by levels of education were summarized first in

Table 1. Bivariate analysis examining mean levels of perceived everyday discrimination and psychological distress by sociodemographic variables were then reported in Table 2. To test the direct effect of perceived everyday discrimination and moderating effects of education and place of education on psychological distress, seven Ordinary Least Squares (OLS) regressions were estimated in Table 3. After the moderating effects of education and place of education were identified in Model 7 of Table 3 using interaction terms, the full model (Model 6 of Table 3) was estimated for four sub-samples stratified by both education and place of education in Table 4 to facilitate comparisons and interpretations.

Results

Levels of Perceived Discrimination and Psychological Distress by Education and Covariates

To examine whether perceived everyday discrimination and psychological distress differ by education and other covariates, bivariate analysis was conducted and results were summarized in Table 2. Findings suggest that, compared to males, females reported significantly lower levels of everyday discrimination, but higher levels of psychological distress. There are ethnic differences in both levels of discrimination and distress: The Filipino reported the highest whereas the Vietnamese reported the lowest mean levels of discrimination. The Chinese reported the highest level of distress whereas the Filipino reported the lowest levels of distress. Among three groups under marital status, the never married reported both the highest discrimination and distress levels. In comparison with those having excellent or good English, respondents having fair or poor English reported significantly higher levels of psychological distress, but lower levels of everyday discrimination. Compared to the U.S.-born, the foreign-born reported significantly lower levels of discrimination. No difference is found on distress by nativity.

In terms of education, those with less than college level of education reported a significantly lower level of everyday discrimination but comparable level of psychological distress compared to those with college or more levels of education. Those foreign-educated also reported significant lower level of discrimination but similar level of distress compared to the U.S.-educated. As for employment status, the employed individuals reported the highest level of discrimination but lowest level of distress.

Since age, everyday discrimination and psychological distress are continuous variables, their pairwise zero-order associations were also examined in Table 2. Results indicate that age is significantly and negatively related to discrimination: Older Asian Americans reported lower levels of discrimination. No age differences in psychological distress are found. As expected, everyday discrimination is significantly and positively related to psychological distress ($r = .25$, $p < .001$).

Discrimination, Education and Psychological Distress

To examine the proposed hypotheses, seven OLS regression models (Models 1–7) were estimated in Table 3. Model 1 explores the effect of everyday discrimination on psychological distress without any control variables. As expected, higher levels of everyday

discrimination is significantly associated with higher levels of psychological distress (b = .154, p <.001). Only education and place of education were included in Model 2 and both variables are insignificantly related to distress. With discrimination being added into Model 3, both the effects of education (b = −.047, p <.05) and place of education (b = −.085, p <.001) become significant. This indicates that when adjusting for the effect of everyday discrimination, college or more levels of education and the U.S. education are associated with lower levels of psychological distress.

Demographic factors (i.e., ethnicity, gender, age and marital status) were included in Model 4 and the coefficients associated with discrimination, education and place of education remained substantial and significant. Compared to males, females reported significantly higher levels of distress (b = .074, p <.001). In comparison with respondents who are never married, those currently married (b = −.132, p <.001) and the divorced/separated/widowed (b = −.091, p <.05) reported lower levels of distress. When household income and employment status were incorporated into Model 5, the effect of education becomes insignificant suggesting that household income partially mediates the effect of education on distress. In Model 6, nativity and English proficiency were added and only the latter is significant and partially explains the effects of both education and place of education on distress. With all the control variables being included in the full model, Model 6, the effect of discrimination remained intact.

Model 7 of Table 3 examines the contingency effect of education and place of education on the association between perceived everyday discrimination and psychological distress via a two-way interaction term (*everyday discrimination by college or more levels of education*) and a three-way interaction term (*everyday discrimination by college or more levels of education by U.S.-educated*). Findings suggest that education is a significant moderator (b = .080, p <.01) that conditions the discrimination-distress association. Moreover, place of education further conditions the moderating effect of education (b = −.044, p <.05).

Moderating Effects of Education and Place of Education

Is education a stress risk factor? To interpret the important interaction terms identified in Model 7 of Table 3, the whole sample was stratified by both education and place of education and findings were summarized in Table 4. We compared the effect of perceived discrimination on psychological distress throughout the four models and found that the effect of discrimination is stronger for respondents with college or more levels of education compared to those with less than college levels of education. The highly educated Asian Americans not only reported higher levels of discrimination (according to Table 2), but also reported more negative mental health consequences of perceived discrimination. As a result, the first hypothesis was supported by the data, suggesting that education may serve as a stress risk factor so that the detrimental effect of perceived discrimination on psychological distress are stronger for Asian Americans with higher levels of education compared to those with lower levels of education.

When examining place of education, although the effect of everyday discrimination on psychological distress is consistently significant and substantial across all subsamples, its effect is the strongest for the highly educated individuals who received foreign education (b

= .242, p <.001). Therefore, the second hypothesis was also supported by the data, suggesting that the detrimental effect of discrimination is strongest for the foreign-educated Asian Americans.

Stratifying the whole sample also reveals distinctive patterns on the significant correlates of psychological distress for the four subsamples. For those foreign-educated Asian Americans with college or more levels of education in Model 1, only English proficiency and everyday discrimination contribute to the variation in psychological distress. For the U.S. educated Asian Americans with similar levels of education in Model 2, gender, marital status, employment status and discrimination are all important correlates of psychological distress. English proficiency is no longer significant for this group. For Asian Americans with less than college levels of education in Models 3–4, marital status and English proficiency are important for the foreign-educated whereas gender status and household income are more essential among the U.S.-educated.

Discussion

This study examines how perceived everyday discrimination is associated with psychological distress among Asian Americans and whether this association varies by education and place of education. Findings reveal that perceived everyday discrimination is associated with increased levels of psychological distress. Most importantly, education moderates the discrimination-distress association such that the detrimental effect of discrimination is stronger for Asian Americans with college or more levels of education than for Asian Americans with less than college levels of education. Place of education further conditions the moderating effect of education with the foreign-educated Asian Americans having higher levels of education being affected most negatively by everyday discrimination.

Although one of the most consistent and robust relationships in social sciences is education's gradient relation to health [17] and the importance of education in health has been increasing in recent years [10, 16], our study found no association exists between higher levels of education and psychological distress among the Asian American population. This finding indicates that the health implications of education may be slightly different for Asian Americans as compared to others in the United States. Higher levels of education may not necessarily lead to similar psychosocial resources for Asian Americans as found in the general U.S. population because many Asian Americans have received their primary education in foreign countries [36]. Higher education for Asian Americans, for instance, does not guarantee English mastery. Without English proficiency, human capital and other merits associated with education may not be easily transformed into socioeconomic resources that are essential to individual health. In this sense, for Asian Americans, Asian immigrants in particular, subjective social status may be more important than objective social status such as education in affecting their health [4, 14].

Although education is not directly associated with psychological distress, it is found to be a risk factor that increases the detrimental effect of perceived discrimination. In other words, those highly-educated Asian Americans are affected more by perceived everyday discrimination compared to those less-educated Asian Americans. This finding suggests that

the better-educated Asian Americans are more likely to be employed and have more social contacts with American society, which in turn, will increase their chances of encountering negative interactions and discriminatory behaviors. Repeated exposures to discriminations may decrease their tolerance level and increase their vulnerability toward discrimination. By contrast, lower levels of education may be associated with limited English proficiency, a lower level of consciousness, transportation barriers and residential isolation, all of which may greatly reduce the odds of negative interactions between the less-educated and American society.

In the social stress literature, many studies have examined the moderating roles of psychosocial resources such as social support, optimism, sense of personal control and self-esteem. Very few studies have examined the role of more fundamental determinants of health such as education in affecting the association between stressors and stress outcomes. One available study by Mandemakers and Monden [18] found that education buffers the impact of disability on psychological distress and the buffering effect of education is partially due to cognitive abilities and economic resources. Our finding is somewhat contradictory to their results and suggests the importance of examining the health effect of personal resources such as education within the context of immigration for Asian Americans.

Education and place of education are found to jointly affect psychological distress among Asian Americans, suggesting that perceived discrimination affects mental health more for the foreign- and highly-educated compared to others. This finding indicates the notion of relative deprivation (that might be triggered or reinforced by perceived discrimination) in understanding mental health of Asian Americans, especially Asian immigrants. Constant and repeated perception of unfair treatment may cause feeling of inequality that creates stress and eventually leads to worse mental health [37]. Although education indicates human capital [20, 21] that can be used to direct and control over one’s own life, it also shapes one’s expectation regarding his/her social standing. An unsuitable match between higher expectation associated with higher levels of education and poorer social standing may inevitably lead to a strong sense of relative deprivation. Feeling of relative deprivation, in turn, is empirically found to be negatively associated with health through psychosocial stress and related behaviors [5, 15, 19, 31, 38].

In sum, as Williams and colleagues pointed out [40], to determine the impact of discrimination on health, we need to learn more about the contextual factors that might affect the appraisals of discrimination and its health consequences. We considered two structural factors—education and place of education. This study found that Asian Americans with higher levels of education (compared to those with lower levels of education) and Asian Americans educated in the U.S. (compared to those foreign-educated) are more likely to perceive and report discrimination. Given that the U.S. education is closely related to levels of acculturation such as English mastery, our finding along with prior research on Mexican Americans [6] suggests that those highly-educated with English proficiency may be more sensitive toward cultural nuances and discriminatory implications. Taken together, the meanings and implications of education on health should be interpreted within the context of immigration (such as place of education and English proficiency) for Asian Americans.

Although this study has addressed several interesting health implications of education for Asian Americans, several issues remain unsolved and deserve future attention. First, future studies may seek to explain the possible reasons that may account for the risk effect of education for Asian Americans. Is it related to more social contacts, higher expectations, feelings of relative deprivation or others? Our speculations need support from empirical examinations. Second, studies may also introduce more subjective measures of social status and compare their direct as well as interacting effect on mental health with those of more objective measures of social status. Third, place of education should be supplemented by asking individuals their place of higher education (i.e., colleague or more) in addition to place of education before age 16 because place of higher education may be more closely related to English proficiency and other psychosocial resources. Fourth, future studies should also examine the moderating role of individual income given its intimate relationships with both education and place of education [43]. Finally, although no association is found between education and psychological distress, we speculate that if we stratify the sample by nativity (i.e., place of birth), we may find different patterns on the association for the U.S.-born and foreign-born individuals because most of the U.S.-born are likely to be educated in the United States and to have English proficiency.

Despite these limitations, this work, to the best of our knowledge, is by far the first study that examines the moderating role of structural factors that underlie the association between perceived discrimination and mental health. Our findings highlight the significant joint role of education and place of education in conditioning the relationship between perceived everyday discrimination and psychological distress, and unique features of education in improving our understanding of Asian Americans' mental health.

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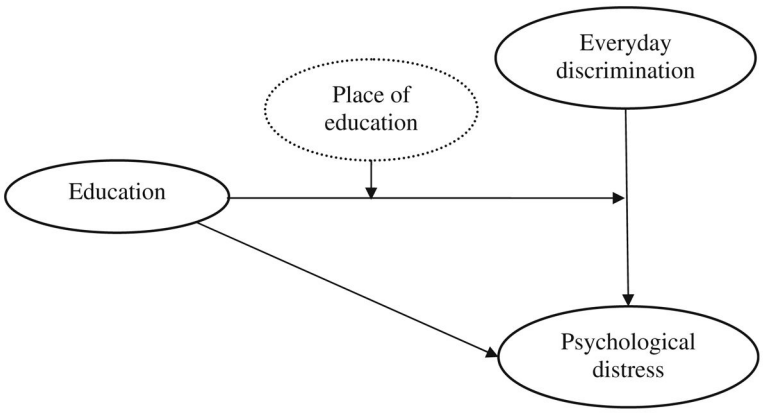

Fig. 1.

Conceptual model on the relationships among everyday discrimination, education, place of education and psychological distress

Table 1

Distributions of demographics, socioeconomic characteristics, nativity, English proficiency, everyday discrimination, place of education and psychological distress of adults: U.S. Asian Americans in the national Latino and Asian American Study 2002–2003

	Total sample	Sub-samples by levels of education	
		College or more	Less than college
	n = 2,085	*n* = 893	*n* = 1,192
Ethnicity			
Vietnamese	12.9	7.2	17.2
Filipino	21.5	18.6	23.6
Chinese	28.7	30.7	27.2
Other Asian Americans	36.9	43.5	32.0
Gender			
Male	47.4	52.5	43.6
Female	52.6	47.5	56.4
Age (years)	41.3 (15.6)	40.3 (14.1)	42.1 (16.5)
Marital status			
Married	68.8	71.2	67.0
Divorced/separated/widowed	8.3	5.3	10.5
Never married	22.9	23.5	22.4
Education			
College or more (≥16)	42.8	–	–
Less than college (< 16)	57.2	–	–
Place of education			
U.S.-educated	34.9	30.8	37.9
Foreign-educated	65.1	69.2	62.1
Household income			
<$15,000	18.3	14.6	21.1
$15,000–$34,999.9	12.6	7.2	16.7
$35,000–$74,999.9	28.5	26.2	30.3
≥$75,000	40.5	52.0	31.9
Employment status			
Employed	64.0	69.3	60.0
Unemployed	6.4	4.9	7.4
Not in labor force	29.7	25.8	32.6
Nativity			
U.S.-born	23.7	21.3	25.5
Foreign-born	76.3	78.7	74.5
English proficiency			
Good/excellent	67.0	80.3	57.0
Poor/fair	33.0	19.7	43.0
Everyday discrimination	1.8 (.7)	1.9 (.7)	1.8 (.8)

	Total sample	Sub-samples by levels of education	
		College or more	Less than college
Psychological distress	1.4 (.5)	1.4 (.4)	1.4 (.5)

Percentages are reported. Except for rounding error, percentages sum to 100.0 %. Means and standard deviations (in parentheses) are reported for continuous variables such as age, everyday discrimination and psychological distress

Table 2

Mean values of everyday discrimination and psychological distress by demographics, socioeconomic characteristics, place of education, nativity and English proficiency: U.S. Asian Americans in the national Latino and Asian American Study 2002–2003

Characteristics	Everyday discrimination	Psychological distress
Age	−.23***	−.04NS
Everyday discrimination	–	.25***
Ethnicity		
Vietnamese	1.48 (.04)	1.33 (.03)
Filipino	1.96 (.04)	1.32 (.02)
Chinese	1.78 (.03)	1.43 (.02)
Other Asian Americans	1.89*** (.03)	1.35*** (.02)
Gender		
Male	1.92 (.03)	1.34 (.01)
Female	1.73*** (.02)	1.38* (.01)
Marital status		
Married	1.75 (.02)	1.33 (.01)
Divorced/separated/widowed	1.63 (.05)	1.37 (.04)
Never married	2.10*** (.04)	1.46*** (.03)
Education		
College or more (≥16)	1.88 (.02)	1.35 (.01)
Less than college (<16)	1.77*** (.02)	1.37NS (.01)
Place of education		
U.S.-educated	2.03 (.03)	1.34 (.02)
Foreign-educated	1.71*** (.02)	1.37NS (.01)
Household income		
<$15,000	1.79 (.05)	1.45 (.03)
$15,000–$34,999.9	1.65 (.04)	1.37 (.03)
$35,000–$74,999.9	1.81 (.03)	1.36 (.02)
≥$75,000	1.89*** (.02)	1.32*** (.01)
Employment status		
Employed	1.86 (.02)	1.35 (.01)
Unemployed	1.84 (.06)	1.43 (.04)
Not in labor force	1.72*** (.03)	1.37* (.02)
Nativity		
U.S.-born	2.03 (.04)	1.33 (.02)
Foreign-born	1.75*** (.02)	1.37NS (.01)
English proficiency		
Good/excellent	1.92 (.02)	1.33 (.01)
Poor/fair	1.62*** (.03)	1.44*** (.02)

N = 2,085; *NS* non-significant,

* *p* <.05,

** *p* <.01,

*** *p* <.001, for significance of association of each variable with everyday discrimination and psychological distress; standard errors are shown in parentheses. For continuous variables such as age, everyday discrimination and psychological distress, correlations are provided

Table 3

Ordinary least squares (OLS) regressions of everyday discrimination, education, place of education, demographics, other socioeconomic factors, nativity and English proficiency on psychological distress: U.S. Asian American in the National Latino and Asian American Study 2002–2003

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Ethnicity (Vietnamese[a])							
Filipino				−.067†(.036)	−.052 (.036)	.001 (.037)	−.001 (.039)
Chinese				.056†(.034)	.066*(.034)	.087**(.034)	.086*(.034)
Other Asians				−.025 (.033)	−.014 (.033)	.034 (.035)	.031 (.035)
Gender (Male[a])							
Female				.074***(.020)	.072***(.020)	.068***(.020)	.068***(.020)
Age (years)				.001†(.001)	.001 (.001)	.001 (.001)	.001 (.001)
Marital status (never married[a])							
Married				−.132***(.028)	−.108***(.030)	−.112***(.030)	−.109***(.030)
Divorced/separated/never married				−.091*(.045)	−.090*(.045)	−.086†(.045)	−.082†(.045)
Household income (<$15,000[a])							
$15,000–$34,999.9					−.055 (.037)	−.055 (.037)	−.051 (.037)
$35,000–$74,999.9					−.051 (.032)	−.041 (.032)	−.038 (.032)
≥$75,000					−.096**(.031)	−.075*(.031)	−.070*(.031)
Employment status (unemployed[a])							
Employed					−.049 (.041)	−.045 (.041)	−.046 (.041)
Not in labor force					−.068 (.044)	−.065 (.044)	−.066 (.043)
Nativity (foreign-born[a])							
U.S.-born						−.022 (.035)	−.024 (.035)
English proficiency (fair to poor English[a])							
Excellent or good English						−.129***(.026)	−.133***(.026)
Place of education (foreign-educated[a])							
U.S.-educated		−.030 (.022)	−.085***(.021)	−.099***(.023)	−.094***(.023)	−.043 (.034)	.002 (.038)
Education (less than college[a])							

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
College or more (≥16)		−.025 (.021)	−.047*(.020)	−.041*(.020)	−.031 (.021)	−.007 (.021)	−.124*(.056)
Everyday discrimination	.154***(.013)		.167***(.014)	.173***(.014)	.174***(.014)	.175***(.014)	.149***(.017)
Interactions							
Everyday discrimination × college or more							.080**(.029)
Everyday discrimination × college or more × U.S.-educated							−.044*(.020)
Intercept	1.083	1.384	1.108	1.116	1.194	1.231	1.262
Adjusted R^2	.059	.001	.067	.090	.093	.103	.106

N = 2,085;

† p <.1;

* p <.05;

** p <.01;

*** p <.001 (two-tailed tests).

The regression coefficients are unstandardized, and standard errors are in parentheses

[a] Reference group

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Table 4

Ordinary least squares (OLS) regressions of everyday discrimination on psychological distress stratified by education and place of education: U.S. Asian American in the National Latino and Asian American Study 2002–2003

	Model 1	Model 2	Model 3	Model 4
	College or more levels of education		Less than college levels of education	
	Foreign-educated (n = 617)	U.S.-educated (n = 275)	Foreign-educated (n = 741)	U.S.-educated (n = 452)
Ethnicity (Vietnamese[a])				
Filipino	−.083 (.078)	−.113 (.097)	−.018 (.059)	.053 (.102)
Chinese	.080 (.072)	−.145 (.094)	.087† (.048)	.148 (.105)
Other Asians	.095 (.070)	−.216* (.092)	.027 (.058)	−.026 (.099)
Gender (male[a])				
Female	−.003 (.036)	.107* (.048)	.076* (.036)	.140** (.047)
Age (years)	−.001 (.001)	.003 (.002)	.003† (.001)	.000 (.002)
Marital status (never married[a])				
Married	−.063 (.052)	−.110* (.056)	−.307*** (.065)	.034 (.064)
Divorced/separated/never married	.017 (.092)	−.194† (.108)	−.259** (.085)	−.005 (.095)
Household income (<$15,000[a])				
$15,000–$34,999.9	.105 (.077)	−.083 (.104)	−.074 (.058)	−.054 (.090)
$35,000–$74,999.9	−.042 (.059)	−.030 (.079)	.037 (.056)	−.151* (.067)
≥$75,000	−.068 (.057)	−.131† (.074)	.020 (.059)	−.144* (.066)
Employment status (unemployed[a])				
Employed	−.019 (.074)	−.213† (.125)	.000 (.074)	−.081 (.082)
Not in labor force	−.009 (.079)	−.269* (.131)	−.067 (.076)	−.083 (.088)
U.S.-born	.011 (.190)	.077 (.053)	−.162 (.283)	−.080 (.053)
English proficiency (fair to poor english[a])				
Excellent or good english	−.191*** (.040)	.094 (.143)	−.092* (.043)	−.126† (.072)
Everyday discrimination	.242*** (.025)	.185*** (.038)	.146*** (.026)	.148*** (.028)
Intercept	1.143	1.141	1.258	1.289
Adjusted R^2	.196	.126	.085	.090

† p <.1;

* p <.05;

** p <.01;

*** p <.001 (two-tailed tests).

The regression coefficients are unstandardized, and standard errors are in parentheses

[a]Reference group