COVID-19 Racism and Mental Health in Chinese American Families

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abstract

OBJECTIVES: The coronavirus disease 2019 (COVID-19) pandemic has fueled xenophobia against Chinese Americans. We examined the rates of 6 types of COVID-19 racism and racial discrimination experienced by Chinese American parents and youth and the associations with their mental health.

METHODS: We recruited a population-based sample of Chinese American families to participate in this self-reported survey study conducted from March 14, 2020, to May 31, 2020. Eligible parent participants identified as ethnically/racially Chinese, lived in the United States, and had a 4- to 18-year-old child; their eligible children were 10 to 18 years old.

RESULTS: The sample included 543 Chinese American parents (mean [SD] age, 43.44 [6.47] years; 425 mothers [78.3%]), and their children (N = 230; mean [SD] age, 13.83 [2.53] years; 111 girls [48.3%]). Nearly half of parents and youth reported being directly targeted by COVID-19 racial discrimination online (parents: 172 [31.7%]; youth: 105 [45.7%]) and/or in person (parents: 276 [50.9%]; youth: 115 [50.2%]). A total of 417 (76.8%) parents and 176 (76.5%) youth reported at least 1 incident of COVID-19 vicarious racial discrimination online and/or in person (parents: 481 [88.5%]; youth: 211 [91.9%]). A total of 267 (49.1%) parents and 164 (71.1%) youth perceived health-related Sinophobia in America, and 274 (50.4%) parents and 129 (56.0%) youth perceived media-perpetuated Sinophobia. Higher levels of parent- and youth-perceived racism and racial discrimination were associated with their poorer mental health.

CONCLUSIONS: Health care professionals must attend to the racism-related experiences and mental health needs of Chinese Americans parents and their children throughout the COVID-19 pandemic via education and making appropriate mental health referrals.

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WHAT'S KNOWN ON THIS SUBJECT: Increased rates of coronavirus disease 2019 racial discrimination against Asian Americans have been documented by reporting centers and polls, but no data exist on children's and adolescents' and their parents' experiences and the associations with their mental health.

WHAT THIS STUDY ADDS: We demonstrated that high proportions of Chinese American youth and adults experienced coronavirus disease 2019 racial discrimination across multiple dimensions, which were associated with lower psychological well-being and higher internalizing and externalizing problems. Youth were also vulnerable to their parents' experiences.

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The coronavirus disease 2019 (COVID-19) pandemic has refueled racist tropes about Chinese people (eg, eating strange foods and being disease ridden) that are veiled under health-related fears.[1,2] Racism and experiences of racial discrimination are known contributors to health disparities.[3] We responded to calls in public health and medicine for research attention to the racism pandemic against Asian Americans.[1,2] This study is the first to report on multiple dimensions of perceived racial discrimination due to COVID-19 that are experienced by Chinese American parents and their children.

Almost 1900 reports of discrimination against Asian Americans have been made since March 19, 2020.[4] This heightened xenophobia during this pandemic reflects perceptions of Chinese Americans as "perpetual foreigners,"[5] threatening the physical and cultural health of a white, Anglo-dominant US society.[6] Indeed, increased Sinophobia[7] was documented on social media feeds during the COVID-19 outbreak.[8]

We focused on individuals of Chinese descent, who have been specifically targeted because the COVID-19 virus was first identified in Wuhan, China, and has subsequently been referred to as the "China or Chinese virus" or "Wuhan virus."[1] The negative impact of perceived racial discrimination on general psychological distress, anxiety, and depressive symptoms in Chinese Americans has been documented.[9–11] However, the associations between discrimination triggered by the racialization of this acute public health crisis and mental health are unknown.

Racism occurs in various interpersonal, institutional, and cultural contexts, and discrimination based on race is manifested in various forms and levels, including through systems and structures.[2,3,12] These experiences are stressors that lead to the disruption of homeostasis and wear and tear of body systems.[6,13] Racial discrimination can be experienced directly or vicariously, in which one witnesses, reads, or hears about an incident of discrimination directed at others of the same race. With social distancing requirements, online experiences with discrimination may be particularly salient.[14] Therefore, we assessed participants' perceptions of direct and vicarious racial discrimination experiences both in person and online. We captured discriminatory experiences specifically due to COVID-19 (eg, referred blame for the COVID-19 pandemic).[15]

Harrell[12] highlighted that stress can be derived from the cultural-symbolic and sociopolitical manifestations of racism. Racism at the collective or group level (ie, collective racism) does not involve personal experience or the witnessing of or hearing about any specific incident associated with identifiable individuals.[12] We examined perceived collective racism in the forms of health-related Sinophobia, in which Chinese people are considered a health threat to American society, and the media's role in perpetuating Sinophobia, both of which are relevant during the COVID-19 pandemic.

To summarize, we examined the following racism and racial discrimination experiences of Chinese American parents and youth due to COVID-19: (1) online direct racial discrimination, (2) online vicarious racial discrimination, (3) in-person direct racial discrimination, (4) in-person vicarious racial discrimination, and their perceptions of (5) health-related Sinophobia, and (6) Sinophobia in the media. We next assessed associations between these experiences and mental health indices in Chinese American parents (psychological well-being, generalized anxiety symptoms, and depressive symptoms) and youth (psychological well-being, generalized anxiety symptoms, and internalization and externalizing problems).

METHODS

Participants and Procedures

Parents who identified as ethnically Chinese residing in the United States with at least 1 child aged 4 to 18 years old were eligible to participate. From this convenience sample, the 10- to 18-year-olds completed their own surveys, resulting in a subsample of 230 parent-child dyads. Participants were recruited through phone calls and distribution of flyers via e-mail, Facebook, and WeChat. This recruitment strategy was necessary because we targeted a specific minority group within a short period, and social distancing regulations did not allow for community-based data collection. The research protocol was approved by the University of Maryland, Baltimore County Institutional Review Board. Parents consented for themselves and their children, whose online assent was obtained separately. The surveys were hosted on the Qualtrics online platform between March 14, 2020, and May 31, 2020. Measures were available in English or simplified or traditional Chinese by using the back-translation method.[16] Parents and youth received e-gift cards ($20 and $10, respectively) as compensation.

Measures

Parents reported on their demographic characteristics. Parents and youth self-reported on their own perceptions of 6 types of racial discrimination due to COVID-19 and their mental health. We adapted existing validated measures to ensure that we captured perceived COVID-19–related racial discrimination experiences that were culturally relevant and due to their racial-ethnic heritage (see Supplemental Fig 3). The psychometric properties presented here pertain to the current sample.

Online direct and vicarious racial discrimination were measured by using items adapted from the Online Victimization Scale for Adolescents.[17] Online direct forms was assessed by using 4 items (eg, "Due to COVID-19, people have said mean or rude things about me because of my race or ethnic group online"; parent: α = .91; youth: α = .85). Online vicarious forms were assessed by using 3 items (eg, "Due to COVID-19, people have cracked jokes about people of my race or ethnic group online"; parent: α = .93; youth: α = .92). Respondents rated how often they experienced each incident on a 6-point scale ranging from 1 (never) to 6 (every day).

In-person direct racial discrimination was assessed by using items adapted from the Racial and Ethnic Microaggressions Scale.[18] Five items were used for the parent survey, and 4 items were used for the youth survey (eg, "Some people were unfriendly or unwelcoming toward me because of my Chinese background"; parent: α = .95; youth: α = .84). Respondents rated how often they experienced each incident because of COVID-19 on a 6-point scale ranging from 1 (never) to 6 (every day).

In-person vicarious racial discrimination was measured by using 4 items adapted from the Asian American Racism-Related Stress Inventory[19] (eg, "Someone said something negative about Chinese people [eg, their diet] related to the COVID-19 outbreak"; parent: α = .86; youth: α = .84). Respondents rated how often they experienced each incident on a 6-point scale ranging from 1 (never) to 6 (every day).

Sinophobia was assessed by using items adapted from the Perceived Islamophobia Scale.[20] Health-related Sinophobia was assessed by using 3 items (eg, "A lot of Americans consider Chinese people as a threat to public health in America"; parent: α = .71; youth: α = .66). Sinophobia in the media was assessed by using 5 items (eg, "US media present Chinese people as dangerous"; parent: α = .95; youth: α = .95). Respondents indicated their agreement with each item using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Psychological well-being was measured by using Ryff's 18-item Psychological Well-Being Scale.[21] Respondents rated the items (eg, "When I look at the story of my life, I am pleased with how things have turned out"; parent: α = .86; youth: α = .83) on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Generalized anxiety symptoms were assessed by using the 7-item Generalized Anxiety Disorder Screener (GAD-7).[22] Respondents rated how often they had been bothered by each symptom over the past 2 weeks (parents: α = .94; youth: α = .89) on a 4-point scale ranging from 0 (not at all sure) to 3 (nearly every day).

Depressive symptoms in parents were measured by using the 21-item Beck Depression Inventory–II.[23] Parents rated the presence and severity of their depressive symptoms during the past 2 weeks (α = .93) on a 4-point scale from 0 to 3.

Internalizing and externalizing problems in youth were assessed by using the Strengths and Difficulties Questionnaire (SDQ).[24] Youth rated 20 items assessing internalizing (emotional symptoms and peer relationships) and externalizing (hyperactivity and conduct) difficulties since January 2020 (α = .73 for internalizing problems α = .76 for externalizing problems) on a 3-point scale ranging from 0 (not true) to 2 (certainly true).

Analyses

Parents' and youth's rates of racial discrimination were computed separately. Respondents' highest scores reported among all items were used to represent the highest frequency of each type of racial discrimination. The percentages of respondents' highest frequencies of experiencing each type of racial discrimination were then computed. For health-related Sinophobia and Sinophobia in the media, respondents' average scores across the items were computed to create 3 categories: (1) disagree (scores < 3), (2) agree (scores between 3 and 4), and (3) strongly agree (scores > 4). We then calculated the percentages of respondents' levels of agreement with each type of Sinophobia.

Next, 3 sets of associations were estimated by using regressions (SPSS version 26.0; IBM SPSS Statistics, IBM Corporation): (1) parents' perceived racial discrimination and their own mental health, (2) parents' perceived racial discrimination and their children's self-reported mental health, and (3) youth's perceived racial discrimination and their own mental health. Associations between the mean score of each type of racial discrimination and each mental health outcome were examined in separate regression models, with types of racial discrimination as predictors and mental health variables as outcomes. Covariates included parent and youth age, sex, nativity, and region and parent socioeconomic status, which was coded by using the Hollingshead Four-Factor Index of Socioeconomic Status–Revised.[25] Confidence intervals (CIs) were obtained by using a bootstrapping method of 2000 resampling replications. We used a threshold of 2-sided $P < .05$ to define statistical significance.

RESULTS

The final sample included 543 Chinese American parents and a subsample of 230 of their children (10–18 years of age). Response rate

information was unavailable because of the convenience sampling design. Table 1 presents the sample's demographic characteristics and descriptive statistics for all study variables. Parent reporters were mostly mothers, foreign born, residing in the southern region of the United States, well employed, and college educated. On average, parents were in their 40s and had lived in the United States for >16 years. Most youth were US born, and approximately equal numbers identified as girls versus boys.

For the youth SDQ, 12.61% (n = 29) of parents and 17.39% (n = 40) of youth reported scores for youth (14–19) that indicate a slightly elevated risk of clinically significant problems, and 6.09% (n = 14) of parents and 6.52% (n = 15) of youth reported scores for youth (≥20), that indicate a substantial risk of clinically significant problems. Regarding the youth GAD-7 scores, 8.26% (n = 19) of youth reported moderate levels of anxiety symptoms (10–14), indicating a moderate risk of anxiety disorder, and 3.04% (n = 7) of youth reported high levels of anxiety symptoms (≥15), indicating a high risk of anxiety disorder.

In Fig 1, we present the percentages of perceived racial discrimination due to COVID-19. Of parents and youth, 31.7% and 45.7%, respectively, reported experiencing direct racial discrimination at least once online, with higher reported in-person rates (parents: 50.9%; children: 50.2%). Most parents and youth indicated witnessing vicarious racial discrimination at least once online (parents: 76.8%; children: 76.5%) and in person (parents: 88.5%; children: 91.9%); approximately one-fourth of both parents and youth experienced both types of vicarious racial discrimination almost every day. Participants' perceptions of Sinophobia in America are shown in Fig 2. A higher percentage of youth (71.1%) versus parents (49.1%) agreed or strongly agreed that health-related Sinophobia was present in America, and more youth (26.3%) than parents (15.9%) endorsed strong agreement. One in 2 parents (50.4%) and youth (56.0%) agreed that the media perpetuated Sinophobia; ∼20% strongly agreed.

In Table 2, we present the statistics for associations between racial discrimination and parents' and youth's mental health. For parents, psychological well-being was negatively associated with online direct discrimination (β = −0.18; $P <$ .001; CI −0.24 to −0.11), in-person direct discrimination (β = −0.23; $P <$ .001; CI −0.30 to −0.16), health-related Sinophobia (β = −0.12; $P <$ .001; CI −0.18 to −0.05), and media Sinophobia (β = −0.10; P = .003; CI −0.17 to −0.03) but was not associated with online vicarious discrimination (β = 0.03; P = .33; CI −0.03 to 0.10) and in-person vicarious discrimination (β = −0.04; P = .22; CI −0.11 to 0.03). Anxiety and depressive symptoms were positively associated with all types of racial discrimination and Sinophobia (β ranging from 0.06 to 0.24; all $P <$ .01). For youth, psychological well-being was negatively associated with online direct discrimination (β = −0.16; P = .002; CI −0.26 to −0.06), online vicarious discrimination (β = −0.11; P = .04; CI −0.22 to −0.00), in-person direct discrimination (β = −0.19; $P <$ .001; CI −0.29 to −0.09), health-related Sinophobia (β = −0.12; P = .03; CI −0.23 to −0.01), and media Sinophobia (β = −0.13; P = .02; CI −0.23 to −0.02) but was not associated with in-person vicarious discrimination (β = −0.07; P = .21; CI −0.18 to 0.04). Anxiety symptoms and internalizing problems were positively associated with all types of racial discrimination and Sinophobia (β ranging from 0.05 to 0.22; all $P <$ .01). Externalizing problems were only positively associated with health-related Sinophobia (β = 0.08; $P <$ .001; CI 0.04 to 0.13) and media Sinophobia (β = 0.08; $P <$ .001; CI 0.03 to 0.12).

Parents' discrimination experiences were also significantly associated with their children's self-reported mental health. Parental in-person direct racial discrimination was negatively associated with youth-reported psychological well-being (β = −0.19; P = .004; CI −0.30 to −0.08) and positively associated with youth-reported anxiety symptoms (β = 0.19; $P <$ .001; CI 0.10 to 0.27) and internalizing problems (β = 0.07; P = .006; CI 0.03 to 0.12). Parental in-person vicarious racial discrimination was positively associated with youth-reported anxiety symptoms (β = 0.08; P = .05; CI 0.00 to 0.17). Moreover, parental online direct racial discrimination was positively associated with youth-reported anxiety symptoms (β = 0.11; P = .02; CI 0.02 to 0.19) and internalizing problems (β = 0.07; P = .005; CI 0.03 to 0.12). Finally, parental perceptions of media Sinophobia were positively associated with youth-reported internalizing (β = 0.06; P = .01; CI 0.01 to 0.10) and externalizing problems (β = 0.04; P = .05; CI 0.00 to 0.09).

DISCUSSION

This study revealed that a high percentage of Chinese American parents and their children personally experienced or witnessed anti-Chinese or anti–Asian American racial discrimination both online and in person due to the COVID-19 pandemic. One in 4 parents and youth reported vicarious racial discrimination almost every day, and most respondents reported directly experiencing or witnessing racial discrimination against other Chinese or Asian American individuals due to COVID-19 at least once. These numbers are highly concerning and support the calls for attention to the issue of racism during the COVID-19 pandemic.[1,2] We also assessed

TABLE 1 Statistics of Demographic Characteristics and Variables of Interest in the 2 Samples

	Parent Sample (N = 543)		Dyad Sample (N = 230)	
	Parent	Child	Parent	Child
Demographic characteristics				
Age, y, mean (SD)	43.44 (6.47)	11.80 (4.04)	46.09 (5.14)	13.83 (2.53)
Age range, y	28–64	4–20	33–64	10–18
Years in the United States, mean (SD)	16.80 (9.62)	10.26 (4.70)	18.52 (8.48)	12.33 (3.93)
Nativity, *n* (%)				
Foreign born	521 (95.9)	130 (23.9)	225 (97.8)	48 (20.9)
US born	22 (4.1)	413 (76.1)	5 (2.2)	182 (79.1)
Parent education, *n* (%)				
Less than high school graduate	39 (7.2)	—	13 (5.7)	—
High school graduate	38 (7.0)	—	14 (6.1)	—
Some college	28 (5.2)	—	8 (3.5)	—
College graduate	113 (20.8)	—	45 (19.6)	—
Graduate or professional degree	325 (59.9)	—	150 (65.2)	—
Parent marital status, *n* (%)				
Married or remarried	489 (90.1)	—	208 (90.4)	—
Divorced, separated, or widowed	54 (9.9)	—	22 (9.6)	—
Parent occupation, *n* (%)				
Administrators, professionals, and large business owners	288 (53.0)	—	142 (61.7)	—
Technicians and small business owners	98 (18.0)	—	32 (13.9)	—
Skilled workers	54 (9.9)	—	21 (9.1)	—
Temporary workers	27 (5.0)	—	10 (4.3)	—
Housewife or unemployed	76 (14.0)	—	25 (10.9)	—
Parent reporter, *n* (%)				
Mother	423 (77.9)	—	183 (79.6)	—
Father	120 (22.1)	—	47 (20.4)	—
Child sex, *n* (%)				
Boys	—	288 (53.0)	—	120 (52.1)
Girls	—	255 (47.0)	—	110 (47.9)
Family region in the United States per US Census Bureau, *n* (%)				
Region 1: Northeast	93 (17.1)	—	20 (8.7)	—
Region 2: Midwest	31 (5.7)	—	14 (6.1)	—
Region 3: South	368 (67.8)	—	179 (77.8)	—
Region 4: West	51 (9.4)	—	17 (7.4)	—
COVID-19 racial discrimination, mean (SD)				
Online direct	1.34 (0.76)	—	1.19 (0.55)	1.39 (0.81)
Online vicarious	2.30 (1.26)	—	2.25 (1.15)	2.34 (1.34)
In-person direct	1.58 (0.89)	—	1.45 (0.71)	1.48 (0.77)
In-person vicarious	2.49 (1.14)	—	2.44 (1.13)	2.65 (1.11)
Health Sinophobia	2.83 (0.94)	—	2.65 (0.89)	3.25 (0.84)
Media Sinophobia	2.81 (1.15)	—	2.67 (1.14)	2.88 (1.06)
Mental health, mean (SD)				
Psychological well-being	5.18 (0.82)	—	5.31 (0.83)	4.98 (0.78)
Generalized anxiety	0.69 (0.68)	—	0.66 (0.70)	0.56 (0.61)
Depressive symptoms	0.36 (0.41)	—	0.32 (0.42)	—
Internalizing problems	—	—	—	0.51 (0.33)
Externalizing problems	—	—	—	0.55 (0.33)

Online direct and vicarious discrimination and in-person direct discrimination were measured on 6-point scales (1–6). In-person vicarious discrimination and health and media Sinophobia were measured on 5-point scales (1–5). Psychological well-being was measured on a 7-point scale (1–7). Generalized anxiety and depressive symptoms were measured on 4-point scales (0–3). Internalizing and externalizing problems were measured on 3-point scales (0–2). —, not applicable.

parents' and youth's perceptions of collective racism toward their racial-ethnic group (Sinophobia) and found that participants, especially youth, perceived that many Americans consider Chinese people and culture to be a threat to public health in the United States. More than half of parents and youth also believed that this fear and/or dislike of China, Chinese people, or Chinese culture was presented and promoted by the media. These findings likely reflect the source of the outbreak and the use of the terms "China or Chinese Virus" or "Kung Flu" by government officials and the media.[8]

We found that COVID-19-experiences of racial discrimination were associated with higher levels of reported generalized anxiety and depressive symptoms, consistent with previous studies on daily discrimination.[26,27] Racial discrimination experiences can threaten individuals' identity and sense of control and thus foster hopelessness and the internalization of negative attitudes from the dominant group.[11] Being the direct target of racial discrimination, both in person and online, and perceptions of Sinophobia were also associated with poorer psychological well-being in adults, indicating that direct experiences may have additional detrimental effects on positive functioning.[28] The patterns of associations between racial discrimination and mental health were also similar for youth. However, witnessing others in their racial-ethnic group being victimized was associated with poorer psychological well-being only among youth, revealing their greater vulnerability to vicarious racial discrimination likely due to their developing social-cognitive and identity processes.[29] Interestingly, externalizing problems in youth were only associated with their perceptions of Sinophobia. Collective racism, such as Sinophobia, is directed against the group rather than individuals and may be more evocative of tendencies to act out in youth because it is seen as a consistent and widespread prejudice that is less within their control.[30]

Unfortunately, Chinese American parents' perceptions of being direct victims of racial discrimination both online and in person were associated with their children's self-reported anxiety and internalizing problems. Moreover, parents' perceptions of Sinophobia were associated with

their children's self-reported externalizing problems, again highlighting the links between collective racism and externalizing problems in youth. Parents' own racial victimization experiences might impact their children's mental health either directly or indirectly through increased stress, a hostile family environment, and/or more negative parenting.[27] Pediatricians should pay greater attention to address youth's experiences within the family system.

Our results suggest that 18.7% to 23.91% of the youth had a slightly elevated to substantial risk of clinically significant mental health problems; these percentages are higher than the US norm, in which 10.9% of 15- to 17-year-olds and 14.3% of 11- to 14-year-olds have similar scores.[31,32] Also, the percentage of youth in our sample (11.3%) reporting anxiety symptoms at moderate to severe levels (≥10) is similar to that of Chinese youth during the COVID-19 outbreak in China (10.4%).[33] Thus, during well-child visits throughout this pandemic, pediatricians should be sensitive to the potential mental health needs of Chinese American youth and their parents related to various forms of racism, in addition to other stressors, as the foundations of perceptions of racial-ethnic discrimination and their consequences may be set during this period.[29] Screening tools (eg, the Child Depression Inventory, GAD-7, and SDQ) can be used to identify youth with mental health concerns and to facilitate referrals to mental health services by using culturally competent approaches that validate and normalize mental help–seeking behavior among Asian Americans.

These data were unique because of the timely focus on COVID-19 racial discrimination. However, future studies using more nationally representative Chinese American samples are warranted to increase the generalizability of our findings and to examine regional differences in discrimination experiences and their correlates.[26] Also, the use of self-reporting may be subject to social desirability bias,[34] which was not assessed. Statistical control for social desirability bias and the inclusion of different reporters are recommended for future research.

In addition, authors of longitudinal studies have found that discrimination predicts mental health and not the other way around.[35,36] However, no causal interpretations can be made because our data were cross-sectional. We focused on the experiences of Chinese Americans, but other Asian American groups have been targeted by racism during COVID-19.[4] Thus, study of the shared and unique experiences and effects of

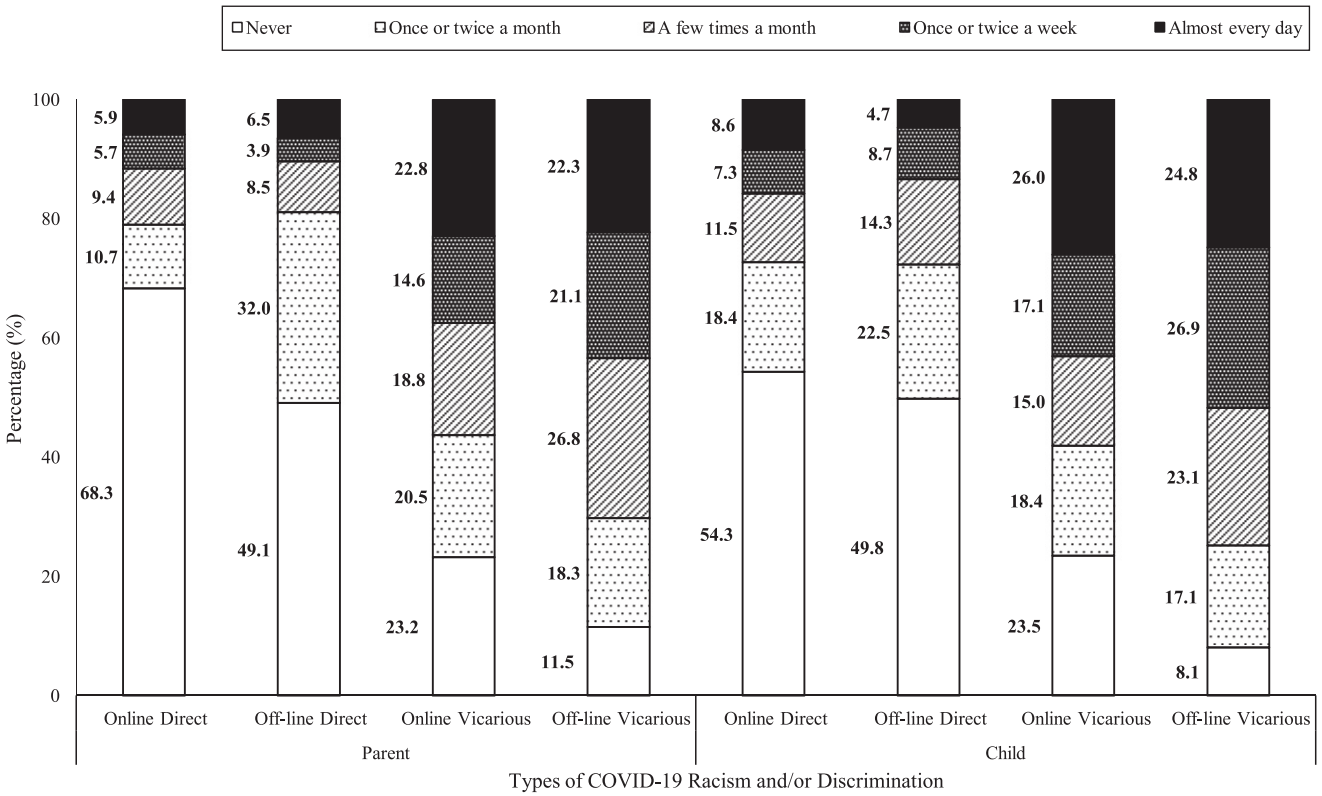

FIGURE 1
Percentages of parent's and children's reported frequencies of experience with different types of COVID-19 racial discrimination.

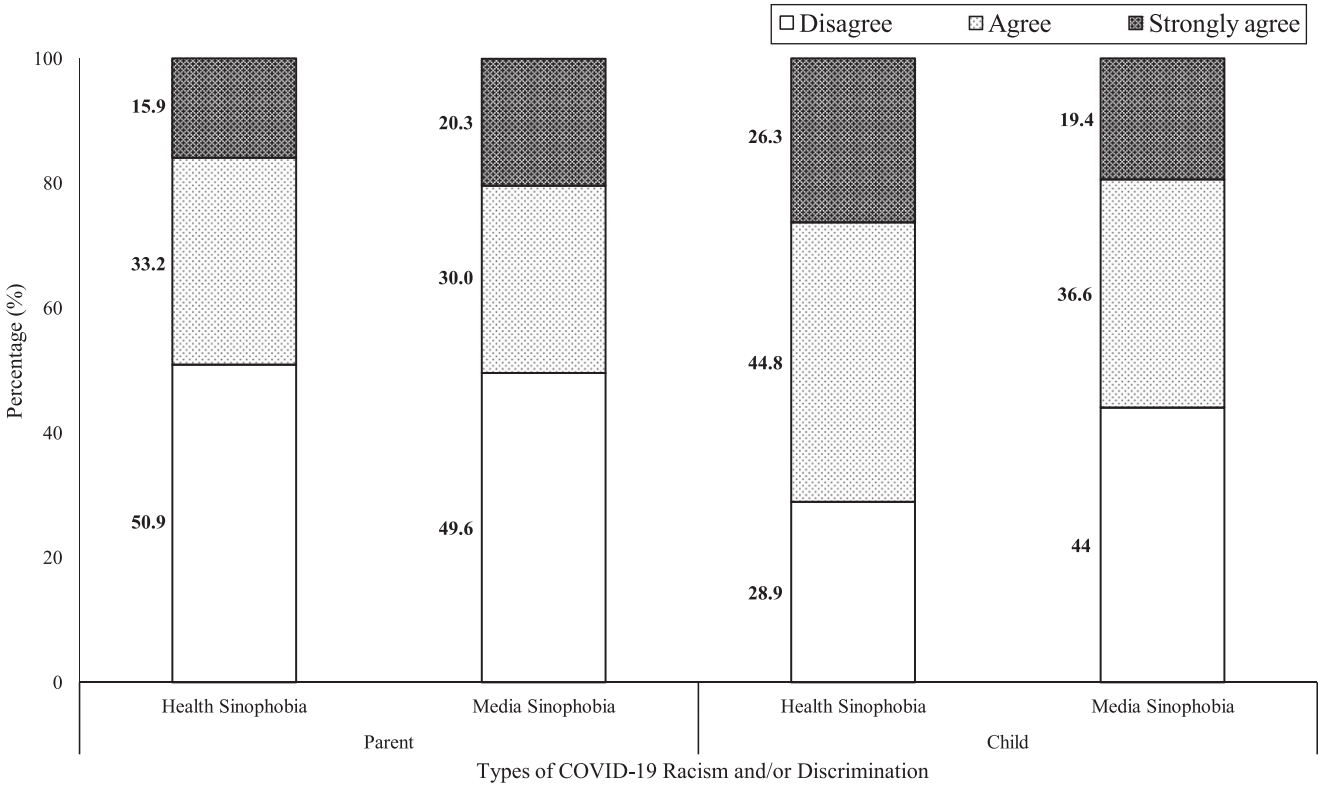

FIGURE 2
Percentages of parent's and children's levels of agreement with the presence of Sinophobia in areas of health and media.

racism in other Asian American subgroups are necessary.[26]

CONCLUSIONS

The racialization of disease is not a new phenomenon. The first severe acute respiratory syndrome outbreak also led to increased racism against Chinese and other Asian Americans.[37] Chinese communities historically have been perceived as public health problems in Western societies.[1] Thus, racial discrimination experienced during the current COVID-19 pandemic must be understood within this historical context because it has important health care implications.

The course of this pandemic remains unclear. As social distancing regulations relax and greater intergroup interactions occur, acts of discrimination will likely increase. Future research identifying protective factors to decrease and ameliorate the negative effects of these experiences is imperative. These findings call for effective public health and educational strategies to decrease the stigmatization of and discrimination against Asian Americans[1,2] and increased attention to their mental health needs related to racism during the COVID-19 pandemic, particularly among pediatric populations. Culturally sensitive care provided by pediatricians, with attention to the unique challenges of Asian American families, during the COVID-19 pandemic can improve quality of care and decrease health disparities in this growing population.

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ABBREVIATIONS

CI: confidence interval
COVID-19: coronavirus disease 2019
GAD-7: 7-item Generalized Anxiety Disorder Screener
SDQ: Strengths and Difficulties Questionnaire

TABLE 2 Results of the Multiple Regression Models

Predictors: Types of Racial Discrimination	β (95% CI) for Parent Sample (N = 543)			β (95% CI) for Parent-Youth Sample (N = 230)			
	Parent Psychological Well-being	Parent Anxiety Symptoms	Parent Depressive Symptoms	Youth Psychological Well-being	Youth Anxiety Symptoms	Youth Internalizing Problems	Youth Externalizing Problems
Parent online direct	−0.18*** (−0.24 to −0.11)	0.18*** (0.12 to 0.24)	0.14*** (0.10 to 0.17)	−0.04 (−0.15 to 0.08)	0.11* (0.02 to 0.19)	0.07** (0.03 to 0.12)	−0.02 (−0.07 to 0.03)
Parent online vicarious	0.03 (−0.03 to 0.10)	0.10*** (0.04 to 0.16)	0.06*** (0.03 to 0.10)	−0.01 (−0.12 to 0.09)	0.03 (−0.05 to 0.11)	0.02 (−0.02 to 0.06)	−0.03 (−0.07 to 0.02)
Parent in-person direct	−0.23*** (−0.30 to −0.16)	0.24*** (0.18 to 0.30)	0.13*** (0.10 to 0.17)	−0.19** (−0.30 to −0.08)	0.19*** (0.10 to 0.27)	0.07** (0.03 to 0.12)	−0.03 (−0.08 to 0.02)
Parent in-person vicarious	−0.04 (−0.11 to 0.03)	0.20*** (0.14 to 0.25)	0.11*** (0.08 to 0.15)	−0.04 (−0.15 to 0.07)	0.08* (0.00 to 0.17)	0.04 (−0.01 to 0.09)	−0.03 (−0.08 to 0.02)
Parent health Sinophobia	−0.12*** (−0.18 to −0.05)	0.16*** (0.11 to 0.22)	0.07** (0.3 to 0.11)	−0.07 (−0.18 to 0.04)	0.06 (−0.02 to 0.14)	0.03 (−0.01 to 0.08)	0.04 (−0.01 to 0.08)
Parent media Sinophobia	−0.10** (−0.17 to −0.03)	0.19*** (0.13 to 0.25)	0.09*** (0.06 to 0.13)	−0.06 (−0.16 to 0.05)	0.06 (−0.02 to 0.15)	0.06* (0.01 to 0.10)	0.04* (0.00 to 0.09)
Youth online direct	—	—	—	−0.16** (−0.26 to −0.06)	0.20*** (0.12 to 0.27)	0.10*** (0.05 to 0.14)	0.03 (−0.02 to 0.08)
Youth online vicarious	—	—	—	−0.11* (−0.22 to −0.00)	0.13** (0.04 to 0.21)	0.05* (0.01 to 0.10)	0.01 (−0.04 to 0.06)
Youth in-person direct	—	—	—	−0.19*** (−0.29 to −0.09)	0.22*** (0.14 to 0.30)	0.12*** (0.08 to 0.17)	0.03 (−0.01 to 0.08)
Youth in-person vicarious	—	—	—	−0.07 (−0.18 to 0.04)	0.18*** (0.10 to 0.26)	0.06** (0.02 to 0.11)	0.02 (−0.02 to 0.07)
Youth health Sinophobia	—	—	—	−0.12* (−0.23 to −0.01)	0.13** (0.05 to 0.22)	0.07** (0.02 to 0.12)	0.08*** (0.04 to 0.13)
Youth media Sinophobia	—	—	—	−0.13* (−0.23 to −0.02)	0.15** (0.07 to 0.23)	0.08*** (0.03 to 0.12)	0.08*** (0.03 to 0.12)

Regression models were run separately for each predictor and outcome pair. Standardized regression coefficients were reported. Parent age, sex, nativity, household SES, and family region were controlled as covariates when parent racial discrimination and parent outcomes were analyzed in the models. Parent and youth age, sex, nativity, household SES, and family region were controlled as covariates when parent racial discrimination and youth adjustment were analyzed in the models. Youth age, sex, nativity, household SES, and family region were controlled as covariates when youth racial discrimination and youth adjustment were analyzed in the models. SES, socioeconomic status; —, not applicable.

* $P < .05$.

** $P < .01$.

*** $P < .001$.

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