

Discrimination Experience and Concerns During COVID-19: Exploring the Role of Media Sources Among U.S. Asians

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Discrimination Experience and Concerns During COVID-19: Exploring the Role of Media Sources Among U.S. Asians

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Abstract

Background: Media have reported that Asians and people of Asian descent have been targets of the blame since the COVID-19 outbreak.

Objective: This study aims to examine what types of discrimination Asians have experienced during the pandemic, as well as factors that can predict everyday discrimination and concerns over future discrimination that the community may face.

Methods: A cross-sectional online survey was conducted. A total of 235 people who identified themselves as Asian or Asian American completed the questionnaire.

Results: The study revealed four major findings. First, about 20-30% of the participants reported having experienced some types of discrimination during the COVID-19 pandemic. Over half of the participants worried that they will face some forms of discrimination in the future. Second, Chinese were more likely to experience discrimination than other Asian groups. Third, frequent use of social media for COVID-19 news positively predicted experience of discrimination and concern over future discrimination. Fourth, Asians were more likely to experience “being treated with less courtesy or respect”, “acting as if you are dangerous,” or “acting as if they are afraid of you” than to experience “receiving poorer service” and “being threatened or harassed.” Asians were more likely to worry about “being treated with less courtesy or respect” than “being threatened or harassed” in the future.

Conclusions: Our study provided important empirical evidence regarding various types of discrimination experienced by Asians during the pandemic. The role of social media as an information source that reinforced the perception of discrimination experience and the concern over future discrimination among Asians during this outbreak was noted.

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Original Manuscript

Discrimination Experience and Concerns During COVID-19: Exploring the Role of Media Sources Among U.S. Asians



Abstract

Background: Media coverage and scholarly research have reported that Asians and Asian Americans who lived in the US have been targets of the blame of the pandemic during the COVID-19 break.

Objective: This study aims to examine what types of discrimination Asians who resided in the U.S. have experienced and worried during the pandemic, as well as factors that were associated with everyday discrimination experience and concerns over future discrimination that the Asian community may face.

Methods: A cross-sectional online survey was conducted. A total of 235 people who identified themselves as Asians or Asian Americans and resided in the US completed the questionnaire.

Results: Our study suggested that up to a third of Asians surveyed had experienced some types of discrimination. When adding the percentages in “very often,” “often,” and “sometimes,” the percentages for each experienced discrimination type fell into 14%-34%, and the higher percentages (49%-58%) were found when measuring concerns over discrimination in the future. By adding the percentages of “very often” and “often”, the most frequently experienced discrimination types included “people act as if they think you are dangerous (25/235; 11%)” and “being treated with less courtesy or respect (24/235; 10%).” About 14% (32/235) of individuals reported very often, often, or sometimes being threatened or harassed. We also discovered the significant role of social media use in the higher likelihood of experiencing discrimination ($\beta = .18, P = .013$) and having concerns over future discrimination that the community would face ($\beta = .20, P = .005$). Use of print media was also positively associated with experienced discrimination ($\beta = .31, P < .001$).

Conclusions: Our study provided important empirical evidence regarding various types of discrimination experienced and concerned by Asians who resided in the US during the global pandemic. The relationship between media sources and the perception of racial biases among this group was also identified. We noted the role of social media in reinforcing the perception of discrimination experience and the concern over future discrimination among Asians during this

outbreak. Our results indicate several practical implications for public health agencies. To reduce discrimination against Asians during the pandemic, official sources and public health professionals should be cognizant of the possible impacts of amplifying stigmatizing cues in media reports on activating racial biases. Furthermore, Asian or Asian Americans could also be informed that using social media for COVID-19 information would associate with greater concerns over future discrimination, and thus they may consider approaching this media source cautiously.

Keywords: COVID-19, discrimination, Asians, Asian Americans, media source, social media, prejudice

Introduction

As of September 2020, COVID-19 has infected about 6.94 million people in the United States (US), causing over 200,000 deaths in the country [1]. Globally, over 31 million people had been infected with COVID-19, making it one of the worst pandemics in human history [1-2]. It is common for people to seek the origin of a pandemic and focus on responsibility and blame during the pandemic [3]. Media reports and nonprofit organizations have alerted the Asian community in the US regarding the rise of anti-Asian hate crimes since the start of this pandemic [4-6]. In late March, the FBI also warned this population about a surge in hate crime during the pandemic and alerted law enforcement to pay closer attention to the bias-motivated crimes [7-8].

Several empirical studies have indicated that Asians residing in the US are vulnerable to racist behaviors during the outbreak of an infectious diseases like COVID-19. Dhanani and Franz conducted a national survey of US adults in March of 2020 to study COVID-19-related discriminatory behaviors, including avoiding ordering from restaurants with primarily Asian employees, limiting interactions with Asian customers or coworkers, or intentionally moving away from an Asian individual while in a public place [13]. Their study found that 42% of the 1,141 people surveyed engaged in at least one discriminatory behavior toward people of Asian descent [13]. Another study showed that racism against Asian groups, which is associated with the outbreak of an infectious disease, is not a new phenomenon but has happened several times throughout American history [7]. Meanwhile, Asians across the globe were also found to experience xenophobia and stigmatization during the SARS outbreak in 2003 [12].

At the same time, according to several news reports, Asians and people of Asian descent who resided in the US had been targets of the blame, partly because the virus was first reported being found in Wuhan, China [9-10]. In addition, President Trump and other political officials have publicly referred to COVID-19 as “Wuhan virus,” “Chinese virus,” and “Kung Flu,” causing a surge in racist behavior against Asians [5, 11-12]. The Asian Pacific Policy and Planning Council received

about 1,500 reports on anti-Asian hate incidents from 45 states during a 4-week period from March to April [6]. Although there is no existing research directly comparing the prevalence of anti-Asian incidents before and after the COVID-19 outbreak, both academic research and news reports have shown that the Asian community experienced a high level of verbal harassment, shunning, physical assaults, workplace discrimination, being barred from transportation, and being turned away by businesses [5-7, 10-11]. The Center of Public Integrity [5] suggested that the national mental-health support Crisis Text Line [14] received significantly more texts from people of Asian descent after President Trump called the coronavirus “Chinese virus” in late March. During the same period, Reny and Barreto [15] found that Google searches for “Chinese virus” and “Kung Flu” increased dramatically.

Given the current social environment, it is meaningful to study discrimination experienced by Asian descent in the US (thereafter referred as Asians) during the COVID-19 pandemic. Recently, scholars have studied relevant topics in the COVID context, such as the impact of discrimination against Asians on mental health [12]; social media usage and anti-Asian sentiment among Caucasians [11]; anti-Asian attitude and behaviors in the US [13]. Different from these recent investigations, our study is one of the first few attempts to focus on Asians residing in the US during the pandemic and examine factors influencing their experience of discrimination against them.

Racism refers to a type of ideology in which certain racial groups are viewed as superior to others [16], and racial biases are negative attitudes and beliefs of out-group members [16-18]. Discrimination is described as unfair treatment and harassment caused by racial biases [17]. In this study, we focused on the everyday discrimination that refers to observations of discriminative events that can happen repeatedly in a variety of contexts, which include incidents such as being treated disrespectfully, being shunned, being offered poor service, or being verbally or physically harassed [19]. The Everyday Discrimination Scale [17] adopted in this study developed is among the most widely used instrument to evaluate this type of discrimination [19]

We distinguished between two dimensions of discrimination: experience of discrimination and concerns over future discrimination. Experience of discrimination examined people's perceptions of the various forms of discrimination experienced during COVID-19, whereas concerns over future discrimination examined the extent to which people worried about discrimination that might happen in the future. Our first research question focused on the prevalence of the experience of discrimination and concerns over future discrimination among Asians who resided in the US during COVID-19.

Our second research question focused on examining the relationship between media sources and Asian participants' experience of discrimination and concerns over future discrimination. Scholars have well noted that media exposure can contribute to beliefs and behaviors associated with social biases [20-22]. Research also showed that media can reinforce the marginalization of ethnic minorities and stigmatized groups by portraying them as primary health threats to others [23]. However, previous research mainly documented how racism-related mainstream media coverage (e.g., newspaper and TV) could cultivate dominant groups' prejudicial attitudes toward racial minorities. Little is known about how exposure to different media sources would relate to the prejudiced/discriminated groups' experience and perception, which arguably reflect beliefs associated with social biases from the opposite perspective (i.e., the perspective from the prejudiced and discriminated).

According to cultivation theory [24], traditional media use could effectively construct a social reality as portrayed in media among the viewers. Being exposed to increasing racism-related media content during the COVID-19 pandemic, Asians may form the belief that anti-Asian racism is a salient concern in the US, leading that they become more sensitive to the discrimination they experienced in their daily lives and more worried about the discrimination they may encounter in the future. The present study aims to use the empirical data to examine such hypotheses.

In addition, the rise of social media also made it a powerful force to influence people's

racism-related beliefs and actions. In a recent study, Davidson and Farquhar [22] showed that social media can serve as a major news source and contribute to prejudicial attitudes toward immigrants, refugees, and transgender people. Specifically relating to COVID-19, Croucher et al. [11] found that users who rated high on their beliefs of the accuracy and fairness in regards to information on social media were more likely to believe that Chinese Americans in the US could pose realistic threats (e.g., threats to physical and material well-being) and symbolic threats (e.g., threats to the morals, values and beliefs). Additionally, Ziems et al. [25], in a pre-print publication, revealed that the presence of anti-Asian hate speech on Twitter was more prevalent than counter-hate messages during the COVID-19 crisis. For Asians in the US, being exposed to the huge amount of unscreened racism-related messages on social media could greatly affect their perceptions of discrimination targeting Asian groups. In fact, a recent study has shown that browsing social media during COVID-19 indeed is associated with Asians' worry about discrimination [26].

To advance this line of research and create tailored interventions for promoting the wellness of Asians, our study aimed at examining what types of discrimination Asians who resided in the US have experienced and worried during the pandemic, as well as how exposure to various traditional media and social media sources would associate with experienced and expected future discrimination among this group during the COVID-19 pandemic.

Methods

Sampling

After the study was approved by the IRB of the corresponding author, a cross-sectional online survey was first generated on Qualtrics and then distributed to qualified participants via Amazon Mechanical Turk (MTurk). MTurk subject pools have revealed proven advantages in recruiting participants during on-going social events [27-29]. We posted our Qualtrics survey link on the MTurk platform, through which eligible participants can join the study. MTurk helped us reach eligible participants and responses from participants were stored in Qualtrics.

Eligible participants included participants aged 18 or above and individuals who identified themselves as Asians residing in the United States when the data was collected. To make sure that participants paid sufficient attention and to exclude bots and responses from server farms, we included an attention check question in the survey. Specifically, participants were asked to select a designated answer at a randomly-picked place of the questionnaire (e.g. please select “never” here to show that you are paying attention), and those who failed to select the designated answer were excluded from the study.

Data collection was completed in the first two weeks of May, 2020. At that time, there was a significant number of confirmed COVID-19 cases in the US, but some states had loosened up the stay-at-home orders. A total of 235 people who identified themselves as Asians or Asian Americans and resided in the US completed the questionnaire. Sample size for this study was determined by an a priori estimate utilizing G*Power version 3.1 [30]. With the regression effect size ($R^2 = 0.15$), 95% power and 14 predictors, a minimum sample of 153 was indicated. In our study, 202 participants were included for regression analyses, which has met the minimum requirement.

Demographics of Participants

Our participants' age ranged from 18 to 73 years old (mean 32.87, SD 10.95). Participants were from 35 out of the 50 states in the US and had lived in the US for an average of 23.56 years (SD 12.95). About 91% (212/235) of the participants reported being a US citizen or a permanent resident, and about 35% (79/235) identified themselves as Chinese with the rest from other Asian countries.

About 52% (122/235) of our participants identified themselves as male and 48% (112/235) as female. In regard to marital status, 55% (128/235) of the participants reported being single, 42% (98/235) reported being married or having a domestic partnership, and 3% (7/235) reported being widowed or divorced. About 6% (14/235) of the participants had an education level below college, 68% (160/235) reported having some college education, an associate degree, or a bachelor's degree,

and 26% (60/235) had earned masters' or doctoral degrees.

About 32% (72/235) of the participants were unemployed, 1% (3/235) were retired, and 67% (152/235) were employed part- or full-time when the data was collected. Regarding the income levels, 23% (51/235) of the participants reported their household income being below \$39,999 in 2019, 49% (92/235) between \$40,000 to \$99,999, and 29% (64/235) above \$100,000. In addition, 57% (126/235) of the participants reported that their family income had been impacted by the COVID-19 outbreak.

We also checked the participants' political stands and orientations. About 18% (48/235) of the participants were Republicans, 47% (110/235) were Democrats, and 25% (58/235) were Independent. More than half of the participants (113/235, 52%) reported being very liberal and liberal, 27% (59/235) being moderate, and another 21% (46/235) being very conservative and conservative (See Table 1).

Table 1. Demographics of participants

Variables	#	%
Biological sex		
Male	122	52.1
Female	112	47.9
*Education		
below college	14	5.6
some college and college degree	160	68.4
graduate degree	60	25.6
Chinese		
Yes	79	34.8
No	148	65.2
Citizens or permanent residents		
Yes	212	91
No	21	9
*Annual household income		
Below \$39,999	51	22.8
\$40,000-\$99,999	92	48.7
\$Over \$100,000	64	28.6
Income impacted by COVID-19		
Yes	126	57.3
No	94	42.7
Marital status		

Single	128	54.9
married or having a domestic partner	98	42.1
Widowed	2	.9
Divorced	5	2.1
Employment		
part-time and full-time	152	67
not employed	72	31.7
Retired	3	1.3
Party affiliation		
Republican	48	18.3
Democrat	110	46.8
Independent	58	24.7
*Political orientation		
Liberal	113	51.8
Moderate	59	27.1
Conservative	46	21.1

Note. Categories in variables with * were re-grouped for this table. Age ranged 18-73 years (mean 32.87, *SD* 10.95). Years in the US ranged from 1-66 years (mean 23.56, *SD* 12.95).

Independent Variables

Media source. The respondents were asked to indicate how often they obtained news regarding COVID-19 from different media sources, including (1) newspapers or magazines (mean 1.69, SD .92), (2) radio (mean 1.85, SD .97), (3) TV (mean 2.50, SD 1.01), (4) social media (mean 3.22, SD .92), and (5) news websites or apps (mean 3.31, SD .88). The items were rated on a 4-point scale (1=never, 4=often).

Dependent Measures

Experience of discrimination. It was assessed by asking participants how often they encountered different forms of unfair treatment since the COVID-19 outbreak. The measurement items were adapted from Everyday Discrimination Scale [17], which was a widely used instrument to evaluate discrimination [19]. The items were rated on a 5-point scale (1=never, 5=very often). These items were worded: Since the COVID-19 outbreak, in your day-to-day life how often have any of the following things happened to you: (1) you are treated with less courtesy or respect than other people; (2) people act as if they think you are dangerous; (3) people act as if they are afraid of you; (4) you receive poorer service than other people; (5) you are threatened or harassed. Items were averaged to indicate the overall experiences of discrimination participants perceived (Cronbach α = .94, mean 1.93, SD .98).

Concerns over future discrimination. It measured the degree to which individuals worry about discrimination they may experience in the future. The same set of items in Everyday Discrimination Scale [17] were used by changing them to future tenses, such as “how often do you worry that you will be treated with less courtesy or respect than other people?” Items were averaged to show the overall level of concerns over future discrimination (Cronbach α = .96, mean 2.61, SD 1.18).

Data Analysis

Data was analyzed with SPSS 25. Descriptive statistics were used to investigate the prevalence of different types of discriminatory experience Asians have encountered or expected in the future. Two hierarchical regression analyses were used to investigate factors that were associated with experienced everyday discrimination and concern over future discrimination, respectively. Model 1 included demographic variables such as age, years in US, biological sex, being Chinese, being a visitor, education level, employment status, income, and political orientation. Model 2 included variables in Model 1 as well as different media sources for COVID-19. Some demographic variables were re-coded for the regression analyses. In specific, biological sex: male=1, female=0; being Chinese: yes=1, no=0; visitor: visitor=1; US citizens and permanent residents=0; and employment status: employed=1; no=0. Some variables were used as how they were measured. Age and years living in the US were measured as continuous variables. Education level ranged from 1=less than high school degree to 7=doctoral degree; income ranged from 1=less than \$10,000 to 12=\$150,000 or more; and political orientation varied from 1=very liberal to 7=very conservative. Assumptions including normality, homoscedasticity, and multicollinearity were checked before regression tests were performed. All assumptions were met. For multicollinearity check, VIF values ranged between 1-2 and far below 10.

Results

Prevalence of Experienced Discrimination

Our first question asked about the prevalence of various types of discrimination experienced by Asians in the US (see Table 2). When adding the percentages of “very often,” “often,” the percentages of each experienced discrimination type ranged from 5% to 11%. The most frequently experienced discrimination types included “people act as if they think you are

dangerous (25/235, 11%);” “being treated with less courtesy or respect (24/235; 10%);” followed by “received poorer service than other people (20/235, 9%);” and “people act if they are afraid of you (17/235, 7%).” Compared to the other four types of discriminatory experiences, experience with being threatened or harassed happened a little less frequently. A total of 5% (11/235) experienced it “very often” or “often;” 9% (21/235) reported “sometimes,” and 86% (203/235) reported “rarely” or “never.” When adding the percentages in “very often,” “often,” and “sometimes,” the percentages for each experienced discrimination type fell into 14-34%.

Table 2. % of experience of discrimination

	Very Often	Often	Sometimes	Rarely	Never
You are treated with less courtesy or respect than other people.	4.7%	5.5%	20.4%	28.5%	40.9%
People act as if they think you are dangerous.	3.0%	7.7%	23.4%	21.3%	44.7%
People act as if they are afraid of you.	2.6%	4.7%	25.5%	22.1%	45.1%
You receive poorer service than other people	1.7%	6.8%	18.3%	25.1%	48.1%
You are threatened or harassed.	1.3%	3.4%	8.9%	21.7%	64.7%

Prevalence of Concerns over Future Discrimination

Relative to the experience of discrimination, a higher percentage of the participants expressed concerns over the five types of discrimination “very often,” “often,” or “sometimes.” The result also showed that participants were generally concerned about the given forms of discrimination at the similar level. The combined percentages of “very often” and “often” for each discrimination type ranged from 25% to 27%. The most frequently concerned discrimination types were “will be treated with less courtesy or respect than other people (64/235, 27%);” and “will receive poorer service than other people (62/235, 26%).” When the percentage of “sometimes” was included, the range increased to 49-58% (see Table 3).

Table 3. % of concern over future discrimination

	Very Often	Often	Sometimes	Rarely	Never
You will be treated with less courtesy or respect than other people.	7.7%	19.6%	30.2%	19.6%	23%
People will act as if they think you are dangerous.	8.5%	16.6%	28.5%	19.1%	27.2%
People will act as if they are afraid of you	7.2%	18.3%	26.8%	20.4%	27.2%
You will receive poorer service than other people	7.2%	19.1%	26.4%	20.0%	27.2%
You will be threatened or harassed.	8.1%	17%	24.3%	22.1%	28.5%

Factors Associated with Discrimination Experience and Concerns

Another question examined factors that may be associated with the experience of discrimination or the concerns over future discrimination. The two sets of hierarchical regression analyses resulted in two significant models for experience of discrimination [$R^2 = .183$, $F(14, 187) = 3.00$, $P < .001$] and concerns over future discrimination [$R^2 = .166$, $F(14, 187) = 2.66$, $P = .001$]. Tables 4 and 5 demonstrated the results associated with these tests.

Our analyses revealed that age was negatively associated with both experience of discrimination ($\beta = -.18$, $P = .033$) and concerns over future discrimination ($\beta = -.26$, $P = .003$). This showed that younger people were more likely to experience discrimination and worry about future discrimination they may face. The length residing in the US was positively associated with both experience of discrimination ($\beta = .20$, $P = .021$) and concerns over future discrimination ($\beta = .21$, $P = .015$). This shows that the longer people stayed in the US, the more likely they felt discriminated or worried about how they might be treated in the future. Among different Asian ethnic groups who lived in the US, Chinese were more likely to experience discrimination ($\beta = .18$, $P = .014$) or have concerns over future discrimination than other Asian groups ($\beta = .15$, $P = .035$).

Individuals who often used print ($\beta = .31, P < .001$) or social media ($\beta = .18, P = .013$) for COVID-19 related news reported having experienced more discrimination. Using social media for COVID-19 was also positively associated with greater concerns over future discrimination ($\beta = .20, P = .005$).



Table 4. Hierarchical regression analysis for variables relating to experience of discrimination

	Model 1		Model 2		R ² Change	F Change	
	β	P	β	P			
Step 1: Demographic Variables					.077	1.77 (P =.076)	
age	-.13	.14	-.18	.033			
years in US	.18	.045	.20	.021			
biological sex	-.00	.96	-.02	.81			
Chinese	.19	.010	.18	.014			
visitor	-.01	.91	-.04	.54			
education	.04	.59	.06	.42			
employment	-.04	.59	-.03	.64			
income	-.08	.31	-.05	.47			
political orientation	.05	.52	.09	.26			
R ² = .077, F (9, 129) = 1.77, P = .076							
Step 2: Media Source of COVID-19					.107	4.88*** (P < .001)	Note. All beta are standardized regression coefficients.
print			.31	< .001			
radio			.02	.79			
TV			-.07	.37			
news website or app			-.05	.48			
social media			.18	.013			
R ² = .183***, F (14, 187) = 3.00, P < .001							

Table 5. Hierarchical

regression analysis for variables relating to concern over future discrimination

	Model 1		Model 2		R ² Change	F Change
	β	P	β	P		
Step 1: Demographic Variables					.114	2.74 (P = .005)

age	-.27	.002	-.26	.003
years in US	.17	.047	.21	.015
biological sex	-.03	.73	-.04	.56
Chinese	.15	.039	.15	.035
visitor	-.03	.68	-.04	.55
education	-.01	.89	-.02	.83
employment	-.08	.29	-.07	.37
income	.03	.71	.03	.71
political orientation	-.11	.11	-.10	.17

$R^2 = .114^{**}, F(9, 192) = 2.74, p = .005$

Step 2: Media Source of COVID-19

print	.07	.39
radio	-.01	.92
TV	.04	.59
news website or app	.06	.38
social media	.20	.005

$R^2 = .166^{**}, F(14, 187) = 2.66, p = .001$

.052
2.34
($P = .043$)

Note. All beta coefficients are standardized regression coefficients.

Discussion

This study examined what types of discrimination Asians who resided in the U.S. have experienced and worried during the pandemic, as well as factors that were associated with everyday discrimination experience and concerns over future discrimination that the Asian community may face. Our study suggested that a substantial part of Asians surveyed had experienced and worried about some types of discrimination. The relationship between media sources and the perception of racial biases among this group was also identified. Our study discovered the significant role of social media use in the higher likelihood of experiencing discrimination and having concerns over future discrimination. Use of print media was also positively associated with experienced discrimination. The detailed discussion of these findings was presented below.

First, our study provided additional empirical evidence suggesting that a substantial part of Asians in the US had experienced and worried some types of discrimination at least part of the time ("sometimes"). These findings complemented what the Center for Public Integrity Poll had suggested: 1 out of 4 people in the US said they would be concerned about close contact with someone of Asian ancestry in public during the pandemic [5, 10]. Additionally, about 14% (32/235) of the participants reported very often, often, or sometimes being threatened or harassed. These numbers were very concerning given that 6% of Asian Americans currently live in the US, representing the fastest growing ethnic group [31]. These numbers were not negligible because disease-related anti-Asian sentiment has caused some damage. For example, an Asian American family was stabbed in March in Texas while shopping at a Sam's Club; an Asian woman was hit on the head with an umbrella in mid-April accompanied with anti-Asian insults [5]. These types of hate crimes have caused additional fear and anxiety among Asians [7]. Our

study further suggests that during a prolonged pandemic like COVID-19, we should pay careful attention to other social issues relating to the pandemic.

Second, frequent use of social media for COVID-19 news was positively associated with both experience of everyday discrimination and concerns over future discrimination. A few features of social media may explain the findings. First, social media can be easily flooded with unconfirmed negative stereotypes, emotion-arousing information, and racist hate speech [25, 32]. Therefore, those who use social media more frequently may have a higher chance of being exposed to racism-related information. Second, research has shown that the network on social media is usually associated with a high degree of friendship ethnic homophily, meaning people from the same ethnic group are more likely to gather together on social media [33-34]. Our Asian participants likely had a social media network composed of a relatively high percentage of Asian friends, who may have shared much racism-related information as it had become a primary concern in the Asian community. Finally, social media algorithms present information to users based on users' earlier behaviors [35]. It is conceivable that, through social media algorithms, those who frequently resort to social media for COVID-19 news are then exposed to more COVID-19 news, which may include reports on anti-Asian incidents (see examples in [4, 5, 10]). Thus, Asian participants who frequently accessed COVID-19 news on social media may have been over-informed of and hyper-vigilant about COVID-related racism, and thus reported more experience of and concerns over discrimination. One recent study showed that Asians/Asian Americans who browsed social media more during COVID-19 reported more worry about being discriminated, likely because social media browsing during this time led to the perception that anti-Asian racism was pervasive [26], which resonated with our findings.

Third, it is noteworthy that usage of print media was also positively associated with

experience of discrimination. Research has found some patterns regarding how different media might affect people's information processing [36]. For example, it is noted that the nature of print media in dominantly delivering text-based information and allowing readers to process information at their own pace and sequence increases the chances of elaborating information in a deeper cognitive level, especially for those who have higher interest in the information [37]. On the other hand, television is more powerful in involving those who are less involved in the content because of its ability of activating multiple sensory modes [38]. Being treated as the main target of discrimination during the COVID-19 pandemic, Asians would be highly involved in racism-related news coverage. In this case, print media could facilitate more cognitive elaboration of relevant information among Asians, which might lead them to be more sensitive to the discrimination they experienced in their daily lives.

Finally, our study also indicated that those who self-identified as Chinese residing in the US were more likely to experience discrimination and have concerns over future discrimination. It is not surprising that Chinese were more sensitive to discrimination considering the close connection between the COVID-19 outbreak and China. Furthermore, we also found that younger age and more years living in the US both associated with experience of and concerns about discrimination. It would be worthwhile to conduct qualitative research to find out how age and the length of living in a different culture can cause different perceptions of racial prejudice and discrimination.

Practically speaking, our study joined earlier reports to reveal the concerning state of Asians during the pandemic. It reveals the potential psychological toll of attributing a pandemic to a particular ethnic group. Our results can be useful for public health agencies. To reduce discrimination against Asians during the pandemic, official sources and public health

professionals should be cognizant of the possible impacts of amplifying stigmatizing cues in media reports on activating racial biases. Furthermore, health communication efforts can further emphasize evidence-based prevention measures of curbing the pandemic and help remedy social prejudice relating to the disease. Finally, Asian users could also be informed that using social media for COVID-19 information would associate with greater concerns over future discrimination, and thus they may consider approaching this media source cautiously.

Limitations and Future Studies

As an exploratory examination of Asians and their experienced and expected discrimination during COVID-19, the study has some limitations. First, even though this project has reached Asians from 35 states in the country, the non-probability sampling nature of this study will limit the chance of generalizing our results to the whole Asian community. Second, our study revealed the prevalence of discrimination against Asians during COVID-19, but the nature of the study did not allow us to report whether and by how much discrimination increased since the outbreak. Scholars who have collected longitudinal data before and after COVID-19 are in a better position to present the change. Third, we used an existing scale of racial discrimination [17], which generated self-report data. Future studies can explore new ways to better assess the presence of racial discrimination, using experimental methods or attitudinal and behavioral indicators, as suggested by the National Research Council [39]. Lastly, our sample included Asians who resided in the US during the outbreak and comprised US citizens, permanent residents, and temporary visitors. We asked our participants whether they self-identified as Chinese but did not ask the non-Chinese participants to report their original nationality. Future scholars may collect this information to present more nuances.

Conclusions

Through a cross-sectional survey study of Asians in the US, our study showed that a substantial percentage of Asians in the US experienced and worried some types of discrimination. Use of print and social media for COVID-19 news both associated with higher likelihood of experiencing discrimination, and social media use was further associated with concerns over future discrimination. Notably, our study contributes to the understanding of media's role in shaping a discriminated group's racism-related perception during a global health crisis. These findings revealed the importance of addressing discrimination in a health pandemic to protect the well-beings of minority groups that are linked to infectious diseases.

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