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I Am Not A Virus: Status-Based Rejection Sensitivity and Sleep Among East Asian People in the United States During COVID-19

J. Doris Dai[1] and Cynthia S. Levine[1]

Abstract

As COVID-19 spread in the United States, anti-East Asian bias increased. This article aimed to (1) show that thinking about COVID-19 heightened East Asian individuals' anxious expectations of discrimination and (2) explore these expectations' health correlates. Specifically, the paper focused on COVID-19-triggered race-based rejection sensitivity, defined as (1) East Asian individuals' expectations of rejection due to the stereotype that they spread the virus and (2) high levels of anxiety about this possibility. Study 1 (N = 412) showed that reminders of COVID-19 increased COVID-19-triggered race-based rejection sensitivity among Chinese citizens living in the United States and East Asian Americans, but not Americans of other races. Study 2 (N = 473) demonstrated that East Asian people who habitually focused on COVID-19 experienced greater COVID-19-triggered race-based rejection sensitivity and, in turn, greater sleep difficulties. Thus, societal-level shifts that target minoritized groups may increase minoritized group members' concerns about discrimination in ways that undermine their health.

Keywords

minority stress, East Asians, sleep, race-based rejection sensitivity

"Chinese Americans have been increasingly worried about their safety every day, and the issue is getting deeper and deeper into their mental health concerns. [The] biggest concern is that when someone goes somewhere, [they] may be attacked, verbally or physically, because of being Asian or Chinese Americans"-Yumin Wang, Chinese American immigration lawyer (Ao, 2020).

From the spikes in homophobia as HIV/AIDS spread in the 1980s to the increase in hate crimes against Arab and Muslim Americans after 9/11 to the harassment of Chinese Americans during the COVID-19 pandemic, people in the United States with minoritized identities often find themselves targeted by discrimination and violence when their group is blamed for national threats (Disha et al., 2011; Jeung, 2020; Ruel & Campbell, 2006). As Yumin Wang, a Chinese American writing early in the COVID-19 outbreak, articulated above, these types of attacks have repercussions beyond the specific incidents because they leave members of the targeted group concerned about the threat of discrimination in each new interaction. This article focuses on these concerns—the anxious expectations of discrimination that arise when the social climate becomes more discriminatory toward one's group—and their relationship to the targeted group's health. Specifically, focusing on the experiences of East Asian individuals in the United States early in the COVID-19 pandemic, we tested (1) whether thinking about COVID-19 increased the extent to which people of East Asian descent, but not people of other races, anxiously expected to experience discrimination and (2) whether these anxious expectations were linked to difficulty sleeping, a health behavior of particular concern during the pandemic because it exacerbates the risk for contracting the virus (Cohen, 2020).

Minority Stress and Health in Shifting Social and Political Climates

People with minoritized social identities, including East Asian people and other people of color, experience minority stress, which is discrimination-related stress that dominant groups do not experience (Meyer, 1995). Minority stress is an ongoing part of living with a minoritized identity in an unequal society but becomes especially acute

[1]University of Washington, Seattle, USA

Corresponding Author:
J. Doris Dai, Graduate Student, Department of Psychology, University of Washington, Guthrie Hall (GTH), 119A, Seattle, WA 98195-1525, USA.
Email: daij9412@uw.edu

when social and political shifts portray one's group as a major threat and normalize discrimination. For instance, increased minority stress has been reported among immigrants during times of heightened antiforeigner prejudice and among lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals after the election of politicians who support homophobic policies (Gonzalez et al., 2018; Sadeghi, 2018).

Minority stress, in turn, harms health (Meyer, 2003; Pittman et al., 2017; Thoits, 1995). Like the stress that underlies it, the health risk is chronic but increases as the social and political climates become more discriminatory (Garrison et al., 2018; Lauderdale, 2006). For example, when a 2017 U.S. policy banned travel from multiple predominantly Muslim countries, pregnant immigrants from these countries who lived in the United States experienced an increase in preterm births (Samari et al., 2020).

COVID-19 Stigma Against East Asian Individuals

As COVID-19 began spreading in 2020, some American leaders blamed China, and the national climate in the United States became more discriminatory toward East Asian individuals (Darling-Hammond et al., 2020). For example, President Trump and his administration frequently called COVID-19 the "Wuhan virus" or "Chinese virus" (Itkowitz, 2020; Nakamura, 2020), despite warnings that this would create and perpetuate stigma (Kupferschmidt, 2015). This rhetoric tapped into longstanding stereotypes that people of East Asian—and particularly Chinese—descent are an existential threat to the United States (i.e., the "Yellow Peril" of the 19th and 20th centuries), perpetually foreign, and carriers of disease due to an unhygienic lifestyle (e.g., allegedly eating rats and bats) (Kawai, 2005; Pomfret, 2020; Wu, 2002; Zou & Cheryan, 2017).

Soon, polls showed that most Americans blamed China for the virus's spread (Ipsos, 2020). Ultimately, this blame was extended to East Asian people more generally (Lempinen, 2020), perhaps due to a failure to differentiate among East Asian individuals from different ethnic backgrounds (Mansfield-Richardson, 2000; Woo, 2000). By March 2020, organizations that tracked anti-East Asian racism were receiving over 100 distinct reports of COVID-19-related discrimination daily (Jeung, 2020). These reports, which came from people of Chinese descent and people of other East Asian ethnicities, ranged from subtle discrimination (e.g., shunning) to blatant hate crimes (e.g., verbal harassment and physical assault).

Status-Based Rejection Sensitivity

Here, we explore the effects of this discriminatory climate on East Asian people in the United States. We propose that in this group, thinking about COVID-19 increases status-based rejection sensitivity, which people of color, people with lower socioeconomic status, LGBTQ + individuals, and others with minoritized identities often experience. It involves (1) expecting rejection or discrimination based on group membership and (2) high levels of anxiety about this rejection or discrimination (Dyar et al., 2016; Mendoza-Denton et al., 2002; Rheinschmidt & Mendoza-Denton, 2014). We focus on a specific form of this construct that we call COVID-19-triggered race-based rejection sensitivity. We define this as (1) expecting rejection or discrimination based on the stereotype that East Asian people carry and spread COVID-19 and (2) high anxiety levels about this rejection or discrimination.

Although status-based rejection sensitivity is often studied as an individual difference variable, we propose that it also shifts with the social context and, specifically, that it would increase among East Asian individuals when they thought about COVID-19. The status-based rejection-sensitivity literature posits that status-based rejection sensitivity develops when people experience discrimination directly or vicariously (Mendoza-Denton et al., 2002). Both experiences were common during the COVID-19 pandemic when many East Asian individuals experienced discrimination themselves, and many more learned about it from loved ones and extensive news and social media coverage (Ellerbeck, 2020; Jeung et al., 2020; Yip et al., 2022). Consistent with this idea, correlational research found that Chinese Canadians who perceived higher levels of COVID-19-related discrimination reported greater race-based rejection sensitivity (Lou et al., 2022). We expand on this work by testing whether thinking about the pandemic causes COVID-19-triggered race-based rejection sensitivity to increase among Chinese citizens living in the United States and East Asian Americans, but not Americans of other races. Because COVID-19-related discrimination was prevalent and widely recognized by East Asian individuals, even early in the pandemic, (Ellerbeck, 2020; Hahm et al., 2021; Jeung et al., 2020; Yip et al., 2022), we propose that merely being reminded of the pandemic (without any explicit reminder about discrimination) would be sufficient to trigger COVID-19-triggered race-based rejection sensitivity among East Asian people.

COVID-19-Triggered Race-Based Rejection Sensitivity and Sleep

Because status-based rejection sensitivity is linked to worse health (Lewis et al., 2019; Page-Gould et al., 2014; Rheinschmidt-Same et al., 2017; Slimowicz et al., 2020), and East Asian individuals' health and well-being suffered during the COVID-19 pandemic (Chen et al., 2020; Wu et al., 2021), we also examined the link between COVID-19-triggered race-based rejection sensitivity and health among East Asian individuals. We focused specifically on sleep difficulties (i.e., difficulties initiating or maintaining

quality sleep). Sleep difficulties were a major public health concern before COVID-19 (Barnes & Drake, 2015; Perry et al., 2013) and received even more attention as increased stress, disrupted routines, and additional screen time further impaired sleep during the pandemic (Express Scripts, 2020; National Sleep Foundation, n.d.; Posner, 2020). This was particularly worrisome because sleep difficulties compromise immune function and increase one's risk of becoming sick after exposure to viruses (Cohen, 2020).

There is an especially acute need to study sleep difficulties among Asian people,[1] who are less likely than White, Black, and Latine Americans to be included in large-scale sleep studies (Johnson et al., 2019). The few existing studies show that they sleep less and report more daytime sleepiness than White people (Carnethon et al., 2016; Chen et al., 2015). Traditional risk factors (e.g., educational attainment, work schedules, smoking, and health status) do not explain these differences (Carnethon et al., 2016), but racism plays a role. Specifically, Asian American college students who are more conscious of racial stigma report lower sleep duration and quality, especially after experiencing racial microaggressions (Ong et al., 2017). This is consistent with the larger literature linking perceived discrimination to impaired sleep (Slopen et al., 2016). Most relevant to the current work, studies with Black and Latine participants have linked race-based rejection sensitivity to sleep difficulties (Gordon et al., 2020; Page-Gould et al., 2014). We build on this work to propose that the race-based rejection sensitivity that is triggered when East Asian individuals think about COVID-19 will be correlated with sleep difficulties.

Present Studies

We tested whether (1) thinking about the COVID-19 outbreak would increase race-based rejection sensitivity among East Asian individuals in the United States but not Americans of other races (Study 1); and (2) East Asian individuals who habitually focused more on COVID-19 would experience greater COVID-19-triggered race-based rejection sensitivity and, in turn, more sleep difficulties (Study 2). We conducted these studies in early 2020 (Figure 1), before the height of the earliest U.S. surge or any stay-at-home orders, but after anti-East Asian bias had begun increasing (Jeung et al., 2020). Our participants were Chinese undergraduate and graduate students studying in the United States on student or scholar VISAs (henceforth referred to as Chinese) and U.S.-born undergraduate and graduate students from different East Asian ethnic backgrounds (e.g., Chinese, Japanese, Korean; henceforth referred to as East Asian Americans).

Study 1

Study 1 (preregistered here: https://osf.io/p6x9m/?view_only=cd6dcb8348f44991ab632ad287ebff9a) examined whether reminders of COVID-19 (vs. a control topic) increased COVID-19-triggered race-based rejection sensitivity among East Asian individuals but not people of other races.

Method

Participants. We initially planned to recruit only Chinese citizens and East Asian Americans and preregistered a target sample of 310 East Asian participants. This was based on an a priori power analysis in G*Power (Faul et al., 2009) for a 2 (condition) × 2 (Chinese vs. East Asian American) interaction with a power of .80 and an expected effect size of r = .19, i.e., Cohen's d = .39, the average effect size in stereotyping and discrimination research according to Richard and colleagues' (2003) meta-analysis. However, after we submitted the preregistration and started data collection, but before we completed data collection or analyzed any data, colleagues suggested adding non-East Asian Americans for comparison. We ultimately collected a sample of 496. These additional participants were mainly in the non-East Asian group but included some extra East Asian participants because our preregistered recruitment strategy (social media and email) did not allow for precise control of the number of participants.

All participants were students from the same public research university. Chinese students and East Asian American students were recruited through two Chinese international student associations and one Asian student association via social media and email. In exchange, all participants were entered into a raffle in which five participants were randomly selected to receive $100. In addition, given a need to run the study quickly due to the fluctuating state of COVID-19, we told participants that the first 150 to complete the survey would receive $5 (and they did receive it). Non-East Asian American students were recruited through the department subject pool for course credit. As preregistered, we only included participants who completed all study materials and passed a manipulation check and an attention check ("For this question, please select 'Somewhat agree'"). The final sample size was 412 (61.9% women, 34.9% men, 3.2% nonbinary; M_{age} = 22.86, SD_{age} = 4.08, $range_{age}$ = 18–35). About 36.8% were Chinese, 24.7% were mono-racial East Asian Americans, and 38.5% were non-East Asian Americans (16.0% White, 7.5% Black, 4.1% Southeast Asian, 2.9% Latine, 2.7% South Asian, 2.2% Caribbean, .7% Middle Eastern, 2.4% multiracial).

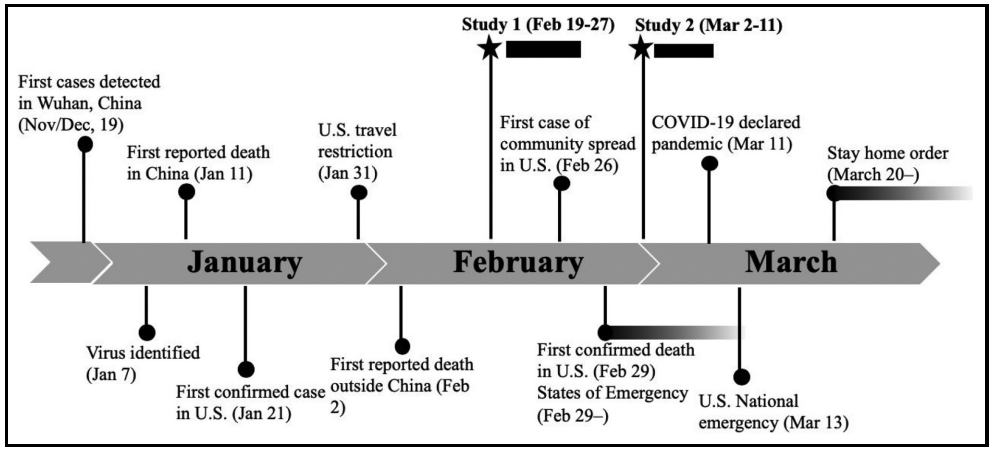

Figure 1. Timeline of Studies 1 and 2 and the Major Events Related to COVID-19 Before and After Each Study.

Procedure and Materials. See all Studies 1 and 2 data, materials, and supplements at https://osf.io/2hbef/?view_only=906b451dddd441b6afc7036d5da2d113.

Manipulation. To manipulate the salience of COVID-19, we randomly assigned participants to a COVID-19 or control condition. Participants in the COVID-19 condition read:

> The World Health Organization (WHO) says the coronavirus (COVID-19) outbreak that originated in Wuhan, China poses a very grave threat to the rest of the world. Disease scientists estimate that COVID-19 could eventually infect two-thirds of the world's population.

They then read five facts about the outbreak unrelated to discrimination (e.g., "There are over 70,000 confirmed cases worldwide, and the death toll stands over 1,000").

Participants in the control condition read about the bushfire in Australia, an international news event at the time that was not relevant to anti-East Asian stigma. They read:

> Ecologists are fearing severe ecological and biodiversity consequences from the Australian bushfire season 2019–2020, one of the worst fire seasons on record.

They then read five facts about the bushfire (e.g., "More than a billion animals are estimated to have died, been injured, or displaced"). Information in both conditions was accurate at the time.

To ensure that materials matched in perceived severity at the time, we conducted a pilot study approximately a week before Study 1. Participants (41.1% White, 18.7% East Asian, 15.0% Black, 12.5% Southeast Asian, 5.1% South Asian, 3.9% Latine; 60.5% women, 39.5% men%; M_{age} = 19.87, SD_{age} = 2.02, $range_{age}$ = 18–31) read either the COVID-19 condition (n = 37) or the control condition (n = 39) materials and rated how much the event would negatively impact the world and them personally. Perceived severity did not differ by condition (p values > .350).

Manipulation Check. After the manipulation, participants were asked to write one or two sentences summarizing what they had read. As preregistered, participants who wrote irrelevant summaries were excluded.

COVID-19-Triggered Race-Based Rejection Sensitivity. Finally, participants completed the COVID-19-triggered race-based rejection-sensitivity questionnaire, which we modeled after the race-based rejection-sensitivity questionnaire (RSQ-Race; Mendoza-Denton et al., 2002). The RSQ-Race scale presents participants with scenarios where they could be rejected based on their race and asks them to rate (1) their anxiety about rejection and (2) the likelihood of rejection. To generate scenarios relevant to anti-East Asian discrimination during COVID-19, we followed Mendoza-Denton and colleagues' (2002) approach and conducted seven four-person focus groups (four with Chinese students, three with East Asian American students) approximately 1 week before running Study 1. Focus group participants described situations where they thought they had experienced rejection or discrimination due to the perception that they had COVID-19. Ten nonrepetitive scenarios were generated from these descriptions (Table 1).

To complete the questionnaire, participants first read each scenario (e.g., "Imagine you are waiting for the bus at a bus stop, and you sneeze. You notice some people at the bus stop looking at you."). They then rated their anxiety about rejection (e.g., "How concerned or anxious would you be that other people at the bus stop might say something offensive to you because of your race/ethnicity?"; 1 = very unconcerned to 6 = very concerned) and the likelihood of rejection (e.g., "I would expect that other people at

Table 1. Factor Loadings, Descriptive Statistics, and Internal Reliability for the COVID-19-Triggered Race-Based Rejection-Sensitivity Questionnaire Items.

Item	Factor loading		
	Study 1 (Chinese and East Asian Americans)	Study 1 (full sample)	Study 2
1. Imagine you visit a clinic to get a flu shot. While waiting, you notice another person in the waiting room glancing your way and shifting in their seat.	.70	.79	.79
2. Imagine you are waiting for the bus at a bus stop, and you sneeze. You notice some people at the bus stop looking at you.	.72	.81	.77
3. Imagine you are in class one day. You have a common cold and cough. The professor asks students to form groups and discuss a question. You do not know anyone in the class.	.70	.79	.75
4. Imagine you are in class. You feel under the weather, coughing and sniffling. You notice the professor glancing your way.	.77	.81	.74
5. Imagine you are walking down the street, and you are wearing a face mask for germ protection. You notice that other pedestrians are looking at you.	.74	.80	.74
6. Imagine you are at a pharmacy, trying to pick up some cold medicines. You bring the medicines to the checkout counter, but the clerk is by the shelves, so you try to get their attention.	.73	.81	.76
7. Imagine you try to rent an apartment, and the property manager is giving you an apartment tour. Your nose itches so you sneeze during the tour. The property manager tells you that you will know whether your rental application is approved soon.	.73	.79	.73
8. Imagine you arrive in class early wearing a face mask. You sit down in an empty row. You notice other students walking into the class. You do not know anyone in the class.	.73	.80	.77
9. Imagine you are riding the bus one day. The bus is full except for two seats, one of which is next to you. As the bus comes to the next stop, you notice a woman getting on the bus.	.72	.79	.77
10. Imagine you are applying for a part-time job at a coffee shop. You complete an in-person interview, and the interviewer informs you that they will let you know about their decision soon.	.72	.79	.81

Note. Anxious expectation scores (anxiety × expectation) were obtained for each item. Study 2 only had Chinese participants and East Asian American participants.

the bus stop might say something offensive to me because of my race/ethnicity"; 1 = very unlikely to 6 = very likely). Following Mendoza-Denton and colleagues' (2002) approach, we multiplied each scenario's anxiety and expectation ratings and averaged the products across scenarios (possible range 1–36) to create a composite. Higher scores indicated stronger COVID-19-triggered race-based rejection sensitivity (α = .95, M = 9.93, SD = 6.90). A minimal residual (MinRes) factor analysis with oblique rotation using the criterion of eigenvalues >1 (Kaiser, 1960) yielded one factor, with an eigenvalue of 5.27 and accounting for 53% of the variance. See Table 1 for factor loadings (all >.70).

Results

COVID-19-triggered race-based rejection-sensitivity scores were submitted to a 3 (race: Chinese vs. East Asian American vs. non-East Asian) × 2 (condition: COVID-19 vs. control) analysis of variance (ANOVA). We then used Tukey's HSD for planned contrasts among the three racial groups. Table 2 provides descriptive statistics of COVID-19-triggered race-based rejection-sensitivity scores by race and condition.

Race had a main effect on COVID-19-triggered race-based rejection sensitivity, $F(2, 406) = 103.23$, $p < .001$, $\eta^2 = .313$. Specifically, Chinese participants reported significantly higher COVID-19-triggered race-based rejection sensitivity than East Asian American participants, $t(406) = 4.09$, $p < .001$, and non-East Asian participants, $t(406) = 14.49$, $p < .001$. East Asian American participants also reported significantly higher COVID-19-triggered race-based rejection sensitivity than non-East Asian participants, $t(406) = 8.89$, $p < .001$. Condition also had a main effect. Specifically, COVID-19-triggered race-based rejection sensitivity was significantly higher in the COVID-19 condition (M = 10.73, SD = 7.75) than in the control condition (M = 9.12, SD = 5.83), $F(1, 406) = 23.89$, $p < .001$, $\eta^2 = .036$.

Table 2. Descriptive Statistics of COVID-19-Triggered Race-Based Rejection-Sensitivity Scores by Race and Condition (Studies 1 and 2).

	Study 1							
	Control condition		COVID-19 condition		Both conditions (collapsed)		Study 2	
Sample	M (SD)	n	M (SD)	n	M (SD)	n	M (SD)	n
Chinese	11.56 (6.21)	89	17.05 (7.14)	63	13.83 (7.12)	152	18.26 (7.33)	309
East Asian American	9.78 (3.58)	48	13.07 (5.45)	53	11.51 (4.92)	101	18.24 (7.01	164
Non-East Asian American	5.46 (4.70)	68	5.00 (4.56)	91	5.20 (4.61)	159	/	/

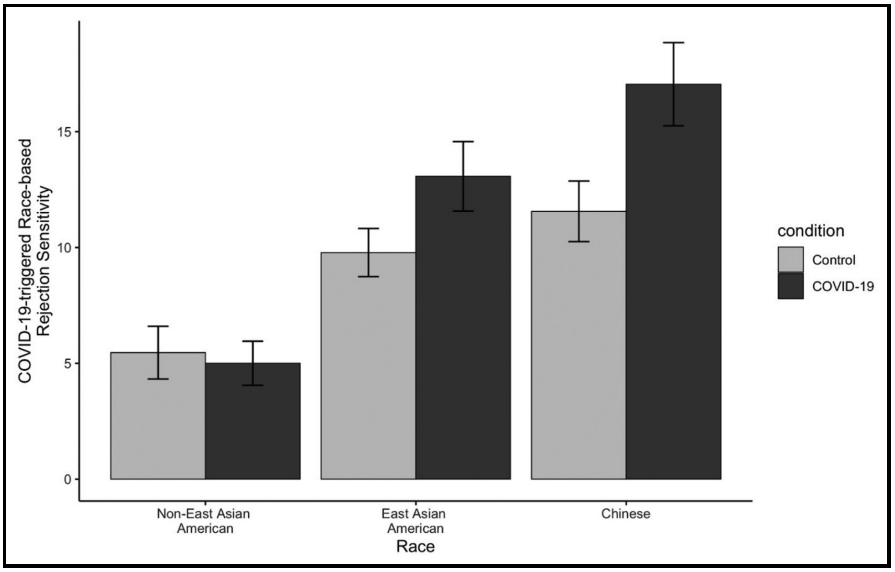

Figure 2 COVID-19-Triggered Race-Based Rejection-Sensitivity Scores Based on Race and Condition (Study 1).
Note. Error bars indicate 95% confidence intervals around the means.

These effects were qualified by the predicted race by condition interaction, $F(2, 406) = 11.51$, $p < .001$, $\eta^2 = .035$ (Figure 2). Condition did not affect non-East Asian participants' COVID-19-triggered race-based rejection sensitivity, $F(1, 406) = .27$, $p = .602$.[2] However, both Chinese participants and East Asian American participants reported significantly higher COVID-19-triggered race-based rejection sensitivity in the COVID-19 versus control condition [Chinese participants: $F(1, 406) = 37.43$, $p < .001$; East Asian American participants: $F(1, 406) = 9.20$, $p = .003$].

Discussion

Study 1 demonstrated that reminders of COVID-19 increased how much Chinese people and East Asian Americans, but not people from other racial groups, anxiously expected race-based rejection. This pattern likely emerged because status-based rejection sensitivity is activated in situations where rejection due to one's identity could occur (Mendoza-Denton et al., 2002). For East Asian people, but not people of other races, everyday situations such as shopping in a pharmacy or taking public transit opened up the possibility of discrimination, at least when Study 1 was conducted. Next, we tested the correlates of COVID-19-triggered race-based rejection sensitivity in the everyday lives of East Asian people.

Study 2

Study 2 (preregistered here: https://osf.io/dpnmt/?view_only=0d6823bd944e4cecbbc8b63f222ee373) conceptually replicated and extended Study 1. We tested whether (1) habitually focusing on COVID-19 was associated with greater COVID-19-triggered race-based rejection sensitivity among Chinese people and East Asian Americans (i.e., a conceptual replication of Study 1); (2) greater focus on COVID-19 was related to sleep difficulties among East Asian individuals; (3) COVID-19-triggered race-based

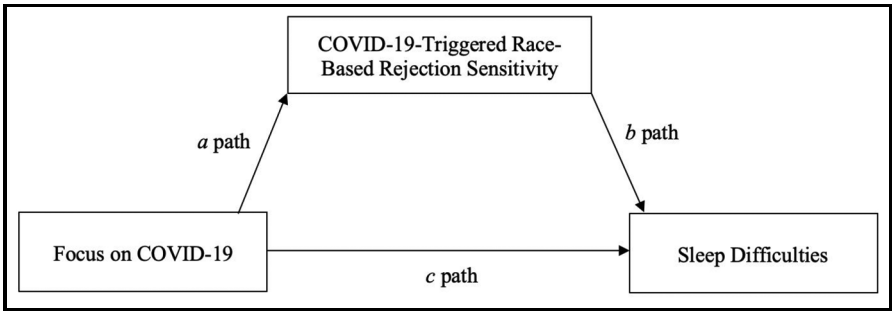

Figure 3. Statistical Model of Focus on COVID-19 Mediating the Relationship Between COVID-19-Triggered Race-Based Rejection Sensitivity and Sleep Difficulties.

rejection sensitivity mediated this relationship between focusing on COVID-19 and sleep difficulties.[3]

Method

Participants. We recruited 535 mono-racial East Asian U.S. university students (Chinese international students and East Asian American students) who had not participated in Study 1, based on an a priori power analysis to detect an average effect size and a power of .80 (Faul et al., 2009). Recruitment and compensation were the same as in Study 1. As preregistered, we only included participants who completed all study materials and passed the same attention check used in Study 1. The final sample size was 473 (34.1% East Asian American, 65.9% Chinese; 42.7% women, 55.8% men, 1.4% non-binary; M_{age} = 24.17, SD_{age} = 3.72, $range_{age}$ = 18–36).

Procedure and Materials. Participants completed the following measures.

Focus on COVID-19. To assess focus on COVID-19, participants rated how often in the last month they had "actively sought out updates about the coronavirus outbreak on social media, on news pages, or from other people" and "come across updates about the coronavirus outbreak on social media, on news pages, or from other people, without actively searching" (1 = Not during the past month; 2 = Less than once a week; 3 = Once or twice a week; 4 = Three or more times a week but not every day; 5 = One or more times every day). We averaged the items (r = .78). Higher values indicate greater focus on COVID-19.

COVID-19-Triggered Race-Based Rejection Sensitivity. COVID-19-triggered race-based rejection sensitivity was assessed using the questionnaire from Study 1 (α = .94).

Sleep Difficulties.. Sleep difficulties were assessed with the Pittsburgh Sleep Quality Index (Buysse et al., 1989), which correlates with clinical and laboratory measures of sleep (Buysse et al., 1989) and has been validated among college students (Dietch et al., 2016). Nineteen self-rated items (e.g., "During the past month, how long (in minutes) has it usually taken you to fall asleep each night?") capture seven components of sleep: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, sleep medication use, and daytime dysfunction. We followed Buysse et al. (1989)'s scoring instructions (see that paper's appendix), which involve calculating a score ranging from 0 = no sleep difficulties to 3 = great sleep difficulties for each component (e.g., for the above example item, $\leqslant$15 minutes = 0; 16–30 = 1; 31–60 minutes = 2; >60 minutes = 3) and summing the component scores to create a sleep difficulty composite (possible range 0–21). Higher scores indicate greater sleep difficulties.

Results

Descriptive Statistics. Table 2 presents the descriptive statistics for the COVID-19-triggered race-based rejection sensitivity scale. Unlike in Study 1, there was no significant difference between the scores of Chinese participants and East Asian American participants, t(471) = .03, p = .972, d = .003. Moreover, a 2 (Study: 1 vs. 2) × 2 (nationality: American vs. Chinese) ANOVA using data from East Asian participants across both studies showed that COVID-19-triggered race-based rejection sensitivity increased between the two studies, F(1, 722) = 98.32, p < .001, η^2 = .12, and this increase was greater among East Asian American participants than Chinese participants, F(1, 722) = 4.28, p = .039, η^2 = .01.

Mediational Analyses. We tested whether East Asian people who focused more on COVID-19 reported greater COVID-19-triggered race-based rejection sensitivity and, in turn, greater sleep difficulties (see model in Figure 3). First, conceptually replicating Study 1, focus on COVID-19 predicted greater COVID-19-triggered race-based rejection sensitivity (a path), β = .10, SE = .05, 95% confidence interval (CI) = [.01, .19]. Second, focus on COVID-19 predicted greater sleep difficulties (c path), β = .17, SE = .04, 95% CI = [.09, .25]. Third, COVID-19-triggered race-

based rejection sensitivity partially mediated the relationship between focus on COVID-19 and sleep difficulties (a * b path), β = .03, SE = .02, 95% CI = [.002, .07].

Because the study was cross-sectional, we further clarified the relationships among the variables by testing three alternative models with the variables in different orders. First, we examined whether COVID-19-triggered race-based rejection sensitivity predicted focus on COVID-19 and subsequently sleep difficulties. The indirect effect was nonsignificant, β = .01, SE = .004, 95% CI = [.000, .01]. Second, we tested whether sleep difficulties predicted focus on COVID-19 and subsequently COVID-19-triggered race-based rejection sensitivity, which also yielded a nonsignificant indirect effect, β = .01, SE = .01, 95% CI = [−.01, .02]. However, the third alternative model—a conventional reverse mediation test which focus on COVID-19-predicted sleep difficulties and subsequently COVID-19-triggered race-based rejection sensitivity—yielded a significant indirect effect, β = .07, SE = .01, 95% CI = [.01, .19].

Additional Analyses

Because reminders of COVID-19 increased COVID-19-triggered race-based rejection sensitivity more among Chinese participants than East Asian American participants in Study 1, we also examined whether participants' nationality moderated our mediational model. Specifically, we entered nationality (0 = American; 1 = Chinese) as a moderator of the relationship between focus on COVID-19 and COVID-19-triggered race-based rejection sensitivity (a path). Unlike in Study 1, nationality did not moderate the a path, β = .02, SE = .10, 95% CI = [−.16, .21]. The conditional indirect effects did not significantly differ for East Asian American versus Chinese participants, β = .01, SE = .003, 95% CI = [−.01, .01].

Finally, to ensure that focus on COVID-19 and COVID-19-triggered race-based rejection sensitivity uniquely predicted sleep difficulties, we examined sleep difficulties' relationships with traditional risk factors for sleep difficulties. Consistent with prior literature, older age, heavier school workload, lower subjective socioeconomic status, medication use, smoking, and alcohol consumption predicted greater sleep difficulties. However, after controlling for these factors, both focus on COVID-19 and COVID-19-triggered race-based rejection sensitivity remained significantly associated with sleep difficulties, suggesting COVID-19 racism was indeed a unique stressor for East Asian individuals. See OSF supplement Study 2 stimulus materials for measures and Preregistered Model Results for results.

Discussion

The more East Asian participants habitually focused on COVID-19, the more they anxiously expected COVID-19-related rejection, which further predicted sleep difficulties. However, unlike in Study 1, in Study 2, the relationship between focusing on COVID-19 and COVID-19-triggered race-based rejection sensitivity was equally strong among Chinese people and East Asian Americans. This inconsistency could stem from the increase in U.S. COVID-19 cases and anti-East Asian discrimination between Studies 1 and 2 (February–March 2020) (Jeung, 2020; Jeung et al., 2020). It is possible that, initially, Chinese participants were more attuned to the threat of discrimination, but East Asian Americans later became more aware of it, too. The increase in COVID-19-triggered race-based rejection sensitivity between Studies 1 and 2, especially among East Asian American participants, supports this interpretation.

Notably, both our hypothesized mediation model (COVID-19-triggered race-based rejection sensitivity mediating the relationship between focus on COVID-19 and sleep difficulties) and the reverse mediation model (sleep difficulties mediating the relationship between focus on COVID-19 and COVID-19-triggered race-based rejection sensitivity) were significant. There is evidence that when the target model is significant, the reverse mediation model will be, too (Lemmer & Gollwitzer, 2017). Thus, this finding does not necessarily undermine our proposed model's plausibility. Future longitudinal or experimental research could more precisely assess how these processes unfold.

General Discussion

This work demonstrates that early in the pandemic, thinking about COVID-19 led Chinese people in the United States and East Asian Americans, but not Americans of other races, to anxiously expect racial discrimination in everyday situations such as shopping, riding the bus, and attending class. Furthermore, East Asian individuals who habitually focused more on the pandemic experienced more sleep difficulties partly because they anxiously expected more discrimination. These findings raise the possibility that COVID-19-related discrimination could compound the pandemic's negative effects on East Asian individuals' lives. Because sleep difficulties compromise immune function (Cohen, 2020), East Asian individuals who are anxious about the possibility of discrimination could be at greater risk of contracting COVID-19 if exposed to it.

Extensions of the Minority Stress Literature

Our findings are consistent with other work showing that discriminatory social and political climates—including the spikes in anti-East Asian violence during the COVID-19 pandemic—harm the health and well-being of targeted groups (Chen et al., 2020; Garrison et al., 2018; Lauderdale, 2006; Lou et al., 2022; Samari et al., 2020; Wu et al., 2021; Yip et al., 2022). However, little of this work has examined *how* these discriminatory climates affect health. Our results suggest that one mechanism may be increased status-based rejection sensitivity.

Extensions of the Status-Based Rejection Sensitivity Literature

Our findings extend the status-based rejection sensitivity literature in several ways. First, although status-based rejection sensitivity is typically treated as an individual difference, we show that it can also be experimentally manipulated. Second, we demonstrate that status-based rejection sensitivity measures can be modified to capture forms of stigma relevant to specific groups or contexts. Prior research on status-based rejection sensitivity among people of Asian descent (Chan & Mendoza-Denton, 2008) has focused on stereotypes that are less relevant to COVID-19 (e.g., stereotypes about intelligence) or to recent immigrants, who might be less familiar with stereotypes that are prevalent in American culture. Our measure focuses on concerns about a different form of anti-East Asian bias that emerged and became salient during the pandemic, and that applies to both East Asian Americans and Chinese people living in the United States. Third, our findings help establish a link between status-based rejection sensitivity and sleep difficulties (see also Gordon et al., 2020). There is considerable overlap in outcomes associated with sleep difficulties and status-based rejection sensitivity, such as worse academic performance and health (e.g., Curcio et al., 2006; London et al., 2012; Mendoza-Denton et al., 2002; Slimowicz et al., 2020). Therefore, sleep difficulties may be one mechanism by which status-based rejection sensitivity influences these other negative outcomes.

Limitations and Future Directions

Despite its contributions, our work has limitations. First, Study 2 was correlational, and future experiments are needed to establish that COVID-19-triggered race-based rejection sensitivity causes sleep difficulties. Second, although we theorize that thinking about COVID-19 triggered status-based rejection sensitivity among East Asian people because it reminded them of discrimination, we did not measure participants' direct or vicarious experiences of discrimination. Future research could examine the role of these variables.

Open questions also remain about how our observed patterns vary geographically and temporally. In terms of location, most of our participants lived in Seattle, a liberal city with a large East Asian population. East Asian individuals in more conservative or rural areas with different racial demographics might have had different concerns about discrimination. As for temporality, after our studies concluded, East Asian individuals' COVID-19-triggered race-based rejection sensitivity might have continued to increase (as it did between Studies 1 and 2). Alternatively, it might have declined as COVID-19 became normalized.

Finally, future research could explore what factors reduce the negative effects observed here. The most effective strategy would be to reduce discrimination. For instance, political leaders could protect minoritized communities by using neutral language (e.g., "COVID-19," not "China virus") or actively condemning discrimination that occurs. Failing that, however, opportunities for meaningful connection with one's ingroup (i.e., other East Asian individuals) and outgroup both buffer against status-based rejection sensitivity's negative health effects (Page-Gould et al., 2014; Rheinschmidt-Same et al., 2017) and might protect minoritized individuals at times of heightened stigma.

Conclusion

The COVID-19 outbreak uniquely affected East Asian people but was not an isolated event. Instead, it reflects the ongoing oppression and inequities facing minoritized groups. Understanding the psychological consequences of the COVID-19 pandemic and similar events in East Asian and other minoritized communities will help to address health disparities going forward.

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ORCID iD

J. Doris Dai https://orcid.org/0000-0003-3554-2849

Supplemental Material

The supplemental material is available in the online version of the article.

Notes

1. Most studies did not break down participants into East Asian participants and participants from other Asian ethnic groups.
2. When separating non-East Asian participants based on their race (e.g., looking at Whites alone, etc.), condition's effect remained nonsignificant (see OSF supplement Ethnicity Breakdown).
3. Initially, we intended for Study 2 to test only the correlation between COVID-19-triggered race-based rejection sensitivity and sleep difficulties. We preregistered this analysis.

However, during the review process, the editor and reviewers suggested that we test the model now in the paper. The analyses that we originally proposed and preregistered also worked as expected. Those analyses can be accessed at OSF supplement Pre-registered Model Results. We thank the editor and reviewers for their helpful suggestions.

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Author Biographies

J. Doris Dai is a graduate student in the Department of Psychology at the University of Washington. Currently, she is working on social identity and intergroup relations, specifically looking at how individuals' social identities shift in response to contextual cues, and how such shifts shape individuals' way of thinking and behaving.

Cynthia S. Levine is an assistant professor of psychology at the University of Washington. Her research, which lies at the intersection of social and health psychology, explores how cultural, social, and psychological factors shape the health and well-being of people from diverse backgrounds.

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