



Cultural Diversity and Ethnic Minority Psychology

Manuscript version of

Psychological Outcomes and Culturally Relevant Moderators Associated With Events of Discrimination Among Asian American Adults

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Funded by:

- Indiana University, Office of the Vice President for Research
- National Institute on Alcohol Abuse and Alcoholism

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AA DISCRIMINATION

ABSTRACT WORD COUNT: 247/250

MANUSCRIPT WORD COUNT: 4822

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discrimination among Asian American Adults**

Key Words: Asian American, mental health, discrimination, culturally relevant factors

Abstract

Objectives: Incidents of discrimination against Asian Americans have increased in the US during the COVID-19 pandemic. The aims of this study are to 1) examine the overall psychological impact of incidents of discrimination on Asian Americans adults, 2) identify whether East Asians experience worse psychological outcomes following experiences of discrimination compared to other Asian Americans, and 3) identify culturally relevant factors that moderate the relationship between incidents of discrimination and psychological outcomes.

Methods: 289 participants who identified racially as Asian American (Mean age = 33.1 years, ± 10.5 SD, 57.1% male, and 54.3% East Asian) completed an online survey including measures of demographics, psychological outcomes, culturally relevant factors (e.g., acculturative stress, collective self-esteem) and racial discrimination. **Results:** We found that, overall, experiencing increased frequency of discrimination related to more depressive symptoms and alcohol use ($p's < .05$). When comparing Asian subgroups (East Asian vs. Other Asian), there were no significantly different relationships between discrimination frequency and attribution to race on psychological outcomes ($p's > .098$). Collective self-esteem ($p = .041$) weakened, while acculturative stress strengthened ($p < .001$) the relationship between discrimination frequency and alcohol use, collective self-esteem weakened the relationship between attribution to race and social anxiety ($p = .021$), and internalized racism weakened the relationship between discrimination frequency and depression ($p = .038$). **Conclusions:** We identified moderators of the relationship between experiences of discrimination and psychological outcomes in Asian Americans. Because the moderators held for all Asian groups under study, they are strong candidates for points of intervention to mitigate the harmful effects of discrimination for Asian Americans.

Key Words: Asian American adults, mental health, discrimination, culturally relevant factors

Public Significance Statement

It is more important than ever to understand how rising rates of racism and discrimination affect the mental health of Asian American adults, and what factors may be targeted to better support this community. We found that increased discrimination is linked to worse psychological outcomes, and this relationship is consistent across both East Asian and other Asian subgroups. We highlight collective self-esteem and acculturative stress as promising culturally relevant factors to mitigate the impact of discrimination.

**Psychological outcomes and culturally relevant moderators associated with events of
discrimination among Asian American adults**

Incidents of discrimination against Asian Americans have increased during the COVID-19 pandemic in the United States. Although overall rates of hate crimes dropped in 2020, anti-Asian American hate crimes in U.S. cities increased by 146% (Levin, 2021). Stop Asian American Pacific Islander (AAPI) Hate, a national coalition on addressing anti-AAPI discrimination, reported over 2,500 incidents of discrimination over the first five months of the U.S. COVID-19 pandemic, which included incidents ranging from shunning and verbal harassment to physical assault. Compared to before the pandemic, East (e.g., individuals from China, Hong Kong, Korea, Taiwan, Japan, and other regionally close countries) and Southeast (i.e., Vietnamese, Filipino, Malaysian, etc.) Asians reported a significant increase in overall racial discrimination and concern about physical assaults (Ha et al., 2020). Finally, a disturbing number of violent racist attacks have occurred against vulnerable groups, such as the Atlanta spa shootings that claimed the lives of six Asian American women and the violent assaults against elderly individuals that left many badly injured or hospitalized (Shear & Wright, 2021; Westervelt, 2021).

Past research has demonstrated that increases in racial discrimination lead to greater alcohol use risk, depression, and anxiety symptoms (Carter et al., 2017; Chae et al., 2008; Chen et al., 2014; Yoo et al., 2010), but these patterns might differ across Asian American subgroups. For instance, one study found that discrimination was associated with alcohol use for Vietnamese immigrants, but not for Filipino or Chinese immigrants (Park et al., 2014). Another study found that levels of perceived discrimination varied across Asian subgroups and was associated with

depression for South Asians (i.e., Asian Indian, Pakistani, or Bangladeshi), Vietnamese, Filipino, Koreans, and Japanese, but not for Chinese Americans (Tummala-Narra et al., 2012). East Asians could be at particular risk of being targeted since the beginning of the COVID-19 pandemic because they are, among U.S. citizens, perceived as the prototype of the Asian group (Goh & McCue, 2021) and COVID-19 was first identified in this region (Tessler et al., 2020).

This study is informed by Causidias' cultural development framework (Causidias, 2013). This framework presents culture, development, and psychopathology as intersecting processes, with culture operating at both a social (i.e., interpersonal, group, societal systems) and individual (i.e., engagement with cultural systems that shapes social and cognitive development) level. These dual processes of socialization inform cultural mechanisms that may potentially influence psychopathology. Importantly, the dual nature of culture is reflected in cultural risk and protective factors, which are dynamic, context-dependent, and key in shaping and patterns of adaptive and maladaptive behavior (Causidias & Cicchetti, 2018). Thus, it is important to integrate culturally relevant factors to better contextualize how these processes may influence psychological outcomes in Asian Americans.

Past research has identified culturally relevant factors as protective or risk factors for the effects of discrimination on psychological outcomes and distress among Asian Americans. Acculturative stress, or stressors related to cultural differences between the dominant and minoritized cultures, has been linked to increased anxiety and alcohol use (Berry, 2006; Park et al., 2014; Zvolensky et al., 2016). However, such stressors are not experienced to the same degree across minoritized persons. Past research has identified several important individual difference variables that account for variability among members of marginalized groups. Stigma consciousness, or the extent to which members of stigmatized groups acknowledge and expect

the likelihood of being stereotyped and discriminated against (Pine1, 1999), has been identified as a significant moderator between racial microaggressions and sleep disturbance in an Asian American sample, such that experiencing bias had an especially detrimental impact on sleep for individuals high in stigma consciousness (Ong et al., 2017). Internalized racism, or the extent to which members of stigmatized racial groups accept and incorporate racist values, narratives, and expectations from the hegemonic structures as part of their identity (Pyke & Dang, 2003), has been associated with greater hopelessness, stress, depression, and anxiety (David et al., 2019). In contrast, collective self-esteem, or the global worth that a person ascribes to his or her group membership (Luhtanen & Crocker, 1992), was related to greater sense of coherence (perhaps due to strong affiliation with one's ingroup), which then was associated with lower depression and anxiety (Lam, 2007).

The cultural development framework is relevant to conceptualizing our study in the following ways. Discrimination is a social-level cultural process that can negatively influence problematic externalizing behavior, such as alcohol use, or internalizing behavior, such as depression or anxiety, at the individual level. However, the impact of social adversities may be buffered by individual-level processes, such as collective self-esteem, acculturative stress, stigma consciousness, and internalized racism, that reflect an individual's self-concept and identity. Among Asian Americans, these individual-level factors are uniquely informed by stereotypes, such as the perpetual foreigner myth (i.e., 'Asian American's are not really American') and the model minority myth (i.e., 'all Asian Americans are high achieving and well-educated'), that may contribute to interracial and intraethnic othering of this group (Hwang, 2021).

Thus, the aims of this study are to 1) examine the psychological impact (e.g., depression, social anxiety and alcohol use) of incidents of discrimination on Asian Americans during the first

5 months of the U.S. COVID-19 pandemic, 2) identify whether East Asians experience worse psychological outcomes following experiences of discrimination compared to other subgroups of Asians, and 3) identify culturally relevant risk or protective factors that moderate the relationship between discrimination frequency and psychological outcomes. We hypothesize that 1) increased frequency of discrimination will be related to increased negative psychological outcomes, 2) East Asians will experience more negative psychological impact related to discriminative events than other subgroups of Asians, and 3) acculturative stress, stigma consciousness, and internalized racism will strengthen the relationships between discrimination and negative psychological outcomes, whereas collective self-esteem will weaken the relationship between discrimination and negative psychological outcomes.

Methods

Participants and Procedure

Participants ($N=300$) were recruited via Amazon's Mechanical Turk online survey platform. Amazon's Mechanical Turk has shown promise as a method to recruit more diverse samples and provide data that are at least as reliable as more traditional data collection methods (e.g., Buhrmester et al., 2016), especially when studying cross-cultural issues across a broad spectrum of socioeconomic status (Woo et al., 2015). Eligibility criteria included age of 18 years or older, able to complete the survey in English, currently residing in the United States, and racially identify as Asian American. After providing informed consent, participants were paid \$2.00 for their participation upon completion of the survey. Data were collected over one week in mid-July 2020. Because no identifying information was collected, the study was deemed exempt from review by the local institutional review board. A number of restrictions were instituted on Mechanical Turk to increase data quality, including preventing individuals from

taking the survey more than once, including random/careless responding items, and restricting data collection to Mechanical Turk workers who have a quality score of 92 or higher (see discussion by Woo et al., 2015).

Measures

Demographics. Participants answered multiple-choice items on their age, gender, racial group, education level, and generational status, with an ‘Other’ option where appropriate for open-ended responses.

Discrimination Experiences. Discrimination experiences were assessed with two 8-item subscales that measured frequency of discrimination and attribution of discrimination to one’s race, respectively. These items were based on the Stop AAPI Hate Reporting Center incident report questionnaire, which ranged from subtle discrimination events (e.g., shunning) to overt hate crimes (e.g., physical assault or vandalism) (Takasaki, 2020). Frequency of discrimination was assessed using the item “How frequently have you experienced shunning since the start of COVID?” where participants responded on a Likert scale ranging from 0 (*never*) to 4 (*always*). Attribution to race was assessed with the item “I believe being shunned happened to me because of my race” and participants responded on a Likert scale ranging from 0 (*not at all likely*) to 4 (*extremely likely*). Items were summed to create a scale score where higher scores indicated higher frequency of discrimination and higher attribution of discrimination to one’s race. Reliability of discrimination frequency scale was good (Cronbach’s alpha=.90) and attribution to race scale was acceptable (Cronbach’s alpha=.74).

Alcohol Use. Problematic alcohol use was assessed using the 10-item Alcohol Use Disorder Identification Test (AUDIT; Cronbach’s alpha in the current sample=.88; Saunders et al., 1993). Participants responded to items assessing alcohol consumption and related problems

(e.g., “How often during the last year have you had a feeling of guilt or remorse after drinking?”). Items were summed so that higher scores indicated higher Alcohol Use Disorder symptom endorsement. This scale has demonstrated high internal consistency and validity in a similar population (Cronbach’s $\alpha=.98$; Osaki et al., 2014).

Social Anxiety. Social anxiety was assessed using the 6-item Social Interaction Anxiety Scale (SIAS-6; Mattick & Clarke, 1998). Participants responded to items (e.g., “I have difficulty making eye contact with others”) using a Likert scale ranging from 0 (*not at all characteristic or true of me*) to 4 (*extremely characteristic or true of me*). Items were summed to create a scale score where higher scores indicated higher social anxiety (Cronbach’s α in the current sample=.89). This scale has demonstrated good internal consistency and validity in a similar sample (Cronbach’s $\alpha=.74$; Ouyang et al., 2020).

Depression. Depression was assessed using the 20-item Center for Epidemiological Studies-Depression measure (CES-D; Radloff, 1977). Participants responded to items based on how they felt during the past week (e.g., “I was bothered by things that usually don’t bother me”) on a Likert scale ranging from 0 (*rarely or none of the time: less than 1 day*) to 3 (*most or all of the time: 5-7 days*). Items were reverse-coded as appropriate and summed to create a scale score, where higher scores indicate higher levels of depression (Cronbach’s α in current sample=.94). This scale has demonstrated good internal consistency and validity in a similar sample (Cronbach’s $\alpha=.87$; Jiang et al., 2019).

Collective Self-Esteem. Collective Self-esteem was assessed using the Collective Self-Esteem measure (CSE; Crocker & Luhtanen, 1990). The Identity subscale (4-items) was adapted to pertain to participant’s racial identity (e.g., “Being Asian is an important reflection of who I am”) and used a Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Items were

reverse-coded as appropriate and summed to create a scale score, where higher scores indicated greater importance of one's social group membership to one's self-concept (Cronbach's alpha in current sample=.89). This subscale has demonstrated good internal consistency and validity in a similar population (Cronbach's alpha=.73; Kim & Omizo, 2005).

Acculturative Stress. Acculturative stress was assessed using the 24-item Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale-Short Form (SAFE-SF; Mena et al., 1987). Participants rated the extent to which they perceive items such as "Many people have stereotypes about my culture or ethnic group and greet me as if they are true" to be stressful in their lives on a Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). Items were summed to create a scale score such that higher scores on this measure indicated higher acculturative stress. Due to clerical error, the last four items of the scale were omitted; however, reliability statistics indicated that internal consistency was still high (Cronbach's alpha in the current sample=.93). This scale has demonstrated high internal consistency and validity in a similar population (Cronbach's alpha=.93; Kim & Omizo, 2006).

Stigma Consciousness. Stigma consciousness was assessed using the Stigma Consciousness Questionnaire for Race/Ethnicity (SCQ; Pinel, 1999), which contains 10 items that assess individual differences in stigma consciousness. Participants responded to items such as "Stereotypes about people of my race/ethnicity do not affect me personally" on a Likert scale ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). Items were reverse-scored as appropriate and summed to create a scale score such that higher scores indicate higher levels of stigma consciousness (Cronbach's alpha in the current sample=.85). This scale has demonstrated good internal consistency and validity in similar samples (Cronbach's alpha=.71; Son & Shelton, 2011).

Internalized Racism. Internalized racism was assessed using the 6-item “Internalized Cultural/Ethnic Inferiority” subscale of the Colonial Mentality Scale (CMS; David & Okazaki, 2006)). Participants responded to items such as “There are situations where I feel that it is more advantageous or necessary to deny my ethnic/cultural heritage” on a Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Items were summed to create a scale score where higher scores indicated higher internalized racism (Cronbach’s alpha in the current sample=.87). This subscale has demonstrated good internal consistency and validity with a similar population (Cronbach’s alpha= .79; David & Okazaki, 2006).

Statistical Analysis Plan

All analyses were performed using SPSS 26 and MPlus 8. Exploratory analyses of the variables were conducted using descriptive statistics, bivariate correlations, independent samples t-tests, and chi-square tests. Because of small group sizes for those who identified as Southeast Asian (n=79), South Asian (n=52), and Other (n=6), these groups were combined for statistical analysis, resulting in two approximately equal-in-size analysis groups of East Asian and Other Asian. Structural equation modeling was used to conduct a series of path analyses, examining the relationship between discrimination experiences and psychological outcomes. All analyses covaried for age, gender, and generational status due to their relationships with psychological outcomes (Faravelli et al., 2013; Liu & Suyemoto, 2016; Wilsnack et al., 2000).

For Aim 1, we created one model, where discrimination frequency, attribution to race, and psychological outcomes (i.e., depression, anxiety, and alcohol use measures) were all modeled as observed variables. All independent variables were set to covary with each other, and all dependent variables covaried with each other. We modeled paths from discrimination

frequency and attribution to race to each psychological outcome, and path coefficients were examined for significant associations ($p < .05$). See Figure 1 for diagram of model.

For Aim 2, we conducted three multi-group analyses (one for each psychological outcome), comparing fit of the model and path coefficients between the East Asian and Other group. Specifically, for each group comparison, we compared a model that allowed path coefficients to vary across groups with a model where the relationships were fixed to be equal across the groups. If the regression coefficient difference between the two models was significant, then there was a significant group difference in these relationships ($p < .05$).

For Aim 3, we conducted a series of four models where we added one culturally relevant factor, along with two interaction terms (between the culturally relevant factor and discrimination frequency and attribution to race) into our Aim 1 model. Interaction terms were defined between culturally relevant variables and each discrimination subscale. Significant interactions were probed at ± 1 SD by standardizing, mean-centering, and graphing relevant variables. Path coefficients were examined for significant associations ($p < .05$). To control for false-positive rates, P values were corrected using the Benjamini-Hochberg method, with a false discovery rate of 30% (Benjamini and Hochberg, 1995; Cribbie, 2007). Data, analytic methods, and study materials will be available to others upon request.

Results

Preliminary Analysis (Table 1 and 2)

Seven participants were removed due to failing random responding checks (responded incorrectly to four or more items), two participants were removed for identifying as non-binary or preferring not to disclose, and four Pacific Islanders were removed because of small group size. Participants were required to respond to all items; thus, no missing data were present in the

study. This left a final study sample of $N=289$ (Table 1). The sample had a mean age of 33.1 years ($SD=10.5$) and a mean education level of grade 15 (i.e., junior year of college; $SD=2.3$). Approximately 57.1% of participants identified as cisgender men, 42.9% as cisgender women. The racial breakdown of the sample was as follows: 54.3% East Asian (i.e., identifying as Chinese, Korean, or Japanese), 27% Southeast Asian (i.e., identifying as Filipino, Vietnamese, Cambodian, or Hmong), 18% South Asian (i.e., identifying as Indian or Pakistani), and 0.7% Biracial. Of the sample, 37.3% identified as first generation to live in the United States, 53.7% second generation, and 9.1% third generation or higher. Our final analysis groups consisted of $n=157$ East Asians, and $n=132$ Other Asians.

About half of the overall sample reported experiencing discrimination (51.6%), and most commonly endorsed shunning ($M=.70$), followed by verbal harassment or name calling ($M=.50$) (See Supplemental Table 1). Discrimination events were reported at similar frequencies across groups ($p>.05$), but East Asians attributed discrimination events more to race ($M=2.19$, $SD=1.17$) than participants in the Other Asians group ($M=1.47$, $SD=1.14$; $t(147)=3.71$, $p<.001$). AUDIT scores were higher in the Other Asians group ($M=7.33$, $SD=6.65$) than in East Asians ($M=4.79$, $SD=4.83$; $t(99)=-2.22$, $p=.014$). Collective self-esteem was lower in the Other Asians group ($M=18.3$, $SD=4.96$) than in East Asians ($M=19.8$, $SD=4.52$; $t(287)=2.64$, $p=.004$).

Relationships between discrimination events and psychological outcomes

Models were saturated; therefore, no fit indices were provided and only regression coefficients are interpreted (West et al., 2012). Analysis of path coefficients indicated that frequency of discrimination events was significantly and positively related to depressive symptoms ($B=7.64$, $p<.001$) and alcohol use ($B=7.05$, $p<.001$). This relationship fell short of significance for social anxiety symptoms, ($B=1.55$, $p=.051$). Attributing discriminative events to

race did not uniquely relate to social anxiety, depression, or alcohol use (p 's>.15). There was a significant effect of generational status on social anxiety ($B=2.00$, $p=.013$) and age on alcohol use ($B=0.131$, $p=.037$); there were no other significant relationships between covariates and other outcome (p 's>.084). See Figure 1 for full model.

Relationships across Racial Groups

Across the East Asian versus Other Asian comparison, there were no significantly different linear regression path coefficients between discrimination frequency or attribution to race on social anxiety, depression, or alcohol use (p 's>.098).

Risk and Protective Factor Moderators

Collective Self Esteem (Table 3). Collective self-esteem significantly moderated the relationship between discrimination frequency and alcohol use ($B=-0.555$, $p=.041$). Across low ($B=2.47$, $p=.006$), mean ($B=1.55$, $p=.001$), and high ($B=.622$, $p<.001$) levels of collective self-esteem, discrimination frequency was significantly related to increased alcohol use, although the relationship was most robust at low levels of collective self-esteem (Figure 2, Panel 1). There was a significant interaction between attribution to race and collective self-esteem for social anxiety ($B=-.190$, $p=.021$). At mean ($B=0.775$, $p=.027$) and low ($B=1.67$, $p=.023$) levels of collective self-esteem, there was a significant positive relationship between attribution to race and social anxiety. However, there was no significant relationship at high levels of collective self-esteem ($B=-0.116$, $p=.215$; Figure 2, Panel 2).

Internalized Racism (Table 4). Internalized racism significantly moderated the relationship between discrimination frequency and depression ($B=-0.448$, $p=.038$). Across low ($B=1.29$, $p=.007$), mean ($B=0.772$, $p=.001$), and high ($B=0.250$, $p=.003$) levels of internalized

racism, discrimination frequency was significantly related to increased depression, although the relationship was most robust at low levels of internalized racism (Figure 2, Panel 3).

Acculturative Stress (Table 5). Acculturative stress significantly moderated the relationship between discrimination frequency and alcohol use ($B=0.455, p<.001$). There was a positive relationship between discrimination frequency and alcohol use at a high level of acculturative stress, ($B=0.98, p<.001$) and a negative relationship at mean ($B=-2.05, p<.001$) and low ($B=-5.08, p<.001$) levels of acculturative stress (Figure 2, Panel 4).

Stigma Consciousness (Supplemental Table 2). Stigma consciousness did not significantly moderate the relationship between discrimination subscales and psychological outcomes ($p's>.31$).

Discussion

Our study sought to examine how experiences of discrimination affect mental health and alcohol use among Asian American adults, especially in the context of recent increased bias and hate crimes towards this group. We found that, compared to other Asian subgroups, East Asians reported a similar frequency of discrimination but more strongly attributed these events to their race. Our first hypothesis was partially supported, such that experiencing more discrimination was related to increased depression and alcohol use, but not to social anxiety. Our second hypothesis was not supported, such that there were no significant group-level differences of East Asian or Other Asian subgrouping on the relationship between discrimination frequency and psychological outcomes. Finally, we found partial support for our third hypothesis regarding culturally relevant factors that moderate the relationship between discrimination and psychological outcomes. We confirmed our hypotheses such that 1) collective self-esteem weakened, while acculturative stress strengthened, the relationship between discrimination

frequency and alcohol use, and 2) collective self-esteem weakened the relationship between attribution to race and social anxiety. Surprisingly, internalized racism weakened the relationship between discrimination frequency and depression.

Our overall discrimination prevalence rates are similar to other study findings, but we found no differences across East Asian and Other Asian subgroupings, which is not consistent with past research (Hahm et al., 2021; Park et al., 2021). These similar rates of discrimination may reflect the perception of Asian Americans being a monolithic, homogenous group and the racialization of disease. Perpetrators of discrimination may attribute the cause of the pandemic to those who phenotypically identify as Asian because of the origin of the COVID-19 virus in China (Tessler et al., 2020). A recent study (Schild et al., 2020) examined how online anti-Asian rhetoric increasingly equates Asian Americans to COVID-19, with a rise in Sinophobic slurs and the emergence of terms such as ‘kung-flu’ or ‘Wuhan virus’. Although the context of COVID-19 clearly contributes to this rise in discrimination, this trend is nested within a larger historical context of anti-Asian American racism (i.e., perpetual foreigner stereotype, ‘yellow peril’, and the 1882 Chinese Exclusion Act) (Chen et al., 2020). Thus, this recent increase in anti-Asian American discrimination is not discretely time-bound to the pandemic and will likely persist into the future.

Our study contributes to a growing body of literature on the negative impact of discrimination on mental health and alcohol use outcomes among Asian Americans (Chen et al., 2014; Yip et al., 2008). The interaction of acculturative stress and discrimination frequency on alcohol use partially aligns with prior research suggesting that alcohol use may be used as a coping strategy in response to racially-related stressors (Park et al., 2014; Yoo et al., 2010). Although the relationship between alcohol use with acculturative stress and collective self-

esteem are well-documented (Park et al., 2014; Pedersen et al., 2013), fostering collective self-esteem and reducing acculturative stress could reduce alcohol use resulting from the experience of discrimination, which has been a promising therapeutic target in the past (Marmarosh & Corazzini, 1997; Miranda et al., 2005; Szapocznik et al., 1984). Finally, our results are consistent with prior research suggesting that a strong sense of collective self-esteem is linked to reduced anxiety symptoms, which may reflect an increased sense of social cohesion (Gupta et al., 2014; Lam, 2007).

Internalized racism, which surprisingly weakened the relationship between discrimination and depression, might function as a self-protective strategy against negative mental health outcomes when there is repeated exposure to discrimination (James, 2020). We suggest more research to replicate this result and, if replication is supported, better understanding of what aspects of internalized racism might be driving such an effect is needed. Finally, although past research has identified a link between stigma consciousness and anxiety in Asian Americans, stigma consciousness did not significantly moderate any relationships in our study; this factor may be more relevant in extended social relationships over brief, one-time interactions. (Son & Shelton, 2011).

Research shows that Asian Americans are less likely to utilize mental health services compared to the general population (Chu & Sue, 2011). In a U.S. national study, only 8.6% of Asian American participants reported using mental health services, compared to 17.9% of the general population (Abe-Kim et al., 2007). Underutilization of services may be related to both cultural and system-level factors, such as stigma, culturally informed conceptions of mental health, and language and financial barriers (Chu & Sue, 2011; Leong & Lau, 2001). With rising discrimination rates in COVID, considering the negative harms of anti-Asian stigma and

discrimination is critical in identifying relevant mental health needs in this population.

Moderators, such as those found in this study, could help meet this need, especially if they can be used to reduce the negative harms of discrimination for Asian American populations.

Constraints on Generality

There were several limitations to the study. First, because structural equation models were saturated, model fit could not be evaluated. Our data were collected using a cross-sectional, self-report, online survey design, which can limit generalizability and causality conclusions. Although the use of Amazon's Mechanical Turk has been found to result in a more diverse group of individuals and data that are at least as reliable as other traditional methods (e.g., undergraduate psychology samples, traditional internet samples; Buhrmester et al., 2016), selection bias can remain a concern. However, Woo and colleagues (2015) suggest that the use of Mechanical Turk can result in less biased samples as long as the constructs under study are not confounded with the aspects related to Mechanical Turk workers (e.g., access to computers) and we have no reason to believe that the constructs of interest in this study are confounded by such aspects. Additionally, our sample's demographics closely matched 2010 U.S. Census data (Hoeffel et al., 2012). Of the more than 17 million Asian Americans living in the U.S., those of East Asian descent make up the majority (>40%), followed by those of Southeast Asian descent (~30%) and South Asian descent (~20%) and Asian Americans on average earn at least a bachelor's degree (49.8%), suggesting little sampling bias was present, although we may have been underrepresented in terms of those of first-generation status (2010 U.S. Census data reported 65% of Asian Americans report first generation status).

Finally, the survey was conducted in English, which may restrict accessibility to those with limited English fluency. However, the study was conducted at the beginning of the

pandemic, reducing the effect of recall bias and providing a novel set of data that cannot be replicated in the absence of another pandemic. Given the context of increasing violent hate crimes targeting vulnerable populations, future studies should examine the mounting stress on the Asian American community in light of racism ranging from microaggressions to violent hate crimes. Finally, our sample size prevented us from further parsing apart Asian subgroups; future studies should prioritize more comprehensively disaggregating Asian subgroups to account for the diversity and heterogeneity of experience within Asian American populations.

Conclusion

In conclusion, our study is the first in a line of research to explore important potential moderators of the relationship between experiences of discrimination and psychological outcomes in Asian American Adults. Because the moderators held for all Asian groups under study, they are strong candidates for points of intervention to mitigate the harmful effects of discrimination for Asian American adults at high and increasing rates of risk. Future work should examine whether collective self-esteem and acculturative stress can be manipulated and what the effects of such manipulations are on psychological outcomes for Asian Americans and other groups. Importantly, the onus of ‘coping more effectively’ should not be placed on individuals, but rather on finding effective interventions for improving support for this group and reducing these incidents in the first place. Given the lower rates of mental health utilization and increasing rates of discrimination, targeting proximal risk factors for Asian Americans is critical to providing relevant and effective clinical care.

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