

Asians and Asian Americans' Experiences of Racial Discrimination During the COVID-19 Pandemic: Impacts on Health Outcomes and the Buffering Role of Social Support

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Reports of racially discriminatory behaviors toward Asians in the United States have surged during the COVID-19 pandemic. The current study examined self-reported racial discrimination toward Asians and Asian Americans living in the United States in relation to four mental and physical health outcomes: anxiety, depressive, and physical symptoms and sleep difficulties. The moderating role of social support was also examined. In addition, participants were asked to describe a specific instance of discrimination that had happened during the pandemic. Four hundred ten participants ($M_{\text{age}} = 26.5$ years, $SD = 7.8$; 47% female) responded via online survey from all across the country. Nearly 30% reported an increase in discrimination since the pandemic, and over 40% reported an increase in anxiety, depressive symptoms, and sleep difficulties. The four multiple regressions were each significant, with higher levels of discrimination and lower levels of social support predicting more health problems for each outcome. Social support significantly buffered the effect of discrimination on depressive symptoms and marginally buffered the effect on physical symptoms. Conventional content analysis was used to identify multiple themes within the three broad categories of personal experiences with discrimination, experiences with a stigmatizing anti-Asian racist culture, and prevention of exposure to discrimination. Results indicate that Asians have experienced elevated racial discrimination during the COVID-19 pandemic, including hate crimes, microaggressions, and vicarious discrimination, and these experiences are associated with poorer self-reported mental and physical health.


Keywords: COVID-19, Asian, racial discrimination, stigma, health

The introduction of the coronavirus and spread of COVID-19 in the United States has been accompanied by an increase in racist attacks and discrimination against Asian Americans. For instance, Stop Asian American and Pacific Islander Hate, a nonprofit and the leading aggregator of incidents against Asian Americans during the pandemic, recorded nearly 1,900 incidents of anti-Asian American discrimination between March 19, 2020 and May 13, 2020 (Asian Pacific Policy & Planning Council, 2020). These incidents seem to be tied, at least in part, to President Trump and others in the Republican Party's use of the label "Chinese virus" to refer to the coronavirus. The prevalence of racist incidents is

important because racial discrimination is a well-established predictor of poor mental and physical health outcomes among people of color in the United States (Paradies et al., 2015). Experiences of discrimination are strongly associated with increased anxiety, depression, chronic disease, and sleep disruption (Gee, Ro, Shariff-Marco, & Chae, 2009; Hwang, & Goto, 2009; Slopen, Lewis, & Williams, 2016). While there are a number of frameworks for understanding the stress of racial discrimination and its implications, our work is grounded in Harrell's (2000) conceptualization of racism-related stress that integrates microaggressions and overt experiences of discrimination as well as direct and vicarious discrimination experiences of the burden of racism-related stress carried by an individual and that undermines physical, psychological, social, functional, and spiritual well-being. In the current study, we investigated Asian Americans' experiences of racial discrimination during the COVID-19 pandemic and examined the relationship between these experiences and current mental and physical health problems.

Much of the extant research on racial discrimination in the United States and linking it to negative health outcomes has focused on Black or African Americans (Pieterse, Todd, Neville, & Carter, 2012; Ryan, Gee, & Laflamme, 2006; Sanchez, & Awad, 2016), while discrimination against Asian Americans and its consequences has garnered less empirical attention. The "model minority" myth, in which Asian Americans are stereotyped as achieving educational, occupational, and economic success and being

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well adjusted (Sue, Sue, Sue, & Takeuchi, 1995), is pervasive and is used to suggest that Asian Americans do not experience racism or its sequelae. The limited research evidence does not bear out this claim, however, and Asian Americans' experiences of discrimination predict elevated anxiety, depression, and psychological distress (D. L. Lee & Ahn, 2011). Indeed, the model minority myth must be considered in light of "yellow peril," a term for Whites' perception of Asian immigration as an existential threat to Western values and systems (Kawai, 2005). This ideology has fueled anti-Asian policy in the United States from the Chinese Exclusion Act of 1882 to the internment of Japanese Americans during World War II (Executive Order 9066) as well as anti-Asian racism and hate crimes (Chen, 2000). The idea of yellow peril may be especially relevant in the context of the COVID-19 pandemic as Trump and others' use of terms like "Chinese virus" feeds the perception that the well-being of America is directly threatened by (coronavirus-carrying) people from China.

Another anti-Asian racist trope is the "perpetual foreigner," a reference to the tendency for Whites to treat Asian Americans as outsiders or like they do not belong in their own country, which has been linked to lower levels of social belonging and life satisfaction (Huynh, Devos, & Smalarz, 2011). Sue and colleagues (2007) identified this concept of "alien in own land" as one of eight microaggressive themes and found that Asian Americans' experiences of microaggression differs from that of other marginalized groups. Microaggressions, which include brief or subtle behaviors or remarks that communicate negative prejudice or hostility toward the marginalized group member, are more commonly experienced by Asian Americans than other minority groups (Hwang & Goto, 2009). Despite their supposed "under the radar" nature, microaggressions have significant negative impacts on health. They predict increased anxiety, depressive symptoms, and somatic symptoms including fatigue and headaches (Lui, & Quezada, 2019; Nadal, Griffin, Wong, Hamit, & Rasmus, 2014; Sue et al., 2007; Wong, Derthick, David, Saw, & Okazaki, 2014). In the current study, we addressed both the yellow peril and perpetual foreigner forms of racism by assessing the extent to which Asian Americans had experienced overt racial discrimination as well as race-based microaggressions during the first months of the COVID-19 pandemic.

While the relationship between discrimination and health is robust, it can be moderated by other factors. A sizable body of work has found that social support is a protective factor that buffers against the negative effects of discrimination on health (Ajrouch, Reisine, Lim, Sohn, & Ismail, 2010; Chou, 2012; Rollock, & Lui, 2016). The protective effect of social support may be especially salient to Asian Americans whose traditional cultural values of collectivism emphasize the importance of positive social relationships for their well-being (Markus & Kitayama, 1994). It is particularly important to study social support during the COVID-19 pandemic because widespread stay-at-home and social distancing measures may have increased social isolation and made maintaining social support more challenging. Thus, we tested the extent to which social support moderated the association between racial discrimination and each health outcome.

We incorporated into the battery of surveys an open-ended inquiry into participants' personal experiences with discrimination during the COVID-19 pandemic. The inclusion of a qualitative measure was for the purpose of complementarity—to clarify and

elaborate, beyond items checked in a survey, on the ways racial discrimination manifested in participants' lives (Sandelowski, 2000). Multimethod and qualitative studies are an important tool for understanding the lived experiences of discrimination among Asian Americans (Sue et al., 2007), shedding light on many forms of racism experienced by Asian Americans (Museus & Park, 2015) and differences between those experienced by Asian American women compared to Asian American men (Mukkamala & Suyemoto, 2018). We asked participants simply to describe an experience without providing any specificity to the prompt (e.g., the most common, recent, or hurtful event), and we expected responses to represent the most salient experiences of discrimination or those most "top of mind" for participants. This would enable us to examine whether themes consistent with the yellow peril or perpetual foreigner myth were more prevalent than those consistent with the model minority myth.

The Current Study

In a sample of over 400 Asians and Asian Americans living across the United States, we used both quantitative and qualitative self-report data to test the following hypotheses: (a) Asians and Asian Americans experienced significant racial discrimination (both overt and microaggressions) during the first months of the COVID-19 pandemic; (b) Asians and Asian Americans experienced significant mental, physical, and sleep health problems during the first months of the COVID-19 pandemic; (c) Asians and Asian Americans who experienced more racial discrimination will also have experienced more mental, physical, and sleep health problems; (d) Asians and Asian Americans who experienced more racial discrimination but also reported greater social support will have experienced less mental, physical, and sleep health problems. In addition, we explored participants' specific experiences of racial discrimination with qualitative analyses.

Method

Participants and Procedures

Four hundred ten participants (47% female, < 1% genderqueer, $M_{\text{age}} = 26.5$ years, $SD = 7.8$, range = 18–60 years) were recruited through the website Prolific. Inclusion criteria included being over 18 and identifying as an Asian currently living in the United States. Seventy-three percent of participants were born in the United States, and those who were not had been living in the United States for an average of 19 years ($SD = 10.13$, range = 0–47). Annual household income ranged widely, with 15% of participants reporting less than \$25,000, 20% between \$25,000 and \$50,000, 35% between \$50,000 and \$100,000, 20% between \$100,000 and \$150,000, and 10% over \$150,000. Forty-nine percent of participants were employed full- or part-time, 35% were students, and 16% were unemployed. Ninety percent of participants had health insurance (half of those were employer sponsored, 10% of participants were uninsured).

The study was made available to eligible individuals via Prolific Academic, which provides an online platform to connect researchers with interested study participants (Palan & Schitter, 2018). While it operates similarly to the widely used Mechanical Turk, Prolific participants are more diverse, more naïve to research

paradigms, and less dishonest than Mechanical Turk participants, while providing comparable data quality (Peer, Brandimarte, Samat, & Acquisti, 2017). Researchers are forbidden from collecting any identifying information, and participants' complete anonymity is maintained throughout the study. In the current study, participants completed a battery of self-report questionnaires through Qualtrics and received compensation through Prolific at the rate of \$9 an hour. The completion rate was 98%. The study was classified exempt by the Washington State University Institutional Review Board.

Quantitative Measures

Impacts of COVID-19. Participants completed the newly developed COVID-19 Experiences and Impacts Questionnaire (Conway, Woodard, & Zubrod, 2020) to assess how much the coronavirus has impacted individuals' lives (e.g., "I spend a huge percentage of my time trying to find updates online or on TV about the coronavirus [COVID-19]") and their exposure to the virus (e.g., "I have been diagnosed with the coronavirus [COVID-19]"). The questionnaire includes 19 items on a 7-point Likert scale from 1 (*not true of me at all*) to 7 (*very true of me*). Items are summed to create a total score ($\alpha = .78$). The questionnaire was tested and refined on a total of 977 participants but has not yet been widely used. We found it to be the best available measure to enable us to control for the effect of COVID-19 on participants when examining the impact of discrimination on health outcomes.

Racial discrimination. Participants completed two measures of racial discrimination: the Perceived Ethnic Discrimination Questionnaire (PEDQ; Contrada et al., 2001) to assess their discriminatory experiences in the past 3 months and the Racial and Ethnic Microaggressions Scales (REMS; Nadal, 2011) to assess their experiences of microaggressions in the last 6 months. The PEDQ includes 22 items on a 7-point Likert scale from 1 (*never*) to 7 (*very often*). Items are averaged to create a total score for experiences of discriminatory behavior ($\alpha = .96$). The REMS includes 45 items on a dichotomous scale of 0 (*I did not experience this event*) or 1 (*I experienced this event at least once in the past 6 months*). Items are averaged to create a total score of microaggressions experienced ($\alpha = .87$).

Social support. Participants completed the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988) to assess the degree to which they perceive social support from family, friend support, and significant other support. The MSPSS includes 12 items on a 7-point Likert scale from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Items are averaged to form a total score ($\alpha = .92$).

Mental health. Participants completed two measures of mental health: the Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988) to assess anxiety symptoms experienced in the past month and the Center for Epidemiologic Studies-Depression Scale (CES-D; Radloff, 1977) to assess depressive symptoms experienced in the past week. The BAI includes 21 items on a 4-point Likert scale from 0 (*never*) to 3 (*always*). Items are averaged to form a total score of anxiety symptoms ($\alpha = .93$). The CES-D includes 20 items on a 4-point Likert scale from 0 (*rarely*) to 3 (*most days*). Items are summed to form a total score of depressive symptoms ($\alpha = .92$).

Physical health. Participants completed the Physical Illness Limbic Languidness (PILL; Pennebaker, 1982) to assess how frequently a respondent experiences certain physical symptoms (e.g., choking sensations, headaches, hand tremble or shake). The PILL includes 54 items on a 5-point Likert scale from 1 (*have never or almost never experienced the symptom*) to 5 (*more than once every week*). Items are summed to form a total score of physical symptoms ($\alpha = .96$).

Sleep health. Participants completed the Pittsburgh Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989) to assess sleep quality in the past month. The PSQI includes 19 items that are combined to form a global sleep quality score ($\alpha = .78$), with higher scores reflecting more sleep difficulties.

Following each of the health outcome measures and the social support measure, an additional forced-choice question was posed. Participants were asked whether the symptoms or experiences they had just reported on had changed during the COVID-19 pandemic compared to before and, if they had, whether they had increased or decreased.

Qualitative Measure

Participants responded to the prompt "Please describe a specific act of discrimination you have experienced in the past two months because of the coronavirus (COVID-19) pandemic" by typing into an open text box embedded in the survey. There was no text limit, so participants could write as much or as little as they chose.

Data Analytic Plan

All quantitative analyses were conducted using SPSS Statistics for Mac Version 26. Missing data were as follows: PEDQ (1), REMS (1), BAI (1), CES-D (3), PILL (5), and PSQI (6), but there were no systematic differences between participants with complete data compared to those with missing. Summary scores for all questionnaires were calculated and examined for outliers ($\pm 3 SD$) from the mean, skewness, and kurtosis, but no problematic values were found. Bivariate correlations were conducted to determine associations between all key variables. Because they were conceptually and statistically closely related, $r(409) = .71, p < .001$, the two measures of racial discrimination were standardized and summed to form a discrimination composite prior to analyses. Separate multiple regressions were performed for each of the four health outcome variables. Gender and impact of COVID-19 were included as covariates in Step 1 of each model, discrimination and social support were included as predictors in Step 2 of each model, and the Discrimination \times Social Support interaction term was included in Step 3 of each model. Gender was dummy coded (0 = female, 1 = male), with two transgender men included in the male category. Three genderqueer individuals were not included in the regressions. All continuous variables were mean centered before being entered into the model or calculating the interaction term. A statistical significance cutoff of $p < .05$ was used for all tests.

Qualitative analysis of the responses to the open-ended inquiry was conducted using conventional content analysis, which is an appropriate technique when the goal is to describe a phenomenon in rich detail (Hsieh, & Shannon, 2005). Consistent with this approach, categories and themes were generated from an in-depth

review of the response data and did not exist a priori (Kondracki, Wellman, & Amundson, 2002). The second author and another independent coder each read the full set of responses through multiple times and developed codes independently to represent the themes they observed. The reviewers combined their lists of codes and each coded all responses individually. There were no discrepancies between the coders. If participants described more than one experience, all information was coded (i.e., one participant could receive multiple codes). There were six participants who did not respond to the prompt and three whose responses could not be coded.

Results

Descriptive statistics and bivariate associations are shown in Table 1. Overall, the mean BAI score fell in the mild anxiety range, the mean CES-D score fell in the moderately depressed range, the total PILL score fell in the poor physical health range, and the mean global PSQI score fell in the poor sleep range. Key study variables were statistically significantly correlated with one another in the expected directions.

Change in Constructs Compared to Pre-COVID-19 Pandemic

When asked to compare their current reporting to their experiences and symptoms prior to the COVID-19 pandemic, 29% of participants reported increased discrimination (2% reported a decrease), 41% reported increased anxiety symptoms (3% reported a decrease), 53% reported increased depressive symptoms (3% reported a decrease), 15% reported increased physical symptoms (4% reported a decrease), and 43% reported increased sleep difficulties (3% reported a decrease). In addition, 21% reported an increase in social support (8% reported a decrease).

Quantitative Analyses Predicting Health Outcomes

The four full regression models with all unstandardized coefficients and standard errors are shown in Table 2. The full model predicting anxiety symptoms was statistically significant, $F(5, 400) = 41.08, p < .001$, adjusted $R^2 = .33$. Anxiety symptoms were statistically significantly predicted by more experiences of discrimination ($p < .001$). This main effect was above and beyond the statistically significant effects of being female ($p < .001$) and greater impact of COVID-19 ($p < .001$). However, neither social

support ($p = .12$) nor the Discrimination \times Social Support interaction term ($p = .91$) was statistically significant. There was no evidence that social support buffered against the impact of discrimination on anxiety symptoms.

The full model predicting depressive symptoms was statistically significant, $F(5, 398) = 53.17, p < .001$, adjusted $R^2 = .40$. Depressive symptoms were statistically significantly predicted by more experiences of discrimination ($p < .001$) and less social support ($p < .001$), but these direct effects were moderated by a statistically significant Discrimination \times Social Support interaction effect ($p = .01$). These effects were controlling for the statistically significant effects of being female ($p < .001$) and greater impact of COVID-19 ($p < .001$). Simple slopes analysis revealed that discrimination was a statistically significant predictor of depressive symptoms at higher levels of social support (1 SD above the mean), $B = 2.14, t(403) = 5.27, p < .001$, and at lower levels of social support (1 SD below the mean), $B = .91, t(403) = 2.90, p = .004$. As shown in Figure 1, the positive association between experiences of discrimination and depressive symptoms was present but attenuated in those with higher levels of social support. In other words, social support buffered against the negative impact of discrimination on depressive symptoms.

The full model predicting physical symptoms was statistically significant, $F(5, 396) = 18.39, p < .001$, adjusted $R^2 = .18$. Physical symptoms were statistically significantly predicted by more experiences of discrimination ($p = .046$). This direct effect was moderated by a Discrimination \times Social Support interaction term that reached borderline statistical significance ($p = .09$). These effects were controlling for the statistically significant effects of being female ($p < .001$) and greater impact of COVID-19 ($p < .001$). While the interaction term did not reach the .05 cutoff for statistical significance, we conducted simple slopes analyses to determine whether the trend was consistent with our hypotheses. These revealed that discrimination was not a statistically significant predictor of physical symptoms at higher levels of social support, $B = 0.01, t(401) = 0.36, p = .72$, but that discrimination was a statistically significant predictor of physical symptoms at lower levels of social support, $B = 0.05, t(401) = 3.05, p = .002$. As shown in Figure 2, only when social support was low were increased experiences of discrimination associated with increased physical symptoms. There was some evidence that social support buffered against the negative impact of discrimination on physical symptoms, but this should be interpreted with caution.

Table 1
Descriptive Statistics and Bivariate Correlations Among Key Study Variables

Measures	1	2	3	4	5	6	7
1. COVID-19 impact	—						
2. Discrimination composite	.44**	—					
3. Social support	-.05	-.11*	—				
4. Anxiety	.47**	.46**	-.11*	—			
5. Depression	.45**	.41**	-.33**	.67**	—		
6. Physical	.33**	.26**	-.09	.60**	.42**	—	
7. Sleep	.36**	.29**	-.17**	.45**	.56**	.40**	—
<i>M</i>	61.57	0	61.11	10.15	19.14	1.69	6.21
<i>SD</i>	14.85	1.85	14.21	9.57	11.32	0.51	3.24

* $p < .05$. ** $p < .01$.

Table 2
Full Regression Models Predicting Health Outcomes From Discrimination and Social Support and Covariates

Variables	Anxiety symptoms	Depressive symptoms	Physical symptoms	Sleep difficulties
Gender	-3.67* (0.78)	-5.34* (0.89)	-0.22* (0.05)	-0.95* (0.30)
COVID-19 impact	0.20* (0.03)	0.25* (0.03)	0.01* (0.002)	0.06* (0.01)
Discrimination	1.55* (0.24)	1.51* (0.27)	0.03* (0.01)	0.30* (0.09)
Social support	-0.04 (0.03)	-0.24* (0.03)	-0.003 (0.002)	-0.03* (0.01)
Discrimination × Social Support	0.001 (0.02)	0.04* (0.02)	-0.001 (0.001)	0.01 (0.01)

Note. Reported statistics are *B* (standard error).

* $p < .01$.

The full model for sleep difficulties was statistically significant, $F(5, 390) = 19.12, p < .001$, adjusted $R^2 = .19$. Sleep difficulties were statistically significantly predicted by more experiences of discrimination ($p = .001$) and less social support ($p = .002$). These main effects were above and beyond the statistically significant effects of being female ($p = .002$) and greater impact of COVID-19 ($p < .001$). However, the Discrimination × Social Support interaction term was not statistically significant ($p = .23$). There was no evidence that social support buffered against the impact of discrimination on sleep difficulties.

Qualitative Analyses of Personal Experiences of Discrimination

Participants' responses to the item requesting description of a personal experience of racial discrimination during and because of the COVID-19 pandemic were inductively organized into eight themes, which fit within three broad categories: personal experiences with discrimination, experiences with a stigmatizing anti-Asian racist culture, and prevention of exposure to discrimination. Some participants provided descriptions of more than one experience, and each was organized into a theme independently. Participants who reported that the prompt was not applicable to them or that they had not experienced discrimination (less than a quarter of the sample) were not included in the following.

Personal experiences with discrimination. The personal experiences with discrimination described by participants were or-

ganized into four themes that demonstrate both microaggressions and overt discriminatory acts. Each theme below is followed by exemplars. The first theme was "treated suspiciously in public":

I was at the groceries, and a person was about to walk into my checkout lane, saw me, and went two lanes over, and was quite near to the person in front of her, seeming to not mind being near a non-Asian person. [Participant 5d5c98f6121fc80001960e82]

People moving to another subway car even though there was plenty of space for social distancing. [Participant 59f66d9b93b40c00016c9e24]

The most frequent theme to emerge in participants' responses was being treated suspiciously in public. These descriptions confirmed that microaggressions were widely experienced by the Asians and Asian Americans in our sample during the COVID-19 pandemic. These subtle communications of hostility do not have to be conscious or intentional on the part of the perpetrator to have impact. While the people on the subway car may not have identified their avoidance behavior as anti-Asian racism, the participant understood the racism at play and was impacted by it. In some cases, participants qualified their descriptions of such microaggressions with statements that they may have been mistaken in attributing White others' suspiciousness to racism. This ambivalence highlights the unique psychological toll of microaggressions wherein the victim bears the wound of the racist insult while simultaneously being made to question whether their pain is inappropriate, baseless, or paranoid.

The second theme was "racist jokes":

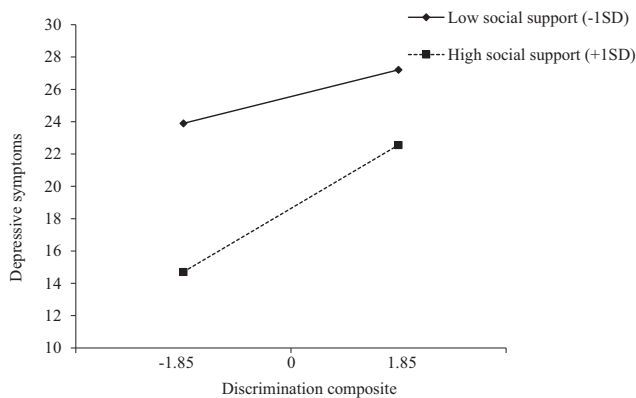


Figure 1. The association between composite of experiences of discrimination and depressive symptoms moderated by the degree of social support.

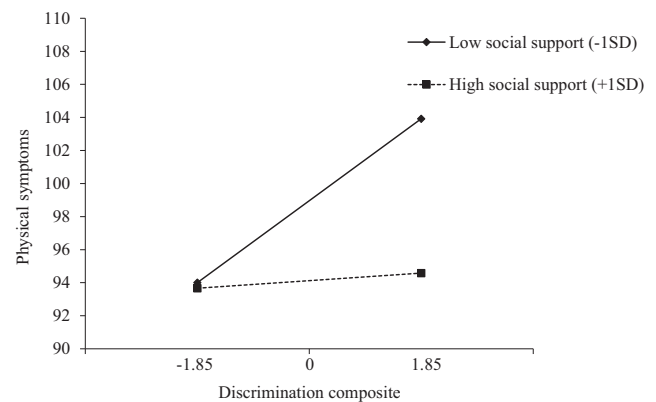


Figure 2. The association between composite of experiences of discrimination and physical symptoms moderated by the degree of social support.

I was talking to a friend and they said a joke about how Asians like to eat bats (referencing the coronavirus). [Participant 5e7135646673ab05548cabfb]

A coworker joked that I had the coronavirus because I was "from Asia." She also made jokes referring to the virus as the "Kung-Flu." [Participant 5e5298967df9e6296875d368]

In contrast to the microaggression above, the anti-Asian jokes participants reported are instances of overt racism. As illustrated in the selected text, these jokes involved insults or slurs related specifically to the coronavirus. It appears that the context of the COVID-19 has escalated such anti-Asian discrimination. Racist labels or terms like "Kung Flu" that were introduced and have been used by President Trump appeared repeatedly in participants' responses. This supports the claim that Trump's choice of language when publicly discussing the COVID-19 pandemic feeds directly into instances of overt racism experienced by Asians and Asian Americans.

The third theme was "attack," which included two subthemes, (a) "verbal assault" and (b) "physical threat":

- (a) Someone specifically yelled at my family to go home when they saw us walking in the park. [Participant 5eaa35a8c0ee303b9d10ae0]
- (a) High schoolchildren called and yelled at me calling me Coronavirus. [Participant 5e129355398bb6904d703ce0]
- (b) I was threatened by someone that they would knife me because I am Asian. [Participant 5b171809bdf4e10001631710]
- (b) A car driven by a White male drove extremely close to my husband and I in a dangerous manner and made us feel unsafe. [Participant 5eaa059c16fb0e18b6bc6bfa]

These responses are evidence of anti-Asian hate crimes and the open terrorizing that some Asians and Asian Americans have experienced. We see the perpetual foreigner idea present in the directive to go home, the presumption and accusation being that they are not American citizens or have the right to live in America. Disturbingly, some of these attacks were perpetrated by children. We can only speculate as to whether the young people who verbally attacked participants were acting upon messages they had received from the adults in their lives, social media, or elsewhere. Overall, the experiences reported by participants are a testament to how tolerant our current society is of overt racism and are indicative of the degree of hate and potential violence that exist toward Asians and Asian Americans.

The fourth theme was "financial hardship":

I applied for COVID-19 financial assistance . . . and they rejected my application saying that they prioritized Americans and cannot help me since I am not one. . . . I am a student there, I paid tuition and fees to be there, but when it comes to assistance I will not be prioritized. [Participant 5cbb2c92b413150001a88e13]

I feel that at my work place when management is thinking about removing some employee, I am thinking we will be first target of them. [Participant 5e8bfc63e53da90ec5673f11]

While the prior three themes were forms of interpersonal racism, the fourth theme represents structural racism. Very few of the responses provided were indicative of this theme, but those that were spoke to messages of illegitimacy or dispensability from institutions of power (i.e., university or employer) based on race. There is an implication, although not directly stated, in participants' responses that these racist structures were not present or felt prior to COVID-19 and the anti-Asian sentiment that has accompanied it. While the negative effects of the pandemic on the economy are felt by many in this country, these data suggest that the effects may be particularly salient for Asians and Asian Americans as they are linked to COVID-19-specific discrimination.

Experiences with a stigmatizing anti-Asian racist culture. The experiences with a stigmatizing anti-Asian racist culture described by participants were organized into two themes. The first theme was "overheard racist comments":

I have heard the virus referred to by people I work with as the "Chinese" virus. [Participant 5ea24e2ba40d0c16e0c2b6e9]

I have heard people say that they do not trust Asian people because the virus came from China. [Participant 542473a4fd99b691fb38455]

This theme has some similarity in tone with the second theme above but has the important distinction of overhearing racist jokes or statements rather than being told them directly. For these participants, anti-Asian sentiments are in the air all around them. While the comments may not be overtly directed at them, it is clear that they have impact. Living in an environment marked by stigma and racism, participants may anticipate being the victim of a racist attack at any time. This kind of continual if indirect threat strains mental well-being and may shape people's willingness to engage in certain activities or spaces in their community.

The second theme was "heard about discrimination experienced by others or in the news":

I have not experienced direct discrimination to me, but have read many news stories about Asian Americans being racially profiled and attacked. [Participant 5e78d6a0bc70c94664aae415]

Although I personally have not been targeted, I have seen videos and read news stories online about Asian Americans who were discriminated against and often verbally or physically attacked because others perceived them as having "caused" the coronavirus pandemic. [Participant 5e77e4c881ea0636484dd745]

Quite a few participants described exposure to stories and images of discrimination even if they had not experienced such discrimination themselves. This theme documents how American society during the COVID-19 pandemic has become saturated in anti-Asian racism. Vicarious discrimination, in which an individual is affected by their partner's direct experience of discrimination, has been linked to poorer mental and physical health in both people (Wofford, Defever, & Chopik, 2019). These participants' responses are testament to the idea that vicarious discrimination may also occur in the form of exposure through social media or news stories to racist attacks against others.

Prevention of exposure to discrimination. While our open-ended inquiry did not solicit an explanation from those who had not experienced discrimination, some of these participants did provide one. Thus, the third category included two themes. The

first theme was “did not personally experience discrimination due to living in a racially diverse community”:

I do not believe I've experienced any due to being in a huge Asian-dominated population. [Participant 5e769c368a8aae08f473d46a]

I have not experienced any acts of discrimination due the COVID-19. I think it's because I live in Hawaii and the majority of the population is Asian, so no one is really thinking about that. [Participant 5b0790cd9649530001a3c527]

Some participants attributed the fact that they had not experienced discrimination to their community being predominantly Asian. This may speak to there being fewer non-Asian people to commit discriminatory acts or that people who might otherwise commit these acts are less likely to when Asians or Asian Americans are not minority members of their communities. Either way, participants articulated experiencing a sense of safety or protection based on living among other Asians or Asian Americans.

The second theme was “did not personally experience discrimination due to social distancing”:

I have not experienced any act of discrimination during the past two months since I have been at home and have only left the house to work in my yard. [Participant 5aa71a2b6219a30001c763ec]

I have not experienced an act of discrimination due to me largely remaining in my home the past several months. [Participant 5e4c40c495fca1000d893735]

This theme relates to a specific feature of the COVID-19 pandemic response—widely implemented quarantine, self-isolation, and/or social distancing measures. Such measures have been linked to negative mental health outcomes in other pandemic situations (Brooks et al., 2020). In contrast, our data suggest that staying isolated at home functioned as a protective factor against the personal experience of discrimination at least for some Asians and Asian Americans. Participants' implicitly communicated assumption is that they would have experienced anti-Asian discrimination if they had been in public spaces and around people as much as they would have otherwise.

Discussion

As multiple news outlets reported increases in racialized attacks against Asians and Asian Americans due to the COVID-19 pandemic and consistent with a call in the literature (Misra, Le, Goldmann, & Yang, 2020), we investigated their experiences of racial discrimination during the first few months of the pandemic, whether discrimination predicted poorer reports on multiple indicators of health, and whether these relationships were moderated by social support. This work is notable in its focus on Asian Americans, who are often understudied in terms of racial discrimination (D. L. Lee & Ahn, 2011), and its contribution to our knowledge of racial discrimination and health during the COVID-19 pandemic specifically.

Nearly a third of the participants in our study reported an increase in experiences of discrimination during the pandemic. This is similar to a recent Pew Research Center poll that found that 39% of Asian people said it was more common for people to express racism against Asians now than before the pandemic (Pew Research Center, 2020). The impact of COVID-19 is not projected

to resolve in the United States for months or even longer, and it will be important to understand whether anti-Asian racism continues, escalates, or decreases as the pandemic wears on. As expected, and consistent with other research, we found that higher levels of reported discrimination significantly predicted all four of our health outcomes. Anxiety, depressive, and physical symptoms as well as sleep difficulties were all elevated in participants who had experienced more discrimination.

When asked to provide a personal example of discrimination experienced during the pandemic, the majority of participants described an incident that happened to them or that they saw on social media or the news. These qualitative data provided rich examples of the kinds of discrimination experienced, which we organized within two broad categories—direct, personal experiences and indirect, cultural ones. The themes comprising direct discrimination were testament to participants' experiences of microaggressions, overt racism, hate crimes, and structural racism. While we did not find evidence of the model minority myth, the ideas of yellow peril and perpetual foreigner clearly underpinned the racism participants experienced. We also found evidence of vicarious discrimination via social media and news stories as part of the indirect discrimination category. By combining quantitative measures of racial microaggressions and discrimination with a qualitative measure of experienced discrimination, we were able to speak to participants' lived experiences of racism that were predictive of poorer health. Future research might investigate specific associations such as whether experiences of being avoided and treated suspiciously by others are linked more closely to depressive symptoms, while experiences of being verbally attacked are linked more closely to anxiety symptoms or sleep difficulties.

Our hypotheses regarding the buffering effect of social support were partially supported. Participants with higher levels of social support reported fewer depressive symptoms even at higher levels of reported discrimination, and those who reported lower levels of social support reported more depressive symptoms with both more and less reported discrimination. Simple slopes analyses indicated that higher levels of social support also buffered against the positive association between increased discrimination and increased physical symptoms, although the interaction term reached only borderline statistical significance. While we did not find that social support buffered against the negative effects of discrimination as consistently as expected, we did find evidence that social support was associated with better health for each outcome. This is consistent with the body of work emphasizing the importance of social support for well-being (C.-Y. Lee, Goldstein, & Dik, 2018). In the context of the COVID-19 pandemic, it is a potential concern that social distancing orders compromise people's ability to access and maintain social connections. This did not seem to be the case in our sample, however, as over 20% of participants reported an increase in social support since the pandemic began and only 8% reported a decrease. Future research might address whether this increase in social support during the pandemic is unique to individuals of Asian heritage who may adhere to more collectivistic values.

We did not, unfortunately, query participants regarding social support in the qualitative portion of data collection, but two other protective factors against discrimination emerged from the open-ended responses. Some participants reported that following social distancing guidelines had inadvertently kept them from experienc-

ing discrimination as their interactions with people in general were severely reduced. This is an unanticipated upshot of an aspect of the pandemic response that has generated concern from public health professionals regarding the mental health consequences (Abel & McQueen, 2020). While the protection against discrimination exposure was positive for these participants, social distancing or self-isolation is not an adaptive long-term tool against anti-Asian racism. Future research must speak to whether the lifting of social distancing measures and "reopening" of communities is associated with an increase in exposure to anti-Asian discrimination. Other participants reported that they had not experienced discrimination because they lived in a racially diverse community, specifically one with a large proportion of Asians or Asian Americans. A large body of research finds that intergroup contact, which likely occurs in a diverse community, reduces prejudice by increasing empathy for outgroup members (Pettigrew, Tropp, Wagner, & Christ, 2011). It was unclear from participants' responses whether the protective effect could be considered an illustration of intergroup contact theory or the result of low levels of anti-Asian discrimination among Asians. Regardless, this finding speaks to the importance for people of color to live in a community with others of their race.

Our findings suggest that intergroup contact, cultural competency trainings, and antiracism efforts that explicitly address and debunk anti-Asian sentiment are necessary to combat the current climate of discrimination and could help prevent poorer health outcomes among Asians and Asian Americans. The increase in anxiety and depression symptoms during the first months of the pandemic and the elevated symptoms in those who experienced discrimination reveal a significant need for mental health services among Asians and Asian Americans. Unfortunately, Asian Americans may be less likely than other groups to seek such services, perhaps in part due to the model minority myth (Gupta, Szymanski, & Leong, 2011). General health care providers as well as public service announcements could validate current experiences of anti-Asian discrimination and normalize the negative health consequences of such experiences in an effort to destigmatize the need for help.

This work must be considered in light of several limitations. We conducted a cross-sectional study and collected data in the spring of 2020. While this design provided insight into the impact on Asians relatively early on in the course of the pandemic, it cannot speak to changes in rates of discrimination as mentioned above or the long-term effects of discrimination during the pandemic on Asians' health. We used a secure online platform to collect surveys from Asian people all over the country, but this means that individuals with more reliable access to the Internet may have been more likely to participate. It is unclear how generalizable our results may be to those without Internet in their homes or those who may have lost Internet with the economic downturn caused by the pandemic. Due to the structure of the online platform, we did not collect information that would enable us to investigate whether heterogeneity in country of origin among the Asians and Asian Americans in our sample played a role in their experiences of discrimination. This may be an important factor to consider in future research, especially given that there can be disparities in socioeconomic status among different Asian American groups.

In sum, the results of this early study to examine racial discrimination and Asians' mental, physical, and sleep health during the

COVID-19 pandemic provide evidence of an increase in anti-Asian racism and indicate this increase is associated with poorer mental and physical health. Qualitative descriptions document an array of discrimination experiences including hate crimes, micro-aggressions, and vicarious discrimination. Higher levels of social support buffered the impact of discrimination on depressive symptoms, and both social distancing and living in a racially diverse community were identified as protective factors against experiences of discrimination.

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